## HW6.R

## tamtam

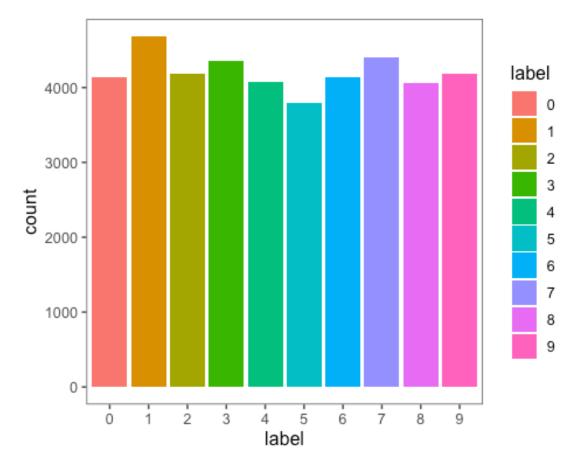
2021-03-06

```
library(FactoMineR)
library(dplyr)
##
## Attaching package: 'dplyr'
## The following objects are masked from 'package:stats':
##
##
      filter, lag
## The following objects are masked from 'package:base':
##
       intersect, setdiff, setequal, union
##
library(tidyverse)
## — Attaching packages -

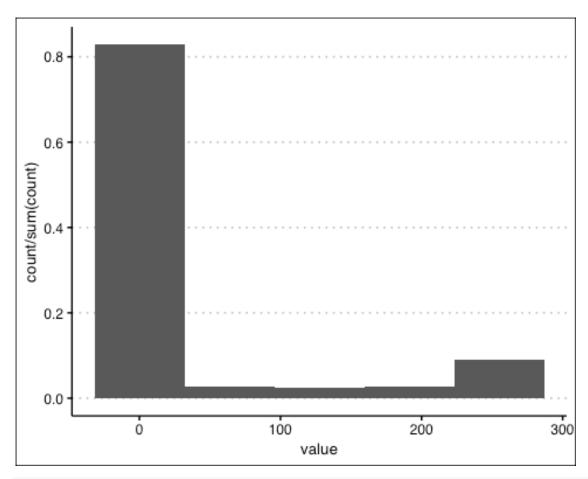
    tidyverse

1.3.0 —
## √ ggplot2 3.3.3
                     √ purrr
                                 0.3.4
## √ tibble 3.0.6 √ stringr 1.4.0
            1.1.2
## √ tidyr
                       √ forcats 0.5.1
## √ readr
             1.4.0
## -- Conflicts -
tidyverse_conflicts() —
## x dplyr::filter() masks stats::filter()
## x dplyr::lag() masks stats::lag()
library(tidyr)
library(caret)
## Loading required package: lattice
##
## Attaching package: 'caret'
## The following object is masked from 'package:purrr':
##
      lift
##
library(rpart)
library(rpart.plot)
library(rattle)
```

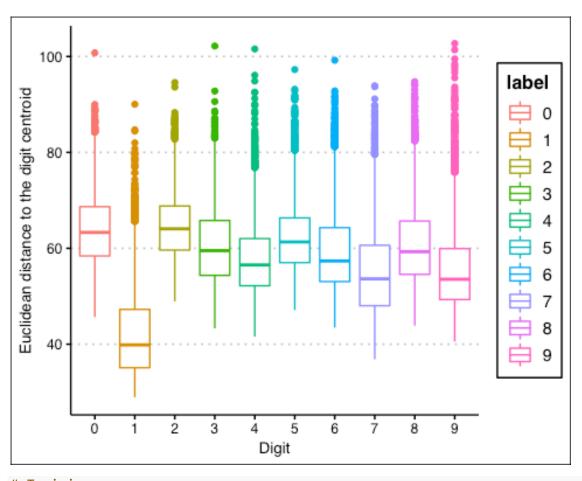
```
## Loading required package: bitops
## Rattle: A free graphical interface for data science with R.
## Version 5.4.0 Copyright (c) 2006-2020 Togaware Pty Ltd.
## Type 'rattle()' to shake, rattle, and roll your data.
library(ggplot2)
library(ggthemes)
#library(Factoshiny)
setwd("~/Downloads/digit-recognizer")
filename <-"train.csv"</pre>
DigitTotalDF <- read.csv(filename, header = TRUE, stringsAsFactors = TRUE)</pre>
DigitTotalDF$label<-as.factor(DigitTotalDF$label)</pre>
dim(DigitTotalDF)
## [1] 42000
               785
colnames<- names(DigitTotalDF)</pre>
names(DigitTotalDF)<- sub("pixel","",colnames)</pre>
pixels_gathered <- DigitTotalDF %>%
  mutate(instance = row_number()) %>%
  gather(pixel, value, -label, -instance) %>%
  tidyr::extract(pixel, "pixel", "(\\d+)", convert = TRUE) %>%
  mutate(pixel = pixel - 2,
         x = pixel \% 28,
         y = 28 - pixel \frac{%}{%} 28
pixel_summary <- pixels_gathered %>%
  group by(x, y, label) %>%
  summarize(mean value = mean(value)) %>%
  ungroup()
## `summarise()` has grouped output by 'x', 'y'. You can override using the
`.groups` argument.
pixels_joined <- pixels_gathered %>%
  inner_join(pixel_summary, by = c("label", "x", "y"))
image distances <- pixels joined %>%
  group_by(label, instance) %>%
  summarize(euclidean_distance = sqrt(mean((value - mean_value) ^ 2)))
## `summarise()` has grouped output by 'label'. You can override using the
`.groups` argument.
#EDA
ggplot(DigitTotalDF,aes(x=label,fill=label)) + geom bar() + theme few()
```



```
#Pixel by color , percent
ggplot(pixels_gathered, aes(value))
+geom_histogram(aes(y=..count../sum(..count..)),bins=5) + theme_clean()
```



```
ggplot(image_distances, aes(factor(label), euclidean_distance,color=label)) +
   geom_boxplot() +
   labs(x = "Digit",
        y = "Euclidean distance to the digit centroid") + theme_clean()
```



```
# Training
set.seed(1024)
library(doParallel)
## Loading required package: foreach
##
## Attaching package: 'foreach'
## The following objects are masked from 'package:purrr':
##
       accumulate, when
##
## Loading required package: iterators
## Loading required package: parallel
cl <- makePSOCKcluster(6)</pre>
registerDoParallel(cl)
plotConfusionMatrix<- function(predicted,actual){</pre>
  table<-(table(Predicted=predicted, TrueDigits=actual))</pre>
  print(table)
```

```
cf<-confusionMatrix(table)</pre>
  print(cf$overall)
  table <- table / rowSums(table)</pre>
  confusion_matrix <- as.data.frame(table)</pre>
  plot<-ggplot(data = confusion_matrix,</pre>
         aes(x = Predicted,y = TrueDigits)) +
    geom_tile(aes(fill = Freq)) +
    #geom_text(aes(label = sprintf("%.2f", (Freq/sum(Freq)*100))), vjust = 1)
+
    geom text(aes(label = scales::percent(Freq,accuracy = 2.2))) +
    scale fill gradient(low = "white",
                         high = "purple",
                         trans = "log") + theme_gdocs()
  print(plot)
  return(cf)
}
#Tree Model
plotTree<-function(treeModel){</pre>
  #summary(treeModel)
  #fancyRpartPlot(treeModel, type=1)
  plot(treeModel)
  #plot number of splits
  rsq.rpart(treeModel)
  plotcp(treeModel)
  #printcp(ptree)
  #confusion matrix to find correct and incorrect predictions
}
#Tree models
trainIndex <- createDataPartition(DigitTotalDF$label, p = .6, list = FALSE,
times = 1)
trainDF <- DigitTotalDF[ trainIndex,]</pre>
testDF <- DigitTotalDF[-trainIndex,]</pre>
predictTreeModel<-function(tree model){</pre>
  summary(tree_model)
  plotTree(tree model)
  predicted tree= predict(tree model, testDF, type="class")
  plotConfusionMatrix(predicted_tree,testDF$label)
  return(tree_model)
}
tree_model_1<-rpart(label ~., data = trainDF, method="class",</pre>
```

```
control=rpart.control(cp=0))
predictTreeModel(tree model 1)
## Call:
## rpart(formula = label ~ ., data = trainDF, method = "class",
       control = rpart.control(cp = 0))
##
     n= 25205
##
##
                 CP nsplit rel error
                                         xerror
                                                        xstd
## 1
       9.779405e-02
                         0 1.0000000 1.0000000 0.002231625
                         1 0.9022059 0.9030097 0.002823465
## 2
       8.256676e-02
                         2 0.8196392 0.8482183 0.003054854
## 3
       8.020005e-02
## 4
                         3 0.7394391 0.7278289 0.003388807
       5.956953e-02
## 5
       5.193355e-02
                         4 0.6798696 0.6604001 0.003490960
## 6
                         5 0.6279361 0.6191391 0.003526886
       4.572653e-02
## 7
       4.505671e-02
                         6 0.5822095 0.5833705 0.003542340
## 8
       2.545325e-02
                         7 0.5371528 0.5345628 0.003540265
## 9
       2.138966e-02
                         8 0.5116996 0.5111190 0.003529761
## 10
       1.866571e-02
                         9 0.4903099 0.4936144 0.003517858
                        10 0.4716442 0.4810217 0.003507127
## 11
       1.576315e-02
## 12
                        11 0.4558810 0.4674466 0.003493505
       1.549522e-02
## 13
       1.330714e-02
                        12 0.4403858 0.4515942 0.003474869
## 14
       1.107439e-02
                        13 0.4270787 0.4339109 0.003450553
## 15
       8.350451e-03
                        14 0.4160043 0.4205144 0.003429611
## 16
       6.966152e-03
                        15 0.4076538 0.4154684 0.003421149
## 17
                        16 0.4006877 0.4035009 0.003399810
       6.117710e-03
## 18
       4.822720e-03
                        17 0.3945700 0.3914888 0.003376564
## 19
                        18 0.3897473 0.3746986 0.003340930
       4.778066e-03
## 20
       4.733411e-03
                        19 0.3849692 0.3711262 0.003332866
## 21
       4.688756e-03
                        21 0.3755024 0.3691614 0.003328358
## 22
       4.644101e-03
                        22 0.3708136 0.3680004 0.003325669
## 23
       4.420827e-03
                        23 0.3661695 0.3646066 0.003317706
## 24
       4.286863e-03
                        24 0.3617487 0.3567920 0.003298769
## 25
                        25 0.3574618 0.3528624 0.003288927
       3.929624e-03
## 26
                        26 0.3535322 0.3471019 0.003274107
       3.795660e-03
## 27
                        29 0.3421452 0.3459409 0.003271064
       3.751005e-03
## 28
       3.483076e-03
                        30 0.3383942 0.3418326 0.003260139
       3.393766e-03
## 29
                        31 0.3349111 0.3366080 0.003245895
## 30
       3.349111e-03
                        32 0.3315174 0.3364741 0.003245524
## 31
                        33 0.3281683 0.3364741 0.003245524
       3.304457e-03
## 32
       2.857908e-03
                        34 0.3248638 0.3317406 0.003232267
## 33
                        37 0.3162901 0.3221845 0.003204489
       2.835581e-03
## 34
                        39 0.3106189 0.3170492 0.003188992
       2.634634e-03
                        40 0.3079843 0.3131196 0.003176860
## 35
       2.589979e-03
                        41 0.3053943 0.3105296 0.003168733
## 36
       2.545325e-03
## 37
       2.500670e-03
                        42 0.3028490 0.3097705 0.003166331
## 38
       2.456015e-03
                        43 0.3003483 0.3084755 0.003162213
                        44 0.2978923 0.3073145 0.003158498
## 39
       2.389033e-03
## 40
       2.366705e-03
                        46 0.2931142 0.3045012 0.003149408
                        47 0.2907475 0.3038314 0.003147225
## 41
       2.277396e-03
```

```
## 42
                        52 0.2793159 0.2940073 0.003114378
       2.054122e-03
## 43
       2.009467e-03
                         53 0.2772618 0.2853889 0.003084253
## 44
                         59 0.2652050 0.2832009 0.003076405
       1.830848e-03
## 45
                         60 0.2633741 0.2771278 0.003054191
       1.696883e-03
## 46
       1.674556e-03
                        62 0.2599804 0.2739573 0.003042339
## 47
       1.629901e-03
                         64 0.2566312 0.2722604 0.003035923
## 48
       1.607573e-03
                         66 0.2533714 0.2693579 0.003024828
## 49
       1.473609e-03
                         69 0.2485487 0.2670358 0.003015843
## 50
       1.406627e-03
                        70 0.2470751 0.2623024 0.002997223
                         72 0.2442619 0.2600697 0.002988297
## 51
       1.384299e-03
## 52
       1.294990e-03
                        76 0.2387247 0.2567652 0.002974915
## 53
       1.250335e-03
                        77 0.2374297 0.2543092 0.002964835
                        79 0.2349290 0.2522997 0.002956502
## 54
       1.161025e-03
## 55
                        81 0.2326069 0.2499330 0.002946587
       1.116370e-03
## 56
       1.094043e-03
                        83 0.2303742 0.2493079 0.002943950
## 57
                        86 0.2268911 0.2477896 0.002937514
       1.071716e-03
## 58
       1.027061e-03
                         88 0.2247477 0.2476110 0.002936754
## 59
       9.824060e-04
                        90 0.2226936 0.2449317 0.002925275
## 60
       9.377512e-04
                        91 0.2217112 0.2422077 0.002913459
                        98 0.2151469 0.2384567 0.002896943
## 61
       8.930964e-04
## 62
       8.707690e-04
                        100 0.2133607 0.2363580 0.002887576
## 63
                        102 0.2116192 0.2352416 0.002882556
       8.484415e-04
## 64
       8.037867e-04
                        105 0.2090739 0.2309547 0.002863039
                        111 0.2042511 0.2269358 0.002844387
## 65
       7.591319e-04
## 66
                        116 0.2004555 0.2259534 0.002839775
       7.368045e-04
## 67
       7.144771e-04
                        118 0.1989819 0.2241672 0.002831335
## 68
       6.698223e-04
                        124 0.1946950 0.2210860 0.002816611
## 69
       6.251675e-04
                        131 0.1893811 0.2196571 0.002809711
## 70
       5.805126e-04
                        136 0.1862552 0.2153702 0.002788733
                        147 0.1798696 0.2114852 0.002769358
## 71
       5.358578e-04
## 72
       4.912030e-04
                        151 0.1777262 0.2069304 0.002746191
                        159 0.1737966 0.2034027 0.002727905
## 73
       4.688756e-04
## 74
       4.465482e-04
                        161 0.1728588 0.2015718 0.002718294
## 75
       4.242208e-04
                        177 0.1656247 0.1976422 0.002697385
## 76
       4.018934e-04
                        183 0.1625882 0.1964365 0.002690892
## 77
                        197 0.1569617 0.1927302 0.002670696
       3.795660e-04
## 78
       3.572385e-04
                        202 0.1550415 0.1917031 0.002665037
## 79
                        216 0.1500402 0.1877289 0.002642873
       3.349111e-04
## 80
       3.125837e-04
                        218 0.1493704 0.1873270 0.002640608
## 81
       2.976988e-04
                        240 0.1424489 0.1863892 0.002635307
## 82
                        246 0.1406627 0.1829508 0.002615661
       2.902563e-04
## 83
       2.679289e-04
                        250 0.1395017 0.1824149 0.002612570
## 84
       2.456015e-04
                        270 0.1341431 0.1811646 0.002605326
## 85
       2.344378e-04
                        286 0.1301688 0.1793338 0.002594640
                        290 0.1292310 0.1791551 0.002593592
## 86
       2.232741e-04
## 87
       2.083892e-04
                        320 0.1225328 0.1785746 0.002590181
## 88
                        323 0.1219077 0.1785746 0.002590181
       2.009467e-04
## 89
       1.786193e-04
                        325 0.1215058 0.1766991 0.002579093
## 90
       1.562919e-04
                        376 0.1122622 0.1764312 0.002577501
## 91
       1.488494e-04
                       380 0.1116370 0.1764758 0.002577766
```

```
## 92 1.339645e-04
                       383 0.1111905 0.1766545 0.002578828
## 93
       1.116370e-04
                       415 0.1069036 0.1767438 0.002579358
## 94
       8.930964e-05
                       424 0.1058319 0.1767884 0.002579623
                       460 0.1026168 0.1774136 0.002583329
## 95
       7.442470e-05
## 96
       6.698223e-05
                       463 0.1023935 0.1770564 0.002581213
## 97
       4.465482e-05
                       465 0.1022595 0.1773243 0.002582800
                       501 0.1006520 0.1783960 0.002589129
## 98
       3.721235e-05
## 99
       2.232741e-05
                       507 0.1004287 0.1785746 0.002590181
                       513 0.1002947 0.1788872 0.002592019
## 100 1.116370e-05
## 101 0.000000e+00
                       517 0.1002501 0.1789319 0.002592281
##
## Variable importance
## 489 517 490 350 461 347 435 514 211 434 462 597 542 378 323 516 351 210
515 543
##
   2 1
                         1
                                      1
             1
                 1
                     1
                             1
                                 1
                                          1
                                              1
                                                  1
                                                      1
                                                          1
                                                              1
                                                                  1
                                                                      1
                                                                          1
## 319 486 270 432 346 212 322 541 487 271 596 626 238 598 239 408 407 348
431 568
##
    1
         1
             1
                 1
                     1
                         1
                             1
                                 1
                                      1
                                          1
                                              1
                                                  1
                                                      1
                                                              1
                                                                      1
                                                          1
                                                                          1
1
    1
## 570 485 349 375 436 262 298 433 155 463 657 243 458 299 297 156 234 320
656 658
##
                         1
                             1
                                 1
     1
         1
             1
                 1
                     1
                                      1
                                          1
                                              1
                                                  1
                                                      1
                                                          1
                                                              1
                                                                  1
                                                                       1
                                                                           1
## 354 154 324 272 353 325 269 240 207 459 488 430 569 296 157 235 206 317
377 381
##
    1
                         1
                             1
                                 1
                                      1
                                                                      1
         1
             1
                 1
                     1
                                          1
                                              1
                                                  1
                                                      1
                                                          1
                                                              1
                                                                  1
                                                                          1
1
    1
## 404 290 376
##
         1
     1
             1
##
## Node number 1: 25205 observations,
                                        complexity param=0.09779405
     predicted class=1 expected loss=0.8884745 P(node) =1
       class counts: 2480 2811 2507 2611 2444 2277 2483 2641
##
2513
      probabilities: 0.098 0.112 0.099 0.104 0.097 0.090 0.099 0.105 0.097
##
0.100
##
     left son=2 (9068 obs) right son=3 (16137 obs)
##
     Primary splits:
         350 < 120.5 to the right, improve=1009.8860, (0 missing)
##
##
         409 < 0.5
                     to the left, improve= 999.1138, (0 missing)
                     to the left, improve= 990.1707, (0 missing)
##
         461 < 1.5
##
         378 < 131.5 to the right, improve= 964.9390, (0 missing)
##
         433 < 0.5
                     to the left, improve= 956.4358, (0 missing)
##
     Surrogate splits:
##
         351 < 192.5 to the right, agree=0.864, adj=0.621, (0 split)
##
         378 < 237.5 to the right, agree=0.860, adj=0.610, (0 split)
##
         323 < 118.5 to the right, agree=0.845, adj=0.570, (0 split)
##
         322 < 40.5 to the right, agree=0.845, adj=0.570, (0 split)
##
         349 < 63.5 to the right, agree=0.844, adj=0.567, (0 split)
```

```
##
## Node number 2: 9068 observations,
                                       complexity param=0.08020005
##
     predicted class=1 expected loss=0.7144905 P(node) =0.3597699
                       194 2589
                                   485 2113
##
       class counts:
                                               239
                                                     968
                                                           512
                                                                 229
                                                                      1200
539
      probabilities: 0.021 0.286 0.053 0.233 0.026 0.107 0.056 0.025 0.132
##
0.059
##
     left son=4 (4400 obs) right son=5 (4668 obs)
##
     Primary splits:
##
         489 < 44.5 to the right, improve=1014.6630, (0 missing)
##
         517 < 28.5 to the right, improve= 931.7002, (0 missing)
                     to the left, improve= 930.7003, (0 missing)
##
         375 < 0.5
         461 < 65.5 to the right, improve= 882.2089, (0 missing)
##
##
         462 < 96.5 to the right, improve= 869.9859, (0 missing)
##
     Surrogate splits:
##
         517 < 32.5 to the right, agree=0.904, adj=0.802, (0 split)
         461 < 124.5 to the right, agree=0.895, adj=0.785, (0 split)
##
##
         490 < 32.5 to the right, agree=0.868, adj=0.728, (0 split)
         462 < 96.5 to the right, agree=0.867, adj=0.726, (0 split)
##
##
         516 < 16.5 to the right, agree=0.844, adj=0.679, (0 split)
##
## Node number 3: 16137 observations,
                                         complexity param=0.08256676
     predicted class=7 expected loss=0.8505298 P(node) =0.6402301
##
##
       class counts: 2286
                             222 2022
                                         498 2205 1309 1971 2412 1238
1974
##
      probabilities: 0.142 0.014 0.125 0.031 0.137 0.081 0.122 0.149 0.077
0.122
##
     left son=6 (4294 obs) right son=7 (11843 obs)
##
     Primary splits:
                                   improve=997.0246, (0 missing)
##
         435 < 0.5
                     to the left,
##
         436 < 0.5
                     to the left,
                                   improve=993.5928, (0 missing)
##
         569 < 0.5
                     to the right, improve=985.1319, (0 missing)
##
         568 < 0.5
                     to the right, improve=981.9576, (0 missing)
##
         408 < 0.5
                     to the left, improve=973.5181, (0 missing)
##
     Surrogate splits:
##
         436 < 0.5
                     to the left, agree=0.892, adj=0.594, (0 split)
                                   agree=0.890, adj=0.588, (0 split)
         408 < 0.5
##
                     to the left,
##
         434 < 0.5
                     to the left,
                                   agree=0.888, adj=0.578, (0 split)
##
         463 < 0.5
                     to the left,
                                   agree=0.883, adj=0.559, (0 split)
         407 < 0.5
                                   agree=0.879, adj=0.545, (0 split)
##
                     to the left,
##
## Node number 4: 4400 observations,
                                        complexity param=0.01866571
##
     predicted class=1
                        expected loss=0.4475 P(node) =0.1745685
##
       class counts:
                        28 2431
                                   337
                                         159
                                               112
                                                     105
                                                           277
                                                                 119
                                                                       674
158
##
      probabilities: 0.006 0.552 0.077 0.036 0.025 0.024 0.063 0.027 0.153
0.036
     left son=8 (3250 obs) right son=9 (1150 obs)
##
##
     Primary splits:
##
         234 < 0.5 to the left, improve=534.2896, (0 missing)
```

```
to the left,
                                   improve=526.6306, (0 missing)
##
         521 < 0.5
##
         319 < 0.5
                     to the left,
                                   improve=524.5641, (0 missing)
##
         262 < 0.5
                     to the left,
                                   improve=524.1744, (0 missing)
##
         550 < 0.5
                     to the left,
                                   improve=523.3399, (0 missing)
##
     Surrogate splits:
##
         206 < 0.5
                     to the left,
                                   agree=0.934, adj=0.747, (0 split)
         262 < 1.5
                                   agree=0.930, adj=0.732, (0 split)
##
                     to the left,
                                   agree=0.930, adj=0.731, (0 split)
##
         235 < 132.5 to the left,
                                   agree=0.925, adj=0.715, (0 split)
##
         207 < 48.5
                     to the left,
##
         233 < 1.5
                     to the left,
                                   agree=0.922, adj=0.700, (0 split)
##
## Node number 5: 4668 observations,
                                         complexity param=0.01549522
     predicted class=3
                        expected loss=0.5814053 P(node) =0.1852013
##
##
       class counts:
                       166
                             158
                                   148 1954
                                                127
                                                      863
                                                            235
                                                                         526
                                                                  110
381
##
      probabilities: 0.036 0.034 0.032 0.419 0.027 0.185 0.050 0.024 0.113
0.082
##
     left son=10 (3675 obs) right son=11 (993 obs)
##
     Primary splits:
         486 < 76.5 to the left,
##
                                   improve=339.3307, (0 missing)
##
         290 < 34.5 to the left,
                                   improve=326.0021, (0 missing)
##
         487 < 11.5
                     to the left,
                                   improve=315.4504, (0 missing)
##
         317 < 33.5 to the left,
                                   improve=282.8250, (0 missing)
##
         291 < 10.5 to the left,
                                   improve=281.4892, (0 missing)
##
     Surrogate splits:
##
         487 < 11.5 to the left,
                                   agree=0.941, adj=0.722, (0 split)
##
         514 < 141.5 to the left,
                                   agree=0.922, adj=0.631, (0 split)
         485 < 101.5 to the left,
                                   agree=0.911, adj=0.581, (0 split)
##
##
         459 < 201.5 to the left,
                                   agree=0.910, adj=0.577, (0 split)
##
         458 < 202.5 to the left,
                                   agree=0.908, adj=0.569, (0 split)
##
## Node number 6: 4294 observations,
                                         complexity param=0.02138966
##
     predicted class=0 expected loss=0.4825338 P(node) =0.170363
##
       class counts: 2222
                              17
                                    282
                                          130
                                                166
                                                      368
                                                            229
                                                                  664
                                                                          37
179
      probabilities: 0.517 0.004 0.066 0.030 0.039 0.086 0.053 0.155 0.009
##
0.042
##
     left son=12 (2737 obs) right son=13 (1557 obs)
##
     Primary splits:
##
         597 < 1.5
                     to the right, improve=603.7671, (0 missing)
##
         598 < 2.5
                     to the right, improve=574.3586, (0 missing)
                     to the right, improve=537.4804, (0 missing)
##
         568 < 0.5
##
         626 < 3.5
                     to the right, improve=524.5488, (0 missing)
##
         511 < 2.5
                     to the right, improve=521.8409, (0 missing)
##
     Surrogate splits:
##
         598 < 7.5
                     to the right, agree=0.930, adj=0.808, (0 split)
##
         596 < 0.5
                     to the right, agree=0.905, adj=0.739, (0 split)
##
                     to the right, agree=0.898, adj=0.720, (0 split)
         568 < 0.5
##
         626 < 6.5
                     to the right, agree=0.895, adj=0.712, (0 split)
                     to the right, agree=0.887, adj=0.689, (0 split)
##
         569 < 1.5
```

```
##
## Node number 7: 11843 observations,
                                         complexity param=0.05956953
##
     predicted class=4
                        expected loss=0.8278308 P(node) =0.4698671
                             205 1740
       class counts:
##
                        64
                                         368 2039
                                                      941 1742 1748
                                                                       1201
1795
      probabilities: 0.005 0.017 0.147 0.031 0.172 0.079 0.147 0.148 0.101
##
0.152
##
     left son=14 (5226 obs) right son=15 (6617 obs)
##
     Primary splits:
##
         542 < 1.5
                     to the right, improve=822.1865, (0 missing)
##
         570 < 1.5
                     to the right, improve=766.1911, (0 missing)
                     to the right, improve=760.7062, (0 missing)
##
         127 < 0.5
                     to the right, improve=752.4553, (0 missing)
         569 < 0.5
##
##
         541 < 0.5
                     to the right, improve=750.0038, (0 missing)
##
     Surrogate splits:
##
         541 < 0.5
                     to the right, agree=0.895, adj=0.762, (0 split)
                     to the right, agree=0.893, adj=0.757, (0 split)
##
         543 < 48.5
##
         570 < 20.5
                     to the right, agree=0.880, adj=0.729, (0 split)
                     to the right, agree=0.854, adj=0.670, (0 split)
##
         515 < 31.5
##
         514 < 1.5
                     to the right, agree=0.852, adj=0.666, (0 split)
##
## Node number 8: 3250 observations,
                                        complexity param=0.002277396
##
     predicted class=1
                        expected loss=0.2649231 P(node) =0.1289427
##
       class counts:
                        18 2389
                                   157
                                                 76
                                                       91
                                                                        214
                                           56
                                                            158
                                                                   24
67
##
      probabilities: 0.006 0.735 0.048 0.017 0.023 0.028 0.049 0.007 0.066
0.021
##
     left son=16 (2607 obs) right son=17 (643 obs)
##
     Primary splits:
##
         347 < 1.5
                     to the left,
                                   improve=298.0289, (0 missing)
##
         402 < 8
                     to the left,
                                   improve=281.7995, (0 missing)
##
         375 < 48.5
                     to the left,
                                   improve=280.9152, (0 missing)
##
         374 < 0.5
                     to the left,
                                   improve=277.2342, (0 missing)
##
         457 < 1.5
                     to the left,
                                   improve=273.9629, (0 missing)
##
     Surrogate splits:
##
         375 < 29.5 to the left,
                                   agree=0.943, adj=0.712, (0 split)
                                   agree=0.942, adj=0.709, (0 split)
##
         319 < 0.5
                     to the left,
##
         348 < 170.5 to the left,
                                   agree=0.930, adj=0.645, (0 split)
##
         374 < 0.5
                     to the left,
                                   agree=0.925, adj=0.621, (0 split)
                                   agree=0.923, adj=0.610, (0 split)
##
         346 < 1
                     to the left,
##
## Node number 9: 1150 observations,
                                        complexity param=0.004733411
                        expected loss=0.6 P(node) =0.04562587
##
     predicted class=8
##
                                                 36
                                                                   95
       class counts:
                        10
                              42
                                   180
                                         103
                                                       14
                                                            119
                                                                        460
91
##
      probabilities: 0.009 0.037 0.157 0.090 0.031 0.012 0.103 0.083 0.400
0.079
##
     left son=18 (434 obs) right son=19 (716 obs)
##
     Primary splits:
         658 < 13.5 to the left, improve=111.38900, (0 missing)
##
```

```
657 < 1.5
                     to the left,
                                    improve=108.81070, (0 missing)
##
##
         659 < 1
                     to the left,
                                    improve=108.67210, (0 missing)
##
         656 < 4
                     to the left,
                                    improve= 97.54418, (0 missing)
##
         319 < 6.5
                     to the left,
                                    improve= 79.81577, (0 missing)
##
     Surrogate splits:
##
         659 < 1
                     to the left,
                                    agree=0.916, adj=0.776, (0 split)
##
                     to the left,
                                    agree=0.910, adj=0.763, (0 split)
         657 < 5
                                    agree=0.860, adj=0.629, (0 split)
##
         630 < 66.5
                     to the left,
                                    agree=0.846, adj=0.592, (0 split)
##
         631 < 5
                     to the left,
##
         656 < 1.5
                     to the left,
                                    agree=0.819, adj=0.521, (0 split)
##
## Node number 10: 3675 observations,
                                          complexity param=0.01330714
     predicted class=3 expected loss=0.4862585 P(node) =0.1458044
##
##
       class counts:
                       101
                             138
                                     22
                                        1888
                                                113
                                                      810
                                                             35
                                                                         113
                                                                  109
346
##
      probabilities: 0.027 0.038 0.006 0.514 0.031 0.220 0.010 0.030 0.031
0.094
##
     left son=20 (2318 obs) right son=21 (1357 obs)
##
     Primary splits:
         290 < 42.5 to the left,
##
                                    improve=347.9199, (0 missing)
##
         317 < 33.5
                     to the left,
                                    improve=327.6350, (0 missing)
##
         296 < 12.5
                     to the right, improve=303.0004, (0 missing)
##
         289 < 5.5
                     to the left,
                                    improve=302.9559, (0 missing)
##
         318 < 51.5 to the left,
                                   improve=279.4329, (0 missing)
##
     Surrogate splits:
##
         289 < 11.5 to the left,
                                   agree=0.875, adj=0.660, (0 split)
                                    agree=0.863, adj=0.629, (0 split)
##
         318 < 138.5 to the left,
                                    agree=0.861, adj=0.623, (0 split)
##
         291 < 38.5
                     to the left,
##
         317 < 68.5
                     to the left,
                                    agree=0.858, adj=0.615, (0 split)
                                    agree=0.850, adj=0.593, (0 split)
##
         262 < 68
                     to the left,
##
## Node number 11: 993 observations,
                                         complexity param=0.006966152
##
     predicted class=8
                        expected loss=0.5840886 P(node) =0.03939695
       class counts:
##
                        65
                              20
                                    126
                                           66
                                                 14
                                                       53
                                                            200
                                                                    1
                                                                         413
35
##
      probabilities: 0.065 0.020 0.127 0.066 0.014 0.053 0.201 0.001 0.416
0.035
##
     left son=22 (423 obs) right son=23 (570 obs)
##
     Primary splits:
##
         657 < 5.5
                                    improve=140.94030, (0 missing)
                     to the left,
##
         656 < 1
                     to the left,
                                    improve=138.99620, (0 missing)
##
         658 < 0.5
                     to the left,
                                    improve=123.86500, (0 missing)
##
         655 < 14
                     to the left,
                                    improve=122.38120, (0 missing)
                                    improve= 90.32948, (0 missing)
##
         654 < 0.5
                     to the left,
##
     Surrogate splits:
##
         656 < 1
                     to the left,
                                    agree=0.957, adj=0.898, (0 split)
##
         658 < 0.5
                     to the left,
                                    agree=0.934, adj=0.844, (0 split)
##
                     to the left,
                                    agree=0.900, adj=0.766, (0 split)
         655 < 0.5
##
         659 < 0.5
                     to the left,
                                    agree=0.845, adj=0.636, (0 split)
                                   agree=0.830, adj=0.600, (0 split)
##
         654 < 0.5
                     to the left,
```

```
##
## Node number 12: 2737 observations,
                                          complexity param=0.004644101
##
     predicted class=0 expected loss=0.2499087
                                                  P(node) =0.1085896
##
       class counts: 2053
                               6
                                    230
                                           85
                                                      220
                                                             83
                                                                   16
                                                                         30
9
      probabilities: 0.750 0.002 0.084 0.031 0.002 0.080 0.030 0.006 0.011
##
0.003
##
     left son=24 (2295 obs) right son=25 (442 obs)
##
     Primary splits:
##
         489 < 0.5
                     to the left,
                                    improve=243.9992, (0 missing)
         461 < 0.5
##
                     to the left,
                                   improve=224.9709, (0 missing)
                                    improve=222.8567, (0 missing)
         488 < 2.5
##
                     to the left,
         372 < 0.5
                     to the right, improve=215.5484, (0 missing)
##
##
         400 < 3.5
                     to the right, improve=215.4347, (0 missing)
##
     Surrogate splits:
##
         490 < 33.5
                    to the left,
                                   agree=0.955, adj=0.724, (0 split)
##
         488 < 0.5
                     to the left,
                                    agree=0.950, adj=0.688, (0 split)
                                   agree=0.936, adj=0.606, (0 split)
##
         517 < 140.5 to the left,
                                   agree=0.932, adj=0.581, (0 split)
##
         462 < 1.5
                     to the left,
##
         461 < 0.5
                     to the left,
                                   agree=0.931, adj=0.570, (0 split)
##
## Node number 13: 1557 observations,
                                          complexity param=0.004778066
     predicted class=7 expected loss=0.583815 P(node) =0.06177346
##
##
       class counts:
                       169
                                     52
                                           45
                                                161
                                                      148
                                                                  648
                                                                           7
                              11
                                                            146
170
##
      probabilities: 0.109 0.007 0.033 0.029 0.103 0.095 0.094 0.416 0.004
0.109
##
     left son=26 (603 obs) right son=27 (954 obs)
##
     Primary splits:
##
         486 < 0.5
                     to the right, improve=171.6117, (0 missing)
##
         458 < 0.5
                     to the right, improve=170.5544, (0 missing)
##
         487 < 0.5
                     to the right, improve=170.2561, (0 missing)
##
         515 < 1
                     to the right, improve=162.3623, (0 missing)
##
         459 < 1
                     to the right, improve=157.7163, (0 missing)
##
     Surrogate splits:
##
         487 < 0.5
                     to the right, agree=0.920, adj=0.793, (0 split)
         485 < 1
                     to the right, agree=0.903, adj=0.750, (0 split)
##
##
                     to the right, agree=0.903, adj=0.750, (0 split)
         514 < 0.5
##
         515 < 2.5
                     to the right, agree=0.900, adj=0.743, (0 split)
                     to the right, agree=0.891, adj=0.718, (0 split)
##
         458 < 0.5
##
## Node number 14: 5226 observations,
                                          complexity param=0.04505671
##
     predicted class=6
                        expected loss=0.6928817 P(node) =0.2073398
##
       class counts:
                        49
                             131 1467
                                           40
                                                271
                                                      235
                                                           1605
                                                                  284
                                                                        948
196
##
      probabilities: 0.009 0.025 0.281 0.008 0.052 0.045 0.307 0.054 0.181
0.038
     left son=28 (2838 obs) right son=29 (2388 obs)
##
##
     Primary splits:
         271 < 0.5 to the right, improve=604.5449, (0 missing)
##
```

```
to the right, improve=599.7244, (0 missing)
##
         270 < 0.5
                     to the right, improve=593.0277, (0 missing)
##
         243 < 0.5
##
         347 < 0.5
                     to the left, improve=575.8547, (0 missing)
                     to the right, improve=568.0370, (0 missing)
##
         242 < 0.5
##
     Surrogate splits:
##
         243 < 0.5
                     to the right, agree=0.910, adj=0.803, (0 split)
         299 < 0.5
##
                     to the right, agree=0.906, adj=0.794, (0 split)
                     to the right, agree=0.857, adj=0.686, (0 split)
##
         270 < 0.5
##
         298 < 3.5
                     to the right, agree=0.854, adj=0.680, (0 split)
##
         272 < 0.5
                     to the right, agree=0.853, adj=0.678, (0 split)
##
## Node number 15: 6617 observations,
                                          complexity param=0.05193355
     predicted class=4
                        expected loss=0.7328094 P(node) =0.2625273
##
##
       class counts:
                        15
                              74
                                   273
                                          328 1768
                                                      706
                                                            137 1464
                                                                        253
1599
##
      probabilities: 0.002 0.011 0.041 0.050 0.267 0.107 0.021 0.221 0.038
0.242
##
     left son=30 (4489 obs) right son=31 (2128 obs)
##
     Primary splits:
##
         432 < 0.5
                     to the right, improve=696.1747, (0 missing)
##
         431 < 0.5
                     to the right, improve=662.3729, (0 missing)
##
         433 < 2.5
                     to the right, improve=658.4506, (0 missing)
##
         430 < 0.5
                     to the right, improve=646.2347, (0 missing)
##
         239 < 0.5
                     to the left, improve=617.7026, (0 missing)
##
     Surrogate splits:
##
         431 < 0.5
                     to the right, agree=0.935, adj=0.798, (0 split)
##
                     to the right, agree=0.922, adj=0.758, (0 split)
         433 < 29.5
                     to the right, agree=0.864, adj=0.577, (0 split)
##
         430 < 0.5
##
         434 < 80.5
                     to the right, agree=0.823, adj=0.451, (0 split)
##
         460 < 0.5
                     to the right, agree=0.821, adj=0.444, (0 split)
##
## Node number 16: 2607 observations,
                                          complexity param=0.002277396
##
     predicted class=1
                        expected loss=0.1258151 P(node) =0.1034319
##
       class counts:
                         1
                            2279
                                   123
                                           20
                                                 14
                                                       24
                                                             30
                                                                        100
7
##
      probabilities: 0.000 0.874 0.047 0.008 0.005 0.009 0.012 0.003 0.038
0.003
##
     left son=32 (2456 obs) right son=33 (151 obs)
##
     Primary splits:
         550 < 0.5
##
                     to the left,
                                   improve=155.3068, (0 missing)
##
         580 < 0.5
                     to the left,
                                   improve=151.2452, (0 missing)
##
         551 < 6.5
                     to the left,
                                   improve=149.7522, (0 missing)
##
         579 < 1.5
                     to the left,
                                   improve=147.4893, (0 missing)
##
         149 < 5
                     to the left,
                                   improve=146.3479, (0 missing)
##
     Surrogate splits:
##
         551 < 0.5
                     to the left,
                                   agree=0.986, adj=0.755, (0 split)
##
         578 < 44
                     to the left,
                                   agree=0.979, adj=0.642, (0 split)
##
         549 < 160
                     to the left,
                                   agree=0.979, adj=0.636, (0 split)
##
         522 < 2.5
                     to the left,
                                   agree=0.978, adj=0.623, (0 split)
##
         552 < 6
                     to the left,
                                   agree=0.977, adj=0.609, (0 split)
```

```
##
## Node number 17: 643 observations,
                                        complexity param=0.002277396
##
     predicted class=6
                        expected loss=0.8009331 P(node) =0.02551081
       class counts:
##
                        17
                             110
                                    34
                                           36
                                                 62
                                                       67
                                                            128
                                                                   15
                                                                        114
60
      probabilities: 0.026 0.171 0.053 0.056 0.096 0.104 0.199 0.023 0.177
##
0.093
##
     left son=34 (564 obs) right son=35 (79 obs)
##
     Primary splits:
                                    improve=49.62266, (0 missing)
##
         103 < 1.5
                     to the left,
##
         102 < 4.5
                     to the left,
                                   improve=45.81023, (0 missing)
                                   improve=44.98221, (0 missing)
         657 < 1.5
##
                     to the left,
##
         467 < 2.5
                     to the right, improve=44.65403, (0 missing)
##
         522 < 37
                     to the left,
                                   improve=43.85053, (0 missing)
##
     Surrogate splits:
##
         104 < 5.5
                     to the left,
                                   agree=0.955, adj=0.633, (0 split)
##
         102 < 11.5 to the left,
                                   agree=0.953, adj=0.620, (0 split)
                                   agree=0.941, adj=0.519, (0 split)
##
         131 < 213.5 to the left,
                                   agree=0.935, adj=0.468, (0 split)
##
         130 < 227.5 to the left,
##
         132 < 228
                     to the left,
                                   agree=0.922, adj=0.367, (0 split)
##
## Node number 18: 434 observations,
                                        complexity param=0.004286863
     predicted class=2 expected loss=0.6705069 P(node) =0.01721881
##
##
       class counts:
                         5
                              19
                                   143
                                           15
                                                 13
                                                        6
                                                            114
                                                                   28
                                                                         37
54
##
      probabilities: 0.012 0.044 0.329 0.035 0.030 0.014 0.263 0.065 0.085
0.124
##
     left son=36 (228 obs) right son=37 (206 obs)
##
     Primary splits:
##
         345 < 18
                     to the left,
                                   improve=60.79050, (0 missing)
##
         384 < 7.5
                     to the left,
                                   improve=48.60646, (0 missing)
##
         373 < 32.5 to the left,
                                   improve=47.71478, (0 missing)
##
         318 < 36.5
                     to the left,
                                   improve=46.92627, (0 missing)
##
         317 < 8.5
                     to the left,
                                   improve=46.85354, (0 missing)
##
     Surrogate splits:
##
         317 < 18.5 to the left,
                                   agree=0.924, adj=0.840, (0 split)
                                   agree=0.924, adj=0.840, (0 split)
##
         373 < 21
                     to the left,
##
                     to the left,
                                   agree=0.901, adj=0.791, (0 split)
         344 < 0.5
         346 < 11.5
##
                     to the left,
                                   agree=0.878, adj=0.743, (0 split)
                                   agree=0.869, adj=0.723, (0 split)
##
         372 < 0.5
                     to the left,
##
## Node number 19: 716 observations,
                                        complexity param=0.001094043
##
     predicted class=8
                        expected loss=0.4092179 P(node) =0.02840706
##
       class counts:
                         5
                                                        8
                              23
                                    37
                                           88
                                                 23
                                                              5
                                                                   67
                                                                        423
37
##
      probabilities: 0.007 0.032 0.052 0.123 0.032 0.011 0.007 0.094 0.591
0.052
##
     left son=38 (218 obs) right son=39 (498 obs)
##
     Primary splits:
         319 < 2 to the left, improve=57.35732, (0 missing)
##
```

```
543 < 10.5
                     to the left,
                                    improve=55.94126, (0 missing)
##
##
         515 < 66.5
                     to the left,
                                    improve=54.57325, (0 missing)
##
         516 < 50
                     to the left,
                                    improve=50.41320, (0 missing)
##
         318 < 1.5
                     to the left,
                                    improve=46.75767, (0 missing)
##
     Surrogate splits:
##
         318 < 0.5
                     to the left,
                                   agree=0.873, adj=0.583, (0 split)
                                    agree=0.865, adj=0.555, (0 split)
##
         320 < 0.5
                     to the left,
                                    agree=0.856, adj=0.528, (0 split)
##
         347 < 7
                     to the left,
                                    agree=0.855, adj=0.523, (0 split)
##
         291 < 79
                     to the left,
##
         290 < 2
                     to the left,
                                    agree=0.837, adj=0.463, (0 split)
##
## Node number 20: 2318 observations,
                                          complexity param=0.002009467
     predicted class=3
                        expected loss=0.2868852 P(node) =0.09196588
##
##
       class counts:
                        34
                             132
                                     19 1653
                                                 36
                                                      277
                                                             19
                                                                   30
                                                                          53
65
##
      probabilities: 0.015 0.057 0.008 0.713 0.016 0.119 0.008 0.013 0.023
0.028
##
     left son=40 (1626 obs) right son=41 (692 obs)
##
     Primary splits:
##
         179 < 1.5
                     to the right, improve=136.4540, (0 missing)
##
         296 < 12.5
                     to the right, improve=131.9266, (0 missing)
                     to the right, improve=131.1460, (0 missing)
##
         655 < 3.5
##
         152 < 0.5
                     to the right, improve=130.7408, (0 missing)
##
         490 < 104.5 to the right, improve=128.5077, (0 missing)
##
     Surrogate splits:
##
         180 < 9.5
                     to the right, agree=0.910, adj=0.698, (0 split)
##
                     to the right, agree=0.902, adj=0.672, (0 split)
         178 < 0.5
                     to the right, agree=0.837, adj=0.455, (0 split)
##
         151 < 0.5
##
         181 < 17.5
                     to the right, agree=0.830, adj=0.432, (0 split)
##
         207 < 0.5
                     to the right, agree=0.825, adj=0.415, (0 split)
##
## Node number 21: 1357 observations,
                                          complexity param=0.008350451
##
     predicted class=5
                        expected loss=0.6072218 P(node) =0.05383852
       class counts:
##
                        67
                               6
                                      3
                                          235
                                                 77
                                                      533
                                                             16
                                                                          60
281
##
      probabilities: 0.049 0.004 0.002 0.173 0.057 0.393 0.012 0.058 0.044
0.207
##
     left son=42 (836 obs) right son=43 (521 obs)
##
     Primary splits:
##
         626 < 10.5 to the right, improve=148.5743, (0 missing)
##
         297 < 13.5
                     to the left, improve=148.4859, (0 missing)
                     to the right, improve=140.2124, (0 missing)
##
         625 < 0.5
##
         296 < 10.5
                     to the left, improve=134.0005, (0 missing)
                     to the right, improve=130.5689, (0 missing)
##
         627 < 1
##
     Surrogate splits:
##
         625 < 0.5
                     to the right, agree=0.935, adj=0.831, (0 split)
##
         627 < 34.5
                     to the right, agree=0.931, adj=0.821, (0 split)
##
                     to the right, agree=0.887, adj=0.704, (0 split)
         598 < 1
##
         597 < 1
                     to the right, agree=0.878, adj=0.683, (0 split)
                     to the right, agree=0.866, adj=0.651, (0 split)
##
         654 < 0.5
```

```
##
## Node number 22: 423 observations,
                                        complexity param=0.002456015
##
     predicted class=6
                        expected loss=0.5626478 P(node) =0.01678238
       class counts:
##
                        13
                              20
                                    98
                                          15
                                                 14
                                                       23
                                                            185
                                                                         29
26
      probabilities: 0.031 0.047 0.232 0.035 0.033 0.054 0.437 0.000 0.069
##
0.061
##
     left son=44 (173 obs) right son=45 (250 obs)
##
     Primary splits:
##
         270 < 51.5 to the right, improve=48.04790, (0 missing)
##
         242 < 2.5
                     to the right, improve=48.02302, (0 missing)
         269 < 129.5 to the right, improve=46.32373, (0 missing)
##
##
         243 < 28.5 to the right, improve=39.71868, (0 missing)
##
         241 < 63.5 to the right, improve=39.07740, (0 missing)
##
     Surrogate splits:
##
         297 < 149
                     to the right, agree=0.898, adj=0.751, (0 split)
##
         271 < 1.5
                     to the right, agree=0.884, adj=0.717, (0 split)
##
         269 < 152.5 to the right, agree=0.882, adj=0.711, (0 split)
                     to the right, agree=0.879, adj=0.705, (0 split)
##
         243 < 4.5
##
         242 < 83
                     to the right, agree=0.877, adj=0.699, (0 split)
##
## Node number 23: 570 observations,
                                        complexity param=0.001027061
##
                        expected loss=0.3263158 P(node) =0.02261456
     predicted class=8
##
       class counts:
                        52
                                    28
                                          51
                                                       30
                                                             15
                                                                        384
9
##
      probabilities: 0.091 0.000 0.049 0.089 0.000 0.053 0.026 0.002 0.674
0.016
##
     left son=46 (97 obs) right son=47 (473 obs)
##
     Primary splits:
##
         407 < 1.5
                                   improve=41.25076, (0 missing)
                     to the left,
##
         412 < 57.5 to the right, improve=40.94860, (0 missing)
##
         435 < 44.5 to the left,
                                   improve=40.48067, (0 missing)
##
         436 < 7
                     to the left,
                                   improve=39.70404, (0 missing)
##
         440 < 51
                     to the right, improve=37.08431, (0 missing)
##
     Surrogate splits:
##
         406 < 59
                                   agree=0.921, adj=0.536, (0 split)
                     to the left,
         379 < 106.5 to the left,
                                   agree=0.907, adj=0.454, (0 split)
##
##
         378 < 118
                     to the left,
                                   agree=0.902, adj=0.423, (0 split)
##
         405 < 39.5 to the left,
                                   agree=0.870, adj=0.237, (0 split)
                                   agree=0.858, adj=0.165, (0 split)
##
         351 < 39.5 to the left,
##
## Node number 24: 2295 observations,
                                         complexity param=0.001384299
##
     predicted class=0 expected loss=0.1389978 P(node) =0.09105336
##
       class counts: 1976
                               1
                                    49
                                          75
                                                  2
                                                      121
                                                             47
                                                                   12
                                                                          6
6
##
      probabilities: 0.861 0.000 0.021 0.033 0.001 0.053 0.020 0.005 0.003
0.003
##
     left son=48 (2072 obs) right son=49 (223 obs)
##
     Primary splits:
         380 < 1.5 to the left, improve=136.9082, (0 missing)
##
```

```
to the left,
                                    improve=120.5561, (0 missing)
##
         351 < 5.5
##
         379 < 1.5
                     to the left,
                                    improve=111.7483, (0 missing)
##
         352 < 5.5
                     to the left,
                                    improve=107.7130, (0 missing)
##
         378 < 46.5 to the left,
                                    improve=106.0854, (0 missing)
##
     Surrogate splits:
##
         379 < 0.5
                     to the left,
                                    agree=0.959, adj=0.574, (0 split)
##
         352 < 122.5 to the left,
                                    agree=0.953, adj=0.511, (0 split)
                                    agree=0.953, adj=0.511, (0 split)
##
         381 < 181.5 to the left,
                                    agree=0.952, adj=0.507, (0 split)
##
         408 < 24.5 to the left,
##
         407 < 4
                     to the left,
                                    agree=0.949, adj=0.471, (0 split)
##
## Node number 25: 442 observations,
                                         complexity param=0.003483076
     predicted class=2 expected loss=0.5904977 P(node) =0.0175362
##
##
       class counts:
                        77
                               5
                                    181
                                           10
                                                  3
                                                       99
                                                             36
                                                                          24
3
##
      probabilities: 0.174 0.011 0.410 0.023 0.007 0.224 0.081 0.009 0.054
0.007
##
     left son=50 (218 obs) right son=51 (224 obs)
##
     Primary splits:
##
         347 < 2.5
                     to the left,
                                    improve=82.75933, (0 missing)
##
         319 < 2
                     to the left,
                                    improve=82.43492, (0 missing)
##
         320 < 1
                     to the left,
                                    improve=78.95617, (0 missing)
##
         374 < 4.5
                     to the left,
                                    improve=77.95075, (0 missing)
##
         346 < 5.5
                     to the left,
                                   improve=73.21611, (0 missing)
##
     Surrogate splits:
##
         319 < 10.5
                     to the left,
                                   agree=0.930, adj=0.858, (0 split)
##
                                    agree=0.928, adj=0.853, (0 split)
         320 < 14.5
                     to the left,
         375 < 1
                     to the left,
                                    agree=0.912, adj=0.821, (0 split)
##
##
         348 < 1
                     to the left,
                                    agree=0.907, adj=0.812, (0 split)
##
         346 < 5.5
                     to the left,
                                    agree=0.882, adj=0.761, (0 split)
##
## Node number 26: 603 observations,
                                         complexity param=0.004733411
##
     predicted class=6 expected loss=0.7794362 P(node) =0.02392382
       class counts:
##
                       108
                               1
                                     44
                                           11
                                                125
                                                       60
                                                            133
                                                                   26
                                                                           5
90
##
      probabilities: 0.179 0.002 0.073 0.018 0.207 0.100 0.221 0.043 0.008
0.149
##
     left son=52 (309 obs) right son=53 (294 obs)
##
     Primary splits:
##
         572 < 5.5
                     to the right, improve=60.75282, (0 missing)
##
         571 < 94.5
                     to the right, improve=60.30347, (0 missing)
         600 < 21.5
##
                     to the right, improve=54.55946, (0 missing)
##
         99 < 1.5
                     to the left, improve=54.37963, (0 missing)
                     to the right, improve=50.66128, (0 missing)
##
         298 < 1.5
##
     Surrogate splits:
##
         571 < 0.5
                     to the right, agree=0.927, adj=0.850, (0 split)
##
         573 < 22
                     to the right, agree=0.894, adj=0.782, (0 split)
##
         543 < 148
                     to the right, agree=0.856, adj=0.704, (0 split)
##
         600 < 19
                     to the right, agree=0.846, adj=0.684, (0 split)
         601 < 13.5 to the right, agree=0.839, adj=0.670, (0 split)
##
```

```
##
## Node number 27: 954 observations,
                                         complexity param=0.00250067
##
     predicted class=7
                        expected loss=0.3480084 P(node) =0.03784963
       class counts:
##
                        61
                              10
                                           34
                                                 36
                                                       88
                                                             13
                                                                  622
                                                                           2
                                      8
80
      probabilities: 0.064 0.010 0.008 0.036 0.038 0.092 0.014 0.652 0.002
##
0.084
##
     left son=54 (208 obs) right son=55 (746 obs)
     Primary splits:
##
##
         404 < 1
                     to the right, improve=127.8033, (0 missing)
##
         403 < 4
                     to the right, improve=126.7987, (0 missing)
                     to the right, improve=117.4801, (0 missing)
##
         432 < 2
         405 < 3
                     to the right, improve=115.9155, (0 missing)
##
##
         376 < 0.5
                     to the right, improve=106.3250, (0 missing)
##
     Surrogate splits:
##
         405 < 3
                     to the right, agree=0.954, adj=0.788, (0 split)
##
         403 < 45
                     to the right, agree=0.953, adj=0.784, (0 split)
##
         377 < 1.5
                     to the right, agree=0.939, adj=0.721, (0 split)
                     to the right, agree=0.935, adj=0.702, (0 split)
##
         376 < 5.5
##
         406 < 1
                     to the right, agree=0.922, adj=0.644, (0 split)
##
## Node number 28: 2838 observations,
                                          complexity param=0.02545325
     predicted class=2 expected loss=0.6169838 P(node) =0.1125967
##
##
       class counts:
                        41
                             102 1087
                                                      131
                                                                         742
                                           28
                                                217
                                                             78
                                                                   249
163
##
      probabilities: 0.014 0.036 0.383 0.010 0.076 0.046 0.027 0.088 0.261
0.057
##
     left son=56 (1644 obs) right son=57 (1194 obs)
##
     Primary splits:
                                    improve=389.0371, (0 missing)
##
         347 < 1.5
                     to the left,
##
         127 < 1.5
                     to the right, improve=367.2948, (0 missing)
##
         126 < 0.5
                     to the right, improve=359.3462, (0 missing)
##
         684 < 0.5
                     to the left,
                                   improve=345.3252, (0 missing)
                     to the left, improve=335.1514, (0 missing)
##
         319 < 1.5
##
     Surrogate splits:
##
         348 < 0.5
                     to the left,
                                   agree=0.898, adj=0.757, (0 split)
                                   agree=0.894, adj=0.748, (0 split)
         319 < 10.5
##
                     to the left,
##
         346 < 7.5
                     to the left,
                                   agree=0.893, adj=0.745, (0 split)
##
         375 < 0.5
                     to the left,
                                    agree=0.880, adj=0.714, (0 split)
         320 < 0.5
                                    agree=0.857, adj=0.660, (0 split)
##
                     to the left,
##
## Node number 29: 2388 observations,
                                          complexity param=0.01107439
##
     predicted class=6
                        expected loss=0.3605528 P(node) =0.09474311
##
       class counts:
                         8
                              29
                                    380
                                           12
                                                 54
                                                      104 1527
                                                                   35
                                                                         206
33
##
      probabilities: 0.003 0.012 0.159 0.005 0.023 0.044 0.639 0.015 0.086
0.014
     left son=58 (447 obs) right son=59 (1941 obs)
##
##
     Primary splits:
         297 < 53.5 to the right, improve=306.1271, (0 missing)
##
```

```
296 < 66.5 to the right, improve=303.9832, (0 missing)
##
         269 < 15.5 to the right, improve=285.7534, (0 missing)
##
                     to the right, improve=271.0391, (0 missing)
##
         324 < 96.5
##
         241 < 53.5 to the right, improve=215.7059, (0 missing)
##
     Surrogate splits:
##
         269 < 82
                     to the right, agree=0.953, adj=0.749, (0 split)
##
                     to the right, agree=0.951, adj=0.740, (0 split)
         296 < 61
         324 < 113.5 to the right, agree=0.948, adj=0.723, (0 split)
##
         325 < 141.5 to the right, agree=0.934, adj=0.647, (0 split)
##
##
         270 < 0.5
                     to the right, agree=0.918, adj=0.562, (0 split)
##
## Node number 30: 4489 observations,
                                         complexity param=0.04572653
     predicted class=4
                        expected loss=0.6437959 P(node) =0.1780996
##
##
       class counts:
                         7
                               8
                                   201
                                          259 1599
                                                      587
                                                            100
                                                                  132
                                                                        217
1379
##
      probabilities: 0.002 0.002 0.045 0.058 0.356 0.131 0.022 0.029 0.048
0.307
##
     left son=60 (1830 obs) right son=61 (2659 obs)
##
     Primary splits:
         211 < 31.5 to the left,
##
                                   improve=645.5260, (0 missing)
##
         210 < 4.5
                     to the left,
                                   improve=585.5882, (0 missing)
##
         238 < 5.5
                     to the left,
                                   improve=521.4250, (0 missing)
##
         239 < 0.5
                     to the left,
                                   improve=517.7189, (0 missing)
##
         212 < 10.5 to the left,
                                   improve=496.3398, (0 missing)
##
     Surrogate splits:
##
         210 < 0.5
                     to the left,
                                   agree=0.892, adj=0.734, (0 split)
##
                                   agree=0.887, adj=0.723, (0 split)
         212 < 10.5 to the left,
                                   agree=0.871, adj=0.683, (0 split)
##
         239 < 0.5
                     to the left,
##
         238 < 1.5
                     to the left,
                                   agree=0.841, adj=0.609, (0 split)
##
         240 < 0.5
                     to the left,
                                   agree=0.798, adj=0.505, (0 split)
##
## Node number 31: 2128 observations,
                                         complexity param=0.00611771
##
     predicted class=7
                        expected loss=0.3740602 P(node) =0.08442769
##
       class counts:
                         8
                              66
                                    72
                                          69
                                                169
                                                      119
                                                             37
                                                                 1332
                                                                         36
220
##
      probabilities: 0.004 0.031 0.034 0.032 0.079 0.056 0.017 0.626 0.017
0.103
##
     left son=62 (1766 obs) right son=63 (362 obs)
##
     Primary splits:
##
         487 < 75.5 to the left,
                                   improve=227.9958, (0 missing)
##
         486 < 63.5
                     to the left,
                                   improve=223.1893, (0 missing)
##
         458 < 47.5 to the left,
                                   improve=211.7383, (0 missing)
##
         488 < 105.5 to the right, improve=209.6276, (0 missing)
##
         459 < 1
                                   improve=205.0181, (0 missing)
                     to the left,
##
     Surrogate splits:
##
         486 < 40
                     to the left,
                                   agree=0.992, adj=0.950, (0 split)
##
         459 < 1
                     to the left,
                                   agree=0.981, adj=0.887, (0 split)
##
                     to the left,
                                   agree=0.971, adj=0.831, (0 split)
         488 < 162
##
         458 < 26.5 to the left,
                                   agree=0.971, adj=0.829, (0 split)
##
         485 < 0.5
                     to the left, agree=0.961, adj=0.771, (0 split)
```

```
##
## Node number 32: 2456 observations,
                                         complexity param=0.001384299
##
     predicted class=1 expected loss=0.0769544 P(node) =0.09744098
       class counts:
                         0 2267
##
                                    31
                                           12
                                                       24
                                                                         90
                                                 10
                                                              8
6
      probabilities: 0.000 0.923 0.013 0.005 0.004 0.010 0.003 0.003 0.037
##
0.002
##
     left son=64 (2312 obs) right son=65 (144 obs)
     Primary splits:
##
                                    improve=78.16071, (0 missing)
##
         300 < 21.5 to the left,
##
         355 < 32.5 to the left,
                                   improve=76.54136, (0 missing)
         484 < 5.5
                     to the left,
                                   improve=75.24698, (0 missing)
##
##
         301 < 2.5
                     to the left,
                                   improve=74.91437, (0 missing)
##
         511 < 6.5
                     to the left,
                                   improve=72.98386, (0 missing)
##
     Surrogate splits:
##
         327 < 81
                     to the left,
                                   agree=0.982, adj=0.694, (0 split)
                                   agree=0.981, adj=0.681, (0 split)
##
         299 < 192
                     to the left,
##
         272 < 98.5
                     to the left,
                                   agree=0.980, adj=0.667, (0 split)
                                   agree=0.979, adj=0.639, (0 split)
         273 < 1
##
                     to the left,
##
         301 < 5.5
                     to the left,
                                   agree=0.975, adj=0.569, (0 split)
##
## Node number 33: 151 observations,
                                        complexity param=0.0005805126
     predicted class=2 expected loss=0.3907285 P(node) =0.005990875
##
##
       class counts:
                         1
                              12
                                    92
                                                  4
                                                             22
                                                                         10
1
##
      probabilities: 0.007 0.079 0.609 0.053 0.026 0.000 0.146 0.007 0.066
0.007
##
     left son=66 (108 obs) right son=67 (43 obs)
##
     Primary splits:
##
         152 < 12
                     to the right, improve=18.06109, (0 missing)
##
         153 < 10.5 to the right, improve=17.30327, (0 missing)
##
         154 < 12.5
                     to the right, improve=17.30274, (0 missing)
##
         125 < 20.5
                     to the right, improve=17.24011, (0 missing)
##
         386 < 43
                     to the left, improve=16.81243, (0 missing)
##
     Surrogate splits:
##
         153 < 20
                     to the right, agree=0.954, adj=0.837, (0 split)
         154 < 12.5
                     to the right, agree=0.914, adj=0.698, (0 split)
##
##
                     to the right, agree=0.894, adj=0.628, (0 split)
         180 < 5
##
         125 < 6
                     to the right, agree=0.881, adj=0.581, (0 split)
                     to the right, agree=0.881, adj=0.581, (0 split)
##
         151 < 5
##
## Node number 34: 564 observations,
                                        complexity param=0.002277396
##
     predicted class=8
                        expected loss=0.7996454 P(node) =0.02237651
##
       class counts:
                        16
                             109
                                    33
                                           33
                                                 61
                                                       66
                                                             58
                                                                   15
                                                                        113
60
##
      probabilities: 0.028 0.193 0.059 0.059 0.108 0.117 0.103 0.027 0.200
0.106
##
     left son=68 (286 obs) right son=69 (278 obs)
##
     Primary splits:
         657 < 1.5 to the left, improve=30.51536, (0 missing)
##
```

```
374 < 37.5 to the left,
                                   improve=28.44060, (0 missing)
##
##
         294 < 190
                     to the right, improve=27.20103, (0 missing)
##
         322 < 245.5 to the right, improve=26.74014, (0 missing)
##
                     to the left,
                                   improve=26.27535, (0 missing)
         658 < 0.5
##
     Surrogate splits:
##
         658 < 0.5
                     to the left,
                                   agree=0.888, adj=0.773, (0 split)
                                   agree=0.872, adj=0.741, (0 split)
##
         629 < 108.5 to the left,
                                   agree=0.860, adj=0.716, (0 split)
##
         656 < 10.5 to the left,
                                   agree=0.826, adj=0.647, (0 split)
##
         630 < 4
                     to the left,
##
         685 < 1
                     to the left,
                                   agree=0.766, adj=0.525, (0 split)
##
## Node number 35: 79 observations,
                                       complexity param=4.465482e-05
     predicted class=6 expected loss=0.1139241 P(node) =0.003134299
##
##
       class counts:
                         1
                               1
                                     1
                                           3
                                                 1
                                                             70
                                                                          1
0
##
      probabilities: 0.013 0.013 0.013 0.038 0.013 0.013 0.886 0.000 0.013
0.000
##
     left son=70 (7 obs) right son=71 (72 obs)
##
     Primary splits:
##
         271 < 74.5 to the right, improve=5.237191, (0 missing)
##
         297 < 191.5 to the right, improve=5.237191, (0 missing)
         298 < 142.5 to the right, improve=5.237191, (0 missing)
##
##
         623 < 36.5 to the right, improve=5.237191, (0 missing)
##
         458 < 100.5 to the left, improve=4.953824, (0 missing)
##
     Surrogate splits:
##
         298 < 142.5 to the right, agree=1.000, adj=1.000, (0 split)
                     to the right, agree=0.987, adj=0.857, (0 split)
##
         244 < 112
         270 < 217.5 to the right, agree=0.987, adj=0.857, (0 split)
##
##
         272 < 11
                     to the right, agree=0.987, adj=0.857, (0 split)
##
         243 < 247
                     to the right, agree=0.975, adj=0.714, (0 split)
##
## Node number 36: 228 observations,
                                        complexity param=0.0004242208
##
     predicted class=2
                        expected loss=0.4122807 P(node) =0.009045824
##
       class counts:
                         0
                              17
                                   134
                                          15
                                                 1
                                                                   21
                                                                         20
10
##
      probabilities: 0.000 0.075 0.588 0.066 0.004 0.004 0.039 0.092 0.088
0.044
##
     left son=72 (142 obs) right son=73 (86 obs)
##
     Primary splits:
         541 < 1.5
                     to the right, improve=29.54094, (0 missing)
##
##
         514 < 218.5 to the right, improve=27.51901, (0 missing)
                     to the right, improve=26.83889, (0 missing)
##
         515 < 26
##
         513 < 61.5 to the right, improve=25.40063, (0 missing)
                     to the right, improve=24.69672, (0 missing)
##
         542 < 4.5
##
     Surrogate splits:
##
         513 < 8
                     to the right, agree=0.925, adj=0.802, (0 split)
##
         542 < 115.5 to the right, agree=0.925, adj=0.802, (0 split)
##
         540 < 0.5 to the right, agree=0.904, adj=0.744, (0 split)
##
         514 < 165.5 to the right, agree=0.895, adj=0.721, (0 split)
         569 < 3 to the right, agree=0.882, adj=0.686, (0 split)
##
```

```
##
## Node number 37: 206 observations,
                                        complexity param=0.001696883
##
     predicted class=6
                        expected loss=0.4902913 P(node) =0.008172982
       class counts:
##
                         5
                               2
                                     9
                                            0
                                                 12
                                                        5
                                                            105
                                                                         17
                                                                    7
44
      probabilities: 0.024 0.010 0.044 0.000 0.058 0.024 0.510 0.034 0.083
##
0.214
##
     left son=74 (144 obs) right son=75 (62 obs)
##
     Primary splits:
##
         575 < 51.5 to the right, improve=38.30019, (0 missing)
         576 < 149
##
                     to the right, improve=34.00853, (0 missing)
                     to the right, improve=33.23562, (0 missing)
         574 < 201
##
##
         603 < 94.5
                     to the right, improve=33.02369, (0 missing)
##
         602 < 58
                     to the right, improve=32.25226, (0 missing)
##
     Surrogate splits:
##
         574 < 201
                     to the right, agree=0.913, adj=0.710, (0 split)
##
         603 < 2.5
                     to the right, agree=0.898, adj=0.661, (0 split)
##
         576 < 1
                     to the right, agree=0.888, adj=0.629, (0 split)
                     to the right, agree=0.879, adj=0.597, (0 split)
##
         602 < 33.5
##
         547 < 74.5
                     to the right, agree=0.864, adj=0.548, (0 split)
##
## Node number 38: 218 observations,
                                        complexity param=0.001094043
                        expected loss=0.706422 P(node) =0.008649078
##
     predicted class=3
##
       class counts:
                         1
                                    34
                                           64
                                                  5
                                                                         50
7
##
      probabilities: 0.005 0.041 0.156 0.294 0.023 0.005 0.014 0.202 0.229
0.032
##
     left son=76 (162 obs) right son=77 (56 obs)
##
     Primary splits:
##
         344 < 24
                     to the left,
                                   improve=24.57021, (0 missing)
##
         345 < 8
                     to the left,
                                   improve=23.04704, (0 missing)
##
         373 < 85.5
                     to the left,
                                   improve=23.00540, (0 missing)
##
         544 < 57.5
                     to the left,
                                   improve=21.22790, (0 missing)
##
         543 < 138
                     to the left,
                                   improve=20.97228, (0 missing)
##
     Surrogate splits:
##
                                   agree=0.954, adj=0.821, (0 split)
         345 < 8
                     to the left,
                                   agree=0.950, adj=0.804, (0 split)
##
         316 < 36.5 to the left,
##
                     to the left,
                                   agree=0.945, adj=0.786, (0 split)
         372 < 0.5
##
         317 < 52.5 to the left,
                                   agree=0.936, adj=0.750, (0 split)
                                   agree=0.936, adj=0.750, (0 split)
##
         373 < 85.5 to the left,
##
## Node number 39: 498 observations,
                                        complexity param=0.000379566
##
     predicted class=8
                        expected loss=0.251004 P(node) =0.01975798
##
       class counts:
                         4
                                                 18
                                                        7
                              14
                                     3
                                          24
                                                              2
                                                                   23
                                                                        373
30
##
      probabilities: 0.008 0.028 0.006 0.048 0.036 0.014 0.004 0.046 0.749
0.060
     left son=78 (124 obs) right son=79 (374 obs)
##
##
     Primary splits:
         543 < 9.5 to the left, improve=31.25450, (0 missing)
##
```

```
to the left,
                                   improve=29.28271, (0 missing)
##
         515 < 13
##
         518 < 248.5 to the right, improve=27.08767, (0 missing)
##
         155 < 4.5
                     to the left,
                                   improve=27.00839, (0 missing)
##
         516 < 46.5 to the left,
                                   improve=25.72759, (0 missing)
##
     Surrogate splits:
         515 < 13
##
                     to the left,
                                   agree=0.918, adj=0.669, (0 split)
                                   agree=0.892, adj=0.565, (0 split)
##
                     to the left,
         571 < 6
                                   agree=0.853, adj=0.411, (0 split)
##
         516 < 45.5
                     to the left,
                                   agree=0.851, adj=0.403, (0 split)
##
         488 < 88.5
                     to the left,
##
         487 < 1
                     to the left,
                                   agree=0.833, adj=0.331, (0 split)
##
## Node number 40: 1626 observations,
                                         complexity param=0.002009467
     predicted class=3 expected loss=0.1439114 P(node) =0.06451101
##
##
       class counts:
                         3
                              41
                                    13 1392
                                                  5
                                                      105
                                                                         31
                                                              2
27
##
      probabilities: 0.002 0.025 0.008 0.856 0.003 0.065 0.001 0.004 0.019
0.017
##
     left son=80 (1502 obs) right son=81 (124 obs)
##
     Primary splits:
         315 < 84.5 to the left,
##
                                   improve=101.33530, (0 missing)
##
         316 < 163.5 to the left,
                                   improve= 93.73302, (0 missing)
##
         288 < 120
                     to the left,
                                   improve= 87.80485, (0 missing)
##
         343 < 129
                     to the left,
                                   improve= 83.76342, (0 missing)
##
         296 < 2.5
                     to the right, improve= 75.56257, (0 missing)
##
     Surrogate splits:
##
         343 < 129
                     to the left,
                                   agree=0.972, adj=0.637, (0 split)
##
                                   agree=0.972, adj=0.629, (0 split)
         316 < 72.5 to the left,
         287 < 151.5 to the left,
                                   agree=0.971, adj=0.621, (0 split)
##
##
         314 < 3.5
                     to the left,
                                   agree=0.967, adj=0.573, (0 split)
##
         342 < 31.5 to the left,
                                   agree=0.964, adj=0.532, (0 split)
##
## Node number 41: 692 observations,
                                        complexity param=0.002009467
##
     predicted class=3
                        expected loss=0.6228324 P(node) =0.02745487
       class counts:
##
                        31
                              91
                                     6
                                          261
                                                 31
                                                      172
                                                             17
                                                                   23
                                                                         22
38
##
      probabilities: 0.045 0.132 0.009 0.377 0.045 0.249 0.025 0.033 0.032
0.055
##
     left son=82 (417 obs) right son=83 (275 obs)
##
     Primary splits:
##
         626 < 19.5 to the right, improve=58.69160, (0 missing)
##
         627 < 36.5 to the right, improve=57.79988, (0 missing)
##
         628 < 23
                     to the left, improve=56.53345, (0 missing)
##
         625 < 1.5
                     to the right, improve=56.23608, (0 missing)
##
         490 < 127.5 to the right, improve=53.88951, (0 missing)
##
     Surrogate splits:
##
         627 < 13.5
                    to the right, agree=0.952, adj=0.880, (0 split)
##
         625 < 1.5
                     to the right, agree=0.945, adj=0.862, (0 split)
##
                     to the right, agree=0.910, adj=0.775, (0 split)
         628 < 3
##
         624 < 0.5
                     to the right, agree=0.871, adj=0.676, (0 split)
         598 < 1 to the right, agree=0.835, adj=0.585, (0 split)
##
```

```
##
## Node number 42: 836 observations,
                                        complexity param=0.003393766
##
     predicted class=5
                        expected loss=0.430622
                                                P(node) =0.03316802
       class counts:
                                         198
                                                      476
                                                                    5
##
                        59
                               1
                                     1
                                                  1
                                                              9
                                                                         49
37
      probabilities: 0.071 0.001 0.001 0.237 0.001 0.569 0.011 0.006 0.059
##
0.044
##
     left son=84 (324 obs) right son=85 (512 obs)
##
     Primary splits:
##
         297 < 29.5 to the right, improve=94.16206, (0 missing)
##
         298 < 0.5
                     to the right, improve=89.46983, (0 missing)
                     to the right, improve=89.39417, (0 missing)
##
         296 < 54.5
##
         269 < 0.5
                     to the right, improve=76.41152, (0 missing)
##
         270 < 9.5
                     to the right, improve=73.21487, (0 missing)
##
     Surrogate splits:
##
                     to the right, agree=0.916, adj=0.784, (0 split)
         298 < 0.5
##
         296 < 111.5 to the right, agree=0.879, adj=0.688, (0 split)
##
                     to the right, agree=0.854, adj=0.623, (0 split)
         270 < 85
         269 < 191.5 to the right, agree=0.848, adj=0.608, (0 split)
##
##
         325 < 210
                     to the right, agree=0.842, adj=0.593, (0 split)
##
## Node number 43: 521 observations,
                                        complexity param=0.002389033
##
     predicted class=9
                        expected loss=0.5316699 P(node) =0.0206705
##
       class counts:
                         8
                               5
                                     2
                                           37
                                                 76
                                                       57
                                                                   74
                                                              7
                                                                         11
244
##
      probabilities: 0.015 0.010 0.004 0.071 0.146 0.109 0.013 0.142 0.021
0.468
##
     left son=86 (164 obs) right son=87 (357 obs)
##
     Primary splits:
##
         210 < 1
                     to the left,
                                   improve=63.94359, (0 missing)
##
         211 < 1.5
                     to the left,
                                   improve=56.21769, (0 missing)
##
         209 < 18.5 to the left,
                                   improve=53.53197, (0 missing)
##
         321 < 234
                     to the right, improve=45.42103, (0 missing)
##
         238 < 9.5
                     to the left, improve=42.78869, (0 missing)
##
     Surrogate splits:
##
         211 < 1.5
                     to the left,
                                   agree=0.933, adj=0.787, (0 split)
         209 < 18.5
                                   agree=0.925, adj=0.762, (0 split)
##
                     to the left,
##
                     to the left,
                                   agree=0.850, adj=0.524, (0 split)
         238 < 1
##
         237 < 1
                     to the left,
                                   agree=0.839, adj=0.488, (0 split)
                                   agree=0.829, adj=0.457, (0 split)
##
         212 < 1
                     to the left,
##
## Node number 44: 173 observations,
                                        complexity param=0.0004465482
##
     predicted class=2
                        expected loss=0.6011561 P(node) =0.006863718
##
                         9
       class counts:
                              15
                                    69
                                            8
                                                  9
                                                        7
                                                             14
                                                                    0
                                                                         23
19
##
      probabilities: 0.052 0.087 0.399 0.046 0.052 0.040 0.081 0.000 0.133
0.110
     left son=88 (73 obs) right son=89 (100 obs)
##
##
     Primary splits:
##
         126 < 10 to the right, improve=21.98748, (0 missing)
```

```
to the right, improve=21.90812, (0 missing)
##
         154 < 11.5
                     to the right, improve=21.04590, (0 missing)
##
         156 < 5.5
                     to the right, improve=20.71615, (0 missing)
##
         155 < 59.5
##
                     to the right, improve=20.26070, (0 missing)
         573 < 94.5
##
     Surrogate splits:
##
         125 < 5.5
                     to the right, agree=0.942, adj=0.863, (0 split)
##
         127 < 6.5
                     to the right, agree=0.936, adj=0.849, (0 split)
                     to the right, agree=0.908, adj=0.781, (0 split)
##
         153 < 24
         154 < 129.5 to the right, agree=0.908, adj=0.781, (0 split)
##
##
                     to the right, agree=0.896, adj=0.753, (0 split)
         128 < 5
##
## Node number 45: 250 observations,
                                         complexity param=0.0003349111
     predicted class=6
                        expected loss=0.316 P(node) =0.009918667
##
##
       class counts:
                         4
                               5
                                    29
                                            7
                                                  5
                                                       16
                                                            171
                                                                          6
7
##
      probabilities: 0.016 0.020 0.116 0.028 0.020 0.064 0.684 0.000 0.024
0.028
##
     left son=90 (41 obs) right son=91 (209 obs)
##
     Primary splits:
##
         601 < 36.5
                    to the left,
                                   improve=19.64868, (0 missing)
##
         295 < 174
                     to the right, improve=19.07010, (0 missing)
##
         380 < 25
                     to the left,
                                   improve=17.06546, (0 missing)
##
         381 < 1
                     to the left,
                                   improve=16.91467, (0 missing)
##
         600 < 2.5
                     to the left,
                                   improve=16.78673, (0 missing)
##
     Surrogate splits:
##
         600 < 2.5
                     to the left,
                                   agree=0.980, adj=0.878, (0 split)
##
                                   agree=0.956, adj=0.732, (0 split)
         602 < 0.5
                     to the left,
         599 < 2
                                   agree=0.944, adj=0.659, (0 split)
##
                     to the left,
##
         573 < 1.5
                     to the left,
                                   agree=0.920, adj=0.512, (0 split)
##
         572 < 1.5
                     to the left,
                                   agree=0.916, adj=0.488, (0 split)
##
## Node number 46: 97 observations,
                                        complexity param=0.0005805126
##
     predicted class=0
                        expected loss=0.5463918 P(node) =0.003848443
       class counts:
##
                        44
                                     8
                                            6
                                                       15
                                                              3
                                                                         21
0
##
      probabilities: 0.454 0.000 0.082 0.062 0.000 0.155 0.031 0.000 0.216
0.000
##
     left son=92 (41 obs) right son=93 (56 obs)
##
     Primary splits:
         329 < 11
                     to the right, improve=18.37385, (0 missing)
##
##
         328 < 120.5 to the right, improve=18.09793, (0 missing)
         301 < 18.5 to the right, improve=17.28437, (0 missing)
##
##
         300 < 67
                     to the right, improve=17.01085, (0 missing)
##
         266 < 240.5 to the right, improve=16.89891, (0 missing)
##
     Surrogate splits:
##
         301 < 26
                     to the right, agree=0.938, adj=0.854, (0 split)
##
         357 < 8.5
                     to the right, agree=0.938, adj=0.854, (0 split)
##
                     to the right, agree=0.928, adj=0.829, (0 split)
         300 < 67
##
         328 < 85.5 to the right, agree=0.928, adj=0.829, (0 split)
##
         356 < 232.5 to the right, agree=0.887, adj=0.732, (0 split)
```

```
##
## Node number 47: 473 observations,
                                        complexity param=0.0004688756
##
     predicted class=8
                        expected loss=0.2325581 P(node) =0.01876612
       class counts:
                                          45
##
                         8
                               0
                                    20
                                                       15
                                                             12
                                                                    1
                                                                        363
9
      probabilities: 0.017 0.000 0.042 0.095 0.000 0.032 0.025 0.002 0.767
##
0.019
##
     left son=94 (43 obs) right son=95 (430 obs)
##
     Primary splits:
##
         514 < 1
                     to the left,
                                   improve=18.95645, (0 missing)
##
         439 < 250.5 to the right, improve=18.87687, (0 missing)
                     to the right, improve=17.81530, (0 missing)
##
         440 < 60
         541 < 1
                     to the left, improve=16.73971, (0 missing)
##
##
         401 < 230.5 to the right, improve=15.72282, (0 missing)
##
     Surrogate splits:
##
         712 < 169
                     to the right, agree=0.918, adj=0.093, (0 split)
##
         507 < 32
                     to the right, agree=0.915, adj=0.070, (0 split)
##
         509 < 28
                     to the right, agree=0.915, adj=0.070, (0 split)
                     to the right, agree=0.915, adj=0.070, (0 split)
##
         535 < 12
##
         537 < 118.5 to the right, agree=0.915, adj=0.070, (0 split)
##
## Node number 48: 2072 observations,
                                         complexity param=0.0004242208
     predicted class=0 expected loss=0.06853282 P(node) =0.08220591
##
##
       class counts: 1930
                                    32
                                           31
                                                  1
                                                       44
                                                                   10
                                                             21
                                                                          1
2
##
      probabilities: 0.931 0.000 0.015 0.015 0.000 0.021 0.010 0.005 0.000
0.001
##
     left son=96 (1973 obs) right son=97 (99 obs)
##
     Primary splits:
##
         324 < 172
                     to the left,
                                   improve=34.63603, (0 missing)
##
         455 < 1
                     to the right, improve=31.48402, (0 missing)
##
         323 < 147.5 to the left,
                                   improve=31.37636, (0 missing)
                     to the right, improve=30.52109, (0 missing)
##
         427 < 0.5
##
         428 < 0.5
                     to the right, improve=28.05817, (0 missing)
##
     Surrogate splits:
##
                                   agree=0.977, adj=0.525, (0 split)
         352 < 15.5 to the left,
                                   agree=0.971, adj=0.394, (0 split)
##
         323 < 216.5 to the left,
##
         325 < 241
                     to the left,
                                   agree=0.967, adj=0.303, (0 split)
##
         351 < 10
                     to the left,
                                   agree=0.965, adj=0.273, (0 split)
                                   agree=0.959, adj=0.152, (0 split)
##
         353 < 218.5 to the left,
##
## Node number 49: 223 observations,
                                        complexity param=0.001250335
##
     predicted class=5
                        expected loss=0.6547085 P(node) =0.008847451
##
       class counts:
                                                                    2
                                                                          5
                        46
                               1
                                    17
                                          44
                                                  1
                                                       77
                                                             26
4
##
      probabilities: 0.206 0.004 0.076 0.197 0.004 0.345 0.117 0.009 0.022
0.018
     left son=98 (84 obs) right son=99 (139 obs)
##
##
     Primary splits:
         484 < 42 to the right, improve=22.09355, (0 missing)
##
```

```
to the right, improve=21.30952, (0 missing)
##
         513 < 105.5 to the right, improve=20.88248, (0 missing)
##
                     to the right, improve=20.27173, (0 missing)
##
         298 < 127
##
         456 < 13.5 to the right, improve=19.78078, (0 missing)
##
     Surrogate splits:
##
         456 < 7.5
                     to the right, agree=0.928, adj=0.810, (0 split)
##
                     to the right, agree=0.892, adj=0.714, (0 split)
         512 < 35
         457 < 29.5 to the right, agree=0.843, adj=0.583, (0 split)
##
         485 < 33.5 to the right, agree=0.839, adj=0.571, (0 split)
##
##
         513 < 105.5 to the right, agree=0.834, adj=0.560, (0 split)
##
## Node number 50: 218 observations,
                                         complexity param=0.0003125837
                        expected loss=0.2201835 P(node) =0.008649078
     predicted class=2
##
##
       class counts:
                         7
                               5
                                   170
                                            6
                                                  2
                                                       10
                                                                          6
2
##
      probabilities: 0.032 0.023 0.780 0.028 0.009 0.046 0.032 0.014 0.028
0.009
##
     left son=100 (192 obs) right son=101 (26 obs)
##
     Primary splits:
         344 < 154.5 to the left,
##
                                   improve=21.28125, (0 missing)
##
         372 < 32
                     to the left,
                                   improve=20.41915, (0 missing)
##
         345 < 33.5
                     to the left,
                                   improve=19.99551, (0 missing)
##
         371 < 16
                     to the left,
                                   improve=19.79440, (0 missing)
##
         465 < 5
                     to the right, improve=18.42076, (0 missing)
##
     Surrogate splits:
##
         372 < 32
                     to the left,
                                   agree=0.982, adj=0.846, (0 split)
##
                                   agree=0.972, adj=0.769, (0 split)
         371 < 3
                     to the left,
                                   agree=0.968, adj=0.731, (0 split)
##
         317 < 167.5 to the left,
##
         345 < 33.5 to the left,
                                   agree=0.968, adj=0.731, (0 split)
##
         316 < 93.5 to the left,
                                   agree=0.959, adj=0.654, (0 split)
##
## Node number 51: 224 observations,
                                         complexity param=0.002857908
##
     predicted class=5
                        expected loss=0.6026786 P(node) =0.008887126
##
       class counts:
                        70
                               0
                                    11
                                            4
                                                  1
                                                       89
                                                             29
                                                                    1
                                                                         18
1
##
      probabilities: 0.312 0.000 0.049 0.018 0.004 0.397 0.129 0.004 0.080
0.004
##
     left son=102 (73 obs) right son=103 (151 obs)
##
     Primary splits:
         386 < 3.5
                     to the right, improve=52.64302, (0 missing)
##
##
         358 < 6.5
                     to the right, improve=52.12740, (0 missing)
                     to the right, improve=51.92639, (0 missing)
##
         413 < 36
##
         357 < 26.5
                     to the right, improve=51.87439, (0 missing)
##
         385 < 43
                     to the right, improve=51.27013, (0 missing)
##
     Surrogate splits:
##
         358 < 13.5
                     to the right, agree=0.973, adj=0.918, (0 split)
##
         385 < 108
                     to the right, agree=0.964, adj=0.890, (0 split)
##
                     to the right, agree=0.960, adj=0.877, (0 split)
         413 < 36
##
         414 < 6.5
                     to the right, agree=0.960, adj=0.877, (0 split)
##
         441 < 19.5 to the right, agree=0.942, adj=0.822, (0 split)
```

```
##
## Node number 52: 309 observations,
                                        complexity param=0.00379566
##
     predicted class=6
                        expected loss=0.6019417 P(node) =0.01225947
       class counts:
##
                        99
                               1
                                     30
                                            6
                                                  9
                                                       19
                                                            123
                                                                    3
                                                                           3
16
      probabilities: 0.320 0.003 0.097 0.019 0.029 0.061 0.398 0.010 0.010
##
0.052
##
     left son=104 (151 obs) right son=105 (158 obs)
##
     Primary splits:
##
         241 < 12
                     to the right, improve=62.80933, (0 missing)
##
         270 < 2
                     to the right, improve=62.15147, (0 missing)
                     to the right, improve=59.06631, (0 missing)
##
         242 < 2
##
         269 < 1
                     to the right, improve=56.39711, (0 missing)
##
         298 < 1.5
                     to the right, improve=55.86574, (0 missing)
##
     Surrogate splits:
##
         269 < 1
                     to the right, agree=0.942, adj=0.881, (0 split)
##
         242 < 2
                     to the right, agree=0.926, adj=0.848, (0 split)
##
                     to the right, agree=0.922, adj=0.841, (0 split)
         270 < 2
                     to the right, agree=0.890, adj=0.775, (0 split)
##
         240 < 0.5
##
         298 < 1.5
                     to the right, agree=0.887, adj=0.768, (0 split)
##
## Node number 53: 294 observations,
                                        complexity param=0.002009467
     predicted class=4 expected loss=0.6054422 P(node) =0.01166435
##
##
       class counts:
                         9
                                     14
                                            5
                                                116
                                                       41
                                                                   23
                                                                           2
74
##
      probabilities: 0.031 0.000 0.048 0.017 0.395 0.139 0.034 0.078 0.007
0.252
##
     left son=106 (119 obs) right son=107 (175 obs)
##
     Primary splits:
##
         211 < 8
                     to the left,
                                    improve=40.32227, (0 missing)
##
         210 < 9
                     to the left,
                                    improve=40.02085, (0 missing)
##
         238 < 1
                     to the left,
                                    improve=34.44240, (0 missing)
##
         239 < 0.5
                     to the left,
                                   improve=31.73947, (0 missing)
##
         465 < 34
                     to the left,
                                   improve=31.34210, (0 missing)
##
     Surrogate splits:
##
         210 < 6.5
                                   agree=0.895, adj=0.739, (0 split)
                     to the left,
                                    agree=0.881, adj=0.706, (0 split)
##
         212 < 0.5
                     to the left,
##
         239 < 0.5
                     to the left,
                                   agree=0.874, adj=0.689, (0 split)
##
         238 < 4
                     to the left,
                                    agree=0.850, adj=0.630, (0 split)
                                    agree=0.844, adj=0.613, (0 split)
##
         240 < 1
                     to the left,
##
## Node number 54: 208 observations,
                                         complexity param=0.002366705
##
     predicted class=9
                        expected loss=0.6875 P(node) =0.008252331
##
       class counts:
                         4
                                                                           2
                               7
                                      3
                                           25
                                                 22
                                                       62
                                                              9
65
##
      probabilities: 0.019 0.034 0.014 0.120 0.106 0.298 0.043 0.043 0.010
0.312
##
     left son=108 (106 obs) right son=109 (102 obs)
##
     Primary splits:
         354 < 26 to the left, improve=31.37672, (0 missing)
##
```

```
353 < 22.5
                     to the left,
                                    improve=28.44115, (0 missing)
##
##
         355 < 2
                     to the left,
                                    improve=24.04168, (0 missing)
##
         465 < 80
                     to the left,
                                    improve=23.43269, (0 missing)
##
                     to the left,
                                    improve=21.14973, (0 missing)
         382 < 35.5
##
     Surrogate splits:
         353 < 22.5
                                    agree=0.909, adj=0.814, (0 split)
##
                     to the left,
##
                     to the left,
                                    agree=0.875, adj=0.745, (0 split)
         355 < 2
                                    agree=0.870, adj=0.735, (0 split)
##
         326 < 2
                     to the left,
                                    agree=0.856, adj=0.706, (0 split)
##
         382 < 146
                     to the left,
##
         465 < 80
                     to the left,
                                    agree=0.817, adj=0.627, (0 split)
##
## Node number 55: 746 observations,
                                         complexity param=0.002009467
     predicted class=7
                        expected loss=0.1782842 P(node) =0.0295973
##
##
       class counts:
                        57
                               3
                                      5
                                            9
                                                 14
                                                       26
                                                                  613
                                                                           0
15
##
      probabilities: 0.076 0.004 0.007 0.012 0.019 0.035 0.005 0.822 0.000
0.020
##
     left son=110 (68 obs) right son=111 (678 obs)
##
     Primary splits:
##
         538 < 1
                     to the right, improve=75.36373, (0 missing)
##
         510 < 10.5
                     to the right, improve=71.88152, (0 missing)
                     to the right, improve=68.65317, (0 missing)
##
         539 < 2
##
         623 < 3
                     to the right, improve=67.04377, (0 missing)
##
         566 < 7
                     to the right, improve=66.62073, (0 missing)
##
     Surrogate splits:
##
         510 < 121.5 to the right, agree=0.981, adj=0.794, (0 split)
##
                     to the right, agree=0.976, adj=0.735, (0 split)
         566 < 1.5
                     to the right, agree=0.971, adj=0.676, (0 split)
##
         567 < 1
##
         539 < 56
                     to the right, agree=0.968, adj=0.647, (0 split)
##
         537 < 2
                     to the right, agree=0.962, adj=0.588, (0 split)
##
## Node number 56: 1644 observations,
                                          complexity param=0.003304457
##
     predicted class=2
                        expected loss=0.386253 P(node) =0.06522515
##
       class counts:
                         5
                              102 1009
                                           23
                                                 65
                                                       12
                                                             50
                                                                   193
                                                                          94
91
##
      probabilities: 0.003 0.062 0.614 0.014 0.040 0.007 0.030 0.117 0.057
0.055
##
     left son=112 (1021 obs) right son=113 (623 obs)
##
     Primary splits:
         155 < 1
                     to the right, improve=246.8804, (0 missing)
##
##
         156 < 0.5
                     to the right, improve=246.5524, (0 missing)
         154 < 0.5
##
                     to the right, improve=235.2572, (0 missing)
##
         127 < 1.5
                     to the right, improve=212.1310, (0 missing)
##
         157 < 2.5
                     to the right, improve=208.6518, (0 missing)
##
     Surrogate splits:
##
         156 < 0.5
                     to the right, agree=0.969, adj=0.918, (0 split)
##
         154 < 0.5
                     to the right, agree=0.956, adj=0.884, (0 split)
##
                     to the right, agree=0.917, adj=0.782, (0 split)
         157 < 2.5
##
         153 < 0.5
                     to the right, agree=0.901, adj=0.738, (0 split)
##
         152 < 1
                     to the right, agree=0.826, adj=0.541, (0 split)
```

```
##
## Node number 57: 1194 observations,
                                          complexity param=0.00379566
##
     predicted class=8
                        expected loss=0.4572864 P(node) =0.04737155
       class counts:
##
                        36
                               0
                                    78
                                            5
                                                152
                                                      119
                                                             28
                                                                   56
                                                                         648
72
##
      probabilities: 0.030 0.000 0.065 0.004 0.127 0.100 0.023 0.047 0.543
0.060
##
     left son=114 (485 obs) right son=115 (709 obs)
##
     Primary splits:
##
         657 < 15
                     to the left,
                                    improve=192.8540, (0 missing)
##
         656 < 22.5
                     to the left,
                                    improve=182.8277, (0 missing)
                     to the left,
                                    improve=168.9296, (0 missing)
##
         658 < 3.5
##
         655 < 20
                     to the left,
                                    improve=143.8821, (0 missing)
##
         684 < 0.5
                     to the left,
                                    improve=142.4054, (0 missing)
##
     Surrogate splits:
##
         658 < 0.5
                     to the left,
                                   agree=0.934, adj=0.837, (0 split)
##
         656 < 59
                     to the left,
                                    agree=0.931, adj=0.831, (0 split)
                                    agree=0.879, adj=0.703, (0 split)
##
         630 < 7.5
                     to the left,
                                    agree=0.848, adj=0.627, (0 split)
##
         629 < 4
                     to the left,
                     to the left,
##
         631 < 0.5
                                   agree=0.843, adj=0.612, (0 split)
##
## Node number 58: 447 observations,
                                         complexity param=0.0009377512
     predicted class=2 expected loss=0.3959732 P(node) =0.01773458
##
##
       class counts:
                         5
                              26
                                    270
                                                 34
                                                             22
                                                                   31
                                                                         37
17
##
      probabilities: 0.011 0.058 0.604 0.009 0.076 0.002 0.049 0.069 0.083
0.038
##
     left son=116 (344 obs) right son=117 (103 obs)
##
     Primary splits:
##
         346 < 7.5
                     to the left,
                                    improve=47.61144, (0 missing)
         347 < 0.5
##
                     to the left,
                                    improve=43.59109, (0 missing)
##
         348 < 2
                     to the left,
                                    improve=38.53257, (0 missing)
##
         124 < 3
                     to the right, improve=38.15032, (0 missing)
##
         345 < 5.5
                     to the left,
                                   improve=37.90400, (0 missing)
##
     Surrogate splits:
##
         347 < 0.5
                     to the left,
                                   agree=0.937, adj=0.728, (0 split)
         318 < 24.5
                                    agree=0.933, adj=0.709, (0 split)
##
                     to the left,
##
         345 < 2.5
                     to the left,
                                    agree=0.915, adj=0.631, (0 split)
##
         374 < 4.5
                     to the left,
                                    agree=0.915, adj=0.631, (0 split)
         319 < 41
                                    agree=0.904, adj=0.583, (0 split)
##
                     to the left,
##
## Node number 59: 1941 observations,
                                          complexity param=0.004688756
##
     predicted class=6
                        expected loss=0.2246265 P(node) =0.07700853
##
       class counts:
                         3
                               3
                                    110
                                            8
                                                 20
                                                      103
                                                          1505
                                                                    4
                                                                         169
16
##
      probabilities: 0.002 0.002 0.057 0.004 0.010 0.053 0.775 0.002 0.087
0.008
     left son=118 (241 obs) right son=119 (1700 obs)
##
##
     Primary splits:
         274 < 2.5 to the right, improve=208.2075, (0 missing)
##
```

```
improve=206.0021, (0 missing)
                     to the left,
##
         655 < 1.5
##
         654 < 0.5
                     to the left,
                                    improve=202.5597, (0 missing)
##
         246 < 5.5
                     to the right, improve=198.0558, (0 missing)
##
                     to the left,
                                    improve=195.6095, (0 missing)
         656 < 2
##
     Surrogate splits:
##
         273 < 3
                     to the right, agree=0.982, adj=0.855, (0 split)
##
                     to the right, agree=0.973, adj=0.780, (0 split)
         246 < 24
         301 < 137.5 to the right, agree=0.965, adj=0.722, (0 split)
##
                     to the right, agree=0.961, adj=0.689, (0 split)
##
##
         245 < 14.5 to the right, agree=0.958, adj=0.660, (0 split)
##
## Node number 60: 1830 observations,
                                          complexity param=0.003751005
     predicted class=4
                        expected loss=0.2836066 P(node) =0.07260464
##
##
       class counts:
                         0
                               6
                                    111
                                           44 1311
                                                      123
                                                             68
                                                                   44
                                                                          56
67
##
      probabilities: 0.000 0.003 0.061 0.024 0.716 0.067 0.037 0.024 0.031
0.037
##
     left son=120 (221 obs) right son=121 (1609 obs)
##
     Primary splits:
##
         596 < 1.5
                     to the right, improve=177.3933, (0 missing)
##
         597 < 13
                     to the right, improve=171.0007, (0 missing)
                     to the right, improve=167.7112, (0 missing)
##
         595 < 0.5
##
         624 < 2.5
                     to the right, improve=167.5858, (0 missing)
##
         625 < 35
                     to the right, improve=163.3194, (0 missing)
##
     Surrogate splits:
##
         597 < 44
                     to the right, agree=0.981, adj=0.846, (0 split)
                     to the right, agree=0.978, adj=0.819, (0 split)
##
         595 < 0.5
         624 < 0.5
                     to the right, agree=0.973, adj=0.778, (0 split)
##
##
         568 < 0.5
                     to the right, agree=0.967, adj=0.729, (0 split)
##
         567 < 15.5
                     to the right, agree=0.964, adj=0.701, (0 split)
##
## Node number 61: 2659 observations,
                                          complexity param=0.01576315
##
     predicted class=9
                        expected loss=0.5065814 P(node) =0.1054949
       class counts:
##
                         7
                               2
                                     90
                                          215
                                                288
                                                      464
                                                             32
                                                                   88
                                                                         161
1312
      probabilities: 0.003 0.001 0.034 0.081 0.108 0.175 0.012 0.033 0.061
##
0.493
##
     left son=122 (808 obs) right son=123 (1851 obs)
##
     Primary splits:
##
         354 < 2.5
                                    improve=332.8322, (0 missing)
                     to the left,
##
         353 < 1.5
                     to the left,
                                    improve=318.0870, (0 missing)
                                    improve=309.1417, (0 missing)
##
         326 < 0.5
                     to the left,
##
         381 < 9.5
                     to the left,
                                    improve=293.6687, (0 missing)
##
         382 < 1.5
                     to the left,
                                    improve=277.3368, (0 missing)
##
     Surrogate splits:
##
         326 < 0.5
                     to the left,
                                   agree=0.920, adj=0.736, (0 split)
##
         382 < 1.5
                     to the left,
                                    agree=0.914, adj=0.715, (0 split)
##
                     to the left,
         381 < 91.5
                                    agree=0.896, adj=0.658, (0 split)
##
         353 < 0.5
                     to the left,
                                    agree=0.881, adj=0.608, (0 split)
                                   agree=0.837, adj=0.464, (0 split)
##
         327 < 1
                     to the left,
```

```
##
## Node number 62: 1766 observations,
                                         complexity param=0.00482272
##
     predicted class=7
                        expected loss=0.2587769 P(node) =0.07006546
       class counts:
##
                         7
                              65
                                    53
                                          68
                                                      118
                                                             21 1309
                                                                         31
                                                 34
60
      probabilities: 0.004 0.037 0.030 0.039 0.019 0.067 0.012 0.741 0.018
##
0.034
##
     left son=124 (313 obs) right son=125 (1453 obs)
##
     Primary splits:
##
         377 < 6.5
                     to the right, improve=248.0977, (0 missing)
##
         405 < 23.5 to the right, improve=243.4815, (0 missing)
         376 < 73.5 to the right, improve=211.9655, (0 missing)
##
##
         378 < 100.5 to the right, improve=210.6609, (0 missing)
##
         404 < 4
                     to the right, improve=196.8469, (0 missing)
##
     Surrogate splits:
##
         405 < 39.5 to the right, agree=0.971, adj=0.834, (0 split)
         376 < 73.5 to the right, agree=0.967, adj=0.815, (0 split)
##
##
         404 < 2.5
                     to the right, agree=0.959, adj=0.767, (0 split)
         378 < 157.5 to the right, agree=0.935, adj=0.636, (0 split)
##
##
         406 < 202.5 to the right, agree=0.914, adj=0.514, (0 split)
##
## Node number 63: 362 observations,
                                        complexity param=0.004420827
                        expected loss=0.558011 P(node) =0.01436223
##
     predicted class=9
##
       class counts:
                         1
                                    19
                                               135
                                                                          5
                                           1
                                                                   23
160
##
      probabilities: 0.003 0.003 0.052 0.003 0.373 0.003 0.044 0.064 0.014
0.442
##
     left son=126 (144 obs) right son=127 (218 obs)
##
     Primary splits:
##
         211 < 5.5
                     to the left,
                                   improve=70.33103, (0 missing)
##
         210 < 9
                     to the left,
                                   improve=65.94942, (0 missing)
##
         212 < 9.5
                     to the left,
                                   improve=60.68276, (0 missing)
##
         209 < 12.5 to the left,
                                   improve=56.75568, (0 missing)
##
         239 < 4.5
                     to the left,
                                   improve=44.24857, (0 missing)
##
     Surrogate splits:
##
         210 < 6.5
                                   agree=0.903, adj=0.757, (0 split)
                     to the left,
         212 < 9.5
                                   agree=0.890, adj=0.722, (0 split)
##
                     to the left,
##
         239 < 0.5
                     to the left,
                                   agree=0.862, adj=0.653, (0 split)
##
         209 < 11.5
                     to the left,
                                   agree=0.859, adj=0.646, (0 split)
                                   agree=0.823, adj=0.556, (0 split)
##
         183 < 6
                     to the left,
##
## Node number 64: 2312 observations,
                                         complexity param=0.0007144771
##
     predicted class=1
                        expected loss=0.04152249 P(node) =0.09172783
##
       class counts:
                         0 2216
                                                 7
                                    30
                                           7
                                                       10
                                                              8
                                                                    8
                                                                         24
2
##
      probabilities: 0.000 0.958 0.013 0.003 0.003 0.004 0.003 0.003 0.010
0.001
##
     left son=128 (2291 obs) right son=129 (21 obs)
##
     Primary splits:
         608 < 6 to the left, improve=30.93996, (0 missing)
##
```

```
177 < 36.5 to the left,
                                    improve=30.91269, (0 missing)
##
##
         607 < 114.5 to the left,
                                   improve=30.66493, (0 missing)
##
         176 < 63.5 to the left,
                                   improve=28.78651, (0 missing)
##
         609 < 21
                     to the left,
                                   improve=28.63209, (0 missing)
##
     Surrogate splits:
         607 < 114.5 to the left,
                                   agree=0.999, adj=0.905, (0 split)
##
##
         636 < 87.5 to the left,
                                   agree=0.999, adj=0.857, (0 split)
                                   agree=0.998, adj=0.762, (0 split)
##
         609 < 21
                     to the left,
                                   agree=0.998, adj=0.762, (0 split)
##
         637 < 8.5
                     to the left,
##
         580 < 37
                     to the left,
                                   agree=0.997, adj=0.714, (0 split)
##
## Node number 65: 144 observations,
                                         complexity param=0.001384299
##
     predicted class=8
                        expected loss=0.5416667 P(node) =0.005713152
##
       class counts:
                         0
                              51
                                     1
                                            5
                                                  3
                                                       14
                                                                         66
4
##
      probabilities: 0.000 0.354 0.007 0.035 0.021 0.097 0.000 0.000 0.458
0.028
##
     left son=130 (72 obs) right son=131 (72 obs)
##
     Primary splits:
##
         265 < 1.5
                     to the left,
                                   improve=42.55556, (0 missing)
##
         293 < 8
                     to the left,
                                   improve=41.14472, (0 missing)
##
         183 < 27
                     to the left,
                                   improve=40.63166, (0 missing)
##
         211 < 33.5
                     to the left,
                                   improve=40.50671, (0 missing)
##
         266 < 2.5
                     to the left,
                                   improve=40.02092, (0 missing)
##
     Surrogate splits:
         293 < 62
##
                     to the left,
                                   agree=0.965, adj=0.931, (0 split)
##
                                   agree=0.938, adj=0.875, (0 split)
         237 < 2
                     to the left,
                                   agree=0.903, adj=0.806, (0 split)
##
         210 < 12
                     to the left,
##
         211 < 11.5
                     to the left,
                                   agree=0.903, adj=0.806, (0 split)
##
         238 < 5.5
                     to the left,
                                   agree=0.903, adj=0.806, (0 split)
##
## Node number 66: 108 observations,
                                        complexity param=0.0003572385
##
     predicted class=2
                        expected loss=0.2314815 P(node) =0.004284864
       class counts:
##
                         0
                              11
                                    83
                                            5
                                                  1
                                                                          8
0
##
      probabilities: 0.000 0.102 0.769 0.046 0.009 0.000 0.000 0.000 0.074
0.000
##
     left son=132 (91 obs) right son=133 (17 obs)
##
     Primary splits:
##
         292 < 58.5 to the left,
                                   improve=15.51201, (0 missing)
##
         321 < 246.5 to the left,
                                   improve=15.02522, (0 missing)
         515 < 26.5 to the right, improve=14.98427, (0 missing)
##
##
         543 < 24.5
                     to the right, improve=14.48043, (0 missing)
##
         264 < 69
                                   improve=14.32744, (0 missing)
                     to the left,
##
     Surrogate splits:
##
         320 < 21.5 to the left,
                                   agree=0.981, adj=0.882, (0 split)
##
         321 < 243
                     to the left,
                                   agree=0.981, adj=0.882, (0 split)
##
                                   agree=0.972, adj=0.824, (0 split)
         264 < 69
                     to the left,
##
         293 < 171.5 to the left,
                                   agree=0.963, adj=0.765, (0 split)
                                   agree=0.954, adj=0.706, (0 split)
##
         236 < 217.5 to the left,
```

```
##
## Node number 67: 43 observations,
                                       complexity param=0.0001786193
##
     predicted class=6
                        expected loss=0.4883721 P(node) =0.001706011
       class counts:
##
                         1
                               1
                                     9
                                           3
                                                  3
                                                       0
                                                             22
                                                                          2
                                                                    1
1
      probabilities: 0.023 0.023 0.209 0.070 0.070 0.000 0.512 0.023 0.047
##
0.023
##
     left son=134 (24 obs) right son=135 (19 obs)
##
     Primary splits:
##
         212 < 22
                     to the right, improve=6.321603, (0 missing)
##
         176 < 131.5 to the left,
                                   improve=6.219615, (0 missing)
                                   improve=6.152366, (0 missing)
##
         204 < 236.5 to the left,
##
         211 < 23.5 to the right, improve=6.013390, (0 missing)
##
         232 < 8.5
                     to the left, improve=5.575989, (0 missing)
##
     Surrogate splits:
##
         120 < 5.5
                     to the left, agree=0.930, adj=0.842, (0 split)
                     to the right, agree=0.930, adj=0.842, (0 split)
##
         239 < 9.5
                                   agree=0.907, adj=0.789, (0 split)
##
                     to the left,
         148 < 7
                                   agree=0.907, adj=0.789, (0 split)
##
         176 < 8
                     to the left,
##
         232 < 8.5
                     to the left, agree=0.907, adj=0.789, (0 split)
##
## Node number 68: 286 observations,
                                        complexity param=0.001406627
##
     predicted class=5 expected loss=0.8111888 P(node) =0.01134695
##
       class counts:
                        12
                              33
                                    31
                                          14
                                                 42
                                                       54
                                                             54
                                                                          8
30
##
      probabilities: 0.042 0.115 0.108 0.049 0.147 0.189 0.189 0.028 0.028
0.105
##
     left son=136 (252 obs) right son=137 (34 obs)
##
     Primary splits:
##
         276 < 44.5 to the left,
                                   improve=21.85412, (0 missing)
##
         574 < 233
                     to the right, improve=21.35074, (0 missing)
##
                     to the left,
                                   improve=21.33641, (0 missing)
         247 < 1
##
         539 < 85.5
                   to the right, improve=20.30011, (0 missing)
##
         275 < 23.5 to the left, improve=20.14673, (0 missing)
##
     Surrogate splits:
##
         275 < 209.5 to the left,
                                   agree=0.965, adj=0.706, (0 split)
                                   agree=0.962, adj=0.676, (0 split)
##
         277 < 0.5
                     to the left,
##
         248 < 120.5 to the left,
                                   agree=0.955, adj=0.618, (0 split)
##
         304 < 67.5 to the left,
                                   agree=0.951, adj=0.588, (0 split)
         249 < 17
                                   agree=0.941, adj=0.500, (0 split)
##
                     to the left,
##
## Node number 69: 278 observations,
                                        complexity param=0.002277396
##
     predicted class=8
                        expected loss=0.6223022 P(node) =0.01102956
##
       class counts:
                         4
                              76
                                     2
                                          19
                                                 19
                                                       12
                                                              4
                                                                    7
                                                                        105
30
##
      probabilities: 0.014 0.273 0.007 0.068 0.068 0.043 0.014 0.025 0.378
0.108
##
     left son=138 (134 obs) right son=139 (144 obs)
##
     Primary splits:
##
         294 < 216 to the right, improve=37.22654, (0 missing)
```

```
322 < 237 to the right, improve=33.89610, (0 missing)
##
##
         295 < 249.5 to the right, improve=30.28190, (0 missing)
##
                     to the left, improve=28.16814, (0 missing)
##
         267 < 185.5 to the right, improve=27.96281, (0 missing)
##
     Surrogate splits:
         267 < 174.5 to the right, agree=0.892, adj=0.776, (0 split)
##
##
         266 < 245.5 to the right, agree=0.878, adj=0.746, (0 split)
         322 < 237 to the right, agree=0.878, adj=0.746, (0 split)
##
         295 < 249.5 to the right, agree=0.849, adj=0.687, (0 split)
##
##
         239 < 248.5 to the right, agree=0.784, adj=0.552, (0 split)
##
## Node number 70: 7 observations
     predicted class=3 expected loss=0.7142857 P(node) =0.0002777227
##
##
       class counts:
                         1
                               0
                                     1
                                            2
                                                  1
                                                              1
                                                                          1
0
##
      probabilities: 0.143 0.000 0.143 0.286 0.143 0.000 0.143 0.000 0.143
0.000
##
## Node number 71: 72 observations
     predicted class=6
                        expected loss=0.04166667 P(node) =0.002856576
##
       class counts:
                         0
                               1
                                     0
                                            1
                                                 0
                                                        1
                                                             69
                                                                          0
0
##
      probabilities: 0.000 0.014 0.000 0.014 0.000 0.014 0.958 0.000 0.000
0.000
##
## Node number 72: 142 observations,
                                        complexity param=0.0003125837
     predicted class=2 expected loss=0.1619718 P(node) =0.005633803
                                   119
                                                        1
##
       class counts:
                         0
                               0
                                            2
                                                  0
                                                              6
                                                                    2
                                                                         11
1
      probabilities: 0.000 0.000 0.838 0.014 0.000 0.007 0.042 0.014 0.077
##
0.007
##
     left son=144 (122 obs) right son=145 (20 obs)
##
     Primary splits:
##
         301 < 3.5
                     to the left,
                                   improve=16.25925, (0 missing)
                                   improve=15.01724, (0 missing)
##
         274 < 1
                     to the left,
##
         356 < 37
                                   improve=13.89224, (0 missing)
                     to the left,
         302 < 12
                                   improve=13.24347, (0 missing)
##
                     to the left,
##
         273 < 36.5 to the left,
                                   improve=12.83977, (0 missing)
##
     Surrogate splits:
         329 < 17
##
                     to the left,
                                   agree=0.972, adj=0.80, (0 split)
##
         273 < 36.5 to the left,
                                   agree=0.965, adj=0.75, (0 split)
##
         300 < 117.5 to the left,
                                   agree=0.965, adj=0.75, (0 split)
##
         302 < 12
                     to the left,
                                   agree=0.965, adj=0.75, (0 split)
##
         328 < 149.5 to the left,
                                   agree=0.965, adj=0.75, (0 split)
##
## Node number 73: 86 observations,
                                       complexity param=0.0004242208
##
     predicted class=7
                        expected loss=0.7790698 P(node) =0.003412021
##
                                                  1
                                                                          9
       class counts:
                         0
                              17
                                    15
                                          13
                                                              3
                                                                   19
9
##
      probabilities: 0.000 0.198 0.174 0.151 0.012 0.000 0.035 0.221 0.105
```

```
0.105
     left son=146 (57 obs) right son=147 (29 obs)
##
##
     Primary splits:
##
         683 < 18
                     to the left,
                                    improve=10.087930, (0 missing)
##
         516 < 37.5
                     to the left,
                                    improve= 9.245802, (0 missing)
##
         684 < 36
                     to the left,
                                    improve= 9.195264, (0 missing)
##
         515 < 5.5
                                    improve= 9.040953, (0 missing)
                     to the left,
         488 < 168.5 to the left,
##
                                    improve= 8.756569, (0 missing)
##
     Surrogate splits:
##
         682 < 1.5
                     to the left,
                                    agree=0.930, adj=0.793, (0 split)
                     to the left,
##
         684 < 4.5
                                    agree=0.907, adj=0.724, (0 split)
                                    agree=0.907, adj=0.724, (0 split)
##
         710 < 8
                     to the left,
         711 < 12.5
                     to the left,
                                    agree=0.907, adj=0.724, (0 split)
##
##
         242 < 126
                     to the left,
                                    agree=0.895, adj=0.690, (0 split)
##
## Node number 74: 144 observations,
                                         complexity param=0.0002232741
     predicted class=6
                        expected loss=0.2708333 P(node) =0.005713152
##
       class counts:
                         5
                               2
                                      3
                                            0
                                                  3
                                                        5
                                                            105
                                                                    5
                                                                         10
6
##
      probabilities: 0.035 0.014 0.021 0.000 0.021 0.035 0.729 0.035 0.069
0.042
##
     left son=148 (112 obs) right son=149 (32 obs)
     Primary splits:
##
##
         213 < 25.5 to the left,
                                    improve=15.76587, (0 missing)
##
         240 < 105
                     to the left,
                                    improve=15.25453, (0 missing)
##
         239 < 43
                     to the right, improve=15.19769, (0 missing)
##
         241 < 12
                     to the left,
                                    improve=14.80026, (0 missing)
         212 < 21.5 to the left,
##
                                   improve=13.19373, (0 missing)
##
     Surrogate splits:
##
         214 < 13
                     to the left,
                                   agree=0.944, adj=0.750, (0 split)
##
         186 < 2.5
                     to the left,
                                    agree=0.938, adj=0.719, (0 split)
##
         212 < 21.5
                     to the left,
                                   agree=0.924, adj=0.656, (0 split)
##
         185 < 51.5
                     to the left,
                                    agree=0.917, adj=0.625, (0 split)
##
         241 < 29
                     to the left,
                                   agree=0.910, adj=0.594, (0 split)
##
## Node number 75: 62 observations,
                                        complexity param=0.0002679289
##
     predicted class=9
                        expected loss=0.3870968 P(node) =0.002459829
##
       class counts:
                         0
                               0
                                      6
                                            0
                                                  9
                                                        a
                                                              0
                                                                    2
                                                                           7
38
##
      probabilities: 0.000 0.000 0.097 0.000 0.145 0.000 0.000 0.032 0.113
0.613
##
     left son=150 (19 obs) right son=151 (43 obs)
##
     Primary splits:
##
         210 < 21.5 to the left,
                                    improve=8.797607, (0 missing)
##
         209 < 131.5 to the left,
                                    improve=7.533531, (0 missing)
##
         238 < 68.5 to the left,
                                    improve=6.490469, (0 missing)
##
         154 < 161.5 to the right, improve=5.666443, (0 missing)
##
                                   improve=5.648694, (0 missing)
         239 < 9.5
                     to the left,
##
     Surrogate splits:
##
         211 < 33.5 to the left, agree=0.919, adj=0.737, (0 split)
```

```
agree=0.887, adj=0.632, (0 split)
##
         239 < 9.5
                     to the left,
##
         209 < 2
                     to the left,
                                    agree=0.871, adj=0.579, (0 split)
                                    agree=0.871, adj=0.579, (0 split)
##
         238 < 21
                     to the left,
                     to the left,
                                    agree=0.839, adj=0.474, (0 split)
##
         182 < 4
##
## Node number 76: 162 observations,
                                         complexity param=0.001094043
     predicted class=3
                        expected loss=0.617284 P(node) =0.006427296
##
##
       class counts:
                         0
                               9
                                     33
                                           62
                                                  0
                                                                   44
                                                                          13
1
##
      probabilities: 0.000 0.056 0.204 0.383 0.000 0.000 0.000 0.272 0.080
0.006
##
     left son=152 (59 obs) right son=153 (103 obs)
##
     Primary splits:
##
         404 < 228
                     to the right, improve=25.18382, (0 missing)
##
         376 < 65
                     to the right, improve=25.02485, (0 missing)
##
         403 < 59.5
                     to the right, improve=22.72821, (0 missing)
##
         578 < 20.5
                     to the right, improve=21.57795, (0 missing)
##
                     to the right, improve=21.43827, (0 missing)
         606 < 2
##
     Surrogate splits:
##
         376 < 48
                     to the right, agree=0.932, adj=0.814, (0 split)
##
         403 < 29
                     to the right, agree=0.932, adj=0.814, (0 split)
##
         375 < 2.5
                     to the right, agree=0.926, adj=0.797, (0 split)
##
         377 < 230.5 to the right, agree=0.889, adj=0.695, (0 split)
##
         431 < 157.5 to the right, agree=0.870, adj=0.644, (0 split)
##
## Node number 77: 56 observations,
                                        complexity param=0.0001786193
##
     predicted class=8
                        expected loss=0.3392857 P(node) =0.002221781
                                      1
                                            2
                                                  5
                                                        1
##
       class counts:
                         1
                                0
                                                              3
                                                                     0
                                                                          37
6
      probabilities: 0.018 0.000 0.018 0.036 0.089 0.018 0.054 0.000 0.661
##
0.107
##
     left son=154 (14 obs) right son=155 (42 obs)
##
     Primary splits:
##
         516 < 53
                     to the left,
                                    improve=8.369048, (0 missing)
         634 < 33.5
##
                                    improve=8.243088, (0 missing)
                     to the left,
         606 < 9
                                    improve=7.903571, (0 missing)
##
                     to the left,
         662 < 13
##
                     to the left,
                                    improve=7.322161, (0 missing)
##
         661 < 56
                     to the left,
                                    improve=6.989683, (0 missing)
##
     Surrogate splits:
         544 < 2
##
                     to the left,
                                    agree=0.964, adj=0.857, (0 split)
                                    agree=0.911, adj=0.643, (0 split)
##
         543 < 1.5
                     to the left,
##
         488 < 84.5
                     to the left,
                                    agree=0.875, adj=0.500, (0 split)
##
         515 < 10
                     to the left,
                                    agree=0.875, adj=0.500, (0 split)
                                    agree=0.857, adj=0.429, (0 split)
##
         433 < 192
                     to the left,
##
## Node number 78: 124 observations,
                                         complexity param=0.000379566
##
     predicted class=8
                        expected loss=0.6370968 P(node) =0.004919659
##
       class counts:
                         1
                              13
                                      1
                                           16
                                                  7
                                                        2
                                                                    12
                                                                          45
27
##
      probabilities: 0.008 0.105 0.008 0.129 0.056 0.016 0.000 0.097 0.363
```

```
0.218
##
     left son=156 (80 obs) right son=157 (44 obs)
##
     Primary splits:
##
         401 < 173
                     to the left,
                                   improve=11.080790, (0 missing)
##
         180 < 115.5 to the right, improve=10.839260, (0 missing)
##
         179 < 4.5
                     to the right, improve=10.102630, (0 missing)
##
         207 < 207.5 to the right, improve= 9.505904, (0 missing)
##
         713 < 26.5 to the left, improve= 9.334151, (0 missing)
##
     Surrogate splits:
##
         400 < 1.5
                     to the left,
                                   agree=0.919, adj=0.773, (0 split)
##
         402 < 248.5 to the left,
                                   agree=0.887, adj=0.682, (0 split)
                                   agree=0.879, adj=0.659, (0 split)
##
         373 < 178
                     to the left,
         428 < 9.5
                     to the left,
                                   agree=0.879, adj=0.659, (0 split)
##
##
         429 < 17.5 to the left,
                                   agree=0.839, adj=0.545, (0 split)
##
## Node number 79: 374 observations,
                                        complexity param=0.0001786193
##
     predicted class=8
                        expected loss=0.1229947 P(node) =0.01483833
##
       class counts:
                         3
                               1
                                     2
                                            8
                                                 11
                                                              2
                                                                   11
                                                        5
                                                                        328
3
##
      probabilities: 0.008 0.003 0.005 0.021 0.029 0.013 0.005 0.029 0.877
0.008
##
     left son=158 (19 obs) right son=159 (355 obs)
##
     Primary splits:
##
         470 < 156.5 to the right, improve=14.94440, (0 missing)
##
                     to the right, improve=14.26268, (0 missing)
                     to the right, improve=13.47169, (0 missing)
##
         440 < 65
##
         441 < 204.5 to the right, improve=13.26268, (0 missing)
         469 < 54.5 to the right, improve=13.15042, (0 missing)
##
##
     Surrogate splits:
##
         471 < 5.5
                     to the right, agree=0.997, adj=0.947, (0 split)
##
         442 < 80
                     to the right, agree=0.989, adj=0.789, (0 split)
##
         498 < 164
                     to the right, agree=0.989, adj=0.789, (0 split)
##
         499 < 2
                     to the right, agree=0.989, adj=0.789, (0 split)
##
         443 < 3.5
                     to the right, agree=0.984, adj=0.684, (0 split)
##
## Node number 80: 1502 observations,
                                         complexity param=0.0007368045
##
     predicted class=3
                        expected loss=0.08521971 P(node) =0.05959135
##
       class counts:
                         0
                              41
                                    13 1374
                                                       39
                                                              0
                                                  0
                                                                    7
                                                                         23
5
      probabilities: 0.000 0.027 0.009 0.915 0.000 0.026 0.000 0.005 0.015
##
0.003
##
     left son=160 (64 obs) right son=161 (1438 obs)
##
     Primary splits:
##
         490 < 139.5 to the right, improve=40.67295, (0 missing)
         264 < 147.5 to the left, improve=39.08559, (0 missing)
##
         491 < 251.5 to the right, improve=35.00766, (0 missing)
##
##
                     to the right, improve=33.06601, (0 missing)
         296 < 2.5
##
         519 < 248.5 to the right, improve=28.93667, (0 missing)
##
     Surrogate splits:
         491 < 251.5 to the right, agree=0.971, adj=0.328, (0 split)
##
```

```
518 < 204 to the right, agree=0.970, adj=0.297, (0 split)
##
##
         519 < 252.5 to the right, agree=0.963, adj=0.141, (0 split)
         462 < 240.5 to the right, agree=0.961, adj=0.078, (0 split)
##
         489 < 17.5 to the right, agree=0.960, adj=0.062, (0 split)
##
##
## Node number 81: 124 observations,
                                         complexity param=0.0005358578
     predicted class=5
                        expected loss=0.4677419 P(node) =0.004919659
##
##
       class counts:
                         3
                                      0
                                           18
                                                  5
                                                       66
                                                                           8
22
##
      probabilities: 0.024 0.000 0.000 0.145 0.040 0.532 0.016 0.000 0.065
0.177
##
     left son=162 (78 obs) right son=163 (46 obs)
##
     Primary splits:
##
         296 < 54
                     to the left,
                                    improve=18.35723, (0 missing)
##
         297 < 8.5
                     to the left,
                                    improve=13.84682, (0 missing)
##
         295 < 190.5 to the left,
                                    improve=13.33559, (0 missing)
                                    improve=13.15037, (0 missing)
##
         493 < 1
                     to the left,
##
         269 < 0.5
                     to the left,
                                    improve=13.05200, (0 missing)
##
     Surrogate splits:
##
         297 < 2
                     to the left,
                                   agree=0.895, adj=0.717, (0 split)
##
                     to the left,
                                    agree=0.863, adj=0.630, (0 split)
         295 < 36.5
##
         324 < 234
                     to the left,
                                    agree=0.855, adj=0.609, (0 split)
##
                                    agree=0.847, adj=0.587, (0 split)
         269 < 0.5
                     to the left,
##
         323 < 228.5 to the left,
                                   agree=0.831, adj=0.543, (0 split)
##
## Node number 82: 417 observations,
                                         complexity param=0.002009467
##
     predicted class=3
                        expected loss=0.4364508 P(node) =0.01654434
                                                      119
##
       class counts:
                        26
                               4
                                      5
                                          235
                                                              8
                                                                    4
                                                                          12
4
      probabilities: 0.062 0.010 0.012 0.564 0.000 0.285 0.019 0.010 0.029
##
0.010
##
     left son=164 (261 obs) right son=165 (156 obs)
##
     Primary splits:
##
         265 < 148
                     to the left,
                                    improve=68.75340, (0 missing)
                                    improve=56.56522, (0 missing)
##
         292 < 98.5 to the left,
         293 < 119
##
                                    improve=50.53075, (0 missing)
                     to the left,
##
         266 < 218
                     to the left,
                                    improve=49.22403, (0 missing)
##
         238 < 178.5 to the left,
                                    improve=43.42265, (0 missing)
##
     Surrogate splits:
         264 < 17.5 to the left,
##
                                    agree=0.873, adj=0.660, (0 split)
##
         238 < 201.5 to the left,
                                    agree=0.868, adj=0.647, (0 split)
##
         292 < 124.5 to the left,
                                    agree=0.859, adj=0.622, (0 split)
##
         266 < 167
                     to the left,
                                    agree=0.842, adj=0.577, (0 split)
                                    agree=0.825, adj=0.532, (0 split)
##
         237 < 83
                     to the left,
##
## Node number 83: 275 observations,
                                         complexity param=0.001830848
##
     predicted class=1
                        expected loss=0.6836364 P(node) =0.01091053
##
       class counts:
                         5
                              87
                                      1
                                           26
                                                 31
                                                       53
                                                                   19
                                                                          10
34
##
      probabilities: 0.018 0.316 0.004 0.095 0.113 0.193 0.033 0.069 0.036
```

```
0.124
     left son=166 (104 obs) right son=167 (171 obs)
##
##
     Primary splits:
##
         376 < 20
                                   improve=41.76481, (0 missing)
                     to the left,
##
         462 < 138.5 to the right, improve=39.92496, (0 missing)
##
         375 < 1
                     to the left,
                                   improve=39.04379, (0 missing)
##
         154 < 2.5
                     to the right, improve=38.93607, (0 missing)
         153 < 2.5
##
                     to the right, improve=38.78834, (0 missing)
##
     Surrogate splits:
##
         375 < 1
                     to the left,
                                    agree=0.938, adj=0.837, (0 split)
                     to the left,
##
         348 < 7.5
                                   agree=0.884, adj=0.692, (0 split)
         403 < 1.5
                     to the left,
                                   agree=0.880, adj=0.683, (0 split)
##
         374 < 2
                     to the left,
                                    agree=0.869, adj=0.654, (0 split)
##
##
         404 < 2.5
                     to the left,
                                   agree=0.869, adj=0.654, (0 split)
##
## Node number 84: 324 observations,
                                         complexity param=0.001250335
##
     predicted class=3
                        expected loss=0.5524691 P(node) =0.01285459
##
       class counts:
                                      1
                                          145
                                                       69
                                                                    5
                        33
                               1
                                                              3
                                                                         38
29
##
      probabilities: 0.102 0.003 0.003 0.448 0.000 0.213 0.009 0.015 0.117
0.090
##
     left son=168 (32 obs) right son=169 (292 obs)
##
     Primary splits:
##
         359 < 77
                     to the right, improve=30.59009, (0 missing)
##
         330 < 172.5 to the right, improve=30.52172, (0 missing)
                     to the right, improve=29.98537, (0 missing)
##
##
         427 < 214.5 to the right, improve=29.80651, (0 missing)
         454 < 162.5 to the right, improve=29.57523, (0 missing)
##
##
     Surrogate splits:
##
         330 < 186.5 to the right, agree=0.981, adj=0.813, (0 split)
##
         358 < 237
                     to the right, agree=0.981, adj=0.813, (0 split)
##
         387 < 64
                     to the right, agree=0.981, adj=0.813, (0 split)
##
         331 < 79.5
                     to the right, agree=0.978, adj=0.781, (0 split)
##
         360 < 7
                     to the right, agree=0.963, adj=0.625, (0 split)
##
## Node number 85: 512 observations,
                                         complexity param=0.001027061
##
     predicted class=5
                        expected loss=0.2050781 P(node) =0.02031343
##
       class counts:
                        26
                               0
                                      0
                                           53
                                                  1
                                                      407
                                                              6
                                                                         11
8
      probabilities: 0.051 0.000 0.000 0.104 0.002 0.795 0.012 0.000 0.021
##
0.016
##
     left son=170 (39 obs) right son=171 (473 obs)
##
     Primary splits:
##
         301 < 74
                     to the right, improve=39.51550, (0 missing)
##
         330 < 1.5
                     to the right, improve=37.61420, (0 missing)
##
         302 < 35
                     to the right, improve=36.12414, (0 missing)
##
         329 < 2
                     to the right, improve=35.30698, (0 missing)
                     to the right, improve=34.88390, (0 missing)
##
         300 < 70.5
##
     Surrogate splits:
##
         329 < 14 to the right, agree=0.992, adj=0.897, (0 split)
```

```
to the right, agree=0.986, adj=0.821, (0 split)
##
##
         330 < 1.5
                     to the right, agree=0.984, adj=0.795, (0 split)
         273 < 211.5 to the right, agree=0.980, adj=0.744, (0 split)
##
         300 < 70.5 to the right, agree=0.975, adj=0.667, (0 split)
##
##
## Node number 86: 164 observations,
                                         complexity param=0.002389033
     predicted class=7
                        expected loss=0.6219512 P(node) =0.006506646
##
##
       class counts:
                         4
                               3
                                     0
                                            9
                                                 58
                                                       11
                                                                   62
                                                                          3
10
##
      probabilities: 0.024 0.018 0.000 0.055 0.354 0.067 0.024 0.378 0.018
0.061
##
     left son=172 (85 obs) right son=173 (79 obs)
##
     Primary splits:
##
         321 < 202
                     to the left,
                                   improve=40.30244, (0 missing)
##
         322 < 200
                     to the left,
                                   improve=37.31707, (0 missing)
##
         405 < 6.5
                     to the right, improve=36.44269, (0 missing)
##
         378 < 201.5 to the right, improve=35.36654, (0 missing)
##
         404 < 59
                     to the right, improve=33.65017, (0 missing)
##
     Surrogate splits:
##
         322 < 207.5 to the left,
                                   agree=0.939, adj=0.873, (0 split)
##
         320 < 214.5 to the left,
                                   agree=0.902, adj=0.797, (0 split)
##
         293 < 63.5 to the left,
                                   agree=0.896, adj=0.785, (0 split)
##
         294 < 99.5 to the left,
                                   agree=0.872, adj=0.734, (0 split)
##
         323 < 233.5 to the left,
                                   agree=0.860, adj=0.709, (0 split)
##
## Node number 87: 357 observations,
                                         complexity param=0.001071716
##
     predicted class=9
                        expected loss=0.3445378 P(node) =0.01416386
                         4
                                                       46
##
       class counts:
                               2
                                     2
                                           28
                                                 18
                                                              3
                                                                   12
                                                                          8
234
      probabilities: 0.011 0.006 0.006 0.078 0.050 0.129 0.008 0.034 0.022
##
0.655
##
     left son=174 (100 obs) right son=175 (257 obs)
##
     Primary splits:
##
         297 < 5.5
                     to the left,
                                   improve=43.67962, (0 missing)
                                   improve=38.79364, (0 missing)
##
         325 < 12.5 to the left,
         296 < 7.5
                                   improve=34.24751, (0 missing)
##
                     to the left,
         464 < 36
##
                     to the left,
                                   improve=33.64649, (0 missing)
##
         492 < 29
                     to the left,
                                   improve=33.25300, (0 missing)
##
     Surrogate splits:
         269 < 2.5
##
                     to the left,
                                   agree=0.908, adj=0.67, (0 split)
##
         325 < 73.5 to the left,
                                   agree=0.894, adj=0.62, (0 split)
         296 < 7.5
##
                     to the left,
                                   agree=0.863, adj=0.51, (0 split)
##
         324 < 188.5 to the left,
                                   agree=0.863, adj=0.51, (0 split)
##
                                   agree=0.818, adj=0.35, (0 split)
         298 < 3
                     to the left,
##
## Node number 88: 73 observations,
                                        complexity param=0.0001786193
##
     predicted class=2
                        expected loss=0.2191781 P(node) =0.002896251
##
       class counts:
                         0
                               1
                                    57
                                            5
                                                        0
                                                              4
                                                                          6
0
##
      probabilities: 0.000 0.014 0.781 0.068 0.000 0.000 0.055 0.000 0.082
```

```
0.000
     left son=176 (60 obs) right son=177 (13 obs)
##
##
     Primary splits:
##
         466 < 39.5 to the left,
                                    improve=9.068247, (0 missing)
##
         412 < 17.5 to the left,
                                    improve=8.709380, (0 missing)
##
         440 < 124.5 to the left,
                                    improve=8.709380, (0 missing)
                                    improve=8.646880, (0 missing)
##
         439 < 184.5 to the left,
##
         411 < 12
                     to the left,
                                    improve=8.380669, (0 missing)
##
     Surrogate splits:
##
         465 < 5
                     to the left,
                                    agree=0.959, adj=0.769, (0 split)
##
         494 < 184.5 to the left,
                                    agree=0.959, adj=0.769, (0 split)
         493 < 128
                     to the left,
                                    agree=0.945, adj=0.692, (0 split)
##
         436 < 58
                     to the left,
                                    agree=0.932, adj=0.615, (0 split)
##
##
         437 < 118
                     to the left,
                                    agree=0.932, adj=0.615, (0 split)
##
## Node number 89: 100 observations,
                                         complexity param=0.0004465482
##
     predicted class=9
                        expected loss=0.81 P(node) =0.003967467
##
       class counts:
                         9
                              14
                                     12
                                            3
                                                        7
                                                             10
                                                                          17
19
##
      probabilities: 0.090 0.140 0.120 0.030 0.090 0.070 0.100 0.000 0.170
0.190
##
     left son=178 (83 obs) right son=179 (17 obs)
##
     Primary splits:
##
         717 < 5
                     to the left,
                                   improve=13.162230, (0 missing)
##
         572 < 25.5
                     to the right, improve= 9.874790, (0 missing)
##
         573 < 12
                     to the right, improve= 9.765385, (0 missing)
##
         600 < 5
                     to the right, improve= 9.620000, (0 missing)
                     to the right, improve= 9.477250, (0 missing)
##
         541 < 20
##
     Surrogate splits:
##
         716 < 2
                     to the left,
                                   agree=0.95, adj=0.706, (0 split)
##
         689 < 166
                     to the left,
                                    agree=0.94, adj=0.647, (0 split)
##
         688 < 164
                     to the left,
                                   agree=0.92, adj=0.529, (0 split)
##
         718 < 3.5
                     to the left,
                                   agree=0.90, adj=0.412, (0 split)
                     to the left, agree=0.90, adj=0.412, (0 split)
##
         745 < 1
##
## Node number 90: 41 observations,
                                        complexity param=0.0003125837
##
     predicted class=2
                        expected loss=0.7804878 P(node) =0.001626661
##
       class counts:
                         2
                                5
                                      9
                                            3
                                                  5
                                                        4
                                                              4
                                                                           2
7
##
      probabilities: 0.049 0.122 0.220 0.073 0.122 0.098 0.098 0.000 0.049
0.171
##
     left son=180 (18 obs) right son=181 (23 obs)
     Primary splits:
##
##
         380 < 19.5 to the left,
                                    improve=5.028161, (0 missing)
##
         400 < 63.5
                    to the left,
                                    improve=4.392656, (0 missing)
##
         352 < 43.5
                     to the left,
                                    improve=4.284634, (0 missing)
##
         409 < 68.5
                     to the left,
                                    improve=4.035147, (0 missing)
##
                                    improve=3.949634, (0 missing)
         408 < 125
                     to the left,
##
     Surrogate splits:
##
         381 < 8 to the left, agree=0.902, adj=0.778, (0 split)
```

```
to the left,
                                   agree=0.878, adj=0.722, (0 split)
##
         408 < 14
                                   agree=0.854, adj=0.667, (0 split)
##
         352 < 43.5
                     to the left,
                                   agree=0.854, adj=0.667, (0 split)
##
         409 < 21
                     to the left,
                     to the left,
                                   agree=0.805, adj=0.556, (0 split)
##
         262 < 68.5
##
## Node number 91: 209 observations,
                                        complexity param=0.0003349111
     predicted class=6
                        expected loss=0.2009569 P(node) =0.008292006
##
##
       class counts:
                         2
                               0
                                    20
                                           4
                                                       12
                                                            167
                                                                          4
0
##
      probabilities: 0.010 0.000 0.096 0.019 0.000 0.057 0.799 0.000 0.019
0.000
##
     left son=182 (16 obs) right son=183 (193 obs)
##
     Primary splits:
##
         584 < 8
                     to the right, improve=15.45373, (0 missing)
##
         583 < 102.5 to the right, improve=13.91228, (0 missing)
##
         582 < 26.5 to the right, improve=13.34968, (0 missing)
##
         556 < 3.5
                     to the right, improve=13.25837, (0 missing)
##
         581 < 81
                     to the right, improve=12.23165, (0 missing)
##
     Surrogate splits:
##
         583 < 120.5 to the right, agree=0.995, adj=0.937, (0 split)
##
         556 < 51.5
                     to the right, agree=0.986, adj=0.813, (0 split)
##
         555 < 149
                     to the right, agree=0.976, adj=0.687, (0 split)
##
         557 < 11
                     to the right, agree=0.976, adj=0.687, (0 split)
##
         611 < 35
                     to the right, agree=0.976, adj=0.687, (0 split)
##
## Node number 92: 41 observations
     predicted class=0
##
                        expected loss=0.09756098 P(node) =0.001626661
                                                        2
##
       class counts:
                        37
                               0
                                     0
                                            1
                                                  0
                                                              0
                                                                    0
                                                                          1
0
      probabilities: 0.902 0.000 0.000 0.024 0.000 0.049 0.000 0.000 0.024
##
0.000
##
## Node number 93: 56 observations,
                                       complexity param=0.0002083892
##
     predicted class=8
                        expected loss=0.6428571 P(node) =0.002221781
##
       class counts:
                         7
                               0
                                     8
                                           5
                                                       13
                                                                         20
0
##
      probabilities: 0.125 0.000 0.143 0.089 0.000 0.232 0.054 0.000 0.357
0.000
##
     left son=186 (40 obs) right son=187 (16 obs)
     Primary splits:
##
##
         347 < 0.5
                     to the right, improve=5.114286, (0 missing)
##
         431 < 11.5 to the left, improve=5.062771, (0 missing)
##
         269 < 10.5
                     to the right, improve=4.992063, (0 missing)
                                   improve=4.928571, (0 missing)
##
         297 < 178
                     to the left,
                                   improve=4.674179, (0 missing)
##
         346 < 22.5 to the left,
##
     Surrogate splits:
##
         320 < 14.5 to the right, agree=0.929, adj=0.750, (0 split)
##
                     to the right, agree=0.893, adj=0.625, (0 split)
##
         348 < 110.5 to the right, agree=0.893, adj=0.625, (0 split)
         318 < 6 to the right, agree=0.839, adj=0.438, (0 split)
##
```

```
to the right, agree=0.839, adj=0.438, (0 split)
##
##
## Node number 94: 43 observations,
                                       complexity param=0.0004688756
                        expected loss=0.4883721 P(node) =0.001706011
##
     predicted class=3
##
       class counts:
                         0
                               0
                                     1
                                           22
                                                        2
                                                              0
                                                                    0
                                                                         13
5
##
      probabilities: 0.000 0.000 0.023 0.512 0.000 0.047 0.000 0.000 0.302
0.116
##
     left son=188 (27 obs) right son=189 (16 obs)
##
     Primary splits:
         512 < 70.5 to the left,
##
                                   improve=12.16258, (0 missing)
                                   improve=12.16258, (0 missing)
##
         513 < 8.5
                     to the left,
##
         539 < 195.5 to the left,
                                   improve=10.96037, (0 missing)
##
         485 < 207.5 to the left,
                                   improve=10.87067, (0 missing)
##
         511 < 67.5 to the left,
                                   improve=10.63056, (0 missing)
     Surrogate splits:
##
##
         511 < 67.5 to the left,
                                   agree=0.977, adj=0.937, (0 split)
##
         484 < 163.5 to the left,
                                   agree=0.953, adj=0.875, (0 split)
                                   agree=0.953, adj=0.875, (0 split)
##
         513 < 8.5
                     to the left,
##
         483 < 76
                     to the left,
                                   agree=0.930, adj=0.812, (0 split)
##
         268 < 9.5
                     to the right, agree=0.907, adj=0.750, (0 split)
##
## Node number 95: 430 observations,
                                        complexity param=0.0002344378
     predicted class=8
                        expected loss=0.1860465 P(node) =0.01706011
##
##
       class counts:
                         8
                               0
                                    19
                                           23
                                                       13
                                                             12
                                                                        350
4
##
      probabilities: 0.019 0.000 0.044 0.053 0.000 0.030 0.028 0.002 0.814
0.009
##
     left son=190 (28 obs) right son=191 (402 obs)
##
     Primary splits:
##
         432 < 1
                     to the left,
                                   improve=15.89285, (0 missing)
##
         459 < 16.5 to the left,
                                   improve=15.80018, (0 missing)
##
         435 < 44.5 to the left,
                                   improve=14.50146, (0 missing)
##
         439 < 250.5 to the right, improve=13.62454, (0 missing)
                                   improve=13.55462, (0 missing)
##
         436 < 7
                     to the left,
##
     Surrogate splits:
         405 < 5
##
                     to the left,
                                   agree=0.967, adj=0.500, (0 split)
##
                     to the left,
                                   agree=0.956, adj=0.321, (0 split)
         431 < 1
##
         459 < 0.5
                     to the left,
                                   agree=0.956, adj=0.321, (0 split)
         385 < 241
                     to the right, agree=0.944, adj=0.143, (0 split)
##
##
         413 < 250
                     to the right, agree=0.944, adj=0.143, (0 split)
##
## Node number 96: 1973 observations,
                                          complexity param=0.0001786193
     predicted class=0 expected loss=0.04460213 P(node) =0.07827812
##
##
       class counts: 1885
                                    30
                                                       19
                                                                   10
                               0
                                            7
                                                  1
                                                             18
                                                                          1
2
##
      probabilities: 0.955 0.000 0.015 0.004 0.001 0.010 0.009 0.005 0.001
0.001
##
     left son=192 (1955 obs) right son=193 (18 obs)
##
     Primary splits:
```

```
to the left,
                                    improve=14.57930, (0 missing)
##
         463 < 80
##
         707 < 3.5
                     to the left,
                                    improve=13.36910, (0 missing)
##
         708 < 43
                     to the left,
                                    improve=13.36910, (0 missing)
         427 < 0.5
                     to the right, improve=12.97644, (0 missing)
##
##
         464 < 193
                     to the left,
                                    improve=12.69634, (0 missing)
##
     Surrogate splits:
##
         464 < 242
                     to the left,
                                   agree=0.993, adj=0.278, (0 split)
         491 < 239.5 to the left,
                                    agree=0.993, adj=0.278, (0 split)
##
                                    agree=0.993, adj=0.222, (0 split)
         490 < 131.5 to the left,
##
                                    agree=0.993, adj=0.222, (0 split)
##
         707 < 39
                     to the left,
##
         706 < 3.5
                     to the left,
                                    agree=0.992, adj=0.167, (0 split)
##
## Node number 97: 99 observations,
                                        complexity param=0.0004242208
                        expected loss=0.5454545 P(node) =0.003927792
##
     predicted class=0
##
       class counts:
                        45
                                      2
                                           24
                                                       25
                                                              3
                                                                           0
0
##
      probabilities: 0.455 0.000 0.020 0.242 0.000 0.253 0.030 0.000 0.000
0.000
##
     left son=194 (42 obs) right son=195 (57 obs)
##
     Primary splits:
##
         427 < 40
                     to the right, improve=25.47832, (0 missing)
                     to the right, improve=23.30820, (0 missing)
##
         455 < 3
##
         399 < 73.5 to the right, improve=23.26249, (0 missing)
##
         428 < 103.5 to the right, improve=19.27411, (0 missing)
                     to the right, improve=18.54264, (0 missing)
##
         271 < 118
##
     Surrogate splits:
##
         399 < 65.5
                     to the right, agree=0.960, adj=0.905, (0 split)
         455 < 51
                     to the right, agree=0.949, adj=0.881, (0 split)
##
##
         426 < 1.5
                     to the right, agree=0.919, adj=0.810, (0 split)
##
         454 < 6.5
                     to the right, agree=0.909, adj=0.786, (0 split)
##
         371 < 21
                     to the right, agree=0.879, adj=0.714, (0 split)
##
## Node number 98: 84 observations,
                                        complexity param=0.0008484415
     predicted class=0
##
                        expected loss=0.5357143 P(node) =0.003332672
##
                                            2
                                                                           2
       class counts:
                        39
                               0
                                      6
                                                  1
                                                       11
                                                             22
1
##
      probabilities: 0.464 0.000 0.071 0.024 0.012 0.131 0.262 0.000 0.024
0.012
     left son=196 (45 obs) right son=197 (39 obs)
##
     Primary splits:
##
##
         270 < 21.5 to the right, improve=18.41636, (0 missing)
                     to the left, improve=16.00212, (0 missing)
##
         378 < 41
##
         269 < 72
                     to the right, improve=15.83202, (0 missing)
                                   improve=15.81935, (0 missing)
##
         405 < 64
                     to the left,
         406 < 70
                                   improve=15.81935, (0 missing)
##
                     to the left,
     Surrogate splits:
##
##
         269 < 72
                     to the right, agree=0.881, adj=0.744, (0 split)
##
                     to the right, agree=0.869, adj=0.718, (0 split)
         241 < 15.5
##
         242 < 78
                     to the right, agree=0.857, adj=0.692, (0 split)
         271 < 45.5 to the right, agree=0.857, adj=0.692, (0 split)
##
```

```
to the right, agree=0.845, adj=0.667, (0 split)
##
##
## Node number 99: 139 observations,
                                         complexity param=0.0007591319
                        expected loss=0.5251799 P(node) =0.005514779
##
     predicted class=5
##
       class counts:
                         7
                               1
                                     11
                                           42
                                                  0
                                                       66
                                                                    2
                                                                           3
3
##
      probabilities: 0.050 0.007 0.079 0.302 0.000 0.475 0.029 0.014 0.022
0.022
##
     left son=198 (65 obs) right son=199 (74 obs)
##
     Primary splits:
##
         375 < 95
                     to the left,
                                    improve=12.76991, (0 missing)
                                    improve=12.54354, (0 missing)
         346 < 2
##
                     to the left,
##
         374 < 104
                     to the left,
                                    improve=11.65058, (0 missing)
##
         402 < 4.5
                     to the left,
                                    improve=11.49828, (0 missing)
##
         324 < 2.5
                     to the right, improve=11.04272, (0 missing)
     Surrogate splits:
##
##
         376 < 11.5
                     to the left,
                                   agree=0.921, adj=0.831, (0 split)
##
         374 < 19.5
                     to the left,
                                    agree=0.871, adj=0.723, (0 split)
                                    agree=0.856, adj=0.692, (0 split)
##
         402 < 4.5
                     to the left,
         403 < 35
##
                     to the left,
                                    agree=0.856, adj=0.692, (0 split)
##
         377 < 2
                     to the left,
                                    agree=0.827, adj=0.631, (0 split)
##
## Node number 100: 192 observations,
                                          complexity param=8.930964e-05
     predicted class=2
                        expected loss=0.1197917 P(node) =0.007617536
##
                                                  1
##
       class counts:
                         0
                               5
                                    169
                                            6
                                                        2
                                                              1
                                                                    3
                                                                           5
0
##
      probabilities: 0.000 0.026 0.880 0.031 0.005 0.010 0.005 0.016 0.026
0.000
##
     left son=200 (169 obs) right son=201 (23 obs)
##
     Primary splits:
                     to the right, improve=11.271360, (0 missing)
##
         520 < 34
##
         492 < 46.5 to the right, improve=10.474310, (0 missing)
##
         406 < 15.5 to the left, improve= 9.946657, (0 missing)
         493 < 115.5 to the right, improve= 9.783002, (0 missing)
##
##
                     to the left, improve= 9.014460, (0 missing)
         379 < 1
##
     Surrogate splits:
         406 < 15.5
                     to the left,
##
                                   agree=0.974, adj=0.783, (0 split)
##
         492 < 5
                     to the right, agree=0.974, adj=0.783, (0 split)
##
         379 < 1
                     to the left,
                                   agree=0.969, adj=0.739, (0 split)
         378 < 12.5
                     to the left,
                                   agree=0.964, adj=0.696, (0 split)
##
##
         466 < 1.5
                     to the right, agree=0.964, adj=0.696, (0 split)
##
## Node number 101: 26 observations,
                                         complexity param=0.0003125837
##
     predicted class=5
                        expected loss=0.6923077 P(node) =0.001031541
##
       class counts:
                                      1
                                            0
                                                  1
                         7
                                                                           1
2
##
      probabilities: 0.269 0.000 0.038 0.000 0.038 0.308 0.231 0.000 0.038
0.077
##
     left son=202 (17 obs) right son=203 (9 obs)
##
     Primary splits:
```

```
512 < 14.5 to the right, improve=5.986928, (0 missing)
##
##
         440 < 170.5 to the right, improve=5.947712, (0 missing)
                     to the right, improve=5.894737, (0 missing)
##
         540 < 19
                     to the right, improve=5.869281, (0 missing)
##
         511 < 0.5
         412 < 185.5 to the right, improve=5.775000, (0 missing)
##
##
     Surrogate splits:
##
                     to the right, agree=0.962, adj=0.889, (0 split)
         523 < 31
##
         541 < 13.5
                    to the right, agree=0.962, adj=0.889, (0 split)
                     to the right, agree=0.923, adj=0.778, (0 split)
##
         355 < 9.5
##
         431 < 42.5
                     to the left, agree=0.923, adj=0.778, (0 split)
##
         495 < 3
                     to the right, agree=0.923, adj=0.778, (0 split)
##
## Node number 102: 73 observations,
                                         complexity param=8.930964e-05
##
     predicted class=0
                        expected loss=0.1232877 P(node) =0.002896251
##
       class counts:
                        64
                                                  0
                                                        0
                                                              5
                                0
                                      1
                                            0
                                                                     1
                                                                           1
1
##
      probabilities: 0.877 0.000 0.014 0.000 0.000 0.000 0.068 0.014 0.014
0.014
##
     left son=204 (64 obs) right son=205 (9 obs)
##
     Primary splits:
##
         243 < 2
                     to the right, improve=5.569540, (0 missing)
##
         244 < 24
                     to the right, improve=4.883627, (0 missing)
##
         214 < 18
                     to the right, improve=4.796181, (0 missing)
##
         399 < 39.5
                     to the right, improve=4.439305, (0 missing)
                     to the right, improve=4.361206, (0 missing)
##
         245 < 19
##
     Surrogate splits:
##
         244 < 4.5
                     to the right, agree=0.945, adj=0.556, (0 split)
         214 < 4
                     to the right, agree=0.932, adj=0.444, (0 split)
##
##
         215 < 3.5
                     to the right, agree=0.932, adj=0.444, (0 split)
##
         272 < 1.5
                     to the right, agree=0.932, adj=0.444, (0 split)
##
         273 < 13.5
                     to the right, agree=0.932, adj=0.444, (0 split)
##
## Node number 103: 151 observations,
                                          complexity param=0.0005805126
                                                 P(node) = 0.005990875
##
     predicted class=5
                        expected loss=0.410596
##
                                                       89
       class counts:
                         6
                               0
                                     10
                                            4
                                                  1
                                                             24
                                                                          17
0
##
      probabilities: 0.040 0.000 0.066 0.026 0.007 0.589 0.159 0.000 0.113
0.000
##
     left son=206 (64 obs) right son=207 (87 obs)
##
     Primary splits:
##
         513 < 12.5 to the right, improve=26.85880, (0 missing)
##
         157 < 47
                     to the left,
                                    improve=22.88604, (0 missing)
##
         156 < 74.5
                     to the left,
                                    improve=21.54192, (0 missing)
                                    improve=21.01624, (0 missing)
##
         514 < 3.5
                     to the left,
##
         131 < 89
                     to the left,
                                    improve=20.69583, (0 missing)
##
     Surrogate splits:
##
         514 < 3.5
                     to the right, agree=0.887, adj=0.734, (0 split)
##
                     to the right, agree=0.874, adj=0.703, (0 split)
         485 < 108
##
         541 < 46
                     to the right, agree=0.854, adj=0.656, (0 split)
##
         512 < 55.5 to the right, agree=0.834, adj=0.609, (0 split)
```

```
##
         486 < 140.5 to the right, agree=0.828, adj=0.594, (0 split)
##
## Node number 104: 151 observations,
                                          complexity param=0.0004018934
                        expected loss=0.4039735 P(node) =0.005990875
     predicted class=0
##
##
       class counts:
                        90
                               0
                                     16
                                            3
                                                  3
                                                       14
                                                              5
                                                                    3
                                                                           2
15
##
      probabilities: 0.596 0.000 0.106 0.020 0.020 0.093 0.033 0.020 0.013
0.099
##
     left son=208 (93 obs) right son=209 (58 obs)
##
     Primary splits:
##
         518 < 102
                     to the left,
                                    improve=21.05911, (0 missing)
                                    improve=15.24324, (0 missing)
##
         519 < 110.5 to the left,
         571 < 118
                     to the right, improve=15.17687, (0 missing)
##
##
         517 < 167.5 to the left,
                                    improve=15.05487, (0 missing)
         489 < 46.5 to the left,
                                    improve=14.75032, (0 missing)
##
##
     Surrogate splits:
##
         517 < 80
                     to the left,
                                   agree=0.901, adj=0.741, (0 split)
##
                     to the left,
                                    agree=0.894, adj=0.724, (0 split)
         490 < 1
                                    agree=0.894, adj=0.724, (0 split)
##
         519 < 110.5 to the left,
##
         489 < 1.5
                     to the left,
                                   agree=0.848, adj=0.603, (0 split)
##
         546 < 224.5 to the left,
                                   agree=0.834, adj=0.569, (0 split)
##
## Node number 105: 158 observations,
                                          complexity param=0.0002679289
     predicted class=6
                        expected loss=0.2531646 P(node) =0.006268598
##
##
       class counts:
                         9
                               1
                                     14
                                            3
                                                  6
                                                        5
                                                            118
                                                                           1
1
##
      probabilities: 0.057 0.006 0.089 0.019 0.038 0.032 0.747 0.000 0.006
0.006
##
     left son=210 (15 obs) right son=211 (143 obs)
##
     Primary splits:
                     to the right, improve=10.949600, (0 missing)
##
         215 < 15
##
         99 < 1.5
                     to the left, improve=10.621320, (0 missing)
                     to the right, improve=10.141330, (0 missing)
##
         244 < 5
##
         657 < 4.5
                     to the right, improve= 9.843735, (0 missing)
##
                     to the right, improve= 9.691958, (0 missing)
         243 < 3
##
     Surrogate splits:
##
         243 < 3
                     to the right, agree=0.994, adj=0.933, (0 split)
##
                     to the right, agree=0.981, adj=0.800, (0 split)
         216 < 20.5
##
         187 < 22.5
                     to the right, agree=0.968, adj=0.667, (0 split)
                     to the right, agree=0.968, adj=0.667, (0 split)
##
         214 < 5
##
         242 < 3
                     to the right, agree=0.968, adj=0.667, (0 split)
##
## Node number 106: 119 observations,
                                          complexity param=0.0002679289
                        expected loss=0.2268908 P(node) =0.004721285
##
     predicted class=4
##
       class counts:
                         2
                               0
                                      6
                                            0
                                                 92
                                                                           0
5
##
      probabilities: 0.017 0.000 0.050 0.000 0.773 0.025 0.042 0.050 0.000
0.042
##
     left son=212 (103 obs) right son=213 (16 obs)
##
     Primary splits:
```

```
294 < 30.5
                     to the left,
                                    improve=14.29289, (0 missing)
##
##
         266 < 44.5
                     to the left,
                                    improve=13.49975, (0 missing)
         295 < 15
##
                     to the left,
                                    improve=12.17027, (0 missing)
         267 < 10.5
                     to the left,
                                    improve=11.11692, (0 missing)
##
##
         322 < 2.5
                     to the left,
                                    improve=10.30024, (0 missing)
##
     Surrogate splits:
##
         266 < 44.5
                     to the left,
                                    agree=0.975, adj=0.812, (0 split)
         295 < 15
                                    agree=0.958, adj=0.688, (0 split)
##
                     to the left,
                                    agree=0.950, adj=0.625, (0 split)
##
         265 < 211
                     to the left,
                                    agree=0.950, adj=0.625, (0 split)
##
         267 < 10.5
                     to the left,
##
         322 < 2.5
                     to the left,
                                    agree=0.950, adj=0.625, (0 split)
##
## Node number 107: 175 observations,
                                          complexity param=0.001473609
                        expected loss=0.6057143 P(node) =0.006943067
##
     predicted class=9
##
       class counts:
                         7
                                      8
                                            5
                                                 24
                                                       38
                                                               5
                                                                    17
                                                                           2
69
##
      probabilities: 0.040 0.000 0.046 0.029 0.137 0.217 0.029 0.097 0.011
0.394
##
     left son=214 (69 obs) right son=215 (106 obs)
##
     Primary splits:
##
         465 < 104
                     to the left,
                                    improve=27.01432, (0 missing)
##
         466 < 0.5
                     to the left,
                                    improve=25.30958, (0 missing)
##
         437 < 11.5 to the left,
                                    improve=25.03619, (0 missing)
##
         438 < 16
                     to the left,
                                    improve=24.84611, (0 missing)
                     to the right, improve=24.44695, (0 missing)
##
         218 < 1.5
##
     Surrogate splits:
##
         437 < 1
                     to the left,
                                    agree=0.943, adj=0.855, (0 split)
         464 < 10.5
                                    agree=0.903, adj=0.754, (0 split)
##
                     to the left,
##
         409 < 1
                     to the left,
                                    agree=0.880, adj=0.696, (0 split)
##
         438 < 52
                     to the left,
                                    agree=0.880, adj=0.696, (0 split)
##
         493 < 55.5 to the left,
                                    agree=0.880, adj=0.696, (0 split)
##
## Node number 108: 106 observations,
                                          complexity param=0.0002456015
                                                  P(node) =0.004205515
##
     predicted class=5
                        expected loss=0.4433962
##
                         2
                                                       59
                                                                           2
       class counts:
                               7
                                      0
                                           17
                                                  2
                                                                     2
6
##
      probabilities: 0.019 0.066 0.000 0.160 0.019 0.557 0.085 0.019 0.019
0.057
     left son=216 (53 obs) right son=217 (53 obs)
##
     Primary splits:
##
##
         290 < 0.5
                     to the left,
                                    improve=9.660377, (0 missing)
##
         263 < 3.5
                     to the left,
                                    improve=9.106793, (0 missing)
##
         203 < 5
                     to the right, improve=8.230857, (0 missing)
                     to the right, improve=7.251435, (0 missing)
##
         205 < 12
##
         291 < 46
                     to the left,
                                    improve=7.251267, (0 missing)
##
     Surrogate splits:
##
         318 < 55
                     to the left,
                                    agree=0.887, adj=0.774, (0 split)
##
                                    agree=0.830, adj=0.660, (0 split)
         263 < 28
                     to the left,
##
         317 < 3
                     to the left,
                                    agree=0.830, adj=0.660, (0 split)
##
         262 < 17.5 to the left,
                                    agree=0.821, adj=0.642, (0 split)
```

```
to the left, agree=0.811, adj=0.623, (0 split)
##
         289 < 13
##
## Node number 109: 102 observations,
                                          complexity param=0.0007144771
                        expected loss=0.4215686 P(node) =0.004046816
##
     predicted class=9
##
       class counts:
                         2
                               0
                                      3
                                            8
                                                 20
                                                        3
                                                              0
                                                                    7
                                                                           0
59
##
      probabilities: 0.020 0.000 0.029 0.078 0.196 0.029 0.000 0.069 0.000
0.578
##
     left son=218 (31 obs) right son=219 (71 obs)
##
     Primary splits:
##
         239 < 1.5
                     to the left,
                                    improve=18.23672, (0 missing)
                                    improve=17.47031, (0 missing)
##
         238 < 17.5
                     to the left,
##
         210 < 2
                     to the left,
                                    improve=16.29280, (0 missing)
##
         211 < 4
                     to the left,
                                    improve=15.30392, (0 missing)
##
         237 < 69.5 to the left,
                                    improve=14.14787, (0 missing)
##
     Surrogate splits:
##
         238 < 2
                     to the left,
                                   agree=0.941, adj=0.806, (0 split)
                                   agree=0.922, adj=0.742, (0 split)
##
         211 < 28.5
                     to the left,
                                    agree=0.922, adj=0.742, (0 split)
##
         240 < 3.5
                     to the left,
##
         210 < 2
                     to the left,
                                   agree=0.902, adj=0.677, (0 split)
                                   agree=0.892, adj=0.645, (0 split)
##
         237 < 8.5
                     to the left,
##
## Node number 110: 68 observations,
                                         complexity param=0.0002679289
     predicted class=0
                        expected loss=0.2794118 P(node) =0.002697877
##
                                                  2
##
       class counts:
                        49
                               0
                                      0
                                            1
                                                        9
                                                              0
                                                                    4
                                                                           0
3
      probabilities: 0.721 0.000 0.000 0.015 0.029 0.132 0.000 0.059 0.000
##
0.044
##
     left son=220 (59 obs) right son=221 (9 obs)
##
     Primary splits:
##
         323 < 203
                     to the left,
                                    improve=8.749972, (0 missing)
##
         353 < 45.5 to the left,
                                    improve=8.666479, (0 missing)
##
         322 < 102.5 to the left,
                                    improve=8.395886, (0 missing)
                     to the right, improve=8.231900, (0 missing)
##
         237 < 24
##
                     to the right, improve=7.987677, (0 missing)
         358 < 3.5
##
     Surrogate splits:
         322 < 197.5 to the left,
##
                                    agree=0.971, adj=0.778, (0 split)
##
         321 < 229
                     to the left,
                                    agree=0.956, adj=0.667, (0 split)
##
         352 < 59.5 to the left,
                                    agree=0.956, adj=0.667, (0 split)
         353 < 75
                                    agree=0.956, adj=0.667, (0 split)
##
                     to the left,
##
         324 < 232.5 to the left,
                                   agree=0.941, adj=0.556, (0 split)
##
## Node number 111: 678 observations,
                                          complexity param=0.0003572385
                        expected loss=0.1017699 P(node) =0.02689942
##
     predicted class=7
##
       class counts:
                         8
                               3
                                      5
                                            8
                                                       17
                                                                  609
                                                 12
                                                                           0
12
##
      probabilities: 0.012 0.004 0.007 0.012 0.018 0.025 0.006 0.898 0.000
0.018
##
     left son=222 (30 obs) right son=223 (648 obs)
##
     Primary splits:
```

```
to the right, improve=27.51554, (0 missing)
##
         460 < 13
                     to the right, improve=27.47981, (0 missing)
##
         488 < 2
                     to the right, improve=26.12030, (0 missing)
##
         461 < 5.5
         432 < 13.5
                     to the right, improve=25.79541, (0 missing)
##
                     to the right, improve=25.38516, (0 missing)
##
         459 < 17.5
##
     Surrogate splits:
##
         459 < 33.5
                     to the right, agree=0.994, adj=0.867, (0 split)
                     to the right, agree=0.993, adj=0.833, (0 split)
##
         461 < 5.5
                     to the right, agree=0.991, adj=0.800, (0 split)
##
         431 < 75.5
##
         432 < 13.5
                     to the right, agree=0.991, adj=0.800, (0 split)
##
         433 < 1.5
                     to the right, agree=0.985, adj=0.667, (0 split)
##
## Node number 112: 1021 observations,
                                           complexity param=0.0009377512
##
     predicted class=2 expected loss=0.1165524 P(node) =0.04050784
##
       class counts:
                         3
                                    902
                                           16
                                                  2
                                                        2
                                                                    12
                                                                          66
16
##
      probabilities: 0.003 0.000 0.883 0.016 0.002 0.002 0.002 0.012 0.065
0.016
##
     left son=224 (936 obs) right son=225 (85 obs)
##
     Primary splits:
##
         344 < 82
                     to the left,
                                    improve=57.73321, (0 missing)
         372 < 94.5
##
                     to the left,
                                    improve=57.50269, (0 missing)
##
         373 < 134
                     to the left,
                                    improve=55.79061, (0 missing)
##
         345 < 6.5
                     to the left,
                                    improve=54.35326, (0 missing)
                                    improve=48.16892, (0 missing)
##
         343 < 27.5
                     to the left,
##
     Surrogate splits:
##
                                    agree=0.976, adj=0.706, (0 split)
         345 < 6.5
                     to the left,
         343 < 4.5
                                    agree=0.975, adj=0.694, (0 split)
##
                     to the left,
##
         316 < 141
                     to the left,
                                    agree=0.966, adj=0.588, (0 split)
##
         372 < 94.5
                     to the left,
                                    agree=0.966, adj=0.588, (0 split)
##
         317 < 137
                     to the left,
                                    agree=0.955, adj=0.459, (0 split)
##
## Node number 113: 623 observations,
                                          complexity param=0.002857908
                        expected loss=0.7094703 P(node) =0.02471732
##
     predicted class=7
##
                         2
       class counts:
                             102
                                    107
                                            7
                                                 63
                                                       10
                                                             48
                                                                   181
                                                                          28
75
##
      probabilities: 0.003 0.164 0.172 0.011 0.101 0.016 0.077 0.291 0.045
0.120
     left son=226 (487 obs) right son=227 (136 obs)
##
     Primary splits:
##
##
         709 < 1.5
                     to the left,
                                    improve=80.54117, (0 missing)
##
         708 < 0.5
                     to the left,
                                    improve=78.89815, (0 missing)
##
         238 < 1
                     to the left,
                                    improve=74.85138, (0 missing)
##
         237 < 1
                     to the left,
                                    improve=71.72020, (0 missing)
##
         239 < 7.5
                     to the left,
                                    improve=70.12118, (0 missing)
     Surrogate splits:
##
##
         708 < 0.5
                     to the left,
                                    agree=0.949, adj=0.765, (0 split)
##
         681 < 204.5 to the left,
                                    agree=0.929, adj=0.676, (0 split)
##
         710 < 8
                     to the left,
                                    agree=0.912, adj=0.596, (0 split)
##
         680 < 92.5 to the left,
                                    agree=0.891, adj=0.500, (0 split)
```

```
682 < 17.5 to the left, agree=0.884, adj=0.471, (0 split)
##
##
## Node number 114: 485 observations,
                                          complexity param=0.00379566
                        expected loss=0.7360825 P(node) =0.01924221
##
     predicted class=4
##
       class counts:
                        19
                               0
                                     73
                                                128
                                                       96
                                                             19
                                                                   48
                                                                          49
53
##
      probabilities: 0.039 0.000 0.151 0.000 0.264 0.198 0.039 0.099 0.101
0.109
##
     left son=228 (121 obs) right son=229 (364 obs)
##
     Primary splits:
##
         354 < 1
                     to the left,
                                    improve=68.34460, (0 missing)
                                    improve=55.12702, (0 missing)
##
         353 < 10.5
                     to the left,
##
         382 < 0.5
                     to the right, improve=51.97462, (0 missing)
##
         381 < 13.5
                     to the left,
                                    improve=51.07833, (0 missing)
##
         488 < 0.5
                     to the left,
                                    improve=50.20387, (0 missing)
##
     Surrogate splits:
##
         381 < 13.5
                     to the left,
                                   agree=0.924, adj=0.694, (0 split)
##
         353 < 2.5
                     to the left,
                                   agree=0.920, adj=0.678, (0 split)
                                   agree=0.907, adj=0.628, (0 split)
##
         382 < 0.5
                     to the left,
##
         326 < 16
                     to the left,
                                   agree=0.905, adj=0.620, (0 split)
##
         327 < 1
                     to the left,
                                   agree=0.889, adj=0.554, (0 split)
##
## Node number 115: 709 observations,
                                          complexity param=0.0004465482
     predicted class=8
                        expected loss=0.1551481 P(node) =0.02812934
##
##
       class counts:
                        17
                               0
                                      5
                                            5
                                                 24
                                                       23
                                                                         599
19
##
      probabilities: 0.024 0.000 0.007 0.007 0.034 0.032 0.013 0.011 0.845
0.027
##
     left son=230 (74 obs) right son=231 (635 obs)
##
     Primary splits:
         428 < 111.5 to the right, improve=43.00775, (0 missing)
##
##
         456 < 224
                     to the right, improve=39.61953, (0 missing)
##
         427 < 3
                     to the right, improve=39.06051, (0 missing)
##
         400 < 57.5
                     to the right, improve=38.75969, (0 missing)
##
                     to the right, improve=35.15894, (0 missing)
         455 < 23.5
##
     Surrogate splits:
         456 < 204
##
                     to the right, agree=0.976, adj=0.770, (0 split)
##
         427 < 9
                     to the right, agree=0.969, adj=0.703, (0 split)
##
         455 < 9
                     to the right, agree=0.968, adj=0.689, (0 split)
         429 < 247.5 to the right, agree=0.962, adj=0.635, (0 split)
##
##
         400 < 164.5 to the right, agree=0.952, adj=0.541, (0 split)
##
## Node number 116: 344 observations,
                                          complexity param=0.0008037867
##
                        expected loss=0.244186 P(node) =0.01364809
     predicted class=2
##
       class counts:
                         3
                              25
                                    260
                                            4
                                                 10
                                                                   27
                                                                           6
6
##
      probabilities: 0.009 0.073 0.756 0.012 0.029 0.000 0.009 0.078 0.017
0.017
##
     left son=232 (318 obs) right son=233 (26 obs)
##
     Primary splits:
```

```
to the left, improve=27.13588, (0 missing)
##
         686 < 2.5
##
         153 < 2
                     to the right, improve=25.48856, (0 missing)
                     to the right, improve=25.38425, (0 missing)
##
         152 < 1
                     to the right, improve=24.04874, (0 missing)
##
         159 < 0.5
         187 < 16.5 to the right, improve=23.73987, (0 missing)
##
##
     Surrogate splits:
##
         687 < 7
                     to the left,
                                   agree=0.983, adj=0.769, (0 split)
                                    agree=0.968, adj=0.577, (0 split)
         714 < 2.5
##
                     to the left,
                                    agree=0.962, adj=0.500, (0 split)
##
         659 < 165.5 to the left,
                                    agree=0.962, adj=0.500, (0 split)
##
         685 < 32
                     to the left,
                                    agree=0.959, adj=0.462, (0 split)
##
         688 < 9
                     to the left,
##
## Node number 117: 103 observations,
                                          complexity param=0.0008930964
##
     predicted class=8
                        expected loss=0.6990291 P(node) =0.004086491
##
       class counts:
                         2
                                1
                                     10
                                                 24
                                                        1
                                                             19
                                                                     4
                                                                          31
11
##
      probabilities: 0.019 0.010 0.097 0.000 0.233 0.010 0.184 0.039 0.301
0.107
##
     left son=234 (73 obs) right son=235 (30 obs)
##
     Primary splits:
##
         656 < 105
                     to the left,
                                    improve=19.74875, (0 missing)
##
         655 < 6.5
                     to the left,
                                    improve=18.45919, (0 missing)
##
         627 < 4
                     to the left,
                                    improve=15.76298, (0 missing)
##
         657 < 18
                     to the left,
                                    improve=15.70104, (0 missing)
                                    improve=15.06336, (0 missing)
##
         626 < 0.5
                     to the left,
##
     Surrogate splits:
##
         655 < 123
                     to the left,
                                    agree=0.971, adj=0.900, (0 split)
                                    agree=0.942, adj=0.800, (0 split)
##
         657 < 108.5 to the left,
##
         627 < 183.5 to the left,
                                    agree=0.913, adj=0.700, (0 split)
##
         654 < 2
                     to the left,
                                    agree=0.883, adj=0.600, (0 split)
##
         628 < 140
                     to the left,
                                    agree=0.874, adj=0.567, (0 split)
##
## Node number 118: 241 observations,
                                          complexity param=0.002545325
                        expected loss=0.5062241 P(node) =0.009561595
##
     predicted class=8
##
                                                        1
       class counts:
                         3
                               1
                                     78
                                            3
                                                 15
                                                             14
                                                                     2
                                                                         119
5
##
      probabilities: 0.012 0.004 0.324 0.012 0.062 0.004 0.058 0.008 0.494
0.021
     left son=236 (127 obs) right son=237 (114 obs)
##
##
     Primary splits:
##
         655 < 30.5 to the left,
                                    improve=54.95627, (0 missing)
##
         654 < 6
                     to the left,
                                    improve=52.10515, (0 missing)
##
         537 < 131.5 to the right, improve=50.14114, (0 missing)
                                    improve=49.56066, (0 missing)
##
         656 < 6
                     to the left,
##
         509 < 3.5
                     to the right, improve=48.44629, (0 missing)
     Surrogate splits:
##
##
         654 < 6
                     to the left,
                                   agree=0.946, adj=0.886, (0 split)
##
                                    agree=0.942, adj=0.877, (0 split)
         656 < 1.5
                     to the left,
                                    agree=0.884, adj=0.754, (0 split)
##
         629 < 2
                     to the left,
                                   agree=0.880, adj=0.746, (0 split)
##
         628 < 1
                     to the left,
```

```
##
         627 < 86.5 to the left, agree=0.867, adj=0.719, (0 split)
##
## Node number 119: 1700 observations,
                                           complexity param=0.001696883
     predicted class=6 expected loss=0.1229412 P(node) =0.06744694
##
##
       class counts:
                         a
                               2
                                     32
                                            5
                                                  5
                                                      102 1491
                                                                     2
                                                                          50
11
##
      probabilities: 0.000 0.001 0.019 0.003 0.003 0.060 0.877 0.001 0.029
0.006
##
     left son=238 (1537 obs) right son=239 (163 obs)
##
     Primary splits:
         658 < 1.5
##
                     to the left,
                                    improve=113.14630, (0 missing)
                                    improve=110.56940, (0 missing)
##
         657 < 6
                     to the left,
         656 < 11
                     to the left,
                                    improve=107.75830, (0 missing)
##
##
         655 < 1.5
                     to the right, improve=100.02240, (0 missing)
         659 < 6.5
                     to the right, improve= 98.06006, (0 missing)
##
##
     Surrogate splits:
##
         657 < 2.5
                     to the left,
                                    agree=0.993, adj=0.926, (0 split)
##
                     to the left,
                                    agree=0.985, adj=0.847, (0 split)
         659 < 3
                                    agree=0.979, adj=0.785, (0 split)
##
         656 < 0.5
                     to the left,
##
         660 < 3.5
                     to the left,
                                    agree=0.971, adj=0.699, (0 split)
         655 < 1.5
                     to the left,
                                    agree=0.962, adj=0.607, (0 split)
##
##
## Node number 120: 221 observations,
                                          complexity param=0.003349111
     predicted class=2
                        expected loss=0.60181
                                                P(node) = 0.008768102
##
##
       class counts:
                         0
                               0
                                     88
                                           24
                                                  4
                                                       81
                                                              2
                                                                          22
0
##
      probabilities: 0.000 0.000 0.398 0.109 0.018 0.367 0.009 0.000 0.100
0.000
##
     left son=240 (109 obs) right son=241 (112 obs)
##
     Primary splits:
##
         346 < 3
                     to the left,
                                    improve=56.90477, (0 missing)
##
         319 < 5
                     to the left,
                                    improve=52.80342, (0 missing)
##
         127 < 31.5
                     to the right, improve=49.12228, (0 missing)
                                    improve=48.68827, (0 missing)
##
         347 < 9
                     to the left.
                     to the right, improve=47.95154, (0 missing)
##
         157 < 2
##
     Surrogate splits:
         319 < 26
##
                     to the left,
                                    agree=0.914, adj=0.826, (0 split)
##
                     to the left,
                                    agree=0.905, adj=0.807, (0 split)
         347 < 9
##
         374 < 58
                     to the left,
                                    agree=0.905, adj=0.807, (0 split)
                                    agree=0.882, adj=0.761, (0 split)
##
         318 < 1
                     to the left,
##
         345 < 1.5
                     to the left,
                                    agree=0.882, adj=0.761, (0 split)
##
## Node number 121: 1609 observations,
                                           complexity param=0.001629901
     predicted class=4 expected loss=0.1876942 P(node) =0.06383654
##
##
       class counts:
                         0
                                     23
                                           20 1307
                                                                    44
                               6
                                                       42
                                                              66
                                                                          34
67
##
      probabilities: 0.000 0.004 0.014 0.012 0.812 0.026 0.041 0.027 0.021
0.042
##
     left son=242 (1469 obs) right son=243 (140 obs)
##
     Primary splits:
```

```
267 < 139
                     to the left,
                                    improve=86.21374, (0 missing)
##
##
         98 < 3
                     to the left,
                                    improve=81.05098, (0 missing)
##
         97 < 1
                     to the left,
                                    improve=69.20911, (0 missing)
         266 < 173.5 to the left,
##
                                    improve=69.13510, (0 missing)
##
         400 < 6.5
                     to the right, improve=63.19168, (0 missing)
##
     Surrogate splits:
##
         239 < 74.5 to the left,
                                    agree=0.965, adj=0.600, (0 split)
                                    agree=0.959, adj=0.529, (0 split)
##
         266 < 191.5 to the left,
                                    agree=0.947, adj=0.386, (0 split)
##
         295 < 176.5 to the left,
                                    agree=0.937, adj=0.271, (0 split)
##
         294 < 132
                     to the left,
##
         268 < 250.5 to the left,
                                    agree=0.927, adj=0.164, (0 split)
##
## Node number 122: 808 observations,
                                          complexity param=0.003929624
##
     predicted class=5
                        expected loss=0.4492574 P(node) =0.03205713
##
       class counts:
                         3
                                2
                                     19
                                           55
                                                 94
                                                      445
                                                             28
                                                                    33
                                                                          37
92
##
      probabilities: 0.004 0.002 0.024 0.068 0.116 0.551 0.035 0.041 0.046
0.114
##
     left son=244 (581 obs) right son=245 (227 obs)
##
     Primary splits:
##
         352 < 55
                     to the left,
                                    improve=128.5179, (0 missing)
##
         324 < 30.5
                     to the left,
                                    improve=120.9151, (0 missing)
##
         351 < 42.5
                     to the left,
                                    improve=107.8040, (0 missing)
##
         353 < 1.5
                     to the left,
                                    improve=105.0853, (0 missing)
                                    improve=103.3771, (0 missing)
##
         325 < 1
                     to the left,
     Surrogate splits:
##
##
         324 < 129.5 to the left,
                                    agree=0.972, adj=0.899, (0 split)
                                    agree=0.968, adj=0.885, (0 split)
##
         351 < 42.5
                     to the left,
##
         353 < 1.5
                     to the left,
                                    agree=0.955, adj=0.841, (0 split)
##
         325 < 6.5
                     to the left,
                                    agree=0.941, adj=0.789, (0 split)
##
         323 < 0.5
                     to the left,
                                    agree=0.906, adj=0.665, (0 split)
##
## Node number 123: 1851 observations,
                                           complexity param=0.002835581
##
     predicted class=9
                        expected loss=0.3408968 P(node) =0.07343781
##
                                                                    55
       class counts:
                         4
                               0
                                     71
                                          160
                                                194
                                                       19
                                                                         124
1220
##
      probabilities: 0.002 0.000 0.038 0.086 0.105 0.010 0.002 0.030 0.067
0.659
     left son=246 (406 obs) right son=247 (1445 obs)
##
     Primary splits:
##
##
         156 < 0.5
                     to the right, improve=177.7674, (0 missing)
         155 < 0.5
##
                     to the right, improve=172.9101, (0 missing)
##
         154 < 1
                     to the right, improve=137.4916, (0 missing)
                     to the right, improve=135.3175, (0 missing)
##
         157 < 0.5
                     to the right, improve=128.5714, (0 missing)
##
         623 < 1
##
     Surrogate splits:
##
         155 < 0.5
                     to the right, agree=0.960, adj=0.818, (0 split)
##
                     to the right, agree=0.949, adj=0.768, (0 split)
         157 < 0.5
##
         154 < 1
                     to the right, agree=0.910, adj=0.589, (0 split)
                     to the right, agree=0.900, adj=0.544, (0 split)
##
         158 < 0.5
```

```
##
         153 < 0.5
                     to the right, agree=0.880, adj=0.451, (0 split)
##
## Node number 124: 313 observations,
                                          complexity param=0.002054122
                        expected loss=0.629393 P(node) =0.01241817
##
     predicted class=5
##
       class counts:
                         1
                               12
                                      8
                                           57
                                                 30
                                                      116
                                                              2
                                                                     8
                                                                          30
49
##
      probabilities: 0.003 0.038 0.026 0.182 0.096 0.371 0.006 0.026 0.096
0.157
##
     left son=248 (175 obs) right son=249 (138 obs)
##
     Primary splits:
##
         353 < 1
                     to the left,
                                    improve=47.76335, (0 missing)
                                    improve=44.04212, (0 missing)
         352 < 12
##
                     to the left,
##
         325 < 2.5
                     to the left,
                                    improve=34.45115, (0 missing)
##
         381 < 141.5 to the left,
                                    improve=32.65698, (0 missing)
##
         354 < 2.5
                     to the left,
                                    improve=31.10189, (0 missing)
##
     Surrogate splits:
##
         352 < 18
                     to the left,
                                    agree=0.920, adj=0.819, (0 split)
##
         325 < 23.5
                     to the left,
                                    agree=0.911, adj=0.797, (0 split)
                                    agree=0.872, adj=0.710, (0 split)
##
         354 < 2.5
                     to the left,
##
         326 < 0.5
                     to the left,
                                    agree=0.869, adj=0.703, (0 split)
         381 < 79.5 to the left,
                                    agree=0.856, adj=0.674, (0 split)
##
##
## Node number 125: 1453 observations,
                                           complexity param=0.001607573
     predicted class=7
                        expected loss=0.1046111 P(node) =0.05764729
##
##
       class counts:
                         6
                               53
                                     45
                                           11
                                                  4
                                                        2
                                                              19 1301
                                                                           1
11
##
      probabilities: 0.004 0.036 0.031 0.008 0.003 0.001 0.013 0.895 0.001
0.008
##
     left son=250 (93 obs) right son=251 (1360 obs)
##
     Primary splits:
                     to the right, improve=93.49668, (0 missing)
##
         156 < 0.5
##
         155 < 3.5
                     to the right, improve=84.86421, (0 missing)
##
         157 < 0.5
                     to the right, improve=83.35302, (0 missing)
##
         154 < 7
                     to the right, improve=71.99319, (0 missing)
##
         153 < 2
                     to the right, improve=65.40702, (0 missing)
##
     Surrogate splits:
         155 < 3.5
##
                     to the right, agree=0.983, adj=0.742, (0 split)
##
         157 < 0.5
                     to the right, agree=0.982, adj=0.720, (0 split)
##
         154 < 10.5
                     to the right, agree=0.966, adj=0.473, (0 split)
                     to the right, agree=0.962, adj=0.409, (0 split)
##
         128 < 6.5
##
         158 < 1.5
                     to the right, agree=0.960, adj=0.376, (0 split)
##
## Node number 126: 144 observations,
                                          complexity param=0.0004018934
                        expected loss=0.2638889 P(node) =0.005713152
##
     predicted class=4
##
       class counts:
                         1
                               1
                                                              15
                                                                           1
                                     11
                                            0
                                                106
7
##
      probabilities: 0.007 0.007 0.076 0.000 0.736 0.007 0.104 0.007 0.007
0.049
##
     left son=252 (132 obs) right son=253 (12 obs)
##
     Primary splits:
```

```
improve=12.98232, (0 missing)
         95 < 6.5
                     to the left,
##
##
         96 < 2
                                   improve=12.87266, (0 missing)
                     to the left,
##
         97 < 4.5
                     to the right, improve=12.59550, (0 missing)
         597 < 35.5 to the right, improve=11.90941, (0 missing)
##
         567 < 164.5 to the right, improve=11.77222, (0 missing)
##
##
     Surrogate splits:
##
         94
            < 4
                     to the left,
                                   agree=0.972, adj=0.667, (0 split)
                                   agree=0.972, adj=0.667, (0 split)
##
         122 < 64
                     to the left,
                                   agree=0.965, adj=0.583, (0 split)
##
             < 4
                     to the left,
                                   agree=0.965, adj=0.583, (0 split)
##
         96 < 36
                     to the left,
##
         123 < 100.5 to the left,
                                   agree=0.958, adj=0.500, (0 split)
##
## Node number 127: 218 observations,
                                          complexity param=0.0003125837
##
     predicted class=9
                        expected loss=0.2981651 P(node) =0.008649078
##
       class counts:
                         0
                               0
                                     8
                                                 29
                                                        0
                                                                   22
                                            1
                                                                          4
153
##
      probabilities: 0.000 0.000 0.037 0.005 0.133 0.000 0.005 0.101 0.018
0.702
##
     left son=254 (50 obs) right son=255 (168 obs)
##
     Primary splits:
##
         518 < 241.5 to the right, improve=14.56990, (0 missing)
                                   improve=14.16128, (0 missing)
##
         235 < 3.5
                     to the left,
##
         155 < 1
                     to the right, improve=13.12314, (0 missing)
##
         354 < 4
                     to the left,
                                   improve=12.86037, (0 missing)
                     to the left,
                                   improve=12.85993, (0 missing)
##
         316 < 6
##
     Surrogate splits:
##
         545 < 30
                     to the right, agree=0.927, adj=0.68, (0 split)
         517 < 223.5 to the right, agree=0.899, adj=0.56, (0 split)
##
##
         546 < 171.5 to the right, agree=0.862, adj=0.40, (0 split)
##
         573 < 62.5 to the right, agree=0.862, adj=0.40, (0 split)
##
         572 < 24.5 to the right, agree=0.858, adj=0.38, (0 split)
##
## Node number 128: 2291 observations,
                                           complexity param=0.0001786193
##
     predicted class=1
                        expected loss=0.03360978
                                                  P(node) =0.09089466
##
                         0 2214
                                                  7
                                                       10
       class counts:
                                    12
                                            6
                                                                    8
                                                                         24
2
##
      probabilities: 0.000 0.966 0.005 0.003 0.003 0.004 0.003 0.003 0.010
0.001
     left son=256 (2260 obs) right son=257 (31 obs)
##
     Primary splits:
##
##
         484 < 8
                     to the left,
                                   improve=24.92766, (0 missing)
##
         456 < 8
                     to the left,
                                   improve=24.56170, (0 missing)
##
         483 < 1
                     to the left,
                                   improve=23.74161, (0 missing)
##
         457 < 81
                     to the left,
                                   improve=23.35611, (0 missing)
##
         466 < 3
                     to the left,
                                   improve=22.41290, (0 missing)
     Surrogate splits:
##
##
         485 < 179
                     to the left,
                                   agree=0.996, adj=0.677, (0 split)
         512 < 113
##
                     to the left,
                                   agree=0.996, adj=0.677, (0 split)
                                   agree=0.995, adj=0.645, (0 split)
##
         457 < 57
                     to the left,
                                   agree=0.994, adj=0.548, (0 split)
##
         456 < 8
                     to the left,
```

```
to the left, agree=0.993, adj=0.516, (0 split)
##
##
## Node number 129: 21 observations
     predicted class=2 expected loss=0.1428571 P(node) =0.000833168
##
       class counts:
                         0
                               2
                                    18
                                           1
                                                       0
                                                              0
                                                                          0
0
##
      probabilities: 0.000 0.095 0.857 0.048 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 130: 72 observations,
                                        complexity param=0.0005358578
##
     predicted class=1
                        expected loss=0.2916667 P(node) =0.002856576
       class counts:
                                           2
                                                 1
##
                         0
                              51
                                     1
                                                       13
                                                                          4
0
##
      probabilities: 0.000 0.708 0.014 0.028 0.014 0.181 0.000 0.000 0.056
0.000
##
     left son=260 (55 obs) right son=261 (17 obs)
##
     Primary splits:
##
         487 < 145
                     to the right, improve=17.70351, (0 missing)
         434 < 203.5 to the right, improve=17.37037, (0 missing)
##
##
         242 < 182
                     to the right, improve=17.02758, (0 missing)
##
         215 < 32
                     to the right, improve=16.82813, (0 missing)
         597 < 27
                     to the right, improve=16.07407, (0 missing)
##
##
     Surrogate splits:
##
         242 < 160.5 to the right, agree=0.958, adj=0.824, (0 split)
##
         460 < 225.5 to the right, agree=0.958, adj=0.824, (0 split)
                     to the right, agree=0.958, adj=0.824, (0 split)
##
         244 < 126.5 to the right, agree=0.944, adj=0.765, (0 split)
##
         243 < 44.5 to the right, agree=0.931, adj=0.706, (0 split)
##
##
## Node number 131: 72 observations
##
     predicted class=8 expected loss=0.1388889 P(node) =0.002856576
##
       class counts:
                                           3
                                                                         62
                                     0
4
      probabilities: 0.000 0.000 0.000 0.042 0.028 0.014 0.000 0.000 0.861
##
0.056
##
## Node number 132: 91 observations,
                                        complexity param=0.0001339645
     predicted class=2
                        expected loss=0.0989011 P(node) =0.003610395
##
##
       class counts:
                         0
                               2
                                    82
                                           5
                                                       0
                                                              0
                                                                    0
                                                                          2
0
##
      probabilities: 0.000 0.022 0.901 0.055 0.000 0.000 0.000 0.000 0.022
0.000
##
     left son=264 (83 obs) right son=265 (8 obs)
##
     Primary splits:
##
         543 < 24.5 to the right, improve=6.665927, (0 missing)
         515 < 112
##
                     to the right, improve=5.821327, (0 missing)
##
         516 < 66.5 to the right, improve=5.641831, (0 missing)
##
                     to the left, improve=5.120092, (0 missing)
         655 < 215
         542 < 61.5 to the right, improve=4.670330, (0 missing)
##
##
     Surrogate splits:
```

```
to the right, agree=0.956, adj=0.500, (0 split)
##
         515 < 34
##
         516 < 13.5 to the right, agree=0.956, adj=0.500, (0 split)
                     to the right, agree=0.945, adj=0.375, (0 split)
##
         488 < 16
                     to the right, agree=0.945, adj=0.375, (0 split)
##
         544 < 1.5
##
         235 < 16.5 to the left, agree=0.934, adj=0.250, (0 split)
##
## Node number 133: 17 observations
##
     predicted class=1 expected loss=0.4705882 P(node) =0.0006744694
##
       class counts:
                         0
                               9
                                     1
                                            0
                                                  1
                                                                          6
0
##
      probabilities: 0.000 0.529 0.059 0.000 0.059 0.000 0.000 0.000 0.353
0.000
##
## Node number 134: 24 observations,
                                        complexity param=0.0001786193
     predicted class=2 expected loss=0.6666667 P(node) =0.000952192
##
##
       class counts:
                         1
                                     8
                                            3
                                                  3
                                                                          2
                               1
                                                              5
0
##
      probabilities: 0.042 0.042 0.333 0.125 0.125 0.000 0.208 0.042 0.083
0.000
##
     left son=268 (13 obs) right son=269 (11 obs)
##
     Primary splits:
##
         349 < 206.5 to the left,
                                   improve=4.564685, (0 missing)
##
         546 < 99.5 to the right, improve=3.767483, (0 missing)
##
                     to the left,
                                   improve=3.583333, (0 missing)
         348 < 7
##
         551 < 18.5
                     to the right, improve=3.459790, (0 missing)
         376 < 75.5 to the left, improve=3.421429, (0 missing)
##
##
     Surrogate splits:
         348 < 7
##
                     to the left,
                                   agree=0.958, adj=0.909, (0 split)
##
         600 < 121
                     to the left,
                                   agree=0.917, adj=0.818, (0 split)
##
         296 < 188.5 to the right, agree=0.875, adj=0.727, (0 split)
##
         321 < 66
                     to the left,
                                   agree=0.875, adj=0.727, (0 split)
##
         376 < 75.5 to the left, agree=0.875, adj=0.727, (0 split)
##
## Node number 135: 19 observations
##
     predicted class=6
                        expected loss=0.1052632 P(node) =0.0007538187
       class counts:
##
                         0
                               0
                                     1
                                                        0
                                                             17
                                                                    0
                                                                          0
                                            0
                                                  0
1
##
      probabilities: 0.000 0.000 0.053 0.000 0.000 0.000 0.895 0.000 0.000
0.053
##
## Node number 136: 252 observations,
                                         complexity param=0.001406627
##
     predicted class=6
                        expected loss=0.7857143 P(node) =0.009998016
##
       class counts:
                        12
                              33
                                    31
                                          14
                                                 40
                                                       24
                                                             54
                                                                          6
30
      probabilities: 0.048 0.131 0.123 0.056 0.159 0.095 0.214 0.032 0.024
##
0.119
##
     left son=272 (93 obs) right son=273 (159 obs)
##
     Primary splits:
##
         574 < 233
                     to the right, improve=20.46787, (0 missing)
##
         602 < 74.5 to the right, improve=18.99616, (0 missing)
```

```
573 < 248.5 to the left,
                                   improve=17.63102, (0 missing)
##
##
         601 < 127
                     to the left,
                                   improve=17.47485, (0 missing)
##
         550 < 65.5 to the right, improve=16.87836, (0 missing)
##
     Surrogate splits:
##
         602 < 52
                     to the right, agree=0.925, adj=0.796, (0 split)
##
         575 < 145.5 to the right, agree=0.913, adj=0.763, (0 split)
##
         603 < 1.5 to the right, agree=0.889, adj=0.699, (0 split)
         576 < 19.5 to the right, agree=0.865, adj=0.634, (0 split)
##
         573 < 250.5 to the right, agree=0.849, adj=0.591, (0 split)
##
##
## Node number 137: 34 observations
##
     predicted class=5
                        expected loss=0.1176471 P(node) =0.001348939
##
       class counts:
                         0
                               0
                                                 2
                                                      30
                                                                         2
                                     0
                                           0
                                                             0
                                                                   0
0
##
      probabilities: 0.000 0.000 0.000 0.009 0.882 0.000 0.009
0.000
##
## Node number 138: 134 observations,
                                         complexity param=0.0004018934
##
     predicted class=1
                        expected loss=0.4552239 P(node) =0.005316405
##
       class counts:
                         3
                              73
                                     1
                                           4
                                                10
                                                       9
                                                                        16
10
      probabilities: 0.022 0.545 0.007 0.030 0.075 0.067 0.030 0.030 0.119
##
0.075
##
     left son=276 (95 obs) right son=277 (39 obs)
##
     Primary splits:
         429 < 10.5 to the left,
                                   improve=18.14786, (0 missing)
##
##
         299 < 18
                     to the left,
                                   improve=17.89685, (0 missing)
##
         271 < 27.5 to the left,
                                   improve=17.79153, (0 missing)
##
         327 < 30.5
                     to the left,
                                   improve=17.44297, (0 missing)
         430 < 2.5
##
                     to the left,
                                   improve=16.75559, (0 missing)
##
     Surrogate splits:
##
         457 < 61
                     to the left,
                                   agree=0.963, adj=0.872, (0 split)
##
         430 < 160.5 to the left,
                                   agree=0.933, adj=0.769, (0 split)
##
         456 < 6.5
                     to the left,
                                   agree=0.933, adj=0.769, (0 split)
##
                                   agree=0.925, adj=0.744, (0 split)
         428 < 3
                     to the left,
##
         401 < 61.5 to the left,
                                   agree=0.910, adj=0.692, (0 split)
##
## Node number 139: 144 observations,
                                         complexity param=0.0008037867
                        expected loss=0.3819444 P(node) =0.005713152
##
     predicted class=8
##
       class counts:
                         1
                               3
                                     1
                                          15
                                                 9
                                                       3
                                                                   3
                                                                        89
20
##
      probabilities: 0.007 0.021 0.007 0.104 0.062 0.021 0.000 0.021 0.618
0.139
##
     left son=278 (124 obs) right son=279 (20 obs)
##
     Primary splits:
##
         711 < 94.5 to the left,
                                   improve=22.83728, (0 missing)
##
         712 < 2.5
                     to the left,
                                   improve=22.34791, (0 missing)
                                   improve=21.84393, (0 missing)
##
         461 < 170.5 to the left,
##
         488 < 15
                     to the right, improve=19.92244, (0 missing)
         433 < 166 to the left, improve=19.58357, (0 missing)
##
```

```
##
     Surrogate splits:
##
         712 < 69.5
                     to the left, agree=0.965, adj=0.75, (0 split)
                                   agree=0.958, adj=0.70, (0 split)
##
         710 < 7.5
                     to the left,
         739 < 44.5
                                   agree=0.917, adj=0.40, (0 split)
##
                     to the left,
##
         740 < 28
                     to the left,
                                   agree=0.910, adj=0.35, (0 split)
##
         433 < 1.5
                     to the right, agree=0.903, adj=0.30, (0 split)
##
## Node number 144: 122 observations
     predicted class=2 expected loss=0.04918033 P(node) =0.004840309
##
##
       class counts:
                         0
                               0
                                   116
                                                  0
                                                        1
                                                                    2
                                                                          1
                                            1
                                                              1
0
      probabilities: 0.000 0.000 0.951 0.008 0.000 0.008 0.008 0.016 0.008
##
0.000
##
## Node number 145: 20 observations,
                                        complexity param=0.0002232741
     predicted class=8
                        expected loss=0.5 P(node) =0.0007934934
##
       class counts:
                         0
                               0
                                     3
                                            1
                                                 0
                                                              5
                                                                    0
                                                                         10
1
##
      probabilities: 0.000 0.000 0.150 0.050 0.000 0.000 0.250 0.000 0.500
0.050
##
     left son=290 (9 obs) right son=291 (11 obs)
##
     Primary splits:
##
         291 < 86
                     to the left,
                                   improve=6.270707, (0 missing)
##
         319 < 26
                     to the left,
                                   improve=6.270707, (0 missing)
##
         320 < 98
                     to the left,
                                   improve=6.270707, (0 missing)
                                   improve=6.270707, (0 missing)
##
         321 < 48
                     to the left,
##
         497 < 8
                     to the right, improve=6.270707, (0 missing)
##
     Surrogate splits:
##
         319 < 26
                     to the left, agree=1, adj=1, (0 split)
##
         320 < 98
                     to the left,
                                   agree=1, adj=1, (0 split)
##
         321 < 48
                     to the left,
                                   agree=1, adj=1, (0 split)
##
         497 < 8
                     to the right, agree=1, adj=1, (0 split)
##
         525 < 20
                     to the right, agree=1, adj=1, (0 split)
##
## Node number 146: 57 observations,
                                        complexity param=0.0004242208
     predicted class=1 expected loss=0.7017544 P(node) =0.002261456
##
##
       class counts:
                         0
                              17
                                    15
                                          10
                                                              3
                                                                          8
2
##
      probabilities: 0.000 0.298 0.263 0.175 0.000 0.000 0.053 0.035 0.140
0.035
##
     left son=292 (21 obs) right son=293 (36 obs)
##
     Primary splits:
##
         459 < 5.5
                     to the left,
                                   improve=11.076860, (0 missing)
                                   improve=10.451460, (0 missing)
##
         515 < 1.5
                     to the left,
##
         487 < 0.5
                     to the left,
                                   improve=10.305740, (0 missing)
##
         488 < 158.5 to the left,
                                   improve=10.213420, (0 missing)
##
         233 < 23
                     to the left,
                                   improve= 9.465748, (0 missing)
##
     Surrogate splits:
##
         460 < 126
                     to the left,
                                   agree=0.947, adj=0.857, (0 split)
##
         487 < 0.5 to the left, agree=0.895, adj=0.714, (0 split)
```

```
to the left,
                                   agree=0.860, adj=0.619, (0 split)
##
         233 < 23
##
         458 < 1
                     to the left,
                                   agree=0.860, adj=0.619, (0 split)
                                   agree=0.842, adj=0.571, (0 split)
##
         431 < 1
                     to the left,
##
## Node number 147: 29 observations,
                                        complexity param=0.0002679289
                        expected loss=0.4137931 P(node) =0.001150565
##
     predicted class=7
##
       class counts:
                         0
                               0
                                     0
                                           3
                                                       0
                                                                   17
                                                                          1
7
      probabilities: 0.000 0.000 0.000 0.103 0.034 0.000 0.000 0.586 0.034
##
0.241
##
     left son=294 (17 obs) right son=295 (12 obs)
     Primary splits:
##
##
         349 < 102.5 to the left,
                                   improve=7.749831, (0 missing)
##
         406 < 250.5 to the right, improve=7.298851, (0 missing)
##
                     to the left,
                                   improve=7.112886, (0 missing)
         319 < 8
##
         434 < 230.5 to the right, improve=6.917898, (0 missing)
                     to the left, improve=6.887595, (0 missing)
##
         318 < 90
##
     Surrogate splits:
         348 < 7
##
                     to the left, agree=0.966, adj=0.917, (0 split)
##
         406 < 250.5 to the right, agree=0.966, adj=0.917, (0 split)
##
         434 < 250
                     to the right, agree=0.931, adj=0.833, (0 split)
##
         461 < 250
                     to the right, agree=0.931, adj=0.833, (0 split)
##
         488 < 142
                     to the right, agree=0.931, adj=0.833, (0 split)
##
## Node number 148: 112 observations,
                                         complexity param=4.465482e-05
     predicted class=6 expected loss=0.1160714 P(node) =0.004443563
##
##
       class counts:
                         1
                                           0
                                                  3
                                                             99
                                                                          0
                               2
                                     0
1
##
      probabilities: 0.009 0.018 0.000 0.000 0.027 0.018 0.884 0.036 0.000
0.009
##
     left son=296 (14 obs) right son=297 (98 obs)
##
     Primary splits:
##
         266 < 154
                     to the right, improve=8.811224, (0 missing)
         294 < 250.5 to the right, improve=8.651905, (0 missing)
##
##
         514 < 2.5 to the left, improve=7.072689, (0 missing)
##
         485 < 17.5 to the left, improve=6.534438, (0 missing)
         293 < 244.5 to the right, improve=6.380592, (0 missing)
##
##
     Surrogate splits:
         294 < 250.5 to the right, agree=0.982, adj=0.857, (0 split)
##
         293 < 244.5 to the right, agree=0.973, adj=0.786, (0 split)
##
##
         267 < 236
                     to the right, agree=0.955, adj=0.643, (0 split)
                     to the right, agree=0.938, adj=0.500, (0 split)
##
         238 < 252.5 to the right, agree=0.929, adj=0.429, (0 split)
##
##
## Node number 149: 32 observations,
                                        complexity param=0.0002232741
##
     predicted class=8
                        expected loss=0.6875 P(node) =0.001269589
##
       class counts:
                         4
                                     3
                                                                    1
                                                                         10
5
##
      probabilities: 0.125 0.000 0.094 0.000 0.000 0.094 0.188 0.031 0.312
0.156
```

```
left son=298 (12 obs) right son=299 (20 obs)
##
##
     Primary splits:
         442 < 27
                     to the right, improve=5.341667, (0 missing)
##
         470 < 21
                     to the right, improve=5.341667, (0 missing)
##
                     to the right, improve=5.278922, (0 missing)
##
         483 < 19
         511 < 138
##
                     to the right, improve=5.278922, (0 missing)
##
         469 < 183
                     to the right, improve=5.154352, (0 missing)
##
     Surrogate splits:
         470 < 21
##
                     to the right, agree=1.000, adj=1.000, (0 split)
         426 < 16.5 to the right, agree=0.969, adj=0.917, (0 split)
##
         443 < 10.5
##
                     to the right, agree=0.969, adj=0.917, (0 split)
         454 < 69
                     to the right, agree=0.969, adj=0.917, (0 split)
##
##
         469 < 183
                     to the right, agree=0.969, adj=0.917, (0 split)
##
## Node number 150: 19 observations
##
     predicted class=4 expected loss=0.5263158 P(node) =0.0007538187
##
       class counts:
                         0
                               0
                                     3
                                            0
                                                  9
                                                        0
                                                                    1
                                                                          3
3
##
      probabilities: 0.000 0.000 0.158 0.000 0.474 0.000 0.000 0.053 0.158
0.158
##
## Node number 151: 43 observations
     predicted class=9
                        expected loss=0.1860465 P(node) =0.001706011
##
##
       class counts:
                         0
                                     3
35
##
      probabilities: 0.000 0.000 0.070 0.000 0.000 0.000 0.000 0.023 0.093
0.814
##
## Node number 152: 59 observations,
                                        complexity param=0.0002232741
     predicted class=3 expected loss=0.1694915 P(node) =0.002340805
##
##
       class counts:
                         0
                               0
                                     7
                                           49
                                                  0
                                                        0
                                                              0
                                                                    2
                                                                          1
0
##
      probabilities: 0.000 0.000 0.119 0.831 0.000 0.000 0.000 0.034 0.017
0.000
##
     left son=304 (7 obs) right son=305 (52 obs)
##
     Primary splits:
         527 < 25.5 to the right, improve=8.098622, (0 missing)
##
##
         555 < 25
                     to the right, improve=8.098622, (0 missing)
                     to the right, improve=6.821203, (0 missing)
##
         514 < 214
         543 < 220.5 to the right, improve=6.821203, (0 missing)
##
##
         515 < 233.5 to the right, improve=6.590588, (0 missing)
##
     Surrogate splits:
##
         555 < 25
                     to the right, agree=1.000, adj=1.000, (0 split)
##
         583 < 14
                     to the right, agree=0.983, adj=0.857, (0 split)
                     to the right, agree=0.966, adj=0.714, (0 split)
##
         499 < 67
##
         554 < 153.5 to the right, agree=0.966, adj=0.714, (0 split)
##
         582 < 122
                     to the right, agree=0.966, adj=0.714, (0 split)
##
## Node number 153: 103 observations,
                                          complexity param=0.001071716
     predicted class=7 expected loss=0.592233 P(node) =0.004086491
```

```
##
       class counts:
                                    26
                                           13
                                                                   42
                                                                         12
1
##
      probabilities: 0.000 0.087 0.252 0.126 0.000 0.000 0.000 0.408 0.117
0.010
##
     left son=306 (47 obs) right son=307 (56 obs)
##
     Primary splits:
##
         153 < 121
                     to the right, improve=21.50764, (0 missing)
##
         152 < 13
                     to the right, improve=20.69896, (0 missing)
##
         154 < 2.5
                     to the right, improve=20.21410, (0 missing)
                     to the right, improve=18.46666, (0 missing)
##
         155 < 20
##
         151 < 0.5
                     to the right, improve=17.12519, (0 missing)
##
     Surrogate splits:
##
         152 < 35.5 to the right, agree=0.961, adj=0.915, (0 split)
##
         154 < 117.5 to the right, agree=0.932, adj=0.851, (0 split)
         155 < 38.5 to the right, agree=0.883, adj=0.745, (0 split)
##
##
                     to the right, agree=0.874, adj=0.723, (0 split)
         151 < 0.5
##
         238 < 148
                     to the left, agree=0.854, adj=0.681, (0 split)
##
## Node number 154: 14 observations
     predicted class=9
                        expected loss=0.5714286 P(node) =0.0005554453
##
##
                                                  5
       class counts:
                         0
                               0
                                     0
                                            1
                                                        0
                                                                    0
                                                                          2
6
##
      probabilities: 0.000 0.000 0.000 0.071 0.357 0.000 0.000 0.000 0.143
0.429
##
## Node number 155: 42 observations,
                                        complexity param=4.465482e-05
     predicted class=8
                        expected loss=0.1666667 P(node) =0.001666336
                                                        1
##
       class counts:
                         1
                               0
                                     1
                                            1
                                                  0
                                                              3
                                                                         35
0
      probabilities: 0.024 0.000 0.024 0.024 0.000 0.024 0.071 0.000 0.833
##
0.000
##
     left son=310 (7 obs) right son=311 (35 obs)
##
     Primary splits:
##
         356 < 118.5 to the right, improve=3.838095, (0 missing)
                     to the right, improve=3.838095, (0 missing)
##
         384 < 122
         383 < 91
                     to the right, improve=3.386310, (0 missing)
##
         602 < 204.5 to the right, improve=3.386310, (0 missing)
##
##
                     to the left, improve=3.266667, (0 missing)
         374 < 24
##
     Surrogate splits:
         384 < 129.5 to the right, agree=0.976, adj=0.857, (0 split)
##
##
                     to the right, agree=0.952, adj=0.714, (0 split)
##
         328 < 247.5 to the right, agree=0.929, adj=0.571, (0 split)
##
         383 < 252.5 to the right, agree=0.929, adj=0.571, (0 split)
##
         385 < 99.5 to the right, agree=0.929, adj=0.571, (0 split)
##
## Node number 156: 80 observations,
                                         complexity param=0.0002976988
##
     predicted class=8
                        expected loss=0.4875
                                             P(node) =0.003173973
##
       class counts:
                         0
                              13
                                     1
                                            6
                                                  4
                                                        1
                                                                         41
6
##
      probabilities: 0.000 0.163 0.013 0.075 0.050 0.013 0.000 0.100 0.513
```

```
0.075
     left son=312 (35 obs) right son=313 (45 obs)
##
##
     Primary splits:
##
         294 < 148.5 to the right, improve=8.124603, (0 missing)
##
         298 < 9
                     to the left,
                                   improve=8.043407, (0 missing)
##
         297 < 11.5 to the left,
                                   improve=7.834584, (0 missing)
                     to the left, improve=7.771429, (0 missing)
##
         213 < 15
         322 < 134.5 to the right, improve=7.548997, (0 missing)
##
##
     Surrogate splits:
##
         322 < 184
                     to the right, agree=0.938, adj=0.857, (0 split)
##
         293 < 176
                     to the right, agree=0.900, adj=0.771, (0 split)
         266 < 233.5 to the right, agree=0.887, adj=0.743, (0 split)
##
##
         185 < 20.5 to the left, agree=0.838, adj=0.629, (0 split)
##
         295 < 241.5 to the right, agree=0.825, adj=0.600, (0 split)
##
## Node number 157: 44 observations,
                                        complexity param=0.000379566
     predicted class=9
                        expected loss=0.5227273 P(node) =0.001745685
##
       class counts:
                         1
                               0
                                     0
                                          10
                                                  3
                                                        1
                                                                    4
                                                                          4
21
##
      probabilities: 0.023 0.000 0.000 0.227 0.068 0.023 0.000 0.091 0.091
0.477
##
     left son=314 (18 obs) right son=315 (26 obs)
##
     Primary splits:
##
         206 < 125
                     to the right, improve=9.240093, (0 missing)
##
         318 < 153
                     to the left, improve=8.282828, (0 missing)
         551 < 16.5 to the right, improve=7.761461, (0 missing)
##
##
         627 < 221
                     to the right, improve=7.698701, (0 missing)
         178 < 7
                     to the right, improve=7.584416, (0 missing)
##
##
     Surrogate splits:
##
         178 < 7
                     to the right, agree=0.955, adj=0.889, (0 split)
##
         205 < 11
                     to the right, agree=0.932, adj=0.833, (0 split)
##
         207 < 207.5 to the right, agree=0.932, adj=0.833, (0 split)
##
         179 < 4.5
                     to the right, agree=0.909, adj=0.778, (0 split)
##
         634 < 17
                     to the right, agree=0.909, adj=0.778, (0 split)
##
## Node number 158: 19 observations
##
     predicted class=7
                        expected loss=0.6842105 P(node) =0.0007538187
##
       class counts:
                         2
                               0
                                     1
                                            4
                                                  1
                                                        3
                                                                          2
                                                              0
                                                                    6
0
      probabilities: 0.105 0.000 0.053 0.211 0.053 0.158 0.000 0.316 0.105
##
0.000
##
## Node number 159: 355 observations,
                                         complexity param=0.0001339645
     predicted class=8 expected loss=0.08169014 P(node) =0.01408451
##
##
       class counts:
                         1
                               1
                                     1
                                            4
                                                 10
                                                              2
                                                                        326
3
##
      probabilities: 0.003 0.003 0.003 0.011 0.028 0.006 0.006 0.014 0.918
0.008
##
     left son=318 (7 obs) right son=319 (348 obs)
##
     Primary splits:
```

```
461 < 43.5 to the left.
                                    improve=7.981241, (0 missing)
##
##
         573 < 252.5 to the right, improve=7.465913, (0 missing)
##
         183 < 25
                     to the left,
                                    improve=7.381929, (0 missing)
         433 < 19.5
                     to the left,
##
                                    improve=7.071051, (0 missing)
##
         182 < 7.5
                     to the left,
                                    improve=5.869188, (0 missing)
##
     Surrogate splits:
         433 < 6.5
##
                                    agree=0.989, adj=0.429, (0 split)
                     to the left,
                     to the right, agree=0.983, adj=0.143, (0 split)
##
         369 < 39
                     to the left,
                                    agree=0.983, adj=0.143, (0 split)
##
         406 < 2
##
## Node number 160: 64 observations,
                                         complexity param=0.0007368045
                        expected loss=0.484375 P(node) =0.002539179
##
     predicted class=1
##
       class counts:
                         0
                               33
                                      3
                                           20
                                                  0
                                                        1
                                                              0
                                                                     5
                                                                           2
0
##
      probabilities: 0.000 0.516 0.047 0.312 0.000 0.016 0.000 0.078 0.031
0.000
##
     left son=320 (39 obs) right son=321 (25 obs)
##
     Primary splits:
         297 < 26.5 to the left,
                                    improve=20.92705, (0 missing)
##
##
         270 < 9
                     to the left,
                                    improve=19.81591, (0 missing)
##
         242 < 18.5
                     to the left,
                                    improve=19.48048, (0 missing)
##
         656 < 6.5
                     to the left,
                                    improve=19.39167, (0 missing)
##
         325 < 3
                     to the left,
                                    improve=19.30833, (0 missing)
##
     Surrogate splits:
##
         325 < 3
                     to the left,
                                    agree=0.984, adj=0.96, (0 split)
##
         324 < 174
                     to the left,
                                    agree=0.969, adj=0.92, (0 split)
##
                                    agree=0.953, adj=0.88, (0 split)
         269 < 11
                     to the left,
         184 < 2.5
                                    agree=0.938, adj=0.84, (0 split)
##
                     to the left,
##
         213 < 3
                     to the left,
                                    agree=0.938, adj=0.84, (0 split)
##
## Node number 161: 1438 observations,
                                           complexity param=0.0002456015
##
     predicted class=3
                        expected loss=0.05841446
                                                  P(node) =0.05705217
##
       class counts:
                         0
                               8
                                     10
                                        1354
                                                       38
                                                              0
                                                                     2
                                                                          21
5
##
      probabilities: 0.000 0.006 0.007 0.942 0.000 0.026 0.000 0.001 0.015
0.003
##
     left son=322 (1393 obs) right son=323 (45 obs)
##
     Primary splits:
##
         264 < 244.5 to the left,
                                    improve=20.42218, (0 missing)
                                    improve=17.95148, (0 missing)
##
         296 < 1
                     to the right,
##
         487 < 140.5 to the left,
                                    improve=17.62124, (0 missing)
##
         317 < 206
                     to the left,
                                    improve=17.03519, (0 missing)
##
         292 < 248.5 to the left,
                                    improve=16.23283, (0 missing)
##
     Surrogate splits:
##
         291 < 224
                                    agree=0.973, adj=0.133, (0 split)
                     to the left,
##
         263 < 251
                     to the left,
                                    agree=0.971, adj=0.089, (0 split)
##
         292 < 254.5 to the left,
                                    agree=0.971, adj=0.067, (0 split)
##
                                    agree=0.970, adj=0.044, (0 split)
         265 < 254.5 to the left,
##
         247 < 220.5 to the left,
                                    agree=0.969, adj=0.022, (0 split)
##
```

```
## Node number 162: 78 observations,
                                       complexity param=4.465482e-05
##
     predicted class=5
                        expected loss=0.2179487 P(node) =0.003094624
##
       class counts:
                         1
                               0
                                      0
                                            3
                                                  4
                                                       61
                                                                           4
5
##
      probabilities: 0.013 0.000 0.000 0.038 0.051 0.782 0.000 0.000 0.051
0.064
##
     left son=324 (62 obs) right son=325 (16 obs)
##
     Primary splits:
##
         300 < 6
                     to the left,
                                    improve=7.859285, (0 missing)
##
         547 < 15
                     to the left,
                                    improve=7.030100, (0 missing)
##
         492 < 100.5 to the left,
                                    improve=6.972129, (0 missing)
                                    improve=6.699389, (0 missing)
##
         299 < 13.5
                     to the left,
##
         520 < 4
                     to the right, improve=6.567512, (0 missing)
##
     Surrogate splits:
##
         299 < 13.5
                     to the left,
                                    agree=0.962, adj=0.813, (0 split)
                                    agree=0.936, adj=0.688, (0 split)
##
         301 < 4.5
                     to the left,
                                    agree=0.910, adj=0.562, (0 split)
##
         272 < 97.5
                     to the left,
                     to the left,
##
         302 < 2
                                    agree=0.910, adj=0.562, (0 split)
                                    agree=0.897, adj=0.500, (0 split)
##
         273 < 84
                     to the left,
##
## Node number 163: 46 observations,
                                         complexity param=0.000491203
##
     predicted class=9
                        expected loss=0.6304348 P(node) =0.001825035
##
       class counts:
                               0
                                           15
                                                  1
                                                        5
                         2
                                                              2
                                                                           4
17
      probabilities: 0.043 0.000 0.000 0.326 0.022 0.109 0.043 0.000 0.087
##
0.370
##
     left son=326 (25 obs) right son=327 (21 obs)
##
     Primary splits:
##
         493 < 1
                                   improve=8.093416, (0 missing)
                     to the left,
##
         497 < 1
                     to the right, improve=7.992977, (0 missing)
##
         624 < 3.5
                     to the right, improve=7.076765, (0 missing)
##
         525 < 32.5
                     to the right, improve=6.866115, (0 missing)
##
         372 < 24.5 to the left,
                                   improve=6.768542, (0 missing)
##
     Surrogate splits:
##
         465 < 14.5 to the left,
                                   agree=0.891, adj=0.762, (0 split)
         492 < 7.5
                     to the left,
                                   agree=0.848, adj=0.667, (0 split)
##
                                    agree=0.848, adj=0.667, (0 split)
##
         494 < 168.5 to the left,
##
         520 < 14.5 to the left,
                                    agree=0.848, adj=0.667, (0 split)
##
         437 < 115.5 to the left,
                                    agree=0.826, adj=0.619, (0 split)
##
## Node number 164: 261 observations,
                                          complexity param=0.000379566
##
     predicted class=3
                        expected loss=0.1954023 P(node) =0.01035509
##
       class counts:
                         7
                               4
                                          210
                                                       23
                                                              3
                                                                           5
1
      probabilities: 0.027 0.015 0.019 0.805 0.000 0.088 0.011 0.011 0.019
##
0.004
##
     left son=328 (202 obs) right son=329 (59 obs)
##
     Primary splits:
##
         155 < 3
                     to the right, improve=20.26569, (0 missing)
##
         154 < 1.5 to the right, improve=17.63843, (0 missing)
```

```
to the right, improve=17.55721, (0 missing)
##
         156 < 0.5
##
                                   improve=16.22994, (0 missing)
         275 < 55
                     to the left,
                                   improve=15.23607, (0 missing)
##
         220 < 4.5
                     to the left,
##
     Surrogate splits:
##
         156 < 7.5
                     to the right, agree=0.943, adj=0.746, (0 split)
##
         154 < 1.5
                     to the right, agree=0.927, adj=0.678, (0 split)
##
                     to the right, agree=0.866, adj=0.407, (0 split)
         157 < 3
                     to the right, agree=0.858, adj=0.373, (0 split)
         184 < 14.5
##
         219 < 3.5
                     to the left, agree=0.839, adj=0.288, (0 split)
##
##
## Node number 165: 156 observations,
                                          complexity param=0.0008037867
                        expected loss=0.3846154 P(node) =0.006189248
##
     predicted class=5
##
       class counts:
                        19
                               0
                                      0
                                           25
                                                  0
                                                       96
                                                              5
                                                                    1
                                                                           7
3
##
      probabilities: 0.122 0.000 0.000 0.160 0.000 0.615 0.032 0.006 0.045
0.019
##
     left son=330 (25 obs) right son=331 (131 obs)
##
     Primary splits:
##
         456 < 235.5 to the right, improve=22.99540, (0 missing)
##
                     to the right, improve=22.37895, (0 missing)
##
                     to the right, improve=21.66617, (0 missing)
         457 < 132
         429 < 252.5 to the right, improve=20.38718, (0 missing)
##
##
         328 < 56.5 to the right, improve=20.05636, (0 missing)
##
     Surrogate splits:
##
         429 < 252.5 to the right, agree=0.968, adj=0.80, (0 split)
##
         457 < 132
                     to the right, agree=0.962, adj=0.76, (0 split)
         484 < 209.5 to the right, agree=0.949, adj=0.68, (0 split)
##
                     to the right, agree=0.936, adj=0.60, (0 split)
##
         428 < 174
##
         455 < 73
                     to the right, agree=0.929, adj=0.56, (0 split)
##
## Node number 166: 104 observations,
                                          complexity param=0.0001786193
     predicted class=1
                        expected loss=0.2307692 P(node) =0.004126165
##
##
       class counts:
                              80
                                                  1
                                                        5
                                                              1
                                                                    7
                                                                           3
3
##
      probabilities: 0.000 0.769 0.000 0.038 0.010 0.048 0.010 0.067 0.029
0.029
##
     left son=332 (85 obs) right son=333 (19 obs)
##
     Primary splits:
         462 < 85.5
##
                    to the right, improve=14.67072, (0 missing)
                     to the right, improve=14.49487, (0 missing)
##
         266 < 63.5
##
         325 < 4
                     to the left, improve=13.46066, (0 missing)
                     to the right, improve=13.14803, (0 missing)
         294 < 73
##
##
         297 < 2
                     to the left, improve=13.10839, (0 missing)
##
     Surrogate splits:
##
         434 < 57
                     to the right, agree=0.952, adj=0.737, (0 split)
##
         490 < 21
                     to the right, agree=0.933, adj=0.632, (0 split)
##
         294 < 66
                     to the right, agree=0.923, adj=0.579, (0 split)
##
                     to the right, agree=0.923, adj=0.579, (0 split)
         463 < 20
##
         491 < 71.5 to the right, agree=0.913, adj=0.526, (0 split)
##
```

```
## Node number 167: 171 observations,
                                        complexity param=0.001161025
                        expected loss=0.7192982 P(node) =0.006784368
##
     predicted class=5
                                                                         7
##
       class counts:
                         5
                               7
                                     1
                                          22
                                                30
                                                      48
                                                                  12
31
      probabilities: 0.029 0.041 0.006 0.129 0.175 0.281 0.047 0.070 0.041
##
0.181
##
     left son=334 (58 obs) right son=335 (113 obs)
##
     Primary splits:
##
         539 < 54.5 to the right, improve=25.08373, (0 missing)
                     to the right, improve=24.44883, (0 missing)
##
         570 < 79
##
         569 < 8
                     to the right, improve=23.88734, (0 missing)
                     to the right, improve=23.88416, (0 missing)
         540 < 57.5
##
##
         541 < 70
                     to the right, improve=23.88416, (0 missing)
##
     Surrogate splits:
##
         538 < 5.5
                     to the right, agree=0.977, adj=0.931, (0 split)
##
         540 < 31
                     to the right, agree=0.953, adj=0.862, (0 split)
##
         567 < 26.5 to the right, agree=0.953, adj=0.862, (0 split)
##
         568 < 74.5 to the right, agree=0.953, adj=0.862, (0 split)
         541 < 117.5 to the right, agree=0.936, adj=0.810, (0 split)
##
##
## Node number 168: 32 observations
##
     predicted class=0
                        expected loss=0.125 P(node) =0.001269589
##
       class counts:
                        28
                               0
                                                       0
                                                                   2
                                     0
                                           0
                                                 0
                                                             1
                                                                         1
0
      probabilities: 0.875 0.000 0.000 0.000 0.000 0.000 0.031 0.062 0.031
##
0.000
##
## Node number 169: 292 observations,
                                         complexity param=0.0007144771
     predicted class=3
                        expected loss=0.5034247
                                                 P(node) =0.011585
##
##
       class counts:
                         5
                               1
                                         145
                                                      69
                                                             2
                                                                   3
                                                                        37
                                     1
29
##
      probabilities: 0.017 0.003 0.003 0.497 0.000 0.236 0.007 0.010 0.127
0.099
##
     left son=338 (112 obs) right son=339 (180 obs)
##
     Primary splits:
##
                                   improve=21.19424, (0 missing)
         318 < 219.5 to the left,
                                   improve=19.16912, (0 missing)
##
         346 < 156.5 to the left,
##
         247 < 16.5 to the left,
                                   improve=19.12572, (0 missing)
                                   improve=18.26027, (0 missing)
##
         345 < 124.5 to the left,
                                   improve=16.79973, (0 missing)
##
         275 < 41
                     to the left,
##
     Surrogate splits:
##
         346 < 127.5 to the left,
                                   agree=0.877, adj=0.679, (0 split)
##
         317 < 22.5 to the left,
                                   agree=0.863, adj=0.643, (0 split)
                                   agree=0.856, adj=0.625, (0 split)
##
         319 < 108
                     to the left,
##
         345 < 5
                     to the left,
                                   agree=0.846, adj=0.598, (0 split)
##
         347 < 205
                     to the left,
                                   agree=0.822, adj=0.536, (0 split)
##
## Node number 170: 39 observations,
                                        complexity param=0.0001786193
##
     predicted class=0 expected loss=0.3846154 P(node) =0.001547312
       class counts: 24 0 0 3 1 1 0
```

```
5
##
      probabilities: 0.615 0.000 0.000 0.077 0.026 0.026 0.000 0.000 0.128
0.128
##
     left son=340 (23 obs) right son=341 (16 obs)
##
     Primary splits:
         293 < 187
                     to the right, improve=10.541670, (0 missing)
##
##
         381 < 28
                     to the left, improve=10.541670, (0 missing)
         409 < 144
##
                     to the left,
                                  improve= 9.820513, (0 missing)
         266 < 161.5 to the right, improve= 9.816667, (0 missing)
##
##
         294 < 42.5 to the right, improve= 9.550000, (0 missing)
##
     Surrogate splits:
         294 < 149
##
                     to the right, agree=0.949, adj=0.875, (0 split)
##
         381 < 28
                     to the left, agree=0.949, adj=0.875, (0 split)
##
         265 < 213
                     to the right, agree=0.923, adj=0.813, (0 split)
##
         266 < 161.5 to the right, agree=0.923, adj=0.813, (0 split)
##
         354 < 48
                     to the left, agree=0.923, adj=0.813, (0 split)
##
## Node number 171: 473 observations,
                                         complexity param=0.0007591319
##
     predicted class=5
                        expected loss=0.141649
                                                P(node) =0.01876612
##
       class counts:
                         2
                               0
                                          50
                                                 0
                                                     406
                                                              6
                                                                          6
3
      probabilities: 0.004 0.000 0.000 0.106 0.000 0.858 0.013 0.000 0.013
##
0.006
##
     left son=342 (33 obs) right son=343 (440 obs)
##
     Primary splits:
##
         295 < 219
                     to the right, improve=29.11258, (0 missing)
##
         294 < 176.5 to the right, improve=24.87470, (0 missing)
                     to the left, improve=24.12164, (0 missing)
##
         186 < 2.5
##
         262 < 12.5 to the left, improve=23.88677, (0 missing)
##
         187 < 1
                     to the left, improve=23.43563, (0 missing)
##
     Surrogate splits:
##
         296 < 117.5 to the right, agree=0.960, adj=0.424, (0 split)
##
         267 < 245.5 to the right, agree=0.958, adj=0.394, (0 split)
##
                     to the right, agree=0.953, adj=0.333, (0 split)
##
         294 < 251.5 to the right, agree=0.949, adj=0.273, (0 split)
##
         349 < 6
                     to the left, agree=0.934, adj=0.061, (0 split)
##
## Node number 172: 85 observations,
                                        complexity param=0.0001786193
##
     predicted class=4
                        expected loss=0.3176471 P(node) =0.003372347
                                           4
##
       class counts:
                         0
                               0
                                     0
                                                 58
                                                                    3
                                                                          1
8
##
      probabilities: 0.000 0.000 0.000 0.047 0.682 0.082 0.047 0.035 0.012
0.094
##
     left son=344 (70 obs) right son=345 (15 obs)
##
     Primary splits:
##
         266 < 36
                     to the left,
                                   improve=9.104762, (0 missing)
##
         405 < 10.5 to the right, improve=8.905141, (0 missing)
                     to the right, improve=8.366917, (0 missing)
##
         409 < 242
##
         238 < 13.5 to the left, improve=8.280590, (0 missing)
         492 < 31 to the right, improve=8.164593, (0 missing)
##
```

```
##
     Surrogate splits:
##
         265 < 131
                     to the left,
                                   agree=0.976, adj=0.867, (0 split)
                                   agree=0.965, adj=0.800, (0 split)
##
         238 < 4.5
                     to the left,
         237 < 151.5 to the left,
                                   agree=0.941, adj=0.667, (0 split)
##
##
         293 < 30
                     to the left,
                                   agree=0.929, adj=0.600, (0 split)
##
         267 < 208
                     to the left,
                                   agree=0.918, adj=0.533, (0 split)
##
## Node number 173: 79 observations,
                                        complexity param=0.0001786193
     predicted class=7
                        expected loss=0.2531646 P(node) =0.003134299
##
       class counts:
                         4
                               3
                                     0
                                           5
                                                 0
                                                       4
                                                                   59
                                                                          2
2
      probabilities: 0.051 0.038 0.000 0.063 0.000 0.051 0.000 0.747 0.025
##
0.025
##
     left son=346 (12 obs) right son=347 (67 obs)
##
     Primary splits:
##
         570 < 2
                     to the right, improve=10.616920, (0 missing)
                     to the right, improve=10.616920, (0 missing)
##
         571 < 64
##
         598 < 8
                     to the right, improve= 9.893048, (0 missing)
                     to the right, improve= 9.529412, (0 missing)
##
         542 < 28.5
##
         569 < 64
                     to the right, improve= 9.426087, (0 missing)
##
     Surrogate splits:
##
         571 < 64
                     to the right, agree=1.000, adj=1.000, (0 split)
##
         542 < 28.5
                    to the right, agree=0.987, adj=0.917, (0 split)
##
         598 < 8
                     to the right, agree=0.987, adj=0.917, (0 split)
##
         543 < 3
                     to the right, agree=0.975, adj=0.833, (0 split)
##
         569 < 64
                     to the right, agree=0.975, adj=0.833, (0 split)
##
## Node number 174: 100 observations,
                                         complexity param=0.0005805126
##
     predicted class=5
                        expected loss=0.56 P(node) =0.003967467
##
       class counts:
                         0
                               2
                                          16
                                                10
                                                      44
                                                                    2
                                                                          3
                                     0
                                                             3
20
##
      probabilities: 0.000 0.020 0.000 0.160 0.100 0.440 0.030 0.020 0.030
0.200
##
     left son=348 (63 obs) right son=349 (37 obs)
##
     Primary splits:
##
         295 < 99
                                   improve=13.37684, (0 missing)
                     to the left,
         491 < 144
                                   improve=11.90888, (0 missing)
##
                     to the left,
##
         186 < 5.5
                     to the right, improve=11.88813, (0 missing)
##
         294 < 203.5 to the right, improve=11.38746, (0 missing)
                                   improve=11.22879, (0 missing)
##
         296 < 3
                     to the left,
##
     Surrogate splits:
##
         296 < 3
                     to the left,
                                   agree=0.94, adj=0.838, (0 split)
##
         267 < 167.5 to the left,
                                   agree=0.91, adj=0.757, (0 split)
         294 < 127
##
                                   agree=0.90, adj=0.730, (0 split)
                     to the left,
##
         323 < 223
                     to the left,
                                   agree=0.90, adj=0.730, (0 split)
##
         266 < 231
                     to the left,
                                   agree=0.80, adj=0.459, (0 split)
##
## Node number 175: 257 observations,
                                         complexity param=0.0003572385
##
     predicted class=9 expected loss=0.1673152 P(node) =0.01019639
       class counts: 4 0 2 12 8 2
```

```
214
##
      probabilities: 0.016 0.000 0.008 0.047 0.031 0.008 0.000 0.039 0.019
0.833
##
     left son=350 (10 obs) right son=351 (247 obs)
##
     Primary splits:
                     to the right, improve=13.31189, (0 missing)
##
         680 < 29
##
         681 < 106.5 to the right, improve=11.82432, (0 missing)
         651 < 29.5 to the right, improve=11.66365, (0 missing)
##
                     to the right, improve=11.59529, (0 missing)
##
##
         652 < 184.5 to the right, improve=11.51373, (0 missing)
##
     Surrogate splits:
         681 < 106.5 to the right, agree=0.996, adj=0.9, (0 split)
##
         651 < 36
##
                     to the right, agree=0.992, adj=0.8, (0 split)
##
         679 < 0.5
                     to the right, agree=0.992, adj=0.8, (0 split)
##
         652 < 218.5 to the right, agree=0.988, adj=0.7, (0 split)
##
         682 < 243.5 to the right, agree=0.988, adj=0.7, (0 split)
##
## Node number 176: 60 observations
##
     predicted class=2 expected loss=0.08333333 P(node) =0.00238048
##
       class counts:
                         0
                               1
                                    55
                                           2
                                                 0
                                                       0
                                                              2
                                                                          0
0
      probabilities: 0.000 0.017 0.917 0.033 0.000 0.000 0.033 0.000 0.000
##
0.000
##
## Node number 177: 13 observations
##
     predicted class=8
                        expected loss=0.5384615 P(node) =0.0005157707
##
       class counts:
                         0
                               0
                                     2
                                                                          6
                                           3
0
##
      probabilities: 0.000 0.000 0.154 0.231 0.000 0.000 0.154 0.000 0.462
0.000
##
## Node number 178: 83 observations,
                                        complexity param=0.0004465482
##
     predicted class=8
                        expected loss=0.8072289 P(node) =0.003292997
       class counts:
##
                         9
                              14
                                    12
                                           3
                                                 9
                                                             10
                                                                         16
3
##
      probabilities: 0.108 0.169 0.145 0.036 0.108 0.084 0.120 0.000 0.193
0.036
##
     left son=356 (39 obs) right son=357 (44 obs)
##
     Primary splits:
         211 < 22.5 to the left,
##
                                   improve=8.254023, (0 missing)
##
         572 < 25.5 to the left,
                                   improve=7.771388, (0 missing)
##
         210 < 37.5
                     to the left,
                                   improve=7.755189, (0 missing)
##
         457 < 14.5
                     to the left,
                                   improve=7.718914, (0 missing)
##
         209 < 2
                     to the left,
                                   improve=7.624469, (0 missing)
##
     Surrogate splits:
##
         210 < 37.5 to the left,
                                   agree=0.940, adj=0.872, (0 split)
##
         237 < 20.5
                     to the left,
                                   agree=0.916, adj=0.821, (0 split)
##
         238 < 91
                     to the left,
                                   agree=0.916, adj=0.821, (0 split)
##
         209 < 0.5
                     to the left,
                                   agree=0.892, adj=0.769, (0 split)
##
         183 < 5 to the left, agree=0.880, adj=0.744, (0 split)
```

```
##
## Node number 179: 17 observations
##
     predicted class=9 expected loss=0.05882353 P(node) =0.0006744694
       class counts:
                               0
                                                       0
##
                         0
                                     0
                                           0
                                                             0
                                                                    0
                                                                          1
16
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0059
##
0.941
##
## Node number 180: 18 observations
##
     predicted class=2
                        expected loss=0.5 P(node) =0.000714144
##
       class counts:
                         1
                               5
                                     9
                                           0
                                                 0
                                                       2
                                                                          0
0
##
      probabilities: 0.056 0.278 0.500 0.000 0.000 0.111 0.056 0.000 0.000
0.000
##
## Node number 181: 23 observations,
                                        complexity param=0.0001786193
     predicted class=9
                        expected loss=0.6956522 P(node) =0.0009125174
##
       class counts:
                         1
                               0
                                     0
                                           3
                                                 5
                                                              3
                                                                    0
                                                                          2
                                                       2
7
##
      probabilities: 0.043 0.000 0.000 0.130 0.217 0.087 0.130 0.000 0.087
0.304
##
     left son=362 (13 obs) right son=363 (10 obs)
##
     Primary splits:
##
         428 < 201
                     to the left,
                                   improve=3.808696, (0 missing)
                                   improve=3.701003, (0 missing)
##
         208 < 74.5 to the left,
         319 < 94.5 to the right, improve=3.320817, (0 missing)
##
                                   improve=3.305665, (0 missing)
##
         344 < 48.5
                     to the left,
                     to the right, improve=3.301003, (0 missing)
         347 < 112
##
##
     Surrogate splits:
##
         371 < 5.5
                     to the left, agree=0.957, adj=0.9, (0 split)
##
         400 < 78
                     to the left,
                                   agree=0.957, adj=0.9, (0 split)
##
         316 < 4.5
                     to the left,
                                   agree=0.913, adj=0.8, (0 split)
##
         343 < 51
                     to the left,
                                   agree=0.913, adj=0.8, (0 split)
##
         344 < 15.5 to the left, agree=0.913, adj=0.8, (0 split)
##
## Node number 182: 16 observations
##
     predicted class=2
                        expected loss=0.1875 P(node) =0.0006347947
##
       class counts:
                         0
                               0
                                    13
                                           0
                                                 0
                                                       0
                                                              3
                                                                          0
0
      probabilities: 0.000 0.000 0.813 0.000 0.000 0.000 0.188 0.000 0.000
##
0.000
##
## Node number 183: 193 observations,
                                         complexity param=0.0002009467
     predicted class=6 expected loss=0.1502591 P(node) =0.007657211
##
##
       class counts:
                         2
                               0
                                     7
                                           4
                                                      12
                                                           164
                                                                          4
0
##
      probabilities: 0.010 0.000 0.036 0.021 0.000 0.062 0.850 0.000 0.021
0.000
##
     left son=366 (21 obs) right son=367 (172 obs)
##
     Primary splits:
```

```
to the left.
                                   improve=9.612658, (0 missing)
##
         431 < 1
##
         430 < 9.5
                     to the left,
                                   improve=8.260657, (0 missing)
##
         245 < 23
                     to the right, improve=7.806778, (0 missing)
                     to the left,
         459 < 15
                                   improve=7.540244, (0 missing)
##
                     to the right, improve=7.168708, (0 missing)
##
         272 < 65
##
     Surrogate splits:
##
         404 < 3.5
                     to the left,
                                   agree=0.964, adj=0.667, (0 split)
                                   agree=0.953, adj=0.571, (0 split)
##
         403 < 4.5
                     to the left,
                                   agree=0.943, adj=0.476, (0 split)
##
         459 < 4
                     to the left,
                                   agree=0.933, adj=0.381, (0 split)
##
         458 < 1.5
                     to the left,
##
         376 < 1.5
                     to the left,
                                   agree=0.922, adj=0.286, (0 split)
##
## Node number 186: 40 observations,
                                        complexity param=0.0002083892
##
     predicted class=5 expected loss=0.675 P(node) =0.001586987
##
       class counts:
                         7
                                           5
                                                       13
                                                             3
                                                                    0
                                                                         12
0
##
      probabilities: 0.175 0.000 0.000 0.125 0.000 0.325 0.075 0.000 0.300
0.000
##
     left son=372 (12 obs) right son=373 (28 obs)
##
     Primary splits:
##
         351 < 190
                     to the left,
                                   improve=4.528571, (0 missing)
         379 < 16
##
                     to the left,
                                   improve=4.407692, (0 missing)
##
         297 < 178
                     to the left,
                                   improve=3.880051, (0 missing)
##
         431 < 27.5 to the left,
                                   improve=3.766667, (0 missing)
                                   improve=3.684416, (0 missing)
##
         352 < 79.5 to the left,
##
     Surrogate splits:
##
         379 < 18.5 to the left,
                                   agree=0.950, adj=0.833, (0 split)
         352 < 111
                                   agree=0.900, adj=0.667, (0 split)
##
                     to the left,
##
         299 < 58
                     to the right, agree=0.825, adj=0.417, (0 split)
##
         350 < 199.5 to the left,
                                   agree=0.825, adj=0.417, (0 split)
##
         353 < 2.5
                     to the left,
                                   agree=0.825, adj=0.417, (0 split)
##
## Node number 187: 16 observations
##
     predicted class=2
                        expected loss=0.5
                                           P(node) = 0.0006347947
##
       class counts:
                         0
                               0
                                     8
                                           0
                                                 0
                                                                    0
                                                                          8
0
##
      probabilities: 0.000 0.000 0.500 0.000 0.000 0.000 0.000 0.500
0.000
##
## Node number 188: 27 observations,
                                        complexity param=0.0001786193
##
     predicted class=3
                        expected loss=0.2222222 P(node) =0.001071216
##
       class counts:
                         0
                                          21
                                                       1
                                                                          0
5
##
      probabilities: 0.000 0.000 0.000 0.778 0.000 0.037 0.000 0.000 0.000
0.185
##
     left son=376 (20 obs) right son=377 (7 obs)
##
     Primary splits:
##
                                   improve=6.560847, (0 missing)
         320 < 71.5 to the left,
##
         265 < 233.5 to the left,
                                   improve=5.453704, (0 missing)
##
         292 < 131.5 to the left, improve=5.453704, (0 missing)
```

```
to the left, improve=5.453704, (0 missing)
##
         319 < 74
##
                     to the right, improve=5.453704, (0 missing)
         653 < 6
##
     Surrogate splits:
##
         265 < 233.5 to the left,
                                   agree=0.963, adj=0.857, (0 split)
##
         292 < 131.5 to the left,
                                   agree=0.963, adj=0.857, (0 split)
##
         319 < 74
                     to the left,
                                   agree=0.963, adj=0.857, (0 split)
         183 < 146.5 to the right, agree=0.926, adj=0.714, (0 split)
##
         291 < 15.5 to the left, agree=0.926, adj=0.714, (0 split)
##
##
## Node number 189: 16 observations
##
     predicted class=8
                        expected loss=0.1875
                                             P(node) =0.0006347947
                         0
                                                       1
                                                                         13
##
       class counts:
                               0
                                     1
                                           1
                                                 0
0
##
      probabilities: 0.000 0.000 0.062 0.062 0.000 0.062 0.000 0.000 0.813
0.000
##
## Node number 190: 28 observations,
                                        complexity param=0.0002344378
     predicted class=3 expected loss=0.7142857 P(node) =0.001110891
##
##
       class counts:
                         6
                                     1
                                           8
                                                       6
                                                                          5
1
##
      probabilities: 0.214 0.000 0.036 0.286 0.000 0.214 0.036 0.000 0.179
0.036
##
     left son=380 (13 obs) right son=381 (15 obs)
##
     Primary splits:
##
         429 < 101.5 to the right, improve=5.722344, (0 missing)
         457 < 228.5 to the right, improve=5.722344, (0 missing)
##
         402 < 196.5 to the right, improve=5.684524, (0 missing)
##
         430 < 119.5 to the right, improve=5.684524, (0 missing)
##
##
         317 < 20.5 to the right, improve=5.559524, (0 missing)
##
     Surrogate splits:
##
         457 < 228.5 to the right, agree=1.000, adj=1.000, (0 split)
##
                    to the right, agree=0.964, adj=0.923, (0 split)
         402 < 196.5 to the right, agree=0.964, adj=0.923, (0 split)
##
         428 < 17.5 to the right, agree=0.964, adj=0.923, (0 split)
##
##
                     to the right, agree=0.964, adj=0.923, (0 split)
         430 < 53
##
## Node number 191: 402 observations,
                                         complexity param=0.0002344378
     predicted class=8
                        expected loss=0.141791 P(node) =0.01594922
##
##
       class counts:
                         2
                               0
                                    18
                                          15
                                                 0
                                                       7
                                                            11
                                                                        345
                                                                    1
3
##
      probabilities: 0.005 0.000 0.045 0.037 0.000 0.017 0.027 0.002 0.858
0.007
##
     left son=382 (57 obs) right son=383 (345 obs)
##
     Primary splits:
##
         436 < 7
                     to the left, improve=10.780420, (0 missing)
         439 < 250.5 to the right, improve= 9.744096, (0 missing)
##
##
         611 < 5.5
                     to the right, improve= 9.738585, (0 missing)
##
         435 < 44.5 to the left, improve= 9.566444, (0 missing)
##
         464 < 0.5
                     to the left, improve= 8.444042, (0 missing)
##
     Surrogate splits:
```

```
407 < 114.5 to the left, agree=0.876, adj=0.123, (0 split)
##
##
         408 < 0.5
                     to the left, agree=0.876, adj=0.123, (0 split)
                     to the right, agree=0.871, adj=0.088, (0 split)
##
         584 < 57
                     to the right, agree=0.871, adj=0.088, (0 split)
##
         611 < 5.5
##
         556 < 121.5 to the right, agree=0.868, adj=0.070, (0 split)
##
## Node number 192: 1955 observations,
                                          complexity param=0.0001786193
##
     predicted class=0 expected loss=0.03734015 P(node) =0.07756398
##
       class counts: 1882
                               0
                                    26
                                            7
                                                  1
                                                       16
                                                                          0
2
##
      probabilities: 0.963 0.000 0.013 0.004 0.001 0.008 0.009 0.002 0.000
0.001
     left son=384 (1623 obs) right son=385 (332 obs)
##
##
     Primary splits:
##
         400 < 3.5
                     to the right, improve=9.077685, (0 missing)
##
         427 < 0.5
                     to the right, improve=8.966215, (0 missing)
                     to the left, improve=8.723178, (0 missing)
##
         563 < 11.5
##
         455 < 1
                     to the right, improve=8.318778, (0 missing)
                     to the right, improve=8.285884, (0 missing)
##
         214 < 0.5
##
     Surrogate splits:
##
         428 < 1.5
                     to the right, agree=0.935, adj=0.614, (0 split)
##
         372 < 5.5
                     to the right, agree=0.912, adj=0.482, (0 split)
##
         345 < 3.5
                     to the right, agree=0.908, adj=0.458, (0 split)
##
         373 < 3.5
                     to the right, agree=0.881, adj=0.301, (0 split)
##
         456 < 0.5
                     to the right, agree=0.874, adj=0.256, (0 split)
##
## Node number 193: 18 observations
     predicted class=7
##
                        expected loss=0.6666667 P(node) =0.000714144
##
       class counts:
                         3
                                     4
                                                        3
                               0
                                            0
                                                  0
                                                              1
                                                                          1
0
##
      probabilities: 0.167 0.000 0.222 0.000 0.000 0.167 0.056 0.333 0.056
0.000
##
## Node number 194: 42 observations
     predicted class=0
                        expected loss=0.04761905 P(node) =0.001666336
##
       class counts:
                        40
                               0
                                                        1
                                                              0
                                                                    0
                                                                          0
                                     0
                                           1
                                                  0
0
##
      probabilities: 0.952 0.000 0.000 0.024 0.000 0.024 0.000 0.000 0.000
0.000
##
## Node number 195: 57 observations,
                                        complexity param=0.0004242208
##
     predicted class=5
                        expected loss=0.5789474 P(node) =0.002261456
##
       class counts:
                         5
                               0
                                     2
                                          23
                                                       24
                                                                          0
0
##
      probabilities: 0.088 0.000 0.035 0.404 0.000 0.421 0.053 0.000 0.000
0.000
##
     left son=390 (30 obs) right son=391 (27 obs)
##
     Primary splits:
##
         240 < 64.5 to the right, improve=11.117740, (0 missing)
         241 < 12 to the right, improve=10.379130, (0 missing)
##
```

```
to the left, improve= 9.593314, (0 missing)
##
##
         267 < 123.5 to the right, improve= 8.864035, (0 missing)
         239 < 11.5 to the right, improve= 8.677368, (0 missing)
##
##
     Surrogate splits:
##
         239 < 11.5 to the right, agree=0.930, adj=0.852, (0 split)
##
         241 < 1
                     to the right, agree=0.860, adj=0.704, (0 split)
##
                     to the right, agree=0.860, adj=0.704, (0 split)
         267 < 190
         212 < 148.5 to the right, agree=0.825, adj=0.630, (0 split)
##
                     to the right, agree=0.825, adj=0.630, (0 split)
##
         213 < 12
##
## Node number 196: 45 observations,
                                        complexity param=0.0001339645
##
     predicted class=0
                        expected loss=0.2 P(node) =0.00178536
##
       class counts:
                        36
                               0
                                     3
                                            0
                                                  1
                                                        2
                                                                          2
                                                                    0
1
##
      probabilities: 0.800 0.000 0.067 0.000 0.022 0.044 0.000 0.000 0.044
0.022
##
     left son=392 (38 obs) right son=393 (7 obs)
##
     Primary splits:
                                   improve=7.364244, (0 missing)
##
         378 < 76.5 to the left,
##
         379 < 201
                     to the left,
                                   improve=7.364244, (0 missing)
##
         405 < 14
                     to the left,
                                   improve=5.277778, (0 missing)
##
         406 < 24.5
                     to the left,
                                   improve=5.236424, (0 missing)
##
         432 < 88
                     to the left,
                                   improve=5.236424, (0 missing)
##
     Surrogate splits:
##
         379 < 201
                     to the left,
                                   agree=1.000, adj=1.000, (0 split)
                                   agree=0.978, adj=0.857, (0 split)
         405 < 125.5 to the left,
##
##
         406 < 128.5 to the left,
                                   agree=0.978, adj=0.857, (0 split)
                                   agree=0.956, adj=0.714, (0 split)
##
         377 < 107.5 to the left,
##
         380 < 252.5 to the left,
                                   agree=0.956, adj=0.714, (0 split)
##
## Node number 197: 39 observations,
                                        complexity param=0.0002679289
##
     predicted class=6
                        expected loss=0.4358974 P(node) =0.001547312
##
       class counts:
                         3
                               0
                                     3
                                            2
                                                        9
                                                             22
                                                                          0
0
##
      probabilities: 0.077 0.000 0.077 0.051 0.000 0.231 0.564 0.000 0.000
0.000
##
     left son=394 (13 obs) right son=395 (26 obs)
##
     Primary splits:
                     to the right, improve=8.025641, (0 missing)
##
         325 < 145
         324 < 49.5 to the right, improve=7.632051, (0 missing)
##
##
         408 < 15.5
                     to the left, improve=6.932414, (0 missing)
         296 < 67.5 to the right, improve=6.494172, (0 missing)
##
##
         323 < 134.5 to the right, improve=6.370940, (0 missing)
##
     Surrogate splits:
##
         297 < 4.5
                     to the right, agree=0.949, adj=0.846, (0 split)
##
         324 < 49.5 to the right, agree=0.949, adj=0.846, (0 split)
##
         296 < 71
                     to the right, agree=0.923, adj=0.769, (0 split)
##
                     to the left, agree=0.872, adj=0.615, (0 split)
         401 < 4
##
         323 < 134.5 to the right, agree=0.846, adj=0.538, (0 split)
##
```

```
## Node number 198: 65 observations, complexity param=0.0003125837
##
     predicted class=3
                        expected loss=0.5230769 P(node) =0.002578853
##
       class counts:
                         3
                               1
                                    10
                                          31
                                                      14
                                                                   2
                                                                          1
0
      probabilities: 0.046 0.015 0.154 0.477 0.000 0.215 0.046 0.031 0.015
##
0.000
##
     left son=396 (55 obs) right son=397 (10 obs)
##
     Primary splits:
##
         287 < 38.5 to the left,
                                   improve=6.146853, (0 missing)
                     to the right, improve=6.090287, (0 missing)
##
         485 < 9.5
##
         322 < 21.5
                     to the left,
                                   improve=5.958974, (0 missing)
                                   improve=5.746089, (0 missing)
         571 < 198
##
                     to the left,
##
         514 < 4
                     to the right, improve=5.712476, (0 missing)
##
     Surrogate splits:
##
         288 < 180
                     to the left,
                                   agree=0.969, adj=0.8, (0 split)
                     to the left,
##
                                   agree=0.954, adj=0.7, (0 split)
         315 < 3
##
         260 < 171.5 to the left,
                                   agree=0.938, adj=0.6, (0 split)
##
                     to the left,
                                   agree=0.938, adj=0.6, (0 split)
         342 < 13
                                   agree=0.923, adj=0.5, (0 split)
##
         371 < 71
                     to the left,
##
## Node number 199: 74 observations,
                                        complexity param=8.930964e-05
##
     predicted class=5
                        expected loss=0.2972973 P(node) =0.002935925
##
       class counts:
                         4
                               0
                                     1
                                          11
                                                      52
                                                             1
                                                                          2
3
      probabilities: 0.054 0.000 0.014 0.149 0.000 0.703 0.014 0.000 0.027
##
0.041
##
     left son=398 (21 obs) right son=399 (53 obs)
##
     Primary splits:
##
         326 < 3.5
                     to the right, improve=6.206843, (0 missing)
##
         268 < 27
                     to the right, improve=5.378133, (0 missing)
                     to the right, improve=5.135544, (0 missing)
##
         296 < 187
##
         297 < 226
                     to the right, improve=4.935708, (0 missing)
##
         459 < 155.5 to the right, improve=4.910736, (0 missing)
##
     Surrogate splits:
##
         325 < 35.5 to the right, agree=0.905, adj=0.667, (0 split)
                     to the right, agree=0.905, adj=0.667, (0 split)
##
         353 < 237
         354 < 73.5
                     to the right, agree=0.905, adj=0.667, (0 split)
##
##
         324 < 2.5
                     to the right, agree=0.851, adj=0.476, (0 split)
##
         408 < 61
                     to the left, agree=0.851, adj=0.476, (0 split)
##
## Node number 200: 169 observations
##
     predicted class=2
                        expected loss=0.04142012 P(node) =0.006705019
##
       class counts:
                                   162
                                           2
                                                 1
                                                             1
                                                                   3
                                                                          0
0
      probabilities: 0.000 0.000 0.959 0.012 0.006 0.000 0.006 0.018 0.000
##
0.000
##
## Node number 201: 23 observations,
                                        complexity param=8.930964e-05
     predicted class=2 expected loss=0.6956522 P(node) =0.0009125174
       class counts: 0 5 7 4 0 2
```

```
0
##
      probabilities: 0.000 0.217 0.304 0.174 0.000 0.087 0.000 0.000 0.217
0.000
##
     left son=402 (11 obs) right son=403 (12 obs)
##
     Primary splits:
         351 < 171.5 to the right, improve=4.204875, (0 missing)
##
##
         546 < 103.5 to the left, improve=4.143547, (0 missing)
         598 < 244.5 to the right, improve=3.986801, (0 missing)
##
                     to the right, improve=3.759420, (0 missing)
##
##
         125 < 111
                     to the right, improve=3.759420, (0 missing)
##
     Surrogate splits:
                     to the left, agree=0.957, adj=0.909, (0 split)
##
         518 < 13
         209 < 4.5
##
                     to the left, agree=0.913, adj=0.818, (0 split)
##
         324 < 159.5 to the right, agree=0.913, adj=0.818, (0 split)
         378 < 164.5 to the right, agree=0.913, adj=0.818, (0 split)
##
##
         517 < 22
                     to the left, agree=0.913, adj=0.818, (0 split)
##
## Node number 202: 17 observations
##
     predicted class=0 expected loss=0.5882353 P(node) =0.0006744694
##
       class counts:
                         7
                               0
                                     1
                                            0
                                                  1
                                                        0
                                                              5
                                                                    0
                                                                          1
2
      probabilities: 0.412 0.000 0.059 0.000 0.059 0.000 0.294 0.000 0.059
##
0.118
##
## Node number 203: 9 observations
##
     predicted class=5 expected loss=0.1111111 P(node) =0.000357072
##
       class counts:
                         0
                               0
                                                              1
                                                                          0
                                     0
                                            0
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.889 0.111 0.000 0.000
0.000
##
## Node number 204: 64 observations
##
     predicted class=0
                        expected loss=0.046875
                                                P(node) =0.002539179
##
       class counts:
                        61
                                     1
                                            0
                                                 0
                                                              0
                                                                          1
0
##
      probabilities: 0.953 0.000 0.016 0.000 0.000 0.000 0.000 0.016 0.016
0.000
##
## Node number 205: 9 observations
     predicted class=6 expected loss=0.4444444 P(node) =0.000357072
##
##
       class counts:
                         3
                               0
                                     0
                                                        0
                                                              5
                                                                    0
                                                                          0
1
      probabilities: 0.333 0.000 0.000 0.000 0.000 0.000 0.556 0.000 0.000
##
0.111
##
## Node number 206: 64 observations,
                                        complexity param=0.0002976988
##
     predicted class=6
                        expected loss=0.640625
                                               P(node) =0.002539179
##
       class counts:
                                                                         12
                         5
                               0
                                     9
                                                  1
                                                       10
                                                             23
0
##
      probabilities: 0.078 0.000 0.141 0.062 0.016 0.156 0.359 0.000 0.188
```

```
0.000
     left son=412 (44 obs) right son=413 (20 obs)
##
##
     Primary splits:
##
         131 < 89
                                    improve=9.009091, (0 missing)
                     to the left,
##
         132 < 19.5 to the left,
                                    improve=8.963636, (0 missing)
##
         432 < 229.5 to the left,
                                    improve=8.156725, (0 missing)
                                    improve=8.133333, (0 missing)
##
         103 < 9.5
                     to the left,
         682 < 20.5 to the left,
##
                                    improve=7.714286, (0 missing)
##
     Surrogate splits:
##
         132 < 19.5 to the left,
                                    agree=0.938, adj=0.80, (0 split)
                     to the left,
##
         103 < 49
                                   agree=0.891, adj=0.65, (0 split)
         130 < 157
                     to the left,
                                   agree=0.891, adj=0.65, (0 split)
##
         104 < 8
##
                     to the left,
                                    agree=0.875, adj=0.60, (0 split)
##
         159 < 210
                     to the left,
                                   agree=0.859, adj=0.55, (0 split)
##
## Node number 207: 87 observations
     predicted class=5
                        expected loss=0.09195402 P(node) =0.003451696
                                                       79
##
       class counts:
                         1
                               0
                                      1
                                                                    0
                                                                           5
                                                              1
0
##
      probabilities: 0.011 0.000 0.011 0.000 0.000 0.908 0.011 0.000 0.057
0.000
##
## Node number 208: 93 observations,
                                         complexity param=4.465482e-05
     predicted class=0
                        expected loss=0.1397849 P(node) =0.003689744
##
##
       class counts:
                        80
                               0
                                      3
                                            1
                                                  0
                                                        2
                                                              2
                                                                    2
                                                                           1
2
##
      probabilities: 0.860 0.000 0.032 0.011 0.000 0.022 0.022 0.022 0.011
0.022
##
     left son=416 (86 obs) right son=417 (7 obs)
##
     Primary splits:
         322 < 103
##
                     to the left,
                                    improve=5.184832, (0 missing)
##
         350 < 6
                     to the left,
                                    improve=5.161576, (0 missing)
##
         294 < 236
                     to the left,
                                   improve=4.098355, (0 missing)
##
         263 < 9.5
                     to the right, improve=3.316716, (0 missing)
##
         600 < 172
                     to the right, improve=2.993843, (0 missing)
##
     Surrogate splits:
         294 < 236
##
                     to the left,
                                   agree=0.968, adj=0.571, (0 split)
##
         350 < 6
                     to the left,
                                   agree=0.957, adj=0.429, (0 split)
##
         321 < 252.5 to the left,
                                   agree=0.946, adj=0.286, (0 split)
                                   agree=0.946, adj=0.286, (0 split)
##
         323 < 144
                     to the left,
##
         349 < 215.5 to the left,
                                   agree=0.946, adj=0.286, (0 split)
##
## Node number 209: 58 observations,
                                         complexity param=0.0004018934
##
     predicted class=2
                        expected loss=0.7758621 P(node) =0.002301131
##
       class counts:
                        10
                                     13
                                            2
                                                       12
                                                                           1
                               0
                                                  3
                                                              3
13
##
      probabilities: 0.172 0.000 0.224 0.034 0.052 0.207 0.052 0.017 0.017
0.224
##
     left son=418 (25 obs) right son=419 (33 obs)
##
     Primary splits:
```

```
improve=9.008694, (0 missing)
##
         438 < 23.5
                     to the left,
##
         443 < 22
                     to the right, improve=7.751724, (0 missing)
##
         494 < 2
                     to the right, improve=7.646461, (0 missing)
         466 < 25.5
                     to the left,
                                   improve=7.511320, (0 missing)
##
##
         411 < 9
                     to the left,
                                   improve=7.316573, (0 missing)
##
     Surrogate splits:
##
         410 < 5
                     to the left,
                                   agree=0.948, adj=0.88, (0 split)
         411 < 22.5 to the left,
                                   agree=0.948, adj=0.88, (0 split)
##
                     to the left,
##
         437 < 1.5
                                   agree=0.914, adj=0.80, (0 split)
##
         466 < 25.5
                     to the left,
                                   agree=0.914, adj=0.80, (0 split)
##
         439 < 39
                     to the left,
                                   agree=0.897, adj=0.76, (0 split)
##
## Node number 210: 15 observations
##
     predicted class=0 expected loss=0.5333333
                                                 P(node) =0.00059512
##
       class counts:
                                                 2
                                                        0
                         7
                               0
                                     3
                                           0
                                                              1
                                                                          1
1
##
      probabilities: 0.467 0.000 0.200 0.000 0.133 0.000 0.067 0.000 0.067
0.067
##
## Node number 211: 143 observations,
                                         complexity param=8.930964e-05
                        expected loss=0.1818182 P(node) =0.005673477
     predicted class=6
##
##
       class counts:
                         2
                               1
                                    11
                                           3
                                                 4
                                                       5
                                                            117
                                                                          0
0
##
      probabilities: 0.014 0.007 0.077 0.021 0.028 0.035 0.818 0.000 0.000
0.000
##
     left son=422 (15 obs) right son=423 (128 obs)
##
     Primary splits:
##
         322 < 99.5 to the right, improve=9.768000, (0 missing)
##
         295 < 31
                     to the right, improve=7.841958, (0 missing)
         554 < 252.5 to the right, improve=7.336076, (0 missing)
##
                     to the right, improve=7.176412, (0 missing)
##
         323 < 122
##
         149 < 21
                     to the right, improve=7.004282, (0 missing)
##
     Surrogate splits:
##
         295 < 31
                     to the right, agree=0.958, adj=0.600, (0 split)
##
         294 < 202
                     to the right, agree=0.951, adj=0.533, (0 split)
         349 < 212.5 to the right, agree=0.951, adj=0.533, (0 split)
##
                     to the right, agree=0.944, adj=0.467, (0 split)
##
         323 < 40
##
         324 < 114.5 to the right, agree=0.930, adj=0.333, (0 split)
##
## Node number 212: 103 observations,
                                         complexity param=4.465482e-05
##
     predicted class=4 expected loss=0.1067961 P(node) =0.004086491
##
       class counts:
                         1
                                     3
                                                92
2
##
      probabilities: 0.010 0.000 0.029 0.000 0.893 0.000 0.049 0.000 0.000
0.019
##
     left son=424 (7 obs) right son=425 (96 obs)
##
     Primary splits:
         125 < 149.5 to the right, improve=4.396007, (0 missing)
##
##
         126 < 128 to the right, improve=4.396007, (0 missing)
##
         415 < 65 to the left, improve=3.184236, (0 missing)
```

```
to the right, improve=2.952554, (0 missing)
##
         128 < 2
                     to the right, improve=2.952554, (0 missing)
##
         155 < 6.5
##
     Surrogate splits:
                     to the right, agree=0.981, adj=0.714, (0 split)
##
         126 < 128
##
         97 < 67.5 to the right, agree=0.971, adj=0.571, (0 split)
##
         98 < 33
                     to the right, agree=0.971, adj=0.571, (0 split)
         127 < 70.5
##
                     to the right, agree=0.961, adj=0.429, (0 split)
                     to the right, agree=0.961, adj=0.429, (0 split)
##
         155 < 64.5
##
## Node number 213: 16 observations
##
     predicted class=7
                        expected loss=0.625 P(node) =0.0006347947
                                                        3
##
       class counts:
                         1
                               0
                                     3
                                            0
                                                  0
                                                                    6
                                                                          0
3
##
      probabilities: 0.062 0.000 0.188 0.000 0.000 0.188 0.000 0.375 0.000
0.188
##
## Node number 214: 69 observations,
                                        complexity param=0.000111637
##
     predicted class=5
                        expected loss=0.4492754 P(node) =0.002737552
##
       class counts:
                         6
                                     5
                                            5
                                                  1
                                                       38
                                                                          1
5
##
      probabilities: 0.087 0.000 0.072 0.072 0.014 0.551 0.058 0.058 0.014
0.072
##
     left son=428 (35 obs) right son=429 (34 obs)
##
     Primary splits:
##
         218 < 1.5
                     to the right, improve=10.841600, (0 missing)
##
         345 < 15
                     to the left,
                                   improve=10.481360, (0 missing)
                     to the right, improve= 9.488872, (0 missing)
##
         523 < 139
         467 < 0.5
##
                     to the left, improve= 8.841421, (0 missing)
##
         373 < 18.5 to the left, improve= 8.838739, (0 missing)
##
     Surrogate splits:
##
         217 < 31
                     to the right, agree=0.928, adj=0.853, (0 split)
##
         216 < 116.5 to the right, agree=0.884, adj=0.765, (0 split)
##
         219 < 2
                     to the right, agree=0.870, adj=0.735, (0 split)
##
         189 < 10
                     to the right, agree=0.855, adj=0.706, (0 split)
                     to the right, agree=0.855, adj=0.706, (0 split)
##
         190 < 0.5
##
## Node number 215: 106 observations,
                                         complexity param=0.0006251675
     predicted class=9
                        expected loss=0.3962264 P(node) =0.004205515
##
##
       class counts:
                         1
                               0
                                     3
                                            0
                                                 23
                                                        0
                                                                   13
                                                                          1
                                                              1
64
##
      probabilities: 0.009 0.000 0.028 0.000 0.217 0.000 0.009 0.123 0.009
0.604
##
     left son=430 (24 obs) right son=431 (82 obs)
##
     Primary splits:
##
         208 < 2.5
                     to the left,
                                   improve=14.69290, (0 missing)
                     to the left,
##
         235 < 3
                                   improve=13.55717, (0 missing)
##
         156 < 10.5
                     to the right, improve=12.51154, (0 missing)
##
                     to the right, improve=12.34940, (0 missing)
         374 < 121
##
         320 < 89
                     to the right, improve=12.34725, (0 missing)
##
     Surrogate splits:
```

```
209 < 17
                     to the left,
                                    agree=0.962, adj=0.833, (0 split)
##
##
         210 < 72
                     to the left,
                                    agree=0.906, adj=0.583, (0 split)
                                    agree=0.877, adj=0.458, (0 split)
##
         207 < 2.5
                     to the left,
                     to the left,
         235 < 3
                                    agree=0.877, adj=0.458, (0 split)
##
                     to the right, agree=0.858, adj=0.375, (0 split)
         157 < 59.5
##
##
## Node number 216: 53 observations,
                                         complexity param=0.0002456015
##
     predicted class=3
                        expected loss=0.6792453 P(node) =0.002102757
##
       class counts:
                         1
                               7
                                           17
                                                       17
                                                                           0
2
##
      probabilities: 0.019 0.132 0.000 0.321 0.019 0.321 0.151 0.000 0.000
0.038
##
     left son=432 (16 obs) right son=433 (37 obs)
##
     Primary splits:
##
         205 < 9.5
                     to the right, improve=7.426759, (0 missing)
##
         541 < 18.5
                     to the left,
                                    improve=6.576329, (0 missing)
                                    improve=6.534771, (0 missing)
##
         574 < 1.5
                     to the left,
##
         517 < 31
                     to the left,
                                    improve=6.495608, (0 missing)
         544 < 2.5
##
                     to the left,
                                    improve=6.334176, (0 missing)
##
     Surrogate splits:
##
         232 < 13
                     to the right, agree=0.943, adj=0.813, (0 split)
##
         204 < 10
                     to the right, agree=0.925, adj=0.750, (0 split)
##
         206 < 23.5
                     to the right, agree=0.925, adj=0.750, (0 split)
##
         203 < 5
                     to the right, agree=0.906, adj=0.688, (0 split)
                     to the right, agree=0.906, adj=0.688, (0 split)
##
         231 < 2
##
## Node number 217: 53 observations,
                                         complexity param=0.0001339645
     predicted class=5
                        expected loss=0.2075472 P(node) =0.002102757
##
##
       class counts:
                         1
                                      0
                                                  1
                                                       42
                                                              1
                                                                           2
                                0
                                            0
                                                                     2
4
      probabilities: 0.019 0.000 0.000 0.000 0.019 0.792 0.019 0.038 0.038
##
0.075
##
     left son=434 (46 obs) right son=435 (7 obs)
     Primary splits:
##
##
         464 < 87
                     to the left,
                                    improve=5.617485, (0 missing)
##
         465 < 186
                     to the left,
                                    improve=3.306926, (0 missing)
                                    improve=3.185902, (0 missing)
##
         325 < 20.5
                     to the left,
##
         656 < 88
                     to the right, improve=3.156754, (0 missing)
##
         351 < 151
                     to the left,
                                    improve=3.064690, (0 missing)
##
     Surrogate splits:
##
         436 < 104.5 to the left,
                                    agree=0.943, adj=0.571, (0 split)
                                    agree=0.943, adj=0.571, (0 split)
##
         465 < 199.5 to the left,
##
         492 < 248.5 to the left,
                                    agree=0.943, adj=0.571, (0 split)
                                    agree=0.925, adj=0.429, (0 split)
##
                     to the left,
         352 < 184
                                    agree=0.925, adj=0.429, (0 split)
##
         353 < 97.5 to the left,
##
## Node number 218: 31 observations,
                                         complexity param=0.0001786193
     predicted class=4
                        expected loss=0.3870968 P(node) =0.001229915
##
##
       class counts:
                         0
                                0
                                      1
                                            4
                                                 19
                                                        1
                                                              0
                                                                     3
                                                                           0
3
```

```
probabilities: 0.000 0.000 0.032 0.129 0.613 0.032 0.000 0.097 0.000
##
0.097
##
     left son=436 (7 obs) right son=437 (24 obs)
##
     Primary splits:
##
         155 < 78.5 to the right, improve=5.693548, (0 missing)
##
         183 < 35
                     to the right, improve=5.693548, (0 missing)
##
         184 < 114
                     to the right, improve=4.508766, (0 missing)
         381 < 251
                     to the right, improve=4.219189, (0 missing)
##
##
                     to the right, improve=4.213750, (0 missing)
         464 < 13
##
     Surrogate splits:
##
         154 < 90.5 to the right, agree=0.968, adj=0.857, (0 split)
         156 < 104.5 to the right, agree=0.968, adj=0.857, (0 split)
##
##
         153 < 77.5 to the right, agree=0.935, adj=0.714, (0 split)
##
         183 < 35
                     to the right, agree=0.935, adj=0.714, (0 split)
##
                     to the right, agree=0.935, adj=0.714, (0 split)
         622 < 9
##
## Node number 219: 71 observations
##
     predicted class=9
                        expected loss=0.2112676 P(node) =0.002816901
##
       class counts:
                         2
                               0
                                     2
                                            4
                                                  1
                                                                          0
56
##
      probabilities: 0.028 0.000 0.028 0.056 0.014 0.028 0.000 0.056 0.000
0.789
##
## Node number 220: 59 observations,
                                        complexity param=8.930964e-05
     predicted class=0
                        expected loss=0.1694915 P(node) =0.002340805
##
       class counts:
                        49
                               0
                                     0
                                            0
                                                  2
                                                        3
                                                              0
                                                                    2
                                                                          0
3
##
      probabilities: 0.831 0.000 0.000 0.000 0.034 0.051 0.000 0.034 0.000
0.051
##
     left son=440 (51 obs) right son=441 (8 obs)
##
     Primary splits:
##
         518 < 37.5 to the left,
                                   improve=6.388917, (0 missing)
##
         517 < 15
                     to the left,
                                   improve=5.477740, (0 missing)
##
         519 < 158.5 to the left,
                                   improve=5.430341, (0 missing)
                                   improve=5.144627, (0 missing)
##
         491 < 1
                     to the left,
##
         492 < 46
                     to the left,
                                   improve=4.550121, (0 missing)
##
     Surrogate splits:
##
         517 < 15
                     to the left,
                                   agree=0.983, adj=0.875, (0 split)
##
         519 < 158.5 to the left,
                                   agree=0.983, adj=0.875, (0 split)
         491 < 11
                                   agree=0.966, adj=0.750, (0 split)
##
                     to the left,
##
         490 < 13.5 to the left,
                                   agree=0.949, adj=0.625, (0 split)
##
         492 < 112.5 to the left,
                                   agree=0.949, adj=0.625, (0 split)
##
## Node number 221: 9 observations
##
     predicted class=5
                        expected loss=0.3333333
                                                 P(node) =0.000357072
##
       class counts:
                         0
                               0
                                     0
                                            1
                                                  0
                                                        6
                                                              0
                                                                    2
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 0.111 0.000 0.667 0.000 0.222 0.000
0.000
##
```

```
## Node number 222: 30 observations,
                                        complexity param=0.0003572385
##
     predicted class=5
                        expected loss=0.6666667 P(node) =0.00119024
##
       class counts:
                         0
                               2
                                      1
                                            1
                                                       10
                                                              1
                                                                    2
                                                                           0
5
##
      probabilities: 0.000 0.067 0.033 0.033 0.267 0.333 0.033 0.067 0.000
0.167
##
     left son=444 (14 obs) right son=445 (16 obs)
##
     Primary splits:
##
         381 < 10.5 to the left,
                                    improve=6.779762, (0 missing)
##
         409 < 65
                     to the left,
                                    improve=6.779762, (0 missing)
##
         437 < 77
                     to the left,
                                    improve=6.779762, (0 missing)
                                    improve=6.779762, (0 missing)
         465 < 168.5 to the left,
##
##
         464 < 205
                     to the right, improve=6.733333, (0 missing)
##
     Surrogate splits:
##
         409 < 65
                     to the left,
                                    agree=1.000, adj=1.000, (0 split)
##
         437 < 77
                     to the left,
                                    agree=1.000, adj=1.000, (0 split)
                                    agree=1.000, adj=1.000, (0 split)
##
         465 < 168.5 to the left,
         493 < 115.5 to the left,
##
                                    agree=0.967, adj=0.929, (0 split)
                                    agree=0.933, adj=0.857, (0 split)
##
         353 < 3.5
                     to the left,
##
## Node number 223: 648 observations,
                                          complexity param=0.0001786193
                        expected loss=0.0632716 P(node) =0.02570918
##
     predicted class=7
##
       class counts:
                         8
                               1
                                      4
                                                  4
                                                                  607
                                            7
                                                              3
                                                                           0
7
      probabilities: 0.012 0.002 0.006 0.011 0.006 0.011 0.005 0.937 0.000
##
0.011
##
     left son=446 (19 obs) right son=447 (629 obs)
##
     Primary splits:
##
         153 < 27
                     to the right, improve=18.41900, (0 missing)
                     to the right, improve=17.95829, (0 missing)
##
         155 < 11.5
                     to the right, improve=17.53289, (0 missing)
##
         154 < 1
##
         157 < 1.5
                     to the right, improve=16.51543, (0 missing)
##
         156 < 6.5
                     to the right, improve=16.38860, (0 missing)
##
     Surrogate splits:
##
         154 < 1
                     to the right, agree=0.998, adj=0.947, (0 split)
         152 < 29
                     to the right, agree=0.994, adj=0.789, (0 split)
##
         151 < 1
                     to the right, agree=0.991, adj=0.684, (0 split)
##
##
                     to the right, agree=0.988, adj=0.579, (0 split)
         150 < 4
##
         155 < 27
                     to the right, agree=0.988, adj=0.579, (0 split)
##
## Node number 224: 936 observations,
                                          complexity param=0.0006251675
##
     predicted class=2
                        expected loss=0.05769231 P(node) =0.03713549
##
       class counts:
                         0
                                    882
                                           15
                                                        1
                                                                   12
                                                                          25
1
      probabilities: 0.000 0.000 0.942 0.016 0.000 0.001 0.000 0.013 0.027
##
0.001
##
     left son=448 (922 obs) right son=449 (14 obs)
##
     Primary splits:
                                   improve=26.08949, (0 missing)
##
         349 < 134.5 to the left,
         348 < 51 to the left, improve=20.47057, (0 missing)
##
```

```
improve=17.05345, (0 missing)
##
         321 < 169.5 to the left,
##
         320 < 143
                     to the left,
                                    improve=15.22744, (0 missing)
                                    improve=11.95572, (0 missing)
##
         345 < 104.5 to the left,
##
     Surrogate splits:
##
         348 < 51
                     to the left,
                                    agree=0.997, adj=0.786, (0 split)
##
         321 < 169.5 to the left,
                                    agree=0.995, adj=0.643, (0 split)
##
         320 < 143
                     to the left,
                                    agree=0.994, adj=0.571, (0 split)
                                   agree=0.987, adj=0.143, (0 split)
##
         377 < 253.5 to the left,
##
## Node number 225: 85 observations,
                                         complexity param=0.0007591319
     predicted class=8
##
                        expected loss=0.5176471 P(node) =0.003372347
                         3
                                                  2
                                                        1
##
       class counts:
                               0
                                     20
                                            1
                                                              2
                                                                    0
                                                                          41
15
##
      probabilities: 0.035 0.000 0.235 0.012 0.024 0.012 0.024 0.000 0.482
0.176
##
     left son=450 (35 obs) right son=451 (50 obs)
     Primary splits:
##
##
         402 < 51.5 to the left,
                                    improve=19.00706, (0 missing)
         403 < 5.5
##
                     to the left,
                                    improve=17.87550, (0 missing)
##
         657 < 157.5 to the left,
                                    improve=15.56613, (0 missing)
         431 < 182
                     to the left,
                                    improve=15.56511, (0 missing)
##
##
         432 < 128
                     to the left,
                                    improve=15.20337, (0 missing)
##
     Surrogate splits:
##
         403 < 5.5
                     to the left,
                                   agree=0.918, adj=0.800, (0 split)
##
         430 < 50.5
                     to the left,
                                   agree=0.906, adj=0.771, (0 split)
                                   agree=0.894, adj=0.743, (0 split)
##
         431 < 24
                     to the left,
                                    agree=0.882, adj=0.714, (0 split)
##
         432 < 128
                     to the left,
         404 < 11
                                    agree=0.871, adj=0.686, (0 split)
##
                     to the left,
##
## Node number 226: 487 observations,
                                          complexity param=0.002857908
##
     predicted class=2
                        expected loss=0.7864476 P(node) =0.01932156
##
       class counts:
                         2
                             102
                                    104
                                            6
                                                       10
                                                                    57
                                                                          22
                                                 62
                                                             48
74
      probabilities: 0.004 0.209 0.214 0.012 0.127 0.021 0.099 0.117 0.045
##
0.152
##
     left son=452 (246 obs) right son=453 (241 obs)
##
     Primary splits:
##
         211 < 1
                     to the left,
                                    improve=54.34980, (0 missing)
##
         344 < 21.5
                     to the left,
                                    improve=52.68771, (0 missing)
                     to the left,
                                    improve=52.56168, (0 missing)
##
         238 < 1
##
         210 < 5.5
                     to the left,
                                    improve=52.23305, (0 missing)
##
         237 < 1
                     to the left,
                                   improve=50.24258, (0 missing)
##
     Surrogate splits:
##
         210 < 0.5
                     to the left,
                                    agree=0.973, adj=0.946, (0 split)
                                    agree=0.951, adj=0.900, (0 split)
##
         212 < 63
                     to the left,
##
         209 < 1
                     to the left,
                                    agree=0.940, adj=0.880, (0 split)
##
         237 < 26.5
                     to the left,
                                    agree=0.940, adj=0.880, (0 split)
##
                     to the left,
                                    agree=0.938, adj=0.876, (0 split)
         238 < 1
##
## Node number 227: 136 observations, complexity param=0.0002679289
```

```
##
     predicted class=7
                        expected loss=0.08823529 P(node) =0.005395755
##
       class counts:
                         0
                               0
                                     3
                                            1
                                                  1
                                                        0
                                                                  124
                                                                          6
1
      probabilities: 0.000 0.000 0.022 0.007 0.007 0.000 0.000 0.912 0.044
##
0.007
##
     left son=454 (128 obs) right son=455 (8 obs)
##
     Primary splits:
##
         373 < 182.5 to the left,
                                   improve=11.541360, (0 missing)
                                   improve=10.126290, (0 missing)
##
         374 < 46
                     to the left,
##
         401 < 51.5
                     to the left,
                                   improve= 9.641326, (0 missing)
         402 < 128
##
                     to the left,
                                   improve= 8.369485, (0 missing)
         603 < 54
                     to the right, improve= 8.036963, (0 missing)
##
##
     Surrogate splits:
##
         374 < 46
                     to the left,
                                   agree=0.993, adj=0.875, (0 split)
##
         402 < 128
                     to the left,
                                   agree=0.985, adj=0.750, (0 split)
                                   agree=0.978, adj=0.625, (0 split)
##
         345 < 233.5 to the left,
                                   agree=0.978, adj=0.625, (0 split)
##
         401 < 51.5 to the left,
##
         346 < 106.5 to the left,
                                   agree=0.971, adj=0.500, (0 split)
##
## Node number 228: 121 observations,
                                          complexity param=0.0002679289
     predicted class=5
                        expected loss=0.2231405 P(node) =0.004800635
##
##
       class counts:
                         5
                               0
                                     7
                                            0
                                                  3
                                                       94
                                                                          8
0
##
      probabilities: 0.041 0.000 0.058 0.000 0.025 0.777 0.033 0.000 0.066
0.000
##
     left son=456 (20 obs) right son=457 (101 obs)
##
     Primary splits:
         384 < 14
##
                     to the right, improve=18.04196, (0 missing)
##
         413 < 1
                     to the right, improve=17.66176, (0 missing)
                     to the right, improve=17.56195, (0 missing)
##
         412 < 5
                     to the right, improve=17.43202, (0 missing)
##
         385 < 43.5
##
         356 < 2.5
                     to the right, improve=16.41559, (0 missing)
##
     Surrogate splits:
##
         385 < 43.5
                     to the right, agree=0.992, adj=0.95, (0 split)
##
         356 < 2.5
                     to the right, agree=0.983, adj=0.90, (0 split)
         357 < 5
                     to the right, agree=0.983, adj=0.90, (0 split)
##
                     to the right, agree=0.983, adj=0.90, (0 split)
##
         412 < 130
##
                     to the right, agree=0.983, adj=0.90, (0 split)
         413 < 1
##
## Node number 229: 364 observations,
                                          complexity param=0.001674556
##
     predicted class=4 expected loss=0.6565934 P(node) =0.01444158
##
       class counts:
                        14
                                    66
                                                125
                                                        2
                                                             15
                                                                   48
                                                                         41
53
##
      probabilities: 0.038 0.000 0.181 0.000 0.343 0.005 0.041 0.132 0.113
0.146
##
     left son=458 (155 obs) right son=459 (209 obs)
##
     Primary splits:
         212 < 1.5
                                   improve=41.35091, (0 missing)
##
                     to the left,
##
         240 < 16.5 to the left,
                                   improve=40.03897, (0 missing)
##
         213 < 6.5 to the left, improve=34.08154, (0 missing)
```

```
to the right, improve=33.64439, (0 missing)
##
         184 < 55
                     to the right, improve=32.44985, (0 missing)
##
         429 < 64
##
     Surrogate splits:
                     to the left,
##
         211 < 7.5
                                    agree=0.896, adj=0.755, (0 split)
##
         213 < 6.5
                     to the left,
                                    agree=0.882, adj=0.723, (0 split)
##
         184 < 4.5
                     to the left,
                                   agree=0.857, adj=0.665, (0 split)
##
                                    agree=0.843, adj=0.632, (0 split)
         240 < 6
                     to the left,
                                   agree=0.832, adj=0.606, (0 split)
##
         239 < 103.5 to the left,
##
## Node number 230: 74 observations,
                                         complexity param=0.0004465482
##
     predicted class=4
                        expected loss=0.7162162 P(node) =0.002935925
                                                        9
##
       class counts:
                        10
                               0
                                      1
                                            0
                                                 21
                                                              5
                                                                    0
                                                                          15
13
##
      probabilities: 0.135 0.000 0.014 0.000 0.284 0.122 0.068 0.000 0.203
0.176
##
     left son=460 (21 obs) right son=461 (53 obs)
##
     Primary splits:
##
         212 < 40.5 to the left,
                                    improve=13.65836, (0 missing)
         213 < 11
##
                     to the left,
                                    improve=11.76198, (0 missing)
##
         211 < 40.5
                     to the left,
                                    improve=11.71766, (0 missing)
         597 < 35
                     to the right, improve=11.04087, (0 missing)
##
##
         185 < 107
                     to the left,
                                    improve=10.69842, (0 missing)
##
     Surrogate splits:
##
         211 < 40.5
                     to the left,
                                   agree=0.946, adj=0.810, (0 split)
##
         239 < 21.5
                     to the left,
                                   agree=0.946, adj=0.810, (0 split)
                                   agree=0.932, adj=0.762, (0 split)
##
         213 < 20
                     to the left,
                                    agree=0.919, adj=0.714, (0 split)
##
         210 < 50
                     to the left,
                                   agree=0.905, adj=0.667, (0 split)
##
         184 < 3
                     to the left,
##
## Node number 231: 635 observations,
                                          complexity param=0.0002456015
##
     predicted class=8
                        expected loss=0.08031496 P(node) =0.02519341
##
       class counts:
                                      4
                                            5
                                                  3
                                                       14
                                                                         584
6
##
      probabilities: 0.011 0.000 0.006 0.008 0.005 0.022 0.006 0.013 0.920
0.009
##
     left son=462 (47 obs) right son=463 (588 obs)
##
     Primary splits:
##
         488 < 14.5
                                    improve=12.62911, (0 missing)
                     to the left,
##
         404 < 2
                     to the left,
                                    improve=12.45999, (0 missing)
         487 < 2.5
                     to the left,
                                    improve=11.15042, (0 missing)
##
##
         434 < 27
                     to the left,
                                    improve=10.17359, (0 missing)
##
         461 < 56.5
                     to the left,
                                   improve=10.09254, (0 missing)
##
     Surrogate splits:
         461 < 67.5
##
                     to the left,
                                   agree=0.965, adj=0.532, (0 split)
                                    agree=0.961, adj=0.468, (0 split)
##
         515 < 8.5
                     to the left,
##
         489 < 0.5
                     to the left,
                                    agree=0.943, adj=0.234, (0 split)
##
         462 < 0.5
                     to the left,
                                    agree=0.942, adj=0.213, (0 split)
                     to the right, agree=0.932, adj=0.085, (0 split)
##
         121 < 6.5
##
## Node number 232: 318 observations, complexity param=0.0006698223
```

```
##
     predicted class=2
                        expected loss=0.1823899 P(node) =0.01261654
##
       class counts:
                         2
                              25
                                    260
                                            2
                                                  8
                                                        0
                                                              3
                                                                           4
5
      probabilities: 0.006 0.079 0.818 0.006 0.025 0.000 0.009 0.028 0.013
##
0.016
##
     left son=464 (32 obs) right son=465 (286 obs)
##
     Primary splits:
##
         159 < 0.5
                     to the right, improve=26.02915, (0 missing)
##
                     to the right, improve=25.86607, (0 missing)
         187 < 16.5
                     to the right, improve=24.47659, (0 missing)
##
         215 < 28
##
         186 < 129
                     to the right, improve=22.71974, (0 missing)
         158 < 132.5 to the right, improve=19.37000, (0 missing)
##
##
     Surrogate splits:
         187 < 16.5 to the right, agree=0.987, adj=0.875, (0 split)
##
##
         186 < 215
                     to the right, agree=0.965, adj=0.656, (0 split)
##
         131 < 12.5
                     to the right, agree=0.959, adj=0.594, (0 split)
##
         158 < 143
                     to the right, agree=0.956, adj=0.562, (0 split)
##
         215 < 4
                     to the right, agree=0.953, adj=0.531, (0 split)
##
## Node number 233: 26 observations
     predicted class=7
                        expected loss=0.3076923
##
                                                 P(node) =0.001031541
##
       class counts:
                         1
                               0
                                      0
                                            2
                                                  2
                                                                   18
                                                                           2
1
##
      probabilities: 0.038 0.000 0.000 0.077 0.077 0.000 0.000 0.692 0.077
0.038
##
## Node number 234: 73 observations,
                                         complexity param=0.0008484415
##
     predicted class=4
                        expected loss=0.6712329 P(node) =0.002896251
##
       class counts:
                         0
                                      9
                                                 24
                                                        1
                                                             19
                                                                          4
                               1
                                            0
11
##
      probabilities: 0.000 0.014 0.123 0.000 0.329 0.014 0.260 0.055 0.055
0.151
##
     left son=468 (48 obs) right son=469 (25 obs)
##
     Primary splits:
##
         573 < 214
                     to the left,
                                   improve=14.67151, (0 missing)
##
         571 < 79
                     to the right, improve=13.28790, (0 missing)
                                   improve=12.90220, (0 missing)
##
         356 < 63.5 to the left,
##
         572 < 108.5 to the right, improve=12.42019, (0 missing)
                     to the right, improve=11.92731, (0 missing)
##
         269 < 4
     Surrogate splits:
##
         572 < 232.5 to the left,
##
                                   agree=0.932, adj=0.80, (0 split)
                                   agree=0.904, adj=0.72, (0 split)
##
         601 < 26.5 to the left,
##
         574 < 182
                     to the left,
                                   agree=0.890, adj=0.68, (0 split)
##
                                   agree=0.890, adj=0.68, (0 split)
         600 < 96
                     to the left,
##
         269 < 4
                     to the right, agree=0.863, adj=0.60, (0 split)
##
## Node number 235: 30 observations
     predicted class=8 expected loss=0.1 P(node) =0.00119024
##
##
       class counts:
                         2
                               0
                                      1
                                            0
                                                  0
                                                        0
                                                              0
                                                                    0
                                                                         27
0
```

```
probabilities: 0.067 0.000 0.033 0.000 0.000 0.000 0.000 0.000 0.900
0.000
##
## Node number 236: 127 observations,
                                          complexity param=0.0004465482
##
     predicted class=2
                        expected loss=0.4330709 P(node) =0.005038683
##
       class counts:
                         3
                               1
                                    72
                                            3
                                                 12
                                                        1
                                                             14
                                                                    1
                                                                         15
5
##
      probabilities: 0.024 0.008 0.567 0.024 0.094 0.008 0.110 0.008 0.118
0.039
##
     left son=472 (83 obs) right son=473 (44 obs)
##
     Primary splits:
         537 < 23.5 to the right, improve=23.51794, (0 missing)
##
##
         565 < 20
                     to the right, improve=22.83947, (0 missing)
##
         158 < 9
                     to the right, improve=19.65800, (0 missing)
         159 < 9.5
                     to the right, improve=19.65800, (0 missing)
##
##
         157 < 67.5 to the right, improve=18.50751, (0 missing)
##
     Surrogate splits:
##
         565 < 2.5
                     to the right, agree=0.937, adj=0.818, (0 split)
                     to the right, agree=0.921, adj=0.773, (0 split)
##
         566 < 17
##
                     to the right, agree=0.913, adj=0.750, (0 split)
         509 < 3
                     to the right, agree=0.913, adj=0.750, (0 split)
##
         538 < 61.5
##
         594 < 3
                     to the right, agree=0.890, adj=0.682, (0 split)
##
## Node number 237: 114 observations,
                                          complexity param=0.000111637
     predicted class=8
                        expected loss=0.0877193 P(node) =0.004522912
##
       class counts:
                         0
                               0
                                     6
                                            0
                                                  3
                                                        0
                                                                    1
                                                                        104
0
##
      probabilities: 0.000 0.000 0.053 0.000 0.026 0.000 0.000 0.009 0.912
0.000
##
     left son=474 (20 obs) right son=475 (94 obs)
##
     Primary splits:
##
         404 < 4.5
                     to the left,
                                   improve=6.019298, (0 missing)
##
         405 < 2
                     to the left,
                                   improve=5.671679, (0 missing)
##
         465 < 251
                     to the right, improve=5.130837, (0 missing)
         467 < 250.5 to the right, improve=5.037055, (0 missing)
##
##
         468 < 138.5 to the right, improve=5.037055, (0 missing)
##
     Surrogate splits:
##
         433 < 23.5 to the left,
                                   agree=0.912, adj=0.50, (0 split)
##
         405 < 2
                     to the left,
                                   agree=0.904, adj=0.45, (0 split)
                                   agree=0.895, adj=0.40, (0 split)
##
         376 < 3
                     to the left,
##
         432 < 4.5
                     to the left,
                                   agree=0.886, adj=0.35, (0 split)
##
         434 < 35.5 to the left, agree=0.886, adj=0.35, (0 split)
##
## Node number 238: 1537 observations,
                                           complexity param=0.00111637
     predicted class=6
                        expected loss=0.0540013 P(node) =0.06097996
##
##
       class counts:
                         0
                               2
                                     30
                                            1
                                                  4
                                                       27
                                                          1454
                                                                    1
                                                                         11
7
##
      probabilities: 0.000 0.001 0.020 0.001 0.003 0.018 0.946 0.001 0.007
0.005
     left son=476 (34 obs) right son=477 (1503 obs)
```

```
Primary splits:
##
##
         323 < 161.5 to the right, improve=48.87607, (0 missing)
         296 < 141.5 to the right, improve=26.03819, (0 missing)
##
                     to the right, improve=25.77839, (0 missing)
##
         324 < 155
                     to the right, improve=21.99027, (0 missing)
##
         217 < 164
         218 < 139
                     to the right, improve=21.17130, (0 missing)
##
##
     Surrogate splits:
##
         351 < 250
                     to the right, agree=0.985, adj=0.324, (0 split)
##
         296 < 141.5 to the right, agree=0.984, adj=0.294, (0 split)
         295 < 250.5 to the right, agree=0.983, adj=0.235, (0 split)
##
##
         324 < 166
                     to the right, agree=0.982, adj=0.206, (0 split)
                     to the right, agree=0.979, adj=0.059, (0 split)
##
         201 < 212
##
## Node number 239: 163 observations,
                                          complexity param=0.000870769
     predicted class=5
                        expected loss=0.5398773 P(node) =0.006466971
##
##
       class counts:
                         0
                                      2
                                                  1
                                                       75
                                                                         39
                               0
                                                             37
                                                                    1
4
##
      probabilities: 0.000 0.000 0.012 0.025 0.006 0.460 0.227 0.006 0.239
0.025
##
     left son=478 (67 obs) right son=479 (96 obs)
##
     Primary splits:
         515 < 12.5 to the left,
##
                                    improve=23.29689, (0 missing)
##
         355 < 30.5 to the left,
                                    improve=23.03449, (0 missing)
##
         488 < 23.5
                     to the left,
                                    improve=22.22119, (0 missing)
##
         487 < 5
                     to the left,
                                    improve=21.91009, (0 missing)
##
         328 < 10
                     to the left,
                                    improve=21.24660, (0 missing)
##
     Surrogate splits:
##
         487 < 5
                     to the left,
                                    agree=0.883, adj=0.716, (0 split)
##
         514 < 65.5
                     to the left,
                                    agree=0.883, adj=0.716, (0 split)
##
         516 < 1.5
                     to the left,
                                    agree=0.871, adj=0.687, (0 split)
##
         488 < 0.5
                     to the left,
                                    agree=0.865, adj=0.672, (0 split)
##
         486 < 41.5 to the left,
                                   agree=0.810, adj=0.537, (0 split)
##
## Node number 240: 109 observations,
                                          complexity param=0.0005805126
                        expected loss=0.2293578 P(node) =0.004324539
##
     predicted class=2
##
       class counts:
                         0
                               0
                                     84
                                           17
                                                        2
                                                              0
                                                                    0
                                                                           6
                                                  0
0
##
      probabilities: 0.000 0.000 0.771 0.156 0.000 0.018 0.000 0.000 0.055
0.000
##
     left son=480 (87 obs) right son=481 (22 obs)
##
     Primary splits:
##
         379 < 151.5 to the left,
                                   improve=21.18397, (0 missing)
##
                     to the right, improve=17.86108, (0 missing)
                     to the right, improve=15.49374, (0 missing)
##
         484 < 2
##
         483 < 1.5
                     to the right, improve=14.94328, (0 missing)
                     to the left,
##
         351 < 1
                                   improve=14.40911, (0 missing)
##
     Surrogate splits:
##
         351 < 1
                     to the left,
                                   agree=0.954, adj=0.773, (0 split)
##
         378 < 162.5 to the left,
                                    agree=0.945, adj=0.727, (0 split)
##
         380 < 155 to the left, agree=0.917, adj=0.591, (0 split)
```

```
agree=0.908, adj=0.545, (0 split)
##
         352 < 66
                     to the left,
##
         377 < 162.5 to the left,
                                   agree=0.908, adj=0.545, (0 split)
##
## Node number 241: 112 observations,
                                          complexity param=0.0006251675
##
     predicted class=5
                        expected loss=0.2946429 P(node) =0.004443563
##
       class counts:
                         0
                                0
                                      4
                                            7
                                                  4
                                                       79
                                                              2
                                                                          16
                                                                    0
0
##
      probabilities: 0.000 0.000 0.036 0.062 0.036 0.705 0.018 0.000 0.143
0.000
##
     left son=482 (87 obs) right son=483 (25 obs)
##
     Primary splits:
         355 < 10
##
                     to the left,
                                    improve=21.55950, (0 missing)
         381 < 6
##
                     to the left,
                                    improve=21.24793, (0 missing)
##
         382 < 4.5
                     to the left,
                                    improve=20.59950, (0 missing)
         354 < 7
                     to the left,
                                    improve=19.31057, (0 missing)
##
##
         356 < 14.5
                     to the left,
                                    improve=17.67997, (0 missing)
##
     Surrogate splits:
##
         354 < 63
                                    agree=0.973, adj=0.88, (0 split)
                     to the left,
         381 < 74
                                    agree=0.964, adj=0.84, (0 split)
##
                     to the left,
##
         382 < 4.5
                     to the left,
                                   agree=0.964, adj=0.84, (0 split)
                     to the left,
                                    agree=0.955, adj=0.80, (0 split)
##
         383 < 6
##
         353 < 14
                     to the left,
                                    agree=0.929, adj=0.68, (0 split)
##
## Node number 242: 1469 observations,
                                           complexity param=0.001629901
##
     predicted class=4
                        expected loss=0.1266167 P(node) =0.05828209
##
       class counts:
                         0
                               6
                                     16
                                           16 1283
                                                       21
                                                             66
                                                                   10
                                                                          31
20
      probabilities: 0.000 0.004 0.011 0.011 0.873 0.014 0.045 0.007 0.021
##
0.014
##
     left son=484 (1415 obs) right son=485 (54 obs)
##
     Primary splits:
##
         98 < 3
                     to the left,
                                    improve=86.42458, (0 missing)
##
         97 < 1
                     to the left,
                                    improve=73.90600, (0 missing)
##
         155 < 99.5
                     to the left,
                                    improve=72.01172, (0 missing)
##
         126 < 2
                     to the left,
                                    improve=70.29448, (0 missing)
##
         154 < 64.5 to the left,
                                   improve=67.46091, (0 missing)
##
     Surrogate splits:
##
         99 < 24
                                   agree=0.990, adj=0.722, (0 split)
                     to the left,
##
         97
            < 1
                     to the left,
                                    agree=0.988, adj=0.685, (0 split)
                     to the left,
                                    agree=0.982, adj=0.500, (0 split)
##
         70
             < 2
##
         126 < 215
                     to the left,
                                    agree=0.980, adj=0.463, (0 split)
                                   agree=0.980, adj=0.444, (0 split)
##
         71 < 7
                     to the left,
##
## Node number 243: 140 observations,
                                          complexity param=0.0009377512
     predicted class=9
                        expected loss=0.6642857 P(node) =0.005554453
##
##
       class counts:
                         0
                               0
                                      7
                                            4
                                                 24
                                                       21
                                                              0
                                                                   34
                                                                           3
47
##
      probabilities: 0.000 0.000 0.050 0.029 0.171 0.150 0.000 0.243 0.021
0.336
##
     left son=486 (93 obs) right son=487 (47 obs)
```

```
Primary splits:
##
##
         401 < 2.5
                     to the right, improve=15.36521, (0 missing)
##
         373 < 12
                     to the left,
                                    improve=15.21905, (0 missing)
                     to the left,
                                    improve=14.71924, (0 missing)
##
         372 < 3
##
         428 < 2
                     to the left,
                                    improve=13.38245, (0 missing)
##
         429 < 5
                     to the left,
                                    improve=13.28977, (0 missing)
##
     Surrogate splits:
         402 < 3
                     to the right, agree=0.907, adj=0.723, (0 split)
##
##
         373 < 1
                     to the right, agree=0.886, adj=0.660, (0 split)
##
         374 < 1.5
                     to the right, agree=0.857, adj=0.574, (0 split)
##
         429 < 91.5
                     to the right, agree=0.857, adj=0.574, (0 split)
                     to the right, agree=0.857, adj=0.574, (0 split)
##
         430 < 94
##
## Node number 244: 581 observations,
                                          complexity param=0.0009377512
     predicted class=5
                        expected loss=0.2340792 P(node) =0.02305098
##
##
       class counts:
                         3
                                     14
                                                      445
                                                                           9
                                0
                                           37
                                                  6
                                                              26
                                                                     1
40
##
      probabilities: 0.005 0.000 0.024 0.064 0.010 0.766 0.045 0.002 0.015
0.069
##
     left son=488 (521 obs) right son=489 (60 obs)
##
     Primary splits:
         384 < 17.5 to the left,
##
                                    improve=45.16512, (0 missing)
##
         356 < 2
                     to the left,
                                    improve=44.03084, (0 missing)
##
         385 < 1.5
                     to the left.
                                    improve=42.43825, (0 missing)
##
         357 < 4.5
                     to the left,
                                    improve=41.53327, (0 missing)
##
         383 < 49.5
                     to the left,
                                    improve=37.52325, (0 missing)
##
     Surrogate splits:
         385 < 1.5
##
                     to the left,
                                    agree=0.981, adj=0.817, (0 split)
##
         383 < 49.5
                     to the left,
                                    agree=0.979, adj=0.800, (0 split)
##
         412 < 78
                     to the left,
                                    agree=0.978, adj=0.783, (0 split)
         356 < 2
##
                     to the left,
                                    agree=0.976, adj=0.767, (0 split)
##
         357 < 4.5
                     to the left,
                                    agree=0.974, adj=0.750, (0 split)
##
## Node number 245: 227 observations,
                                          complexity param=0.00129499
                        expected loss=0.6123348 P(node) =0.00900615
##
     predicted class=4
##
       class counts:
                         0
                                2
                                      5
                                           18
                                                        0
                                                               2
                                                                    32
                                                 88
                                                                          28
52
##
      probabilities: 0.000 0.009 0.022 0.079 0.388 0.000 0.009 0.141 0.123
0.229
##
     left son=490 (79 obs) right son=491 (148 obs)
##
     Primary splits:
##
         209 < 16.5
                     to the left,
                                    improve=34.57810, (0 missing)
##
         208 < 14.5
                     to the left,
                                    improve=33.34277, (0 missing)
                                    improve=22.91833, (0 missing)
##
         210 < 95
                     to the left,
##
         156 < 1
                     to the right, improve=20.89619, (0 missing)
##
         373 < 40
                     to the right, improve=18.83432, (0 missing)
##
     Surrogate splits:
##
                                    agree=0.912, adj=0.747, (0 split)
         210 < 82.5
                     to the left,
##
         208 < 1
                     to the left,
                                    agree=0.881, adj=0.658, (0 split)
##
         181 < 5
                     to the left,
                                    agree=0.819, adj=0.481, (0 split)
```

```
agree=0.802, adj=0.430, (0 split)
##
                     to the left,
         182 < 1
##
         237 < 18
                     to the left,
                                    agree=0.780, adj=0.367, (0 split)
##
## Node number 246: 406 observations,
                                          complexity param=0.002835581
##
     predicted class=4
                        expected loss=0.7487685 P(node) =0.01610792
##
       class counts:
                         3
                                0
                                     53
                                           98
                                                102
                                                       12
                                                                     1
                                                                          77
56
##
      probabilities: 0.007 0.000 0.131 0.241 0.251 0.030 0.010 0.002 0.190
0.138
##
     left son=492 (178 obs) right son=493 (228 obs)
##
     Primary splits:
         624 < 1
##
                     to the right, improve=41.06848, (0 missing)
##
         400 < 6.5
                     to the left,
                                    improve=41.06288, (0 missing)
##
         372 < 2.5
                     to the left,
                                    improve=40.49366, (0 missing)
                     to the left,
                                    improve=40.21070, (0 missing)
##
         345 < 1
##
         373 < 65
                     to the left,
                                    improve=40.00554, (0 missing)
##
     Surrogate splits:
##
         625 < 90.5
                     to the right, agree=0.941, adj=0.865, (0 split)
##
         623 < 1
                     to the right, agree=0.936, adj=0.854, (0 split)
##
         595 < 0.5
                     to the right, agree=0.904, adj=0.781, (0 split)
         596 < 3.5
                     to the right, agree=0.904, adj=0.781, (0 split)
##
##
         652 < 0.5
                     to the right, agree=0.887, adj=0.742, (0 split)
##
## Node number 247: 1445 observations,
                                           complexity param=0.0006698223
     predicted class=9
                        expected loss=0.1944637 P(node) =0.05732989
##
       class counts:
                         1
                               0
                                     18
                                           62
                                                 92
                                                        7
                                                                    54
                                                                          47
1164
##
      probabilities: 0.001 0.000 0.012 0.043 0.064 0.005 0.000 0.037 0.033
0.806
##
     left son=494 (293 obs) right son=495 (1152 obs)
##
     Primary splits:
##
         317 < 1
                     to the left,
                                    improve=48.99596, (0 missing)
##
         290 < 3.5
                     to the left,
                                    improve=45.68732, (0 missing)
##
         345 < 0.5
                     to the left,
                                    improve=44.17524, (0 missing)
##
         289 < 8.5
                     to the left,
                                    improve=39.02495, (0 missing)
##
         373 < 0.5
                     to the left,
                                    improve=36.31497, (0 missing)
##
     Surrogate splits:
##
         290 < 13.5
                     to the left,
                                    agree=0.905, adj=0.532, (0 split)
##
         345 < 0.5
                     to the left,
                                    agree=0.901, adj=0.512, (0 split)
         289 < 0.5
                     to the left,
                                    agree=0.878, adj=0.399, (0 split)
##
##
         344 < 0.5
                     to the left,
                                    agree=0.854, adj=0.280, (0 split)
##
         263 < 0.5
                     to the left,
                                    agree=0.846, adj=0.239, (0 split)
##
## Node number 248: 175 observations,
                                          complexity param=0.0008930964
     predicted class=5
                        expected loss=0.3428571 P(node) =0.006943067
##
##
       class counts:
                         1
                                7
                                      4
                                           40
                                                  3
                                                      115
                                                              2
                                                                     0
                                                                           1
2
##
      probabilities: 0.006 0.040 0.023 0.229 0.017 0.657 0.011 0.000 0.006
0.011
     left son=496 (40 obs) right son=497 (135 obs)
```

```
Primary splits:
##
##
         323 < 1.5
                     to the right, improve=24.11683, (0 missing)
                     to the right, improve=23.30486, (0 missing)
##
         322 < 52
                     to the right, improve=17.90386, (0 missing)
##
         150 < 65
                     to the right, improve=17.71134, (0 missing)
##
         295 < 126
                     to the right, improve=16.90571, (0 missing)
##
         321 < 210
##
     Surrogate splits:
         295 < 140
##
                     to the right, agree=0.914, adj=0.625, (0 split)
##
         322 < 76
                     to the right, agree=0.897, adj=0.550, (0 split)
##
         324 < 2.5
                     to the right, agree=0.897, adj=0.550, (0 split)
##
         296 < 97
                     to the right, agree=0.880, adj=0.475, (0 split)
         294 < 252.5 to the right, agree=0.851, adj=0.350, (0 split)
##
##
## Node number 249: 138 observations,
                                          complexity param=0.00111637
                        expected loss=0.6594203 P(node) =0.005475104
##
     predicted class=9
##
       class counts:
                         0
                               5
                                      4
                                                 27
                                                                         29
                                           17
                                                        1
                                                                    8
47
##
      probabilities: 0.000 0.036 0.029 0.123 0.196 0.007 0.000 0.058 0.210
0.341
##
     left son=498 (46 obs) right son=499 (92 obs)
##
     Primary splits:
         434 < 208.5 to the right, improve=19.10145, (0 missing)
##
##
                     to the right, improve=17.09489, (0 missing)
         433 < 12
         154 < 1.5
##
                     to the right, improve=14.04231, (0 missing)
##
         376 < 47.5 to the left, improve=13.70145, (0 missing)
##
         375 < 129.5 to the left, improve=13.29010, (0 missing)
##
     Surrogate splits:
##
         461 < 63
                     to the right, agree=0.899, adj=0.696, (0 split)
##
         433 < 17
                     to the right, agree=0.891, adj=0.674, (0 split)
##
         489 < 183.5 to the right, agree=0.862, adj=0.587, (0 split)
##
         462 < 193.5 to the right, agree=0.848, adj=0.543, (0 split)
##
         488 < 8.5
                     to the right, agree=0.833, adj=0.500, (0 split)
##
## Node number 250: 93 observations,
                                         complexity param=0.0009377512
##
     predicted class=1
                        expected loss=0.5591398 P(node) =0.003689744
##
       class counts:
                         4
                              41
                                     24
                                            5
                                                        2
                                                             12
                                                                    5
                                                  0
                                                                           0
0
##
      probabilities: 0.043 0.441 0.258 0.054 0.000 0.022 0.129 0.054 0.000
0.000
     left son=500 (54 obs) right son=501 (39 obs)
##
##
     Primary splits:
##
         179 < 7
                     to the left,
                                   improve=18.75774, (0 missing)
##
         351 < 244
                     to the right, improve=18.16590, (0 missing)
                     to the right, improve=18.01097, (0 missing)
##
         378 < 71.5
##
         323 < 173
                     to the right, improve=17.50988, (0 missing)
                     to the left,
##
         178 < 29
                                   improve=17.14835, (0 missing)
##
     Surrogate splits:
                                   agree=0.968, adj=0.923, (0 split)
##
         180 < 49
                     to the left,
##
         153 < 53
                     to the left,
                                    agree=0.946, adj=0.872, (0 split)
##
         178 < 4
                     to the left, agree=0.946, adj=0.872, (0 split)
```

```
agree=0.925, adj=0.821, (0 split)
##
         152 < 19
                     to the left,
##
         206 < 1
                     to the left,
                                    agree=0.925, adj=0.821, (0 split)
##
## Node number 251: 1360 observations,
                                           complexity param=0.0004018934
##
     predicted class=7
                        expected loss=0.04705882 P(node) =0.05395755
##
       class counts:
                         2
                               12
                                     21
                                            6
                                                  4
                                                        0
                                                              7 1296
                                                                           1
11
##
      probabilities: 0.001 0.009 0.015 0.004 0.003 0.000 0.005 0.953 0.001
0.008
##
     left son=502 (23 obs) right son=503 (1337 obs)
##
     Primary splits:
         153 < 57
##
                     to the right, improve=25.10725, (0 missing)
                     to the right, improve=20.15141, (0 missing)
         154 < 7
##
##
         152 < 18
                     to the right, improve=19.96451, (0 missing)
         151 < 5.5
                     to the right, improve=17.55849, (0 missing)
##
##
         150 < 219
                     to the right, improve=17.38734, (0 missing)
##
     Surrogate splits:
##
         154 < 3
                     to the right, agree=0.996, adj=0.783, (0 split)
                     to the right, agree=0.996, adj=0.739, (0 split)
##
         152 < 98.5
##
         124 < 6.5
                     to the right, agree=0.991, adj=0.478, (0 split)
         125 < 1.5
                     to the right, agree=0.991, adj=0.478, (0 split)
##
##
         151 < 87
                     to the right, agree=0.991, adj=0.478, (0 split)
##
## Node number 252: 132 observations,
                                          complexity param=0.0001562919
##
     predicted class=4
                        expected loss=0.1969697 P(node) =0.005237056
##
       class counts:
                         1
                               1
                                      8
                                            0
                                                106
                                                        1
                                                              6
                                                                     1
                                                                           1
7
##
      probabilities: 0.008 0.008 0.061 0.000 0.803 0.008 0.045 0.008 0.008
0.053
##
     left son=504 (29 obs) right son=505 (103 obs)
##
     Primary splits:
##
         429 < 8
                     to the left,
                                    improve=8.663578, (0 missing)
##
         597 < 35.5
                     to the right, improve=8.599218, (0 missing)
##
         97 < 4.5
                     to the left,
                                    improve=7.835550, (0 missing)
                     to the right, improve=7.614560, (0 missing)
##
         125 < 155
##
         267 < 132
                     to the left, improve=7.563361, (0 missing)
##
     Surrogate splits:
##
         457 < 95.5
                                    agree=0.886, adj=0.483, (0 split)
                     to the left,
##
         401 < 11.5
                     to the left,
                                    agree=0.879, adj=0.448, (0 split)
         373 < 1.5
                     to the left,
                                    agree=0.864, adj=0.379, (0 split)
##
##
         353 < 1
                     to the left,
                                    agree=0.841, adj=0.276, (0 split)
                     to the right, agree=0.841, adj=0.276, (0 split)
##
         538 < 19
##
## Node number 253: 12 observations
     predicted class=6
                        expected loss=0.25 P(node) =0.000476096
##
##
       class counts:
                         0
                                0
                                      3
                                            0
                                                  0
                                                        0
                                                              9
                                                                     0
                                                                           0
0
      probabilities: 0.000 0.000 0.250 0.000 0.000 0.000 0.750 0.000 0.000
##
0.000
##
```

```
## Node number 254: 50 observations,
                                      complexity param=0.0003125837
##
     predicted class=7
                        expected loss=0.68 P(node) =0.001983733
##
       class counts:
                         0
                               0
                                     4
                                            0
                                                 12
                                                                   16
                                                                          3
15
##
      probabilities: 0.000 0.000 0.080 0.000 0.240 0.000 0.000 0.320 0.060
0.300
##
     left son=508 (24 obs) right son=509 (26 obs)
##
     Primary splits:
##
         429 < 48.5 to the left,
                                   improve=9.358974, (0 missing)
##
         457 < 169.5 to the left,
                                    improve=9.358974, (0 missing)
##
         205 < 45
                     to the left,
                                   improve=9.039216, (0 missing)
                                   improve=8.314103, (0 missing)
##
         428 < 42
                     to the left,
##
         232 < 76.5 to the left,
                                   improve=7.873016, (0 missing)
##
     Surrogate splits:
##
         457 < 169.5 to the left,
                                   agree=0.96, adj=0.917, (0 split)
##
         401 < 31
                     to the left,
                                   agree=0.92, adj=0.833, (0 split)
##
         428 < 42
                     to the left,
                                   agree=0.92, adj=0.833, (0 split)
                     to the left,
##
         400 < 3.5
                                   agree=0.88, adj=0.750, (0 split)
##
         456 < 15.5 to the left,
                                   agree=0.88, adj=0.750, (0 split)
##
## Node number 255: 168 observations,
                                          complexity param=0.0002902563
                        expected loss=0.1785714 P(node) =0.006665344
##
     predicted class=9
##
       class counts:
                         0
                               0
                                     4
                                            1
                                                 17
                                                        0
                                                              1
                                                                    6
                                                                          1
138
      probabilities: 0.000 0.000 0.024 0.006 0.101 0.000 0.006 0.036 0.006
##
0.821
##
     left son=510 (25 obs) right son=511 (143 obs)
##
     Primary splits:
##
         235 < 0.5
                                   improve=12.447550, (0 missing)
                     to the left,
##
         320 < 91.5
                     to the right, improve=11.288570, (0 missing)
##
         326 < 2
                     to the left,
                                   improve=10.129240, (0 missing)
##
         354 < 3
                     to the left,
                                   improve= 9.811462, (0 missing)
                     to the right, improve= 9.306647, (0 missing)
##
         293 < 72
##
     Surrogate splits:
##
         320 < 81.5
                     to the right, agree=0.911, adj=0.40, (0 split)
         208 < 1.5
                     to the left, agree=0.905, adj=0.36, (0 split)
##
         292 < 181
                     to the right, agree=0.905, adj=0.36, (0 split)
##
##
         293 < 72
                     to the right, agree=0.905, adj=0.36, (0 split)
##
         347 < 192
                     to the right, agree=0.899, adj=0.32, (0 split)
##
## Node number 256: 2260 observations,
                                           complexity param=0.0001339645
##
     predicted class=1
                        expected loss=0.02256637 P(node) =0.08966475
##
       class counts:
                         0 2209
                                            6
                                                  2
                                                        5
                                                                         19
2
      probabilities: 0.000 0.977 0.002 0.003 0.001 0.002 0.002 0.004 0.008
##
0.001
##
     left son=512 (2249 obs) right son=513 (11 obs)
##
     Primary splits:
##
         406 < 48
                     to the right, improve=10.840210, (0 missing)
##
         410 < 32 to the left, improve= 9.961333, (0 missing)
```

```
improve= 9.149731, (0 missing)
##
         437 < 198
                     to the left,
##
         466 < 3
                     to the left,
                                   improve= 8.726610, (0 missing)
##
         411 < 28.5 to the left,
                                   improve= 8.723056, (0 missing)
##
     Surrogate splits:
##
         434 < 6.5
                     to the right, agree=0.998, adj=0.545, (0 split)
##
         378 < 126.5 to the right, agree=0.996, adj=0.273, (0 split)
         345 < 136.5 to the left, agree=0.996, adj=0.182, (0 split)
##
                                   agree=0.996, adj=0.182, (0 split)
##
         372 < 73
                     to the left,
                     to the left,
                                   agree=0.996, adj=0.182, (0 split)
##
         387 < 7.5
##
## Node number 257: 31 observations,
                                        complexity param=0.0001786193
     predicted class=2 expected loss=0.7419355 P(node) =0.001229915
##
##
       class counts:
                         0
                               5
                                     8
                                           0
                                                 5
                                                       5
                                                              3
                                                                    0
                                                                          5
0
##
      probabilities: 0.000 0.161 0.258 0.000 0.161 0.161 0.097 0.000 0.161
0.000
##
     left son=514 (19 obs) right son=515 (12 obs)
##
     Primary splits:
##
         623 < 14.5 to the left,
                                   improve=4.489530, (0 missing)
##
         457 < 152.5 to the right, improve=4.227688, (0 missing)
##
         652 < 12.5 to the left,
                                   improve=4.095545, (0 missing)
                     to the right, improve=4.062212, (0 missing)
##
         432 < 115
##
         322 < 159
                     to the left,
                                   improve=4.038402, (0 missing)
##
     Surrogate splits:
##
         595 < 136.5 to the left, agree=0.935, adj=0.833, (0 split)
                                   agree=0.935, adj=0.833, (0 split)
##
         624 < 168.5 to the left,
                                   agree=0.935, adj=0.833, (0 split)
##
         652 < 12.5 to the left,
         622 < 5.5
                                   agree=0.903, adj=0.750, (0 split)
##
                     to the left,
##
         651 < 0.5
                     to the left,
                                   agree=0.903, adj=0.750, (0 split)
##
## Node number 260: 55 observations
##
     predicted class=1
                        expected loss=0.07272727 P(node) =0.002182107
##
       class counts:
                              51
                                     1
                                           1
                                                 0
                                                       1
                                                              0
                                                                          1
0
      probabilities: 0.000 0.927 0.018 0.018 0.000 0.018 0.000 0.000 0.018
##
0.000
##
## Node number 261: 17 observations
##
     predicted class=5
                        expected loss=0.2941176 P(node) =0.0006744694
##
       class counts:
                         0
                               0
                                     0
                                           1
                                                       12
                                                                          3
0
##
      probabilities: 0.000 0.000 0.000 0.059 0.059 0.706 0.000 0.000 0.176
0.000
##
## Node number 264: 83 observations
##
     predicted class=2
                        expected loss=0.03614458 P(node) =0.003292997
##
       class counts:
                         0
                               2
                                    80
                                                                          1
0
##
      probabilities: 0.000 0.024 0.964 0.000 0.000 0.000 0.000 0.001
0.000
```

```
##
## Node number 265: 8 observations
##
     predicted class=3 expected loss=0.375 P(node) =0.0003173973
       class counts:
                               0
                                           5
                                                 0
                                                       0
##
                         0
                                     2
                                                              0
                                                                          1
0
      probabilities: 0.000 0.000 0.250 0.625 0.000 0.000 0.000 0.000 0.125
##
0.000
##
## Node number 268: 13 observations
##
     predicted class=2
                        expected loss=0.3846154 P(node) =0.0005157707
##
       class counts:
                         1
                               0
                                     8
                                           0
                                                 3
                                                                          0
0
##
      probabilities: 0.077 0.000 0.615 0.000 0.231 0.000 0.000 0.077 0.000
0.000
##
## Node number 269: 11 observations
     predicted class=6
                        expected loss=0.5454545 P(node) =0.0004364213
##
       class counts:
                         0
                               1
                                     0
                                           3
                                                              5
                                                                    0
                                                                          2
                                                       0
0
##
      probabilities: 0.000 0.091 0.000 0.273 0.000 0.000 0.455 0.000 0.182
0.000
##
## Node number 272: 93 observations,
                                        complexity param=0.0005805126
     predicted class=6 expected loss=0.4623656 P(node) =0.003689744
##
                              13
                                     9
                                                 3
                                                             50
##
       class counts:
                         7
                                           6
                                                        3
                                                                          0
1
      probabilities: 0.075 0.140 0.097 0.065 0.032 0.032 0.538 0.011 0.000
##
0.011
##
     left son=544 (25 obs) right son=545 (68 obs)
##
     Primary splits:
##
         486 < 67.5 to the left,
                                   improve=15.77872, (0 missing)
##
         514 < 7
                     to the left,
                                   improve=13.63803, (0 missing)
##
         458 < 48.5 to the left,
                                   improve=12.53402, (0 missing)
                                   improve=12.32299, (0 missing)
##
         487 < 30
                     to the left,
                                   improve=11.10767, (0 missing)
##
         459 < 119.5 to the left,
##
     Surrogate splits:
         487 < 30
##
                     to the left,
                                   agree=0.946, adj=0.80, (0 split)
##
                     to the left,
                                   agree=0.946, adj=0.80, (0 split)
         514 < 7
##
         458 < 14.5 to the left,
                                   agree=0.914, adj=0.68, (0 split)
         485 < 2.5
                                   agree=0.903, adj=0.64, (0 split)
##
                     to the left,
##
         515 < 24.5 to the left,
                                   agree=0.882, adj=0.56, (0 split)
##
## Node number 273: 159 observations,
                                         complexity param=0.0007591319
     predicted class=4 expected loss=0.7672956 P(node) =0.006308272
##
##
       class counts:
                         5
                              20
                                    22
                                           8
                                                37
                                                       21
                                                                          6
29
##
      probabilities: 0.031 0.126 0.138 0.050 0.233 0.132 0.025 0.044 0.038
0.182
##
     left son=546 (67 obs) right son=547 (92 obs)
##
     Primary splits:
```

```
to the right, improve=14.46493, (0 missing)
##
         539 < 2
                     to the right, improve=14.31537, (0 missing)
##
         540 < 48
                     to the right, improve=12.80517, (0 missing)
         567 < 10.5
##
                     to the left, improve=12.69986, (0 missing)
##
         681 < 73
                     to the right, improve=12.23804, (0 missing)
##
         538 < 0.5
##
     Surrogate splits:
         540 < 2.5
##
                     to the right, agree=0.962, adj=0.910, (0 split)
         512 < 37.5
                     to the right, agree=0.931, adj=0.836, (0 split)
##
                     to the right, agree=0.906, adj=0.776, (0 split)
##
         511 < 59.5
                     to the right, agree=0.906, adj=0.776, (0 split)
##
         541 < 57.5
##
         567 < 2.5
                     to the right, agree=0.906, adj=0.776, (0 split)
##
## Node number 276: 95 observations,
                                         complexity param=0.0002232741
##
     predicted class=1 expected loss=0.2421053 P(node) =0.003769093
##
       class counts:
                         1
                              72
                                      1
                                                  0
                                                        3
                                                              1
                                            1
                                                                           8
4
##
      probabilities: 0.011 0.758 0.011 0.011 0.000 0.032 0.011 0.042 0.084
0.042
##
     left son=552 (77 obs) right son=553 (18 obs)
##
     Primary splits:
##
         299 < 31
                     to the left,
                                    improve=12.03746, (0 missing)
##
         300 < 2
                     to the left,
                                    improve=11.65921, (0 missing)
##
         155 < 1.5
                     to the right, improve=11.20692, (0 missing)
##
         271 < 27.5
                     to the left,
                                    improve=11.11690, (0 missing)
                                    improve=10.82839, (0 missing)
##
         272 < 170
                     to the left,
##
     Surrogate splits:
##
         271 < 43
                     to the left,
                                    agree=0.979, adj=0.889, (0 split)
         298 < 219
                                    agree=0.968, adj=0.833, (0 split)
##
                     to the left,
##
         300 < 2
                     to the left,
                                    agree=0.968, adj=0.833, (0 split)
##
         327 < 19
                     to the left,
                                   agree=0.968, adj=0.833, (0 split)
##
         272 < 60
                     to the left,
                                   agree=0.958, adj=0.778, (0 split)
##
## Node number 277: 39 observations,
                                         complexity param=0.0003125837
                        expected loss=0.7435897 P(node) =0.001547312
##
     predicted class=4
##
       class counts:
                         2
                               1
                                      0
                                            3
                                                 10
                                                        6
                                                              3
                                                                           8
6
##
      probabilities: 0.051 0.026 0.000 0.077 0.256 0.154 0.077 0.000 0.205
0.154
     left son=554 (11 obs) right son=555 (28 obs)
##
##
     Primary splits:
##
         627 < 5.5
                     to the left,
                                    improve=6.047286, (0 missing)
         628 < 87.5
##
                     to the left,
                                    improve=5.647863, (0 missing)
##
         655 < 10.5
                     to the left,
                                    improve=5.136752, (0 missing)
                                   improve=5.043185, (0 missing)
##
         625 < 40.5 to the right,
##
         653 < 106.5 to the left,
                                    improve=4.815496, (0 missing)
##
     Surrogate splits:
##
         655 < 10.5
                     to the left,
                                    agree=0.974, adj=0.909, (0 split)
##
                     to the left,
                                    agree=0.949, adj=0.818, (0 split)
         628 < 87.5
##
         626 < 13
                     to the left,
                                    agree=0.923, adj=0.727, (0 split)
##
         598 < 5.5
                     to the left,
                                   agree=0.897, adj=0.636, (0 split)
```

```
600 < 77.5 to the left, agree=0.897, adj=0.636, (0 split)
##
##
## Node number 278: 124 observations,
                                         complexity param=0.0002902563
     predicted class=8 expected loss=0.2822581 P(node) =0.004919659
##
       class counts:
                         1
                               3
                                     1
                                          15
                                                  9
                                                        3
                                                              0
                                                                    1
                                                                         89
2
##
      probabilities: 0.008 0.024 0.008 0.121 0.073 0.024 0.000 0.008 0.718
0.016
##
     left son=556 (37 obs) right son=557 (87 obs)
##
     Primary splits:
         265 < 15.5 to the left,
##
                                   improve=11.27827, (0 missing)
                     to the right, improve=11.17824, (0 missing)
##
         373 < 6
##
         401 < 123
                     to the right, improve=10.98102, (0 missing)
##
         378 < 196
                     to the left,
                                   improve=10.40339, (0 missing)
##
         292 < 98.5 to the left,
                                   improve=10.24454, (0 missing)
     Surrogate splits:
##
##
         237 < 49
                     to the left, agree=0.935, adj=0.784, (0 split)
                                   agree=0.935, adj=0.784, (0 split)
##
         264 < 25
                     to the left,
                                   agree=0.919, adj=0.730, (0 split)
##
         292 < 126.5 to the left,
##
         238 < 4
                     to the left,
                                   agree=0.895, adj=0.649, (0 split)
##
         236 < 40.5 to the left,
                                   agree=0.887, adj=0.622, (0 split)
##
## Node number 279: 20 observations
     predicted class=9
                        expected loss=0.1 P(node) =0.0007934934
##
                                                                    2
##
       class counts:
                         0
                               0
                                     0
                                            0
                                                 0
                                                              0
                                                                          0
18
##
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.100 0.000
0.900
##
## Node number 290: 9 observations
##
     predicted class=6 expected loss=0.4444444 P(node) =0.000357072
##
       class counts:
                               0
                                     3
                                                                          0
0
      probabilities: 0.000 0.000 0.333 0.111 0.000 0.000 0.556 0.000 0.000
##
0.000
##
## Node number 291: 11 observations
                        expected loss=0.09090909 P(node) =0.0004364213
##
     predicted class=8
       class counts:
##
                         0
                               0
                                     0
                                            0
                                                 0
                                                        0
                                                              0
                                                                    0
                                                                         10
1
##
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.909
0.091
##
## Node number 292: 21 observations
     predicted class=1
                        expected loss=0.1904762
                                                 P(node) = 0.000833168
##
##
       class counts:
                         0
                              17
                                     2
                                            0
                                                  0
                                                        0
                                                              0
                                                                    0
                                                                          1
1
      probabilities: 0.000 0.810 0.095 0.000 0.000 0.000 0.000 0.000 0.048
##
0.048
##
```

```
## Node number 293: 36 observations, complexity param=0.0004018934
     predicted class=2 expected loss=0.6388889 P(node) =0.001428288
##
                                                                          7
##
       class counts:
                         0
                               0
                                    13
                                           10
                                                        0
                                                              3
                                                                    2
1
##
      probabilities: 0.000 0.000 0.361 0.278 0.000 0.000 0.083 0.056 0.194
0.028
##
     left son=586 (24 obs) right son=587 (12 obs)
##
     Primary splits:
##
         516 < 7
                     to the right, improve=6.777778, (0 missing)
##
         517 < 88
                     to the right, improve=6.777778, (0 missing)
##
         515 < 1.5
                     to the right, improve=6.383129, (0 missing)
                     to the right, improve=6.377778, (0 missing)
         488 < 234
##
##
         544 < 8
                     to the left, improve=5.863492, (0 missing)
##
     Surrogate splits:
##
         517 < 88
                     to the right, agree=1.000, adj=1.00, (0 split)
##
         488 < 234
                     to the right, agree=0.917, adj=0.75, (0 split)
##
         489 < 152.5 to the right, agree=0.917, adj=0.75, (0 split)
##
         515 < 1.5
                     to the right, agree=0.917, adj=0.75, (0 split)
                     to the right, agree=0.917, adj=0.75, (0 split)
##
         544 < 8
##
## Node number 294: 17 observations
##
     predicted class=7
                        expected loss=0.05882353 P(node) =0.0006744694
##
       class counts:
                               0
                                                        0
                         0
                                      0
                                            1
                                                  0
                                                              0
                                                                   16
                                                                           0
0
      probabilities: 0.000 0.000 0.000 0.059 0.000 0.000 0.000 0.941 0.000
##
0.000
##
## Node number 295: 12 observations
     predicted class=9
                        expected loss=0.4166667
                                                  P(node) = 0.000476096
##
##
       class counts:
                         0
                               0
                                      0
                                            2
                                                  1
                                                        0
                                                              0
                                                                           1
                                                                    1
7
      probabilities: 0.000 0.000 0.000 0.167 0.083 0.000 0.000 0.083 0.083
##
0.583
##
## Node number 296: 14 observations
     predicted class=7
##
                        expected loss=0.7142857
                                                  P(node) =0.0005554453
##
       class counts:
                         1
                               2
                                      0
                                                  2
                                                        1
                                                              3
                                                                           0
1
      probabilities: 0.071 0.143 0.000 0.000 0.143 0.071 0.214 0.286 0.000
##
0.071
##
## Node number 297: 98 observations
                        expected loss=0.02040816 P(node) =0.003888117
##
     predicted class=6
##
       class counts:
                         0
                               0
                                      0
                                            0
                                                  1
                                                        1
                                                             96
                                                                    0
                                                                           0
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.010 0.010 0.980 0.000 0.000
0.000
##
## Node number 298: 12 observations
     predicted class=6 expected loss=0.5 P(node) =0.000476096
```

```
2
##
       class counts: 4
0
##
      probabilities: 0.333 0.000 0.167 0.000 0.000 0.000 0.500 0.000 0.000
0.000
##
## Node number 299: 20 observations,
                                        complexity param=0.0001786193
     predicted class=8 expected loss=0.5 P(node) =0.0007934934
                                     1
##
       class counts:
                         0
                               0
                                                 0
                                                                        10
5
##
      probabilities: 0.000 0.000 0.050 0.000 0.000 0.150 0.000 0.050 0.500
0.250
##
     left son=598 (9 obs) right son=599 (11 obs)
##
     Primary splits:
         432 < 47.5 to the left,
##
                                   improve=5.381818, (0 missing)
##
         433 < 173.5 to the left,
                                   improve=5.381818, (0 missing)
##
         434 < 181.5 to the left,
                                   improve=5.381818, (0 missing)
##
         409 < 183
                   to the left,
                                   improve=5.000000, (0 missing)
##
         410 < 50.5 to the left,
                                   improve=5.000000, (0 missing)
##
     Surrogate splits:
##
         433 < 173.5 to the left,
                                   agree=1.00, adj=1.000, (0 split)
##
         434 < 181.5 to the left,
                                   agree=1.00, adj=1.000, (0 split)
##
         406 < 216
                     to the left,
                                   agree=0.95, adj=0.889, (0 split)
##
                     to the left,
                                   agree=0.95, adj=0.889, (0 split)
         461 < 48
##
         431 < 37.5 to the left, agree=0.90, adj=0.778, (0 split)
##
## Node number 304: 7 observations
##
     predicted class=2
                        expected loss=0.1428571 P(node) =0.0002777227
                                                       0
##
       class counts:
                         0
                               0
                                     6
                                           1
                                                 0
                                                             0
                                                                   0
                                                                         0
0
      probabilities: 0.000 0.000 0.857 0.143 0.000 0.000 0.000 0.000 0.000
##
0.000
##
## Node number 305: 52 observations
##
     predicted class=3 expected loss=0.07692308 P(node) =0.002063083
##
                                                                         1
       class counts:
                         0
                               0
                                     1
                                          48
                                                 0
                                                       0
0
##
      probabilities: 0.000 0.000 0.019 0.923 0.000 0.000 0.000 0.038 0.019
0.000
##
## Node number 306: 47 observations,
                                        complexity param=0.0004465482
     predicted class=2 expected loss=0.4893617 P(node) =0.001864709
##
       class counts:
                               4
                                    24
                                           8
                                                                        11
0
##
      probabilities: 0.000 0.085 0.511 0.170 0.000 0.000 0.000 0.000 0.234
0.000
##
     left son=612 (34 obs) right son=613 (13 obs)
##
     Primary splits:
##
         321 < 195
                    to the left, improve=10.735050, (0 missing)
##
         293 < 55.5 to the left,
                                   improve= 9.355531, (0 missing)
##
         292 < 19.5 to the left, improve= 8.993085, (0 missing)
```

```
to the right, improve= 8.151418, (0 missing)
##
         600 < 133
##
                                   improve= 8.006097, (0 missing)
         320 < 30
                     to the left,
##
     Surrogate splits:
         293 < 55.5 to the left,
##
                                   agree=0.979, adj=0.923, (0 split)
##
         292 < 19.5 to the left,
                                   agree=0.957, adj=0.846, (0 split)
##
         264 < 80.5
                     to the left,
                                   agree=0.936, adj=0.769, (0 split)
##
         320 < 9.5
                     to the left,
                                   agree=0.936, adj=0.769, (0 split)
         265 < 57.5 to the left, agree=0.915, adj=0.692, (0 split)
##
##
## Node number 307: 56 observations,
                                        complexity param=0.0001786193
##
     predicted class=7
                        expected loss=0.25 P(node) =0.002221781
                         0
                                     2
                                            5
                                                                   42
##
       class counts:
                               5
                                                 0
                                                        0
                                                              0
                                                                          1
1
##
      probabilities: 0.000 0.089 0.036 0.089 0.000 0.000 0.000 0.750 0.018
0.018
##
     left son=614 (7 obs) right son=615 (49 obs)
##
     Primary splits:
##
         546 < 15
                                   improve=6.275510, (0 missing)
                     to the left,
         578 < 59
                     to the right, improve=5.541667, (0 missing)
##
##
         634 < 94
                     to the right, improve=4.397959, (0 missing)
         606 < 105.5 to the right, improve=4.275510, (0 missing)
##
                     to the left, improve=4.208333, (0 missing)
##
         518 < 116
##
     Surrogate splits:
##
         518 < 116
                     to the left, agree=0.946, adj=0.571, (0 split)
##
         573 < 16
                     to the left, agree=0.929, adj=0.429, (0 split)
##
         574 < 90
                     to the left,
                                   agree=0.929, adj=0.429, (0 split)
                     to the right, agree=0.911, adj=0.286, (0 split)
##
         315 < 196
         316 < 178.5 to the right, agree=0.911, adj=0.286, (0 split)
##
##
## Node number 310: 7 observations
##
     predicted class=6 expected loss=0.5714286 P(node) =0.0002777227
##
       class counts:
                                                                          2
                                            1
0
      probabilities: 0.143 0.000 0.000 0.143 0.000 0.000 0.429 0.000 0.286
##
0.000
##
## Node number 311: 35 observations
                        expected loss=0.05714286 P(node) =0.001388613
##
     predicted class=8
##
       class counts:
                         0
                               0
                                     1
                                            0
                                                 0
                                                        1
                                                              0
                                                                    0
                                                                         33
0
##
      probabilities: 0.000 0.000 0.029 0.000 0.000 0.029 0.000 0.000 0.943
0.000
##
## Node number 312: 35 observations,
                                        complexity param=0.0002976988
     predicted class=1
                        expected loss=0.6285714 P(node) =0.001388613
##
##
       class counts:
                         0
                              13
                                     0
                                            3
                                                  0
                                                        1
                                                              0
                                                                    8
                                                                          9
1
##
      probabilities: 0.000 0.371 0.000 0.086 0.000 0.029 0.000 0.229 0.257
0.029
     left son=624 (26 obs) right son=625 (9 obs)
```

```
Primary splits:
##
##
         180 < 118.5 to the right, improve=7.936508, (0 missing)
##
         269 < 25.5 to the left,
                                   improve=7.431391, (0 missing)
##
         268 < 26
                     to the left,
                                   improve=7.098344, (0 missing)
         377 < 134.5 to the right, improve=7.071429, (0 missing)
##
##
         233 < 126
                     to the left, improve=6.786181, (0 missing)
##
     Surrogate splits:
         179 < 7
##
                     to the right, agree=0.943, adj=0.778, (0 split)
##
         181 < 43
                     to the right, agree=0.943, adj=0.778, (0 split)
##
         377 < 134.5 to the right, agree=0.943, adj=0.778, (0 split)
##
         349 < 138.5 to the right, agree=0.914, adj=0.667, (0 split)
         352 < 251.5 to the left, agree=0.914, adj=0.667, (0 split)
##
##
## Node number 313: 45 observations,
                                        complexity param=0.0001339645
                        expected loss=0.2888889 P(node) =0.00178536
##
     predicted class=8
##
       class counts:
                         0
                               0
                                     1
                                           3
                                                 4
                                                                         32
5
##
      probabilities: 0.000 0.000 0.022 0.067 0.089 0.000 0.000 0.000 0.711
0.111
##
     left son=626 (8 obs) right son=627 (37 obs)
     Primary splits:
##
##
         461 < 62.5 to the left,
                                   improve=5.658408, (0 missing)
##
         433 < 129
                     to the left,
                                   improve=5.444444, (0 missing)
##
         180 < 61.5 to the left,
                                   improve=5.134153, (0 missing)
##
         207 < 191.5 to the left,
                                   improve=4.691111, (0 missing)
         488 < 15.5 to the left,
##
                                   improve=4.555556, (0 missing)
##
     Surrogate splits:
         433 < 15.5 to the left,
##
                                   agree=0.956, adj=0.750, (0 split)
##
         209 < 4.5
                     to the left,
                                   agree=0.889, adj=0.375, (0 split)
##
         405 < 2.5
                     to the left,
                                   agree=0.889, adj=0.375, (0 split)
##
         406 < 230.5 to the left,
                                   agree=0.889, adj=0.375, (0 split)
##
         432 < 6
                     to the left,
                                   agree=0.889, adj=0.375, (0 split)
##
## Node number 314: 18 observations
##
     predicted class=3
                        expected loss=0.4444444 P(node) =0.000714144
##
       class counts:
                         0
                               0
                                                       1
                                                              0
                                                                    3
                                                                          3
                                     0
                                          10
                                                 0
1
##
      probabilities: 0.000 0.000 0.000 0.556 0.000 0.056 0.000 0.167 0.167
0.056
##
## Node number 315: 26 observations,
                                        complexity param=4.465482e-05
##
     predicted class=9
                        expected loss=0.2307692 P(node) =0.001031541
##
       class counts:
                         1
                               0
                                           0
                                                 3
                                                        0
                                                                          1
20
##
      probabilities: 0.038 0.000 0.000 0.000 0.115 0.000 0.000 0.038 0.038
0.769
##
     left son=630 (7 obs) right son=631 (19 obs)
##
     Primary splits:
##
         325 < 213.5 to the left,
                                   improve=3.401966, (0 missing)
##
         326 < 25.5 to the left, improve=3.401966, (0 missing)
```

```
353 < 159.5 to the left, improve=3.401966, (0 missing)
##
##
         440 < 153.5 to the right, improve=3.401966, (0 missing)
         441 < 22.5 to the right, improve=3.401966, (0 missing)
##
##
     Surrogate splits:
##
         157 < 68
                     to the right, agree=0.923, adj=0.714, (0 split)
##
         158 < 9
                     to the right, agree=0.923, adj=0.714, (0 split)
##
         326 < 25.5 to the left, agree=0.923, adj=0.714, (0 split)
         353 < 159.5 to the left, agree=0.923, adj=0.714, (0 split)
##
         156 < 47.5 to the right, agree=0.885, adj=0.571, (0 split)
##
##
## Node number 318: 7 observations
##
     predicted class=7
                        expected loss=0.5714286 P(node) =0.0002777227
##
       class counts:
                         0
                               0
                                                  2
                                                        1
                                                                    3
                                                                          0
                                     0
                                           1
                                                              0
0
##
      probabilities: 0.000 0.000 0.000 0.143 0.286 0.143 0.000 0.429 0.000
0.000
##
## Node number 319: 348 observations,
                                         complexity param=8.930964e-05
     predicted class=8
                        expected loss=0.06321839 P(node) =0.01380678
##
##
       class counts:
                         1
                               1
                                     1
                                            3
                                                  8
                                                        1
                                                              2
                                                                    2
                                                                        326
3
      probabilities: 0.003 0.003 0.003 0.009 0.023 0.003 0.006 0.006 0.937
##
0.009
##
     left son=638 (36 obs) right son=639 (312 obs)
##
     Primary splits:
         401 < 218.5 to the right, improve=5.680961, (0 missing)
##
##
         430 < 252.5 to the right, improve=4.851546, (0 missing)
         573 < 252.5 to the right, improve=4.635418, (0 missing)
##
##
                     to the right, improve=4.473383, (0 missing)
         428 < 52
##
         400 < 162.5 to the right, improve=4.259570, (0 missing)
##
     Surrogate splits:
##
         400 < 15
                     to the right, agree=0.983, adj=0.833, (0 split)
##
         428 < 3
                     to the right, agree=0.966, adj=0.667, (0 split)
##
         372 < 145.5 to the right, agree=0.963, adj=0.639, (0 split)
##
                     to the right, agree=0.957, adj=0.583, (0 split)
         429 < 128
##
                     to the right, agree=0.954, adj=0.556, (0 split)
         399 < 8
##
## Node number 320: 39 observations,
                                        complexity param=4.465482e-05
##
     predicted class=1 expected loss=0.1538462 P(node) =0.001547312
##
       class counts:
                         0
                              33
                                     3
                                            0
                                                        1
                                                                    2
                                                                          0
0
##
      probabilities: 0.000 0.846 0.077 0.000 0.000 0.026 0.000 0.051 0.000
0.000
##
     left son=640 (32 obs) right son=641 (7 obs)
     Primary splits:
##
##
         264 < 27.5 to the right, improve=4.20902, (0 missing)
##
         265 < 185.5 to the right, improve=4.20902, (0 missing)
                     to the right, improve=4.20902, (0 missing)
##
         292 < 6
##
         293 < 175
                     to the right, improve=4.20902, (0 missing)
         321 < 128.5 to the right, improve=4.20902, (0 missing)
##
```

```
##
     Surrogate splits:
##
         265 < 185.5 to the right, agree=1.000, adj=1.000, (0 split)
                     to the right, agree=1.000, adj=1.000, (0 split)
##
                     to the right, agree=1.000, adj=1.000, (0 split)
##
         293 < 175
         321 < 128.5 to the right, agree=1.000, adj=1.000, (0 split)
##
##
         236 < 39.5 to the right, agree=0.974, adj=0.857, (0 split)
##
## Node number 321: 25 observations,
                                        complexity param=4.465482e-05
     predicted class=3
                        expected loss=0.2 P(node) =0.0009918667
##
       class counts:
                         0
                               0
                                          20
                                                 0
                                                                   3
                                                                         2
0
##
      probabilities: 0.000 0.000 0.000 0.800 0.000 0.000 0.000 0.120 0.080
0.000
##
     left son=642 (18 obs) right son=643 (7 obs)
##
     Primary splits:
##
         628 < 164
                     to the right, improve=3.908571, (0 missing)
##
         625 < 17.5 to the right, improve=3.230000, (0 missing)
##
         653 < 10
                     to the right, improve=3.230000, (0 missing)
         654 < 115
                     to the right, improve=3.230000, (0 missing)
##
##
         156 < 139.5 to the right, improve=2.702222, (0 missing)
##
     Surrogate splits:
##
         627 < 33.5 to the right, agree=0.96, adj=0.857, (0 split)
##
         214 < 8
                     to the right, agree=0.92, adj=0.714, (0 split)
##
         599 < 4
                     to the right, agree=0.92, adj=0.714, (0 split)
                    to the right, agree=0.92, adj=0.714, (0 split)
##
         625 < 49.5
         629 < 47.5 to the right, agree=0.92, adj=0.714, (0 split)
##
##
## Node number 322: 1393 observations,
                                          complexity param=0.0002456015
##
     predicted class=3
                        expected loss=0.04020101 P(node) =0.05526681
##
       class counts:
                         0
                               2
                                    10 1337
                                                      23
                                                                        16
5
##
      probabilities: 0.000 0.001 0.007 0.960 0.000 0.017 0.000 0.000 0.011
0.004
##
     left son=644 (1370 obs) right son=645 (23 obs)
##
     Primary splits:
##
         317 < 206
                     to the left,
                                   improve=17.86201, (0 missing)
         289 < 174
                                   improve=16.71907, (0 missing)
##
                     to the left,
##
         487 < 140.5 to the left,
                                   improve=16.29442, (0 missing)
##
         488 < 58.5 to the left,
                                   improve=14.98376, (0 missing)
##
         316 < 156
                     to the left,
                                   improve=13.71488, (0 missing)
##
     Surrogate splits:
##
         289 < 151.5 to the left,
                                   agree=0.992, adj=0.522, (0 split)
##
         316 < 132
                     to the left,
                                   agree=0.992, adj=0.522, (0 split)
                                   agree=0.986, adj=0.174, (0 split)
##
         288 < 211
                     to the left,
                                   agree=0.984, adj=0.043, (0 split)
##
         290 < 40.5
                    to the left,
##
         717 < 142
                     to the left,
                                   agree=0.984, adj=0.043, (0 split)
##
## Node number 323: 45 observations,
                                       complexity param=0.0002456015
##
     predicted class=3 expected loss=0.6222222 P(node) =0.00178536
      class counts: 0 6 0 17 0 15
```

```
0
##
      probabilities: 0.000 0.133 0.000 0.378 0.000 0.333 0.000 0.044 0.111
0.000
##
     left son=646 (16 obs) right son=647 (29 obs)
##
     Primary splits:
         296 < 124.5 to the right, improve=7.904885, (0 missing)
##
##
                     to the right, improve=7.849679, (0 missing)
         297 < 146
                     to the right, improve=7.737020, (0 missing)
##
         205 < 103
         324 < 169.5 to the right, improve=7.651852, (0 missing)
##
##
         323 < 191.5 to the right, improve=7.538192, (0 missing)
##
     Surrogate splits:
##
         297 < 25.5 to the right, agree=0.978, adj=0.937, (0 split)
##
         268 < 10.5 to the right, agree=0.956, adj=0.875, (0 split)
##
         324 < 169.5 to the right, agree=0.956, adj=0.875, (0 split)
##
         323 < 191.5 to the right, agree=0.933, adj=0.812, (0 split)
##
         269 < 58
                     to the right, agree=0.911, adj=0.750, (0 split)
##
## Node number 324: 62 observations
     predicted class=5
##
                        expected loss=0.08064516 P(node) =0.002459829
                                                       57
##
       class counts:
                         1
                               0
                                     0
                                           2
                                                  2
                                                              0
                                                                    0
                                                                          0
0
      probabilities: 0.016 0.000 0.000 0.032 0.032 0.919 0.000 0.000 0.000
##
0.000
##
## Node number 325: 16 observations
##
     predicted class=9
                        expected loss=0.6875
                                             P(node) =0.0006347947
##
       class counts:
                         0
                               0
                                                  2
                                     0
                                           1
                                                                          4
5
##
      probabilities: 0.000 0.000 0.000 0.062 0.125 0.250 0.000 0.000 0.250
0.312
##
## Node number 326: 25 observations,
                                        complexity param=0.0002232741
##
     predicted class=3
                        expected loss=0.52 P(node) =0.0009918667
##
       class counts:
                         2
                                          12
                                                                          4
1
##
      probabilities: 0.080 0.000 0.000 0.480 0.000 0.200 0.040 0.000 0.160
0.040
##
     left son=652 (13 obs) right son=653 (12 obs)
##
     Primary splits:
         401 < 112.5 to the left,
##
                                   improve=7.180513, (0 missing)
##
         428 < 4
                     to the left,
                                   improve=7.180513, (0 missing)
         429 < 41
##
                     to the left,
                                   improve=6.840519, (0 missing)
##
         400 < 67
                     to the left,
                                   improve=6.697662, (0 missing)
##
         399 < 42
                     to the left,
                                   improve=4.960000, (0 missing)
##
     Surrogate splits:
##
         428 < 4
                     to the left,
                                   agree=1.00, adj=1.000, (0 split)
##
         400 < 67
                     to the left,
                                   agree=0.96, adj=0.917, (0 split)
##
         429 < 41
                     to the left,
                                   agree=0.96, adj=0.917, (0 split)
##
         399 < 42
                     to the left,
                                   agree=0.92, adj=0.833, (0 split)
                     to the left, agree=0.92, adj=0.833, (0 split)
##
         427 < 4
```

```
##
## Node number 327: 21 observations
##
     predicted class=9
                        expected loss=0.2380952 P(node) =0.000833168
       class counts:
                               0
##
                         0
                                     0
                                           3
                                                  1
                                                        0
                                                              1
                                                                          0
16
      probabilities: 0.000 0.000 0.000 0.143 0.048 0.000 0.048 0.000 0.000
##
0.762
##
## Node number 328: 202 observations,
                                         complexity param=8.930964e-05
##
     predicted class=3
                        expected loss=0.06930693 P(node) =0.008014283
##
       class counts:
                         2
                               1
                                     4
                                          188
                                                        2
                                                                          4
                                                 0
1
##
      probabilities: 0.010 0.005 0.020 0.931 0.000 0.010 0.000 0.000 0.020
0.005
##
     left son=656 (9 obs) right son=657 (193 obs)
##
     Primary splits:
##
         428 < 205
                     to the right, improve=6.698581, (0 missing)
##
         456 < 107.5 to the right, improve=5.803467, (0 missing)
         427 < 216.5 to the left, improve=5.334603, (0 missing)
##
##
         455 < 63.5 to the right, improve=4.149721, (0 missing)
##
         454 < 252
                     to the right, improve=4.039365, (0 missing)
##
     Surrogate splits:
##
         357 < 210.5 to the right, agree=0.975, adj=0.444, (0 split)
##
         358 < 107
                     to the right, agree=0.975, adj=0.444, (0 split)
##
         427 < 232.5 to the right, agree=0.975, adj=0.444, (0 split)
                     to the right, agree=0.970, adj=0.333, (0 split)
##
         385 < 237.5 to the right, agree=0.970, adj=0.333, (0 split)
##
##
## Node number 329: 59 observations,
                                        complexity param=0.000379566
##
     predicted class=3
                        expected loss=0.6271186 P(node) =0.002340805
##
       class counts:
                         5
                               3
                                     1
                                          22
                                                  0
                                                       21
                                                              3
                                                                    3
                                                                          1
0
      probabilities: 0.085 0.051 0.017 0.373 0.000 0.356 0.051 0.051 0.017
##
0.000
##
     left son=658 (29 obs) right son=659 (30 obs)
##
     Primary splits:
         348 < 235
##
                     to the left,
                                   improve=11.326320, (0 missing)
##
         321 < 120
                     to the left,
                                   improve=10.406780, (0 missing)
##
         320 < 11.5 to the left,
                                   improve= 9.742619, (0 missing)
         209 < 30
##
                     to the right, improve= 9.666942, (0 missing)
##
         294 < 71
                     to the left,
                                   improve= 9.123446, (0 missing)
##
     Surrogate splits:
##
         320 < 105.5 to the left,
                                   agree=0.898, adj=0.793, (0 split)
##
         347 < 108.5 to the left,
                                   agree=0.898, adj=0.793, (0 split)
##
         319 < 2
                     to the left,
                                   agree=0.864, adj=0.724, (0 split)
##
         321 < 207
                     to the left,
                                   agree=0.831, adj=0.655, (0 split)
##
         349 < 250.5 to the left, agree=0.814, adj=0.621, (0 split)
##
## Node number 330: 25 observations,
                                        complexity param=8.930964e-05
     predicted class=0 expected loss=0.24 P(node) =0.0009918667
```

```
##
       class counts:
                        19
0
##
      probabilities: 0.760 0.000 0.000 0.000 0.000 0.040 0.080 0.000 0.120
0.000
##
     left son=660 (18 obs) right son=661 (7 obs)
##
     Primary splits:
##
         214 < 169
                     to the right, improve=5.142857, (0 missing)
##
         241 < 184.5 to the right, improve=5.142857, (0 missing)
         295 < 242.5 to the right, improve=5.142857, (0 missing)
##
##
         351 < 223
                     to the left,
                                   improve=5.142857, (0 missing)
##
         352 < 50
                     to the left,
                                   improve=5.142857, (0 missing)
##
     Surrogate splits:
##
         241 < 184.5 to the right, agree=1.00, adj=1.000, (0 split)
##
         352 < 50
                     to the left,
                                   agree=1.00, adj=1.000, (0 split)
                     to the right, agree=0.96, adj=0.857, (0 split)
##
         240 < 245
##
         353 < 185.5 to the left,
                                   agree=0.96, adj=0.857, (0 split)
##
         380 < 176
                     to the left,
                                    agree=0.96, adj=0.857, (0 split)
##
## Node number 331: 131 observations,
                                          complexity param=0.0005358578
##
     predicted class=5
                        expected loss=0.2748092 P(node) =0.005197381
##
       class counts:
                         0
                               0
                                      0
                                           25
                                                  0
                                                       95
                                                              3
                                                                    1
                                                                           4
3
##
      probabilities: 0.000 0.000 0.000 0.191 0.000 0.725 0.023 0.008 0.031
0.023
##
     left son=662 (30 obs) right son=663 (101 obs)
##
     Primary splits:
##
         299 < 40
                     to the right, improve=18.01656, (0 missing)
         298 < 162
                     to the right, improve=17.94568, (0 missing)
##
##
         326 < 98
                     to the right, improve=14.96753, (0 missing)
##
         327 < 8.5
                     to the right, improve=13.19848, (0 missing)
##
         328 < 56.5
                     to the right, improve=12.87945, (0 missing)
##
     Surrogate splits:
##
         298 < 80.5
                     to the right, agree=0.954, adj=0.800, (0 split)
##
         271 < 217
                     to the right, agree=0.916, adj=0.633, (0 split)
##
                     to the right, agree=0.916, adj=0.633, (0 split)
         297 < 131
                     to the right, agree=0.908, adj=0.600, (0 split)
##
         300 < 0.5
         270 < 202.5 to the right, agree=0.885, adj=0.500, (0 split)
##
##
## Node number 332: 85 observations,
                                         complexity param=8.930964e-05
                        expected loss=0.07058824 P(node) =0.003372347
##
     predicted class=1
##
       class counts:
                         0
                              79
                                      0
                                            0
                                                  1
                                                        0
                                                              1
                                                                    4
                                                                           0
0
      probabilities: 0.000 0.929 0.000 0.000 0.012 0.000 0.012 0.047 0.000
##
0.000
##
     left son=664 (77 obs) right son=665 (8 obs)
##
     Primary splits:
##
         324 < 109.5 to the left,
                                   improve=6.114706, (0 missing)
##
                                   improve=6.114706, (0 missing)
         352 < 173
                     to the left,
##
         266 < 71.5 to the right, improve=4.533204, (0 missing)
##
         296 < 104.5 to the left, improve=4.533204, (0 missing)
```

```
##
         380 < 105.5 to the left,
                                   improve=3.391022, (0 missing)
##
     Surrogate splits:
##
         352 < 173
                     to the left,
                                   agree=1.000, adj=1.000, (0 split)
                                   agree=0.976, adj=0.750, (0 split)
##
         232 < 22
                     to the left,
##
         380 < 178
                     to the left,
                                   agree=0.976, adj=0.750, (0 split)
##
         204 < 12.5
                     to the left,
                                   agree=0.965, adj=0.625, (0 split)
##
         260 < 14
                     to the left,
                                   agree=0.965, adj=0.625, (0 split)
##
## Node number 333: 19 observations
##
     predicted class=5
                        expected loss=0.7368421 P(node) =0.0007538187
##
       class counts:
                         0
                               1
                                     0
                                                                    3
                                                                          3
3
##
      probabilities: 0.000 0.053 0.000 0.211 0.000 0.263 0.000 0.158 0.158
0.158
##
## Node number 334: 58 observations,
                                        complexity param=0.0002232741
     predicted class=5
                        expected loss=0.2586207 P(node) =0.002301131
##
       class counts:
                         5
                               0
                                     1
                                            6
                                                       43
                                                              1
                                                                    1
                                                                          1
0
##
      probabilities: 0.086 0.000 0.017 0.103 0.000 0.741 0.017 0.017 0.017
0.000
##
     left son=668 (7 obs) right son=669 (51 obs)
##
     Primary splits:
##
         413 < 194
                     to the right, improve=7.789916, (0 missing)
                     to the right, improve=7.442577, (0 missing)
##
         507 < 5.5
                     to the right, improve=7.220000, (0 missing)
##
         456 < 243
         455 < 228.5 to the right, improve=6.977324, (0 missing)
##
                     to the right, improve=6.832200, (0 missing)
##
         385 < 3.5
##
     Surrogate splits:
##
         385 < 28
                     to the right, agree=0.983, adj=0.857, (0 split)
##
         414 < 28.5 to the right, agree=0.983, adj=0.857, (0 split)
##
         330 < 169.5 to the right, agree=0.966, adj=0.714, (0 split)
##
         358 < 128.5 to the right, agree=0.966, adj=0.714, (0 split)
         359 < 52.5 to the right, agree=0.966, adj=0.714, (0 split)
##
##
## Node number 335: 113 observations,
                                         complexity param=0.001161025
##
     predicted class=9
                        expected loss=0.7256637 P(node) =0.004483237
##
       class counts:
                         0
                               7
                                     0
                                          16
                                                 30
                                                        5
                                                                   11
                                                                          6
31
##
      probabilities: 0.000 0.062 0.000 0.142 0.265 0.044 0.062 0.097 0.053
0.274
##
     left son=670 (43 obs) right son=671 (70 obs)
##
     Primary splits:
##
         237 < 2
                     to the left,
                                   improve=15.18030, (0 missing)
##
         210 < 1
                     to the left,
                                   improve=14.74200, (0 missing)
##
         238 < 17
                     to the left,
                                   improve=14.30474, (0 missing)
##
         209 < 3
                     to the left,
                                   improve=12.95114, (0 missing)
##
                     to the left,
                                   improve=12.88428, (0 missing)
         236 < 5.5
##
     Surrogate splits:
##
         210 < 1 to the left, agree=0.956, adj=0.884, (0 split)
```

```
agree=0.938, adj=0.837, (0 split)
##
         238 < 17
                     to the left,
##
         209 < 3
                     to the left,
                                    agree=0.920, adj=0.791, (0 split)
                                    agree=0.858, adj=0.628, (0 split)
##
         236 < 5.5
                     to the left,
         211 < 2.5
                     to the left,
                                    agree=0.850, adj=0.605, (0 split)
##
##
## Node number 338: 112 observations,
                                          complexity param=0.0004465482
     predicted class=3
                        expected loss=0.2321429 P(node) =0.004443563
##
                                                        4
##
       class counts:
                         0
                               0
                                      0
                                           86
                                                                     0
                                                                          16
6
##
      probabilities: 0.000 0.000 0.000 0.768 0.000 0.036 0.000 0.000 0.143
0.054
##
     left son=676 (101 obs) right son=677 (11 obs)
##
     Primary splits:
##
         484 < 186
                     to the left,
                                    improve=14.425810, (0 missing)
##
         485 < 113
                     to the left,
                                    improve=12.845660, (0 missing)
##
         483 < 100
                     to the left,
                                    improve=11.382120, (0 missing)
##
         456 < 204.5 to the left,
                                    improve=10.193880, (0 missing)
##
         457 < 141
                     to the left,
                                    improve= 9.204099, (0 missing)
##
     Surrogate splits:
##
         485 < 113
                     to the left,
                                    agree=0.991, adj=0.909, (0 split)
##
                     to the left,
                                    agree=0.964, adj=0.636, (0 split)
         483 < 100
##
         456 < 204.5 to the left,
                                    agree=0.955, adj=0.545, (0 split)
##
                                    agree=0.955, adj=0.545, (0 split)
         457 < 252.5 to the left,
##
         512 < 218
                     to the left,
                                    agree=0.955, adj=0.545, (0 split)
##
## Node number 339: 180 observations,
                                          complexity param=0.0007144771
                        expected loss=0.6388889 P(node) =0.00714144
##
     predicted class=5
                         5
                               1
                                                       65
##
       class counts:
                                      1
                                           59
                                                  0
                                                              2
                                                                     3
                                                                          21
23
      probabilities: 0.028 0.006 0.006 0.328 0.000 0.361 0.011 0.017 0.117
##
0.128
##
     left son=678 (40 obs) right son=679 (140 obs)
##
     Primary splits:
##
         176 < 79.5
                     to the right, improve=14.89206, (0 missing)
                     to the right, improve=14.58492, (0 missing)
##
         149 < 81
##
         262 < 5
                     to the left, improve=13.83847, (0 missing)
##
         263 < 51.5
                     to the left,
                                    improve=13.79172, (0 missing)
##
         148 < 48
                     to the right, improve=13.79111, (0 missing)
##
     Surrogate splits:
         175 < 3
                     to the right, agree=0.972, adj=0.875, (0 split)
##
##
         148 < 5.5
                     to the right, agree=0.944, adj=0.750, (0 split)
##
         177 < 213
                     to the right, agree=0.933, adj=0.700, (0 split)
##
         147 < 0.5
                     to the right, agree=0.922, adj=0.650, (0 split)
##
                     to the right, agree=0.922, adj=0.650, (0 split)
         149 < 46
##
## Node number 340: 23 observations
##
     predicted class=0
                        expected loss=0
                                          P(node) = 0.0009125174
##
       class counts:
                        23
                               0
                                      0
                                            0
                                                  0
                                                        0
                                                                     0
                                                                           0
0
##
      probabilities: 1.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
```

```
0.000
##
## Node number 341: 16 observations
     predicted class=8
                        expected loss=0.6875 P(node) =0.0006347947
##
       class counts:
                         1
                               0
                                     0
                                           3
                                                 1
                                                       1
                                                             0
                                                                          5
5
##
      probabilities: 0.062 0.000 0.000 0.188 0.062 0.062 0.000 0.000 0.312
0.312
##
## Node number 342: 33 observations,
                                        complexity param=0.0001786193
##
     predicted class=3
                        expected loss=0.3333333 P(node) =0.001309264
                         2
                                                                          2
##
       class counts:
                               0
                                     0
                                          22
                                                 0
                                                       5
                                                             1
1
##
      probabilities: 0.061 0.000 0.000 0.667 0.000 0.152 0.030 0.000 0.061
0.030
##
     left son=684 (23 obs) right son=685 (10 obs)
##
     Primary splits:
##
         214 < 206
                                   improve=6.733597, (0 missing)
                     to the left,
         242 < 146
                                   improve=6.217172, (0 missing)
##
                     to the left,
##
         187 < 34.5 to the left,
                                   improve=6.133597, (0 missing)
         243 < 100
                     to the left,
                                   improve=6.041958, (0 missing)
##
##
         244 < 6.5
                     to the left,
                                   improve=6.041958, (0 missing)
##
     Surrogate splits:
##
         187 < 96
                     to the left,
                                   agree=0.97, adj=0.9, (0 split)
##
         215 < 65.5 to the left,
                                   agree=0.97, adj=0.9, (0 split)
                                   agree=0.97, adj=0.9, (0 split)
##
         216 < 10
                     to the left,
##
         242 < 104.5 to the left,
                                   agree=0.97, adj=0.9, (0 split)
                                   agree=0.97, adj=0.9, (0 split)
##
         243 < 10.5 to the left,
##
## Node number 343: 440 observations,
                                         complexity param=0.0004018934
##
     predicted class=5 expected loss=0.08863636 P(node) =0.01745685
##
       class counts:
                         0
                                                     401
                                          28
2
      probabilities: 0.000 0.000 0.000 0.064 0.000 0.911 0.011 0.000 0.009
##
0.005
##
     left son=686 (18 obs) right son=687 (422 obs)
##
     Primary splits:
##
         121 < 122.5 to the right, improve=17.09669, (0 missing)
##
         262 < 12.5 to the left, improve=14.56608, (0 missing)
         148 < 159.5 to the right, improve=12.84638, (0 missing)
##
##
                     to the left, improve=12.75933, (0 missing)
         186 < 1
                     to the right, improve=12.66861, (0 missing)
##
         120 < 3.5
##
     Surrogate splits:
##
         120 < 19.5 to the right, agree=0.989, adj=0.722, (0 split)
##
         122 < 193.5 to the right, agree=0.982, adj=0.556, (0 split)
##
         148 < 232.5 to the right, agree=0.980, adj=0.500, (0 split)
##
                     to the right, agree=0.973, adj=0.333, (0 split)
         119 < 3.5
##
         118 < 64.5 to the right, agree=0.970, adj=0.278, (0 split)
##
## Node number 344: 70 observations, complexity param=0.0001786193
```

```
expected loss=0.1857143 P(node) =0.002777227
##
     predicted class=4
##
       class counts:
                         0
                               0
                                     0
                                                 57
                                                        3
                                                              4
                                                                    2
                                                                          0
3
      probabilities: 0.000 0.000 0.000 0.014 0.814 0.043 0.057 0.029 0.000
##
0.043
##
     left son=688 (63 obs) right son=689 (7 obs)
##
     Primary splits:
##
         124 < 37
                     to the left,
                                   improve=8.393651, (0 missing)
                                   improve=8.393651, (0 missing)
##
         543 < 17.5 to the left,
##
         544 < 32
                     to the left,
                                   improve=8.393651, (0 missing)
##
         571 < 5
                     to the left,
                                   improve=8.393651, (0 missing)
         152 < 187.5 to the left,
                                   improve=6.585023, (0 missing)
##
##
     Surrogate splits:
##
         543 < 17.5 to the left,
                                   agree=1.000, adj=1.000, (0 split)
##
         544 < 32
                     to the left,
                                   agree=1.000, adj=1.000, (0 split)
##
         571 < 5
                     to the left,
                                   agree=1.000, adj=1.000, (0 split)
##
         123 < 17
                     to the left,
                                   agree=0.986, adj=0.857, (0 split)
##
         125 < 76
                     to the left,
                                   agree=0.986, adj=0.857, (0 split)
##
## Node number 345: 15 observations
     predicted class=9
                        expected loss=0.6666667
##
                                                 P(node) =0.00059512
##
       class counts:
                         0
                               0
                                     0
                                           3
                                                  1
                                                        4
                                                              0
                                                                          1
                                                                    1
5
##
      probabilities: 0.000 0.000 0.000 0.200 0.067 0.267 0.000 0.067 0.067
0.333
##
## Node number 346: 12 observations
##
     predicted class=0
                        expected loss=0.6666667 P(node) =0.000476096
##
       class counts:
                         4
                               0
                                                        4
                                                                          2
                                     0
                                            2
                                                  0
0
##
      probabilities: 0.333 0.000 0.000 0.167 0.000 0.333 0.000 0.000 0.167
0.000
##
## Node number 347: 67 observations
     predicted class=7
                        expected loss=0.119403
                                                P(node) =0.002658203
##
       class counts:
                         0
                               3
                                           3
                                                  0
                                                        0
                                                              0
                                                                   59
                                                                          0
                                     0
2
##
      probabilities: 0.000 0.045 0.000 0.045 0.000 0.000 0.000 0.881 0.000
0.030
##
## Node number 348: 63 observations,
                                       complexity param=0.0001339645
##
     predicted class=5
                        expected loss=0.3174603 P(node) =0.002499504
##
       class counts:
                         0
                               0
                                     0
                                            5
                                                  4
                                                       43
                                                              3
                                                                          1
6
      probabilities: 0.000 0.000 0.000 0.079 0.063 0.683 0.048 0.016 0.016
##
0.095
##
     left son=696 (52 obs) right son=697 (11 obs)
##
     Primary splits:
##
         491 < 144
                     to the left, improve=7.089633, (0 missing)
##
         327 < 21.5 to the left, improve=6.906798, (0 missing)
```

```
improve=6.533968, (0 missing)
##
         519 < 156.5 to the left,
##
         518 < 94.5 to the left,
                                   improve=6.072836, (0 missing)
##
         326 < 177
                     to the left,
                                   improve=5.994709, (0 missing)
##
     Surrogate splits:
##
         463 < 59.5 to the left,
                                   agree=0.968, adj=0.818, (0 split)
##
         490 < 14.5
                     to the left,
                                   agree=0.952, adj=0.727, (0 split)
##
         435 < 146
                     to the left,
                                   agree=0.937, adj=0.636, (0 split)
                                   agree=0.937, adj=0.636, (0 split)
##
         462 < 69
                     to the left,
                                   agree=0.937, adj=0.636, (0 split)
##
         464 < 241.5 to the left,
##
## Node number 349: 37 observations,
                                         complexity param=0.0004018934
                        expected loss=0.6216216 P(node) =0.001467963
##
     predicted class=9
##
       class counts:
                         0
                               2
                                      0
                                           11
                                                  6
                                                        1
                                                              0
                                                                    1
                                                                           2
14
##
      probabilities: 0.000 0.054 0.000 0.297 0.162 0.027 0.000 0.027 0.054
0.378
##
     left son=698 (9 obs) right son=699 (28 obs)
##
     Primary splits:
                     to the right, improve=7.974903, (0 missing)
##
         468 < 26
##
         496 < 101
                     to the right, improve=7.974903, (0 missing)
##
         294 < 197.5 to the right, improve=7.958420, (0 missing)
         349 < 249.5 to the right, improve=7.570142, (0 missing)
##
                     to the right, improve=6.995072, (0 missing)
##
         321 < 196
##
     Surrogate splits:
##
         496 < 101
                     to the right, agree=1.000, adj=1.000, (0 split)
                     to the right, agree=0.946, adj=0.778, (0 split)
##
         524 < 69
         467 < 227.5 to the right, agree=0.919, adj=0.667, (0 split)
##
                     to the right, agree=0.919, adj=0.667, (0 split)
##
         469 < 23
##
         497 < 17
                     to the right, agree=0.919, adj=0.667, (0 split)
##
## Node number 350: 10 observations
##
     predicted class=3
                        expected loss=0.2 P(node) =0.0003967467
##
       class counts:
                         1
                               0
                                      0
                                            8
                                                  0
                                                        1
                                                                           0
0
##
      probabilities: 0.100 0.000 0.000 0.800 0.000 0.100 0.000 0.000 0.000
0.000
##
## Node number 351: 247 observations,
                                          complexity param=0.0002232741
##
     predicted class=9
                        expected loss=0.1336032 P(node) =0.009799643
                                            4
                                                                           5
##
       class counts:
                         3
                               0
                                      2
                                                        1
                                                                   10
214
##
      probabilities: 0.012 0.000 0.008 0.016 0.032 0.004 0.000 0.040 0.020
0.866
##
     left son=702 (9 obs) right son=703 (238 obs)
##
     Primary splits:
                     to the right, improve=10.555990, (0 missing)
##
         515 < 44
##
         543 < 61
                     to the right, improve= 9.894746, (0 missing)
##
         571 < 23.5 to the right, improve= 9.894746, (0 missing)
##
         516 < 10.5 to the right, improve= 9.302766, (0 missing)
         544 < 79 to the right, improve= 8.892397, (0 missing)
##
```

```
##
     Surrogate splits:
##
         516 < 10.5
                    to the right, agree=0.996, adj=0.889, (0 split)
                     to the right, agree=0.992, adj=0.778, (0 split)
##
         543 < 61
         571 < 23.5
                     to the right, agree=0.992, adj=0.778, (0 split)
##
##
         514 < 5.5
                     to the right, agree=0.988, adj=0.667, (0 split)
##
         542 < 0.5
                     to the right, agree=0.988, adj=0.667, (0 split)
##
## Node number 356: 39 observations,
                                        complexity param=0.0003125837
     predicted class=1
                        expected loss=0.6410256 P(node) =0.001547312
##
       class counts:
                         0
                              14
                                     0
                                           0
                                                 8
                                                       7
                                                             7
                                                                         2
1
      probabilities: 0.000 0.359 0.000 0.000 0.205 0.179 0.179 0.000 0.051
##
0.026
##
     left son=712 (14 obs) right son=713 (25 obs)
##
     Primary splits:
##
         457 < 14.5 to the left,
                                   improve=9.035165, (0 missing)
##
         402 < 16
                     to the left,
                                   improve=8.007525, (0 missing)
##
         572 < 25.5 to the left,
                                   improve=7.542308, (0 missing)
##
         548 < 3.5
                     to the left,
                                   improve=7.200244, (0 missing)
                     to the left,
##
         429 < 32
                                   improve=6.976518, (0 missing)
##
     Surrogate splits:
##
         429 < 8
                     to the left, agree=0.923, adj=0.786, (0 split)
##
         458 < 205.5 to the left,
                                   agree=0.923, adj=0.786, (0 split)
##
         160 < 13
                     to the right, agree=0.897, adj=0.714, (0 split)
##
         161 < 25
                     to the right, agree=0.897, adj=0.714, (0 split)
##
         402 < 16
                     to the left, agree=0.897, adj=0.714, (0 split)
##
## Node number 357: 44 observations,
                                        complexity param=0.0004018934
##
     predicted class=8
                        expected loss=0.6818182 P(node) =0.001745685
##
       class counts:
                         9
                               0
                                    12
                                           3
                                                 1
                                                       0
                                                             3
                                                                        14
2
##
      probabilities: 0.205 0.000 0.273 0.068 0.023 0.000 0.068 0.000 0.318
0.045
##
     left son=714 (9 obs) right son=715 (35 obs)
##
     Primary splits:
##
         406 < 98
                                   improve=7.388456, (0 missing)
                     to the left,
                     to the left,
         380 < 1.5
                                   improve=6.828010, (0 missing)
##
##
         386 < 75
                     to the right, improve=6.214646, (0 missing)
##
         414 < 43
                     to the right, improve=6.214646, (0 missing)
         429 < 50.5
                    to the right, improve=6.132249, (0 missing)
##
##
     Surrogate splits:
##
         386 < 75
                     to the right, agree=0.977, adj=0.889, (0 split)
##
         414 < 43
                     to the right, agree=0.977, adj=0.889, (0 split)
         358 < 82
##
                     to the right, agree=0.955, adj=0.778, (0 split)
##
         380 < 1.5
                     to the left, agree=0.955, adj=0.778, (0 split)
##
         385 < 31
                     to the right, agree=0.932, adj=0.667, (0 split)
##
## Node number 362: 13 observations
##
     predicted class=4 expected loss=0.6923077 P(node) =0.0005157707
       class counts: 0 0 0 3
                                                   1
```

```
0
##
      probabilities: 0.000 0.000 0.000 0.231 0.308 0.077 0.231 0.000 0.154
0.000
##
## Node number 363: 10 observations
##
     predicted class=9
                        expected loss=0.3 P(node) =0.0003967467
##
       class counts:
                         1
                                                                          0
                               0
                                     0
                                           0
                                                 1
                                                       1
                                                             0
7
##
      probabilities: 0.100 0.000 0.000 0.000 0.100 0.100 0.000 0.000 0.000
0.700
##
## Node number 366: 21 observations,
                                        complexity param=0.0002009467
     predicted class=5 expected loss=0.5238095 P(node) =0.000833168
##
##
       class counts:
                         0
                               0
                                     0
                                           3
                                                      10
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 0.143 0.000 0.476 0.381 0.000 0.000
0.000
##
     left son=732 (14 obs) right son=733 (7 obs)
##
     Primary splits:
##
         321 < 93.5 to the right, improve=6.619048, (0 missing)
##
         598 < 138.5 to the right, improve=5.011905, (0 missing)
         400 < 62.5 to the left, improve=5.011905, (0 missing)
##
##
                     to the right, improve=4.984127, (0 missing)
         597 < 135
##
         293 < 84.5 to the right, improve=4.761905, (0 missing)
##
     Surrogate splits:
         293 < 11.5 to the right, agree=0.952, adj=0.857, (0 split)
##
##
         430 < 97
                     to the left, agree=0.952, adj=0.857, (0 split)
         294 < 44.5 to the right, agree=0.905, adj=0.714, (0 split)
##
##
         401 < 208
                     to the left, agree=0.905, adj=0.714, (0 split)
##
         429 < 190.5 to the left, agree=0.905, adj=0.714, (0 split)
##
## Node number 367: 172 observations,
                                         complexity param=0.0001339645
##
     predicted class=6 expected loss=0.09302326 P(node) =0.006824043
##
       class counts:
                         2
                                     7
                                           1
                                                       2
                                                           156
                                                                          4
0
##
      probabilities: 0.012 0.000 0.041 0.006 0.000 0.012 0.907 0.000 0.023
0.000
##
     left son=734 (7 obs) right son=735 (165 obs)
##
     Primary splits:
         273 < 58.5 to the right, improve=8.024252, (0 missing)
##
##
         245 < 33.5 to the right, improve=6.886273, (0 missing)
##
         246 < 18.5 to the right, improve=6.886273, (0 missing)
##
         271 < 34
                     to the right, improve=6.157586, (0 missing)
##
         272 < 22.5 to the right, improve=6.157586, (0 missing)
##
     Surrogate splits:
##
         245 < 33.5 to the right, agree=0.994, adj=0.857, (0 split)
##
         246 < 18.5 to the right, agree=0.994, adj=0.857, (0 split)
##
         271 < 48.5 to the right, agree=0.994, adj=0.857, (0 split)
##
         272 < 103.5 to the right, agree=0.994, adj=0.857, (0 split)
##
         274 < 29 to the right, agree=0.994, adj=0.857, (0 split)
```

```
##
## Node number 372: 12 observations
##
     predicted class=0 expected loss=0.4166667 P(node) =0.000476096
##
       class counts:
                         7
                               0
                                            1
                                                  0
                                                        3
                                                              1
                                                                          0
                                     0
0
      probabilities: 0.583 0.000 0.000 0.083 0.000 0.250 0.083 0.000 0.000
##
0.000
##
## Node number 373: 28 observations,
                                        complexity param=0.0002083892
##
     predicted class=8
                        expected loss=0.5714286 P(node) =0.001110891
##
       class counts:
                         0
                               0
                                     0
                                            4
                                                       10
                                                                         12
                                                  0
                                                              2
0
##
      probabilities: 0.000 0.000 0.000 0.143 0.000 0.357 0.071 0.000 0.429
0.000
##
     left son=746 (16 obs) right son=747 (12 obs)
##
     Primary splits:
##
         297 < 178
                     to the left,
                                   improve=4.863095, (0 missing)
##
         468 < 197.5 to the right, improve=4.089377, (0 missing)
##
         269 < 10.5 to the left,
                                   improve=3.863095, (0 missing)
##
         270 < 1
                     to the left,
                                   improve=3.863095, (0 missing)
##
         431 < 27.5 to the left,
                                   improve=3.771429, (0 missing)
##
     Surrogate splits:
##
         298 < 3.5
                     to the left,
                                   agree=0.929, adj=0.833, (0 split)
##
         269 < 10.5 to the left,
                                   agree=0.857, adj=0.667, (0 split)
##
         270 < 1
                     to the left,
                                   agree=0.857, adj=0.667, (0 split)
##
         296 < 181
                     to the left,
                                   agree=0.857, adj=0.667, (0 split)
                                   agree=0.821, adj=0.583, (0 split)
##
         548 < 14
                     to the left,
##
## Node number 376: 20 observations
     predicted class=3 expected loss=0 P(node) =0.0007934934
##
##
       class counts:
                         0
                               0
                                     0
                                           20
                                                  0
                                                        0
                                                              0
                                                                    0
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 1.000 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 377: 7 observations
##
     predicted class=9
                        expected loss=0.2857143 P(node) =0.0002777227
##
       class counts:
                         0
                               0
                                                        1
                                                                          0
                                     0
                                            1
                                                  0
                                                              0
5
      probabilities: 0.000 0.000 0.000 0.143 0.000 0.143 0.000 0.000 0.000
##
0.714
##
## Node number 380: 13 observations
##
     predicted class=0 expected loss=0.5384615 P(node) =0.0005157707
                                                                          5
##
       class counts:
                         6
                               0
                                     1
                                            0
                                                              1
0
##
      probabilities: 0.462 0.000 0.077 0.000 0.000 0.000 0.077 0.000 0.385
0.000
##
## Node number 381: 15 observations
```

```
expected loss=0.4666667 P(node) =0.00059512
##
     predicted class=3
##
       class counts:
                         0
                               0
                                      0
                                            8
                                                  0
                                                        6
                                                              0
                                                                          0
1
      probabilities: 0.000 0.000 0.000 0.533 0.000 0.400 0.000 0.000 0.000
##
0.067
##
## Node number 382: 57 observations,
                                         complexity param=0.0002344378
##
     predicted class=8
                        expected loss=0.4385965 P(node) =0.002261456
##
       class counts:
                         1
                               0
                                    18
                                            3
                                                                         32
0
##
      probabilities: 0.018 0.000 0.316 0.053 0.000 0.018 0.018 0.018 0.561
0.000
##
     left son=764 (24 obs) right son=765 (33 obs)
##
     Primary splits:
##
         126 < 44.5 to the right, improve=11.622810, (0 missing)
##
                     to the right, improve=11.084970, (0 missing)
##
         154 < 246.5 to the right, improve=10.226700, (0 missing)
##
         606 < 250.5 to the right, improve= 9.847131, (0 missing)
                     to the right, improve= 9.819103, (0 missing)
##
         608 < 57
##
     Surrogate splits:
##
         127 < 24
                     to the right, agree=0.965, adj=0.917, (0 split)
##
         128 < 5.5
                     to the right, agree=0.947, adj=0.875, (0 split)
##
         125 < 1.5
                     to the right, agree=0.930, adj=0.833, (0 split)
##
         129 < 2.5
                     to the right, agree=0.912, adj=0.792, (0 split)
                     to the right, agree=0.877, adj=0.708, (0 split)
##
         154 < 237
##
## Node number 383: 345 observations,
                                          complexity param=0.0001786193
##
     predicted class=8
                        expected loss=0.09275362 P(node) =0.01368776
##
       class counts:
                         1
                                           12
                                                        6
                               0
                                      0
                                                  0
                                                             10
                                                                        313
3
##
      probabilities: 0.003 0.000 0.000 0.035 0.000 0.017 0.029 0.000 0.907
0.009
##
     left son=766 (36 obs) right son=767 (309 obs)
##
     Primary splits:
##
         439 < 250.5 to the right, improve=9.676202, (0 missing)
##
         459 < 15
                     to the left, improve=8.315192, (0 missing)
                     to the right, improve=7.693051, (0 missing)
##
         428 < 119
##
         440 < 156.5 to the right, improve=7.585100, (0 missing)
         468 < 249.5 to the right, improve=7.509916, (0 missing)
##
     Surrogate splits:
##
##
         440 < 72.5 to the right, agree=0.965, adj=0.667, (0 split)
##
         468 < 242
                     to the right, agree=0.965, adj=0.667, (0 split)
##
         412 < 4
                     to the right, agree=0.945, adj=0.472, (0 split)
                     to the right, agree=0.942, adj=0.444, (0 split)
##
         411 < 130
                     to the right, agree=0.936, adj=0.389, (0 split)
##
         441 < 1
##
## Node number 384: 1623 observations,
                                           complexity param=6.698223e-05
     predicted class=0 expected loss=0.01047443 P(node) =0.06439199
##
##
       class counts: 1606
                               0
                                      1
                                            0
                                                  1
                                                        2
                                                             12
                                                                    0
                                                                          0
1
```

```
probabilities: 0.990 0.000 0.001 0.000 0.001 0.001 0.007 0.000 0.000
##
0.001
##
     left son=768 (1603 obs) right son=769 (20 obs)
##
     Primary splits:
##
         96 < 93.5 to the left,
                                   improve=2.353663, (0 missing)
         97 < 24.5
                                   improve=1.727104, (0 missing)
##
                     to the left,
         214 < 0.5
##
                     to the right, improve=1.546484, (0 missing)
         101 < 189
                     to the left,
                                   improve=1.542815, (0 missing)
##
##
         626 < 64.5 to the right, improve=1.534401, (0 missing)
##
     Surrogate splits:
##
         95 < 2.5
                    to the left,
                                  agree=0.998, adj=0.80, (0 split)
         97 < 162
                                  agree=0.994, adj=0.50, (0 split)
##
                    to the left,
##
         70 < 126.5 to the left,
                                  agree=0.989, adj=0.10, (0 split)
##
         71 < 31
                    to the left,
                                  agree=0.989, adj=0.10, (0 split)
##
         69 < 52
                    to the left,
                                  agree=0.988, adj=0.05, (0 split)
##
## Node number 385: 332 observations,
                                         complexity param=0.0001786193
##
     predicted class=0 expected loss=0.1686747 P(node) =0.01317199
##
       class counts:
                       276
                               0
                                    25
                                           7
                                                       14
                                                                          0
1
##
      probabilities: 0.831 0.000 0.075 0.021 0.000 0.042 0.015 0.012 0.000
0.003
##
     left son=770 (299 obs) right son=771 (33 obs)
##
     Primary splits:
##
         545 < 198.5 to the left,
                                   improve=14.54646, (0 missing)
                                   improve=13.77057, (0 missing)
##
         517 < 13
                     to the left,
##
                                   improve=13.00613, (0 missing)
         544 < 83.5 to the left,
         398 < 10.5
                     to the right, improve=12.99808, (0 missing)
##
##
         370 < 8
                     to the right, improve=12.75578, (0 missing)
##
     Surrogate splits:
##
         517 < 7
                     to the left,
                                   agree=0.961, adj=0.606, (0 split)
##
         546 < 239.5 to the left,
                                   agree=0.961, adj=0.606, (0 split)
                                   agree=0.958, adj=0.576, (0 split)
##
         544 < 145.5 to the left,
                                   agree=0.949, adj=0.485, (0 split)
         518 < 93.5 to the left,
##
##
                                   agree=0.934, adj=0.333, (0 split)
         490 < 13.5 to the left,
##
## Node number 390: 30 observations,
                                        complexity param=8.930964e-05
##
     predicted class=3
                        expected loss=0.3 P(node) =0.00119024
##
       class counts:
                         4
                               0
                                     1
                                          21
                                                       4
                                                                    0
                                                                          0
0
##
      probabilities: 0.133 0.000 0.033 0.700 0.000 0.133 0.000 0.000 0.000
0.000
##
     left son=780 (11 obs) right son=781 (19 obs)
##
     Primary splits:
##
         209 < 148.5 to the right, improve=6.563636, (0 missing)
                     to the right, improve=5.300000, (0 missing)
##
         208 < 131
##
         236 < 185.5 to the right, improve=4.436025, (0 missing)
##
                     to the left, improve=3.768182, (0 missing)
         210 < 229
                     to the right, improve=3.600000, (0 missing)
##
         299 < 13
##
     Surrogate splits:
```

```
to the right, agree=0.967, adj=0.909, (0 split)
##
         208 < 131
##
         210 < 186
                     to the right, agree=0.900, adj=0.727, (0 split)
         236 < 22.5 to the right, agree=0.900, adj=0.727, (0 split)
##
         181 < 211.5 to the right, agree=0.867, adj=0.636, (0 split)
##
##
         207 < 131
                     to the right, agree=0.867, adj=0.636, (0 split)
##
## Node number 391: 27 observations,
                                        complexity param=4.465482e-05
##
     predicted class=5 expected loss=0.2592593 P(node) =0.001071216
       class counts:
##
                                     1
                                           2
                                                      20
                                                                         0
0
##
      probabilities: 0.037 0.000 0.037 0.074 0.000 0.741 0.111 0.000 0.000
0.000
##
     left son=782 (7 obs) right son=783 (20 obs)
##
     Primary splits:
##
         541 < 148
                     to the right, improve=3.172487, (0 missing)
##
         572 < 9.5
                     to the right, improve=3.074074, (0 missing)
         512 < 216.5 to the right, improve=3.072487, (0 missing)
##
##
         602 < 121
                     to the right, improve=2.552707, (0 missing)
                     to the right, improve=2.445419, (0 missing)
##
         153 < 10
##
     Surrogate splits:
##
         327 < 248
                     to the right, agree=0.889, adj=0.571, (0 split)
##
         354 < 129
                     to the left, agree=0.889, adj=0.571, (0 split)
##
                     to the right, agree=0.889, adj=0.571, (0 split)
         429 < 210
##
         457 < 163.5 to the right, agree=0.889, adj=0.571, (0 split)
         485 < 153.5 to the right, agree=0.889, adj=0.571, (0 split)
##
##
## Node number 392: 38 observations
##
     predicted class=0
                        expected loss=0.05263158 P(node) =0.001507637
##
       class counts:
                        36
                                                 1
                               0
                                     0
                                           0
                                                                         0
1
##
      probabilities: 0.947 0.000 0.000 0.000 0.026 0.000 0.000 0.000 0.000
0.026
##
## Node number 393: 7 observations
     predicted class=2 expected loss=0.5714286 P(node) =0.0002777227
##
       class counts:
                         0
                               0
                                     3
                                                       2
                                                             0
                                                                   0
                                                                         2
                                           0
                                                 0
0
##
      probabilities: 0.000 0.000 0.429 0.000 0.000 0.286 0.000 0.000 0.286
0.000
##
## Node number 394: 13 observations
##
     predicted class=5
                        expected loss=0.5384615 P(node) =0.0005157707
##
       class counts:
                         2
                               0
                                     3
                                           2
                                                       6
                                                                         0
      probabilities: 0.154 0.000 0.231 0.154 0.000 0.462 0.000 0.000 0.000
##
0.000
##
## Node number 395: 26 observations
     predicted class=6 expected loss=0.1538462 P(node) =0.001031541
## class counts: 1 0 0 0 0 3
```

```
0
##
      probabilities: 0.038 0.000 0.000 0.000 0.115 0.846 0.000 0.000
0.000
##
## Node number 396: 55 observations,
                                        complexity param=0.0002679289
                        expected loss=0.4363636 P(node) =0.002182107
##
     predicted class=3
##
       class counts:
                         3
                                    10
                                                                          0
                               1
                                          31
                                                       7
                                                             1
                                                                    2
0
##
      probabilities: 0.055 0.018 0.182 0.564 0.000 0.127 0.018 0.036 0.000
0.000
##
     left son=792 (11 obs) right son=793 (44 obs)
##
     Primary splits:
##
         514 < 4
                     to the right, improve=6.409091, (0 missing)
##
         485 < 9.5
                     to the right, improve=6.357049, (0 missing)
##
         513 < 37.5 to the right, improve=6.234343, (0 missing)
##
         571 < 209.5 to the left, improve=6.188865, (0 missing)
                     to the right, improve=6.146518, (0 missing)
##
         541 < 187
##
     Surrogate splits:
##
         513 < 37.5
                     to the right, agree=0.982, adj=0.909, (0 split)
##
         485 < 9.5
                     to the right, agree=0.964, adj=0.818, (0 split)
##
         486 < 44.5
                     to the right, agree=0.964, adj=0.818, (0 split)
                     to the right, agree=0.945, adj=0.727, (0 split)
##
         487 < 22
##
         515 < 2
                     to the right, agree=0.945, adj=0.727, (0 split)
##
## Node number 397: 10 observations
##
     predicted class=5
                        expected loss=0.3 P(node) =0.0003967467
##
       class counts:
                         0
                                           0
                               0
                                     0
                                                                          1
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.700 0.200 0.000 0.100
0.000
##
## Node number 398: 21 observations,
                                        complexity param=8.930964e-05
##
     predicted class=5
                        expected loss=0.7142857 P(node) =0.000833168
       class counts:
##
                         4
                                     1
                                           4
                                                                          2
3
##
      probabilities: 0.190 0.000 0.048 0.190 0.000 0.286 0.048 0.000 0.095
0.143
##
     left son=796 (13 obs) right son=797 (8 obs)
##
     Primary splits:
##
         381 < 215.5 to the right, improve=3.105311, (0 missing)
##
         351 < 63.5 to the left, improve=3.047619, (0 missing)
                     to the left, improve=2.993074, (0 missing)
##
         352 < 218
##
         654 < 106.5 to the right, improve=2.701465, (0 missing)
                     to the right, improve=2.658730, (0 missing)
##
         575 < 36
##
     Surrogate splits:
##
         351 < 113.5 to the left, agree=0.905, adj=0.75, (0 split)
##
         409 < 36
                     to the right, agree=0.905, adj=0.75, (0 split)
##
         437 < 18.5 to the right, agree=0.905, adj=0.75, (0 split)
##
         465 < 31
                     to the right, agree=0.905, adj=0.75, (0 split)
##
         493 < 18.5 to the right, agree=0.905, adj=0.75, (0 split)
```

```
##
## Node number 399: 53 observations,
                                       complexity param=8.930964e-05
##
     predicted class=5
                        expected loss=0.1320755 P(node) =0.002102757
       class counts:
##
                         0
                               0
                                     0
                                            7
                                                       46
                                                                          0
0
      probabilities: 0.000 0.000 0.000 0.132 0.000 0.868 0.000 0.000 0.000
##
0.000
##
     left son=798 (7 obs) right son=799 (46 obs)
##
     Primary splits:
##
         202 < 10
                     to the right, improve=5.467714, (0 missing)
         203 < 95
##
                     to the right, improve=5.467714, (0 missing)
                     to the right, improve=4.684277, (0 missing)
         177 < 144
##
##
         554 < 8
                     to the right, improve=4.199724, (0 missing)
##
         294 < 47
                     to the right, improve=3.915649, (0 missing)
##
     Surrogate splits:
##
         203 < 95
                     to the right, agree=1.000, adj=1.000, (0 split)
                     to the right, agree=0.962, adj=0.714, (0 split)
##
         174 < 1
##
         175 < 11
                     to the right, agree=0.962, adj=0.714, (0 split)
                     to the right, agree=0.962, adj=0.714, (0 split)
##
         204 < 220
##
         176 < 52
                     to the right, agree=0.943, adj=0.571, (0 split)
##
## Node number 402: 11 observations
##
     predicted class=2 expected loss=0.4545455 P(node) =0.0004364213
##
       class counts:
                         0
                               5
                                     6
0
##
      probabilities: 0.000 0.455 0.545 0.000 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 403: 12 observations
     predicted class=8 expected loss=0.5833333 P(node) =0.000476096
##
##
       class counts:
                         0
                               0
                                     1
                                           4
                                                  0
                                                        2
                                                              0
                                                                    0
                                                                          5
0
##
      probabilities: 0.000 0.000 0.083 0.333 0.000 0.167 0.000 0.000 0.417
0.000
##
## Node number 412: 44 observations,
                                        complexity param=0.0002976988
##
     predicted class=8
                        expected loss=0.7272727 P(node) =0.001745685
##
       class counts:
                         4
                               0
                                     8
                                            3
                                                  1
                                                       10
                                                              6
                                                                         12
0
      probabilities: 0.091 0.000 0.182 0.068 0.023 0.227 0.136 0.000 0.273
##
0.000
##
     left son=824 (34 obs) right son=825 (10 obs)
##
     Primary splits:
##
         407 < 63
                     to the left,
                                   improve=6.379144, (0 missing)
##
         682 < 20.5 to the left,
                                   improve=6.313131, (0 missing)
##
         684 < 31.5 to the left,
                                   improve=5.933341, (0 missing)
##
         685 < 43.5 to the left,
                                   improve=5.933341, (0 missing)
##
                                   improve=5.772727, (0 missing)
         380 < 118.5 to the left,
##
     Surrogate splits:
##
         380 < 118.5 to the left, agree=0.977, adj=0.9, (0 split)
```

```
agree=0.955, adj=0.8, (0 split)
##
         378 < 89.5 to the left,
##
         379 < 107.5 to the left,
                                    agree=0.955, adj=0.8, (0 split)
                                    agree=0.955, adj=0.8, (0 split)
##
         405 < 197.5 to the left,
         406 < 130.5 to the left,
                                    agree=0.955, adj=0.8, (0 split)
##
##
## Node number 413: 20 observations
     predicted class=6
                        expected loss=0.15 P(node) =0.0007934934
##
##
       class counts:
                         1
                                      1
                                                             17
0
##
      probabilities: 0.050 0.000 0.050 0.050 0.000 0.000 0.850 0.000 0.000
0.000
##
## Node number 416: 86 observations
##
     predicted class=0
                        expected loss=0.08139535 P(node) =0.003412021
##
       class counts:
                        79
                                                        0
                                                                           0
                               0
                                      2
                                            1
                                                  0
                                                              0
                                                                    2
2
##
      probabilities: 0.919 0.000 0.023 0.012 0.000 0.000 0.000 0.023 0.000
0.023
##
## Node number 417: 7 observations
     predicted class=5
                        expected loss=0.7142857
##
                                                  P(node) = 0.0002777227
##
       class counts:
                         1
                               0
                                      1
                                            0
                                                        2
                                                              2
                                                                    0
                                                                           1
0
##
      probabilities: 0.143 0.000 0.143 0.000 0.000 0.286 0.286 0.000 0.143
0.000
##
## Node number 418: 25 observations,
                                         complexity param=0.0003572385
##
     predicted class=5
                        expected loss=0.52 P(node) =0.0009918667
##
       class counts:
                         8
                                      0
                                                       12
                                                                           1
                               0
                                            1
                                                              3
0
##
      probabilities: 0.320 0.000 0.000 0.040 0.000 0.480 0.120 0.000 0.040
0.000
##
     left son=836 (8 obs) right son=837 (17 obs)
##
     Primary splits:
##
         370 < 3
                     to the right, improve=8.357647, (0 missing)
         386 < 2
                     to the right, improve=8.357647, (0 missing)
##
         443 < 22
                     to the right, improve=8.357647, (0 missing)
##
##
         470 < 1
                     to the right, improve=8.357647, (0 missing)
                     to the right, improve=8.087222, (0 missing)
##
         398 < 36
##
     Surrogate splits:
##
         386 < 2
                     to the right, agree=1.00, adj=1.000, (0 split)
         443 < 22
##
                     to the right, agree=1.00, adj=1.000, (0 split)
##
         470 < 1
                     to the right, agree=1.00, adj=1.000, (0 split)
                     to the right, agree=0.96, adj=0.875, (0 split)
##
         358 < 62
##
         359 < 16.5 to the right, agree=0.96, adj=0.875, (0 split)
##
## Node number 419: 33 observations,
                                         complexity param=0.0004018934
     predicted class=2 expected loss=0.6060606 P(node) =0.001309264
##
##
       class counts:
                         2
                               0
                                     13
                                            1
                                                  3
                                                        0
                                                              0
                                                                    1
                                                                           0
13
```

```
probabilities: 0.061 0.000 0.394 0.030 0.091 0.000 0.000 0.030 0.000
##
0.394
##
     left son=838 (19 obs) right son=839 (14 obs)
     Primary splits:
##
##
         343 < 29
                     to the left,
                                   improve=9.152654, (0 missing)
##
         371 < 64.5 to the left,
                                   improve=9.152654, (0 missing)
##
         315 < 3.5
                     to the left,
                                   improve=7.658586, (0 missing)
         372 < 2.5
##
                     to the left,
                                   improve=7.560383, (0 missing)
##
                                   improve=7.560383, (0 missing)
         261 < 72.5 to the left,
##
     Surrogate splits:
##
         371 < 6
                     to the left,
                                   agree=0.939, adj=0.857, (0 split)
         315 < 3.5
                                   agree=0.909, adj=0.786, (0 split)
##
                     to the left,
##
         316 < 38
                     to the left,
                                   agree=0.909, adj=0.786, (0 split)
##
         261 < 72.5
                     to the left,
                                   agree=0.879, adj=0.714, (0 split)
##
         288 < 62.5 to the left,
                                   agree=0.879, adj=0.714, (0 split)
##
## Node number 422: 15 observations
##
     predicted class=2 expected loss=0.7333333 P(node) =0.00059512
##
       class counts:
                         2
                               1
                                     4
                                            3
                                                              2
                                                                          0
0
##
      probabilities: 0.133 0.067 0.267 0.200 0.000 0.200 0.133 0.000 0.000
0.000
##
## Node number 423: 128 observations,
                                          complexity param=8.930964e-05
     predicted class=6
                        expected loss=0.1015625 P(node) =0.005078357
##
       class counts:
                         0
                               0
                                     7
                                            0
                                                  4
                                                        2
                                                            115
                                                                    0
                                                                          0
0
##
      probabilities: 0.000 0.000 0.055 0.000 0.031 0.016 0.898 0.000 0.000
0.000
##
     left son=846 (8 obs) right son=847 (120 obs)
##
     Primary splits:
##
         555 < 194
                     to the right, improve=5.123958, (0 missing)
##
         657 < 4.5
                     to the right, improve=4.126457, (0 missing)
##
         272 < 7
                     to the right, improve=3.819492, (0 missing)
                     to the right, improve=3.819492, (0 missing)
##
         273 < 62.5
##
         300 < 176.5 to the right, improve=3.819492, (0 missing)
##
     Surrogate splits:
##
         528 < 60
                     to the right, agree=0.984, adj=0.750, (0 split)
##
         556 < 4.5
                     to the right, agree=0.984, adj=0.750, (0 split)
         583 < 9
                     to the right, agree=0.984, adj=0.750, (0 split)
##
##
         529 < 56
                     to the right, agree=0.977, adj=0.625, (0 split)
##
         584 < 6.5
                     to the right, agree=0.977, adj=0.625, (0 split)
##
## Node number 424: 7 observations
##
     predicted class=2
                        expected loss=0.5714286
                                                  P(node) =0.0002777227
##
       class counts:
                         0
                               0
                                     3
                                            0
                                                  2
                                                        0
                                                              2
                                                                    0
                                                                          0
0
##
      probabilities: 0.000 0.000 0.429 0.000 0.286 0.000 0.286 0.000 0.000
0.000
##
```

```
## Node number 425: 96 observations
##
     predicted class=4 expected loss=0.0625
                                              P(node) = 0.003808768
##
       class counts:
                         1
                               0
                                     0
                                           0
                                                90
                                                       0
                                                              3
                                                                          0
2
##
      probabilities: 0.010 0.000 0.000 0.000 0.938 0.000 0.031 0.000 0.000
0.021
##
## Node number 428: 35 observations
     predicted class=5
                        expected loss=0.08571429 P(node) =0.001388613
##
       class counts:
                         2
                               0
                                     1
                                                       32
                                                                          0
                                                 0
                                                              0
0
      probabilities: 0.057 0.000 0.029 0.000 0.000 0.914 0.000 0.000 0.000
##
0.000
##
## Node number 429: 34 observations,
                                        complexity param=0.000111637
     predicted class=5
                        expected loss=0.8235294 P(node) =0.001348939
##
       class counts:
                         4
                               0
                                     4
                                           5
                                                 1
                                                       6
                                                                          1
5
##
      probabilities: 0.118 0.000 0.118 0.147 0.029 0.176 0.118 0.118 0.029
0.147
##
     left son=858 (25 obs) right son=859 (9 obs)
##
     Primary splits:
##
                     to the left,
                                   improve=4.569412, (0 missing)
         345 < 146
##
         373 < 160.5 to the left,
                                   improve=4.569412, (0 missing)
##
         317 < 97
                     to the left,
                                   improve=3.514260, (0 missing)
                                   improve=3.423592, (0 missing)
##
         318 < 209
                     to the left,
##
         570 < 82.5 to the right, improve=3.394796, (0 missing)
##
     Surrogate splits:
##
         373 < 160.5 to the left,
                                   agree=1.000, adj=1.000, (0 split)
##
         317 < 146
                   to the left,
                                   agree=0.941, adj=0.778, (0 split)
##
         318 < 204.5 to the left,
                                   agree=0.912, adj=0.667, (0 split)
##
         401 < 250
                   to the left,
                                   agree=0.912, adj=0.667, (0 split)
##
         661 < 192.5 to the left,
                                   agree=0.882, adj=0.556, (0 split)
##
## Node number 430: 24 observations,
                                        complexity param=4.465482e-05
     predicted class=4 expected loss=0.2916667 P(node) =0.000952192
##
##
       class counts:
                         1
                                     1
                                           0
                                                17
                                                                          0
3
##
      probabilities: 0.042 0.000 0.042 0.000 0.708 0.000 0.000 0.083 0.000
0.125
##
     left son=860 (17 obs) right son=861 (7 obs)
##
     Primary splits:
##
         328 < 97.5 to the left,
                                   improve=4.022409, (0 missing)
##
         411 < 120.5 to the left,
                                   improve=4.022409, (0 missing)
##
         184 < 2.5
                   to the right, improve=3.708333, (0 missing)
##
         263 < 112.5 to the left,
                                   improve=3.708333, (0 missing)
##
         356 < 44.5 to the left,
                                   improve=3.208333, (0 missing)
##
     Surrogate splits:
##
         411 < 120.5 to the left,
                                   agree=1.000, adj=1.000, (0 split)
##
         356 < 44.5 to the left, agree=0.958, adj=0.857, (0 split)
```

```
345 < 22.5 to the right, agree=0.917, adj=0.714, (0 split)
##
##
         353 < 8
                     to the right, agree=0.917, adj=0.714, (0 split)
         355 < 249.5 to the left, agree=0.917, adj=0.714, (0 split)
##
##
## Node number 431: 82 observations,
                                        complexity param=0.0001339645
                        expected loss=0.2560976 P(node) =0.003253323
##
     predicted class=9
##
       class counts:
                         0
                               0
                                     2
                                            0
                                                  6
                                                        0
                                                                   11
                                                              1
                                                                          1
61
##
      probabilities: 0.000 0.000 0.024 0.000 0.073 0.000 0.012 0.134 0.012
0.744
##
     left son=862 (9 obs) right son=863 (73 obs)
     Primary splits:
##
##
         375 < 62.5 to the right, improve=5.696551, (0 missing)
         293 < 122
##
                     to the right, improve=4.776038, (0 missing)
##
         153 < 2
                     to the right, improve=4.747579, (0 missing)
##
         154 < 12
                     to the right, improve=4.660902, (0 missing)
##
         155 < 4.5
                     to the right, improve=4.660902, (0 missing)
##
     Surrogate splits:
##
         348 < 6.5
                     to the right, agree=0.988, adj=0.889, (0 split)
##
         347 < 161.5 to the right, agree=0.976, adj=0.778, (0 split)
##
         402 < 208.5 to the right, agree=0.963, adj=0.667, (0 split)
##
         403 < 156
                     to the right, agree=0.963, adj=0.667, (0 split)
##
         320 < 68.5 to the right, agree=0.951, adj=0.556, (0 split)
##
## Node number 432: 16 observations
##
     predicted class=3
                        expected loss=0.1875 P(node) =0.0006347947
##
       class counts:
                         0
                                                  1
                               0
                                     0
                                          13
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 0.813 0.062 0.125 0.000 0.000 0.000
0.000
##
## Node number 433: 37 observations,
                                        complexity param=0.0001786193
##
     predicted class=5
                        expected loss=0.5945946 P(node) =0.001467963
##
       class counts:
                         1
                               7
                                     0
                                            4
                                                       15
                                                                          0
2
##
      probabilities: 0.027 0.189 0.000 0.108 0.000 0.405 0.216 0.000 0.000
0.054
##
     left son=866 (28 obs) right son=867 (9 obs)
##
     Primary splits:
         541 < 12
##
                     to the left,
                                   improve=5.368726, (0 missing)
##
         550 < 9.5
                     to the left,
                                   improve=5.322938, (0 missing)
         487 < 65
##
                     to the left,
                                   improve=5.116345, (0 missing)
##
         488 < 40.5
                     to the left,
                                   improve=4.987356, (0 missing)
                                   improve=4.917297, (0 missing)
##
         551 < 1.5
                     to the left,
##
     Surrogate splits:
##
         540 < 46.5
                    to the left,
                                   agree=0.973, adj=0.889, (0 split)
##
         482 < 12.5
                     to the left,
                                   agree=0.946, adj=0.778, (0 split)
##
         510 < 40
                     to the left,
                                   agree=0.946, adj=0.778, (0 split)
##
         511 < 13
                     to the left,
                                   agree=0.946, adj=0.778, (0 split)
         512 < 91 to the left, agree=0.946, adj=0.778, (0 split)
##
```

```
##
## Node number 434: 46 observations
##
     predicted class=5 expected loss=0.1086957 P(node) =0.001825035
                         1
                               0
                                                      41
                                                                          2
##
       class counts:
                                     0
                                           0
                                                 0
                                                             1
                                                                   1
0
      probabilities: 0.022 0.000 0.000 0.000 0.891 0.022 0.022 0.043
##
0.000
##
## Node number 435: 7 observations
     predicted class=9 expected loss=0.4285714 P(node) =0.0002777227
##
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                 1
                                                       1
                                                                   1
                                                                          0
4
##
      probabilities: 0.000 0.000 0.000 0.000 0.143 0.143 0.000 0.143 0.000
0.571
##
## Node number 436: 7 observations
     predicted class=3 expected loss=0.4285714 P(node) =0.0002777227
##
       class counts:
                         0
                               0
                                     1
                                           4
                                                             0
                                                                   0
                                                                         0
                                                 0
                                                       0
2
##
      probabilities: 0.000 0.000 0.143 0.571 0.000 0.000 0.000 0.000 0.000
0.286
##
## Node number 437: 24 observations
     predicted class=4 expected loss=0.2083333 P(node) =0.000952192
##
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                19
                                                       1
                                                                          0
1
      probabilities: 0.000 0.000 0.000 0.000 0.792 0.042 0.000 0.125 0.000
##
0.042
##
## Node number 440: 51 observations
##
     predicted class=0 expected loss=0.05882353 P(node) =0.002023408
##
       class counts:
                        48
                               0
                                     0
                                           0
0
      probabilities: 0.941 0.000 0.000 0.000 0.000 0.020 0.000 0.039 0.000
##
0.000
##
## Node number 441: 8 observations
     predicted class=9 expected loss=0.625 P(node) =0.0003173973
##
       class counts:
##
                         1
                               0
                                     0
                                           0
                                                 2
                                                      2
                                                                          0
3
##
      probabilities: 0.125 0.000 0.000 0.000 0.250 0.250 0.000 0.000 0.000
0.375
##
## Node number 444: 14 observations
     predicted class=5 expected loss=0.2857143 P(node) =0.0005554453
##
##
       class counts:
                         0
                               2
                                     0
                                           1
                                                 0
                                                      10
                                                             1
                                                                   0
                                                                         0
0
      probabilities: 0.000 0.143 0.000 0.071 0.000 0.714 0.071 0.000 0.000
##
0.000
##
```

```
## Node number 445: 16 observations
##
     predicted class=4
                        expected loss=0.5 P(node) =0.0006347947
##
       class counts:
                         0
                               0
                                     1
                                           0
                                                 8
                                                       0
                                                              0
                                                                    2
                                                                          0
5
##
      probabilities: 0.000 0.000 0.062 0.000 0.500 0.000 0.000 0.125 0.000
0.312
##
## Node number 446: 19 observations
     predicted class=3
                        expected loss=0.7368421 P(node) =0.0007538187
##
       class counts:
                         3
                               1
                                     3
                                                       4
                                                                          0
                                           5
2
      probabilities: 0.158 0.053 0.158 0.263 0.000 0.211 0.000 0.053 0.000
##
0.105
##
## Node number 447: 629 observations,
                                         complexity param=0.0001339645
     predicted class=7
                        expected loss=0.03656598 P(node) =0.02495537
##
       class counts:
                         5
                               0
                                     1
                                           2
                                                  4
                                                       3
                                                                  606
                                                                          0
5
##
      probabilities: 0.008 0.000 0.002 0.003 0.006 0.005 0.005 0.963 0.000
0.008
##
     left son=894 (7 obs) right son=895 (622 obs)
##
     Primary splits:
##
         158 < 2
                     to the right, improve=8.934805, (0 missing)
##
         157 < 28.5
                     to the right, improve=8.649091, (0 missing)
##
         542 < 123
                     to the right, improve=8.341861, (0 missing)
                     to the right, improve=8.206338, (0 missing)
##
         512 < 205
##
         513 < 101.5 to the right, improve=7.903226, (0 missing)
##
     Surrogate splits:
##
         159 < 10.5 to the right, agree=0.998, adj=0.857, (0 split)
##
         157 < 28.5 to the right, agree=0.997, adj=0.714, (0 split)
##
         185 < 251.5 to the right, agree=0.997, adj=0.714, (0 split)
##
         156 < 39.5 to the right, agree=0.995, adj=0.571, (0 split)
##
         160 < 0.5
                     to the right, agree=0.995, adj=0.571, (0 split)
##
## Node number 448: 922 observations,
                                         complexity param=0.0002679289
     predicted class=2 expected loss=0.04338395 P(node) =0.03658004
##
##
       class counts:
                         0
                               0
                                   882
                                          15
                                                                   12
                                                                         11
1
##
      probabilities: 0.000 0.000 0.957 0.016 0.000 0.001 0.000 0.013 0.012
0.001
##
     left son=896 (912 obs) right son=897 (10 obs)
##
     Primary splits:
##
         345 < 104.5 to the left,
                                   improve=12.406900, (0 missing)
                                   improve=12.406900, (0 missing)
##
         346 < 70.5 to the left,
##
         681 < 18
                     to the left,
                                   improve= 6.490996, (0 missing)
##
         680 < 41
                     to the left,
                                   improve= 5.718800, (0 missing)
##
         683 < 44.5 to the left,
                                   improve= 5.615033, (0 missing)
##
     Surrogate splits:
##
         346 < 70.5 to the left,
                                   agree=1.000, adj=1.0, (0 split)
##
         318 < 245.5 to the left, agree=0.991, adj=0.2, (0 split)
```

```
373 < 241.5 to the left,
                                   agree=0.991, adj=0.2, (0 split)
##
##
                     to the left, agree=0.990, adj=0.1, (0 split)
         317 < 230
                                   agree=0.990, adj=0.1, (0 split)
##
         374 < 230.5 to the left,
##
## Node number 449: 14 observations
##
     predicted class=8
                        expected loss=0
                                         P(node) = 0.0005554453
##
       class counts:
                         0
                                                                         14
                               0
                                     0
                                           0
                                                 0
                                                       0
                                                                    0
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.000 1.000
0.000
##
## Node number 450: 35 observations,
                                        complexity param=0.000491203
     predicted class=2 expected loss=0.5142857 P(node) =0.001388613
##
##
       class counts:
                         3
                               0
                                    17
                                           0
                                                 2
                                                       0
                                                              2
                                                                          0
11
##
      probabilities: 0.086 0.000 0.486 0.000 0.057 0.000 0.057 0.000 0.000
0.314
##
     left son=900 (22 obs) right son=901 (13 obs)
##
     Primary splits:
##
         570 < 169.5 to the right, improve=11.14266, (0 missing)
##
                     to the right, improve=11.14266, (0 missing)
         597 < 4.5
         598 < 93.5 to the right, improve=11.14266, (0 missing)
##
##
         599 < 19.5
                     to the right, improve=11.14058, (0 missing)
##
         626 < 2.5
                     to the right, improve=11.14058, (0 missing)
##
     Surrogate splits:
##
         597 < 4.5
                     to the right, agree=1.000, adj=1.000, (0 split)
##
         598 < 93.5 to the right, agree=1.000, adj=1.000, (0 split)
         599 < 19.5
                     to the right, agree=0.971, adj=0.923, (0 split)
##
##
         625 < 2.5
                     to the right, agree=0.971, adj=0.923, (0 split)
##
         626 < 2.5
                     to the right, agree=0.971, adj=0.923, (0 split)
##
## Node number 451: 50 observations,
                                        complexity param=4.465482e-05
##
     predicted class=8
                        expected loss=0.18 P(node) =0.001983733
       class counts:
##
                         0
                                     3
                                           1
                                                       1
                                                                         41
4
##
      probabilities: 0.000 0.000 0.060 0.020 0.000 0.020 0.000 0.000 0.820
0.080
##
     left son=902 (7 obs) right son=903 (43 obs)
##
     Primary splits:
         318 < 167.5 to the right, improve=4.737010, (0 missing)
##
##
         545 < 239.5 to the right, improve=3.780199, (0 missing)
         290 < 247.5 to the right, improve=3.292575, (0 missing)
##
##
         488 < 203
                     to the left, improve=3.240000, (0 missing)
##
                     to the left, improve=3.066190, (0 missing)
         657 < 8
     Surrogate splits:
##
##
         290 < 247.5 to the right, agree=0.96, adj=0.714, (0 split)
##
         291 < 143.5 to the right, agree=0.96, adj=0.714, (0 split)
##
                     to the right, agree=0.94, adj=0.571, (0 split)
##
         577 < 253.5 to the right, agree=0.92, adj=0.429, (0 split)
         264 < 211.5 to the right, agree=0.90, adj=0.286, (0 split)
##
```

```
##
## Node number 452: 246 observations,
                                          complexity param=0.002589979
##
     predicted class=1
                        expected loss=0.5934959 P(node) =0.009759968
       class counts:
##
                         0
                             100
                                     19
                                            1
                                                 60
                                                        5
                                                             48
                                                                    8
                                                                           3
2
      probabilities: 0.000 0.407 0.077 0.004 0.244 0.020 0.195 0.033 0.012
##
0.008
##
     left son=904 (135 obs) right son=905 (111 obs)
##
     Primary splits:
##
         344 < 1.5
                     to the left,
                                    improve=56.73869, (0 missing)
##
         456 < 1
                     to the left,
                                    improve=55.85903, (0 missing)
                                    improve=55.65413, (0 missing)
         372 < 10
                     to the left,
##
##
         428 < 2
                     to the left,
                                    improve=55.43471, (0 missing)
##
         316 < 1
                     to the left,
                                   improve=55.18781, (0 missing)
##
     Surrogate splits:
##
         316 < 1
                     to the left,
                                   agree=0.967, adj=0.928, (0 split)
                                    agree=0.967, adj=0.928, (0 split)
##
         372 < 10
                     to the left,
##
         400 < 4.5
                                    agree=0.947, adj=0.883, (0 split)
                     to the left,
         288 < 0.5
##
                     to the left,
                                    agree=0.939, adj=0.865, (0 split)
##
         289 < 0.5
                     to the left,
                                   agree=0.935, adj=0.856, (0 split)
##
## Node number 453: 241 observations,
                                          complexity param=0.002634634
     predicted class=2 expected loss=0.6473029 P(node) =0.009561595
##
##
       class counts:
                         2
                               2
                                     85
                                            5
                                                  2
                                                                   49
                                                                         19
72
##
      probabilities: 0.008 0.008 0.353 0.021 0.008 0.021 0.000 0.203 0.079
0.299
##
     left son=906 (150 obs) right son=907 (91 obs)
##
     Primary splits:
##
         371 < 1.5
                     to the left,
                                    improve=41.69612, (0 missing)
##
         344 < 110
                     to the left,
                                    improve=41.20927, (0 missing)
##
         372 < 67
                     to the left,
                                    improve=39.75462, (0 missing)
##
         343 < 1
                     to the left,
                                   improve=35.41713, (0 missing)
##
         399 < 3
                     to the left,
                                   improve=34.26607, (0 missing)
##
     Surrogate splits:
##
         343 < 1
                                   agree=0.946, adj=0.857, (0 split)
                     to the left,
                                    agree=0.934, adj=0.824, (0 split)
         399 < 8.5
##
                     to the left,
##
         344 < 66.5
                     to the left,
                                    agree=0.925, adj=0.802, (0 split)
##
         316 < 139
                     to the left,
                                    agree=0.913, adj=0.769, (0 split)
         372 < 58
                                    agree=0.909, adj=0.758, (0 split)
##
                     to the left,
##
## Node number 454: 128 observations
##
     predicted class=7
                        expected loss=0.03125
                                                P(node) = 0.005078357
##
       class counts:
                         0
                               0
                                      3
                                            1
                                                  0
                                                        0
                                                              0
                                                                  124
                                                                           0
0
##
      probabilities: 0.000 0.000 0.023 0.008 0.000 0.000 0.000 0.969 0.000
0.000
##
## Node number 455: 8 observations
     predicted class=8 expected loss=0.25 P(node) =0.0003173973
```

```
##
       class counts:
                                                  1
1
##
      probabilities: 0.000 0.000 0.000 0.000 0.125 0.000 0.000 0.000 0.750
0.125
##
## Node number 456: 20 observations,
                                        complexity param=0.0002232741
                        expected loss=0.7 P(node) =0.0007934934
     predicted class=8
##
       class counts:
                         5
                                     5
                                                  1
                                                                          6
0
##
      probabilities: 0.250 0.000 0.250 0.000 0.050 0.000 0.150 0.000 0.300
0.000
##
     left son=912 (13 obs) right son=913 (7 obs)
##
     Primary splits:
##
         522 < 13.5 to the right, improve=5.024176, (0 missing)
##
         495 < 32.5 to the right, improve=5.024176, (0 missing)
##
         493 < 165.5 to the right, improve=4.800000, (0 missing)
##
         494 < 80
                     to the right, improve=4.450000, (0 missing)
##
                     to the right, improve=4.450000, (0 missing)
         521 < 125
##
     Surrogate splits:
##
         495 < 32.5 to the right, agree=1.00, adj=1.000, (0 split)
##
                     to the right, agree=0.95, adj=0.857, (0 split)
         440 < 205
##
         441 < 13.5 to the right, agree=0.95, adj=0.857, (0 split)
##
         467 < 121.5 to the right, agree=0.95, adj=0.857, (0 split)
##
         468 < 19
                     to the right, agree=0.95, adj=0.857, (0 split)
##
## Node number 457: 101 observations,
                                         complexity param=4.465482e-05
                        expected loss=0.06930693 P(node) =0.004007141
##
     predicted class=5
                                     2
                                                  2
                                                       94
##
       class counts:
                         0
                               0
                                            0
                                                              1
                                                                    0
                                                                          2
0
      probabilities: 0.000 0.000 0.020 0.000 0.020 0.931 0.010 0.000 0.020
##
0.000
##
     left son=914 (7 obs) right son=915 (94 obs)
##
     Primary splits:
##
         352 < 52.5 to the right, improve=6.264558, (0 missing)
##
         272 < 12.5 to the left, improve=4.552805, (0 missing)
         294 < 6.5
                     to the left, improve=4.307111, (0 missing)
##
         325 < 216
                     to the right, improve=4.307111, (0 missing)
##
##
         353 < 14
                     to the right, improve=4.307111, (0 missing)
##
     Surrogate splits:
         325 < 216
##
                     to the right, agree=0.98, adj=0.714, (0 split)
         353 < 14
##
                     to the right, agree=0.98, adj=0.714, (0 split)
##
         351 < 64
                     to the right, agree=0.97, adj=0.571, (0 split)
##
         129 < 54
                     to the right, agree=0.96, adj=0.429, (0 split)
                     to the right, agree=0.96, adj=0.429, (0 split)
##
         130 < 80
##
## Node number 458: 155 observations,
                                         complexity param=0.0005805126
##
     predicted class=4
                        expected loss=0.316129 P(node) =0.006149573
##
                                                                          7
       class counts:
                         0
                               0
                                    13
                                            0
                                                106
                                                        1
                                                                   13
2
##
      probabilities: 0.000 0.000 0.084 0.000 0.684 0.006 0.084 0.084 0.045
```

```
0.013
     left son=916 (132 obs) right son=917 (23 obs)
##
##
     Primary splits:
##
         268 < 136
                                   improve=20.08729, (0 missing)
                     to the left,
##
         295 < 173
                     to the left,
                                    improve=17.80890, (0 missing)
##
         429 < 55
                     to the right, improve=16.97293, (0 missing)
                     to the right, improve=16.01735, (0 missing)
##
         126 < 6.5
         127 < 2.5
##
                     to the right, improve=15.84815, (0 missing)
##
     Surrogate splits:
##
         295 < 173
                     to the left,
                                   agree=0.981, adj=0.870, (0 split)
##
         267 < 184.5 to the left,
                                   agree=0.961, adj=0.739, (0 split)
                                   agree=0.948, adj=0.652, (0 split)
##
         296 < 210.5 to the left,
##
         240 < 68.5 to the left,
                                   agree=0.942, adj=0.609, (0 split)
##
         294 < 228
                     to the left,
                                   agree=0.935, adj=0.565, (0 split)
##
## Node number 459: 209 observations,
                                          complexity param=0.001674556
##
     predicted class=2
                        expected loss=0.7464115 P(node) =0.008292006
##
       class counts:
                        14
                               0
                                     53
                                            0
                                                 19
                                                              2
                                                                   35
                                                        1
                                                                          34
51
##
      probabilities: 0.067 0.000 0.254 0.000 0.091 0.005 0.010 0.167 0.163
0.244
##
     left son=918 (85 obs) right son=919 (124 obs)
##
     Primary splits:
##
         567 < 25
                     to the right, improve=24.04753, (0 missing)
                     to the right, improve=22.73472, (0 missing)
##
         568 < 77
                     to the left, improve=22.62774, (0 missing)
##
         708 < 1.5
         709 < 6.5
##
                     to the left, improve=21.41509, (0 missing)
                     to the right, improve=20.79665, (0 missing)
         155 < 9.5
##
##
     Surrogate splits:
##
         568 < 172.5 to the right, agree=0.919, adj=0.800, (0 split)
##
         566 < 2
                     to the right, agree=0.904, adj=0.765, (0 split)
##
         595 < 8.5
                     to the right, agree=0.895, adj=0.741, (0 split)
##
         539 < 7.5
                     to the right, agree=0.876, adj=0.694, (0 split)
##
         594 < 0.5
                     to the right, agree=0.871, adj=0.682, (0 split)
##
## Node number 460: 21 observations
##
     predicted class=4
                        expected loss=0.0952381 P(node) =0.000833168
##
       class counts:
                         0
                               0
                                      0
                                                 19
                                                        0
                                                                           2
                                            0
                                                              0
0
      probabilities: 0.000 0.000 0.000 0.000 0.905 0.000 0.000 0.000 0.095
##
0.000
##
## Node number 461: 53 observations,
                                         complexity param=0.0004465482
##
     predicted class=8
                        expected loss=0.754717 P(node) =0.002102757
##
       class counts:
                        10
                                      1
                                            0
                                                  2
                               0
                                                                          13
13
##
      probabilities: 0.189 0.000 0.019 0.000 0.038 0.170 0.094 0.000 0.245
0.245
##
     left son=922 (36 obs) right son=923 (17 obs)
##
     Primary splits:
```

```
to the right, improve=9.657849, (0 missing)
##
         597 < 24.5
                     to the right, improve=9.326491, (0 missing)
##
         570 < 22.5
                     to the right, improve=9.164385, (0 missing)
##
         598 < 10.5
         569 < 2.5
                     to the right, improve=9.100859, (0 missing)
##
                     to the right, improve=8.688021, (0 missing)
##
         627 < 2.5
##
     Surrogate splits:
##
         569 < 96
                     to the right, agree=0.943, adj=0.824, (0 split)
         598 < 39
##
                     to the right, agree=0.943, adj=0.824, (0 split)
                     to the right, agree=0.943, adj=0.824, (0 split)
##
         626 < 16
                     to the right, agree=0.906, adj=0.706, (0 split)
##
         568 < 7
##
         570 < 22.5
                     to the right, agree=0.906, adj=0.706, (0 split)
##
## Node number 462: 47 observations,
                                         complexity param=0.0002456015
##
     predicted class=8 expected loss=0.5106383 P(node) =0.001864709
##
       class counts:
                         4
                                            2
                                                  1
                                                       12
                                                              1
                                                                    2
                                                                         23
2
##
      probabilities: 0.085 0.000 0.000 0.043 0.021 0.255 0.021 0.043 0.489
0.043
##
     left son=924 (20 obs) right son=925 (27 obs)
##
     Primary splits:
##
         600 < 214
                     to the right, improve=11.983290, (0 missing)
                                   improve= 8.681651, (0 missing)
##
         485 < 32.5 to the left,
##
         486 < 1.5
                     to the left,
                                   improve= 8.681651, (0 missing)
                     to the right, improve= 8.433531, (0 missing)
##
         572 < 6
         628 < 251.5 to the right, improve= 7.878917, (0 missing)
##
##
     Surrogate splits:
##
         572 < 132
                     to the right, agree=0.894, adj=0.75, (0 split)
         599 < 226.5 to the right, agree=0.894, adj=0.75, (0 split)
##
##
                     to the right, agree=0.851, adj=0.65, (0 split)
         601 < 71
##
         265 < 237
                     to the right, agree=0.830, adj=0.60, (0 split)
##
         373 < 145.5 to the right, agree=0.830, adj=0.60, (0 split)
##
## Node number 463: 588 observations,
                                          complexity param=0.000111637
##
     predicted class=8
                        expected loss=0.04591837 P(node) =0.0233287
##
                                                  2
                                                        2
       class counts:
                         3
                               0
                                      4
                                            3
                                                              3
                                                                    6
                                                                         561
4
##
      probabilities: 0.005 0.000 0.007 0.005 0.003 0.003 0.005 0.010 0.954
0.007
     left son=926 (33 obs) right son=927 (555 obs)
##
##
     Primary splits:
##
         404 < 2
                     to the left,
                                    improve=9.524919, (0 missing)
         433 < 111
##
                     to the left,
                                    improve=5.477891, (0 missing)
##
         322 < 122.5 to the right, improve=5.366020, (0 missing)
                                    improve=5.170456, (0 missing)
##
         405 < 18.5
                     to the left,
##
         376 < 1.5
                     to the left,
                                   improve=5.165837, (0 missing)
     Surrogate splits:
##
##
         433 < 29
                     to the left,
                                   agree=0.957, adj=0.242, (0 split)
##
                                   agree=0.951, adj=0.121, (0 split)
         376 < 1.5
                     to the left,
##
         405 < 4
                     to the left,
                                    agree=0.951, adj=0.121, (0 split)
                     to the right, agree=0.947, adj=0.061, (0 split)
##
         322 < 252
```

```
357 < 254.5 to the right, agree=0.947, adj=0.061, (0 split)
##
##
## Node number 464: 32 observations,
                                         complexity param=0.0003125837
                        expected loss=0.3125 P(node) =0.001269589
##
     predicted class=1
##
       class counts:
                         1
                               22
                                      7
                                            0
                                                  1
                                                        0
                                                                     0
                                                                           1
0
##
      probabilities: 0.031 0.688 0.219 0.000 0.031 0.000 0.000 0.000 0.031
0.000
##
     left son=928 (24 obs) right son=929 (8 obs)
##
     Primary splits:
##
         127 < 5
                     to the left,
                                    improve=9.750000, (0 missing)
                                    improve=9.750000, (0 missing)
##
         128 < 106.5 to the left,
##
         154 < 2.5
                     to the left,
                                    improve=9.750000, (0 missing)
##
         577 < 48
                     to the left,
                                    improve=9.730000, (0 missing)
##
         155 < 1
                     to the left,
                                    improve=8.177536, (0 missing)
##
     Surrogate splits:
##
         128 < 106.5 to the left,
                                   agree=1.000, adj=1.000, (0 split)
##
         154 < 2.5
                     to the left,
                                    agree=1.000, adj=1.000, (0 split)
                                    agree=0.969, adj=0.875, (0 split)
         126 < 11
##
                     to the left,
##
         155 < 1
                     to the left,
                                    agree=0.969, adj=0.875, (0 split)
##
         577 < 48
                     to the left,
                                    agree=0.969, adj=0.875, (0 split)
##
## Node number 465: 286 observations,
                                          complexity param=0.0002232741
##
     predicted class=2
                        expected loss=0.1153846 P(node) =0.01134695
                                            2
##
       class counts:
                         1
                                3
                                    253
                                                  7
                                                        0
                                                              3
                                                                     9
                                                                           3
5
##
      probabilities: 0.003 0.010 0.885 0.007 0.024 0.000 0.010 0.031 0.010
0.017
##
     left son=930 (275 obs) right son=931 (11 obs)
##
     Primary splits:
##
         398 < 100.5 to the left,
                                    improve=12.80392, (0 missing)
##
         371 < 119
                     to the left,
                                    improve=12.03539, (0 missing)
##
         370 < 183
                     to the left,
                                    improve=11.69353, (0 missing)
                                    improve=11.44725, (0 missing)
##
         343 < 21.5
                     to the left,
                                    improve=11.43237, (0 missing)
##
         399 < 157
                     to the left,
##
     Surrogate splits:
         370 < 183
##
                     to the left,
                                    agree=0.997, adj=0.909, (0 split)
##
         399 < 230
                     to the left,
                                    agree=0.990, adj=0.727, (0 split)
##
         315 < 251
                     to the left,
                                    agree=0.986, adj=0.636, (0 split)
                                    agree=0.986, adj=0.636, (0 split)
##
         371 < 245.5 to the left,
##
         397 < 10.5 to the left,
                                   agree=0.986, adj=0.636, (0 split)
##
## Node number 468: 48 observations,
                                         complexity param=0.0001339645
##
     predicted class=4
                        expected loss=0.5 P(node) =0.001904384
##
       class counts:
                         0
                               1
                                      5
                                            0
                                                 24
                                                                     2
                                                                           4
                                                        1
11
##
      probabilities: 0.000 0.021 0.104 0.000 0.500 0.021 0.000 0.042 0.083
0.229
##
     left son=936 (27 obs) right son=937 (21 obs)
##
     Primary splits:
```

```
465 < 250 to the right, improve=5.748677, (0 missing)
##
         209 < 225.5 to the left, improve=5.611111, (0 missing)
##
##
         208 < 72.5 to the left, improve=5.596189, (0 missing)
         402 < 48.5 to the right, improve=5.588889, (0 missing)
##
         492 < 250.5 to the right, improve=5.537037, (0 missing)
##
##
     Surrogate splits:
##
         437 < 250
                     to the right, agree=0.938, adj=0.857, (0 split)
##
         409 < 225.5 to the right, agree=0.896, adj=0.762, (0 split)
                     to the right, agree=0.896, adj=0.762, (0 split)
##
                     to the right, agree=0.854, adj=0.667, (0 split)
##
         485 < 142
##
         493 < 156.5 to the right, agree=0.854, adj=0.667, (0 split)
##
## Node number 469: 25 observations,
                                        complexity param=0.0001339645
##
     predicted class=6 expected loss=0.24 P(node) =0.0009918667
##
       class counts:
                         0
                                           0
                                                            19
                                                                    2
                               0
                                                                          0
0
##
      probabilities: 0.000 0.000 0.160 0.000 0.000 0.000 0.760 0.080 0.000
0.000
##
     left son=938 (7 obs) right son=939 (18 obs)
##
     Primary splits:
##
         441 < 2.5
                     to the left,
                                   improve=5.76, (0 missing)
##
         468 < 13.5 to the left,
                                   improve=5.76, (0 missing)
##
                     to the right, improve=5.76, (0 missing)
         296 < 220
##
         324 < 251.5 to the right, improve=4.76, (0 missing)
         413 < 21.5 to the left, improve=4.76, (0 missing)
##
##
     Surrogate splits:
##
         468 < 13.5 to the left, agree=1.00, adj=1.000, (0 split)
         413 < 21.5 to the left, agree=0.96, adj=0.857, (0 split)
##
##
         440 < 5.5
                     to the left, agree=0.96, adj=0.857, (0 split)
##
         296 < 220
                     to the right, agree=0.92, adj=0.714, (0 split)
##
         297 < 234
                     to the right, agree=0.92, adj=0.714, (0 split)
##
## Node number 472: 83 observations
##
     predicted class=2 expected loss=0.1566265
                                                 P(node) =0.003292997
##
                                    70
                                                                          5
       class counts:
                         3
                               0
                                           3
                                                       0
                                                             2
0
##
      probabilities: 0.036 0.000 0.843 0.036 0.000 0.000 0.024 0.000 0.060
0.000
##
## Node number 473: 44 observations,
                                        complexity param=0.0004465482
##
     predicted class=4 expected loss=0.7272727 P(node) =0.001745685
##
       class counts:
                                     2
                                                12
                                                       1
                                                             12
                                                                         10
5
##
      probabilities: 0.000 0.023 0.045 0.000 0.273 0.023 0.273 0.023 0.227
0.114
##
     left son=946 (12 obs) right son=947 (32 obs)
##
     Primary splits:
##
         220 < 30
                     to the right, improve=7.079545, (0 missing)
##
         415 < 42.5 to the right, improve=5.933911, (0 missing)
         443 < 3.5 to the right, improve=5.933911, (0 missing)
##
```

```
470 < 27 to the right, improve=5.933911, (0 missing)
##
         442 < 40.5 to the right, improve=5.848485, (0 missing)
##
##
     Surrogate splits:
##
         248 < 98
                     to the right, agree=0.932, adj=0.750, (0 split)
##
         221 < 15.5 to the right, agree=0.886, adj=0.583, (0 split)
##
         247 < 107
                     to the right, agree=0.864, adj=0.500, (0 split)
##
         275 < 242.5 to the right, agree=0.864, adj=0.500, (0 split)
                     to the right, agree=0.841, adj=0.417, (0 split)
##
         249 < 14
##
## Node number 474: 20 observations,
                                        complexity param=0.000111637
##
     predicted class=8
                        expected loss=0.5 P(node) =0.0007934934
##
       class counts:
                         0
                               0
                                     6
                                           0
                                                 3
                                                       0
                                                             0
                                                                    1
                                                                         10
0
##
      probabilities: 0.000 0.000 0.300 0.000 0.150 0.000 0.000 0.050 0.500
0.000
##
     left son=948 (10 obs) right son=949 (10 obs)
##
     Primary splits:
##
         626 < 244
                     to the right, improve=5.100000, (0 missing)
         247 < 13
##
                     to the left, improve=4.950000, (0 missing)
##
         374 < 25
                     to the left, improve=4.950000, (0 missing)
         402 < 64
                     to the left, improve=4.950000, (0 missing)
##
         465 < 228.5 to the right, improve=4.765934, (0 missing)
##
##
     Surrogate splits:
##
         191 < 14
                     to the left, agree=0.90, adj=0.8, (0 split)
##
         545 < 190
                     to the right, agree=0.90, adj=0.8, (0 split)
##
         599 < 245.5 to the right, agree=0.90, adj=0.8, (0 split)
         627 < 194.5 to the right, agree=0.90, adj=0.8, (0 split)
##
         218 < 133.5 to the left, agree=0.85, adj=0.7, (0 split)
##
##
## Node number 475: 94 observations
##
     predicted class=8 expected loss=0 P(node) =0.003729419
##
       class counts:
                                                                         94
0
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.000 1.000
##
0.000
##
## Node number 476: 34 observations
                        expected loss=0.2352941 P(node) =0.001348939
##
     predicted class=2
       class counts:
##
                         0
                               2
                                    26
                                           0
                                                 2
                                                       0
                                                             1
                                                                          2
                                                                    1
0
##
      probabilities: 0.000 0.059 0.765 0.000 0.059 0.000 0.029 0.029 0.059
0.000
##
## Node number 477: 1503 observations,
                                          complexity param=0.000491203
     predicted class=6 expected loss=0.0332668 P(node) =0.05963103
##
##
       class counts:
                         0
                               0
                                     4
                                           1
                                                 2
                                                       27 1453
                                                                          9
7
##
      probabilities: 0.000 0.000 0.003 0.001 0.001 0.018 0.967 0.000 0.006
0.005
     left son=954 (18 obs) right son=955 (1485 obs)
```

```
Primary splits:
##
##
         217 < 164
                     to the right, improve=22.62187, (0 missing)
                     to the right, improve=21.71964, (0 missing)
##
         218 < 139
                     to the right, improve=20.87881, (0 missing)
##
         215 < 165
                     to the right, improve=19.28097, (0 missing)
##
         191 < 40
                     to the right, improve=18.87744, (0 missing)
##
         192 < 25
##
     Surrogate splits:
##
         218 < 139
                     to the right, agree=0.997, adj=0.778, (0 split)
##
         216 < 194.5 to the right, agree=0.997, adj=0.722, (0 split)
##
                     to the right, agree=0.995, adj=0.556, (0 split)
         219 < 34
##
         215 < 236.5 to the right, agree=0.994, adj=0.500, (0 split)
                     to the right, agree=0.994, adj=0.500, (0 split)
##
         220 < 82
##
## Node number 478: 67 observations,
                                        complexity param=0.0002232741
                        expected loss=0.1641791 P(node) =0.002658203
##
     predicted class=5
##
       class counts:
                         0
                                      0
                                            2
                                                  1
                                                       56
                                                                           2
                                                              6
0
##
      probabilities: 0.000 0.000 0.000 0.030 0.015 0.836 0.090 0.000 0.030
0.000
##
     left son=956 (58 obs) right son=957 (9 obs)
##
     Primary splits:
##
         456 < 140
                     to the left,
                                    improve=9.097101, (0 missing)
##
         484 < 104.5 to the left,
                                    improve=6.276934, (0 missing)
##
         485 < 100.5 to the left,
                                    improve=4.330817, (0 missing)
##
         427 < 39
                     to the left,
                                   improve=4.108595, (0 missing)
##
         428 < 154
                     to the left,
                                   improve=3.775949, (0 missing)
##
     Surrogate splits:
##
         427 < 39
                     to the left,
                                   agree=0.940, adj=0.556, (0 split)
##
         455 < 35.5
                     to the left,
                                   agree=0.940, adj=0.556, (0 split)
         405 < 16
##
                     to the right, agree=0.925, adj=0.444, (0 split)
##
         484 < 104.5 to the left,
                                    agree=0.925, adj=0.444, (0 split)
##
         428 < 154
                     to the left,
                                   agree=0.910, adj=0.333, (0 split)
##
## Node number 479: 96 observations,
                                         complexity param=0.000870769
##
     predicted class=8
                        expected loss=0.6145833 P(node) =0.003808768
##
       class counts:
                         0
                               0
                                      2
                                            2
                                                       19
                                                             31
                                                                    1
                                                  0
                                                                         37
4
##
      probabilities: 0.000 0.000 0.021 0.021 0.000 0.198 0.323 0.010 0.385
0.042
##
     left son=958 (34 obs) right son=959 (62 obs)
##
     Primary splits:
##
         457 < 103
                     to the right, improve=13.42750, (0 missing)
##
         429 < 14
                     to the right, improve=13.11877, (0 missing)
                     to the left, improve=12.90833, (0 missing)
##
         328 < 10
##
         131 < 9.5
                     to the right, improve=12.26006, (0 missing)
##
         430 < 226
                     to the right, improve=11.99758, (0 missing)
##
     Surrogate splits:
##
         429 < 22.5 to the right, agree=0.885, adj=0.676, (0 split)
##
         485 < 150.5 to the right, agree=0.885, adj=0.676, (0 split)
##
         456 < 9.5 to the right, agree=0.854, adj=0.588, (0 split)
```

```
to the right, agree=0.854, adj=0.588, (0 split)
##
         458 < 246
##
         484 < 17
                     to the right, agree=0.833, adj=0.529, (0 split)
##
## Node number 480: 87 observations
##
     predicted class=2
                        expected loss=0.05747126 P(node) =0.003451696
##
       class counts:
                         0
                               0
                                     82
                                            2
                                                  0
                                                                           1
0
      probabilities: 0.000 0.000 0.943 0.023 0.000 0.023 0.000 0.000 0.011
##
0.000
##
## Node number 481: 22 observations,
                                         complexity param=0.0002232741
                        expected loss=0.3181818 P(node) =0.0008728427
##
     predicted class=3
##
       class counts:
                         0
                               0
                                      2
                                           15
                                                  0
                                                        0
                                                              0
                                                                    0
                                                                           5
0
##
      probabilities: 0.000 0.000 0.091 0.682 0.000 0.000 0.000 0.000 0.227
0.000
##
     left son=962 (15 obs) right son=963 (7 obs)
##
     Primary splits:
                                    improve=7.597403, (0 missing)
##
         484 < 42.5 to the left,
##
         485 < 86
                     to the left,
                                    improve=7.597403, (0 missing)
##
         512 < 106
                     to the left,
                                    improve=7.597403, (0 missing)
##
         511 < 45.5
                     to the left,
                                    improve=6.204545, (0 missing)
##
         513 < 2.5
                     to the left,
                                   improve=6.204545, (0 missing)
##
     Surrogate splits:
##
         485 < 86
                     to the left,
                                   agree=1.000, adj=1.000, (0 split)
                                   agree=1.000, adj=1.000, (0 split)
##
         512 < 106
                     to the left,
##
                                    agree=0.955, adj=0.857, (0 split)
         511 < 45.5
                     to the left,
         513 < 2.5
                                    agree=0.955, adj=0.857, (0 split)
##
                     to the left,
##
         321 < 12
                     to the left,
                                   agree=0.909, adj=0.714, (0 split)
##
## Node number 482: 87 observations,
                                         complexity param=4.465482e-05
##
     predicted class=5
                        expected loss=0.1034483 P(node) =0.003451696
##
       class counts:
                         0
                               0
                                      2
                                            5
                                                       78
                                                              1
                                                                           1
0
##
      probabilities: 0.000 0.000 0.023 0.057 0.000 0.897 0.011 0.000 0.011
0.000
##
     left son=964 (9 obs) right son=965 (78 obs)
##
     Primary splits:
##
         126 < 110
                     to the right, improve=5.088712, (0 missing)
         185 < 218
                     to the right, improve=5.088712, (0 missing)
##
##
         123 < 16
                     to the right, improve=4.962644, (0 missing)
                     to the right, improve=4.962644, (0 missing)
##
         124 < 86.5
##
         156 < 174
                     to the right, improve=4.793725, (0 missing)
##
     Surrogate splits:
##
         124 < 43
                     to the right, agree=0.977, adj=0.778, (0 split)
##
         125 < 7
                     to the right, agree=0.977, adj=0.778, (0 split)
##
         127 < 37
                     to the right, agree=0.977, adj=0.778, (0 split)
##
                     to the right, agree=0.966, adj=0.667, (0 split)
         123 < 7.5
##
         128 < 1
                     to the right, agree=0.954, adj=0.556, (0 split)
##
```

```
## Node number 483: 25 observations, complexity param=0.0001786193
                       expected loss=0.4 P(node) =0.0009918667
##
     predicted class=8
##
       class counts:
                         0
                               0
                                     2
                                           2
                                                 4
                                                       1
                                                             1
                                                                        15
0
##
      probabilities: 0.000 0.000 0.080 0.080 0.160 0.040 0.040 0.000 0.600
0.000
##
     left son=966 (7 obs) right son=967 (18 obs)
##
     Primary splits:
##
         400 < 192
                     to the right, improve=5.626667, (0 missing)
##
         485 < 88.5 to the left, improve=5.055238, (0 missing)
##
         401 < 201.5 to the right, improve=4.890556, (0 missing)
         512 < 17.5 to the left, improve=4.769524, (0 missing)
##
                     to the right, improve=4.652308, (0 missing)
##
         439 < 38
##
     Surrogate splits:
##
         427 < 25.5 to the right, agree=0.96, adj=0.857, (0 split)
##
                     to the right, agree=0.92, adj=0.714, (0 split)
##
         399 < 97.5 to the right, agree=0.92, adj=0.714, (0 split)
         401 < 201.5 to the right, agree=0.92, adj=0.714, (0 split)
##
                     to the right, agree=0.92, adj=0.714, (0 split)
##
         426 < 3
##
## Node number 484: 1415 observations,
                                          complexity param=0.0008037867
     predicted class=4 expected loss=0.09399293 P(node) =0.05613965
##
##
       class counts:
                         0
                               6
                                    14
                                                            15
                                                                  10
                                          16 1282
                                                      21
                                                                        31
20
      probabilities: 0.000 0.004 0.010 0.011 0.906 0.015 0.011 0.007 0.022
##
0.014
##
     left son=968 (1344 obs) right son=969 (71 obs)
##
     Primary splits:
##
         155 < 120.5 to the left,
                                   improve=61.80734, (0 missing)
##
         183 < 31.5 to the left,
                                   improve=46.27412, (0 missing)
##
         154 < 128
                     to the left,
                                   improve=37.69171, (0 missing)
##
         156 < 179
                     to the left,
                                   improve=33.33936, (0 missing)
##
         429 < 29.5 to the right, improve=24.05030, (0 missing)
##
     Surrogate splits:
##
         183 < 82
                     to the left,
                                   agree=0.983, adj=0.662, (0 split)
##
         154 < 169.5 to the left,
                                   agree=0.972, adj=0.437, (0 split)
                                   agree=0.970, adj=0.394, (0 split)
##
         156 < 221
                     to the left,
##
         127 < 72
                     to the left,
                                   agree=0.965, adj=0.296, (0 split)
##
         182 < 240.5 to the left,
                                   agree=0.963, adj=0.268, (0 split)
##
## Node number 485: 54 observations
##
     predicted class=6
                        expected loss=0.05555556 P(node) =0.002142432
##
       class counts:
                               0
                                     2
                                                 1
                                                            51
                                                                         0
0
      probabilities: 0.000 0.000 0.037 0.000 0.019 0.000 0.944 0.000 0.000
##
0.000
##
## Node number 486: 93 observations,
                                        complexity param=0.0006251675
     predicted class=9 expected loss=0.5806452 P(node) =0.003689744
      class counts: 0 0 2 2 24 20
```

```
39
##
      probabilities: 0.000 0.000 0.022 0.022 0.258 0.215 0.000 0.054 0.011
0.419
##
     left son=972 (21 obs) right son=973 (72 obs)
##
     Primary splits:
         247 < 1.5
##
                     to the right, improve=11.82066, (0 missing)
##
         381 < 4
                     to the left,
                                   improve=11.37190, (0 missing)
         353 < 5
##
                     to the left,
                                   improve=10.84927, (0 missing)
                     to the right, improve=10.22326, (0 missing)
##
         248 < 1.5
                     to the left, improve=10.20015, (0 missing)
##
         354 < 2
##
     Surrogate splits:
         246 < 68.5
##
                     to the right, agree=0.968, adj=0.857, (0 split)
         248 < 1.5
##
                     to the right, agree=0.946, adj=0.762, (0 split)
##
         275 < 10.5
                     to the right, agree=0.935, adj=0.714, (0 split)
##
         218 < 29
                     to the right, agree=0.925, adj=0.667, (0 split)
##
         219 < 2
                     to the right, agree=0.925, adj=0.667, (0 split)
##
## Node number 487: 47 observations,
                                         complexity param=0.0003125837
##
     predicted class=7
                        expected loss=0.3829787 P(node) =0.001864709
##
       class counts:
                         0
                               0
                                     5
                                            2
                                                  0
                                                        1
                                                              0
                                                                   29
                                                                          2
8
      probabilities: 0.000 0.000 0.106 0.043 0.000 0.021 0.000 0.617 0.043
##
0.170
##
     left son=974 (36 obs) right son=975 (11 obs)
##
     Primary splits:
                                   improve=9.107135, (0 missing)
##
         455 < 81.5 to the left,
##
         426 < 9
                     to the left,
                                   improve=8.740324, (0 missing)
         427 < 1
                                   improve=8.740324, (0 missing)
##
                     to the left,
##
         370 < 112
                     to the left,
                                   improve=8.707174, (0 missing)
##
         371 < 190.5 to the left,
                                   improve=8.707174, (0 missing)
##
     Surrogate splits:
##
         426 < 26
                     to the left,
                                   agree=0.957, adj=0.818, (0 split)
##
         427 < 1
                     to the left,
                                   agree=0.936, adj=0.727, (0 split)
##
         370 < 144
                     to the left,
                                   agree=0.915, adj=0.636, (0 split)
##
         398 < 90
                                   agree=0.915, adj=0.636, (0 split)
                     to the left,
##
         454 < 5.5
                     to the left,
                                   agree=0.915, adj=0.636, (0 split)
##
## Node number 488: 521 observations,
                                          complexity param=0.0009377512
                        expected loss=0.1516315
##
     predicted class=5
                                                P(node) =0.0206705
##
       class counts:
                         0
                               0
                                     1
                                           35
                                                      442
                                                             24
                                                                          0
17
##
      probabilities: 0.000 0.000 0.002 0.067 0.002 0.848 0.046 0.002 0.000
0.033
##
     left son=976 (494 obs) right son=977 (27 obs)
##
     Primary splits:
##
         516 < 166.5 to the left,
                                   improve=37.42924, (0 missing)
##
         544 < 240.5 to the left,
                                   improve=35.78384, (0 missing)
##
                                   improve=35.66911, (0 missing)
         100 < 22
                     to the left,
##
         101 < 1.5
                     to the left,
                                   improve=33.93476, (0 missing)
                                   improve=28.88534, (0 missing)
##
         543 < 40 to the left,
```

```
##
     Surrogate splits:
##
         100 < 22
                     to the left,
                                   agree=0.988, adj=0.778, (0 split)
                                   agree=0.988, adj=0.778, (0 split)
##
         544 < 240.5 to the left,
                                   agree=0.987, adj=0.741, (0 split)
##
         101 < 1.5
                     to the left,
##
         515 < 67.5
                    to the left,
                                   agree=0.981, adj=0.630, (0 split)
##
         543 < 40
                     to the left,
                                   agree=0.981, adj=0.630, (0 split)
##
## Node number 489: 60 observations,
                                        complexity param=0.0005805126
     predicted class=9
                        expected loss=0.6166667 P(node) =0.00238048
##
       class counts:
                         3
                               0
                                    13
                                           2
                                                 5
                                                       3
                                                             2
                                                                         9
23
##
      probabilities: 0.050 0.000 0.217 0.033 0.083 0.050 0.033 0.000 0.150
0.383
##
     left son=978 (25 obs) right son=979 (35 obs)
##
     Primary splits:
##
         596 < 14
                     to the right, improve=11.298100, (0 missing)
                     to the right, improve= 9.944947, (0 missing)
##
         155 < 24
##
         597 < 21.5
                     to the right, improve= 9.661661, (0 missing)
                     to the right, improve= 9.196044, (0 missing)
##
         595 < 9
##
         154 < 7
                     to the right, improve= 9.104167, (0 missing)
##
     Surrogate splits:
##
         597 < 44.5
                    to the right, agree=0.950, adj=0.88, (0 split)
##
         595 < 9
                     to the right, agree=0.933, adj=0.84, (0 split)
##
         539 < 13.5
                     to the right, agree=0.900, adj=0.76, (0 split)
##
         567 < 4.5
                     to the right, agree=0.900, adj=0.76, (0 split)
##
         568 < 2
                     to the right, agree=0.900, adj=0.76, (0 split)
##
## Node number 490: 79 observations,
                                        complexity param=8.930964e-05
##
     predicted class=4
                        expected loss=0.1392405 P(node) =0.003134299
##
       class counts:
                         0
                               1
                                     1
                                           1
                                                68
                                                       0
                                                                         1
3
##
      probabilities: 0.000 0.013 0.013 0.013 0.861 0.000 0.000 0.051 0.013
0.038
##
     left son=980 (71 obs) right son=981 (8 obs)
##
     Primary splits:
##
         265 < 248
                                   improve=5.523801, (0 missing)
                     to the left,
         436 < 185
                     to the right, improve=4.886980, (0 missing)
##
##
         492 < 86.5 to the right, improve=4.420106, (0 missing)
##
         464 < 212.5 to the right, improve=4.353250, (0 missing)
                     to the left, improve=4.113171, (0 missing)
##
         714 < 1
##
     Surrogate splits:
##
         264 < 181
                     to the left,
                                   agree=0.962, adj=0.625, (0 split)
                     to the left,
##
         237 < 63.5
                                   agree=0.949, adj=0.500, (0 split)
                                   agree=0.937, adj=0.375, (0 split)
##
         258 < 44
                     to the left,
##
         714 < 1
                     to the left,
                                   agree=0.937, adj=0.375, (0 split)
##
         741 < 28.5 to the left,
                                   agree=0.937, adj=0.375, (0 split)
##
## Node number 491: 148 observations,
                                         complexity param=0.0008037867
##
     predicted class=9 expected loss=0.6689189 P(node) =0.005871851
       class counts: 0 1 4 17 20 0
                                                             2
```

```
49
##
      probabilities: 0.000 0.007 0.027 0.115 0.135 0.000 0.014 0.189 0.182
0.331
##
     left son=982 (127 obs) right son=983 (21 obs)
##
     Primary splits:
         544 < 172.5 to the left,
                                   improve=15.29669, (0 missing)
##
##
         346 < 0.5
                     to the left,
                                   improve=14.10428, (0 missing)
##
         345 < 4
                     to the left,
                                   improve=13.30087, (0 missing)
                                   improve=13.08108, (0 missing)
##
         572 < 43
                     to the left,
##
         373 < 3.5
                     to the left,
                                   improve=12.66705, (0 missing)
##
     Surrogate splits:
         516 < 159
##
                     to the left,
                                   agree=0.966, adj=0.762, (0 split)
         543 < 1
##
                     to the left,
                                   agree=0.939, adj=0.571, (0 split)
##
         571 < 7.5
                     to the left,
                                   agree=0.939, adj=0.571, (0 split)
##
         572 < 165.5 to the left,
                                   agree=0.932, adj=0.524, (0 split)
##
         517 < 252.5 to the left,
                                   agree=0.926, adj=0.476, (0 split)
##
## Node number 492: 178 observations,
                                          complexity param=0.001607573
##
     predicted class=3
                        expected loss=0.5393258 P(node) =0.007062091
##
       class counts:
                         2
                               0
                                    44
                                           82
                                                  1
                                                        8
                                                              3
                                                                    0
                                                                         27
11
      probabilities: 0.011 0.000 0.247 0.461 0.006 0.045 0.017 0.000 0.152
##
0.062
##
     left son=984 (99 obs) right son=985 (79 obs)
##
     Primary splits:
                                   improve=36.93243, (0 missing)
##
         484 < 46
                     to the left,
##
         483 < 2.5
                     to the left,
                                   improve=34.73228, (0 missing)
         485 < 2
                                   improve=29.35907, (0 missing)
##
                     to the left,
##
         379 < 121
                     to the left,
                                   improve=29.01655, (0 missing)
##
         511 < 69.5 to the left,
                                   improve=28.38304, (0 missing)
##
     Surrogate splits:
##
         483 < 2.5
                     to the left,
                                   agree=0.938, adj=0.861, (0 split)
                                   agree=0.904, adj=0.785, (0 split)
##
         485 < 2
                     to the left,
##
         511 < 31.5
                     to the left,
                                   agree=0.904, adj=0.785, (0 split)
##
                                   agree=0.904, adj=0.785, (0 split)
         512 < 6
                     to the left,
##
         457 < 47.5 to the left,
                                   agree=0.876, adj=0.722, (0 split)
##
## Node number 493: 228 observations,
                                          complexity param=0.001607573
                        expected loss=0.5570175 P(node) =0.009045824
##
     predicted class=4
                                                        4
##
       class counts:
                         1
                               0
                                     9
                                           16
                                                101
                                                                    1
                                                                         50
45
##
      probabilities: 0.004 0.000 0.039 0.070 0.443 0.018 0.004 0.004 0.219
0.197
##
     left son=986 (138 obs) right son=987 (90 obs)
##
     Primary splits:
##
         428 < 25
                     to the right, improve=29.39194, (0 missing)
##
         658 < 3.5
                     to the left,
                                   improve=29.31754, (0 missing)
##
         544 < 104
                     to the left, improve=29.17931, (0 missing)
##
         427 < 2.5
                     to the right, improve=27.69817, (0 missing)
                     to the left, improve=27.61997, (0 missing)
##
         657 < 62
```

```
##
     Surrogate splits:
##
         456 < 1.5
                     to the right, agree=0.912, adj=0.778, (0 split)
                     to the right, agree=0.904, adj=0.756, (0 split)
##
         400 < 31
         429 < 109.5 to the right, agree=0.882, adj=0.700, (0 split)
##
##
         427 < 2.5
                     to the right, agree=0.877, adj=0.689, (0 split)
##
         457 < 32
                     to the right, agree=0.873, adj=0.678, (0 split)
##
## Node number 494: 293 observations,
                                         complexity param=0.0006698223
     predicted class=9
                        expected loss=0.5119454 P(node) =0.01162468
##
       class counts:
                         1
                               0
                                    17
                                          52
                                                23
                                                       1
                                                                  43
                                                                        13
143
      probabilities: 0.003 0.000 0.058 0.177 0.078 0.003 0.000 0.147 0.044
##
0.488
##
     left son=988 (176 obs) right son=989 (117 obs)
##
     Primary splits:
##
         319 < 108.5 to the left,
                                   improve=23.69464, (0 missing)
##
         320 < 2.5
                     to the left,
                                   improve=22.47628, (0 missing)
##
         318 < 3.5
                     to the left,
                                   improve=21.91279, (0 missing)
         347 < 71
##
                     to the left,
                                   improve=21.76380, (0 missing)
         292 < 66.5 to the left,
##
                                   improve=20.70928, (0 missing)
##
     Surrogate splits:
##
         347 < 71
                     to the left,
                                   agree=0.973, adj=0.932, (0 split)
##
         320 < 2.5
                     to the left,
                                   agree=0.959, adj=0.897, (0 split)
##
         292 < 85.5
                     to the left,
                                   agree=0.952, adj=0.880, (0 split)
##
         318 < 1
                     to the left,
                                   agree=0.939, adj=0.846, (0 split)
##
         291 < 13.5 to the left,
                                   agree=0.928, adj=0.821, (0 split)
##
## Node number 495: 1152 observations,
                                          complexity param=0.0006698223
##
     predicted class=9
                        expected loss=0.1137153 P(node) =0.04570522
##
       class counts:
                         0
                               0
                                          10
                                                       6
                                                                  11
                                                                         34
                                     1
                                                69
1021
##
      probabilities: 0.000 0.000 0.001 0.009 0.060 0.005 0.000 0.010 0.030
0.886
##
     left son=990 (66 obs) right son=991 (1086 obs)
##
     Primary splits:
##
         212 < 14
                     to the left, improve=28.50180, (0 missing)
         219 < 193
                     to the right, improve=22.58637, (0 missing)
##
##
         191 < 63
                     to the right, improve=22.43587, (0 missing)
##
         220 < 2
                     to the right, improve=20.35757, (0 missing)
         213 < 0.5
                     to the left, improve=18.59774, (0 missing)
##
##
     Surrogate splits:
         191 < 166
##
                     to the right, agree=0.948, adj=0.091, (0 split)
##
         154 < 96
                     to the right, agree=0.947, adj=0.076, (0 split)
##
                     to the right, agree=0.947, adj=0.076, (0 split)
         164 < 9.5
         192 < 27.5 to the right, agree=0.946, adj=0.061, (0 split)
##
##
         219 < 200.5 to the right, agree=0.946, adj=0.061, (0 split)
##
## Node number 496: 40 observations,
                                        complexity param=0.0002679289
##
     predicted class=3 expected loss=0.4 P(node) =0.001586987
       class counts: 1 6 0 24 3 4
```

```
1
##
      probabilities: 0.025 0.150 0.000 0.600 0.075 0.100 0.025 0.000 0.000
0.025
##
     left son=992 (26 obs) right son=993 (14 obs)
##
     Primary splits:
         490 < 1
##
                     to the left,
                                   improve=9.945055, (0 missing)
##
                     to the left,
                                   improve=9.367521, (0 missing)
         462 < 37.5
         518 < 24
                     to the right, improve=9.133903, (0 missing)
##
                     to the right, improve=8.523810, (0 missing)
##
         517 < 7
##
         545 < 19.5 to the right, improve=8.523810, (0 missing)
##
     Surrogate splits:
         462 < 37.5
##
                    to the left,
                                   agree=0.975, adj=0.929, (0 split)
##
         518 < 24
                     to the left,
                                   agree=0.975, adj=0.929, (0 split)
##
         517 < 7
                     to the left,
                                   agree=0.950, adj=0.857, (0 split)
##
         545 < 19.5
                   to the left,
                                   agree=0.950, adj=0.857, (0 split)
##
         546 < 15.5 to the left,
                                   agree=0.925, adj=0.786, (0 split)
##
## Node number 497: 135 observations,
                                         complexity param=0.0002679289
##
     predicted class=5
                        expected loss=0.1777778 P(node) =0.00535608
##
       class counts:
                         0
                               1
                                     4
                                          16
                                                      111
                                                              1
                                                                          1
                                                  0
1
      probabilities: 0.000 0.007 0.030 0.119 0.000 0.822 0.007 0.000 0.007
##
0.007
##
     left son=994 (25 obs) right son=995 (110 obs)
##
     Primary splits:
##
         150 < 65
                     to the right, improve=10.710710, (0 missing)
         151 < 133.5 to the right, improve=10.355560, (0 missing)
##
                     to the right, improve=10.235900, (0 missing)
##
         149 < 46
##
         176 < 25.5 to the right, improve= 8.979616, (0 missing)
         152 < 138.5 to the right, improve= 8.784127, (0 missing)
##
##
     Surrogate splits:
##
         151 < 227.5 to the right, agree=0.948, adj=0.72, (0 split)
##
         149 < 25.5 to the right, agree=0.941, adj=0.68, (0 split)
##
         123 < 9.5
                     to the right, agree=0.933, adj=0.64, (0 split)
##
                     to the right, agree=0.926, adj=0.60, (0 split)
         122 < 3.5
##
         152 < 138.5 to the right, agree=0.904, adj=0.48, (0 split)
##
## Node number 498: 46 observations,
                                        complexity param=0.0004018934
##
     predicted class=8
                        expected loss=0.4347826 P(node) =0.001825035
                               5
                                     2
                                           9
##
       class counts:
                         0
                                                                    3
                                                                         26
1
##
      probabilities: 0.000 0.109 0.043 0.196 0.000 0.000 0.000 0.065 0.565
0.022
##
     left son=996 (18 obs) right son=997 (28 obs)
##
     Primary splits:
##
         348 < 11.5 to the left,
                                   improve=13.425810, (0 missing)
##
         347 < 20.5 to the left,
                                   improve=10.983680, (0 missing)
##
         376 < 113
                     to the left,
                                   improve=10.578990, (0 missing)
##
         319 < 3
                     to the left,
                                   improve=10.226420, (0 missing)
##
         377 < 111.5 to the left, improve= 9.637319, (0 missing)
```

```
##
     Surrogate splits:
##
         347 < 20.5
                    to the left, agree=0.935, adj=0.833, (0 split)
                                   agree=0.913, adj=0.778, (0 split)
##
         376 < 113
                     to the left,
         377 < 111.5 to the left,
                                   agree=0.913, adj=0.778, (0 split)
##
                     to the right, agree=0.891, adj=0.722, (0 split)
##
         351 < 148
##
         319 < 3
                     to the left, agree=0.870, adj=0.667, (0 split)
##
## Node number 499: 92 observations,
                                        complexity param=0.0008484415
     predicted class=9
                        expected loss=0.5 P(node) =0.003650069
##
       class counts:
                         0
                               0
                                     2
                                           8
                                                27
                                                       1
                                                                   5
                                                                         3
46
      probabilities: 0.000 0.000 0.022 0.087 0.293 0.011 0.000 0.054 0.033
##
0.500
##
     left son=998 (32 obs) right son=999 (60 obs)
##
     Primary splits:
##
         210 < 49
                     to the left,
                                   improve=15.898190, (0 missing)
##
         211 < 18
                     to the left,
                                   improve=14.630380, (0 missing)
##
         237 < 12.5 to the left,
                                   improve=12.035720, (0 missing)
##
         212 < 19
                     to the left,
                                   improve=10.219870, (0 missing)
                     to the left,
##
         238 < 8
                                   improve= 9.997799, (0 missing)
     Surrogate splits:
##
##
         209 < 3
                     to the left,
                                   agree=0.891, adj=0.687, (0 split)
##
         211 < 11.5 to the left,
                                   agree=0.891, adj=0.687, (0 split)
##
         237 < 1.5
                     to the left.
                                   agree=0.848, adj=0.562, (0 split)
##
         212 < 19
                     to the left,
                                   agree=0.815, adj=0.469, (0 split)
##
         238 < 0.5
                     to the left,
                                   agree=0.815, adj=0.469, (0 split)
##
## Node number 500: 54 observations,
                                        complexity param=0.000491203
##
     predicted class=1
                        expected loss=0.2962963 P(node) =0.002142432
##
       class counts:
                         2
                              38
                                           1
                                                       2
                                                            11
                                                                         0
                                     0
0
##
      probabilities: 0.037 0.704 0.000 0.019 0.000 0.037 0.204 0.000 0.000
0.000
##
     left son=1000 (39 obs) right son=1001 (15 obs)
##
     Primary splits:
         568 < 14
##
                     to the left, improve=16.36980, (0 missing)
                     to the right, improve=15.85899, (0 missing)
##
         268 < 40
##
         296 < 37.5
                     to the right, improve=15.65485, (0 missing)
                     to the right, improve=15.54233, (0 missing)
##
         295 < 10.5
         323 < 23
                     to the right, improve=15.54233, (0 missing)
##
##
     Surrogate splits:
         567 < 18.5
##
                     to the left, agree=0.981, adj=0.933, (0 split)
##
         569 < 28
                     to the left,
                                   agree=0.981, adj=0.933, (0 split)
                                   agree=0.981, adj=0.933, (0 split)
##
         596 < 77
                     to the left,
                                   agree=0.981, adj=0.933, (0 split)
##
         597 < 144
                     to the left,
##
         296 < 37.5 to the right, agree=0.963, adj=0.867, (0 split)
##
## Node number 501: 39 observations,
                                        complexity param=8.930964e-05
##
     predicted class=2 expected loss=0.3846154 P(node) =0.001547312
       class counts: 2 3 24 4 0 0
```

```
0
##
      probabilities: 0.051 0.077 0.615 0.103 0.000 0.000 0.026 0.128 0.000
0.000
##
     left son=1002 (25 obs) right son=1003 (14 obs)
##
     Primary splits:
         545 < 104
                     to the right, improve=6.094799, (0 missing)
##
                     to the right, improve=5.025776, (0 missing)
##
         231 < 5
         544 < 23
                     to the right, improve=4.757021, (0 missing)
##
         518 < 165.5 to the right, improve=4.574799, (0 missing)
##
##
         204 < 15
                     to the right, improve=4.467252, (0 missing)
##
     Surrogate splits:
##
         518 < 165.5 to the right, agree=0.949, adj=0.857, (0 split)
##
         517 < 13.5 to the right, agree=0.923, adj=0.786, (0 split)
##
         490 < 223.5 to the right, agree=0.897, adj=0.714, (0 split)
##
                     to the right, agree=0.872, adj=0.643, (0 split)
         573 < 178
##
         544 < 23
                     to the right, agree=0.846, adj=0.571, (0 split)
##
## Node number 502: 23 observations,
                                         complexity param=0.0002232741
##
     predicted class=2
                        expected loss=0.5652174 P(node) =0.0009125174
##
       class counts:
                         0
                                3
                                    10
                                            2
                                                  1
                                                        0
                                                              5
                                                                    1
                                                                          1
0
      probabilities: 0.000 0.130 0.435 0.087 0.043 0.000 0.217 0.043 0.043
##
0.000
##
     left son=1004 (12 obs) right son=1005 (11 obs)
##
     Primary splits:
         176 < 25.5 to the right, improve=5.899868, (0 missing)
##
##
                     to the right, improve=5.899868, (0 missing)
         202 < 6.5
         203 < 13
                     to the right, improve=5.899868, (0 missing)
##
##
         177 < 77.5
                     to the right, improve=5.546488, (0 missing)
##
         210 < 201
                     to the right, improve=5.369565, (0 missing)
##
     Surrogate splits:
##
         202 < 6.5
                     to the right, agree=1.000, adj=1.000, (0 split)
##
         203 < 13
                     to the right, agree=1.000, adj=1.000, (0 split)
##
         175 < 27
                     to the right, agree=0.957, adj=0.909, (0 split)
##
                     to the right, agree=0.957, adj=0.909, (0 split)
         177 < 77.5
##
         240 < 50
                     to the right, agree=0.957, adj=0.909, (0 split)
##
## Node number 503: 1337 observations,
                                           complexity param=0.0003572385
##
     predicted class=7
                        expected loss=0.03141361 P(node) =0.05304503
##
       class counts:
                         2
                               9
                                    11
                                            4
                                                  3
                                                        0
                                                              2 1295
                                                                          0
11
##
      probabilities: 0.001 0.007 0.008 0.003 0.002 0.000 0.001 0.969 0.000
0.008
##
     left son=1006 (10 obs) right son=1007 (1327 obs)
##
     Primary splits:
##
         158 < 54
                     to the right, improve=16.191000, (0 missing)
##
         159 < 24.5 to the right, improve=14.330360, (0 missing)
                     to the right, improve=12.494870, (0 missing)
##
##
         461 < 219.5 to the right, improve=11.010110, (0 missing)
##
         433 < 113.5 to the right, improve= 6.680192, (0 missing)
```

```
##
     Surrogate splits:
##
         159 < 24.5
                    to the right, agree=0.999, adj=0.9, (0 split)
                     to the right, agree=0.999, adj=0.8, (0 split)
##
         157 < 3
                     to the right, agree=0.996, adj=0.4, (0 split)
##
         130 < 4.5
##
         131 < 35.5 to the right, agree=0.996, adj=0.4, (0 split)
##
         160 < 78.5
                    to the right, agree=0.995, adj=0.3, (0 split)
##
## Node number 504: 29 observations,
                                        complexity param=0.0001562919
     predicted class=4
                        expected loss=0.6206897 P(node) =0.001150565
##
       class counts:
                         1
                               1
                                     8
                                                11
                                                       1
                                                             3
                                                                   1
                                                                         1
2
      probabilities: 0.034 0.034 0.276 0.000 0.379 0.034 0.103 0.034 0.034
##
0.069
     left son=1008 (11 obs) right son=1009 (18 obs)
##
##
     Primary splits:
##
         398 < 2.5
                     to the right, improve=6.737374, (0 missing)
         399 < 10.5 to the right, improve=6.737374, (0 missing)
##
##
         426 < 13
                     to the left, improve=6.147059, (0 missing)
                     to the right, improve=5.673684, (0 missing)
##
         371 < 59
##
         427 < 73.5 to the right, improve=5.673684, (0 missing)
##
     Surrogate splits:
##
         399 < 10.5 to the right, agree=1.000, adj=1.000, (0 split)
##
         371 < 59
                     to the right, agree=0.966, adj=0.909, (0 split)
##
         426 < 13
                     to the right, agree=0.966, adj=0.909, (0 split)
##
         427 < 73.5
                    to the right, agree=0.966, adj=0.909, (0 split)
##
         454 < 0.5
                     to the right, agree=0.931, adj=0.818, (0 split)
##
## Node number 505: 103 observations,
                                         complexity param=4.465482e-05
##
     predicted class=4
                        expected loss=0.0776699 P(node) =0.004086491
##
       class counts:
                         0
                               0
                                           0
                                                95
                                                       0
                                                             3
                                                                         0
                                     0
5
##
      probabilities: 0.000 0.000 0.000 0.000 0.922 0.000 0.029 0.000 0.000
0.049
##
     left son=1010 (96 obs) right son=1011 (7 obs)
##
     Primary splits:
##
         490 < 97.5 to the right, improve=3.890806, (0 missing)
                     to the right, improve=3.096163, (0 missing)
##
         463 < 137
##
         210 < 11.5 to the left, improve=2.586422, (0 missing)
##
         209 < 135.5 to the left,
                                   improve=2.380440, (0 missing)
                     to the right, improve=2.015806, (0 missing)
##
         491 < 38
     Surrogate splits:
##
         207 < 254.5 to the left, agree=0.951, adj=0.286, (0 split)
##
##
         235 < 254.5 to the left, agree=0.951, adj=0.286, (0 split)
                                   agree=0.951, adj=0.286, (0 split)
##
         268 < 254.5 to the left,
                     to the right, agree=0.951, adj=0.286, (0 split)
##
         491 < 3
##
         719 < 59.5 to the left, agree=0.951, adj=0.286, (0 split)
##
## Node number 508: 24 observations,
                                      complexity param=0.0001339645
##
     predicted class=7 expected loss=0.3333333 P(node) =0.000952192
      class counts: 0 0 4 0 2 0
```

```
2
##
      probabilities: 0.000 0.000 0.167 0.000 0.083 0.000 0.000 0.667 0.000
0.083
##
     left son=1016 (8 obs) right son=1017 (16 obs)
##
     Primary splits:
         233 < 2.5
##
                     to the left,
                                   improve=5.208333, (0 missing)
##
         234 < 20
                     to the left,
                                   improve=5.208333, (0 missing)
##
         494 < 6
                     to the left,
                                   improve=5.208333, (0 missing)
                                   improve=4.708333, (0 missing)
##
         207 < 88
                     to the left,
##
         205 < 74
                     to the left,
                                   improve=4.333333, (0 missing)
##
     Surrogate splits:
         234 < 20
##
                     to the left,
                                   agree=1.000, adj=1.000, (0 split)
##
         205 < 23.5
                     to the left,
                                   agree=0.958, adj=0.875, (0 split)
##
         206 < 58.5
                     to the left,
                                   agree=0.958, adj=0.875, (0 split)
##
         207 < 41.5
                     to the left,
                                   agree=0.958, adj=0.875, (0 split)
##
         235 < 12.5 to the left,
                                   agree=0.958, adj=0.875, (0 split)
##
## Node number 509: 26 observations,
                                        complexity param=0.0003125837
##
     predicted class=9
                        expected loss=0.5
                                           P(node) =0.001031541
##
       class counts:
                         0
                               0
                                     0
                                            0
                                                 10
                                                        0
                                                                    0
                                                                          3
13
      probabilities: 0.000 0.000 0.000 0.000 0.385 0.000 0.000 0.000 0.115
##
0.500
##
     left son=1018 (12 obs) right son=1019 (14 obs)
##
     Primary splits:
##
         382 < 178.5 to the left,
                                   improve=6.902930, (0 missing)
##
         355 < 79
                     to the left,
                                   improve=6.786480, (0 missing)
         383 < 20.5
                                   improve=6.786480, (0 missing)
##
                     to the left,
##
         410 < 175
                     to the left,
                                   improve=5.615385, (0 missing)
##
         344 < 3
                     to the left,
                                   improve=4.557692, (0 missing)
##
     Surrogate splits:
##
         355 < 79
                     to the left,
                                   agree=0.962, adj=0.917, (0 split)
         383 < 20.5
                                   agree=0.962, adj=0.917, (0 split)
##
                     to the left,
##
         410 < 51
                     to the left,
                                   agree=0.885, adj=0.750, (0 split)
##
                                   agree=0.846, adj=0.667, (0 split)
         354 < 243.5 to the left,
##
         327 < 35
                     to the left,
                                   agree=0.808, adj=0.583, (0 split)
##
## Node number 510: 25 observations,
                                        complexity param=0.0002902563
##
     predicted class=4
                        expected loss=0.44 P(node) =0.0009918667
##
                                            0
                                                 14
       class counts:
                         0
                               0
                                     1
                                                                    1
                                                                          0
9
##
      probabilities: 0.000 0.000 0.040 0.000 0.560 0.000 0.000 0.040 0.000
0.360
##
     left son=1020 (17 obs) right son=1021 (8 obs)
##
     Primary splits:
##
         434 < 94
                     to the left,
                                   improve=8.545882, (0 missing)
##
         267 < 139.5 to the right, improve=4.590000, (0 missing)
##
         351 < 104 to the right, improve=4.590000, (0 missing)
##
         456 < 179.5 to the right, improve=4.411429, (0 missing)
         492 < 225.5 to the right, improve=4.333506, (0 missing)
##
```

```
##
     Surrogate splits:
         433 < 49
##
                     to the left, agree=0.92, adj=0.750, (0 split)
                                   agree=0.88, adj=0.625, (0 split)
##
         406 < 4
                     to the left,
         464 < 218
                     to the right, agree=0.88, adj=0.625, (0 split)
##
##
         490 < 102
                     to the right, agree=0.88, adj=0.625, (0 split)
##
         243 < 132.5 to the left, agree=0.84, adj=0.500, (0 split)
##
## Node number 511: 143 observations
     predicted class=9
##
                        expected loss=0.0979021 P(node) =0.005673477
##
       class counts:
                         0
                               0
                                     3
                                                 3
                                                       0
                                                              1
                                                                    5
                                                                          1
                                           1
129
      probabilities: 0.000 0.000 0.021 0.007 0.021 0.000 0.007 0.035 0.007
##
0.902
##
## Node number 512: 2249 observations,
                                          complexity param=8.930964e-05
     predicted class=1 expected loss=0.01823032 P(node) =0.08922833
##
       class counts:
                         0 2208
                                     2
                                           2
                                                 1
                                                       4
                                                                    8
                                                                         19
1
      probabilities: 0.000 0.982 0.001 0.001 0.000 0.002 0.002 0.004 0.008
##
0.000
##
     left son=1024 (2237 obs) right son=1025 (12 obs)
##
     Primary splits:
##
         410 < 32
                     to the left,
                                   improve=9.285559, (0 missing)
##
         430 < 196.5 to the left,
                                   improve=7.490684, (0 missing)
##
         437 < 198
                     to the left,
                                   improve=7.445189, (0 missing)
##
         411 < 32
                     to the left,
                                   improve=6.891602, (0 missing)
##
                                   improve=6.695199, (0 missing)
         438 < 3
                     to the left,
##
     Surrogate splits:
##
         438 < 3
                     to the left,
                                   agree=0.998, adj=0.667, (0 split)
##
         437 < 211.5 to the left,
                                   agree=0.997, adj=0.500, (0 split)
##
         384 < 16
                     to the left,
                                   agree=0.997, adj=0.417, (0 split)
##
         411 < 32
                     to the left,
                                   agree=0.997, adj=0.417, (0 split)
##
         409 < 245
                     to the left,
                                   agree=0.996, adj=0.333, (0 split)
##
## Node number 513: 11 observations
     predicted class=3 expected loss=0.6363636 P(node) =0.0004364213
##
##
       class counts:
                         0
                               1
                                     2
                                           4
                                                 1
                                                        1
                                                                          0
1
      probabilities: 0.000 0.091 0.182 0.364 0.091 0.091 0.091 0.000 0.000
##
0.091
##
## Node number 514: 19 observations
##
     predicted class=2
                        expected loss=0.5789474
                                                 P(node) =0.0007538187
##
       class counts:
                         0
                                                 5
                               0
                                     8
                                           0
                                                       4
                                                              2
                                                                    0
                                                                          0
0
##
      probabilities: 0.000 0.000 0.421 0.000 0.263 0.211 0.105 0.000 0.000
0.000
##
## Node number 515: 12 observations
     predicted class=1 expected loss=0.5833333 P(node) =0.000476096
```

```
##
       class counts:
0
##
      probabilities: 0.000 0.417 0.000 0.000 0.000 0.083 0.083 0.000 0.417
0.000
##
## Node number 544: 25 observations,
                                        complexity param=0.0002232741
     predicted class=1 expected loss=0.48 P(node) =0.0009918667
##
       class counts:
                         0
                              13
                                     3
                                           5
                                                                          0
0
##
      probabilities: 0.000 0.520 0.120 0.200 0.080 0.040 0.000 0.040 0.000
0.000
##
     left son=1088 (16 obs) right son=1089 (9 obs)
##
     Primary splits:
##
         603 < 181
                     to the right, improve=5.959444, (0 missing)
##
         631 < 32.5 to the right, improve=5.959444, (0 missing)
##
         185 < 9.5
                     to the left,
                                   improve=5.782857, (0 missing)
##
         374 < 32.5 to the left,
                                   improve=5.211429, (0 missing)
##
         265 < 230
                     to the right, improve=5.211429, (0 missing)
##
     Surrogate splits:
##
         631 < 32.5
                    to the right, agree=1.00, adj=1.000, (0 split)
##
                     to the left,
                                   agree=0.92, adj=0.778, (0 split)
         325 < 10.5
##
         326 < 8
                     to the left,
                                   agree=0.92, adj=0.778, (0 split)
##
         599 < 25.5 to the left,
                                   agree=0.92, adj=0.778, (0 split)
##
         604 < 102.5 to the right, agree=0.92, adj=0.778, (0 split)
##
## Node number 545: 68 observations,
                                        complexity param=0.0002232741
##
     predicted class=6
                        expected loss=0.2647059 P(node) =0.002697877
                                     6
                                                  1
                                                        2
                                                             50
##
       class counts:
                         7
                               0
                                           1
                                                                    0
                                                                          0
1
      probabilities: 0.103 0.000 0.088 0.015 0.015 0.029 0.735 0.000 0.000
##
0.015
##
     left son=1090 (12 obs) right son=1091 (56 obs)
##
     Primary splits:
##
                     to the right, improve=8.191877, (0 missing)
         567 < 224.5 to the right, improve=7.572943, (0 missing)
##
##
         123 < 192.5 to the right, improve=7.446756, (0 missing)
         150 < 251.5 to the right, improve=7.446756, (0 missing)
##
##
         151 < 133
                     to the right, improve=7.446756, (0 missing)
##
     Surrogate splits:
         243 < 190.5 to the right, agree=0.956, adj=0.750, (0 split)
##
##
         245 < 10
                     to the right, agree=0.956, adj=0.750, (0 split)
##
         272 < 2.5
                     to the right, agree=0.941, adj=0.667, (0 split)
##
         217 < 97
                     to the right, agree=0.926, adj=0.583, (0 split)
##
         271 < 142.5 to the right, agree=0.926, adj=0.583, (0 split)
##
## Node number 546: 67 observations,
                                        complexity param=0.000491203
##
     predicted class=2
                        expected loss=0.6865672 P(node) =0.002658203
##
                                                                          5
       class counts:
                         5
                               6
                                    21
                                           6
                                                       19
0
##
      probabilities: 0.075 0.090 0.313 0.090 0.060 0.284 0.015 0.000 0.075
```

```
0.000
##
     left son=1092 (13 obs) right son=1093 (54 obs)
##
     Primary splits:
         552 < 26
##
                     to the right, improve=9.399668, (0 missing)
         553 < 31.5
##
                     to the right, improve=9.399668, (0 missing)
##
         554 < 40
                     to the right, improve=9.399668, (0 missing)
         555 < 12.5
                     to the right, improve=9.399668, (0 missing)
##
                     to the right, improve=8.635048, (0 missing)
##
         524 < 8
##
     Surrogate splits:
##
         553 < 79.5
                     to the right, agree=0.970, adj=0.846, (0 split)
##
         524 < 197
                     to the right, agree=0.940, adj=0.692, (0 split)
                     to the right, agree=0.940, adj=0.692, (0 split)
##
         554 < 40
         555 < 12.5
                     to the right, agree=0.940, adj=0.692, (0 split)
##
##
         525 < 186
                     to the right, agree=0.925, adj=0.615, (0 split)
##
## Node number 547: 92 observations,
                                         complexity param=0.0007144771
##
     predicted class=4
                        expected loss=0.6413043 P(node) =0.003650069
##
       class counts:
                         0
                              14
                                      1
                                            2
                                                 33
                                                              3
                                                        2
                                                                    7
                                                                           1
29
##
      probabilities: 0.000 0.152 0.011 0.022 0.359 0.022 0.033 0.076 0.011
0.315
##
     left son=1094 (22 obs) right son=1095 (70 obs)
##
     Primary splits:
##
         456 < 13.5 to the right, improve=12.39633, (0 missing)
##
         429 < 115.5 to the right, improve=12.32083, (0 missing)
         401 < 130.5 to the right, improve=11.91346, (0 missing)
##
##
                     to the right, improve=11.63469, (0 missing)
         428 < 0.5
         467 < 2.5
                     to the right, improve=11.42450, (0 missing)
##
##
     Surrogate splits:
##
         428 < 60
                     to the right, agree=0.957, adj=0.818, (0 split)
##
         457 < 198.5 to the right, agree=0.946, adj=0.773, (0 split)
##
                     to the right, agree=0.935, adj=0.727, (0 split)
         429 < 160
##
         455 < 2
                     to the right, agree=0.935, adj=0.727, (0 split)
##
         484 < 7
                     to the right, agree=0.935, adj=0.727, (0 split)
##
## Node number 552: 77 observations
##
     predicted class=1
                        expected loss=0.09090909 P(node) =0.003054949
##
       class counts:
                              70
                                      1
                                                        1
                                                              1
                                                                           1
                         0
                                            0
                                                  0
                                                                    2
1
      probabilities: 0.000 0.909 0.013 0.000 0.000 0.013 0.013 0.026 0.013
##
0.013
##
## Node number 553: 18 observations
##
     predicted class=8
                        expected loss=0.6111111
                                                 P(node) =0.000714144
##
       class counts:
                         1
                               2
                                                                           7
                                      0
                                            1
3
##
      probabilities: 0.056 0.111 0.000 0.056 0.000 0.111 0.000 0.111 0.389
0.167
##
## Node number 554: 11 observations
```

```
expected loss=0.1818182 P(node) =0.0004364213
##
     predicted class=4
##
       class counts:
                         0
                               0
                                     0
                                                  9
                                                        0
                                                              1
                                                                    0
                                                                          0
1
      probabilities: 0.000 0.000 0.000 0.000 0.818 0.000 0.091 0.000 0.000
##
0.091
##
## Node number 555: 28 observations,
                                         complexity param=0.0002679289
##
     predicted class=8
                        expected loss=0.7142857 P(node) =0.001110891
##
       class counts:
                         2
                               1
                                     0
                                            3
                                                  1
                                                                          8
5
##
      probabilities: 0.071 0.036 0.000 0.107 0.036 0.214 0.071 0.000 0.286
0.179
##
     left son=1110 (7 obs) right son=1111 (21 obs)
##
     Primary splits:
##
         379 < 17.5 to the left,
                                   improve=5.047619, (0 missing)
##
         378 < 119
                     to the left,
                                   improve=4.857143, (0 missing)
##
         406 < 165
                     to the left,
                                   improve=4.279365, (0 missing)
                     to the left,
##
         407 < 62
                                   improve=4.279365, (0 missing)
         408 < 141.5 to the left,
##
                                   improve=3.913553, (0 missing)
##
     Surrogate splits:
##
         378 < 119
                                   agree=0.964, adj=0.857, (0 split)
                     to the left,
##
         240 < 232.5 to the left,
                                   agree=0.929, adj=0.714, (0 split)
##
         267 < 214
                     to the left,
                                   agree=0.893, adj=0.571, (0 split)
##
         277 < 3.5
                     to the right, agree=0.893, adj=0.571, (0 split)
                                   agree=0.893, adj=0.571, (0 split)
##
         380 < 15.5 to the left,
##
## Node number 556: 37 observations,
                                         complexity param=0.0002902563
##
     predicted class=3
                        expected loss=0.6486486 P(node) =0.001467963
##
       class counts:
                         1
                               1
                                     1
                                           13
                                                  5
                                                        2
                                                              0
                                                                    1
                                                                         12
1
      probabilities: 0.027 0.027 0.027 0.351 0.135 0.054 0.000 0.027 0.324
##
0.027
##
     left son=1112 (19 obs) right son=1113 (18 obs)
##
     Primary splits:
                                   improve=8.604078, (0 missing)
##
         317 < 4.5
                     to the left,
##
         232 < 12
                     to the left,
                                   improve=8.288288, (0 missing)
                                   improve=7.824003, (0 missing)
##
         318 < 65.5
                     to the left,
##
         544 < 31
                     to the left,
                                   improve=7.645013, (0 missing)
##
         289 < 12.5 to the left,
                                   improve=7.627682, (0 missing)
##
     Surrogate splits:
##
         289 < 3.5
                     to the left,
                                   agree=0.973, adj=0.944, (0 split)
                                   agree=0.973, adj=0.944, (0 split)
##
         318 < 164.5 to the left,
##
         290 < 3
                     to the left,
                                   agree=0.892, adj=0.778, (0 split)
                                   agree=0.865, adj=0.722, (0 split)
##
         316 < 6.5
                     to the left,
                     to the right, agree=0.865, adj=0.722, (0 split)
##
         403 < 153
##
## Node number 557: 87 observations,
                                         complexity param=4.465482e-05
     predicted class=8 expected loss=0.1149425 P(node) =0.003451696
##
##
       class counts:
                         0
                               2
                                     0
                                            2
                                                  4
                                                        1
                                                              0
                                                                    0
                                                                         77
1
```

```
probabilities: 0.000 0.023 0.000 0.023 0.046 0.011 0.000 0.000 0.885
##
0.011
##
     left son=1114 (8 obs) right son=1115 (79 obs)
##
     Primary splits:
                     to the right, improve=4.206787, (0 missing)
##
         401 < 186
         345 < 150
##
                     to the right, improve=4.069581, (0 missing)
##
         461 < 165.5 to the left, improve=3.523153, (0 missing)
                     to the right, improve=3.385057, (0 missing)
##
         373 < 6.5
##
                     to the left, improve=2.956787, (0 missing)
         184 < 84
##
     Surrogate splits:
##
         373 < 190.5 to the right, agree=0.977, adj=0.750, (0 split)
         400 < 77.5 to the right, agree=0.966, adj=0.625, (0 split)
##
##
         372 < 38.5
                     to the right, agree=0.954, adj=0.500, (0 split)
##
         402 < 249
                     to the right, agree=0.954, adj=0.500, (0 split)
##
         344 < 6.5
                     to the right, agree=0.943, adj=0.375, (0 split)
##
## Node number 586: 24 observations,
                                        complexity param=0.0001786193
     predicted class=2 expected loss=0.4583333 P(node) =0.000952192
##
##
       class counts:
                         0
                               0
                                    13
                                            1
                                                                          6
                                                              3
0
##
      probabilities: 0.000 0.000 0.542 0.042 0.000 0.000 0.125 0.042 0.250
0.000
##
     left son=1172 (16 obs) right son=1173 (8 obs)
##
     Primary splits:
##
         270 < 4.5
                     to the left, improve=4.25, (0 missing)
         470 < 11.5 to the right, improve=3.50, (0 missing)
##
##
         471 < 11.5 to the right, improve=3.50, (0 missing)
         472 < 1.5
                     to the right, improve=3.50, (0 missing)
##
##
         498 < 68.5 to the right, improve=3.50, (0 missing)
##
     Surrogate splits:
##
         242 < 3
                     to the left,
                                   agree=0.958, adj=0.875, (0 split)
##
         214 < 2.5
                     to the left,
                                   agree=0.917, adj=0.750, (0 split)
##
         241 < 120.5 to the left,
                                   agree=0.917, adj=0.750, (0 split)
##
         269 < 136
                     to the left,
                                   agree=0.917, adj=0.750, (0 split)
##
                                   agree=0.917, adj=0.750, (0 split)
         607 < 221.5 to the left,
##
## Node number 587: 12 observations
##
     predicted class=3
                        expected loss=0.25 P(node) =0.000476096
##
       class counts:
                         0
                               0
                                     0
                                           9
                                                  0
                                                        0
                                                              0
                                                                    1
                                                                          1
1
##
      probabilities: 0.000 0.000 0.000 0.750 0.000 0.000 0.000 0.083 0.083
0.083
##
## Node number 598: 9 observations
     predicted class=9
                        expected loss=0.5555556
                                                 P(node) = 0.000357072
##
##
       class counts:
                         0
                               0
                                     1
                                            0
                                                  0
                                                        3
                                                              0
                                                                    1
                                                                          0
4
      probabilities: 0.000 0.000 0.111 0.000 0.000 0.333 0.000 0.111 0.000
##
0.444
##
```

```
## Node number 599: 11 observations
     predicted class=8 expected loss=0.09090909 P(node) =0.0004364213
##
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                 0
                                                       0
                                                             0
                                                                         10
1
##
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.909
0.091
##
## Node number 612: 34 observations,
                                        complexity param=0.0003125837
     predicted class=2 expected loss=0.2941176 P(node) =0.001348939
##
       class counts:
                         0
                               1
                                    24
                                           8
                                                 0
                                                       0
                                                             0
                                                                          1
0
      probabilities: 0.000 0.029 0.706 0.235 0.000 0.000 0.000 0.000 0.029
##
0.000
##
     left son=1224 (24 obs) right son=1225 (10 obs)
##
     Primary splits:
##
         543 < 81
                     to the right, improve=9.800980, (0 missing)
                     to the right, improve=8.477331, (0 missing)
##
         544 < 69
##
         516 < 79.5
                     to the right, improve=8.024314, (0 missing)
                     to the right, improve=7.921880, (0 missing)
##
         571 < 14.5
##
         600 < 120
                     to the right, improve=7.921880, (0 missing)
##
     Surrogate splits:
##
         516 < 79.5 to the right, agree=0.971, adj=0.9, (0 split)
##
         544 < 69
                     to the right, agree=0.971, adj=0.9, (0 split)
##
         571 < 185
                     to the right, agree=0.941, adj=0.8, (0 split)
##
         600 < 120
                     to the right, agree=0.912, adj=0.7, (0 split)
##
         572 < 3.5
                     to the right, agree=0.882, adj=0.6, (0 split)
##
## Node number 613: 13 observations
##
     predicted class=8
                        expected loss=0.2307692 P(node) =0.0005157707
##
       class counts:
                         0
                               3
                                     0
                                           0
                                                 0
                                                       0
                                                             0
                                                                    0
                                                                         10
a
      probabilities: 0.000 0.231 0.000 0.000 0.000 0.000 0.000 0.769
##
0.000
##
## Node number 614: 7 observations
     predicted class=3 expected loss=0.2857143 P(node) =0.0002777227
##
##
       class counts:
                         0
                               0
                                     0
                                           5
                                                                          1
0
      probabilities: 0.000 0.000 0.000 0.714 0.000 0.000 0.000 0.143 0.143
##
0.000
##
## Node number 615: 49 observations
##
     predicted class=7
                        expected loss=0.1632653 P(node) =0.001944059
##
       class counts:
                         0
                               5
                                     2
                                           0
                                                       0
                                                             0
                                                                  41
                                                                          0
1
##
      probabilities: 0.000 0.102 0.041 0.000 0.000 0.000 0.000 0.837 0.000
0.020
##
## Node number 624: 26 observations,
                                        complexity param=0.0002976988
     predicted class=1 expected loss=0.5 P(node) =0.001031541
```

```
0
                                           3
##
       class counts: 0
                              13
0
##
      probabilities: 0.000 0.500 0.000 0.115 0.000 0.038 0.000 0.000 0.346
0.000
##
     left son=1248 (14 obs) right son=1249 (12 obs)
##
     Primary splits:
##
         269 < 25.5 to the left,
                                   improve=8.309524, (0 missing)
         573 < 251.5 to the left,
##
                                   improve=7.825000, (0 missing)
##
         268 < 169
                     to the left,
                                   improve=6.923077, (0 missing)
##
         241 < 7.5
                     to the left,
                                   improve=6.896970, (0 missing)
##
         374 < 14.5 to the left,
                                   improve=6.896970, (0 missing)
##
     Surrogate splits:
##
         241 < 7.5
                     to the left,
                                   agree=0.962, adj=0.917, (0 split)
         268 < 169
##
                     to the left,
                                   agree=0.962, adj=0.917, (0 split)
         212 < 99
                     to the left,
                                   agree=0.923, adj=0.833, (0 split)
##
##
         213 < 19.5 to the left,
                                   agree=0.923, adj=0.833, (0 split)
##
         240 < 115
                     to the left,
                                   agree=0.923, adj=0.833, (0 split)
##
## Node number 625: 9 observations
     predicted class=7
                        expected loss=0.1111111 P(node) =0.000357072
##
       class counts:
##
                                                       0
                         0
                               0
                                     0
                                           0
                                                 0
                                                              0
                                                                    8
                                                                          0
1
##
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.889 0.000
0.111
##
## Node number 626: 8 observations
     predicted class=9
                        expected loss=0.5 P(node) =0.0003173973
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                 3
                                                       0
                                                              0
                                                                    0
                                                                          1
4
      probabilities: 0.000 0.000 0.000 0.000 0.375 0.000 0.000 0.000 0.125
##
0.500
##
## Node number 627: 37 observations
##
     predicted class=8
                        expected loss=0.1621622 P(node) =0.001467963
##
                                                       0
       class counts:
                         0
                               0
                                     1
                                           3
                                                 1
                                                                         31
1
      probabilities: 0.000 0.000 0.027 0.081 0.027 0.000 0.000 0.000 0.838
##
0.027
##
## Node number 630: 7 observations
     predicted class=4 expected loss=0.5714286 P(node) =0.0002777227
##
       class counts:
                         1
                                                                          1
2
##
      probabilities: 0.143 0.000 0.000 0.000 0.429 0.000 0.000 0.000 0.143
0.286
##
## Node number 631: 19 observations
     predicted class=9 expected loss=0.05263158 P(node) =0.0007538187
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                 0
                                                       0
                                                              0
                                                                    1
                                                                          0
18
```

```
probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.053 0.000
0.947
##
## Node number 638: 36 observations,
                                       complexity param=8.930964e-05
##
     predicted class=8
                        expected loss=0.3888889 P(node) =0.001428288
##
       class counts:
                         0
                               0
                                     0
                                           2
                                                 7
                                                       1
                                                              1
                                                                    1
                                                                         22
2
      probabilities: 0.000 0.000 0.000 0.056 0.194 0.028 0.028 0.028 0.611
##
0.056
##
     left son=1276 (13 obs) right son=1277 (23 obs)
##
     Primary splits:
##
         269 < 252.5 to the right, improve=6.026013, (0 missing)
##
         210 < 195.5 to the left,
                                   improve=6.000000, (0 missing)
##
         576 < 90.5 to the left,
                                   improve=5.960317, (0 missing)
##
         183 < 25.5 to the left, improve=5.781746, (0 missing)
##
         604 < 244
                     to the left, improve=5.450762, (0 missing)
##
     Surrogate splits:
##
         604 < 244
                     to the left, agree=0.889, adj=0.692, (0 split)
         545 < 252.5 to the right, agree=0.833, adj=0.538, (0 split)
##
##
         573 < 252.5 to the right, agree=0.833, adj=0.538, (0 split)
##
         576 < 140.5 to the left, agree=0.833, adj=0.538, (0 split)
##
         577 < 174.5 to the left,
                                   agree=0.833, adj=0.538, (0 split)
##
## Node number 639: 312 observations
     predicted class=8 expected loss=0.02564103 P(node) =0.0123785
##
       class counts:
                         1
                               1
                                     1
                                           1
                                                 1
                                                       0
                                                              1
                                                                    1
                                                                        304
1
##
      probabilities: 0.003 0.003 0.003 0.003 0.003 0.000 0.003 0.003 0.974
0.003
##
## Node number 640: 32 observations
     predicted class=1 expected loss=0.03125
                                               P(node) = 0.001269589
##
       class counts:
                              31
                                     0
                                                 0
                                                        1
                                                                          0
0
      probabilities: 0.000 0.969 0.000 0.000 0.000 0.031 0.000 0.000 0.000
##
0.000
##
## Node number 641: 7 observations
##
     predicted class=2 expected loss=0.5714286 P(node) =0.0002777227
                               2
                                                       0
##
       class counts:
                         0
                                     3
                                           0
                                                                    2
0
##
      probabilities: 0.000 0.286 0.429 0.000 0.000 0.000 0.000 0.286 0.000
0.000
##
## Node number 642: 18 observations
     predicted class=3
                        expected loss=0
                                         P(node) =0.000714144
##
##
       class counts:
                         0
                               0
                                     0
                                          18
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 1.000 0.000 0.000 0.000 0.000 0.000
0.000
```

```
##
## Node number 643: 7 observations
##
     predicted class=7
                        expected loss=0.5714286 P(node) =0.0002777227
       class counts:
                                                                          2
##
                         0
                               0
                                            2
                                                        0
                                                              0
                                                                    3
                                     0
0
      probabilities: 0.000 0.000 0.000 0.286 0.000 0.000 0.000 0.429 0.286
##
0.000
##
## Node number 644: 1370 observations,
                                           complexity param=0.0002456015
##
     predicted class=3
                        expected loss=0.02773723 P(node) =0.05435429
##
       class counts:
                         0
                               2
                                    10 1332
                                                       14
                                                                         12
                                                  0
0
##
      probabilities: 0.000 0.001 0.007 0.972 0.000 0.010 0.000 0.000 0.009
0.000
##
     left son=1288 (1360 obs) right son=1289 (10 obs)
##
     Primary splits:
##
         487 < 148
                     to the left,
                                   improve=14.791020, (0 missing)
##
         488 < 58.5 to the left,
                                   improve=13.689060, (0 missing)
##
         341 < 70
                     to the left,
                                   improve=12.826310, (0 missing)
##
         342 < 147.5 to the left,
                                   improve=10.885130, (0 missing)
##
         313 < 154
                                   improve= 9.880721, (0 missing)
                     to the left,
##
     Surrogate splits:
##
                                   agree=0.997, adj=0.6, (0 split)
         488 < 63
                     to the left,
##
         515 < 248.5 to the left, agree=0.996, adj=0.4, (0 split)
##
## Node number 645: 23 observations,
                                        complexity param=0.0002232741
##
     predicted class=5
                        expected loss=0.6086957 P(node) =0.0009125174
                                     a
                                            5
                                                        9
                                                                    0
##
       class counts:
                         0
                               0
                                                  0
                                                              0
                                                                          4
5
      probabilities: 0.000 0.000 0.000 0.217 0.000 0.391 0.000 0.000 0.174
##
0.217
##
     left son=1290 (16 obs) right son=1291 (7 obs)
##
     Primary splits:
##
         524 < 20
                     to the right, improve=4.090839, (0 missing)
##
         496 < 36
                     to the right, improve=3.958696, (0 missing)
         296 < 16
                     to the left, improve=3.701003, (0 missing)
##
                     to the right, improve=3.558696, (0 missing)
##
         580 < 1
##
         294 < 109.5 to the right, improve=3.555124, (0 missing)
##
     Surrogate splits:
         496 < 36
##
                     to the right, agree=0.957, adj=0.857, (0 split)
##
         552 < 23.5 to the right, agree=0.957, adj=0.857, (0 split)
                     to the right, agree=0.870, adj=0.571, (0 split)
##
         205 < 66
##
         468 < 36
                     to the right, agree=0.870, adj=0.571, (0 split)
                     to the left, agree=0.870, adj=0.571, (0 split)
##
         492 < 29
##
## Node number 646: 16 observations
##
     predicted class=3
                        expected loss=0.1875
                                              P(node) = 0.0006347947
##
                                                                          2
       class counts:
                         0
                               0
                                     0
                                           13
                                                  0
                                                        0
                                                              0
0
##
      probabilities: 0.000 0.000 0.000 0.813 0.000 0.000 0.000 0.062 0.125
```

```
0.000
##
## Node number 647: 29 observations,
                                        complexity param=0.0002456015
                        expected loss=0.4827586 P(node) =0.001150565
     predicted class=5
##
       class counts:
                         0
                               6
                                     0
                                                  0
                                                       15
                                                              0
                                                                    1
                                                                          3
0
##
      probabilities: 0.000 0.207 0.000 0.138 0.000 0.517 0.000 0.034 0.103
0.000
##
     left son=1294 (12 obs) right son=1295 (17 obs)
##
     Primary splits:
         185 < 63.5 to the left,
##
                                   improve=8.074037, (0 missing)
                                   improve=6.834218, (0 missing)
##
         213 < 0.5
                     to the left,
##
         466 < 27.5 to the left,
                                   improve=6.752799, (0 missing)
##
         628 < 16.5 to the left,
                                   improve=6.752799, (0 missing)
##
         629 < 27
                     to the left,
                                   improve=6.752799, (0 missing)
##
     Surrogate splits:
##
         213 < 0.5
                     to the left,
                                   agree=0.966, adj=0.917, (0 split)
                                   agree=0.931, adj=0.833, (0 split)
##
         157 < 9
                     to the left,
                                   agree=0.931, adj=0.833, (0 split)
##
         158 < 4
                     to the left,
##
         186 < 18
                     to the left,
                                   agree=0.931, adj=0.833, (0 split)
##
         156 < 8
                     to the left,
                                   agree=0.897, adj=0.750, (0 split)
##
## Node number 652: 13 observations
     predicted class=3
                        expected loss=0.07692308 P(node) =0.0005157707
##
##
       class counts:
                         1
                               0
                                     0
                                          12
                                                  0
                                                        0
                                                              0
                                                                          0
0
      probabilities: 0.077 0.000 0.000 0.923 0.000 0.000 0.000 0.000 0.000
##
0.000
##
## Node number 653: 12 observations
##
     predicted class=5
                        expected loss=0.5833333 P(node) =0.000476096
##
       class counts:
                                                                          4
                                     0
1
      probabilities: 0.083 0.000 0.000 0.000 0.417 0.083 0.000 0.333
##
0.083
##
## Node number 656: 9 observations
                        expected loss=0.555556 P(node) =0.000357072
##
     predicted class=2
##
       class counts:
                         1
                               0
                                     4
                                            2
                                                  0
                                                        1
                                                              0
                                                                    0
                                                                          1
0
##
      probabilities: 0.111 0.000 0.444 0.222 0.000 0.111 0.000 0.000 0.111
0.000
##
## Node number 657: 193 observations
     predicted class=3
                        expected loss=0.03626943 P(node) =0.007657211
##
##
       class counts:
                         1
                               1
                                     0
                                          186
                                                  0
                                                        1
                                                              0
                                                                    0
                                                                          3
1
      probabilities: 0.005 0.005 0.000 0.964 0.000 0.005 0.000 0.000 0.016
##
0.005
##
```

```
## Node number 658: 29 observations, complexity param=0.0001339645
##
     predicted class=3
                       expected loss=0.3103448 P(node) =0.001150565
##
       class counts:
                         0
                               3
                                     1
                                          20
                                                       2
                                                             3
                                                                         0
0
##
      probabilities: 0.000 0.103 0.034 0.690 0.000 0.069 0.103 0.000 0.000
0.000
##
     left son=1316 (7 obs) right son=1317 (22 obs)
##
     Primary splits:
         486 < 1
##
                     to the right, improve=5.829378, (0 missing)
                     to the right, improve=4.719056, (0 missing)
##
         325 < 11
##
         352 < 111.5 to the right, improve=4.699507, (0 missing)
         353 < 72.5 to the right, improve=4.413793, (0 missing)
##
##
         459 < 46
                     to the left, improve=4.102105, (0 missing)
##
     Surrogate splits:
##
         352 < 23
                     to the left, agree=0.931, adj=0.714, (0 split)
##
         459 < 46
                     to the right, agree=0.931, adj=0.714, (0 split)
##
         460 < 189
                     to the right, agree=0.931, adj=0.714, (0 split)
##
         487 < 94.5
                    to the right, agree=0.931, adj=0.714, (0 split)
                    to the right, agree=0.931, adj=0.714, (0 split)
##
         488 < 74.5
##
## Node number 659: 30 observations,
                                        complexity param=0.0002232741
##
     predicted class=5
                       expected loss=0.3666667 P(node) =0.00119024
##
       class counts:
                         5
                               0
                                           2
                                                      19
                                                                         1
0
      probabilities: 0.167 0.000 0.000 0.067 0.000 0.633 0.000 0.100 0.033
##
0.000
##
     left son=1318 (7 obs) right son=1319 (23 obs)
##
     Primary splits:
##
         412 < 5.5
                     to the right, improve=6.480331, (0 missing)
##
         384 < 6
                     to the right, improve=5.536232, (0 missing)
                     to the right, improve=5.416667, (0 missing)
##
         356 < 8.5
##
         357 < 2.5
                     to the right, improve=5.416667, (0 missing)
##
         440 < 15.5 to the right, improve=5.089027, (0 missing)
##
     Surrogate splits:
##
         330 < 239.5 to the right, agree=0.967, adj=0.857, (0 split)
         357 < 111.5 to the right, agree=0.967, adj=0.857, (0 split)
##
         384 < 70.5 to the right, agree=0.967, adj=0.857, (0 split)
##
##
                    to the right, agree=0.967, adj=0.857, (0 split)
         385 < 40.5
         413 < 95.5 to the right, agree=0.967, adj=0.857, (0 split)
##
##
## Node number 660: 18 observations
##
     predicted class=0
                        expected loss=0
                                         P(node) = 0.000714144
##
       class counts:
                        18
                               0
                                     0
                                           0
                                                                         0
0
      probabilities: 1.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
##
0.000
##
## Node number 661: 7 observations
     predicted class=8 expected loss=0.5714286 P(node) =0.0002777227
      class counts: 1 0 0 0 0 1
```

```
0
##
      probabilities: 0.143 0.000 0.000 0.000 0.143 0.286 0.000 0.429
0.000
##
## Node number 662: 30 observations,
                                        complexity param=0.0002232741
##
     predicted class=3
                        expected loss=0.4333333 P(node) =0.00119024
##
       class counts:
                         0
                               0
                                          17
                                                       5
                                                             2
                                                                          2
                                                                   1
3
##
      probabilities: 0.000 0.000 0.000 0.567 0.000 0.167 0.067 0.033 0.067
0.100
##
     left son=1324 (22 obs) right son=1325 (8 obs)
##
     Primary splits:
##
         324 < 153.5 to the right, improve=6.228788, (0 missing)
##
         352 < 239
                     to the right, improve=6.058333, (0 missing)
##
         187 < 208.5 to the right, improve=5.403922, (0 missing)
##
         439 < 26.5 to the right, improve=5.403922, (0 missing)
                     to the right, improve=5.333333, (0 missing)
##
         353 < 117
##
     Surrogate splits:
##
         323 < 120.5 to the right, agree=0.933, adj=0.750, (0 split)
##
         325 < 66.5 to the right, agree=0.933, adj=0.750, (0 split)
##
                     to the right, agree=0.900, adj=0.625, (0 split)
         236 < 3.5
##
         247 < 60.5
                    to the left, agree=0.900, adj=0.625, (0 split)
##
         274 < 187
                     to the left, agree=0.900, adj=0.625, (0 split)
##
## Node number 663: 101 observations,
                                         complexity param=0.0002232741
     predicted class=5 expected loss=0.1089109 P(node) =0.004007141
##
##
       class counts:
                         0
                                           8
                                                      90
                                                                          2
                               0
                                     0
0
##
      probabilities: 0.000 0.000 0.000 0.079 0.000 0.891 0.010 0.000 0.020
0.000
##
     left son=1326 (8 obs) right son=1327 (93 obs)
##
     Primary splits:
##
         124 < 83
                     to the right, improve=9.105371, (0 missing)
                     to the right, improve=6.255909, (0 missing)
##
         125 < 130
##
         97 < 12.5 to the right, improve=4.693280, (0 missing)
##
         440 < 252.5 to the right, improve=4.693280, (0 missing)
         552 < 170
                     to the right, improve=4.693280, (0 missing)
##
##
     Surrogate splits:
##
         122 < 0.5
                     to the right, agree=0.98, adj=0.750, (0 split)
         123 < 60
                     to the right, agree=0.98, adj=0.750, (0 split)
##
##
         96 < 43
                     to the right, agree=0.97, adj=0.625, (0 split)
##
         152 < 116.5 to the right, agree=0.97, adj=0.625, (0 split)
##
         94 < 61.5 to the right, agree=0.96, adj=0.500, (0 split)
##
## Node number 664: 77 observations
##
     predicted class=1
                        expected loss=0
                                         P(node) = 0.003054949
##
       class counts:
                         0
                              77
                                     0
                                                                          0
0
##
      probabilities: 0.000 1.000 0.000 0.000 0.000 0.000 0.000 0.000
0.000
```

```
##
## Node number 665: 8 observations
##
     predicted class=7
                        expected loss=0.5 P(node) =0.0003173973
       class counts:
                                                                    4
##
                         0
                               2
                                            0
                                                  1
                                                        0
                                                              1
                                                                          0
                                     0
0
      probabilities: 0.000 0.250 0.000 0.000 0.125 0.000 0.125 0.500 0.000
##
0.000
##
## Node number 668: 7 observations
     predicted class=0
                        expected loss=0.2857143 P(node) =0.0002777227
##
##
       class counts:
                         5
                               0
                                     0
                                            2
                                                                          0
0
##
      probabilities: 0.714 0.000 0.000 0.286 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 669: 51 observations,
                                        complexity param=8.930964e-05
     predicted class=5
                        expected loss=0.1568627 P(node) =0.002023408
##
       class counts:
                         0
                               0
                                     1
                                            4
                                                       43
                                                              1
                                                                    1
                                                                          1
0
##
      probabilities: 0.000 0.000 0.020 0.078 0.000 0.843 0.020 0.020 0.020
0.000
##
     left son=1338 (7 obs) right son=1339 (44 obs)
##
     Primary splits:
##
         352 < 251.5 to the right, improve=4.625668, (0 missing)
         184 < 138.5 to the right, improve=4.625668, (0 missing)
##
         326 < 171.5 to the right, improve=3.899283, (0 missing)
##
##
         327 < 69.5 to the right, improve=3.412032, (0 missing)
         183 < 138
                     to the right, improve=3.378915, (0 missing)
##
##
     Surrogate splits:
##
         353 < 242
                     to the right, agree=0.922, adj=0.429, (0 split)
##
         507 < 5.5
                     to the right, agree=0.922, adj=0.429, (0 split)
##
         508 < 252.5 to the right, agree=0.922, adj=0.429, (0 split)
##
         535 < 2
                     to the right, agree=0.922, adj=0.429, (0 split)
##
         221 < 166
                     to the right, agree=0.902, adj=0.286, (0 split)
##
## Node number 670: 43 observations,
                                       complexity param=0.0002456015
##
     predicted class=4
                        expected loss=0.3953488 P(node) =0.001706011
##
       class counts:
                         0
                               0
                                     0
                                            6
                                                 26
                                                        a
                                                              1
                                                                   10
                                                                          0
0
      probabilities: 0.000 0.000 0.000 0.140 0.605 0.000 0.023 0.233 0.000
##
0.000
##
     left son=1340 (23 obs) right son=1341 (20 obs)
##
     Primary splits:
##
         231 < 13
                     to the right, improve=8.879980, (0 missing)
##
         203 < 3
                     to the right, improve=7.843023, (0 missing)
##
         259 < 5
                     to the right, improve=7.584251, (0 missing)
##
         204 < 9.5
                     to the right, improve=7.133023, (0 missing)
##
                     to the left, improve=6.586236, (0 missing)
         322 < 136
##
     Surrogate splits:
##
         259 < 5 to the right, agree=0.977, adj=0.95, (0 split)
```

```
232 < 13.5 to the right, agree=0.930, adj=0.85, (0 split)
##
##
         260 < 11.5
                     to the right, agree=0.930, adj=0.85, (0 split)
                     to the right, agree=0.930, adj=0.85, (0 split)
##
         287 < 60.5
                     to the right, agree=0.907, adj=0.80, (0 split)
##
         203 < 3
##
## Node number 671: 70 observations,
                                        complexity param=0.0003125837
     predicted class=9
                        expected loss=0.5571429 P(node) =0.002777227
##
                                                        5
##
       class counts:
                         0
                               7
                                     0
                                          10
                                                  4
                                                              6
                                                                          6
31
##
      probabilities: 0.000 0.100 0.000 0.143 0.057 0.071 0.086 0.014 0.086
0.443
##
     left son=1342 (27 obs) right son=1343 (43 obs)
##
     Primary splits:
##
         325 < 5
                     to the left,
                                   improve=11.360110, (0 missing)
##
                     to the right, improve=10.020820, (0 missing)
         182 < 5
##
         324 < 167.5 to the left,
                                   improve= 8.603102, (0 missing)
         155 < 60.5 to the right, improve= 8.141367, (0 missing)
##
                     to the left,
##
                                   improve= 8.109524, (0 missing)
         353 < 42
##
     Surrogate splits:
##
         324 < 80.5 to the left, agree=0.900, adj=0.741, (0 split)
##
         297 < 11
                                   agree=0.871, adj=0.667, (0 split)
                     to the left,
##
         353 < 31.5
                     to the left,
                                   agree=0.871, adj=0.667, (0 split)
##
         352 < 127.5 to the left,
                                   agree=0.843, adj=0.593, (0 split)
##
         155 < 25.5 to the right, agree=0.814, adj=0.519, (0 split)
##
## Node number 676: 101 observations,
                                         complexity param=0.0001339645
                        expected loss=0.1485149 P(node) =0.004007141
##
     predicted class=3
##
       class counts:
                         0
                               0
                                     0
                                          86
                                                  0
                                                        3
                                                              0
                                                                    0
                                                                          6
6
      probabilities: 0.000 0.000 0.000 0.851 0.000 0.030 0.000 0.000 0.059
##
0.059
##
     left son=1352 (94 obs) right son=1353 (7 obs)
##
     Primary splits:
##
         488 < 57.5 to the left,
                                   improve=5.666346, (0 missing)
##
         515 < 194
                     to the left,
                                   improve=5.666346, (0 missing)
         487 < 45
                                   improve=4.790190, (0 missing)
##
                     to the left,
         380 < 205
                     to the right, improve=4.469740, (0 missing)
##
##
         381 < 25
                     to the right, improve=4.060609, (0 missing)
##
     Surrogate splits:
         487 < 45
##
                     to the left,
                                   agree=0.99, adj=0.857, (0 split)
##
         515 < 194
                     to the left,
                                   agree=0.98, adj=0.714, (0 split)
##
         516 < 137.5 to the left,
                                   agree=0.98, adj=0.714, (0 split)
##
         460 < 243.5 to the left,
                                   agree=0.97, adj=0.571, (0 split)
##
                                   agree=0.96, adj=0.429, (0 split)
         543 < 248
                     to the left,
##
## Node number 677: 11 observations
##
     predicted class=8
                        expected loss=0.09090909
                                                 P(node) =0.0004364213
##
       class counts:
                         0
                               0
                                     0
                                            0
                                                  0
                                                        1
                                                                    0
                                                                         10
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.001 0.000 0.000 0.909
```

```
0.000
##
## Node number 678: 40 observations,
                                        complexity param=0.0001786193
                        expected loss=0.2 P(node) =0.001586987
     predicted class=3
##
       class counts:
                         0
                               0
                                      0
                                           32
                                                  a
                                                        6
                                                                           2
0
##
      probabilities: 0.000 0.000 0.000 0.800 0.000 0.150 0.000 0.000 0.050
0.000
##
     left son=1356 (32 obs) right son=1357 (8 obs)
##
     Primary splits:
##
         288 < 216
                     to the left,
                                    improve=7.212500, (0 missing)
                                    improve=6.131183, (0 missing)
         260 < 176.5 to the left,
##
##
         289 < 234.5 to the left,
                                    improve=5.642424, (0 missing)
##
         261 < 168.5 to the left,
                                    improve=5.337500, (0 missing)
         287 < 29.5 to the left,
                                    improve=5.266667, (0 missing)
##
     Surrogate splits:
##
##
         289 < 234.5 to the left,
                                   agree=0.975, adj=0.875, (0 split)
##
         287 < 29.5 to the left,
                                    agree=0.950, adj=0.750, (0 split)
                                    agree=0.925, adj=0.625, (0 split)
##
         260 < 110
                     to the left,
##
         316 < 239
                     to the left,
                                    agree=0.900, adj=0.500, (0 split)
                                   agree=0.900, adj=0.500, (0 split)
##
         428 < 222.5 to the left,
##
## Node number 679: 140 observations,
                                          complexity param=0.0004465482
     predicted class=5
                        expected loss=0.5785714 P(node) =0.005554453
##
##
       class counts:
                         5
                               1
                                           27
                                                       59
                                                              2
                                                                    3
                                                                         19
23
##
      probabilities: 0.036 0.007 0.007 0.193 0.000 0.421 0.014 0.021 0.136
0.164
##
     left son=1358 (102 obs) right son=1359 (38 obs)
##
     Primary splits:
##
         294 < 3
                     to the right, improve=11.174260, (0 missing)
##
         293 < 70
                     to the right, improve=11.042710, (0 missing)
##
         320 < 182.5 to the right, improve=10.150730, (0 missing)
##
         247 < 16.5
                     to the right, improve=10.000000, (0 missing)
##
         596 < 15
                     to the right, improve= 9.077527, (0 missing)
##
     Surrogate splits:
         295 < 32
##
                     to the right, agree=0.914, adj=0.684, (0 split)
##
         293 < 42
                     to the right, agree=0.907, adj=0.658, (0 split)
##
         322 < 192
                     to the right, agree=0.864, adj=0.500, (0 split)
                     to the right, agree=0.843, adj=0.421, (0 split)
##
         321 < 166
##
         320 < 164
                     to the right, agree=0.829, adj=0.368, (0 split)
##
## Node number 684: 23 observations
##
     predicted class=3
                        expected loss=0.08695652 P(node) =0.0009125174
##
       class counts:
                         0
                                           21
                                                                           1
                                      0
1
##
      probabilities: 0.000 0.000 0.000 0.913 0.000 0.000 0.000 0.000 0.043
0.043
##
## Node number 685: 10 observations
```

```
##
     predicted class=5
                       expected loss=0.5 P(node) =0.0003967467
##
       class counts:
                        2
                                          1
                                                                        1
                              0
                                    0
                                                0
                                                      5
0
      probabilities: 0.200 0.000 0.000 0.100 0.000 0.500 0.100 0.000 0.100
##
0.000
##
## Node number 686: 18 observations
##
     predicted class=3 expected loss=0.2777778 P(node) =0.000714144
       class counts:
##
                        0
                              0
                                    0
                                         13
                                                                        1
0
##
      probabilities: 0.000 0.000 0.000 0.722 0.000 0.222 0.000 0.000 0.056
0.000
##
## Node number 687: 422 observations,
                                        complexity param=0.0001488494
                       expected loss=0.05924171 P(node) =0.01674271
     predicted class=5
##
       class counts:
                        0
                                         15
                                                    397
                                                                        3
                                    0
                                                            5
2
##
      probabilities: 0.000 0.000 0.000 0.036 0.000 0.941 0.012 0.000 0.007
0.005
##
     left son=1374 (37 obs) right son=1375 (385 obs)
##
     Primary splits:
##
         235 < 1
                    to the left,
                                  improve=6.854948, (0 missing)
##
         262 < 12.5 to the left,
                                  improve=6.151673, (0 missing)
##
         299 < 67
                    to the left.
                                  improve=4.890571, (0 missing)
##
         234 < 7.5
                    to the left, improve=3.863683, (0 missing)
                    to the right, improve=3.715413, (0 missing)
##
         293 < 167
##
     Surrogate splits:
##
         262 < 0.5
                    to the left, agree=0.924, adj=0.135, (0 split)
##
         266 < 253.5 to the right, agree=0.922, adj=0.108, (0 split)
##
         499 < 252.5 to the right, agree=0.919, adj=0.081, (0 split)
##
         500 < 48
                    to the right, agree=0.919, adj=0.081, (0 split)
##
         528 < 32
                    to the right, agree=0.919, adj=0.081, (0 split)
##
## Node number 688: 63 observations
##
     predicted class=4 expected loss=0.0952381 P(node) =0.002499504
##
       class counts:
                         0
                              0
                                          1
                                               57
                                                      0
                                                            0
                                                                  2
                                                                        0
                                    0
3
##
      probabilities: 0.000 0.000 0.000 0.016 0.905 0.000 0.000 0.032 0.000
0.048
##
## Node number 689: 7 observations
##
     predicted class=6
                       expected loss=0.4285714 P(node) =0.0002777227
##
       class counts:
                              0
                                    0
                                                0
                                                      3
                                                                        0
      probabilities: 0.000 0.000 0.000 0.000 0.429 0.571 0.000 0.000
##
0.000
## Node number 696: 52 observations
     predicted class=5 expected loss=0.1923077 P(node) =0.002063083
## class counts: 0 0 0 5 0 42 3 0 0
```

```
2
      probabilities: 0.000 0.000 0.000 0.096 0.000 0.808 0.058 0.000 0.000
##
0.038
##
## Node number 697: 11 observations
     predicted class=4
                        expected loss=0.6363636 P(node) =0.0004364213
##
##
       class counts:
                         0
                                                                          1
                               0
                                     0
                                            0
                                                  4
                                                        1
                                                              0
                                                                    1
4
      probabilities: 0.000 0.000 0.000 0.364 0.091 0.000 0.091 0.091
##
0.364
##
## Node number 698: 9 observations
     predicted class=3 expected loss=0 P(node) =0.000357072
##
##
       class counts:
                         0
                               0
                                     0
                                            9
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 1.000 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 699: 28 observations,
                                        complexity param=0.0001339645
     predicted class=9
                        expected loss=0.5 P(node) =0.001110891
       class counts:
                                                                          2
##
                         0
                               2
                                     0
                                            2
                                                 6
                                                        1
                                                              0
                                                                    1
14
##
      probabilities: 0.000 0.071 0.000 0.071 0.214 0.036 0.000 0.036 0.071
0.500
##
     left son=1398 (17 obs) right son=1399 (11 obs)
##
     Primary splits:
##
         294 < 197.5 to the right, improve=5.684874, (0 missing)
         660 < 155 to the right, improve=4.123377, (0 missing)
##
##
         462 < 205.5 to the right, improve=3.964286, (0 missing)
##
         632 < 134.5 to the right, improve=3.785714, (0 missing)
##
         152 < 5.5
                     to the right, improve=3.690476, (0 missing)
##
     Surrogate splits:
##
         632 < 10.5 to the right, agree=0.857, adj=0.636, (0 split)
##
         660 < 1
                     to the right, agree=0.857, adj=0.636, (0 split)
##
         267 < 228
                     to the right, agree=0.821, adj=0.545, (0 split)
         319 < 1.5
                     to the right, agree=0.821, adj=0.545, (0 split)
##
                     to the right, agree=0.821, adj=0.545, (0 split)
##
         320 < 37
##
## Node number 702: 9 observations
##
     predicted class=8 expected loss=0.4444444 P(node) =0.000357072
##
       class counts:
                         2
                               0
                                     2
                                                  0
                                                        0
                                                              0
                                                                    0
                                                                          5
0
      probabilities: 0.222 0.000 0.222 0.000 0.000 0.000 0.000 0.000 0.556
##
0.000
##
## Node number 703: 238 observations,
                                         complexity param=8.930964e-05
     predicted class=9
                        expected loss=0.1008403 P(node) =0.009442571
##
##
       class counts:
                         1
                               0
                                     0
                                                  8
                                                        1
                                                                   10
                                                                          0
214
##
      probabilities: 0.004 0.000 0.000 0.017 0.034 0.004 0.000 0.042 0.000
```

```
0.899
##
     left son=1406 (16 obs) right son=1407 (222 obs)
##
     Primary splits:
         377 < 21.5 to the left, improve=8.451387, (0 missing)
##
                     to the right, improve=7.080038, (0 missing)
##
         203 < 11
##
         294 < 249
                     to the right, improve=6.083107, (0 missing)
         378 < 16.5 to the left, improve=6.047269, (0 missing)
##
         232 < 244.5 to the right, improve=6.011555, (0 missing)
##
##
     Surrogate splits:
##
         376 < 1
                     to the left,
                                   agree=0.945, adj=0.187, (0 split)
##
         201 < 18
                     to the right, agree=0.941, adj=0.125, (0 split)
         228 < 11.5 to the right, agree=0.941, adj=0.125, (0 split)
##
         229 < 190.5 to the right, agree=0.941, adj=0.125, (0 split)
##
##
         509 < 126
                     to the right, agree=0.941, adj=0.125, (0 split)
##
## Node number 712: 14 observations
     predicted class=1 expected loss=0.07142857 P(node) =0.0005554453
##
       class counts:
                         0
                              13
                                                       0
                                                                    0
                                                                          0
                                     0
                                           0
                                                              1
0
##
      probabilities: 0.000 0.929 0.000 0.000 0.000 0.000 0.071 0.000 0.000
0.000
##
## Node number 713: 25 observations,
                                        complexity param=0.0003125837
     predicted class=4
                        expected loss=0.68 P(node) =0.0009918667
##
##
                                                                          2
       class counts:
                         0
                               1
                                     0
                                                 8
                                                       7
1
##
      probabilities: 0.000 0.040 0.000 0.000 0.320 0.280 0.240 0.000 0.080
0.040
##
     left son=1426 (17 obs) right son=1427 (8 obs)
##
     Primary splits:
##
         293 < 127.5 to the left,
                                   improve=6.108824, (0 missing)
##
         572 < 19.5 to the left,
                                   improve=5.319481, (0 missing)
##
         294 < 94
                     to the left,
                                   improve=5.235897, (0 missing)
##
         320 < 22.5
                     to the left,
                                   improve=5.235897, (0 missing)
                                   improve=5.235897, (0 missing)
##
         321 < 63
                     to the left,
##
     Surrogate splits:
         273 < 155
##
                     to the left,
                                   agree=0.92, adj=0.750, (0 split)
##
         274 < 20.5 to the left,
                                   agree=0.92, adj=0.750, (0 split)
##
         292 < 20.5 to the left,
                                   agree=0.92, adj=0.750, (0 split)
         246 < 18.5
                                   agree=0.88, adj=0.625, (0 split)
##
                    to the left,
##
         265 < 14.5 to the left,
                                   agree=0.88, adj=0.625, (0 split)
##
## Node number 714: 9 observations
##
     predicted class=0 expected loss=0.1111111 P(node) =0.000357072
##
       class counts:
                         8
                               0
                                     0
                                                              1
                                                                          0
0
##
      probabilities: 0.889 0.000 0.000 0.000 0.000 0.000 0.111 0.000 0.000
0.000
##
## Node number 715: 35 observations, complexity param=0.0004018934
```

```
expected loss=0.6 P(node) =0.001388613
##
     predicted class=8
##
       class counts:
                                           3
                                                1
                                                                       14
                         1
                              0
                                   12
                                                      0
2
      probabilities: 0.029 0.000 0.343 0.086 0.029 0.000 0.057 0.000 0.400
##
0.057
##
     left son=1430 (16 obs) right son=1431 (19 obs)
##
     Primary splits:
##
         550 < 139
                    to the right, improve=6.933647, (0 missing)
         577 < 205.5 to the right, improve=6.177640, (0 missing)
##
         551 < 219.5 to the right, improve=5.885714, (0 missing)
##
##
         552 < 217.5 to the right, improve=5.134161, (0 missing)
         545 < 59.5 to the right, improve=5.004295, (0 missing)
##
##
     Surrogate splits:
##
         551 < 41
                    to the right, agree=0.943, adj=0.875, (0 split)
##
         578 < 3.5
                    to the right, agree=0.886, adj=0.750, (0 split)
##
         579 < 21.5 to the right, agree=0.886, adj=0.750, (0 split)
##
         464 < 1.5
                    to the left, agree=0.829, adj=0.625, (0 split)
         523 < 37.5 to the right, agree=0.829, adj=0.625, (0 split)
##
##
## Node number 732: 14 observations
     predicted class=5 expected loss=0.2857143 P(node) =0.0005554453
##
##
       class counts:
                        0
                              0
                                    0
                                          3
                                                     10
                                                            1
                                                                        0
0
##
      probabilities: 0.000 0.000 0.000 0.214 0.000 0.714 0.071 0.000 0.000
0.000
##
## Node number 733: 7 observations
##
     predicted class=6
                       expected loss=0 P(node) =0.0002777227
##
       class counts:
                        0
                              0
                                    0
                                           0
                                                0
                                                                        0
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.000 1.000 0.000 0.000
0.000
##
## Node number 734: 7 observations
     predicted class=8 expected loss=0.5714286 P(node) =0.0002777227
##
       class counts:
                         2
                              0
                                          1
                                                      1
                                                            0
                                                                  0
                                                                        3
                                    0
                                                0
0
##
      probabilities: 0.286 0.000 0.000 0.143 0.000 0.143 0.000 0.000 0.429
0.000
##
## Node number 735: 165 observations
##
     predicted class=6
                       expected loss=0.05454545
                                                P(node) =0.00654632
##
       class counts:
                              0
                                    7
                                                0
                                                          156
                                                                        1
0
      probabilities: 0.000 0.000 0.042 0.000 0.000 0.006 0.945 0.000 0.006
##
0.000
## Node number 746: 16 observations
     predicted class=5 expected loss=0.375 P(node) =0.0006347947
## class counts: 0 0 0 2 0 10 1 0
```

```
0
##
      probabilities: 0.000 0.000 0.000 0.125 0.000 0.625 0.062 0.000 0.188
0.000
##
## Node number 747: 12 observations
##
     predicted class=8
                        expected loss=0.25 P(node) =0.000476096
##
       class counts:
                         0
                               0
                                     0
                                           2
                                                                          9
                                                 0
                                                       0
##
      probabilities: 0.000 0.000 0.000 0.167 0.000 0.000 0.083 0.000 0.750
0.000
##
## Node number 764: 24 observations,
                                        complexity param=0.0001786193
     predicted class=2 expected loss=0.2916667 P(node) =0.000952192
##
       class counts:
                         0
                               0
                                    17
                                           1
                                                       0
                                                                          5
0
##
      probabilities: 0.000 0.000 0.708 0.042 0.000 0.000 0.042 0.000 0.208
0.000
##
     left son=1528 (17 obs) right son=1529 (7 obs)
##
     Primary splits:
##
         602 < 175
                     to the right, improve=5.808123, (0 missing)
##
         212 < 2
                     to the right, improve=4.708333, (0 missing)
                     to the right, improve=4.708333, (0 missing)
##
         574 < 0.5
##
         603 < 251.5 to the right, improve=4.708333, (0 missing)
##
         347 < 36.5 to the left, improve=4.665266, (0 missing)
##
     Surrogate splits:
##
         574 < 0.5
                     to the right, agree=0.958, adj=0.857, (0 split)
##
         603 < 207.5 to the right, agree=0.958, adj=0.857, (0 split)
                     to the right, agree=0.917, adj=0.714, (0 split)
##
         184 < 160
##
         486 < 246
                     to the right, agree=0.917, adj=0.714, (0 split)
##
         575 < 25
                     to the right, agree=0.917, adj=0.714, (0 split)
##
## Node number 765: 33 observations
##
     predicted class=8
                        expected loss=0.1818182 P(node) =0.001309264
##
       class counts:
                         1
                                     1
                                           2
                                                                         27
0
##
      probabilities: 0.030 0.000 0.030 0.061 0.000 0.030 0.000 0.030 0.818
0.000
##
## Node number 766: 36 observations,
                                        complexity param=0.0001786193
     predicted class=8 expected loss=0.5 P(node) =0.001428288
##
       class counts:
                         0
                               0
                                          10
                                                 0
                                                              2
                                                                         18
1
      probabilities: 0.000 0.000 0.000 0.278 0.000 0.139 0.056 0.000 0.500
##
0.028
##
     left son=1532 (11 obs) right son=1533 (25 obs)
##
     Primary splits:
##
         289 < 1.5
                     to the left,
                                   improve=7.614343, (0 missing)
##
         260 < 30
                                   improve=6.635642, (0 missing)
                     to the left,
##
         288 < 8.5
                     to the left,
                                   improve=6.539391, (0 missing)
##
         298 < 5.5 to the left, improve=5.462963, (0 missing)
```

```
268 < 147.5 to the right, improve=5.388889, (0 missing)
##
##
     Surrogate splits:
##
         261 < 2
                     to the left,
                                   agree=0.944, adj=0.818, (0 split)
##
                                   agree=0.944, adj=0.818, (0 split)
         288 < 8.5
                     to the left,
         268 < 147.5 to the right, agree=0.889, adj=0.636, (0 split)
##
##
         290 < 19
                     to the left, agree=0.889, adj=0.636, (0 split)
         295 < 232
##
                     to the right, agree=0.889, adj=0.636, (0 split)
##
## Node number 767: 309 observations,
                                         complexity param=8.930964e-05
##
     predicted class=8
                        expected loss=0.04530744 P(node) =0.01225947
##
       class counts:
                         1
                               0
                                     0
                                           2
                                                 0
                                                        1
                                                              8
                                                                        295
2
##
      probabilities: 0.003 0.000 0.000 0.006 0.000 0.003 0.026 0.000 0.955
0.006
##
     left son=1534 (37 obs) right son=1535 (272 obs)
##
     Primary splits:
##
         406 < 171.5 to the left,
                                   improve=2.811428, (0 missing)
##
                     to the right, improve=2.227015, (0 missing)
         428 < 119
##
         433 < 71.5 to the left,
                                   improve=2.180759, (0 missing)
##
         405 < 183.5 to the left,
                                   improve=1.994410, (0 missing)
##
         181 < 1
                     to the left,
                                   improve=1.987110, (0 missing)
##
     Surrogate splits:
##
         434 < 7
                     to the left,
                                   agree=0.935, adj=0.459, (0 split)
##
         405 < 85
                     to the left.
                                   agree=0.909, adj=0.243, (0 split)
##
         407 < 66
                     to the left,
                                   agree=0.906, adj=0.216, (0 split)
##
         433 < 1
                     to the left,
                                   agree=0.903, adj=0.189, (0 split)
                                   agree=0.900, adj=0.162, (0 split)
##
         378 < 222
                     to the left,
##
## Node number 768: 1603 observations,
                                          complexity param=2.232741e-05
##
     predicted class=0 expected loss=0.007485964 P(node) =0.06359849
##
       class counts: 1591
                               0
                                     1
                                           0
                                                 1
                                                       2
                                                              7
                                                                    0
                                                                          0
1
##
      probabilities: 0.993 0.000 0.001 0.000 0.001 0.001 0.004 0.000 0.000
0.001
##
     left son=1536 (1578 obs) right son=1537 (25 obs)
##
     Primary splits:
         101 < 189
##
                     to the left,
                                   improve=1.5957920, (0 missing)
##
         102 < 1.5
                     to the left,
                                   improve=1.3138310, (0 missing)
##
         405 < 76.5 to the left,
                                   improve=1.0415200, (0 missing)
         100 < 53
##
                     to the left,
                                   improve=1.0322220, (0 missing)
##
         492 < 253.5 to the left,
                                   improve=0.9408491, (0 missing)
##
     Surrogate splits:
##
         102 < 22
                     to the left, agree=0.99, adj=0.36, (0 split)
##
## Node number 769: 20 observations,
                                        complexity param=6.698223e-05
                        expected loss=0.25 P(node) =0.0007934934
##
     predicted class=0
##
       class counts:
                        15
                                           0
                                                                          0
0
##
      probabilities: 0.750 0.000 0.000 0.000 0.000 0.250 0.000 0.000
0.000
```

```
left son=1538 (13 obs) right son=1539 (7 obs)
##
##
     Primary splits:
                     to the right, improve=4.642857, (0 missing)
##
         183 < 24.5
##
                     to the right, improve=4.642857, (0 missing)
         184 < 4
                     to the right, improve=4.642857, (0 missing)
##
         185 < 3.5
##
         212 < 63
                     to the right, improve=4.642857, (0 missing)
         213 < 82.5
##
                     to the right, improve=4.642857, (0 missing)
##
     Surrogate splits:
##
         184 < 63.5
                     to the right, agree=0.95, adj=0.857, (0 split)
                     to the right, agree=0.95, adj=0.857, (0 split)
##
         212 < 31
##
         213 < 16
                     to the right, agree=0.95, adj=0.857, (0 split)
                     to the right, agree=0.90, adj=0.714, (0 split)
##
         156 < 13.5
##
         157 < 7
                     to the right, agree=0.90, adj=0.714, (0 split)
##
## Node number 770: 299 observations,
                                         complexity param=0.0001786193
##
     predicted class=0 expected loss=0.1170569 P(node) =0.01186273
##
       class counts:
                       264
                               0
                                     9
                                           7
                                                       14
                                                              3
                                                                          0
1
##
      probabilities: 0.883 0.000 0.030 0.023 0.000 0.047 0.010 0.003 0.000
0.003
##
     left son=1540 (267 obs) right son=1541 (32 obs)
##
     Primary splits:
##
         296 < 135
                     to the left,
                                   improve=14.112060, (0 missing)
##
         295 < 40.5
                     to the left,
                                   improve=10.053470, (0 missing)
##
         323 < 37
                     to the left,
                                   improve= 8.928094, (0 missing)
                                   improve= 8.732347, (0 missing)
##
         324 < 29.5 to the left,
##
                     to the right, improve= 8.321044, (0 missing)
         214 < 0.5
##
     Surrogate splits:
##
         324 < 29.5 to the left,
                                   agree=0.963, adj=0.656, (0 split)
##
         295 < 237.5 to the left,
                                   agree=0.950, adj=0.531, (0 split)
                                   agree=0.936, adj=0.406, (0 split)
##
         323 < 37
                     to the left,
##
         268 < 248
                     to the left,
                                   agree=0.926, adj=0.313, (0 split)
##
         563 < 11.5 to the left,
                                   agree=0.913, adj=0.187, (0 split)
##
## Node number 771: 33 observations,
                                        complexity param=0.0001786193
     predicted class=2 expected loss=0.5151515 P(node) =0.001309264
##
##
       class counts:
                        12
                                    16
                                                              2
                                                                          0
0
##
      probabilities: 0.364 0.000 0.485 0.000 0.000 0.000 0.061 0.091 0.000
0.000
##
     left son=1542 (11 obs) right son=1543 (22 obs)
##
     Primary splits:
##
         455 < 4
                     to the right, improve=7.666667, (0 missing)
##
         482 < 13.5 to the right, improve=7.666667, (0 missing)
##
         483 < 76
                     to the right, improve=7.666667, (0 missing)
##
         214 < 158
                     to the right, improve=7.521613, (0 missing)
##
         369 < 40.5 to the right, improve=6.884848, (0 missing)
##
     Surrogate splits:
##
         483 < 76
                     to the right, agree=1.000, adj=1.000, (0 split)
         482 < 45.5 to the right, agree=0.970, adj=0.909, (0 split)
##
```

```
511 < 207.5 to the right, agree=0.970, adj=0.909, (0 split)
##
##
         510 < 172.5 to the right, agree=0.939, adj=0.818, (0 split)
                     to the right, agree=0.909, adj=0.727, (0 split)
##
         454 < 3
##
## Node number 780: 11 observations
##
     predicted class=0
                        expected loss=0.6363636 P(node) =0.0004364213
##
       class counts:
                         4
                                                  0
                                                        4
                                                                          0
                               0
                                     1
                                           2
                                                              0
                                                                    0
      probabilities: 0.364 0.000 0.091 0.182 0.000 0.364 0.000 0.000 0.000
##
0.000
##
## Node number 781: 19 observations
     predicted class=3 expected loss=0 P(node) =0.0007538187
##
##
       class counts:
                         0
                               0
                                     0
                                          19
                                                        0
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 1.000 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 782: 7 observations
     predicted class=6 expected loss=0.5714286 P(node) =0.0002777227
##
       class counts:
                         1
                               0
                                     1
                                            0
                                                  0
                                                        2
                                                              3
                                                                    0
                                                                          0
0
      probabilities: 0.143 0.000 0.143 0.000 0.000 0.286 0.429 0.000 0.000
##
0.000
##
## Node number 783: 20 observations
     predicted class=5 expected loss=0.1 P(node) =0.0007934934
##
       class counts:
                         0
                               0
                                     0
                                            2
                                                 0
                                                       18
                                                              0
                                                                    0
                                                                          0
0
      probabilities: 0.000 0.000 0.000 0.100 0.000 0.900 0.000 0.000 0.000
##
0.000
##
## Node number 792: 11 observations
##
     predicted class=2 expected loss=0.4545455 P(node) =0.0004364213
##
       class counts:
                         1
                               1
                                     6
                                            0
                                                        2
                                                              1
                                                                          0
0
      probabilities: 0.091 0.091 0.545 0.000 0.000 0.182 0.091 0.000 0.000
##
0.000
##
## Node number 793: 44 observations,
                                        complexity param=0.0001339645
     predicted class=3 expected loss=0.2954545 P(node) =0.001745685
##
       class counts:
                         2
                                     4
                                           31
                                                                          0
0
##
      probabilities: 0.045 0.000 0.091 0.705 0.000 0.114 0.000 0.045 0.000
0.000
##
     left son=1586 (36 obs) right son=1587 (8 obs)
##
     Primary splits:
         544 < 35
                     to the left, improve=5.351010, (0 missing)
##
         351 < 8.5 to the left,
##
                                   improve=5.045455, (0 missing)
##
         571 < 209.5 to the left, improve=4.651632, (0 missing)
```

```
572 < 246.5 to the left,
                                   improve=4.651632, (0 missing)
##
##
         211 < 227.5 to the left,
                                   improve=4.400574, (0 missing)
##
     Surrogate splits:
         571 < 209.5 to the left,
##
                                   agree=0.977, adj=0.875, (0 split)
##
         572 < 246.5 to the left,
                                   agree=0.977, adj=0.875, (0 split)
##
         543 < 48
                     to the left,
                                   agree=0.955, adj=0.750, (0 split)
##
         545 < 168.5 to the left,
                                   agree=0.955, adj=0.750, (0 split)
                                   agree=0.955, adj=0.750, (0 split)
##
         546 < 232.5 to the left,
##
## Node number 796: 13 observations
##
     predicted class=0
                        expected loss=0.6923077 P(node) =0.0005157707
                         4
                                                       1
##
       class counts:
                               0
                                     1
                                           4
                                                  0
                                                              0
                                                                    0
                                                                          0
3
##
      probabilities: 0.308 0.000 0.077 0.308 0.000 0.077 0.000 0.000 0.000
0.231
##
## Node number 797: 8 observations
     predicted class=5
                        expected loss=0.375 P(node) =0.0003173973
##
##
       class counts:
                         0
                               0
                                                        5
                                                              1
                                                                          2
                                     0
                                           0
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.625 0.125 0.000 0.250
0.000
##
## Node number 798: 7 observations
     predicted class=3
                        expected loss=0.2857143 P(node) =0.0002777227
##
       class counts:
                         0
                               0
                                     0
                                           5
                                                        2
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 0.714 0.000 0.286 0.000 0.000 0.000
0.000
##
## Node number 799: 46 observations
     predicted class=5
                        expected loss=0.04347826 P(node) =0.001825035
##
       class counts:
                               0
                                     0
                                           2
                                                  0
                                                       44
                                                              0
                                                                          0
0
      probabilities: 0.000 0.000 0.000 0.043 0.000 0.957 0.000 0.000 0.000
##
0.000
##
## Node number 824: 34 observations,
                                        complexity param=0.0002976988
##
     predicted class=5
                        expected loss=0.7058824 P(node) =0.001348939
##
       class counts:
                         4
                               0
                                     8
                                           3
                                                  1
                                                       10
                                                              5
                                                                          3
0
##
      probabilities: 0.118 0.000 0.235 0.088 0.029 0.294 0.147 0.000 0.088
0.000
##
     left son=1648 (10 obs) right son=1649 (24 obs)
##
     Primary splits:
##
         580 < 144
                     to the right, improve=4.645098, (0 missing)
##
         554 < 19
                     to the right, improve=4.438220, (0 missing)
##
                     to the right, improve=4.438220, (0 missing)
         582 < 7.5
##
         247 < 3
                     to the left, improve=4.200226, (0 missing)
         579 < 69 to the right, improve=4.189542, (0 missing)
##
```

```
##
     Surrogate splits:
##
         581 < 28
                     to the right, agree=0.971, adj=0.9, (0 split)
         552 < 116.5 to the right, agree=0.941, adj=0.8, (0 split)
##
         553 < 20.5 to the right, agree=0.941, adj=0.8, (0 split)
##
##
         554 < 19
                     to the right, agree=0.912, adj=0.7, (0 split)
         582 < 7.5
##
                     to the right, agree=0.912, adj=0.7, (0 split)
##
## Node number 825: 10 observations
     predicted class=8 expected loss=0.1 P(node) =0.0003967467
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                 0
                                                              1
                                                                    0
                                                                          9
                                                       0
0
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.100 0.100 0.000 0.900
##
0.000
##
## Node number 836: 8 observations
     predicted class=0 expected loss=0 P(node) =0.0003173973
##
       class counts:
                         8
                               0
                                     0
                                           0
                                                 0
                                                       0
                                                                          0
0
##
      probabilities: 1.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 837: 17 observations
     predicted class=5 expected loss=0.2941176 P(node) =0.0006744694
##
       class counts:
                         0
                                                       12
                                                                          1
                                     0
                                           1
                                                              3
0
##
      probabilities: 0.000 0.000 0.000 0.059 0.000 0.706 0.176 0.000 0.059
0.000
##
## Node number 838: 19 observations
     predicted class=2 expected loss=0.3157895 P(node) =0.0007538187
##
##
       class counts:
                         2
                               0
                                    13
                                           1
                                                  2
                                                       0
                                                              0
                                                                    0
                                                                          0
1
##
      probabilities: 0.105 0.000 0.684 0.053 0.105 0.000 0.000 0.000 0.000
0.053
##
## Node number 839: 14 observations
##
     predicted class=9
                        expected loss=0.1428571 P(node) =0.0005554453
##
       class counts:
                         0
                               0
                                     0
                                                  1
                                                       0
                                                                          0
                                           0
                                                              0
                                                                    1
12
      probabilities: 0.000 0.000 0.000 0.000 0.071 0.000 0.000 0.071 0.000
##
0.857
##
## Node number 846: 8 observations
##
     predicted class=2 expected loss=0.375 P(node) =0.0003173973
##
       class counts:
                         0
                               0
                                     5
                                                       0
                                                              3
0
##
      probabilities: 0.000 0.000 0.625 0.000 0.000 0.000 0.375 0.000 0.000
0.000
##
## Node number 847: 120 observations, complexity param=4.465482e-05
```

```
expected loss=0.06666667 P(node) =0.00476096
##
     predicted class=6
##
       class counts:
                                                            112
                         0
                               0
                                     2
                                           0
                                                 4
                                                       2
                                                                          0
0
      probabilities: 0.000 0.000 0.017 0.000 0.033 0.017 0.933 0.000 0.000
##
0.000
##
     left son=1694 (7 obs) right son=1695 (113 obs)
##
     Primary splits:
                     to the right, improve=4.515718, (0 missing)
##
         657 < 4.5
                     to the right, improve=4.059459, (0 missing)
##
         427 < 210
         300 < 143.5 to the right, improve=4.050485, (0 missing)
##
##
         301 < 123.5 to the right, improve=4.050485, (0 missing)
                     to the right, improve=3.480952, (0 missing)
##
         302 < 3.5
##
     Surrogate splits:
##
         658 < 54.5 to the right, agree=0.992, adj=0.857, (0 split)
##
         659 < 102.5 to the right, agree=0.983, adj=0.714, (0 split)
##
         190 < 119.5 to the right, agree=0.967, adj=0.429, (0 split)
##
         628 < 240 to the right, agree=0.967, adj=0.429, (0 split)
##
         656 < 47.5 to the right, agree=0.967, adj=0.429, (0 split)
##
## Node number 858: 25 observations,
                                        complexity param=0.000111637
     predicted class=3
                        expected loss=0.8 P(node) =0.0009918667
##
##
       class counts:
                         4
                               0
                                     4
                                           5
                                                 1
                                                                    1
                                                                          1
5
##
      probabilities: 0.160 0.000 0.160 0.200 0.040 0.000 0.160 0.040 0.040
0.200
##
     left son=1716 (7 obs) right son=1717 (18 obs)
##
     Primary splits:
         324 < 5.5
##
                     to the right, improve=3.483810, (0 missing)
##
         570 < 82.5
                     to the right, improve=3.268824, (0 missing)
##
         571 < 25
                     to the right, improve=3.268824, (0 missing)
                     to the right, improve=3.268824, (0 missing)
##
         598 < 32
##
         599 < 78.5 to the right, improve=3.268824, (0 missing)
##
     Surrogate splits:
##
         325 < 60.5 to the right, agree=0.92, adj=0.714, (0 split)
##
                     to the right, agree=0.92, adj=0.714, (0 split)
         326 < 213
         353 < 156
                     to the right, agree=0.92, adj=0.714, (0 split)
##
         296 < 124.5 to the right, agree=0.88, adj=0.571, (0 split)
##
##
         298 < 64.5 to the right, agree=0.88, adj=0.571, (0 split)
##
## Node number 859: 9 observations
##
     predicted class=5 expected loss=0.3333333 P(node) =0.000357072
##
       class counts:
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.667 0.000 0.333 0.000
0.000
##
## Node number 860: 17 observations
     predicted class=4 expected loss=0.05882353 P(node) =0.0006744694
##
       class counts:
                         0
                               0
                                     0
                                                16
                                                       0
                                                             0
                                                                    0
                                                                          0
1
```

```
probabilities: 0.000 0.000 0.000 0.000 0.941 0.000 0.000 0.000 0.000
0.059
##
## Node number 861: 7 observations
##
     predicted class=7
                        expected loss=0.7142857 P(node) =0.0002777227
##
       class counts:
                         1
                               0
                                     1
                                           0
                                                 1
                                                       0
                                                                   2
                                                                          0
2
      probabilities: 0.143 0.000 0.143 0.000 0.143 0.000 0.000 0.286 0.000
##
0.286
##
## Node number 862: 9 observations
     predicted class=4 expected loss=0.5555556 P(node) =0.000357072
##
       class counts:
                         0
                               0
                                     1
                                                 4
                                                       0
                                                                          1
                                           0
                                                             0
                                                                   2
1
##
      probabilities: 0.000 0.000 0.111 0.000 0.444 0.000 0.000 0.222 0.111
0.111
##
## Node number 863: 73 observations,
                                       complexity param=4.465482e-05
##
     predicted class=9
                        expected loss=0.1780822 P(node) =0.002896251
##
       class counts:
                         0
                               0
                                     1
                                           0
                                                 2
                                                       0
                                                             1
                                                                          0
60
      probabilities: 0.000 0.000 0.014 0.000 0.027 0.000 0.014 0.123 0.000
##
0.822
##
     left son=1726 (11 obs) right son=1727 (62 obs)
##
     Primary splits:
         408 < 130.5 to the right, improve=4.070863, (0 missing)
##
##
         179 < 252.5 to the right, improve=4.066228, (0 missing)
         520 < 252.5 to the right, improve=3.483465, (0 missing)
##
##
         436 < 135.5 to the right, improve=3.392456, (0 missing)
##
         457 < 12
                     to the left, improve=3.226289, (0 missing)
##
     Surrogate splits:
##
         436 < 135.5 to the right, agree=0.918, adj=0.455, (0 split)
##
         211 < 64.5 to the left, agree=0.904, adj=0.364, (0 split)
##
         212 < 4.5
                    to the left, agree=0.890, adj=0.273, (0 split)
##
         747 < 177.5 to the right, agree=0.890, adj=0.273, (0 split)
##
         179 < 254.5 to the right, agree=0.877, adj=0.182, (0 split)
##
## Node number 866: 28 observations,
                                        complexity param=0.0001786193
##
     predicted class=6 expected loss=0.7142857 P(node) =0.001110891
                                           4
##
       class counts:
                         1
                               7
                                     0
                                                       6
                                                                          0
2
##
      probabilities: 0.036 0.250 0.000 0.143 0.000 0.214 0.286 0.000 0.000
0.071
##
     left son=1732 (18 obs) right son=1733 (10 obs)
##
     Primary splits:
##
         515 < 28.5 to the left,
                                   improve=5.084127, (0 missing)
##
         544 < 196.5 to the left,
                                   improve=4.978571, (0 missing)
##
         657 < 96
                    to the left,
                                   improve=4.747285, (0 missing)
##
         188 < 14.5 to the right, improve=4.678571, (0 missing)
         656 < 8.5 to the left, improve=4.602368, (0 missing)
##
```

```
##
     Surrogate splits:
##
         516 < 173.5 to the left, agree=0.964, adj=0.9, (0 split)
                                   agree=0.929, adj=0.8, (0 split)
##
         487 < 16
                     to the left,
                                   agree=0.929, adj=0.8, (0 split)
##
         488 < 203.5 to the left,
##
         544 < 12
                     to the left,
                                   agree=0.929, adj=0.8, (0 split)
         543 < 22
##
                     to the left,
                                   agree=0.893, adj=0.7, (0 split)
##
## Node number 867: 9 observations
     predicted class=5
                        expected loss=0
                                         P(node) = 0.000357072
##
       class counts:
                         0
                               0
                                     0
                                                 0
                                                        9
                                                              0
                                                                          0
                                           0
0
      probabilities: 0.000 0.000 0.000 0.000 1.000 0.000 0.000 0.000
##
0.000
##
## Node number 894: 7 observations
     predicted class=0 expected loss=0.5714286 P(node) =0.0002777227
##
       class counts:
                         3
                               0
                                     0
                                           0
                                                  2
                                                        2
                                                                          0
0
##
      probabilities: 0.429 0.000 0.000 0.000 0.286 0.286 0.000 0.000 0.000
0.000
##
## Node number 895: 622 observations,
                                         complexity param=8.930964e-05
##
     predicted class=7 expected loss=0.02572347 P(node) =0.02467764
##
       class counts:
                         2
                                     1
                                           2
                                                  2
                                                                  606
                                                              3
                                                                          0
5
##
      probabilities: 0.003 0.000 0.002 0.003 0.003 0.002 0.005 0.974 0.000
0.008
##
     left son=1790 (8 obs) right son=1791 (614 obs)
##
     Primary splits:
                     to the right, improve=7.430635, (0 missing)
##
         542 < 123
##
         541 < 102
                     to the right, improve=6.569800, (0 missing)
##
         513 < 101.5 to the right, improve=5.881189, (0 missing)
                     to the right, improve=5.713208, (0 missing)
##
         514 < 4.5
##
         512 < 205
                     to the right, improve=5.317830, (0 missing)
##
     Surrogate splits:
##
         541 < 102
                     to the right, agree=0.998, adj=0.875, (0 split)
                     to the right, agree=0.997, adj=0.750, (0 split)
##
         514 < 4.5
##
         569 < 10
                     to the right, agree=0.995, adj=0.625, (0 split)
##
         570 < 10.5 to the right, agree=0.995, adj=0.625, (0 split)
         443 < 140.5 to the right, agree=0.994, adj=0.500, (0 split)
##
##
## Node number 896: 912 observations,
                                         complexity param=0.0001339645
##
     predicted class=2
                        expected loss=0.03399123 P(node) =0.0361833
##
       class counts:
                                                       0
                         0
                               0
                                   881
                                          15
                                                              0
                                                                   12
                                                                          4
0
##
      probabilities: 0.000 0.000 0.966 0.016 0.000 0.000 0.000 0.013 0.004
0.000
##
     left son=1792 (869 obs) right son=1793 (43 obs)
##
     Primary splits:
##
         681 < 37 to the left, improve=6.530813, (0 missing)
```

```
to the left,
                                    improve=5.938896, (0 missing)
##
         680 < 41
##
         678 < 104
                     to the left,
                                    improve=5.706384, (0 missing)
         679 < 10.5
##
                     to the left,
                                    improve=5.044293, (0 missing)
                     to the left,
##
         682 < 10
                                    improve=4.922556, (0 missing)
##
     Surrogate splits:
##
         680 < 3
                     to the left,
                                   agree=0.987, adj=0.721, (0 split)
##
                     to the left,
                                    agree=0.986, adj=0.698, (0 split)
         682 < 6.5
                                   agree=0.975, adj=0.465, (0 split)
##
         679 < 0.5
                     to the left,
##
         683 < 21.5
                     to the left,
                                    agree=0.975, adj=0.465, (0 split)
                                    agree=0.964, adj=0.233, (0 split)
##
         678 < 0.5
                     to the left,
##
## Node number 897: 10 observations
     predicted class=8
                        expected loss=0.3 P(node) =0.0003967467
##
##
       class counts:
                         0
                               0
                                      1
                                            0
                                                        1
                                                                     0
                                                                           7
1
##
      probabilities: 0.000 0.000 0.100 0.000 0.000 0.100 0.000 0.000 0.700
0.100
##
## Node number 900: 22 observations,
                                         complexity param=4.465482e-05
##
     predicted class=2
                        expected loss=0.2272727 P(node) =0.0008728427
##
       class counts:
                         3
                               0
                                     17
                                            0
                                                        0
                                                              2
                                                                     0
                                                                           0
0
##
      probabilities: 0.136 0.000 0.773 0.000 0.000 0.000 0.091 0.000 0.000
0.000
##
     left son=1800 (15 obs) right son=1801 (7 obs)
##
     Primary splits:
##
         372 < 138
                                    improve=3.701299, (0 missing)
                     to the left,
##
         428 < 9
                     to the left,
                                    improve=3.701299, (0 missing)
##
         440 < 29.5
                     to the left,
                                    improve=3.701299, (0 missing)
##
         455 < 7.5
                     to the left,
                                    improve=3.701299, (0 missing)
##
         468 < 89
                     to the left,
                                    improve=3.701299, (0 missing)
##
     Surrogate splits:
##
         183 < 193
                     to the right, agree=0.909, adj=0.714, (0 split)
##
         399 < 57
                     to the left,
                                   agree=0.909, adj=0.714, (0 split)
##
                                    agree=0.909, adj=0.714, (0 split)
         400 < 65
                     to the left,
         427 < 79
                                   agree=0.909, adj=0.714, (0 split)
##
                     to the left,
                                   agree=0.909, adj=0.714, (0 split)
##
         455 < 86.5 to the left,
##
## Node number 901: 13 observations
##
     predicted class=9
                        expected loss=0.1538462
                                                  P(node) =0.0005157707
##
       class counts:
                         0
                               0
                                      0
                                            0
                                                  2
                                                        0
                                                              0
                                                                     0
                                                                           0
11
##
      probabilities: 0.000 0.000 0.000 0.000 0.154 0.000 0.000 0.000 0.000
0.846
##
## Node number 902: 7 observations
##
     predicted class=2
                        expected loss=0.7142857
                                                  P(node) =0.0002777227
##
       class counts:
                         0
                               0
                                      2
                                            1
                                                  0
                                                        1
                                                              0
                                                                           1
2
##
      probabilities: 0.000 0.000 0.286 0.143 0.000 0.143 0.000 0.000 0.143
```

```
0.286
##
## Node number 903: 43 observations
     predicted class=8
                        expected loss=0.06976744 P(node) =0.001706011
##
       class counts:
                         0
                               0
                                     1
                                            0
                                                  0
                                                        0
                                                              0
                                                                    0
                                                                         40
2
      probabilities: 0.000 0.000 0.023 0.000 0.000 0.000 0.000 0.000 0.930
##
0.047
##
## Node number 904: 135 observations,
                                          complexity param=0.0005805126
##
     predicted class=1
                        expected loss=0.2592593 P(node) =0.00535608
                                                  2
##
       class counts:
                         0
                             100
                                    17
                                            1
                                                        3
                                                              6
                                                                    6
                                                                          0
0
##
      probabilities: 0.000 0.741 0.126 0.007 0.015 0.022 0.044 0.044 0.000
0.000
##
     left son=1808 (107 obs) right son=1809 (28 obs)
##
     Primary splits:
##
         520 < 3
                                   improve=23.79034, (0 missing)
                     to the left,
##
         351 < 79
                     to the right, improve=23.07407, (0 missing)
##
         519 < 49.5
                    to the left,
                                   improve=23.00462, (0 missing)
                     to the left,
                                   improve=22.79906, (0 missing)
##
         510 < 2.5
##
         352 < 194
                     to the right, improve=22.79529, (0 missing)
##
     Surrogate splits:
##
         519 < 69.5
                     to the left,
                                   agree=0.963, adj=0.821, (0 split)
##
         547 < 2.5
                     to the left,
                                   agree=0.956, adj=0.786, (0 split)
##
         492 < 71
                     to the left,
                                   agree=0.948, adj=0.750, (0 split)
                                   agree=0.941, adj=0.714, (0 split)
##
                     to the left,
         521 < 3
                                   agree=0.933, adj=0.679, (0 split)
##
         464 < 139.5 to the left,
##
## Node number 905: 111 observations,
                                          complexity param=0.001384299
##
     predicted class=4
                        expected loss=0.4774775 P(node) =0.004403888
##
       class counts:
                                     2
                                            0
                                                 58
                                                                          3
                                                             42
2
##
      probabilities: 0.000 0.000 0.018 0.000 0.523 0.018 0.378 0.018 0.027
0.018
##
     left son=1810 (72 obs) right son=1811 (39 obs)
##
     Primary splits:
##
         573 < 221
                                   improve=26.92487, (0 missing)
                     to the left,
##
         216 < 3.5
                     to the right, improve=26.23956, (0 missing)
                     to the right, improve=24.46467, (0 missing)
##
         438 < 73
##
         574 < 101
                     to the left, improve=23.81049, (0 missing)
         488 < 105.5 to the right, improve=23.70271, (0 missing)
##
##
     Surrogate splits:
##
         572 < 142
                     to the left,
                                   agree=0.883, adj=0.667, (0 split)
##
         574 < 142.5 to the left,
                                   agree=0.865, adj=0.615, (0 split)
##
         601 < 70.5 to the left,
                                   agree=0.865, adj=0.615, (0 split)
##
         488 < 43.5
                     to the right, agree=0.847, adj=0.564, (0 split)
                     to the right, agree=0.829, adj=0.513, (0 split)
##
         459 < 5
##
## Node number 906: 150 observations, complexity param=0.000982406
```

```
expected loss=0.46 P(node) =0.0059512
##
     predicted class=2
##
       class counts:
                                            5
                                                                   46
                         0
                               2
                                     81
                                                  1
                                                        0
                                                                           6
9
      probabilities: 0.000 0.013 0.540 0.033 0.007 0.000 0.000 0.307 0.040
##
0.060
##
     left son=1812 (127 obs) right son=1813 (23 obs)
##
     Primary splits:
                                    improve=19.60675, (0 missing)
##
         678 < 45.5 to the left,
         566 < 74
                     to the right, improve=17.50022, (0 missing)
##
##
         706 < 3.5
                     to the left,
                                    improve=16.47333, (0 missing)
         538 < 25
##
                     to the right, improve=16.11102, (0 missing)
         679 < 102.5 to the left,
                                   improve=15.70316, (0 missing)
##
##
     Surrogate splits:
##
         677 < 3
                     to the left,
                                   agree=0.973, adj=0.826, (0 split)
##
         706 < 3.5
                     to the left,
                                   agree=0.967, adj=0.783, (0 split)
                                   agree=0.960, adj=0.739, (0 split)
##
         650 < 50.5
                     to the left,
                                   agree=0.960, adj=0.739, (0 split)
##
         705 < 8
                     to the left,
##
         679 < 0.5
                     to the left,
                                   agree=0.953, adj=0.696, (0 split)
##
## Node number 907: 91 observations,
                                         complexity param=0.0004465482
     predicted class=9
                        expected loss=0.3076923 P(node) =0.003610395
##
##
       class counts:
                         2
                               0
                                      4
                                            0
                                                  1
                                                        5
                                                                    3
                                                                         13
63
##
      probabilities: 0.022 0.000 0.044 0.000 0.011 0.055 0.000 0.033 0.143
0.692
##
     left son=1814 (28 obs) right son=1815 (63 obs)
##
     Primary splits:
         599 < 6.5
##
                     to the right, improve=18.85958, (0 missing)
##
         627 < 74.5
                     to the right, improve=14.62795, (0 missing)
                     to the right, improve=14.29277, (0 missing)
##
         598 < 26
         626 < 29.5
                     to the right, improve=14.18974, (0 missing)
##
##
         403 < 0.5
                     to the right, improve=13.52410, (0 missing)
##
     Surrogate splits:
##
         598 < 26
                     to the right, agree=0.945, adj=0.821, (0 split)
##
                     to the right, agree=0.934, adj=0.786, (0 split)
         627 < 74.5
         600 < 4
                     to the right, agree=0.923, adj=0.750, (0 split)
##
         626 < 29.5
                     to the right, agree=0.923, adj=0.750, (0 split)
##
##
                     to the right, agree=0.912, adj=0.714, (0 split)
         570 < 36.5
##
## Node number 912: 13 observations
##
     predicted class=0 expected loss=0.6153846
                                                  P(node) =0.0005157707
##
       class counts:
                         5
                                      5
                                                              3
                                                                           0
0
      probabilities: 0.385 0.000 0.385 0.000 0.000 0.000 0.231 0.000 0.000
##
0.000
##
## Node number 913: 7 observations
     predicted class=8 expected loss=0.1428571 P(node) =0.0002777227
##
       class counts:
                         0
                               0
                                      0
                                            0
                                                  1
                                                        0
                                                              0
                                                                    0
                                                                           6
0
```

```
probabilities: 0.000 0.000 0.000 0.143 0.000 0.000 0.000 0.857
0.000
##
## Node number 914: 7 observations
##
     predicted class=2
                        expected loss=0.7142857 P(node) =0.0002777227
##
       class counts:
                         0
                               0
                                     2
                                           0
                                                 2
                                                       1
                                                             0
                                                                          2
0
##
      probabilities: 0.000 0.000 0.286 0.000 0.286 0.143 0.000 0.000 0.286
0.000
##
## Node number 915: 94 observations
     predicted class=5 expected loss=0.0106383 P(node) =0.003729419
##
       class counts:
                         0
                               0
                                                      93
                                                                          0
                                     0
                                           0
                                                 0
                                                             1
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.989 0.011 0.000 0.000
0.000
##
## Node number 916: 132 observations,
                                         complexity param=0.0004018934
##
     predicted class=4 expected loss=0.1969697 P(node) =0.005237056
##
       class counts:
                         0
                               0
                                    10
                                           0
                                               106
                                                       1
                                                            13
                                                                          2
0
      probabilities: 0.000 0.000 0.076 0.000 0.803 0.008 0.098 0.000 0.015
##
0.000
##
     left son=1832 (18 obs) right son=1833 (114 obs)
##
     Primary splits:
                     to the right, improve=19.72116, (0 missing)
##
         127 < 2.5
##
         126 < 6.5
                     to the left,
                                   improve=19.47208, (0 missing)
         125 < 34
                                   improve=18.35517, (0 missing)
##
                     to the left,
##
         97 < 2
                     to the left,
                                  improve=16.73281, (0 missing)
##
         128 < 6.5
                     to the right, improve=15.73523, (0 missing)
##
     Surrogate splits:
##
         99 < 1
                     to the right, agree=0.970, adj=0.778, (0 split)
##
         128 < 6.5
                     to the right, agree=0.970, adj=0.778, (0 split)
##
         126 < 6.5
                     to the right, agree=0.962, adj=0.722, (0 split)
##
         129 < 19
                     to the right, agree=0.947, adj=0.611, (0 split)
##
         98 < 68.5 to the right, agree=0.939, adj=0.556, (0 split)
##
## Node number 917: 23 observations,
                                        complexity param=0.0002232741
##
     predicted class=7
                        expected loss=0.4347826 P(node) =0.0009125174
                                           0
                                                       0
                                                                          5
##
       class counts:
                         0
                               0
                                     3
                                                                   13
2
##
      probabilities: 0.000 0.000 0.130 0.000 0.000 0.000 0.000 0.565 0.217
0.087
##
     left son=1834 (8 obs) right son=1835 (15 obs)
##
     Primary splits:
##
         486 < 162.5 to the right, improve=6.783333, (0 missing)
##
         376 < 55
                     to the left, improve=6.283333, (0 missing)
##
         430 < 5.5
                     to the left, improve=6.267857, (0 missing)
                     to the right, improve=6.150000, (0 missing)
##
         458 < 56
         290 < 13.5 to the right, improve=5.732143, (0 missing)
##
```

```
##
     Surrogate splits:
##
         485 < 50
                     to the right, agree=0.957, adj=0.875, (0 split)
         513 < 132
                     to the right, agree=0.957, adj=0.875, (0 split)
##
                     to the right, agree=0.913, adj=0.750, (0 split)
##
         458 < 56
         459 < 187.5 to the right, agree=0.913, adj=0.750, (0 split)
##
##
         460 < 247.5 to the right, agree=0.913, adj=0.750, (0 split)
##
## Node number 918: 85 observations,
                                        complexity param=0.0008037867
                        expected loss=0.4823529 P(node) =0.003372347
##
     predicted class=2
##
       class counts:
                        12
                               0
                                    44
                                           0
                                                 1
                                                       1
                                                             1
                                                                   2
                                                                        23
1
      probabilities: 0.141 0.000 0.518 0.000 0.012 0.012 0.012 0.024 0.271
##
0.012
##
     left son=1836 (56 obs) right son=1837 (29 obs)
##
     Primary splits:
##
         654 < 33
                     to the left,
                                   improve=16.81152, (0 missing)
                                   improve=14.56957, (0 missing)
##
         653 < 28.5 to the left,
##
         655 < 20
                     to the left,
                                   improve=14.16532, (0 missing)
##
         348 < 206.5 to the left,
                                   improve=13.32259, (0 missing)
##
         525 < 33.5 to the right, improve=12.24566, (0 missing)
##
     Surrogate splits:
##
         653 < 28.5 to the left,
                                   agree=0.953, adj=0.862, (0 split)
##
         655 < 4.5
                     to the left,
                                   agree=0.953, adj=0.862, (0 split)
##
         652 < 56.5 to the left,
                                   agree=0.906, adj=0.724, (0 split)
##
         656 < 5.5
                     to the left,
                                   agree=0.906, adj=0.724, (0 split)
##
         627 < 180.5 to the left,
                                   agree=0.871, adj=0.621, (0 split)
##
## Node number 919: 124 observations,
                                         complexity param=0.0007591319
##
     predicted class=9
                        expected loss=0.5967742 P(node) =0.004919659
                                                                        11
##
       class counts:
                         2
                               0
                                     9
                                           0
                                                18
                                                       0
                                                                  33
50
##
      probabilities: 0.016 0.000 0.073 0.000 0.145 0.000 0.008 0.266 0.089
0.403
##
     left son=1838 (71 obs) right son=1839 (53 obs)
##
     Primary splits:
##
         458 < 5
                                   improve=13.01018, (0 missing)
                     to the left,
         457 < 5.5
                     to the right, improve=12.63663, (0 missing)
##
##
         429 < 9.5
                     to the left,
                                   improve=12.35484, (0 missing)
##
         681 < 233.5 to the right, improve=11.61812, (0 missing)
                                   improve=11.53778, (0 missing)
##
         709 < 168.5 to the left,
     Surrogate splits:
##
##
         457 < 17.5 to the left,
                                   agree=0.919, adj=0.811, (0 split)
##
         459 < 13.5
                     to the left,
                                   agree=0.895, adj=0.755, (0 split)
##
         429 < 20.5
                                   agree=0.879, adj=0.717, (0 split)
                    to the left,
         456 < 5.5
                                   agree=0.863, adj=0.679, (0 split)
##
                     to the left,
##
         430 < 88.5 to the left,
                                   agree=0.855, adj=0.660, (0 split)
##
## Node number 922: 36 observations,
                                        complexity param=0.0004465482
##
     predicted class=8 expected loss=0.6388889 P(node) =0.001428288
       class counts: 10 0 1 0 0 8
```

```
0
##
      probabilities: 0.278 0.000 0.028 0.000 0.000 0.222 0.111 0.000 0.361
0.000
##
     left son=1844 (14 obs) right son=1845 (22 obs)
##
     Primary splits:
         266 < 251.5 to the right, improve=7.745310, (0 missing)
##
##
                     to the left, improve=7.349206, (0 missing)
                     to the right, improve=6.699182, (0 missing)
##
         382 < 7
                     to the right, improve=6.102778, (0 missing)
##
         293 < 218
##
         354 < 29.5 to the right, improve=5.940115, (0 missing)
##
     Surrogate splits:
         293 < 218
##
                     to the right, agree=0.889, adj=0.714, (0 split)
##
         294 < 223
                     to the right, agree=0.889, adj=0.714, (0 split)
##
         574 < 225
                     to the right, agree=0.889, adj=0.714, (0 split)
##
         295 < 21
                     to the right, agree=0.861, adj=0.643, (0 split)
##
         322 < 3
                     to the right, agree=0.861, adj=0.643, (0 split)
##
## Node number 923: 17 observations
     predicted class=9
##
                        expected loss=0.2352941 P(node) =0.0006744694
##
       class counts:
                         0
                               0
                                     0
                                            0
                                                  2
                                                        1
                                                              1
                                                                    0
                                                                          0
13
      probabilities: 0.000 0.000 0.000 0.118 0.059 0.059 0.000 0.000
##
0.765
##
## Node number 924: 20 observations,
                                        complexity param=0.0001786193
##
     predicted class=5 expected loss=0.45 P(node) =0.0007934934
##
       class counts:
                         4
                                           2
                                                  1
                                                       11
                                                                          0
                               0
                                     0
1
##
      probabilities: 0.200 0.000 0.000 0.100 0.050 0.550 0.000 0.050 0.000
0.050
##
     left son=1848 (8 obs) right son=1849 (12 obs)
##
     Primary splits:
##
         327 < 46.5 to the right, improve=5.716667, (0 missing)
##
         355 < 30.5
                     to the right, improve=5.716667, (0 missing)
                     to the right, improve=5.200000, (0 missing)
##
         382 < 12
##
         435 < 204.5 to the left, improve=4.975824, (0 missing)
                     to the right, improve=4.966667, (0 missing)
         354 < 58
##
##
     Surrogate splits:
##
         355 < 30.5
                    to the right, agree=1.00, adj=1.000, (0 split)
         328 < 26.5 to the right, agree=0.95, adj=0.875, (0 split)
##
         289 < 20
##
                     to the left, agree=0.90, adj=0.750, (0 split)
                     to the right, agree=0.90, adj=0.750, (0 split)
##
         354 < 58
##
         382 < 12
                     to the right, agree=0.90, adj=0.750, (0 split)
##
## Node number 925: 27 observations
##
     predicted class=8
                        expected loss=0.1481481 P(node) =0.001071216
##
       class counts:
                         0
                                     0
                                                        1
                                                              1
                                                                         23
1
##
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.037 0.037 0.037 0.852
0.037
```

```
##
## Node number 926: 33 observations, complexity param=0.000111637
##
     predicted class=8 expected loss=0.5151515 P(node) =0.001309264
       class counts:
                                     4
##
                         1
                               0
                                           1
                                                 0
                                                       1
                                                             1
                                                                         16
3
      probabilities: 0.030 0.000 0.121 0.030 0.000 0.030 0.030 0.182 0.485
##
0.091
##
     left son=1852 (15 obs) right son=1853 (18 obs)
##
     Primary splits:
##
         294 < 13
                     to the right, improve=7.139394, (0 missing)
##
         297 < 238.5 to the right, improve=6.545455, (0 missing)
         265 < 244 to the right, improve=6.103610, (0 missing)
##
##
         241 < 170.5 to the right, improve=5.795804, (0 missing)
##
         293 < 169
                    to the right, improve=5.753930, (0 missing)
##
     Surrogate splits:
##
         293 < 181 to the right, agree=0.939, adj=0.867, (0 split)
         241 < 170.5 to the right, agree=0.879, adj=0.733, (0 split)
##
##
                     to the right, agree=0.879, adj=0.733, (0 split)
         295 < 41.5 to the right, agree=0.879, adj=0.733, (0 split)
##
##
         297 < 238.5 to the right, agree=0.879, adj=0.733, (0 split)
##
## Node number 927: 555 observations
     predicted class=8 expected loss=0.01801802 P(node) =0.02201944
##
##
       class counts:
                         2
                                     0
                                           2
                                                 2
                                                                        545
1
##
      probabilities: 0.004 0.000 0.000 0.004 0.004 0.002 0.004 0.000 0.982
0.002
##
## Node number 928: 24 observations
     predicted class=1 expected loss=0.08333333 P(node) =0.000952192
##
##
       class counts:
                         0
                              22
                                     0
                                           0
                                                 1
                                                       0
                                                             0
                                                                    0
                                                                          1
0
##
      probabilities: 0.000 0.917 0.000 0.000 0.042 0.000 0.000 0.000 0.042
0.000
##
## Node number 929: 8 observations
     predicted class=2 expected loss=0.125 P(node) =0.0003173973
##
##
       class counts:
                         1
                               0
                                     7
                                                 0
                                           0
                                                       0
                                                                          0
0
      probabilities: 0.125 0.000 0.875 0.000 0.000 0.000 0.000 0.000 0.000
##
0.000
##
## Node number 930: 275 observations,
                                         complexity param=0.0001786193
     predicted class=2 expected loss=0.08 P(node) =0.01091053
##
##
       class counts:
                         1
                               3
                                   253
                                           2
                                                 3
                                                                          3
0
##
      probabilities: 0.004 0.011 0.920 0.007 0.011 0.000 0.004 0.033 0.011
0.000
##
     left son=1860 (268 obs) right son=1861 (7 obs)
##
     Primary splits:
```

```
to the left,
                                   improve=7.816926, (0 missing)
##
         681 < 13
##
         348 < 41
                     to the left,
                                   improve=6.281745, (0 missing)
##
         349 < 37.5
                     to the left,
                                   improve=6.281745, (0 missing)
                     to the left,
##
         320 < 35.5
                                   improve=6.132054, (0 missing)
##
         321 < 12.5 to the left,
                                   improve=5.425455, (0 missing)
##
     Surrogate splits:
##
         680 < 11.5
                     to the left,
                                   agree=0.985, adj=0.429, (0 split)
##
         682 < 42.5 to the left,
                                   agree=0.985, adj=0.429, (0 split)
                     to the left,
                                   agree=0.982, adj=0.286, (0 split)
##
         679 < 56
                                   agree=0.982, adj=0.286, (0 split)
##
         708 < 26.5
                     to the left,
##
         709 < 77.5 to the left,
                                   agree=0.982, adj=0.286, (0 split)
##
## Node number 931: 11 observations
##
     predicted class=9
                        expected loss=0.5454545 P(node) =0.0004364213
##
       class counts:
                                                        0
                         0
                               0
                                     0
                                           0
                                                  4
                                                              2
                                                                    0
                                                                          0
5
##
      probabilities: 0.000 0.000 0.000 0.364 0.000 0.182 0.000 0.000
0.455
##
## Node number 936: 27 observations,
                                        complexity param=8.930964e-05
     predicted class=4
                        expected loss=0.2222222 P(node) =0.001071216
##
##
       class counts:
                         0
                               0
                                     1
                                           0
                                                 21
                                                       0
                                                                          0
5
##
      probabilities: 0.000 0.000 0.037 0.000 0.778 0.000 0.000 0.000 0.000
0.185
##
     left son=1872 (18 obs) right son=1873 (9 obs)
##
     Primary splits:
##
         209 < 225.5 to the left,
                                   improve=4.592593, (0 missing)
##
         208 < 72.5 to the left,
                                   improve=3.370370, (0 missing)
##
         185 < 83
                     to the right, improve=3.340067, (0 missing)
##
         406 < 5
                     to the left,
                                   improve=3.058967, (0 missing)
##
         407 < 153.5 to the left,
                                   improve=3.058967, (0 missing)
##
     Surrogate splits:
##
         208 < 40
                     to the left,
                                   agree=0.889, adj=0.667, (0 split)
##
         181 < 37.5 to the left,
                                   agree=0.852, adj=0.556, (0 split)
                                   agree=0.852, adj=0.556, (0 split)
##
         182 < 236
                     to the left,
                                   agree=0.852, adj=0.556, (0 split)
##
         210 < 242.5 to the left,
##
                     to the left,
                                   agree=0.815, adj=0.444, (0 split)
         235 < 237
##
## Node number 937: 21 observations,
                                        complexity param=0.0001339645
##
     predicted class=9
                        expected loss=0.7142857 P(node) =0.000833168
##
       class counts:
                                     4
                                                        1
                                                                          4
6
##
      probabilities: 0.000 0.048 0.190 0.000 0.143 0.048 0.000 0.095 0.190
0.286
##
     left son=1874 (10 obs) right son=1875 (11 obs)
##
     Primary splits:
                     to the left, improve=2.720346, (0 missing)
##
         429 < 5
##
         240 < 81
                     to the right, improve=2.619048, (0 missing)
         599 < 81.5 to the right, improve=2.451465, (0 missing)
##
```

```
627 < 10.5 to the right, improve=2.451465, (0 missing)
##
                     to the right, improve=2.429437, (0 missing)
##
         488 < 86
##
     Surrogate splits:
##
         401 < 45.5 to the left,
                                   agree=0.905, adj=0.8, (0 split)
##
         402 < 2
                     to the left,
                                   agree=0.905, adj=0.8, (0 split)
                     to the left,
                                   agree=0.905, adj=0.8, (0 split)
##
         430 < 11
                                   agree=0.905, adj=0.8, (0 split)
##
         458 < 13.5 to the left,
         457 < 23.5 to the left, agree=0.857, adj=0.7, (0 split)
##
##
## Node number 938: 7 observations
##
     predicted class=2
                        expected loss=0.4285714 P(node) =0.0002777227
                         0
                                                       0
                                                                    2
##
       class counts:
                               0
                                     4
                                           0
                                                 0
                                                             1
                                                                          0
0
##
      probabilities: 0.000 0.000 0.571 0.000 0.000 0.000 0.143 0.286 0.000
0.000
##
## Node number 939: 18 observations
     predicted class=6 expected loss=0
##
                                         P(node) = 0.000714144
##
       class counts:
                         0
                               0
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.000 1.000 0.000 0.000
0.000
##
## Node number 946: 12 observations
                        expected loss=0.1666667 P(node) =0.000476096
     predicted class=4
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                10
                                                       1
                                                                          1
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.833 0.083 0.000 0.000 0.083
0.000
##
## Node number 947: 32 observations,
                                        complexity param=0.0003572385
     predicted class=6
                        expected loss=0.625 P(node) =0.001269589
##
##
       class counts:
                         0
                               1
                                     2
                                           0
                                                 2
                                                       0
                                                             12
                                                                          9
5
##
      probabilities: 0.000 0.031 0.062 0.000 0.062 0.000 0.375 0.031 0.281
0.156
##
     left son=1894 (15 obs) right son=1895 (17 obs)
##
     Primary splits:
##
         494 < 33.5 to the right, improve=6.282843, (0 missing)
         456 < 30.5 to the right, improve=5.583502, (0 missing)
##
##
         484 < 131.5 to the right, improve=5.583502, (0 missing)
                     to the right, improve=5.087121, (0 missing)
##
         415 < 5
##
         442 < 40.5 to the right, improve=5.087121, (0 missing)
##
     Surrogate splits:
         467 < 13
##
                     to the right, agree=0.906, adj=0.800, (0 split)
##
         468 < 3.5
                     to the right, agree=0.906, adj=0.800, (0 split)
##
         495 < 3.5
                     to the right, agree=0.906, adj=0.800, (0 split)
##
         428 < 121.5 to the right, agree=0.875, adj=0.733, (0 split)
##
         455 < 43.5 to the right, agree=0.875, adj=0.733, (0 split)
##
```

```
## Node number 948: 10 observations
##
     predicted class=2 expected loss=0.4 P(node) =0.0003967467
##
       class counts:
                         0
                               0
                                     6
                                           0
                                                 2
                                                       0
                                                             0
                                                                   1
                                                                          1
0
##
      probabilities: 0.000 0.000 0.600 0.000 0.200 0.000 0.000 0.100 0.100
0.000
##
## Node number 949: 10 observations
     predicted class=8
                        expected loss=0.1 P(node) =0.0003967467
##
       class counts:
                         0
                               0
                                     0
                                                 1
                                                                          9
                                           0
                                                       0
0
      probabilities: 0.000 0.000 0.000 0.100 0.000 0.000 0.000 0.900
##
0.000
##
## Node number 954: 18 observations
     predicted class=5 expected loss=0.2777778 P(node) =0.000714144
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                 0
                                                      13
                                                             2
                                                                          2
1
##
      probabilities: 0.000 0.000 0.000 0.000 0.722 0.111 0.000 0.111
0.056
##
## Node number 955: 1485 observations,
                                          complexity param=0.0001786193
     predicted class=6 expected loss=0.02289562 P(node) =0.05891688
##
       class counts:
                         0
                                     4
                                           1
                                                 2
                                                      14 1451
                                                                          7
6
##
      probabilities: 0.000 0.000 0.003 0.001 0.001 0.009 0.977 0.000 0.005
0.004
##
     left son=1910 (1478 obs) right son=1911 (7 obs)
##
     Primary splits:
##
         662 < 2
                                   improve=9.656883, (0 missing)
                     to the left,
##
         651 < 2
                     to the left,
                                   improve=6.903935, (0 missing)
##
         652 < 132.5 to the left,
                                   improve=6.903935, (0 missing)
##
         653 < 122
                     to the left,
                                   improve=6.903935, (0 missing)
##
         624 < 225.5 to the left, improve=4.762589, (0 missing)
##
     Surrogate splits:
##
                                   agree=0.999, adj=0.857, (0 split)
         661 < 3
                     to the left,
         690 < 9.5
                                   agree=0.998, adj=0.571, (0 split)
##
                     to the left,
##
         660 < 1
                     to the left,
                                   agree=0.997, adj=0.429, (0 split)
##
         663 < 30
                     to the left,
                                   agree=0.997, adj=0.429, (0 split)
                                   agree=0.997, adj=0.429, (0 split)
##
         689 < 4
                     to the left,
##
## Node number 956: 58 observations
                        expected loss=0.05172414 P(node) =0.002301131
##
     predicted class=5
##
       class counts:
                         0
                               0
                                     0
                                           2
                                                 0
                                                      55
                                                             0
                                                                   0
                                                                          1
0
##
      probabilities: 0.000 0.000 0.000 0.034 0.000 0.948 0.000 0.000 0.017
0.000
##
## Node number 957: 9 observations
     predicted class=6 expected loss=0.3333333 P(node) =0.000357072
```

```
##
       class counts:
                                                 1 1
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.111 0.111 0.667 0.000 0.111
0.000
##
## Node number 958: 34 observations,
                                        complexity param=0.0001339645
     predicted class=6
                        expected loss=0.2647059 P(node) =0.001348939
##
       class counts:
                         0
                                     0
                                           0
                                                       3
                                                             25
                                                                          4
2
##
      probabilities: 0.000 0.000 0.000 0.000 0.0088 0.735 0.000 0.118
0.059
##
     left son=1916 (27 obs) right son=1917 (7 obs)
##
     Primary splits:
         243 < 11.5 to the left,
##
                                   improve=6.489574, (0 missing)
##
         215 < 195.5 to the left,
                                   improve=4.574230, (0 missing)
##
                     to the left,
                                   improve=3.727669, (0 missing)
         357 < 12
##
         402 < 18.5 to the right, improve=3.653595, (0 missing)
##
         382 < 241.5 to the left,
                                   improve=3.156240, (0 missing)
##
     Surrogate splits:
##
         215 < 215.5 to the left, agree=0.971, adj=0.857, (0 split)
##
         542 < 51
                     to the right, agree=0.941, adj=0.714, (0 split)
##
         599 < 27
                     to the right, agree=0.941, adj=0.714, (0 split)
##
         600 < 45
                     to the right, agree=0.941, adj=0.714, (0 split)
##
         684 < 26
                     to the left, agree=0.941, adj=0.714, (0 split)
##
## Node number 959: 62 observations,
                                        complexity param=0.0003125837
##
     predicted class=8 expected loss=0.4677419 P(node) =0.002459829
                                     2
                                           2
                                                       16
##
       class counts:
                         0
                               0
                                                 0
                                                              6
                                                                    1
                                                                         33
2
      probabilities: 0.000 0.000 0.032 0.032 0.000 0.258 0.097 0.016 0.532
##
0.032
##
     left son=1918 (29 obs) right son=1919 (33 obs)
##
     Primary splits:
##
         354 < 0.5
                     to the left,
                                   improve=8.548522, (0 missing)
                                   improve=8.537137, (0 missing)
##
         355 < 30.5 to the left,
         467 < 5.5
                     to the right, improve=8.294507, (0 missing)
##
##
         488 < 0.5
                     to the left,
                                   improve=7.360993, (0 missing)
##
         466 < 218.5 to the right, improve=6.812832, (0 missing)
##
     Surrogate splits:
         355 < 3.5
                                   agree=0.984, adj=0.966, (0 split)
##
                     to the left,
##
         356 < 1.5
                     to the left,
                                   agree=0.919, adj=0.828, (0 split)
                                   agree=0.903, adj=0.793, (0 split)
##
         382 < 137.5 to the left,
##
         381 < 30
                     to the left,
                                   agree=0.855, adj=0.690, (0 split)
##
                                   agree=0.839, adj=0.655, (0 split)
         383 < 1
                     to the left,
##
## Node number 962: 15 observations
##
     predicted class=3
                        expected loss=0
                                         P(node) =0.00059512
##
       class counts:
                         0
                               0
                                     0
                                          15
                                                 0
                                                       0
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 1.000 0.000 0.000 0.000 0.000 0.000
```

```
0.000
##
## Node number 963: 7 observations
     predicted class=8 expected loss=0.2857143 P(node) =0.0002777227
##
       class counts:
                         0
                               0
                                     2
                                           0
                                                  0
                                                       0
                                                              0
                                                                    0
                                                                          5
0
      probabilities: 0.000 0.000 0.286 0.000 0.000 0.000 0.000 0.001 0.714
0.000
##
## Node number 964: 9 observations
##
     predicted class=3 expected loss=0.5555556 P(node) =0.000357072
##
       class counts:
                         0
                               0
                                     2
                                           4
                                                  0
                                                        3
                                                              0
                                                                          0
0
##
      probabilities: 0.000 0.000 0.222 0.444 0.000 0.333 0.000 0.000 0.000
0.000
##
## Node number 965: 78 observations
     predicted class=5 expected loss=0.03846154 P(node) =0.003094624
##
       class counts:
                         0
                               0
                                     0
                                           1
                                                 0
                                                      75
                                                              1
                                                                          1
0
##
      probabilities: 0.000 0.000 0.000 0.013 0.000 0.962 0.013 0.000 0.013
0.000
##
## Node number 966: 7 observations
     predicted class=4 expected loss=0.4285714 P(node) =0.0002777227
##
       class counts:
                         0
                               0
                                     2
                                           1
                                                 4
                                                       0
                                                                          0
0
      probabilities: 0.000 0.000 0.286 0.143 0.571 0.000 0.000 0.000 0.000
##
0.000
##
## Node number 967: 18 observations
     predicted class=8
                        expected loss=0.1666667
                                                 P(node) = 0.000714144
##
       class counts:
                               0
                                     0
                                           1
                                                  0
                                                       1
                                                              1
                                                                         15
0
      probabilities: 0.000 0.000 0.000 0.056 0.000 0.056 0.056 0.000 0.833
##
0.000
##
## Node number 968: 1344 observations,
                                          complexity param=0.0004018934
##
     predicted class=4 expected loss=0.05208333 P(node) =0.05332275
                                           9 1274
                                                                          5
##
       class counts:
                         0
                               6
                                     8
                                                       2
                                                             14
                                                                   10
16
##
      probabilities: 0.000 0.004 0.006 0.007 0.948 0.001 0.010 0.007 0.004
0.012
##
     left son=1936 (1325 obs) right son=1937 (19 obs)
     Primary splits:
##
##
         295 < 222
                     to the left,
                                   improve=21.51074, (0 missing)
##
         294 < 222.5 to the left,
                                   improve=20.11547, (0 missing)
##
                                   improve=16.49136, (0 missing)
         322 < 47
                     to the left,
##
         95
            < 32
                     to the left,
                                   improve=15.59351, (0 missing)
         96 < 2 to the left, improve=15.59351, (0 missing)
##
```

```
##
     Surrogate splits:
##
         294 < 245.5 to the left,
                                   agree=0.992, adj=0.421, (0 split)
                                   agree=0.992, adj=0.421, (0 split)
##
         322 < 210.5 to the left,
                                   agree=0.987, adj=0.105, (0 split)
##
         323 < 253.5 to the left,
##
         740 < 159
                     to the left,
                                   agree=0.987, adj=0.105, (0 split)
         255 < 222
##
                     to the left,
                                   agree=0.987, adj=0.053, (0 split)
##
## Node number 969: 71 observations,
                                        complexity param=0.0005358578
     predicted class=8
                        expected loss=0.6338028 P(node) =0.002816901
##
       class counts:
                         0
                               0
                                     6
                                           7
                                                 8
                                                      19
                                                             1
                                                                         26
4
      probabilities: 0.000 0.000 0.085 0.099 0.113 0.268 0.014 0.000 0.366
##
0.056
##
     left son=1938 (48 obs) right son=1939 (23 obs)
##
     Primary splits:
##
         516 < 47
                     to the left,
                                   improve=11.28641, (0 missing)
                                   improve=10.56403, (0 missing)
##
         544 < 95.5 to the left,
##
         517 < 20
                     to the left,
                                   improve=10.35095, (0 missing)
##
         572 < 46
                     to the left,
                                   improve=10.16924, (0 missing)
##
         489 < 177.5 to the left,
                                   improve=10.07118, (0 missing)
##
     Surrogate splits:
##
         544 < 131.5 to the left,
                                   agree=0.958, adj=0.870, (0 split)
##
         489 < 177.5 to the left,
                                   agree=0.930, adj=0.783, (0 split)
##
         543 < 16.5 to the left,
                                   agree=0.930, adj=0.783, (0 split)
##
         517 < 28.5
                     to the left,
                                   agree=0.901, adj=0.696, (0 split)
                                   agree=0.887, adj=0.652, (0 split)
##
         515 < 3
                     to the left,
##
## Node number 972: 21 observations
##
     predicted class=5
                        expected loss=0.2380952
                                                 P(node) =0.000833168
##
       class counts:
                         0
                               0
                                     0
                                                 2
                                                       16
                                                                          1
                                           0
2
      probabilities: 0.000 0.000 0.000 0.000 0.095 0.762 0.000 0.000 0.048
##
0.095
##
## Node number 973: 72 observations,
                                        complexity param=0.0006251675
     predicted class=9
                        expected loss=0.4861111 P(node) =0.002856576
##
##
       class counts:
                         0
                                     2
                                           2
                                                22
                                                                          0
37
##
      probabilities: 0.000 0.000 0.028 0.028 0.306 0.056 0.000 0.069 0.000
0.514
##
     left son=1946 (32 obs) right son=1947 (40 obs)
##
     Primary splits:
##
         237 < 23.5 to the left,
                                   improve=12.383330, (0 missing)
                                   improve=10.583330, (0 missing)
##
         238 < 158.5 to the left,
##
         375 < 35.5 to the right, improve= 9.861111, (0 missing)
##
         186 < 4
                     to the right, improve= 8.873974, (0 missing)
##
         263 < 5.5
                     to the left, improve= 8.694444, (0 missing)
##
     Surrogate splits:
##
         238 < 142.5 to the left, agree=0.944, adj=0.875, (0 split)
##
         236 < 2 to the left, agree=0.917, adj=0.812, (0 split)
```

```
263 < 15 to the left, agree=0.861, adj=0.688, (0 split)
##
##
         347 < 137.5 to the right, agree=0.861, adj=0.688, (0 split)
                     to the left, agree=0.847, adj=0.656, (0 split)
##
         265 < 235
##
## Node number 974: 36 observations
##
     predicted class=7
                        expected loss=0.1944444 P(node) =0.001428288
##
       class counts:
                         0
                                            2
                                                  0
                               0
                                     2
                                                        0
                                                                   29
                                                                          2
1
##
      probabilities: 0.000 0.000 0.056 0.056 0.000 0.000 0.000 0.806 0.056
0.028
##
## Node number 975: 11 observations
     predicted class=9 expected loss=0.3636364 P(node) =0.0004364213
##
##
       class counts:
                         0
                               0
                                     3
                                           0
                                                                          0
7
##
      probabilities: 0.000 0.000 0.273 0.000 0.000 0.091 0.000 0.000 0.000
0.636
##
## Node number 976: 494 observations,
                                         complexity param=0.0003572385
     predicted class=5 expected loss=0.1093117 P(node) =0.01959929
       class counts:
                                                  1
                                                     440
                                                                          0
##
                         0
                               0
                                     1
                                          35
                                                                    1
16
      probabilities: 0.000 0.000 0.002 0.071 0.002 0.891 0.000 0.002 0.000
##
0.032
##
     left son=1952 (24 obs) right son=1953 (470 obs)
##
     Primary splits:
##
         322 < 187.5 to the right, improve=16.81794, (0 missing)
##
         217 < 1
                     to the left,
                                   improve=15.29740, (0 missing)
##
         216 < 1.5
                     to the left, improve=15.15130, (0 missing)
##
         188 < 2
                     to the left, improve=14.52128, (0 missing)
##
         263 < 8.5
                     to the left, improve=14.33422, (0 missing)
##
     Surrogate splits:
##
         321 < 252.5 to the right, agree=0.962, adj=0.208, (0 split)
##
         323 < 62.5 to the right, agree=0.957, adj=0.125, (0 split)
##
                     to the right, agree=0.957, adj=0.125, (0 split)
         649 < 245
         203 < 253.5 to the right, agree=0.953, adj=0.042, (0 split)
##
         324 < 117.5 to the right, agree=0.953, adj=0.042, (0 split)
##
##
## Node number 977: 27 observations
##
     predicted class=6 expected loss=0.1111111 P(node) =0.001071216
##
       class counts:
                         0
                               0
                                     0
                                                  0
                                                        2
                                                             24
                                                                          0
1
##
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.074 0.889 0.000 0.000
0.037
##
## Node number 978: 25 observations,
                                        complexity param=0.0002679289
     predicted class=2
                        expected loss=0.48 P(node) =0.0009918667
##
##
                                                                          6
       class counts:
                         3
                               0
                                    13
                                           1
0
##
      probabilities: 0.120 0.000 0.520 0.040 0.000 0.000 0.080 0.000 0.240
```

```
0.000
##
     left son=1956 (18 obs) right son=1957 (7 obs)
##
     Primary splits:
##
         685 < 1.5
                     to the left,
                                   improve=6.636825, (0 missing)
##
         684 < 3
                     to the left,
                                   improve=6.414603, (0 missing)
##
         683 < 8.5
                     to the left,
                                   improve=6.401765, (0 missing)
##
         358 < 61.5 to the left,
                                   improve=6.084156, (0 missing)
         466 < 239
##
                     to the right, improve=5.483590, (0 missing)
##
     Surrogate splits:
##
         436 < 252.5 to the left,
                                   agree=0.96, adj=0.857, (0 split)
                     to the left,
##
         683 < 8.5
                                   agree=0.96, adj=0.857, (0 split)
         684 < 7
                                   agree=0.96, adj=0.857, (0 split)
##
                     to the left,
         232 < 2.5
                     to the left,
                                   agree=0.92, adj=0.714, (0 split)
##
##
         233 < 58
                     to the left,
                                   agree=0.92, adj=0.714, (0 split)
##
## Node number 979: 35 observations,
                                        complexity param=0.0001786193
     predicted class=9
                        expected loss=0.3428571 P(node) =0.001388613
##
       class counts:
                         0
                               0
                                     0
                                            1
                                                  5
                                                        3
                                                              0
                                                                    0
                                                                          3
23
##
      probabilities: 0.000 0.000 0.000 0.029 0.143 0.086 0.000 0.000 0.086
0.657
##
     left son=1958 (11 obs) right son=1959 (24 obs)
##
     Primary splits:
##
         242 < 14.5 to the left, improve=7.424026, (0 missing)
##
         347 < 176.5 to the right, improve=6.867888, (0 missing)
                                   improve=6.508571, (0 missing)
##
         243 < 0.5
                     to the left,
##
         155 < 24
                     to the right, improve=5.841534, (0 missing)
         320 < 144.5 to the right, improve=5.708571, (0 missing)
##
##
     Surrogate splits:
##
         243 < 0.5
                     to the left, agree=0.971, adj=0.909, (0 split)
##
         241 < 2
                     to the left,
                                   agree=0.943, adj=0.818, (0 split)
##
         347 < 221
                     to the right, agree=0.914, adj=0.727, (0 split)
##
         154 < 7
                     to the right, agree=0.857, adj=0.545, (0 split)
##
         213 < 57
                     to the left, agree=0.857, adj=0.545, (0 split)
##
## Node number 980: 71 observations
##
     predicted class=4
                        expected loss=0.07042254 P(node) =0.002816901
##
       class counts:
                         0
                               1
                                     1
                                                 66
                                                        0
                                                                          1
                                            1
                                                              0
1
      probabilities: 0.000 0.014 0.014 0.014 0.930 0.000 0.000 0.000 0.014
##
0.014
##
## Node number 981: 8 observations
##
     predicted class=7
                        expected loss=0.5 P(node) =0.0003173973
##
       class counts:
                         0
                               0
                                                                          0
                                     0
                                            0
2
##
      probabilities: 0.000 0.000 0.000 0.000 0.250 0.000 0.000 0.500 0.000
0.250
##
## Node number 982: 127 observations, complexity param=0.0007144771
```

```
expected loss=0.6141732 P(node) =0.005038683
##
     predicted class=9
##
       class counts:
                                1
                                           16
                                                                           9
                         0
                                      3
                                                 20
                                                        0
                                                              1
                                                                    28
49
##
      probabilities: 0.000 0.008 0.024 0.126 0.157 0.000 0.008 0.220 0.071
0.386
##
     left son=1964 (60 obs) right son=1965 (67 obs)
##
     Primary splits:
                                    improve=14.28025, (0 missing)
##
         373 < 9.5
                     to the left,
##
                                    improve=14.01165, (0 missing)
         345 < 4
                     to the left,
##
         346 < 1
                     to the left,
                                    improve=13.03548, (0 missing)
##
         205 < 46
                     to the right, improve=11.38308, (0 missing)
         318 < 1
                                    improve=11.35079, (0 missing)
##
                     to the left,
##
     Surrogate splits:
##
         345 < 4
                     to the left,
                                   agree=0.929, adj=0.850, (0 split)
##
         401 < 30.5
                     to the left,
                                    agree=0.874, adj=0.733, (0 split)
##
         317 < 1
                     to the left,
                                    agree=0.858, adj=0.700, (0 split)
                                    agree=0.835, adj=0.650, (0 split)
##
         374 < 55
                     to the left,
##
         346 < 1
                     to the left,
                                   agree=0.811, adj=0.600, (0 split)
##
## Node number 983: 21 observations
     predicted class=8
                        expected loss=0.1428571
##
                                                  P(node) = 0.000833168
##
       class counts:
                         0
                               0
                                      1
                                            1
                                                        0
                                                              1
                                                                     0
                                                                          18
0
##
      probabilities: 0.000 0.000 0.048 0.048 0.000 0.000 0.048 0.000 0.857
0.000
##
## Node number 984: 99 observations,
                                         complexity param=0.0002679289
##
     predicted class=3
                        expected loss=0.2323232 P(node) =0.003927792
##
       class counts:
                         1
                                      2
                                           76
                                                  1
                                                                           2
                                0
                                                              0
10
      probabilities: 0.010 0.000 0.020 0.768 0.010 0.071 0.000 0.000 0.020
##
0.101
##
     left son=1968 (77 obs) right son=1969 (22 obs)
##
     Primary splits:
                                    improve=15.06349, (0 missing)
##
         373 < 63
                     to the left,
##
         318 < 22
                     to the left,
                                    improve=13.10780, (0 missing)
         346 < 167.5 to the left,
##
                                    improve=12.38503, (0 missing)
##
         345 < 13
                     to the left,
                                    improve=12.08025, (0 missing)
         319 < 116.5 to the left,
##
                                    improve=11.25532, (0 missing)
##
     Surrogate splits:
##
         345 < 13
                     to the left,
                                   agree=0.949, adj=0.773, (0 split)
                                    agree=0.949, adj=0.773, (0 split)
##
         374 < 209
                     to the left,
##
         346 < 83.5 to the left,
                                    agree=0.919, adj=0.636, (0 split)
         372 < 16
                                    agree=0.909, adj=0.591, (0 split)
##
                     to the left,
                                    agree=0.909, adj=0.591, (0 split)
##
         402 < 251.5 to the left,
##
## Node number 985: 79 observations,
                                         complexity param=0.0009377512
     predicted class=2 expected loss=0.4683544 P(node) =0.003134299
##
##
       class counts:
                         1
                                0
                                     42
                                            6
                                                  0
                                                        1
                                                              3
                                                                     0
                                                                          25
1
```

```
probabilities: 0.013 0.000 0.532 0.076 0.000 0.013 0.038 0.000 0.316
##
0.013
##
     left son=1970 (46 obs) right son=1971 (33 obs)
##
     Primary splits:
##
         465 < 96.5 to the right, improve=20.78167, (0 missing)
                     to the right, improve=19.34563, (0 missing)
##
         521 < 6.5
         492 < 114.5 to the right, improve=18.17561, (0 missing)
##
         379 < 146.5 to the left, improve=17.94013, (0 missing)
##
##
         599 < 126.5 to the right, improve=17.68251, (0 missing)
##
     Surrogate splits:
##
         493 < 41
                     to the right, agree=0.937, adj=0.848, (0 split)
         437 < 121
                     to the right, agree=0.911, adj=0.788, (0 split)
##
         492 < 59.5
##
                     to the right, agree=0.899, adj=0.758, (0 split)
##
         464 < 99
                     to the right, agree=0.886, adj=0.727, (0 split)
##
         520 < 86.5
                     to the right, agree=0.861, adj=0.667, (0 split)
##
## Node number 986: 138 observations,
                                         complexity param=0.0004465482
##
     predicted class=4
                        expected loss=0.3333333 P(node) =0.005475104
##
       class counts:
                         0
                                     5
                                           7
                                                 92
                                                                          5
26
##
      probabilities: 0.000 0.000 0.036 0.051 0.667 0.014 0.007 0.000 0.036
0.188
##
     left son=1972 (90 obs) right son=1973 (48 obs)
##
     Primary splits:
##
         207 < 10
                     to the left,
                                   improve=19.72005, (0 missing)
##
         181 < 126
                     to the left,
                                   improve=18.83848, (0 missing)
##
         180 < 1.5
                     to the left,
                                   improve=18.44868, (0 missing)
         208 < 31
##
                     to the left,
                                   improve=17.91859, (0 missing)
##
         179 < 6
                     to the left,
                                   improve=15.51269, (0 missing)
##
     Surrogate splits:
##
         208 < 88.5 to the left,
                                   agree=0.942, adj=0.833, (0 split)
                                   agree=0.920, adj=0.771, (0 split)
##
         180 < 1.5
                     to the left,
                                   agree=0.913, adj=0.750, (0 split)
##
         179 < 2.5
                     to the left,
                                   agree=0.899, adj=0.708, (0 split)
##
         235 < 109
                     to the left,
##
                                   agree=0.891, adj=0.687, (0 split)
         181 < 152.5 to the left,
##
## Node number 987: 90 observations,
                                        complexity param=0.0004465482
     predicted class=8
                        expected loss=0.5 P(node) =0.00357072
##
       class counts:
##
                         1
                               0
                                     4
                                            9
                                                        2
                                                                    1
                                                                         45
19
##
      probabilities: 0.011 0.000 0.044 0.100 0.100 0.022 0.000 0.011 0.500
0.211
##
     left son=1974 (50 obs) right son=1975 (40 obs)
##
     Primary splits:
##
         544 < 147
                                   improve=17.02444, (0 missing)
                     to the left,
##
         516 < 55
                     to the left,
                                   improve=14.42222, (0 missing)
##
         517 < 192.5 to the left,
                                   improve=12.81599, (0 missing)
##
                                   improve=11.52738, (0 missing)
         543 < 12
                     to the left,
##
         545 < 131
                     to the left,
                                   improve=10.43108, (0 missing)
##
     Surrogate splits:
```

```
to the left,
                                    agree=0.900, adj=0.775, (0 split)
##
         516 < 55
##
         543 < 12
                     to the left,
                                    agree=0.900, adj=0.775, (0 split)
                                    agree=0.878, adj=0.725, (0 split)
##
         572 < 239.5 to the left,
                     to the left,
                                    agree=0.867, adj=0.700, (0 split)
##
         517 < 149
##
         571 < 52
                     to the left,
                                    agree=0.867, adj=0.700, (0 split)
##
## Node number 988: 176 observations,
                                          complexity param=0.0006698223
##
     predicted class=9
                        expected loss=0.6931818 P(node) =0.006982742
##
       class counts:
                         1
                               0
                                     17
                                           51
                                                                    39
                                                                           6
54
##
      probabilities: 0.006 0.000 0.097 0.290 0.045 0.000 0.000 0.222 0.034
0.307
##
     left son=1976 (119 obs) right son=1977 (57 obs)
##
     Primary splits:
##
         342 < 10
                     to the left,
                                    improve=36.80002, (0 missing)
##
         371 < 3
                     to the left,
                                    improve=36.32649, (0 missing)
                                    improve=33.43193, (0 missing)
##
         370 < 2.5
                     to the left,
##
         399 < 5.5
                     to the left,
                                    improve=33.30885, (0 missing)
         315 < 51
##
                     to the left,
                                    improve=32.74784, (0 missing)
##
     Surrogate splits:
##
         371 < 3
                                    agree=0.972, adj=0.912, (0 split)
                     to the left,
         370 < 2.5
##
                     to the left,
                                    agree=0.960, adj=0.877, (0 split)
##
         314 < 5.5
                     to the left,
                                    agree=0.949, adj=0.842, (0 split)
##
         343 < 10
                     to the left,
                                    agree=0.949, adj=0.842, (0 split)
                                    agree=0.938, adj=0.807, (0 split)
##
         315 < 32
                     to the left,
##
## Node number 989: 117 observations,
                                          complexity param=0.0003572385
##
     predicted class=9
                        expected loss=0.2393162 P(node) =0.004641936
##
       class counts:
                         0
                                      0
                                                 15
                                                        1
                                                                     4
                                                                           7
                                0
                                            1
89
##
      probabilities: 0.000 0.000 0.000 0.009 0.128 0.009 0.000 0.034 0.060
0.761
##
     left son=1978 (20 obs) right son=1979 (97 obs)
##
     Primary splits:
##
         428 < 71.5
                     to the right, improve=13.05703, (0 missing)
##
         456 < 1
                     to the right, improve=11.83117, (0 missing)
         213 < 3.5
                                    improve=11.66334, (0 missing)
##
                     to the left,
##
         212 < 83
                     to the left,
                                    improve=11.41880, (0 missing)
                     to the right, improve=10.77495, (0 missing)
##
         427 < 0.5
     Surrogate splits:
##
##
         400 < 12
                     to the right, agree=0.966, adj=0.80, (0 split)
         427 < 0.5
##
                     to the right, agree=0.966, adj=0.80, (0 split)
##
         456 < 2.5
                     to the right, agree=0.949, adj=0.70, (0 split)
         401 < 244.5 to the right, agree=0.940, adj=0.65, (0 split)
##
                     to the right, agree=0.932, adj=0.60, (0 split)
##
         455 < 16
##
## Node number 990: 66 observations,
                                         complexity param=0.0006698223
     predicted class=4
                        expected loss=0.4848485 P(node) =0.002618528
##
##
       class counts:
                         0
                                0
                                      0
                                            0
                                                 34
                                                        0
                                                              0
                                                                     1
                                                                           2
29
```

```
probabilities: 0.000 0.000 0.000 0.515 0.000 0.000 0.015 0.030
##
0.439
##
     left son=1980 (31 obs) right son=1981 (35 obs)
##
     Primary splits:
##
         319 < 195
                     to the right, improve=23.27404, (0 missing)
         206 < 5.5
                                   improve=22.77634, (0 missing)
##
                     to the left,
                                   improve=21.84444, (0 missing)
##
         261 < 29
                     to the left,
         291 < 141.5 to the right, improve=21.32479, (0 missing)
##
##
                     to the left, improve=21.27350, (0 missing)
         234 < 142
##
     Surrogate splits:
##
         292 < 99.5 to the right, agree=0.939, adj=0.871, (0 split)
                     to the right, agree=0.939, adj=0.871, (0 split)
##
         320 < 6
##
         346 < 235.5 to the right, agree=0.939, adj=0.871, (0 split)
##
         347 < 33.5 to the right, agree=0.939, adj=0.871, (0 split)
##
                     to the left, agree=0.924, adj=0.839, (0 split)
         261 < 29
##
## Node number 991: 1086 observations,
                                          complexity param=0.0003125837
##
     predicted class=9 expected loss=0.08655617 P(node) =0.04308669
##
       class counts:
                         0
                                     1
                                          10
                                                 35
                                                        6
                                                                   10
                                                                         32
992
##
      probabilities: 0.000 0.000 0.001 0.009 0.032 0.006 0.000 0.009 0.029
0.913
##
     left son=1982 (72 obs) right son=1983 (1014 obs)
##
     Primary splits:
##
         204 < 10.5 to the right, improve=12.80996, (0 missing)
##
         437 < 2.5
                     to the left, improve=12.02509, (0 missing)
                     to the right, improve=11.64847, (0 missing)
##
         203 < 12
         232 < 132.5 to the right, improve=11.64608, (0 missing)
##
##
         177 < 119
                     to the right, improve=11.10262, (0 missing)
##
     Surrogate splits:
##
         232 < 212.5 to the right, agree=0.977, adj=0.653, (0 split)
##
         205 < 91.5 to the right, agree=0.975, adj=0.625, (0 split)
##
         231 < 16.5
                     to the right, agree=0.969, adj=0.528, (0 split)
##
         203 < 0.5
                     to the right, agree=0.967, adj=0.500, (0 split)
##
         259 < 195
                     to the right, agree=0.966, adj=0.486, (0 split)
##
## Node number 992: 26 observations
     predicted class=3
                        expected loss=0.07692308 P(node) =0.001031541
##
##
       class counts:
                         0
                               0
                                     0
                                          24
                                                  1
                                                       1
                                                              0
                                                                    0
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 0.923 0.038 0.038 0.000 0.000 0.000
0.000
##
## Node number 993: 14 observations
                        expected loss=0.5714286
     predicted class=1
                                                 P(node) = 0.0005554453
##
##
       class counts:
                         1
                               6
                                     0
                                           0
                                                  2
                                                        3
                                                              1
                                                                    0
                                                                          0
1
      probabilities: 0.071 0.429 0.000 0.000 0.143 0.214 0.071 0.000 0.000
##
0.071
##
```

```
## Node number 994: 25 observations, complexity param=0.0002679289
     predicted class=3 expected loss=0.52 P(node) =0.0009918667
##
##
       class counts:
                         0
                               1
                                     2
                                          12
                                                 0
                                                                          1
0
##
      probabilities: 0.000 0.040 0.080 0.480 0.000 0.360 0.000 0.000 0.040
0.000
##
     left son=1988 (16 obs) right son=1989 (9 obs)
##
     Primary splits:
##
         233 < 6
                     to the left,
                                   improve=9.135000, (0 missing)
##
         261 < 11.5 to the left,
                                   improve=8.893333, (0 missing)
##
         234 < 58.5 to the left,
                                   improve=7.357222, (0 missing)
                                   improve=7.305455, (0 missing)
##
         289 < 21
                     to the left,
##
         262 < 83.5 to the left,
                                   improve=6.315556, (0 missing)
##
     Surrogate splits:
##
         261 < 11.5 to the left,
                                   agree=0.96, adj=0.889, (0 split)
##
         234 < 58.5 to the left,
                                   agree=0.92, adj=0.778, (0 split)
##
         262 < 83.5 to the left,
                                   agree=0.92, adj=0.778, (0 split)
                     to the left,
##
         289 < 21
                                   agree=0.92, adj=0.778, (0 split)
##
         205 < 227.5 to the left, agree=0.88, adj=0.667, (0 split)
##
## Node number 995: 110 observations
##
     predicted class=5 expected loss=0.07272727 P(node) =0.004364213
##
       class counts:
                               0
                                     2
                                                     102
                         0
                                           4
                                                 0
                                                             1
                                                                   0
                                                                          0
1
      probabilities: 0.000 0.000 0.018 0.036 0.000 0.927 0.009 0.000 0.000
##
0.009
##
## Node number 996: 18 observations
     predicted class=3
                        expected loss=0.5 P(node) =0.000714144
##
##
       class counts:
                         0
                               5
                                     0
                                           9
                                                 0
                                                       0
                                                                   3
                                                                          0
1
##
      probabilities: 0.000 0.278 0.000 0.500 0.000 0.000 0.000 0.167 0.000
0.056
##
## Node number 997: 28 observations
     predicted class=8 expected loss=0.07142857 P(node) =0.001110891
##
##
       class counts:
                         0
                               0
                                     2
                                                 0
                                                                        26
0
      probabilities: 0.000 0.000 0.071 0.000 0.000 0.000 0.000 0.000 0.929
##
0.000
##
## Node number 998: 32 observations
                        expected loss=0.3125 P(node) =0.001269589
##
     predicted class=4
##
       class counts:
                                                       1
                         0
                               0
                                     1
                                           2
                                                22
                                                                   3
                                                                          0
3
##
      probabilities: 0.000 0.000 0.031 0.062 0.688 0.031 0.000 0.094 0.000
0.094
##
## Node number 999: 60 observations,
                                        complexity param=0.0002232741
     predicted class=9 expected loss=0.2833333 P(node) =0.00238048
```

```
1 6 5 0
##
       class counts: 0
                               0
43
##
      probabilities: 0.000 0.000 0.017 0.100 0.083 0.000 0.000 0.033 0.050
0.717
##
     left son=1998 (7 obs) right son=1999 (53 obs)
##
     Primary splits:
##
         623 < 10
                     to the right, improve=7.237916, (0 missing)
         375 < 20.5 to the left, improve=6.194771, (0 missing)
##
                     to the right, improve=6.194771, (0 missing)
##
##
         567 < 11.5
                   to the right, improve=5.809344, (0 missing)
##
         595 < 33.5 to the right, improve=5.809344, (0 missing)
##
     Surrogate splits:
##
         157 < 96
                     to the right, agree=0.983, adj=0.857, (0 split)
##
         158 < 25
                     to the right, agree=0.983, adj=0.857, (0 split)
         376 < 47.5 to the left, agree=0.967, adj=0.714, (0 split)
##
##
         494 < 248.5 to the right, agree=0.967, adj=0.714, (0 split)
##
         567 < 11.5 to the right, agree=0.967, adj=0.714, (0 split)
##
## Node number 1000: 39 observations
     predicted class=1
                        expected loss=0.02564103 P(node) =0.001547312
##
       class counts:
##
                                                       1
                         0
                              38
                                     0
                                           0
                                                 0
                                                             0
                                                                   0
                                                                          0
0
      probabilities: 0.000 0.974 0.000 0.000 0.000 0.026 0.000 0.000 0.000
##
0.000
##
## Node number 1001: 15 observations
     predicted class=6 expected loss=0.2666667
                                                 P(node) = 0.00059512
##
       class counts:
                         2
                               0
                                     0
                                           1
                                                 0
                                                       1
                                                            11
                                                                          0
0
      probabilities: 0.133 0.000 0.000 0.067 0.000 0.067 0.733 0.000 0.000
##
0.000
##
## Node number 1002: 25 observations
##
     predicted class=2 expected loss=0.12 P(node) =0.0009918667
##
                                                                   2
                                                                          0
       class counts:
                         0
                               1
                                    22
                                           0
                                                 0
                                                       0
0
##
      probabilities: 0.000 0.040 0.880 0.000 0.000 0.000 0.000 0.080 0.000
0.000
##
## Node number 1003: 14 observations
     predicted class=3 expected loss=0.7142857
                                                 P(node) =0.0005554453
##
##
       class counts:
                         2
                               2
                                     2
                                                             1
                                                                          0
0
##
      probabilities: 0.143 0.143 0.143 0.286 0.000 0.000 0.071 0.214 0.000
0.000
##
## Node number 1004: 12 observations
     predicted class=2 expected loss=0.1666667
                                                 P(node) = 0.000476096
##
       class counts:
                         0
                               0
                                    10
                                           2
                                                 0
                                                       0
                                                             0
                                                                   0
                                                                          0
0
```

```
probabilities: 0.000 0.000 0.833 0.167 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 1005: 11 observations
##
     predicted class=6 expected loss=0.5454545 P(node) =0.0004364213
##
       class counts:
                         0
                               3
                                     0
                                           0
                                                 1
                                                       0
                                                              5
                                                                    1
                                                                          1
0
##
      probabilities: 0.000 0.273 0.000 0.000 0.091 0.000 0.455 0.091 0.091
0.000
##
## Node number 1006: 10 observations
     predicted class=1 expected loss=0.2 P(node) =0.0003967467
##
       class counts:
                         2
                               8
                                                                    0
                                                                          0
                                     0
                                           0
                                                       0
                                                              0
0
##
      probabilities: 0.200 0.800 0.000 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 1007: 1327 observations,
                                           complexity param=2.232741e-05
##
     predicted class=7
                        expected loss=0.02411454 P(node) =0.05264828
##
       class counts:
                         0
                               1
                                    11
                                           4
                                                 3
                                                        0
                                                              2 1295
                                                                          0
11
      probabilities: 0.000 0.001 0.008 0.003 0.002 0.000 0.002 0.976 0.000
##
0.008
##
     left son=2014 (13 obs) right son=2015 (1314 obs)
##
     Primary splits:
##
         553 < 6
                     to the right, improve=5.010716, (0 missing)
##
         608 < 40.5 to the right, improve=5.009198, (0 missing)
                     to the right, improve=4.674842, (0 missing)
##
         552 < 87.5
##
         525 < 93
                     to the right, improve=4.285472, (0 missing)
##
         609 < 50
                     to the right, improve=4.220859, (0 missing)
##
     Surrogate splits:
##
         552 < 87.5 to the right, agree=0.998, adj=0.769, (0 split)
##
         581 < 1
                     to the right, agree=0.997, adj=0.692, (0 split)
##
         525 < 18.5
                     to the right, agree=0.996, adj=0.615, (0 split)
##
                     to the right, agree=0.995, adj=0.538, (0 split)
         580 < 161
##
         524 < 146
                     to the right, agree=0.995, adj=0.462, (0 split)
##
## Node number 1008: 11 observations
##
     predicted class=4 expected loss=0.09090909 P(node) =0.0004364213
##
       class counts:
                         1
                               0
                                     0
                                           0
                                                10
0
##
      probabilities: 0.091 0.000 0.000 0.000 0.909 0.000 0.000 0.000 0.000
0.000
##
## Node number 1009: 18 observations
##
     predicted class=2 expected loss=0.5555556 P(node) =0.000714144
##
       class counts:
                         0
                               1
                                     8
                                                 1
                                                        1
                                                              3
                                                                          1
                                           a
2
##
      probabilities: 0.000 0.056 0.444 0.000 0.056 0.056 0.167 0.056 0.056
0.111
```

```
##
## Node number 1010: 96 observations
##
     predicted class=4 expected loss=0.04166667 P(node) =0.003808768
                                          0
                                                92
                         0
                               0
                                                       0
##
       class counts:
                                     0
                                                             3
                                                                   0
                                                                         0
1
      probabilities: 0.000 0.000 0.000 0.000 0.958 0.000 0.031 0.000 0.000
##
0.010
##
## Node number 1011: 7 observations
     predicted class=9 expected loss=0.4285714 P(node) =0.0002777227
##
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                 3
                                                       0
                                                                         0
4
##
      probabilities: 0.000 0.000 0.000 0.429 0.000 0.000 0.000 0.000
0.571
##
## Node number 1016: 8 observations
     predicted class=2 expected loss=0.5 P(node) =0.0003173973
##
       class counts:
                         0
                               0
                                     4
                                           0
                                                       0
                                                             0
                                                                   1
                                                                         0
                                                 1
2
##
      probabilities: 0.000 0.000 0.500 0.000 0.125 0.000 0.000 0.125 0.000
0.250
##
## Node number 1017: 16 observations
     predicted class=7 expected loss=0.0625 P(node) =0.0006347947
##
                                                 1
                                                       0
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                                  15
                                                                         0
0
      probabilities: 0.000 0.000 0.000 0.000 0.062 0.000 0.000 0.937 0.000
##
0.000
##
## Node number 1018: 12 observations
##
     predicted class=4 expected loss=0.25 P(node) =0.000476096
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                 9
                                                                         2
1
      probabilities: 0.000 0.000 0.000 0.750 0.000 0.000 0.006 0.167
##
0.083
##
## Node number 1019: 14 observations
     predicted class=9 expected loss=0.1428571 P(node) =0.0005554453
      class counts:
##
                         0
                               0
                                     0
                                           0
                                                 1
                                                       0
                                                             0
                                                                   0
                                                                         1
12
##
      probabilities: 0.000 0.000 0.000 0.000 0.071 0.000 0.000 0.000 0.071
0.857
##
## Node number 1020: 17 observations
     predicted class=4 expected loss=0.1764706 P(node) =0.0006744694
##
##
      class counts:
                         0
                               0
                                     1
                                           0
                                                14
                                                       0
                                                             0
                                                                   1
                                                                         0
1
      probabilities: 0.000 0.000 0.059 0.000 0.824 0.000 0.000 0.059 0.000
##
0.059
##
```

```
## Node number 1021: 8 observations
                                         P(node) = 0.0003173973
##
     predicted class=9 expected loss=0
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                       0
                                                                   0
                                                                          0
8
##
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
1.000
##
## Node number 1024: 2237 observations,
                                           complexity param=7.44247e-05
     predicted class=1 expected loss=0.01430487 P(node) =0.08875223
##
       class counts:
                         0 2205
                                     1
                                           2
                                                 1
                                                       4
                                                                        14
                                                             4
1
      probabilities: 0.000 0.986 0.000 0.001 0.000 0.002 0.002 0.002 0.006
##
0.000
##
     left son=2048 (2230 obs) right son=2049 (7 obs)
##
     Primary splits:
##
         219 < 22.5 to the left,
                                   improve=4.458432, (0 missing)
##
         493 < 64.5 to the left,
                                   improve=3.891068, (0 missing)
##
         492 < 253.5 to the left,
                                   improve=3.614926, (0 missing)
##
         538 < 5
                     to the left,
                                   improve=3.600392, (0 missing)
##
         539 < 97.5 to the left,
                                   improve=3.600392, (0 missing)
##
     Surrogate splits:
##
         191 < 79
                     to the left,
                                   agree=1.000, adj=0.857, (0 split)
##
         220 < 2
                     to the left,
                                   agree=0.999, adj=0.714, (0 split)
##
         192 < 64
                     to the left.
                                   agree=0.999, adj=0.571, (0 split)
##
         164 < 1.5
                     to the left,
                                   agree=0.998, adj=0.429, (0 split)
##
         190 < 225.5 to the left, agree=0.998, adj=0.429, (0 split)
##
## Node number 1025: 12 observations
##
     predicted class=8 expected loss=0.5833333 P(node) =0.000476096
##
       class counts:
                         0
                               3
                                     1
                                           0
                                                 0
                                                       0
                                                             0
                                                                   3
                                                                          5
a
      probabilities: 0.000 0.250 0.083 0.000 0.000 0.000 0.000 0.250 0.417
##
0.000
##
## Node number 1088: 16 observations
     predicted class=1 expected loss=0.1875 P(node) =0.0006347947
##
##
       class counts:
                              13
                                     1
                                           0
                                                 2
0
      probabilities: 0.000 0.813 0.062 0.000 0.125 0.000 0.000 0.000 0.000
##
0.000
##
## Node number 1089: 9 observations
##
     predicted class=3
                        expected loss=0.4444444
                                                 P(node) = 0.000357072
##
       class counts:
                         0
                                     2
                               0
                                           5
                                                       1
                                                             0
                                                                   1
                                                                          0
0
##
      probabilities: 0.000 0.000 0.222 0.556 0.000 0.111 0.000 0.111 0.000
0.000
##
## Node number 1090: 12 observations
     predicted class=0 expected loss=0.4166667 P(node) =0.000476096
```

```
##
       class counts:
                                     1
                                           1
0
##
      probabilities: 0.583 0.000 0.083 0.083 0.000 0.083 0.167 0.000 0.000
0.000
##
## Node number 1091: 56 observations,
                                         complexity param=0.0001339645
     predicted class=6 expected loss=0.1428571 P(node) =0.002221781
##
       class counts:
                         0
                                     5
                                                        1
                                                                          0
1
##
      probabilities: 0.000 0.000 0.089 0.000 0.018 0.018 0.857 0.000 0.000
0.018
##
     left son=2182 (7 obs) right son=2183 (49 obs)
##
     Primary splits:
##
         95 < 41
                     to the right, improve=5.744898, (0 missing)
##
         122 < 243.5 to the right, improve=5.744898, (0 missing)
##
         123 < 124
                     to the right, improve=5.744898, (0 missing)
##
         150 < 193
                     to the right, improve=5.744898, (0 missing)
##
         151 < 71
                     to the right, improve=5.744898, (0 missing)
##
     Surrogate splits:
##
         94 < 32
                     to the right, agree=0.982, adj=0.857, (0 split)
##
         121 < 117
                     to the right, agree=0.982, adj=0.857, (0 split)
##
         122 < 157
                     to the right, agree=0.982, adj=0.857, (0 split)
##
         123 < 192.5 to the right, agree=0.982, adj=0.857, (0 split)
##
         150 < 134.5 to the right, agree=0.982, adj=0.857, (0 split)
##
## Node number 1092: 13 observations
##
     predicted class=2
                        expected loss=0
                                         P(node) = 0.0005157707
##
       class counts:
                         0
                               0
                                    13
                                            0
                                                 0
                                                        0
                                                                          0
0
      probabilities: 0.000 0.000 1.000 0.000 0.000 0.000 0.000 0.000 0.000
##
0.000
##
## Node number 1093: 54 observations,
                                         complexity param=0.0002456015
##
     predicted class=5
                        expected loss=0.6481481 P(node) =0.002142432
##
                         5
                                                                          5
       class counts:
                               6
                                     8
                                           6
                                                  4
                                                       19
0
##
      probabilities: 0.093 0.111 0.148 0.111 0.074 0.352 0.019 0.000 0.093
0.000
##
     left son=2186 (31 obs) right son=2187 (23 obs)
##
     Primary splits:
##
         458 < 16.5 to the right, improve=7.384448, (0 missing)
##
         459 < 70.5 to the right, improve=7.209402, (0 missing)
##
                     to the right, improve=7.043791, (0 missing)
         431 < 134.5 to the right, improve=5.979118, (0 missing)
##
         430 < 113.5 to the right, improve=5.956678, (0 missing)
##
##
     Surrogate splits:
##
         459 < 27
                     to the right, agree=0.907, adj=0.783, (0 split)
##
         486 < 209.5 to the right, agree=0.889, adj=0.739, (0 split)
##
         457 < 11
                     to the right, agree=0.870, adj=0.696, (0 split)
##
         460 < 40.5 to the right, agree=0.833, adj=0.609, (0 split)
```

```
485 < 171.5 to the right, agree=0.833, adj=0.609, (0 split)
##
##
## Node number 1094: 22 observations
     predicted class=4 expected loss=0.09090909 P(node) =0.0008728427
##
       class counts:
                         a
                               0
                                     0
                                            1
                                                 20
                                                        0
                                                              0
                                                                    1
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 0.045 0.909 0.000 0.000 0.045 0.000
0.000
##
## Node number 1095: 70 observations,
                                         complexity param=0.0003125837
     predicted class=9
##
                        expected loss=0.5857143 P(node) =0.002777227
                                                        2
                                                                          1
##
       class counts:
                         0
                              14
                                     1
                                            1
                                                 13
                                                              3
                                                                    6
29
##
      probabilities: 0.000 0.200 0.014 0.014 0.186 0.029 0.043 0.086 0.014
0.414
##
     left son=2190 (37 obs) right son=2191 (33 obs)
##
     Primary splits:
##
         381 < 210.5 to the left,
                                   improve=7.800889, (0 missing)
                     to the right, improve=7.766667, (0 missing)
##
         321 < 230
##
         237 < 75
                     to the left, improve=7.444655, (0 missing)
##
         322 < 217
                     to the right, improve=7.150018, (0 missing)
##
         681 < 72
                     to the left,
                                   improve=7.022782, (0 missing)
##
     Surrogate splits:
##
         353 < 249.5 to the left,
                                   agree=0.900, adj=0.788, (0 split)
##
         354 < 109
                     to the left, agree=0.886, adj=0.758, (0 split)
         382 < 15.5 to the left, agree=0.871, adj=0.727, (0 split)
##
##
                                   agree=0.857, adj=0.697, (0 split)
         326 < 129.5 to the left,
                                   agree=0.843, adj=0.667, (0 split)
##
         408 < 230
                     to the left,
##
## Node number 1110: 7 observations
##
     predicted class=5
                        expected loss=0.1428571 P(node) =0.0002777227
##
       class counts:
                                     0
                                            1
0
      probabilities: 0.000 0.000 0.000 0.143 0.000 0.857 0.000 0.000 0.000
##
0.000
##
## Node number 1111: 21 observations,
                                         complexity param=0.0001786193
                        expected loss=0.6190476 P(node) =0.000833168
##
     predicted class=8
##
       class counts:
                         2
                               1
                                     0
                                            2
                                                  1
                                                        0
                                                              2
                                                                    0
                                                                          8
5
##
      probabilities: 0.095 0.048 0.000 0.095 0.048 0.000 0.095 0.000 0.381
0.238
##
     left son=2222 (10 obs) right son=2223 (11 obs)
##
     Primary splits:
##
         653 < 111.5 to the right, improve=3.477056, (0 missing)
##
         625 < 80
                     to the right, improve=3.383700, (0 missing)
##
         487 < 134
                     to the right, improve=3.373016, (0 missing)
##
                     to the right, improve=3.095238, (0 missing)
         330 < 2.5
##
         566 < 79.5 to the right, improve=3.095238, (0 missing)
##
     Surrogate splits:
```

```
to the right, agree=0.952, adj=0.9, (0 split)
##
         623 < 19
##
         624 < 189
                     to the right, agree=0.952, adj=0.9, (0 split)
         625 < 151.5 to the right, agree=0.952, adj=0.9, (0 split)
##
                     to the right, agree=0.952, adj=0.9, (0 split)
##
         651 < 0.5
##
         652 < 53
                     to the right, agree=0.952, adj=0.9, (0 split)
##
## Node number 1112: 19 observations
##
     predicted class=3 expected loss=0.3157895 P(node) =0.0007538187
       class counts:
                                                 2
##
                         0
                               1
                                     1
                                          13
                                                       1
                                                                          0
1
##
      probabilities: 0.000 0.053 0.053 0.684 0.105 0.053 0.000 0.000 0.000
0.053
##
## Node number 1113: 18 observations
     predicted class=8 expected loss=0.3333333 P(node) =0.000714144
##
       class counts:
                         1
                                     0
                                                 3
                                                                         12
                                           0
                                                       1
                                                              0
0
##
      probabilities: 0.056 0.000 0.000 0.000 0.167 0.056 0.000 0.056 0.667
0.000
##
## Node number 1114: 8 observations
     predicted class=4 expected loss=0.5 P(node) =0.0003173973
##
       class counts:
                               0
                                     0
                                           1
                         0
                                                 4
                                                       0
                                                              0
                                                                          3
0
      probabilities: 0.000 0.000 0.000 0.125 0.500 0.000 0.000 0.000 0.375
##
0.000
##
## Node number 1115: 79 observations
     predicted class=8 expected loss=0.06329114 P(node) =0.003134299
##
##
       class counts:
                         0
                               2
                                     0
                                           1
                                                 0
                                                       1
                                                              0
                                                                         74
1
      probabilities: 0.000 0.025 0.000 0.013 0.000 0.013 0.000 0.000 0.937
##
0.013
##
## Node number 1172: 16 observations
     predicted class=2 expected loss=0.3125 P(node) =0.0006347947
##
##
       class counts:
                         0
                               0
                                    11
                                           1
                                                              3
0
      probabilities: 0.000 0.000 0.688 0.062 0.000 0.000 0.188 0.062 0.000
##
0.000
##
## Node number 1173: 8 observations
     predicted class=8 expected loss=0.25 P(node) =0.0003173973
##
       class counts:
                                                                          6
                         0
                               0
                                     2
                                           0
                                                 0
                                                       0
                                                              0
                                                                    0
0
##
      probabilities: 0.000 0.000 0.250 0.000 0.000 0.000 0.000 0.000 0.750
0.000
##
## Node number 1224: 24 observations
     predicted class=2 expected loss=0.04166667 P(node) =0.000952192
```

```
class counts: 0 0
                                   23 0 0 0 0 0
##
0
##
      probabilities: 0.000 0.000 0.958 0.000 0.000 0.000 0.000 0.000 0.042
0.000
##
## Node number 1225: 10 observations
     predicted class=3 expected loss=0.2 P(node) =0.0003967467
##
       class counts:
                        0
                              1
                                    1
                                          8
                                                0
                                                                        0
0
##
      probabilities: 0.000 0.100 0.100 0.800 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 1248: 14 observations
##
     predicted class=1 expected loss=0.07142857 P(node) =0.0005554453
##
                             13
                                                      0
       class counts:
                         0
                                    0
                                          0
                                                0
                                                            0
                                                                  0
                                                                        1
0
##
      probabilities: 0.000 0.929 0.000 0.000 0.000 0.000 0.000 0.001
0.000
##
## Node number 1249: 12 observations
     predicted class=8 expected loss=0.3333333 P(node) =0.000476096
##
##
       class counts:
                        0
                              0
                                    0
                                          3
                                                      1
                                                            0
                                                                        8
0
##
      probabilities: 0.000 0.000 0.000 0.250 0.000 0.083 0.000 0.000 0.667
0.000
##
## Node number 1276: 13 observations
##
     predicted class=4
                       expected loss=0.5384615 P(node) =0.0005157707
##
       class counts:
                              0
                                                            1
                                                                        2
                        0
                                    0
                                          1
                                                6
                                                      а
                                                                  1
2
##
      probabilities: 0.000 0.000 0.000 0.077 0.462 0.000 0.077 0.077 0.154
0.154
##
## Node number 1277: 23 observations
     predicted class=8 expected loss=0.1304348 P(node) =0.0009125174
##
      class counts:
                        0
                              0
                                                1
                                                      1
                                                                  0
                                                                       20
                                    0
                                          1
                                                            0
0
##
      probabilities: 0.000 0.000 0.000 0.043 0.043 0.043 0.000 0.000 0.870
0.000
##
## Node number 1288: 1360 observations, complexity param=0.0002456015
##
     predicted class=3 expected loss=0.02058824 P(node) =0.05395755
##
       class counts:
                        0
                              2
                                    8 1332
                                                     13
                                                                        5
0
      probabilities: 0.000 0.001 0.006 0.979 0.000 0.010 0.000 0.000 0.004
##
0.000
##
     left son=2576 (1350 obs) right son=2577 (10 obs)
##
     Primary splits:
##
        341 < 70
                    to the left, improve=12.981990, (0 missing)
##
        342 < 147.5 to the left, improve=11.016070, (0 missing)
```

```
improve=10.020510, (0 missing)
##
         313 < 154
                     to the left,
##
         369 < 98
                     to the left,
                                   improve= 8.555135, (0 missing)
##
         314 < 160.5 to the left,
                                   improve= 8.256068, (0 missing)
##
     Surrogate splits:
##
         313 < 154
                     to the left,
                                   agree=0.999, adj=0.8, (0 split)
##
         369 < 98
                     to the left,
                                   agree=0.998, adj=0.7, (0 split)
         314 < 160.5 to the left,
                                   agree=0.997, adj=0.6, (0 split)
##
                                   agree=0.997, adj=0.6, (0 split)
##
         342 < 147.5 to the left,
##
         340 < 5
                     to the left,
                                   agree=0.996, adj=0.5, (0 split)
##
## Node number 1289: 10 observations
##
     predicted class=8 expected loss=0.3 P(node) =0.0003967467
##
       class counts:
                         0
                               0
                                     2
                                                        1
                                                              0
                                                                    0
                                                                          7
                                            0
0
##
      probabilities: 0.000 0.000 0.200 0.000 0.000 0.100 0.000 0.000 0.700
0.000
##
## Node number 1290: 16 observations
##
     predicted class=5
                        expected loss=0.4375 P(node) =0.0006347947
##
       class counts:
                         0
                               0
                                     0
                                            4
                                                  0
                                                        9
                                                              0
                                                                          3
0
      probabilities: 0.000 0.000 0.000 0.250 0.000 0.562 0.000 0.000 0.188
##
0.000
##
## Node number 1291: 7 observations
##
     predicted class=9 expected loss=0.2857143 P(node) =0.0002777227
##
       class counts:
                         0
                               0
                                                        0
                                                                          1
                                     0
                                           1
5
##
      probabilities: 0.000 0.000 0.000 0.143 0.000 0.000 0.000 0.000 0.143
0.714
##
## Node number 1294: 12 observations
##
     predicted class=1
                        expected loss=0.5 P(node) =0.000476096
##
       class counts:
                         0
                               6
                                     0
                                            4
                                                              0
                                                                    1
                                                                          1
0
##
      probabilities: 0.000 0.500 0.000 0.333 0.000 0.000 0.000 0.083 0.083
0.000
##
## Node number 1295: 17 observations
##
     predicted class=5 expected loss=0.1176471 P(node) =0.0006744694
##
       class counts:
                         0
                               0
                                     0
                                            0
                                                       15
                                                              0
                                                                          2
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.882 0.000 0.000 0.118
0.000
##
## Node number 1316: 7 observations
     predicted class=1
                        expected loss=0.5714286 P(node) =0.0002777227
##
##
       class counts:
                         0
                               3
                                     1
                                            0
                                                  0
                                                        1
                                                              2
                                                                          0
0
##
      probabilities: 0.000 0.429 0.143 0.000 0.000 0.143 0.286 0.000 0.000
```

```
0.000
##
## Node number 1317: 22 observations
     predicted class=3 expected loss=0.09090909 P(node) =0.0008728427
##
       class counts:
                         0
                               0
                                     0
                                          20
                                                 0
                                                       1
                                                             1
                                                                         0
0
      probabilities: 0.000 0.000 0.000 0.909 0.000 0.045 0.045 0.000 0.000
0.000
##
## Node number 1318: 7 observations
##
     predicted class=0 expected loss=0.2857143 P(node) =0.0002777227
                         5
                                                       0
##
       class counts:
                               0
                                     0
                                           1
                                                 0
                                                             0
                                                                   1
                                                                         0
0
##
      probabilities: 0.714 0.000 0.000 0.143 0.000 0.000 0.000 0.143 0.000
0.000
##
## Node number 1319: 23 observations
     predicted class=5 expected loss=0.173913 P(node) =0.0009125174
##
       class counts:
                         0
                               0
                                     0
                                           1
                                                 0
                                                      19
                                                                         1
0
##
      probabilities: 0.000 0.000 0.000 0.043 0.000 0.826 0.000 0.087 0.043
0.000
##
## Node number 1324: 22 observations
     predicted class=3 expected loss=0.2272727 P(node) =0.0008728427
##
       class counts:
                         0
                               0
                                     0
                                          17
                                                 0
                                                       0
                                                             2
                                                                         2
1
      probabilities: 0.000 0.000 0.000 0.773 0.000 0.000 0.091 0.000 0.091
##
0.045
##
## Node number 1325: 8 observations
     predicted class=5 expected loss=0.375 P(node) =0.0003173973
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                 0
                                                       5
2
      probabilities: 0.000 0.000 0.000 0.000 0.625 0.000 0.125 0.000
##
0.250
##
## Node number 1326: 8 observations
##
     predicted class=3 expected loss=0.25 P(node) =0.0003173973
##
       class counts:
                         0
                               0
                                     0
                                           6
                                                 0
                                                       1
0
##
      probabilities: 0.000 0.000 0.000 0.750 0.000 0.125 0.000 0.000 0.125
0.000
##
## Node number 1327: 93 observations
     predicted class=5 expected loss=0.04301075 P(node) =0.003689744
##
##
       class counts:
                         0
                               0
                                     0
                                           2
                                                 0
                                                      89
                                                             1
                                                                         1
0
##
      probabilities: 0.000 0.000 0.000 0.022 0.000 0.957 0.011 0.000 0.011
0.000
```

```
##
## Node number 1338: 7 observations
##
     predicted class=3 expected loss=0.4285714 P(node) =0.0002777227
       class counts:
                               0
##
                         0
                                     0
                                           4
                                                  0
                                                        2
                                                              0
                                                                    0
                                                                          1
0
      probabilities: 0.000 0.000 0.000 0.571 0.000 0.286 0.000 0.000 0.143
##
0.000
##
## Node number 1339: 44 observations
##
     predicted class=5
                        expected loss=0.06818182 P(node) =0.001745685
##
       class counts:
                         0
                               0
                                     1
                                                 0
                                                       41
                                                              1
                                                                          0
                                            0
0
##
      probabilities: 0.000 0.000 0.023 0.000 0.000 0.932 0.023 0.023 0.000
0.000
##
## Node number 1340: 23 observations
     predicted class=4
                        expected loss=0.04347826 P(node) =0.0009125174
##
       class counts:
                         0
                               0
                                                 22
                                                        0
                                                                    1
                                                                          0
                                     0
                                           0
                                                              0
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.957 0.000 0.000 0.043 0.000
0.000
##
## Node number 1341: 20 observations,
                                         complexity param=0.0002456015
     predicted class=7
                        expected loss=0.55 P(node) =0.0007934934
##
##
       class counts:
                                                                    9
                                                                          0
                         0
                               0
                                     0
                                            6
                                                 4
                                                              1
0
##
      probabilities: 0.000 0.000 0.000 0.300 0.200 0.000 0.050 0.450 0.000
0.000
##
     left son=2682 (11 obs) right son=2683 (9 obs)
##
     Primary splits:
##
         345 < 12
                     to the left,
                                   improve=7.118182, (0 missing)
##
         346 < 93
                     to the left,
                                   improve=6.700000, (0 missing)
##
         183 < 18
                     to the right, improve=6.047253, (0 missing)
                                   improve=5.800000, (0 missing)
##
         327 < 13.5
                     to the left,
##
         328 < 2.5
                     to the left,
                                   improve=5.800000, (0 missing)
##
     Surrogate splits:
         327 < 13.5 to the left,
##
                                   agree=0.95, adj=0.889, (0 split)
##
         328 < 2.5
                     to the left,
                                   agree=0.95, adj=0.889, (0 split)
##
         343 < 18
                     to the left,
                                   agree=0.95, adj=0.889, (0 split)
         344 < 42.5 to the left,
                                   agree=0.95, adj=0.889, (0 split)
##
##
         346 < 93
                     to the left, agree=0.95, adj=0.889, (0 split)
##
## Node number 1342: 27 observations,
                                         complexity param=0.0002232741
     predicted class=1 expected loss=0.7407407 P(node) =0.001071216
##
##
       class counts:
                         0
                               7
                                     0
                                           3
                                                                          4
0
##
      probabilities: 0.000 0.259 0.000 0.111 0.074 0.185 0.222 0.000 0.148
0.000
##
     left son=2684 (13 obs) right son=2685 (14 obs)
##
     Primary splits:
```

```
to the right, improve=4.016687, (0 missing)
##
         154 < 20
##
         521 < 3.5
                     to the left,
                                   improve=4.016687, (0 missing)
##
         214 < 19.5
                     to the left,
                                   improve=3.962963, (0 missing)
         465 < 3
                     to the left,
                                   improve=3.862841, (0 missing)
##
##
         572 < 142
                     to the left,
                                   improve=3.806397, (0 missing)
##
     Surrogate splits:
##
         465 < 3
                     to the left, agree=0.926, adj=0.846, (0 split)
         182 < 97.5 to the right, agree=0.889, adj=0.769, (0 split)
##
                                   agree=0.889, adj=0.769, (0 split)
##
         437 < 11
                     to the left,
                                   agree=0.852, adj=0.692, (0 split)
##
         493 < 17
                     to the left,
         155 < 75
##
                     to the right, agree=0.815, adj=0.615, (0 split)
##
## Node number 1343: 43 observations,
                                         complexity param=0.0001562919
     predicted class=9 expected loss=0.2790698 P(node) =0.001706011
##
##
       class counts:
                         0
                                            7
                                                  2
                                                        0
                                                                          2
                                                                    1
31
##
      probabilities: 0.000 0.000 0.000 0.163 0.047 0.000 0.000 0.023 0.047
0.721
##
     left son=2686 (22 obs) right son=2687 (21 obs)
##
     Primary splits:
         288 < 117
                                   improve=4.484144, (0 missing)
##
                     to the left,
##
         289 < 9
                     to the left,
                                    improve=4.084934, (0 missing)
##
         263 < 103
                     to the right, improve=3.881813, (0 missing)
##
         316 < 1.5
                     to the left,
                                   improve=3.774187, (0 missing)
                                   improve=3.774187, (0 missing)
##
         345 < 23.5 to the left,
##
     Surrogate splits:
##
         289 < 9
                     to the left,
                                   agree=0.977, adj=0.952, (0 split)
         316 < 1.5
                                   agree=0.977, adj=0.952, (0 split)
##
                     to the left,
##
         261 < 133.5 to the left,
                                   agree=0.953, adj=0.905, (0 split)
##
         208 < 178.5 to the left,
                                   agree=0.907, adj=0.810, (0 split)
##
         260 < 21.5 to the left,
                                   agree=0.907, adj=0.810, (0 split)
##
## Node number 1352: 94 observations
##
     predicted class=3
                        expected loss=0.106383
                                                 P(node) = 0.003729419
##
                         0
       class counts:
                               0
                                     0
                                           84
                                                  0
                                                        3
                                                                          1
6
##
      probabilities: 0.000 0.000 0.000 0.894 0.000 0.032 0.000 0.000 0.011
0.064
##
## Node number 1353: 7 observations
##
     predicted class=8
                        expected loss=0.2857143
                                                 P(node) = 0.0002777227
##
       class counts:
                                            2
                                                                          5
0
##
      probabilities: 0.000 0.000 0.000 0.286 0.000 0.000 0.000 0.000 0.714
0.000
##
## Node number 1356: 32 observations
     predicted class=3 expected loss=0.03125
                                               P(node) = 0.001269589
##
       class counts:
                         0
                               0
                                           31
                                                  0
                                                        1
                                                              0
                                                                    0
                                                                          0
0
```

```
probabilities: 0.000 0.000 0.000 0.969 0.000 0.031 0.000 0.000 0.000
0.000
##
## Node number 1357: 8 observations
##
     predicted class=5
                        expected loss=0.375 P(node) =0.0003173973
##
       class counts:
                         0
                               0
                                     0
                                            1
                                                  0
                                                        5
                                                                          2
0
      probabilities: 0.000 0.000 0.000 0.125 0.000 0.625 0.000 0.000 0.250
##
0.000
##
## Node number 1358: 102 observations,
                                          complexity param=0.0004465482
                        expected loss=0.4803922 P(node) =0.004046816
     predicted class=5
##
       class counts:
                         5
                               1
                                     1
                                          25
                                                  0
                                                       53
                                                              2
                                                                          3
                                                                    3
9
##
      probabilities: 0.049 0.010 0.010 0.245 0.000 0.520 0.020 0.029 0.029
0.088
##
     left son=2716 (25 obs) right son=2717 (77 obs)
##
     Primary splits:
         125 < 40.5 to the right, improve=8.196486, (0 missing)
##
##
         535 < 1.5
                     to the right, improve=7.889258, (0 missing)
         124 < 62.5 to the right, improve=7.225490, (0 missing)
##
                     to the left, improve=7.091031, (0 missing)
##
         247 < 16.5
##
         263 < 52.5 to the left, improve=6.857765, (0 missing)
##
     Surrogate splits:
##
         124 < 0.5
                     to the right, agree=0.961, adj=0.84, (0 split)
##
         126 < 40
                     to the right, agree=0.922, adj=0.68, (0 split)
##
                     to the right, agree=0.902, adj=0.60, (0 split)
         123 < 8.5
         153 < 222
                     to the right, agree=0.892, adj=0.56, (0 split)
##
##
         127 < 163.5 to the right, agree=0.882, adj=0.52, (0 split)
##
## Node number 1359: 38 observations,
                                         complexity param=0.0003572385
##
     predicted class=8
                        expected loss=0.5789474 P(node) =0.001507637
##
       class counts:
                         0
                               0
                                     0
                                            2
                                                        6
                                                              0
                                                                         16
14
##
      probabilities: 0.000 0.000 0.000 0.053 0.000 0.158 0.000 0.000 0.421
0.368
##
     left son=2718 (30 obs) right son=2719 (8 obs)
##
     Primary splits:
##
         545 < 45.5 to the left,
                                   improve=6.119298, (0 missing)
##
         546 < 170
                     to the left,
                                   improve=6.119298, (0 missing)
##
         157 < 11
                     to the left,
                                   improve=5.778785, (0 missing)
         156 < 77.5
##
                     to the left,
                                   improve=5.692632, (0 missing)
                     to the left,
##
         431 < 13
                                   improve=5.684211, (0 missing)
##
     Surrogate splits:
                     to the left,
##
         546 < 170
                                   agree=1.000, adj=1.000, (0 split)
##
         490 < 41
                     to the left,
                                   agree=0.974, adj=0.875, (0 split)
##
         518 < 32
                     to the left,
                                   agree=0.974, adj=0.875, (0 split)
##
                                   agree=0.974, adj=0.875, (0 split)
         573 < 186
                     to the left,
##
         464 < 247.5 to the left,
                                   agree=0.947, adj=0.750, (0 split)
##
```

```
## Node number 1374: 37 observations,
                                         complexity param=0.0001488494
                        expected loss=0.3513514 P(node) =0.001467963
##
     predicted class=5
##
       class counts:
                         0
                               0
                                     0
                                          12
                                                      24
                                                                         0
0
##
      probabilities: 0.000 0.000 0.000 0.324 0.000 0.649 0.027 0.000 0.000
0.000
##
     left son=2748 (20 obs) right son=2749 (17 obs)
##
     Primary splits:
##
         293 < 176
                     to the right, improve=7.213514, (0 missing)
         265 < 162.5 to the right, improve=6.465894, (0 missing)
##
##
         267 < 113.5 to the right, improve=6.407923, (0 missing)
         238 < 40.5 to the right, improve=5.786241, (0 missing)
##
##
         239 < 36
                     to the right, improve=5.786241, (0 missing)
##
     Surrogate splits:
##
         292 < 128
                     to the right, agree=0.892, adj=0.765, (0 split)
##
         320 < 202
                     to the right, agree=0.892, adj=0.765, (0 split)
##
         239 < 148
                     to the right, agree=0.865, adj=0.706, (0 split)
##
         264 < 3.5
                     to the right, agree=0.865, adj=0.706, (0 split)
         265 < 162.5 to the right, agree=0.865, adj=0.706, (0 split)
##
##
## Node number 1375: 385 observations,
                                          complexity param=4.465482e-05
##
     predicted class=5 expected loss=0.03116883 P(node) =0.01527475
##
       class counts:
                         0
                               0
                                           3
                                                     373
                                                 0
                                                                         3
2
      probabilities: 0.000 0.000 0.000 0.008 0.000 0.969 0.010 0.000 0.008
##
0.005
##
     left son=2750 (378 obs) right son=2751 (7 obs)
##
     Primary splits:
##
         299 < 67
                                   improve=5.151611, (0 missing)
                     to the left,
##
         298 < 14.5
                    to the left,
                                   improve=3.524606, (0 missing)
##
         300 < 6
                     to the left,
                                   improve=3.524606, (0 missing)
##
         484 < 252
                     to the left,
                                   improve=3.172775, (0 missing)
##
         456 < 253.5 to the left,
                                   improve=3.005389, (0 missing)
##
     Surrogate splits:
##
         300 < 58.5 to the left,
                                   agree=0.997, adj=0.857, (0 split)
         271 < 253.5 to the left,
                                   agree=0.992, adj=0.571, (0 split)
##
                                   agree=0.990, adj=0.429, (0 split)
##
         272 < 252.5 to the left,
##
         298 < 14.5 to the left,
                                   agree=0.987, adj=0.286, (0 split)
##
         327 < 253
                     to the left,
                                   agree=0.987, adj=0.286, (0 split)
##
## Node number 1398: 17 observations
##
     predicted class=4
                        expected loss=0.6470588
                                                 P(node) =0.0006744694
##
       class counts:
                               2
                                           2
                                                 6
                                                       1
                                                                         2
3
      probabilities: 0.000 0.118 0.000 0.118 0.353 0.059 0.000 0.059 0.118
##
0.176
## Node number 1399: 11 observations
     predicted class=9 expected loss=0 P(node) =0.0004364213
       class counts: 0 0 0 0 0
```

```
11
##
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
1.000
##
## Node number 1406: 16 observations
     predicted class=7 expected loss=0.5 P(node) =0.0006347947
##
##
       class counts:
                         1
                               0
                                     0
                                           0
                                                 0
                                                                         0
                                                       1
                                                             0
                                                                   8
6
      probabilities: 0.062 0.000 0.000 0.000 0.000 0.062 0.000 0.500 0.000
##
0.375
##
## Node number 1407: 222 observations
     predicted class=9 expected loss=0.06306306 P(node) =0.008807776
##
       class counts:
                         0
                               0
                                     0
                                           4
                                                 8
208
##
      probabilities: 0.000 0.000 0.000 0.018 0.036 0.000 0.000 0.009 0.000
0.937
##
## Node number 1426: 17 observations
     predicted class=4 expected loss=0.5294118 P(node) =0.0006744694
##
      class counts:
                         0
                               1
                                                 8
                                                       0
                                     0
                                           0
                                                             6
                                                                         1
1
##
      probabilities: 0.000 0.059 0.000 0.000 0.471 0.000 0.353 0.000 0.059
0.059
##
## Node number 1427: 8 observations
     predicted class=5 expected loss=0.125 P(node) =0.0003173973
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                 0
                                                       7
                                                                         1
0
      probabilities: 0.000 0.000 0.000 0.000 0.875 0.000 0.000 0.125
##
0.000
##
## Node number 1430: 16 observations
     predicted class=2 expected loss=0.3125 P(node) =0.0006347947
##
                         0
                                                 1
                                                       0
                                                                         1
       class counts:
                               0
                                    11
                                           1
                                                             1
1
      probabilities: 0.000 0.000 0.688 0.062 0.062 0.000 0.062 0.000 0.062
##
0.062
##
## Node number 1431: 19 observations
     predicted class=8 expected loss=0.3157895 P(node) =0.0007538187
##
       class counts:
                         1
                                     1
                                           2
                                                             1
                                                                        13
1
##
      probabilities: 0.053 0.000 0.053 0.105 0.000 0.000 0.053 0.000 0.684
0.053
##
## Node number 1528: 17 observations
     predicted class=2 expected loss=0.05882353 P(node) =0.0006744694
##
       class counts:
                         0
                                    16
                                           0
                                                 0
                                                       0
                                                             1
                                                                   0
                                                                         0
0
```

```
probabilities: 0.000 0.000 0.941 0.000 0.000 0.000 0.059 0.000 0.000
0.000
##
## Node number 1529: 7 observations
##
     predicted class=8
                        expected loss=0.2857143 P(node) =0.0002777227
##
       class counts:
                         0
                               0
                                     1
                                           1
                                                       0
                                                                          5
0
      probabilities: 0.000 0.000 0.143 0.143 0.000 0.000 0.000 0.000 0.714
##
0.000
##
## Node number 1532: 11 observations
     predicted class=3 expected loss=0.1818182 P(node) =0.0004364213
##
       class counts:
                         0
                               0
                                                       0
                                                                          1
                                     0
                                           9
                                                              1
                                                                    0
0
##
      probabilities: 0.000 0.000 0.000 0.818 0.000 0.000 0.091 0.000 0.091
0.000
##
## Node number 1533: 25 observations,
                                         complexity param=0.0001786193
##
     predicted class=8
                        expected loss=0.32 P(node) =0.0009918667
##
       class counts:
                         0
                               0
                                     0
                                           1
                                                 0
                                                       5
                                                              1
                                                                         17
1
      probabilities: 0.000 0.000 0.000 0.040 0.000 0.200 0.040 0.000 0.680
##
0.040
##
     left son=3066 (8 obs) right son=3067 (17 obs)
##
     Primary splits:
                                   improve=5.937647, (0 missing)
##
         270 < 126
                     to the left,
##
         130 < 11
                     to the right, improve=5.510476, (0 missing)
                     to the left,
                                   improve=5.510476, (0 missing)
##
         297 < 48
##
         298 < 23.5 to the left,
                                  improve=5.510476, (0 missing)
         158 < 203.5 to the right, improve=4.889444, (0 missing)
##
##
     Surrogate splits:
##
         298 < 180
                     to the left, agree=0.96, adj=0.875, (0 split)
         130 < 40.5 to the right, agree=0.92, adj=0.750, (0 split)
##
         129 < 80.5 to the right, agree=0.88, adj=0.625, (0 split)
##
##
                     to the right, agree=0.88, adj=0.625, (0 split)
         131 < 6
##
         242 < 112.5 to the left, agree=0.88, adj=0.625, (0 split)
##
## Node number 1534: 37 observations,
                                         complexity param=8.930964e-05
     predicted class=8 expected loss=0.2432432 P(node) =0.001467963
##
                                           0
##
       class counts:
                         1
                               0
                                     0
                                                                    0
                                                                         28
1
##
      probabilities: 0.027 0.000 0.000 0.000 0.000 0.000 0.189 0.000 0.757
0.027
##
     left son=3068 (7 obs) right son=3069 (30 obs)
##
     Primary splits:
##
         131 < 50
                     to the right, improve=5.756242, (0 missing)
##
         403 < 252.5 to the right, improve=5.254655, (0 missing)
##
         375 < 251.5 to the right, improve=4.861004, (0 missing)
##
         130 < 33
                     to the right, improve=4.665191, (0 missing)
         347 < 159 to the right, improve=4.361920, (0 missing)
##
```

```
##
     Surrogate splits:
##
         130 < 33
                     to the right, agree=0.973, adj=0.857, (0 split)
                     to the right, agree=0.919, adj=0.571, (0 split)
##
         132 < 0.5
                     to the right, agree=0.919, adj=0.571, (0 split)
##
         159 < 246
##
         129 < 163.5 to the right, agree=0.892, adj=0.429, (0 split)
##
         161 < 64.5 to the right, agree=0.892, adj=0.429, (0 split)
##
## Node number 1535: 272 observations
     predicted class=8 expected loss=0.01838235 P(node) =0.01079151
##
       class counts:
                         0
                               0
                                     0
                                           2
                                                 0
                                                       1
                                                              1
                                                                        267
1
      probabilities: 0.000 0.000 0.000 0.007 0.000 0.004 0.004 0.000 0.982
##
0.004
##
## Node number 1536: 1578 observations
     predicted class=0 expected loss=0.004435995 P(node) =0.06260663
##
       class counts: 1571
                               0
                                     0
                                           0
                                                 1
                                                        2
                                                              3
                                                                          0
1
##
      probabilities: 0.996 0.000 0.000 0.000 0.001 0.001 0.002 0.000 0.000
0.001
##
## Node number 1537: 25 observations,
                                         complexity param=2.232741e-05
     predicted class=0
                        expected loss=0.2 P(node) =0.0009918667
##
       class counts:
                        20
                                     1
                                           0
                                                                          0
0
##
      probabilities: 0.800 0.000 0.040 0.000 0.000 0.000 0.160 0.000 0.000
0.000
##
     left son=3074 (18 obs) right son=3075 (7 obs)
##
     Primary splits:
##
         244 < 5.5
                     to the right, improve=3.00254, (0 missing)
##
         272 < 26.5 to the right, improve=3.00254, (0 missing)
##
         300 < 26.5 to the right, improve=3.00254, (0 missing)
##
         301 < 3.5
                     to the right, improve=3.00254, (0 missing)
##
         329 < 87
                     to the right, improve=3.00254, (0 missing)
##
     Surrogate splits:
##
         216 < 23.5 to the right, agree=0.92, adj=0.714, (0 split)
                     to the right, agree=0.88, adj=0.571, (0 split)
##
         272 < 54
##
         492 < 194.5 to the left, agree=0.88, adj=0.571, (0 split)
         496 < 74.5 to the right, agree=0.88, adj=0.571, (0 split)
##
         606 < 252.5 to the left, agree=0.88, adj=0.571, (0 split)
##
##
## Node number 1538: 13 observations
##
     predicted class=0
                        expected loss=0
                                         P(node) = 0.0005157707
##
       class counts:
                        13
                               0
                                     0
                                           0
                                                       0
                                                              0
                                                                    0
                                                                          0
0
##
      probabilities: 1.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 1539: 7 observations
     predicted class=6 expected loss=0.2857143 P(node) =0.0002777227
```

```
##
       class counts:
0
##
      probabilities: 0.286 0.000 0.000 0.000 0.000 0.714 0.000 0.000
0.000
##
## Node number 1540: 267 observations,
                                          complexity param=0.000111637
     predicted class=0 expected loss=0.05617978 P(node) =0.01059314
                                     7
##
       class counts:
                       252
                                           1
                                                        2
                                                                          0
1
##
      probabilities: 0.944 0.000 0.026 0.004 0.000 0.007 0.011 0.004 0.000
0.004
##
     left son=3080 (201 obs) right son=3081 (66 obs)
##
     Primary splits:
         244 < 1
##
                     to the right, improve=2.428557, (0 missing)
##
         149 < 3
                     to the left, improve=2.381101, (0 missing)
##
                     to the left,
                                  improve=2.254517, (0 missing)
         102 < 71.5
                     to the right, improve=2.247191, (0 missing)
##
         273 < 1.5
##
         272 < 48.5 to the right, improve=2.134487, (0 missing)
##
     Surrogate splits:
##
         215 < 10.5 to the right, agree=0.873, adj=0.485, (0 split)
                     to the right, agree=0.873, adj=0.485, (0 split)
##
         272 < 27.5
##
         273 < 4
                     to the right, agree=0.858, adj=0.424, (0 split)
##
                     to the right, agree=0.839, adj=0.348, (0 split)
         216 < 1.5
##
         326 < 131.5 to the left, agree=0.835, adj=0.333, (0 split)
##
## Node number 1541: 32 observations,
                                         complexity param=0.0001786193
                        expected loss=0.625 P(node) =0.001269589
##
     predicted class=0
                                     2
                                                       12
##
       class counts:
                        12
                               0
                                            6
                                                                          0
0
      probabilities: 0.375 0.000 0.062 0.188 0.000 0.375 0.000 0.000 0.000
##
0.000
##
     left son=3082 (18 obs) right son=3083 (14 obs)
##
     Primary splits:
##
         239 < 145
                     to the right, improve=8.511905, (0 missing)
##
         241 < 21
                     to the right, improve=8.250000, (0 missing)
         238 < 157
                     to the right, improve=7.750000, (0 missing)
##
         240 < 1.5
                     to the right, improve=6.816667, (0 missing)
##
##
         267 < 251
                     to the right, improve=6.575397, (0 missing)
##
     Surrogate splits:
         212 < 30.5
##
                    to the right, agree=0.938, adj=0.857, (0 split)
##
         238 < 157
                     to the right, agree=0.938, adj=0.857, (0 split)
##
         240 < 61.5
                     to the right, agree=0.906, adj=0.786, (0 split)
##
         211 < 30
                     to the right, agree=0.875, adj=0.714, (0 split)
##
         241 < 26.5 to the right, agree=0.844, adj=0.643, (0 split)
##
## Node number 1542: 11 observations
##
     predicted class=0
                        expected loss=0.09090909
                                                 P(node) =0.0004364213
##
       class counts:
                        10
                               0
                                     1
                                            0
                                                 0
0
##
      probabilities: 0.909 0.000 0.091 0.000 0.000 0.000 0.000 0.000 0.000
```

```
0.000
##
## Node number 1543: 22 observations,
                                         complexity param=4.465482e-05
     predicted class=2 expected loss=0.3181818 P(node) =0.0008728427
##
       class counts:
                         2
                               0
                                    15
                                            0
                                                  0
                                                        0
                                                              2
                                                                    3
                                                                          0
0
##
      probabilities: 0.091 0.000 0.682 0.000 0.000 0.000 0.091 0.136 0.000
0.000
##
     left son=3086 (14 obs) right son=3087 (8 obs)
##
     Primary splits:
##
         544 < 170
                     to the right, improve=3.392857, (0 missing)
         152 < 20.5 to the right, improve=3.000000, (0 missing)
##
##
         265 < 23.5
                    to the left,
                                   improve=3.000000, (0 missing)
##
         291 < 41.5 to the left,
                                   improve=3.000000, (0 missing)
         292 < 11.5 to the left,
                                   improve=3.000000, (0 missing)
##
##
     Surrogate splits:
##
         545 < 250.5 to the right, agree=0.909, adj=0.750, (0 split)
##
         543 < 21.5 to the right, agree=0.864, adj=0.625, (0 split)
                     to the right, agree=0.864, adj=0.625, (0 split)
##
##
         183 < 253.5 to the left, agree=0.818, adj=0.500, (0 split)
##
         357 < 244.5 to the left, agree=0.818, adj=0.500, (0 split)
##
## Node number 1586: 36 observations,
                                         complexity param=4.465482e-05
     predicted class=3
                        expected loss=0.1666667 P(node) =0.001428288
##
##
       class counts:
                         2
                               0
                                           30
                                                  0
                                                        4
                                                              0
                                                                    0
                                                                          0
0
##
      probabilities: 0.056 0.000 0.000 0.833 0.000 0.111 0.000 0.000 0.000
0.000
##
     left son=3172 (27 obs) right son=3173 (9 obs)
##
     Primary splits:
##
         538 < 56
                     to the left,
                                   improve=4.666667, (0 missing)
##
         189 < 25.5 to the left,
                                   improve=4.044444, (0 missing)
##
         217 < 11.5 to the left,
                                   improve=4.044444, (0 missing)
##
         510 < 1.5
                     to the left,
                                   improve=4.044444, (0 missing)
##
         509 < 64
                     to the right, improve=3.941981, (0 missing)
##
     Surrogate splits:
         510 < 1.5
##
                     to the left,
                                   agree=0.972, adj=0.889, (0 split)
##
                     to the left,
                                   agree=0.944, adj=0.778, (0 split)
         509 < 64
##
         537 < 140.5 to the left,
                                   agree=0.944, adj=0.778, (0 split)
                                   agree=0.917, adj=0.667, (0 split)
##
         481 < 36.5 to the left,
##
         566 < 169.5 to the left,
                                   agree=0.917, adj=0.667, (0 split)
##
## Node number 1587: 8 observations
##
     predicted class=2
                        expected loss=0.5 P(node) =0.0003173973
                                                                    2
##
       class counts:
                         0
                               0
                                     4
                                            1
                                                        1
0
##
      probabilities: 0.000 0.000 0.500 0.125 0.000 0.125 0.000 0.250 0.000
0.000
##
## Node number 1648: 10 observations
```

```
##
     predicted class=2 expected loss=0.3 P(node) =0.0003967467
##
       class counts:
                                           1
                        0
                              0
                                    7
                                                0
                                                                        0
0
      probabilities: 0.000 0.000 0.700 0.100 0.000 0.000 0.200 0.000 0.000
##
0.000
##
## Node number 1649: 24 observations,
                                        complexity param=0.0001786193
     predicted class=5 expected loss=0.5833333 P(node) =0.000952192
       class counts:
##
                        4
                              0
                                    1
                                          2
                                                     10
                                                                        3
0
##
      probabilities: 0.167 0.000 0.042 0.083 0.042 0.417 0.125 0.000 0.125
0.000
##
     left son=3298 (10 obs) right son=3299 (14 obs)
##
     Primary splits:
##
         627 < 242
                    to the right, improve=4.195238, (0 missing)
##
         247 < 3
                    to the left, improve=4.049020, (0 missing)
                    to the right, improve=4.000000, (0 missing)
##
##
         430 < 193.5 to the right, improve=3.528011, (0 missing)
         183 < 137.5 to the right, improve=3.131702, (0 missing)
##
##
     Surrogate splits:
##
         214 < 148.5 to the right, agree=0.917, adj=0.8, (0 split)
##
                   to the right, agree=0.917, adj=0.8, (0 split)
##
         184 < 240.5 to the right, agree=0.875, adj=0.7, (0 split)
##
         431 < 108.5 to the right, agree=0.875, adj=0.7, (0 split)
         183 < 219.5 to the right, agree=0.833, adj=0.6, (0 split)
##
##
## Node number 1694: 7 observations
##
     predicted class=4
                       expected loss=0.5714286 P(node) =0.0002777227
##
       class counts:
                              0
                                    1
                                                3
                                                      1
                        0
                                           0
                                                            2
0
##
      probabilities: 0.000 0.000 0.143 0.000 0.429 0.143 0.286 0.000 0.000
0.000
##
## Node number 1695: 113 observations
     predicted class=6 expected loss=0.02654867 P(node) =0.004483237
##
      class counts:
                         0
                              0
                                    1
                                                1
                                                      1
                                                          110
                                                                  0
                                                                        0
                                          0
0
##
      probabilities: 0.000 0.000 0.009 0.000 0.009 0.009 0.973 0.000 0.000
0.000
##
## Node number 1716: 7 observations
##
     predicted class=3
                       expected loss=0.2857143 P(node) =0.0002777227
##
       class counts:
                              0
                                    0
                                           5
                                                1
                                                      0
                                                                        0
1
      probabilities: 0.000 0.000 0.000 0.714 0.143 0.000 0.000 0.000 0.000
##
0.143
## Node number 1717: 18 observations
     predicted class=0 expected loss=0.7777778 P(node) =0.000714144
## class counts: 4 0 4 0 0 4
```

```
4
##
      probabilities: 0.222 0.000 0.222 0.000 0.000 0.000 0.222 0.056 0.056
0.222
##
## Node number 1726: 11 observations
##
     predicted class=7 expected loss=0.4545455 P(node) =0.0004364213
##
       class counts:
                         0
                               0
                                     0
                                                 0
                                                       0
                                                                          0
                                           0
                                                             0
                                                                   6
5
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.545 0.000
##
0.455
##
## Node number 1727: 62 observations
     predicted class=9 expected loss=0.1129032 P(node) =0.002459829
##
       class counts:
                         0
                               0
                                     1
                                           0
                                                 2
                                                       0
                                                             1
                                                                         0
55
##
      probabilities: 0.000 0.000 0.016 0.000 0.032 0.000 0.016 0.048 0.000
0.887
##
## Node number 1732: 18 observations
     predicted class=1 expected loss=0.6666667 P(node) =0.000714144
##
       class counts:
                         1
                                                       5
                               6
                                     0
                                           4
                                                 0
                                                             0
                                                                          0
2
##
      probabilities: 0.056 0.333 0.000 0.222 0.000 0.278 0.000 0.000 0.000
0.111
##
## Node number 1733: 10 observations
     predicted class=6 expected loss=0.2 P(node) =0.0003967467
##
       class counts:
                         0
                               1
                                     0
                                           0
                                                 0
                                                       1
                                                             8
                                                                   0
                                                                          0
0
      probabilities: 0.000 0.100 0.000 0.000 0.100 0.800 0.000 0.000
##
0.000
##
## Node number 1790: 8 observations
     predicted class=6 expected loss=0.625 P(node) =0.0003173973
##
                                                 1
                                                       1
       class counts:
                         1
                               0
                                     0
                                           0
                                                             3
                                                                          0
1
      probabilities: 0.125 0.000 0.000 0.000 0.125 0.125 0.375 0.125 0.000
##
0.125
## Node number 1791: 614 observations
     predicted class=7 expected loss=0.01465798 P(node) =0.02436025
##
       class counts:
                         1
                                     1
                                           2
                                                 1
                                                                 605
                                                                          0
4
##
      probabilities: 0.002 0.000 0.002 0.003 0.002 0.000 0.000 0.985 0.000
0.007
##
## Node number 1792: 869 observations,
                                          complexity param=8.930964e-05
     predicted class=2 expected loss=0.01841197 P(node) =0.03447729
##
       class counts:
                         0
                                   853
                                          12
                                                       0
                                                             0
                                                                   3
                                                                          1
0
```

```
##
      probabilities: 0.000 0.000 0.982 0.014 0.000 0.000 0.000 0.003 0.001
0.000
##
     left son=3584 (801 obs) right son=3585 (68 obs)
##
     Primary splits:
##
         488 < 1.5
                     to the right, improve=2.531792, (0 missing)
##
         515 < 4.5
                     to the right, improve=2.489658, (0 missing)
         516 < 1.5
                     to the right, improve=2.454042, (0 missing)
##
         323 < 239
##
                     to the left, improve=1.846059, (0 missing)
                     to the right, improve=1.798154, (0 missing)
##
         487 < 8
##
     Surrogate splits:
         489 < 1.5
##
                     to the right, agree=0.936, adj=0.176, (0 split)
                     to the right, agree=0.930, adj=0.103, (0 split)
##
         487 < 1
##
         377 < 254
                     to the left, agree=0.924, adj=0.029, (0 split)
##
         389 < 63.5
                     to the left,
                                   agree=0.924, adj=0.029, (0 split)
##
         416 < 242
                     to the left, agree=0.924, adj=0.029, (0 split)
##
## Node number 1793: 43 observations,
                                          complexity param=0.0001339645
     predicted class=2 expected loss=0.3488372 P(node) =0.001706011
##
##
       class counts:
                         0
                                     28
                                            3
                                                                           3
                               0
0
##
      probabilities: 0.000 0.000 0.651 0.070 0.000 0.000 0.000 0.209 0.070
0.000
##
     left son=3586 (28 obs) right son=3587 (15 obs)
##
     Primary splits:
##
         206 < 235.5 to the right, improve=8.298450, (0 missing)
                     to the right, improve=7.864131, (0 missing)
##
         234 < 62
##
         233 < 4.5
                     to the right, improve=7.731783, (0 missing)
         232 < 33.5
                     to the right, improve=6.922259, (0 missing)
##
##
         205 < 106
                     to the right, improve=6.775461, (0 missing)
##
     Surrogate splits:
##
         232 < 33.5
                     to the right, agree=0.953, adj=0.867, (0 split)
##
         207 < 197
                     to the right, agree=0.930, adj=0.800, (0 split)
##
         233 < 38
                     to the right, agree=0.930, adj=0.800, (0 split)
##
         234 < 62
                     to the right, agree=0.930, adj=0.800, (0 split)
                     to the right, agree=0.884, adj=0.667, (0 split)
##
         204 < 2
##
## Node number 1800: 15 observations
                                          P(node) = 0.00059512
##
     predicted class=2
                        expected loss=0
##
       class counts:
                         0
                               0
                                     15
                                            0
                                                  0
                                                        0
                                                              0
                                                                    0
                                                                           0
0
##
      probabilities: 0.000 0.000 1.000 0.000 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 1801: 7 observations
     predicted class=0
                        expected loss=0.5714286
                                                  P(node) = 0.0002777227
##
##
       class counts:
                         3
                               0
                                      2
                                            0
                                                  0
                                                        0
                                                              2
                                                                    0
                                                                           0
0
      probabilities: 0.429 0.000 0.286 0.000 0.000 0.000 0.286 0.000 0.000
##
0.000
##
```

```
## Node number 1808: 107 observations,
                                          complexity param=0.0001339645
##
     predicted class=1 expected loss=0.07476636 P(node) =0.004245189
##
       class counts:
                         0
                              99
                                     3
                                            0
                                                  1
                                                        1
                                                                    3
                                                                          0
0
##
      probabilities: 0.000 0.925 0.028 0.000 0.009 0.009 0.000 0.028 0.000
0.000
##
     left son=3616 (100 obs) right son=3617 (7 obs)
##
     Primary splits:
##
         411 < 14.5 to the left,
                                   improve=8.949239, (0 missing)
##
         412 < 2.5
                     to the left,
                                   improve=8.949239, (0 missing)
##
         437 < 122.5 to the left,
                                   improve=8.949239, (0 missing)
                                   improve=8.949239, (0 missing)
##
         438 < 30.5 to the left,
##
         439 < 25
                     to the left,
                                   improve=8.949239, (0 missing)
##
     Surrogate splits:
##
         412 < 2.5
                                   agree=1.000, adj=1.000, (0 split)
                     to the left,
##
         437 < 122.5 to the left,
                                   agree=1.000, adj=1.000, (0 split)
                                   agree=1.000, adj=1.000, (0 split)
##
         438 < 30.5 to the left,
                     to the left,
##
         439 < 25
                                   agree=1.000, adj=1.000, (0 split)
                                   agree=0.991, adj=0.857, (0 split)
##
         410 < 161
                     to the left,
##
## Node number 1809: 28 observations,
                                         complexity param=0.0001786193
##
     predicted class=2
                        expected loss=0.5
                                           P(node) =0.001110891
##
       class counts:
                         0
                               1
                                    14
                                            1
                                                        2
                                                  1
                                                                          0
0
      probabilities: 0.000 0.036 0.500 0.036 0.036 0.071 0.214 0.107 0.000
##
0.000
##
     left son=3618 (14 obs) right son=3619 (14 obs)
##
     Primary splits:
##
         431 < 8.5
                     to the right, improve=5.428571, (0 missing)
##
         410 < 3
                     to the right, improve=5.346066, (0 missing)
##
         331 < 48
                     to the left,
                                   improve=5.238095, (0 missing)
##
         359 < 14.5
                     to the left,
                                   improve=5.238095, (0 missing)
##
         387 < 42
                     to the left,
                                   improve=5.238095, (0 missing)
##
     Surrogate splits:
##
                     to the right, agree=0.964, adj=0.929, (0 split)
         430 < 32.5
                     to the right, agree=0.929, adj=0.857, (0 split)
##
         429 < 11.5
                     to the right, agree=0.893, adj=0.786, (0 split)
##
         432 < 11.5
##
         458 < 149.5 to the right, agree=0.893, adj=0.786, (0 split)
                     to the right, agree=0.893, adj=0.786, (0 split)
##
         459 < 216
##
## Node number 1810: 72 observations,
                                         complexity param=0.0001786193
##
     predicted class=4
                        expected loss=0.25
                                           P(node) =0.002856576
##
       class counts:
                         0
                               0
                                     2
                                                 54
                                                        2
                                                              7
                                                                    2
                                                                          3
2
      probabilities: 0.000 0.000 0.028 0.000 0.750 0.028 0.097 0.028 0.042
##
0.028
##
     left son=3620 (63 obs) right son=3621 (9 obs)
##
     Primary splits:
                                   improve=7.678571, (0 missing)
##
         292 < 124
                     to the left,
##
         293 < 96 to the left, improve=7.678571, (0 missing)
```

```
improve=7.678571, (0 missing)
##
         294 < 33.5
                     to the left,
##
         265 < 89
                     to the left,
                                    improve=7.456349, (0 missing)
##
         266 < 56.5
                     to the left,
                                    improve=7.456349, (0 missing)
##
     Surrogate splits:
##
         293 < 96
                     to the left,
                                    agree=1.000, adj=1.000, (0 split)
##
         294 < 33.5
                     to the left,
                                    agree=1.000, adj=1.000, (0 split)
##
         320 < 14.5
                     to the left,
                                    agree=0.986, adj=0.889, (0 split)
                                    agree=0.986, adj=0.889, (0 split)
##
         321 < 7.5
                     to the left,
                     to the left,
                                    agree=0.972, adj=0.778, (0 split)
##
         265 < 89
##
## Node number 1811: 39 observations,
                                          complexity param=4.465482e-05
                        expected loss=0.1025641 P(node) =0.001547312
##
     predicted class=6
##
       class counts:
                         0
                               0
                                      0
                                            0
                                                  4
                                                        0
                                                             35
                                                                           0
                                                                    0
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.103 0.000 0.897 0.000 0.000
0.000
##
     left son=3622 (7 obs) right son=3623 (32 obs)
##
     Primary splits:
                                   improve=3.750916, (0 missing)
##
         576 < 114
                     to the left,
##
         628 < 38
                     to the right, improve=3.750916, (0 missing)
##
         244 < 161.5 to the right, improve=3.179487, (0 missing)
         263 < 76.5 to the right, improve=3.179487, (0 missing)
##
##
         358 < 6.5
                     to the left, improve=2.735043, (0 missing)
##
     Surrogate splits:
##
         550 < 39.5
                     to the left, agree=0.974, adj=0.857, (0 split)
                     to the right, agree=0.949, adj=0.714, (0 split)
##
         188 < 6
##
                     to the right, agree=0.949, adj=0.714, (0 split)
         189 < 56
                     to the right, agree=0.949, adj=0.714, (0 split)
##
         190 < 4.5
##
         215 < 35
                     to the right, agree=0.949, adj=0.714, (0 split)
##
## Node number 1812: 127 observations,
                                           complexity param=0.0005805126
##
     predicted class=2 expected loss=0.3622047 P(node) =0.005038683
##
       class counts:
                                2
                                     81
                                            5
                                                        0
                                                                   24
                                                                           6
9
##
      probabilities: 0.000 0.016 0.638 0.039 0.000 0.000 0.000 0.189 0.047
0.071
##
     left son=3624 (109 obs) right son=3625 (18 obs)
##
     Primary splits:
##
         712 < 40.5 to the left,
                                    improve=14.50879, (0 missing)
                                    improve=13.22317, (0 missing)
##
         713 < 7
                     to the left,
##
         568 < 142.5 to the right, improve=11.55354, (0 missing)
         569 < 17
                     to the right, improve=11.38362, (0 missing)
##
##
         566 < 74
                     to the right, improve=10.29529, (0 missing)
##
     Surrogate splits:
##
         711 < 21.5
                     to the left,
                                    agree=0.953, adj=0.667, (0 split)
##
         710 < 1.5
                     to the left,
                                    agree=0.945, adj=0.611, (0 split)
##
         684 < 94.5
                     to the left,
                                    agree=0.937, adj=0.556, (0 split)
##
                                   agree=0.937, adj=0.556, (0 split)
         713 < 149
                     to the left,
##
         683 < 224.5 to the left,
                                   agree=0.921, adj=0.444, (0 split)
##
```

```
## Node number 1813: 23 observations
     predicted class=7 expected loss=0.04347826 P(node) =0.0009125174
##
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                 1
                                                       0
                                                             0
                                                                   22
                                                                         0
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.043 0.000 0.000 0.957 0.000
0.000
##
## Node number 1814: 28 observations,
                                         complexity param=0.0001786193
                        expected loss=0.5357143 P(node) =0.001110891
     predicted class=8
##
       class counts:
                         2
                               0
                                     2
                                           0
                                                 1
                                                       5
                                                             0
                                                                    2
                                                                         13
3
      probabilities: 0.071 0.000 0.071 0.000 0.036 0.179 0.000 0.071 0.464
##
0.107
##
     left son=3628 (14 obs) right son=3629 (14 obs)
##
     Primary splits:
##
         467 < 4
                     to the right, improve=5.571429, (0 missing)
##
         398 < 105.5 to the right, improve=4.663492, (0 missing)
##
                     to the left, improve=4.535714, (0 missing)
         496 < 49.5 to the right, improve=4.374603, (0 missing)
##
##
         426 < 17.5 to the right, improve=4.157059, (0 missing)
##
     Surrogate splits:
         440 < 14.5 to the right, agree=0.893, adj=0.786, (0 split)
##
##
         468 < 16.5 to the right, agree=0.893, adj=0.786, (0 split)
##
         398 < 105.5 to the right, agree=0.857, adj=0.714, (0 split)
##
                     to the right, agree=0.857, adj=0.714, (0 split)
         496 < 13.5 to the right, agree=0.857, adj=0.714, (0 split)
##
##
## Node number 1815: 63 observations
##
     predicted class=9
                        expected loss=0.04761905 P(node) =0.002499504
##
       class counts:
                         0
                               0
                                     2
                                           0
                                                 0
                                                       0
                                                             0
                                                                          0
                                                                    1
60
      probabilities: 0.000 0.000 0.032 0.000 0.000 0.000 0.000 0.016 0.000
##
0.952
##
## Node number 1832: 18 observations
     predicted class=2 expected loss=0.5 P(node) =0.000714144
##
##
       class counts:
                               0
                                     9
                                                                          1
0
      probabilities: 0.000 0.000 0.500 0.000 0.000 0.000 0.444 0.000 0.056
##
0.000
##
## Node number 1833: 114 observations,
                                          complexity param=0.0001339645
##
     predicted class=4 expected loss=0.07017544 P(node) =0.004522912
##
       class counts:
                         0
                                               106
                               0
                                     1
                                           0
                                                       1
                                                              5
                                                                    0
                                                                          1
0
##
      probabilities: 0.000 0.000 0.009 0.000 0.930 0.009 0.044 0.000 0.009
0.000
##
     left son=3666 (107 obs) right son=3667 (7 obs)
##
     Primary splits:
##
         124 < 172 to the left, improve=6.447989, (0 missing)
```

```
to the left,
                                   improve=4.862824, (0 missing)
##
         152 < 239
##
         123 < 71.5 to the left,
                                   improve=3.477296, (0 missing)
##
         153 < 137
                     to the left,
                                   improve=3.381662, (0 missing)
         574 < 243
                     to the left,
                                   improve=3.157948, (0 missing)
##
##
     Surrogate splits:
            < 36
##
         95
                     to the left,
                                   agree=0.991, adj=0.857, (0 split)
##
         96 < 20
                     to the left,
                                   agree=0.991, adj=0.857, (0 split)
                                   agree=0.991, adj=0.857, (0 split)
##
         125 < 4
                     to the left,
                                   agree=0.982, adj=0.714, (0 split)
##
         97 < 2
                     to the left,
##
         94 < 9.5
                     to the left,
                                   agree=0.974, adj=0.571, (0 split)
##
## Node number 1834: 8 observations
     predicted class=8 expected loss=0.375 P(node) =0.0003173973
##
##
       class counts:
                         0
                               0
                                     3
                                           0
                                                  0
                                                       0
                                                                          5
0
##
      probabilities: 0.000 0.000 0.375 0.000 0.000 0.000 0.000 0.000 0.625
0.000
##
## Node number 1835: 15 observations
                        expected loss=0.1333333 P(node) =0.00059512
     predicted class=7
##
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                  0
                                                       0
                                                                   13
                                                                          0
2
##
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.867 0.000
0.133
##
## Node number 1836: 56 observations,
                                         complexity param=8.930964e-05
     predicted class=2
                        expected loss=0.25 P(node) =0.002221781
       class counts:
                                    42
                                                  1
##
                         6
                               0
                                           0
                                                       1
                                                              1
                                                                    1
                                                                          3
1
      probabilities: 0.107 0.000 0.750 0.000 0.018 0.018 0.018 0.018 0.054
##
0.018
##
     left son=3672 (43 obs) right son=3673 (13 obs)
##
     Primary splits:
##
         346 < 236.5 to the left,
                                   improve=7.163493, (0 missing)
                                   improve=6.166492, (0 missing)
##
         347 < 227.5 to the left,
##
                                   improve=4.709184, (0 missing)
         435 < 109.5 to the left,
         294 < 231.5 to the right, improve=3.818525, (0 missing)
##
##
         321 < 124
                     to the right, improve=3.818525, (0 missing)
##
     Surrogate splits:
         347 < 227.5 to the left,
##
                                   agree=0.893, adj=0.538, (0 split)
                                   agree=0.857, adj=0.385, (0 split)
##
         331 < 34.5 to the left,
         358 < 163
                                   agree=0.857, adj=0.385, (0 split)
##
                     to the left,
##
         359 < 18
                     to the left,
                                   agree=0.857, adj=0.385, (0 split)
                                   agree=0.857, adj=0.385, (0 split)
##
         385 < 236
                     to the left,
##
## Node number 1837: 29 observations,
                                         complexity param=0.0002679289
##
     predicted class=8
                        expected loss=0.3103448 P(node) =0.001150565
##
       class counts:
                         6
                               0
                                     2
                                           0
                                                       0
                                                              0
                                                                    1
                                                                         20
0
##
      probabilities: 0.207 0.000 0.069 0.000 0.000 0.000 0.000 0.034 0.690
```

```
0.000
##
     left son=3674 (9 obs) right son=3675 (20 obs)
##
     Primary splits:
##
         492 < 236
                     to the right, improve=9.348659, (0 missing)
##
         464 < 251.5 to the right, improve=8.888342, (0 missing)
##
         520 < 247
                     to the right, improve=8.888342, (0 missing)
                     to the left, improve=8.638342, (0 missing)
##
         406 < 18
         438 < 232
                     to the right, improve=8.638342, (0 missing)
##
##
     Surrogate splits:
##
         406 < 18
                     to the left,
                                   agree=0.966, adj=0.889, (0 split)
##
         438 < 232
                     to the right, agree=0.966, adj=0.889, (0 split)
         464 < 242.5 to the right, agree=0.966, adj=0.889, (0 split)
##
##
         520 < 247
                     to the right, agree=0.966, adj=0.889, (0 split)
##
         433 < 95.5 to the left, agree=0.931, adj=0.778, (0 split)
##
## Node number 1838: 71 observations,
                                          complexity param=0.000491203
##
     predicted class=7
                        expected loss=0.5352113 P(node) =0.002816901
##
       class counts:
                         1
                               0
                                      6
                                            0
                                                  5
                                                        0
                                                                   33
                                                                           9
                                                              1
16
##
      probabilities: 0.014 0.000 0.085 0.000 0.070 0.000 0.014 0.465 0.127
0.225
##
     left son=3676 (43 obs) right son=3677 (28 obs)
##
     Primary splits:
##
         404 < 25
                     to the left,
                                   improve=12.44179, (0 missing)
##
         709 < 4
                     to the left,
                                   improve=11.68334, (0 missing)
                                   improve=11.53947, (0 missing)
##
         708 < 1
                     to the left,
##
         405 < 123.5 to the left,
                                   improve=10.77252, (0 missing)
         710 < 7.5
##
                     to the left,
                                   improve=10.09426, (0 missing)
##
     Surrogate splits:
##
         376 < 40
                                   agree=0.958, adj=0.893, (0 split)
                     to the left,
##
         405 < 123.5 to the left,
                                   agree=0.958, adj=0.893, (0 split)
##
         377 < 15.5 to the left,
                                   agree=0.944, adj=0.857, (0 split)
##
         403 < 43
                     to the left,
                                   agree=0.930, adj=0.821, (0 split)
##
         432 < 13
                     to the left,
                                   agree=0.930, adj=0.821, (0 split)
##
## Node number 1839: 53 observations,
                                          complexity param=0.0002456015
##
     predicted class=9
                        expected loss=0.3584906 P(node) =0.002102757
##
       class counts:
                         1
                               0
                                      3
                                            0
                                                 13
                                                        a
                                                              0
                                                                    0
                                                                           2
34
##
      probabilities: 0.019 0.000 0.057 0.000 0.245 0.000 0.000 0.000 0.038
0.642
##
     left son=3678 (24 obs) right son=3679 (29 obs)
##
     Primary splits:
##
         402 < 234.5 to the right, improve=8.051941, (0 missing)
##
         237 < 21
                     to the left,
                                   improve=7.578157, (0 missing)
##
         264 < 34
                     to the left,
                                   improve=7.493425, (0 missing)
##
         375 < 166.5 to the right, improve=6.766152, (0 missing)
                     to the right, improve=6.300890, (0 missing)
##
         349 < 13
##
     Surrogate splits:
         375 < 60.5 to the right, agree=0.887, adj=0.750, (0 split)
##
```

```
403 < 63.5 to the right, agree=0.868, adj=0.708, (0 split)
##
##
         374 < 227.5 to the right, agree=0.849, adj=0.667, (0 split)
         347 < 152.5 to the right, agree=0.830, adj=0.625, (0 split)
##
                     to the right, agree=0.830, adj=0.625, (0 split)
##
         376 < 9
##
## Node number 1844: 14 observations
     predicted class=0 expected loss=0.2857143 P(node) =0.0005554453
##
##
       class counts:
                        10
                                     0
                                                        4
                                                                          0
0
##
      probabilities: 0.714 0.000 0.000 0.000 0.000 0.286 0.000 0.000 0.000
0.000
##
## Node number 1845: 22 observations,
                                         complexity param=0.0001339645
##
     predicted class=8 expected loss=0.4090909 P(node) =0.0008728427
##
       class counts:
                         0
                                     1
                                                  0
                                                        4
                               0
                                            0
                                                                         13
0
##
      probabilities: 0.000 0.000 0.045 0.000 0.000 0.182 0.182 0.000 0.591
0.000
##
     left son=3690 (9 obs) right son=3691 (13 obs)
##
     Primary splits:
##
         272 < 158.5 to the left,
                                   improve=4.972028, (0 missing)
##
         382 < 7
                     to the left,
                                   improve=4.972028, (0 missing)
##
         596 < 44.5 to the left,
                                   improve=4.139610, (0 missing)
##
         625 < 71.5 to the left,
                                   improve=4.139610, (0 missing)
                                   improve=3.984848, (0 missing)
##
         300 < 119.5 to the left,
##
     Surrogate splits:
##
         273 < 151.5 to the left,
                                   agree=0.909, adj=0.778, (0 split)
                                   agree=0.909, adj=0.778, (0 split)
##
         301 < 4.5
                     to the left,
##
         382 < 7
                     to the left,
                                   agree=0.909, adj=0.778, (0 split)
##
         262 < 235.5 to the left,
                                   agree=0.864, adj=0.667, (0 split)
##
         271 < 109.5 to the left,
                                   agree=0.864, adj=0.667, (0 split)
##
## Node number 1848: 8 observations
##
     predicted class=0
                        expected loss=0.5
                                           P(node) =0.0003173973
##
                                                                    1
       class counts:
                         4
                               0
                                            2
                                                 0
                                                                          0
1
##
      probabilities: 0.500 0.000 0.000 0.250 0.000 0.000 0.000 0.125 0.000
0.125
##
## Node number 1849: 12 observations
##
     predicted class=5 expected loss=0.08333333 P(node) =0.000476096
##
       class counts:
                                     0
                                                  1
                                                       11
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.083 0.917 0.000 0.000 0.000
0.000
##
## Node number 1852: 15 observations
     predicted class=7 expected loss=0.6 P(node) =0.00059512
##
       class counts:
                         0
                               0
                                     4
                                            1
                                                  0
                                                        0
                                                              0
                                                                    6
                                                                          1
3
```

```
probabilities: 0.000 0.000 0.267 0.067 0.000 0.000 0.000 0.400 0.067
0.200
##
## Node number 1853: 18 observations
##
     predicted class=8
                        expected loss=0.1666667 P(node) =0.000714144
##
       class counts:
                         1
                               0
                                     0
                                           0
                                                        1
                                                              1
                                                                         15
0
      probabilities: 0.056 0.000 0.000 0.000 0.000 0.056 0.056 0.000 0.833
##
0.000
##
## Node number 1860: 268 observations,
                                          complexity param=4.465482e-05
     predicted class=2 expected loss=0.05970149 P(node) =0.01063281
##
       class counts:
                         0
                               3
                                   252
                                           2
                                                 3
                                                       0
                                                              1
                                                                          3
0
##
      probabilities: 0.000 0.011 0.940 0.007 0.011 0.000 0.004 0.015 0.011
0.000
##
     left son=3720 (260 obs) right son=3721 (8 obs)
     Primary splits:
##
                                   improve=5.607979, (0 missing)
##
         320 < 35.5 to the left,
##
         321 < 12.5 to the left,
                                   improve=4.915436, (0 missing)
##
         349 < 20.5 to the left,
                                   improve=4.876619, (0 missing)
##
         660 < 152
                     to the left,
                                   improve=3.514416, (0 missing)
##
         292 < 162
                     to the left, improve=3.054819, (0 missing)
##
     Surrogate splits:
##
         321 < 12.5 to the left, agree=0.996, adj=0.875, (0 split)
                                   agree=0.989, adj=0.625, (0 split)
##
         293 < 247
                     to the left,
         348 < 84
##
                                   agree=0.989, adj=0.625, (0 split)
                     to the left,
         349 < 37.5 to the left,
                                   agree=0.989, adj=0.625, (0 split)
##
##
         292 < 162
                     to the left, agree=0.985, adj=0.500, (0 split)
##
## Node number 1861: 7 observations
     predicted class=7
                        expected loss=0.2857143 P(node) =0.0002777227
##
##
       class counts:
                         1
                               0
                                     1
                                                 0
                                                       0
                                                              0
                                                                    5
                                                                          0
0
      probabilities: 0.143 0.000 0.143 0.000 0.000 0.000 0.000 0.714 0.000
##
0.000
##
## Node number 1872: 18 observations
##
     predicted class=4 expected loss=0
                                         P(node) = 0.000714144
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                18
                                                       0
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 0.000 1.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 1873: 9 observations
##
     predicted class=9
                        expected loss=0.4444444 P(node) =0.000357072
##
       class counts:
                         0
                               0
                                     1
                                           0
                                                 3
                                                                          0
5
##
      probabilities: 0.000 0.000 0.111 0.000 0.333 0.000 0.000 0.000 0.000
0.556
```

```
##
## Node number 1874: 10 observations
##
     predicted class=2 expected loss=0.7 P(node) =0.0003967467
       class counts:
                               1
                                                                    2
##
                         0
                                     3
                                           0
                                                 0
                                                       1
                                                              0
                                                                          3
0
      probabilities: 0.000 0.100 0.300 0.000 0.000 0.100 0.000 0.200 0.300
##
0.000
##
## Node number 1875: 11 observations
##
     predicted class=9
                        expected loss=0.4545455 P(node) =0.0004364213
##
       class counts:
                         0
                               0
                                     1
                                                 3
                                                                          1
                                           0
6
##
      probabilities: 0.000 0.000 0.091 0.000 0.273 0.000 0.000 0.000 0.091
0.545
##
## Node number 1894: 15 observations
     predicted class=6 expected loss=0.2666667 P(node) =0.00059512
##
       class counts:
                         0
                               0
                                     1
                                                 2
                                                             11
                                           0
                                                       0
                                                                          0
1
##
      probabilities: 0.000 0.000 0.067 0.000 0.133 0.000 0.733 0.000 0.000
0.067
##
## Node number 1895: 17 observations
     predicted class=8 expected loss=0.4705882 P(node) =0.0006744694
##
                                                                          9
##
       class counts:
                         0
                               1
                                     1
                                                 0
                                                       0
                                                              1
4
      probabilities: 0.000 0.059 0.059 0.000 0.000 0.000 0.059 0.059 0.529
##
0.235
##
## Node number 1910: 1478 observations,
                                           complexity param=0.0001339645
##
     predicted class=6 expected loss=0.01826793 P(node) =0.05863916
##
       class counts:
                                     4
                                           1
                                                 1
                                                       12 1451
                                                                          7
2
      probabilities: 0.000 0.000 0.003 0.001 0.001 0.008 0.982 0.000 0.005
##
0.001
##
     left son=3820 (1471 obs) right son=3821 (7 obs)
##
     Primary splits:
##
         651 < 2
                                   improve=6.948752, (0 missing)
                     to the left,
##
         652 < 132.5 to the left,
                                   improve=6.948752, (0 missing)
                                   improve=6.948752, (0 missing)
##
         653 < 122
                   to the left,
##
         624 < 225.5 to the left,
                                   improve=4.806803, (0 missing)
##
         654 < 73.5 to the left,
                                   improve=4.806803, (0 missing)
##
     Surrogate splits:
##
         652 < 63
                                   agree=0.999, adj=0.857, (0 split)
                     to the left,
##
         653 < 122
                     to the left,
                                   agree=0.999, adj=0.714, (0 split)
##
         624 < 225.5 to the left,
                                   agree=0.997, adj=0.286, (0 split)
##
         650 < 23
                     to the left,
                                   agree=0.997, adj=0.286, (0 split)
##
                                   agree=0.997, adj=0.286, (0 split)
         654 < 73.5 to the left,
##
## Node number 1911: 7 observations
```

```
##
     predicted class=9
                       expected loss=0.4285714 P(node) =0.0002777227
##
       class counts:
                                                 1
                         0
                               0
                                     0
                                           0
                                                       2
                                                             0
                                                                   0
                                                                         0
4
      probabilities: 0.000 0.000 0.000 0.143 0.286 0.000 0.000 0.000
##
0.571
##
## Node number 1916: 27 observations
##
     predicted class=6 expected loss=0.07407407 P(node) =0.001071216
       class counts:
##
                         0
                               0
                                     0
                                                            25
                                                                         2
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.926 0.000 0.074
0.000
##
## Node number 1917: 7 observations
##
     predicted class=5
                       expected loss=0.5714286 P(node) =0.0002777227
##
       class counts:
                         0
                                                                         2
                                     0
                                           0
                                                                   0
2
##
      probabilities: 0.000 0.000 0.000 0.000 0.429 0.000 0.000 0.286
0.286
##
## Node number 1918: 29 observations,
                                         complexity param=0.0002232741
     predicted class=5 expected loss=0.5517241 P(node) =0.001150565
##
       class counts:
                               0
                                     1
                                           2
                                                      13
                         0
                                                             6
                                                                   1
                                                                         6
0
      probabilities: 0.000 0.000 0.034 0.069 0.000 0.448 0.207 0.034 0.207
##
0.000
##
     left son=3836 (13 obs) right son=3837 (16 obs)
##
     Primary splits:
##
         186 < 160
                     to the left,
                                  improve=5.098143, (0 missing)
##
         346 < 142
                     to the right, improve=4.416092, (0 missing)
##
         187 < 3
                     to the right, improve=4.412052, (0 missing)
##
         374 < 133
                     to the right, improve=4.319297, (0 missing)
##
         128 < 127
                     to the left, improve=4.261706, (0 missing)
##
     Surrogate splits:
##
                                   agree=0.897, adj=0.769, (0 split)
         214 < 41
                     to the left,
##
         187 < 130
                     to the left,
                                   agree=0.862, adj=0.692, (0 split)
         374 < 133
                                   agree=0.862, adj=0.692, (0 split)
##
                     to the left,
##
         185 < 157
                     to the left,
                                   agree=0.828, adj=0.615, (0 split)
##
         402 < 132.5 to the left,
                                   agree=0.828, adj=0.615, (0 split)
##
## Node number 1919: 33 observations
##
     predicted class=8
                       expected loss=0.1818182 P(node) =0.001309264
##
       class counts:
                               0
                                     1
                                                 0
                                                       3
                                                                        27
2
      probabilities: 0.000 0.000 0.030 0.000 0.000 0.091 0.000 0.000 0.818
##
0.061
##
## Node number 1936: 1325 observations,
                                          complexity param=0.0003572385
     predicted class=4 expected loss=0.03924528 P(node) =0.05256893
      class counts: 0 6 5 7 1273 0 14
```

```
15
##
      probabilities: 0.000 0.005 0.004 0.005 0.961 0.000 0.011 0.000 0.004
0.011
##
     left son=3872 (1313 obs) right son=3873 (12 obs)
##
     Primary splits:
         95 < 32
                                   improve=15.836140, (0 missing)
##
                     to the left,
##
         96 < 2
                     to the left,
                                   improve=15.836140, (0 missing)
            < 3.5
##
                     to the left,
                                   improve=10.278060, (0 missing)
                     to the right, improve=10.010500, (0 missing)
##
         437 < 1
##
         123 < 251.5 to the left,
                                   improve= 9.190573, (0 missing)
##
     Surrogate splits:
         94
            < 3.5
                     to the left,
##
                                   agree=0.998, adj=0.750, (0 split)
##
         96
            < 39
                     to the left,
                                   agree=0.998, adj=0.750, (0 split)
##
         67
            < 11
                     to the left,
                                   agree=0.995, adj=0.500, (0 split)
##
                     to the left,
                                   agree=0.995, adj=0.417, (0 split)
         68 < 47
##
         123 < 251.5 to the left,
                                   agree=0.994, adj=0.333, (0 split)
##
## Node number 1937: 19 observations
##
     predicted class=7
                        expected loss=0.4736842 P(node) =0.0007538187
##
       class counts:
                         0
                               0
                                     3
                                            2
                                                  1
                                                        2
                                                              0
                                                                   10
                                                                          0
1
      probabilities: 0.000 0.000 0.158 0.105 0.053 0.105 0.000 0.526 0.000
##
0.053
##
## Node number 1938: 48 observations,
                                          complexity param=0.0002232741
##
     predicted class=5
                        expected loss=0.625 P(node) =0.001904384
##
       class counts:
                         0
                                     5
                                           7
                                                  8
                                                       18
                                                                          6
                               0
4
##
      probabilities: 0.000 0.000 0.104 0.146 0.167 0.375 0.000 0.000 0.125
0.083
##
     left son=3876 (24 obs) right son=3877 (24 obs)
##
     Primary splits:
##
         354 < 4
                     to the left,
                                   improve=6.458333, (0 missing)
                     to the right, improve=6.229167, (0 missing)
##
         215 < 11
                                   improve=6.136111, (0 missing)
##
         492 < 53.5 to the left,
##
         326 < 43
                     to the left,
                                   improve=5.991667, (0 missing)
         327 < 9.5
                     to the right, improve=5.901467, (0 missing)
##
##
     Surrogate splits:
##
         326 < 43
                     to the left,
                                   agree=0.917, adj=0.833, (0 split)
         327 < 32
                                   agree=0.875, adj=0.750, (0 split)
##
                     to the left,
##
         382 < 23
                     to the left,
                                   agree=0.875, adj=0.750, (0 split)
                                   agree=0.854, adj=0.708, (0 split)
         381 < 31
##
                     to the left,
##
         298 < 5
                     to the left,
                                   agree=0.833, adj=0.667, (0 split)
##
## Node number 1939: 23 observations
##
     predicted class=8
                        expected loss=0.1304348 P(node) =0.0009125174
##
       class counts:
                         0
                                     1
                                                        1
                                                              1
                                                                         20
0
##
      probabilities: 0.000 0.000 0.043 0.000 0.000 0.043 0.043 0.000 0.870
0.000
```

```
##
## Node number 1946: 32 observations,
                                          complexity param=0.0002232741
##
     predicted class=4
                        expected loss=0.34375
                                               P(node) =0.001269589
       class counts:
##
                         0
                               0
                                     1
                                            1
                                                 21
                                                                          0
                                                        2
7
      probabilities: 0.000 0.000 0.031 0.031 0.656 0.062 0.000 0.000 0.000
##
0.219
##
     left son=3892 (24 obs) right son=3893 (8 obs)
##
     Primary splits:
##
         323 < 1
                     to the right, improve=6.083333, (0 missing)
##
         244 < 73.5
                     to the left, improve=5.435065, (0 missing)
                     to the right, improve=4.884314, (0 missing)
##
         324 < 39
                     to the left, improve=4.833333, (0 missing)
         300 < 6.5
##
##
         245 < 14
                     to the left, improve=4.637143, (0 missing)
##
     Surrogate splits:
##
         295 < 90.5
                     to the right, agree=0.938, adj=0.750, (0 split)
                     to the right, agree=0.938, adj=0.750, (0 split)
##
         296 < 17
##
         244 < 73.5
                     to the left, agree=0.906, adj=0.625, (0 split)
         245 < 14
                     to the left, agree=0.906, adj=0.625, (0 split)
##
##
         265 < 186
                     to the left, agree=0.906, adj=0.625, (0 split)
##
## Node number 1947: 40 observations,
                                          complexity param=8.930964e-05
##
     predicted class=9
                        expected loss=0.25 P(node) =0.001586987
##
       class counts:
                         0
                                     1
                                            1
                                                                          0
30
##
      probabilities: 0.000 0.000 0.025 0.025 0.025 0.050 0.000 0.125 0.000
0.750
##
     left son=3894 (9 obs) right son=3895 (31 obs)
##
     Primary splits:
##
         468 < 101
                     to the right, improve=4.864875, (0 missing)
##
         373 < 47.5 to the left, improve=4.262724, (0 missing)
##
         441 < 27.5
                     to the right, improve=4.137500, (0 missing)
##
         442 < 2.5
                     to the right, improve=4.137500, (0 missing)
##
         470 < 14
                     to the right, improve=4.137500, (0 missing)
##
     Surrogate splits:
##
         258 < 7
                     to the right, agree=0.925, adj=0.667, (0 split)
                     to the right, agree=0.925, adj=0.667, (0 split)
##
         286 < 154
         467 < 210
                     to the right, agree=0.925, adj=0.667, (0 split)
##
##
         469 < 5
                     to the right, agree=0.925, adj=0.667, (0 split)
##
         497 < 79.5
                     to the right, agree=0.925, adj=0.667, (0 split)
##
## Node number 1952: 24 observations,
                                          complexity param=0.0003125837
##
     predicted class=3
                        expected loss=0.3333333 P(node) =0.000952192
##
                         0
                                                        8
       class counts:
                               0
                                     0
                                           16
                                                              0
                                                                    0
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 0.667 0.000 0.333 0.000 0.000 0.000
0.000
     left son=3904 (15 obs) right son=3905 (9 obs)
##
##
     Primary splits:
##
         265 < 169.5 to the left, improve=8.888889, (0 missing)
```

```
to the right, improve=8.784314, (0 missing)
##
         179 < 3.5
                     to the right, improve=8.784314, (0 missing)
##
         180 < 3.5
##
         217 < 48.5
                     to the left,
                                   improve=8.784314, (0 missing)
                     to the left,
                                   improve=8.784314, (0 missing)
##
         218 < 38.5
##
     Surrogate splits:
##
         264 < 8.5
                     to the left, agree=0.958, adj=0.889, (0 split)
##
         573 < 56
                     to the left, agree=0.958, adj=0.889, (0 split)
         574 < 126
                                   agree=0.958, adj=0.889, (0 split)
##
                     to the left,
##
         179 < 3.5
                     to the right, agree=0.917, adj=0.778, (0 split)
##
         180 < 3.5
                     to the right, agree=0.917, adj=0.778, (0 split)
##
## Node number 1953: 470 observations,
                                          complexity param=0.0002232741
     predicted class=5 expected loss=0.08085106 P(node) =0.01864709
##
##
       class counts:
                         0
                               0
                                     1
                                          19
                                                  1
                                                      432
                                                                          0
16
##
      probabilities: 0.000 0.000 0.002 0.040 0.002 0.919 0.000 0.002 0.000
0.034
##
     left son=3906 (9 obs) right son=3907 (461 obs)
##
     Primary splits:
##
         123 < 180.5 to the right, improve=9.456185, (0 missing)
                     to the left, improve=8.900252, (0 missing)
##
         718 < 37
                     to the right, improve=8.580909, (0 missing)
##
         188 < 2
##
         215 < 27
                     to the left, improve=8.377046, (0 missing)
##
         216 < 1.5
                     to the left, improve=7.969778, (0 missing)
##
     Surrogate splits:
##
         122 < 11
                     to the right, agree=0.998, adj=0.889, (0 split)
##
         124 < 251.5 to the right, agree=0.994, adj=0.667, (0 split)
                     to the right, agree=0.991, adj=0.556, (0 split)
##
         121 < 13
##
         125 < 121.5 to the right, agree=0.991, adj=0.556, (0 split)
##
                     to the right, agree=0.989, adj=0.444, (0 split)
         120 < 1.5
##
## Node number 1956: 18 observations
##
     predicted class=2
                        expected loss=0.2777778 P(node) =0.000714144
##
       class counts:
                         3
                                    13
                                            0
                                                              2
0
##
      probabilities: 0.167 0.000 0.722 0.000 0.000 0.000 0.111 0.000 0.000
0.000
##
## Node number 1957: 7 observations
     predicted class=8 expected loss=0.1428571 P(node) =0.0002777227
##
##
       class counts:
                         0
                               0
                                     0
                                            1
                                                        0
                                                              0
                                                                    0
                                                                          6
0
##
      probabilities: 0.000 0.000 0.000 0.143 0.000 0.000 0.000 0.000 0.857
0.000
##
## Node number 1958: 11 observations
##
     predicted class=4
                        expected loss=0.5454545
                                                 P(node) = 0.0004364213
##
                                                  5
                                                                          3
       class counts:
                         0
                               0
                                     0
                                            0
                                                        2
                                                              0
1
##
      probabilities: 0.000 0.000 0.000 0.000 0.455 0.182 0.000 0.000 0.273
```

```
0.091
##
## Node number 1959: 24 observations
     predicted class=9 expected loss=0.08333333 P(node) =0.000952192
##
       class counts:
                         0
                               0
                                     0
                                            1
                                                  0
                                                        1
                                                                          0
22
##
      probabilities: 0.000 0.000 0.000 0.042 0.000 0.042 0.000 0.000 0.000
0.917
##
## Node number 1964: 60 observations,
                                         complexity param=0.000491203
##
     predicted class=7
                        expected loss=0.5666667 P(node) =0.00238048
                                                  1
                                                        0
##
       class counts:
                         0
                               1
                                     3
                                          14
                                                              1
                                                                   26
                                                                          4
10
##
      probabilities: 0.000 0.017 0.050 0.233 0.017 0.000 0.017 0.433 0.067
0.167
##
     left son=3928 (23 obs) right son=3929 (37 obs)
##
     Primary splits:
##
         377 < 4
                     to the right, improve=10.137090, (0 missing)
                     to the right, improve= 9.846812, (0 missing)
##
         406 < 243
##
         405 < 95.5 to the right, improve= 9.406748, (0 missing)
##
         574 < 18.5
                     to the left, improve= 8.147813, (0 missing)
                                   improve= 7.998405, (0 missing)
##
         546 < 8
                     to the left,
##
     Surrogate splits:
##
         405 < 163
                     to the right, agree=0.917, adj=0.783, (0 split)
##
         378 < 142.5 to the right, agree=0.867, adj=0.652, (0 split)
         406 < 223.5 to the right, agree=0.867, adj=0.652, (0 split)
##
##
         376 < 17.5 to the right, agree=0.850, adj=0.609, (0 split)
                     to the left, agree=0.833, adj=0.565, (0 split)
##
         461 < 124
##
## Node number 1965: 67 observations,
                                         complexity param=0.0005805126
##
     predicted class=9 expected loss=0.4179104 P(node) =0.002658203
##
       class counts:
                                     0
                                            2
                                                                          5
                                                 19
39
##
      probabilities: 0.000 0.000 0.000 0.030 0.284 0.000 0.000 0.030 0.075
0.582
##
     left son=3930 (13 obs) right son=3931 (54 obs)
##
     Primary splits:
##
         454 < 2
                     to the right, improve=13.86235, (0 missing)
         455 < 101.5 to the right, improve=13.86235, (0 missing)
##
         483 < 11.5 to the right, improve=13.86235, (0 missing)
##
##
                     to the right, improve=12.56336, (0 missing)
         482 < 3
##
         456 < 226.5 to the right, improve=12.10794, (0 missing)
##
     Surrogate splits:
##
         455 < 101.5 to the right, agree=1.000, adj=1.000, (0 split)
##
         483 < 11.5 to the right, agree=1.000, adj=1.000, (0 split)
##
         456 < 226.5 to the right, agree=0.985, adj=0.923, (0 split)
##
                     to the right, agree=0.985, adj=0.923, (0 split)
         482 < 3
##
         484 < 82.5 to the right, agree=0.970, adj=0.846, (0 split)
##
## Node number 1968: 77 observations
```

```
##
     predicted class=3
                        expected loss=0.05194805 P(node) =0.003054949
##
       class counts:
                         0
                               0
                                      1
                                           73
                                                  0
                                                        0
                                                              0
                                                                    0
                                                                           1
2
      probabilities: 0.000 0.000 0.013 0.948 0.000 0.000 0.000 0.000 0.013
##
0.026
##
## Node number 1969: 22 observations,
                                          complexity param=0.0002679289
##
     predicted class=9
                        expected loss=0.6363636 P(node) =0.0008728427
##
       class counts:
                         1
                               0
                                      1
                                            3
                                                  1
                                                                           1
8
##
      probabilities: 0.045 0.000 0.045 0.136 0.045 0.318 0.000 0.000 0.045
0.364
##
     left son=3938 (14 obs) right son=3939 (8 obs)
##
     Primary splits:
##
         188 < 3.5
                     to the right, improve=6.701299, (0 missing)
##
         376 < 110
                     to the right, improve=6.187257, (0 missing)
                     to the right, improve=5.951299, (0 missing)
##
         160 < 85.5
##
         467 < 194
                     to the right, improve=5.951299, (0 missing)
                     to the right, improve=5.708625, (0 missing)
##
         161 < 68.5
##
     Surrogate splits:
##
         376 < 110
                     to the right, agree=0.955, adj=0.875, (0 split)
##
         681 < 6.5
                     to the left, agree=0.955, adj=0.875, (0 split)
##
         158 < 65
                     to the right, agree=0.909, adj=0.750, (0 split)
##
         159 < 16
                     to the right, agree=0.909, adj=0.750, (0 split)
                     to the right, agree=0.909, adj=0.750, (0 split)
##
         187 < 96
##
## Node number 1970: 46 observations,
                                          complexity param=8.930964e-05
##
     predicted class=2
                        expected loss=0.1521739 P(node) =0.001825035
##
       class counts:
                         0
                               0
                                     39
                                            4
                                                        1
                                                                           1
1
##
      probabilities: 0.000 0.000 0.848 0.087 0.000 0.022 0.000 0.000 0.022
0.022
##
     left son=3940 (38 obs) right son=3941 (8 obs)
##
     Primary splits:
##
         351 < 9
                     to the left,
                                    improve=5.324371, (0 missing)
##
         380 < 249.5 to the left,
                                    improve=5.324371, (0 missing)
                                    improve=4.675585, (0 missing)
##
         379 < 226.5 to the left,
##
         680 < 15.5 to the left,
                                    improve=4.675585, (0 missing)
##
         681 < 21
                     to the left,
                                    improve=4.675585, (0 missing)
     Surrogate splits:
##
##
         379 < 155
                     to the left,
                                   agree=0.978, adj=0.875, (0 split)
                                   agree=0.957, adj=0.750, (0 split)
##
         350 < 3.5
                     to the left,
                                    agree=0.957, adj=0.750, (0 split)
##
         380 < 236
                     to the left,
                                    agree=0.957, adj=0.750, (0 split)
##
         655 < 250.5 to the left,
                                    agree=0.957, adj=0.750, (0 split)
##
         656 < 173.5 to the left,
##
## Node number 1971: 33 observations,
                                          complexity param=4.465482e-05
                        expected loss=0.2727273 P(node) =0.001309264
##
     predicted class=8
##
       class counts:
                         1
                               0
                                      3
                                            2
                                                  0
                                                        0
                                                              3
                                                                    0
                                                                         24
0
```

```
probabilities: 0.030 0.000 0.091 0.061 0.000 0.000 0.091 0.000 0.727
##
0.000
##
     left son=3942 (10 obs) right son=3943 (23 obs)
##
     Primary splits:
                     to the right, improve=5.535441, (0 missing)
##
         549 < 71
##
         522 < 67.5 to the right, improve=5.338485, (0 missing)
##
         550 < 113.5 to the right, improve=5.338485, (0 missing)
         377 < 85.5 to the left, improve=4.848485, (0 missing)
##
##
                     to the right, improve=4.757576, (0 missing)
         576 < 71
##
     Surrogate splits:
##
         521 < 6.5
                     to the right, agree=0.970, adj=0.9, (0 split)
         577 < 119.5 to the right, agree=0.970, adj=0.9, (0 split)
##
##
         522 < 67.5 to the right, agree=0.939, adj=0.8, (0 split)
##
         550 < 113.5 to the right, agree=0.939, adj=0.8, (0 split)
##
         376 < 42.5 to the left, agree=0.909, adj=0.7, (0 split)
##
## Node number 1972: 90 observations
##
     predicted class=4 expected loss=0.1 P(node) =0.00357072
##
       class counts:
                         0
                                     3
                                                81
                                                                          0
5
##
      probabilities: 0.000 0.000 0.033 0.000 0.900 0.000 0.011 0.000 0.000
0.056
##
## Node number 1973: 48 observations,
                                         complexity param=0.0003572385
     predicted class=9
                        expected loss=0.5625 P(node) =0.001904384
##
       class counts:
                         0
                               0
                                     2
                                           7
                                                11
                                                       2
                                                                          5
21
##
      probabilities: 0.000 0.000 0.042 0.146 0.229 0.042 0.000 0.000 0.104
0.438
##
     left son=3946 (10 obs) right son=3947 (38 obs)
##
     Primary splits:
##
         183 < 239
                     to the left, improve=6.762281, (0 missing)
                     to the right, improve=6.670290, (0 missing)
##
         403 < 157
##
         376 < 2.5
                     to the right, improve=5.578042, (0 missing)
         372 < 11.5 to the left, improve=5.352564, (0 missing)
##
##
         178 < 250
                     to the right, improve=5.238386, (0 missing)
##
     Surrogate splits:
##
         182 < 34.5 to the left,
                                   agree=0.896, adj=0.5, (0 split)
##
         181 < 15.5 to the left,
                                   agree=0.875, adj=0.4, (0 split)
         155 < 33
                     to the left,
                                   agree=0.854, adj=0.3, (0 split)
##
##
         156 < 9
                     to the left,
                                   agree=0.854, adj=0.3, (0 split)
         208 < 31.5 to the left, agree=0.854, adj=0.3, (0 split)
##
##
## Node number 1974: 50 observations,
                                         complexity param=0.0003572385
##
     predicted class=9
                        expected loss=0.64 P(node) =0.001983733
##
       class counts:
                         0
                               0
                                     3
                                           9
                                                 9
                                                       2
                                                             0
                                                                    1
                                                                          8
18
##
      probabilities: 0.000 0.000 0.060 0.180 0.180 0.040 0.000 0.020 0.160
0.360
     left son=3948 (14 obs) right son=3949 (36 obs)
```

```
Primary splits:
##
##
         374 < 58
                     to the left,
                                   improve=5.950159, (0 missing)
##
         407 < 139.5 to the left,
                                   improve=5.825263, (0 missing)
##
         179 < 239
                     to the right, improve=5.676341, (0 missing)
##
         151 < 8
                     to the right, improve=5.131765, (0 missing)
##
         178 < 62.5
                     to the right, improve=5.131765, (0 missing)
##
     Surrogate splits:
##
         346 < 8
                     to the left,
                                   agree=0.98, adj=0.929, (0 split)
##
         318 < 4
                     to the left,
                                   agree=0.94, adj=0.786, (0 split)
##
         375 < 4
                     to the left,
                                   agree=0.94, adj=0.786, (0 split)
##
         347 < 3.5
                     to the left,
                                   agree=0.90, adj=0.643, (0 split)
                                   agree=0.90, adj=0.643, (0 split)
##
         402 < 2.5
                     to the left,
##
## Node number 1975: 40 observations
##
     predicted class=8
                        expected loss=0.075 P(node) =0.001586987
##
       class counts:
                         1
                                     1
                                                                         37
                               0
1
##
      probabilities: 0.025 0.000 0.025 0.000 0.000 0.000 0.000 0.000 0.925
0.025
##
## Node number 1976: 119 observations,
                                           complexity param=0.0006698223
     predicted class=3 expected loss=0.5798319 P(node) =0.004721285
##
       class counts:
                               0
                                           50
                                                        0
                                                                   39
                         1
                                    16
                                                  6
                                                              0
                                                                          2
5
      probabilities: 0.008 0.000 0.134 0.420 0.050 0.000 0.000 0.328 0.017
##
0.042
##
     left son=3952 (66 obs) right son=3953 (53 obs)
##
     Primary splits:
##
         518 < 96.5 to the left,
                                   improve=20.87927, (0 missing)
##
         545 < 130.5 to the left,
                                   improve=18.94055, (0 missing)
##
         573 < 90.5 to the left,
                                   improve=18.81878, (0 missing)
##
         577 < 10.5 to the right, improve=18.25678, (0 missing)
##
         550 < 3
                     to the right, improve=18.11945, (0 missing)
##
     Surrogate splits:
##
         546 < 101
                                   agree=0.924, adj=0.830, (0 split)
                     to the left,
##
         517 < 1.5
                     to the left,
                                   agree=0.882, adj=0.736, (0 split)
         490 < 217.5 to the left,
                                   agree=0.874, adj=0.717, (0 split)
##
##
         545 < 7.5
                     to the left,
                                   agree=0.866, adj=0.698, (0 split)
##
         573 < 160
                     to the left,
                                   agree=0.824, adj=0.604, (0 split)
##
## Node number 1977: 57 observations,
                                          complexity param=4.465482e-05
##
     predicted class=9
                        expected loss=0.1403509 P(node) =0.002261456
##
       class counts:
                         0
                               0
                                     1
                                            1
                                                  2
                                                        0
                                                                          4
49
      probabilities: 0.000 0.000 0.018 0.018 0.035 0.000 0.000 0.000 0.070
##
0.860
##
     left son=3954 (10 obs) right son=3955 (47 obs)
##
     Primary splits:
##
         546 < 49
                     to the right, improve=5.333781, (0 missing)
##
         519 < 57.5 to the right, improve=4.716525, (0 missing)
```

```
518 < 35.5 to the right, improve=4.202339, (0 missing)
##
##
         374 < 168.5 to the right, improve=4.171784, (0 missing)
         375 < 130.5 to the right, improve=4.159799, (0 missing)
##
##
     Surrogate splits:
##
         518 < 79
                     to the right, agree=0.982, adj=0.9, (0 split)
##
         519 < 57.5
                     to the right, agree=0.982, adj=0.9, (0 split)
##
                     to the right, agree=0.965, adj=0.8, (0 split)
         517 < 134
                     to the right, agree=0.947, adj=0.7, (0 split)
##
         545 < 34.5
                     to the right, agree=0.947, adj=0.7, (0 split)
##
         574 < 53.5
##
## Node number 1978: 20 observations,
                                          complexity param=0.0001339645
                        expected loss=0.35 P(node) =0.0007934934
##
     predicted class=4
##
       class counts:
                         0
                               0
                                      0
                                            1
                                                 13
                                                        1
                                                              0
                                                                           0
                                                                    0
5
##
      probabilities: 0.000 0.000 0.000 0.050 0.650 0.050 0.000 0.000 0.000
0.250
##
     left son=3956 (11 obs) right son=3957 (9 obs)
##
     Primary splits:
         213 < 128
                                    improve=4.644444, (0 missing)
##
                     to the left,
##
         214 < 111.5 to the left,
                                   improve=4.068132, (0 missing)
##
         463 < 187.5 to the right, improve=4.068132, (0 missing)
         491 < 201.5 to the right, improve=4.068132, (0 missing)
##
##
         466 < 35.5 to the right, improve=3.270707, (0 missing)
##
     Surrogate splits:
##
         214 < 69
                     to the left,
                                   agree=0.95, adj=0.889, (0 split)
##
         185 < 52
                     to the left,
                                    agree=0.90, adj=0.778, (0 split)
                                    agree=0.90, adj=0.778, (0 split)
##
         186 < 72
                     to the left,
                                    agree=0.90, adj=0.778, (0 split)
##
         212 < 179.5 to the left,
##
         240 < 144.5 to the left,
                                   agree=0.90, adj=0.778, (0 split)
##
## Node number 1979: 97 observations,
                                          complexity param=0.0001339645
     predicted class=9
                        expected loss=0.1340206 P(node) =0.003848443
##
##
       class counts:
                         0
                               0
                                      0
                                                  2
                                                        0
                                                              0
                                                                    4
                                                                           7
84
##
      probabilities: 0.000 0.000 0.000 0.000 0.021 0.000 0.000 0.041 0.072
0.866
##
     left son=3958 (12 obs) right son=3959 (85 obs)
##
     Primary splits:
##
         436 < 152
                     to the left,
                                    improve=7.540509, (0 missing)
         464 < 25
                                    improve=7.106645, (0 missing)
##
                     to the left,
##
         218 < 20
                     to the right, improve=6.037965, (0 missing)
         485 < 89.5
##
                     to the right, improve=5.667027, (0 missing)
##
         437 < 2
                     to the left, improve=5.221091, (0 missing)
##
     Surrogate splits:
##
         464 < 6
                     to the left, agree=0.969, adj=0.750, (0 split)
##
         483 < 1
                     to the right, agree=0.928, adj=0.417, (0 split)
##
         484 < 47
                     to the right, agree=0.928, adj=0.417, (0 split)
##
                     to the right, agree=0.928, adj=0.417, (0 split)
         511 < 42
##
         512 < 8
                     to the right, agree=0.928, adj=0.417, (0 split)
##
```

```
## Node number 1980: 31 observations
     predicted class=4 expected loss=0.03225806 P(node) =0.001229915
##
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                30
                                                       0
                                                             0
                                                                         1
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.968 0.000 0.000 0.000 0.032
0.000
##
## Node number 1981: 35 observations,
                                         complexity param=4.465482e-05
                        expected loss=0.1714286 P(node) =0.001388613
     predicted class=9
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                 4
                                                       0
                                                             0
                                                                         1
29
      probabilities: 0.000 0.000 0.000 0.000 0.114 0.000 0.000 0.029 0.029
##
0.829
##
     left son=3962 (7 obs) right son=3963 (28 obs)
##
     Primary splits:
##
         518 < 79.5 to the right, improve=3.671429, (0 missing)
##
         384 < 47
                     to the right, improve=3.242857, (0 missing)
##
         411 < 221
                     to the right, improve=3.242857, (0 missing)
                     to the right, improve=3.242857, (0 missing)
##
         412 < 4.5
##
         546 < 101
                     to the right, improve=3.031217, (0 missing)
##
     Surrogate splits:
##
         546 < 79
                     to the right, agree=0.943, adj=0.714, (0 split)
##
         190 < 1.5
                     to the right, agree=0.914, adj=0.571, (0 split)
##
         218 < 66.5
                     to the right, agree=0.914, adj=0.571, (0 split)
##
         233 < 8
                     to the left, agree=0.914, adj=0.571, (0 split)
##
         266 < 8.5
                     to the left, agree=0.914, adj=0.571, (0 split)
##
## Node number 1982: 72 observations,
                                         complexity param=0.0003125837
##
     predicted class=9
                        expected loss=0.4305556 P(node) =0.002856576
##
       class counts:
                         0
                               0
                                           4
                                                 5
                                                       2
                                                                   3
                                                                        17
                                     0
41
##
      probabilities: 0.000 0.000 0.000 0.056 0.069 0.028 0.000 0.042 0.236
0.569
##
     left son=3964 (24 obs) right son=3965 (48 obs)
##
     Primary splits:
##
         438 < 130.5 to the left,
                                   improve=15.34722, (0 missing)
         400 < 25
##
                     to the left,
                                   improve=14.57825, (0 missing)
##
         544 < 138
                     to the left,
                                   improve=14.19766, (0 missing)
##
         429 < 19.5 to the left,
                                   improve=13.87868, (0 missing)
         517 < 198
                     to the right, improve=13.83532, (0 missing)
##
##
     Surrogate splits:
##
         410 < 165
                     to the left,
                                   agree=0.875, adj=0.625, (0 split)
##
         466 < 75
                     to the left,
                                   agree=0.875, adj=0.625, (0 split)
         544 < 107.5 to the right, agree=0.861, adj=0.583, (0 split)
##
##
         411 < 13.5 to the left,
                                   agree=0.847, adj=0.542, (0 split)
##
         430 < 45.5 to the left,
                                   agree=0.847, adj=0.542, (0 split)
##
## Node number 1983: 1014 observations,
                                          complexity param=0.0001339645
##
     predicted class=9 expected loss=0.06213018 P(node) =0.04023011
      class counts: 0 0 1 6 30 4 0 7 15
```

```
951
##
      probabilities: 0.000 0.000 0.001 0.006 0.030 0.004 0.000 0.007 0.015
0.938
##
     left son=3966 (7 obs) right son=3967 (1007 obs)
##
     Primary splits:
         595 < 21.5 to the right, improve=8.816440, (0 missing)
##
##
                     to the right, improve=8.816440, (0 missing)
         623 < 69
                     to the right, improve=6.776719, (0 missing)
##
         219 < 193
         348 < 250.5 to the right, improve=6.691927, (0 missing)
##
                     to the right, improve=6.633264, (0 missing)
##
         470 < 5
##
     Surrogate splits:
         623 < 69
##
                     to the right, agree=1.000, adj=1.000, (0 split)
##
         596 < 36.5 to the right, agree=0.999, adj=0.857, (0 split)
##
         567 < 38
                     to the right, agree=0.998, adj=0.714, (0 split)
##
                     to the right, agree=0.998, adj=0.714, (0 split)
         568 < 17.5
##
         594 < 4
                     to the right, agree=0.998, adj=0.714, (0 split)
##
## Node number 1988: 16 observations
##
     predicted class=3 expected loss=0.25 P(node) =0.0006347947
##
       class counts:
                         0
                               1
                                     2
                                          12
                                                 0
                                                        0
                                                              0
                                                                    0
                                                                          1
0
      probabilities: 0.000 0.062 0.125 0.750 0.000 0.000 0.000 0.000 0.062
##
0.000
##
## Node number 1989: 9 observations
##
     predicted class=5
                        expected loss=0
                                         P(node) = 0.000357072
##
       class counts:
                         0
                               0
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 0.000 1.000 0.000 0.000 0.000
0.000
##
## Node number 1998: 7 observations
##
     predicted class=3
                        expected loss=0.1428571 P(node) =0.0002777227
##
       class counts:
                         0
                                     0
                                           6
1
      probabilities: 0.000 0.000 0.000 0.857 0.000 0.000 0.000 0.000 0.000
##
0.143
##
## Node number 1999: 53 observations,
                                         complexity param=4.465482e-05
     predicted class=9 expected loss=0.2075472 P(node) =0.002102757
##
       class counts:
                         0
                               0
                                     1
                                           0
                                                  5
                                                       0
                                                              0
                                                                          3
42
      probabilities: 0.000 0.000 0.019 0.000 0.094 0.000 0.000 0.038 0.057
##
0.792
##
     left son=3998 (7 obs) right son=3999 (46 obs)
##
     Primary splits:
##
         379 < 57
                     to the left, improve=4.335169, (0 missing)
##
         320 < 198.5 to the right, improve=3.708405, (0 missing)
##
         214 < 41
                     to the left,
                                   improve=3.136557, (0 missing)
         213 < 51 to the left, improve=3.109510, (0 missing)
##
```

```
to the right, improve=3.023556, (0 missing)
##
         181 < 18
##
     Surrogate splits:
##
         378 < 110
                     to the left, agree=0.925, adj=0.429, (0 split)
                     to the right, agree=0.925, adj=0.429, (0 split)
##
         428 < 120
##
         149 < 1.5
                     to the right, agree=0.906, adj=0.286, (0 split)
##
         150 < 38.5 to the right, agree=0.906, adj=0.286, (0 split)
##
         151 < 105.5 to the right, agree=0.906, adj=0.286, (0 split)
##
## Node number 2014: 13 observations
##
     predicted class=7
                        expected loss=0.5384615 P(node) =0.0005157707
##
       class counts:
                         0
                               0
                                     4
                                           2
                                                                          0
                                                 0
1
##
      probabilities: 0.000 0.000 0.308 0.154 0.000 0.000 0.000 0.462 0.000
0.077
##
## Node number 2015: 1314 observations,
                                           complexity param=2.232741e-05
     predicted class=7 expected loss=0.01902588 P(node) =0.05213251
##
       class counts:
                         0
                               1
                                     7
                                           2
                                                 3
                                                       0
                                                                1289
                                                              2
10
##
      probabilities: 0.000 0.001 0.005 0.002 0.002 0.000 0.002 0.981 0.000
0.008
##
     left son=4030 (7 obs) right son=4031 (1307 obs)
     Primary splits:
##
##
         482 < 134.5 to the right, improve=1.888461, (0 missing)
##
         265 < 10.5 to the left, improve=1.728205, (0 missing)
                     to the right, improve=1.711924, (0 missing)
##
         488 < 106
                     to the left, improve=1.628118, (0 missing)
##
         512 < 2
                     to the right, improve=1.623524, (0 missing)
         664 < 3.5
##
##
     Surrogate splits:
##
         483 < 252.5 to the right, agree=0.998, adj=0.571, (0 split)
##
         510 < 24.5 to the right, agree=0.998, adj=0.571, (0 split)
##
         454 < 217.5 to the right, agree=0.997, adj=0.429, (0 split)
##
         481 < 68
                     to the right, agree=0.997, adj=0.429, (0 split)
         509 < 24.5 to the right, agree=0.997, adj=0.429, (0 split)
##
##
## Node number 2048: 2230 observations,
                                           complexity param=7.44247e-05
##
     predicted class=1
                        expected loss=0.01255605 P(node) =0.08847451
##
       class counts:
                         0 2202
                                     1
                                           2
                                                 1
                                                        0
                                                              4
                                                                    5
                                                                         14
1
      probabilities: 0.000 0.987 0.000 0.001 0.000 0.000 0.002 0.002 0.006
##
0.000
##
     left son=4096 (2198 obs) right son=4097 (32 obs)
     Primary splits:
##
                                   improve=3.924876, (0 missing)
##
         493 < 64.5 to the left,
##
         492 < 253.5 to the left,
                                   improve=3.631965, (0 missing)
##
         494 < 9
                     to the left,
                                   improve=3.600578, (0 missing)
##
         300 < 1
                     to the left,
                                   improve=3.237390, (0 missing)
                     to the right, improve=3.201928, (0 missing)
##
         433 < 2.5
##
     Surrogate splits:
##
         521 < 56 to the left, agree=0.995, adj=0.625, (0 split)
```

```
agree=0.993, adj=0.500, (0 split)
##
         465 < 56 to the left,
##
         492 < 252.5 to the left,
                                   agree=0.991, adj=0.375, (0 split)
                                   agree=0.989, adj=0.219, (0 split)
##
         549 < 146.5 to the left,
         494 < 21.5 to the left,
                                   agree=0.988, adj=0.188, (0 split)
##
##
## Node number 2049: 7 observations
     predicted class=5
                        expected loss=0.4285714 P(node) =0.0002777227
##
##
       class counts:
                         0
                               3
                                                        4
                                                                          0
0
##
      probabilities: 0.000 0.429 0.000 0.000 0.000 0.571 0.000 0.000 0.000
0.000
##
## Node number 2182: 7 observations
##
     predicted class=2 expected loss=0.2857143
                                                 P(node) =0.0002777227
##
                                     5
                                                        0
       class counts:
                         0
                               0
                                            0
                                                  0
                                                              2
                                                                    0
                                                                          0
0
##
      probabilities: 0.000 0.000 0.714 0.000 0.000 0.000 0.286 0.000 0.000
0.000
##
## Node number 2183: 49 observations
     predicted class=6
                        expected loss=0.06122449 P(node) =0.001944059
##
##
       class counts:
                         0
                               0
                                     0
                                            0
                                                  1
                                                        1
                                                             46
                                                                          0
1
##
      probabilities: 0.000 0.000 0.000 0.000 0.020 0.020 0.939 0.000 0.000
0.020
##
## Node number 2186: 31 observations,
                                          complexity param=0.0002456015
##
     predicted class=2
                        expected loss=0.7741935 P(node) =0.001229915
##
       class counts:
                         4
                                     7
                                            3
                                                  4
                                                              1
                                                                          4
                               6
                                                        2
0
##
      probabilities: 0.129 0.194 0.226 0.097 0.129 0.065 0.032 0.000 0.129
0.000
##
     left son=4372 (20 obs) right son=4373 (11 obs)
##
     Primary splits:
##
         652 < 147
                     to the left,
                                   improve=4.476246, (0 missing)
##
         653 < 128.5 to the left,
                                   improve=4.476246, (0 missing)
                                   improve=4.476246, (0 missing)
##
         654 < 14
                     to the left,
##
         160 < 49.5 to the left,
                                   improve=4.155500, (0 missing)
##
         626 < 149
                     to the left,
                                   improve=4.126486, (0 missing)
##
     Surrogate splits:
##
         653 < 128.5 to the left,
                                   agree=1.000, adj=1.000, (0 split)
                                   agree=1.000, adj=1.000, (0 split)
##
         654 < 14
                     to the left,
                                   agree=0.968, adj=0.909, (0 split)
##
         626 < 149
                     to the left,
                                   agree=0.935, adj=0.818, (0 split)
##
         160 < 49.5 to the left,
                     to the left,
                                   agree=0.935, adj=0.818, (0 split)
##
         651 < 34
##
## Node number 2187: 23 observations,
                                          complexity param=8.930964e-05
     predicted class=5 expected loss=0.2608696 P(node) =0.0009125174
##
##
       class counts:
                         1
                               0
                                     1
                                            3
                                                       17
                                                              0
                                                                    0
                                                                          1
0
```

```
probabilities: 0.043 0.000 0.043 0.130 0.000 0.739 0.000 0.000 0.043
##
0.000
##
     left son=4374 (7 obs) right son=4375 (16 obs)
##
     Primary splits:
##
         157 < 20.5 to the right, improve=4.770186, (0 missing)
                     to the right, improve=4.770186, (0 missing)
##
         158 < 9
         155 < 20.5
##
                     to the right, improve=3.180901, (0 missing)
         184 < 22
                     to the right, improve=2.713043, (0 missing)
##
##
                     to the right, improve=2.713043, (0 missing)
         185 < 57
##
     Surrogate splits:
##
         158 < 9
                     to the right, agree=1.000, adj=1.000, (0 split)
         155 < 20.5 to the right, agree=0.913, adj=0.714, (0 split)
##
##
         156 < 165.5 to the right, agree=0.913, adj=0.714, (0 split)
##
         159 < 14
                     to the right, agree=0.913, adj=0.714, (0 split)
##
         125 < 10.5 to the right, agree=0.870, adj=0.571, (0 split)
##
## Node number 2190: 37 observations,
                                         complexity param=0.0003125837
##
     predicted class=1 expected loss=0.6756757 P(node) =0.001467963
       class counts:
##
                         0
                              12
                                     1
                                            1
                                                                          0
5
##
      probabilities: 0.000 0.324 0.027 0.027 0.216 0.054 0.081 0.135 0.000
0.135
##
     left son=4380 (15 obs) right son=4381 (22 obs)
##
     Primary splits:
##
         405 < 205.5 to the right, improve=6.039803, (0 missing)
                     to the right, improve=5.747548, (0 missing)
##
         377 < 245
##
                     to the right, improve=5.137150, (0 missing)
         349 < 248
         321 < 189.5 to the right, improve=4.770690, (0 missing)
##
##
         375 < 155
                     to the left, improve=4.407336, (0 missing)
##
     Surrogate splits:
##
         377 < 62
                     to the right, agree=0.838, adj=0.600, (0 split)
         180 < 54
##
                     to the right, agree=0.811, adj=0.533, (0 split)
         433 < 240.5 to the right, agree=0.811, adj=0.533, (0 split)
##
##
         153 < 159.5 to the right, agree=0.784, adj=0.467, (0 split)
##
         181 < 97.5 to the right, agree=0.784, adj=0.467, (0 split)
##
## Node number 2191: 33 observations,
                                         complexity param=4.465482e-05
                        expected loss=0.2727273 P(node) =0.001309264
##
     predicted class=9
##
       class counts:
                         0
                               2
                                     0
                                            0
                                                  5
                                                        0
                                                              0
                                                                    1
                                                                          1
24
##
      probabilities: 0.000 0.061 0.000 0.000 0.152 0.000 0.000 0.030 0.030
0.727
##
     left son=4382 (9 obs) right son=4383 (24 obs)
##
     Primary splits:
         238 < 175.5 to the left,
##
                                   improve=4.050505, (0 missing)
##
         237 < 81
                     to the left,
                                   improve=3.869797, (0 missing)
##
         212 < 23
                     to the left,
                                   improve=3.452214, (0 missing)
##
                                   improve=3.452214, (0 missing)
         213 < 110.5 to the left,
##
         211 < 42
                     to the left,
                                   improve=2.671995, (0 missing)
     Surrogate splits:
##
```

```
211 < 98 to the left,
                                   agree=0.909, adj=0.667, (0 split)
##
##
         237 < 52.5 to the left, agree=0.909, adj=0.667, (0 split)
                     to the left,
                                   agree=0.909, adj=0.667, (0 split)
##
         239 < 21
         212 < 23
                     to the left,
                                   agree=0.879, adj=0.556, (0 split)
##
##
         264 < 66.5 to the left,
                                   agree=0.879, adj=0.556, (0 split)
##
## Node number 2222: 10 observations
##
     predicted class=8 expected loss=0.3 P(node) =0.0003967467
##
       class counts:
                         1
                               1
                                     0
                                           0
                                                 1
                                                                         7
0
##
      probabilities: 0.100 0.100 0.000 0.000 0.100 0.000 0.000 0.000 0.700
0.000
##
## Node number 2223: 11 observations
##
     predicted class=9 expected loss=0.5454545 P(node) =0.0004364213
##
       class counts:
                         1
                                     0
                                           2
                                                             2
                                                                         1
                                                 0
5
##
      probabilities: 0.091 0.000 0.000 0.182 0.000 0.000 0.182 0.000 0.091
0.455
##
## Node number 2576: 1350 observations
     predicted class=3 expected loss=0.01407407 P(node) =0.0535608
##
       class counts:
                               2
                                     8 1331
                         0
                                                 0
                                                       6
                                                             0
                                                                          3
0
      probabilities: 0.000 0.001 0.006 0.986 0.000 0.004 0.000 0.000 0.002
##
0.000
##
## Node number 2577: 10 observations
     predicted class=5
                        expected loss=0.3 P(node) =0.0003967467
##
##
       class counts:
                         0
                               0
                                     0
                                           1
                                                 0
                                                       7
                                                             0
                                                                   0
                                                                          2
a
##
      probabilities: 0.000 0.000 0.000 0.100 0.000 0.700 0.000 0.000 0.200
0.000
##
## Node number 2682: 11 observations
     predicted class=3 expected loss=0.4545455 P(node) =0.0004364213
##
##
       class counts:
                         0
                               0
                                     0
                                           6
                                                       0
                                                             1
                                                                         0
0
      probabilities: 0.000 0.000 0.000 0.545 0.364 0.000 0.091 0.000 0.000
##
0.000
##
## Node number 2683: 9 observations
##
     predicted class=7
                        expected loss=0 P(node) =0.000357072
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                 0
                                                       0
                                                             0
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 1.000 0.000
0.000
##
## Node number 2684: 13 observations
     predicted class=1 expected loss=0.4615385 P(node) =0.0005157707
```

```
##
       class counts: 0
0
##
      probabilities: 0.000 0.538 0.000 0.000 0.000 0.000 0.154 0.000 0.308
0.000
##
## Node number 2685: 14 observations
     predicted class=5 expected loss=0.6428571 P(node) =0.0005554453
##
       class counts:
                         0
                               0
                                     0
                                           3
                                                       5
0
##
      probabilities: 0.000 0.000 0.000 0.214 0.143 0.357 0.286 0.000 0.000
0.000
##
## Node number 2686: 22 observations,
                                         complexity param=0.0001562919
     predicted class=9 expected loss=0.5454545 P(node) =0.0008728427
##
       class counts:
                         0
                               0
                                     0
                                                 2
                                                       0
                                                                         2
                                           7
                                                                   1
10
##
      probabilities: 0.000 0.000 0.000 0.318 0.091 0.000 0.000 0.045 0.091
0.455
##
     left son=5372 (9 obs) right son=5373 (13 obs)
##
     Primary splits:
##
         292 < 132
                    to the left,
                                   improve=6.783994, (0 missing)
##
         491 < 243.5 to the left,
                                   improve=6.783994, (0 missing)
##
         518 < 73.5 to the left,
                                   improve=6.718182, (0 missing)
##
         291 < 60.5 to the left,
                                   improve=6.639610, (0 missing)
                     to the left, improve=6.639610, (0 missing)
##
         319 < 57
##
     Surrogate splits:
##
         491 < 243.5 to the left, agree=1.000, adj=1.000, (0 split)
                     to the right, agree=0.955, adj=0.889, (0 split)
##
         208 < 56
##
         235 < 83.5 to the right, agree=0.955, adj=0.889, (0 split)
##
         291 < 60.5 to the left, agree=0.955, adj=0.889, (0 split)
##
         318 < 3
                     to the left, agree=0.955, adj=0.889, (0 split)
##
## Node number 2687: 21 observations
##
     predicted class=9 expected loss=0
                                         P(node) = 0.000833168
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                                         0
21
##
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
1.000
##
## Node number 2716: 25 observations,
                                         complexity param=0.0002232741
     predicted class=3 expected loss=0.36 P(node) =0.0009918667
##
       class counts:
                               1
                                     1
                                          16
                                                                         1
0
##
      probabilities: 0.000 0.040 0.040 0.640 0.000 0.240 0.000 0.000 0.040
0.000
##
     left son=5432 (16 obs) right son=5433 (9 obs)
##
     Primary splits:
##
         270 < 13.5 to the right, improve=6.658333, (0 missing)
##
         269 < 88.5 to the right, improve=6.302941, (0 missing)
##
         262 < 248 to the left, improve=6.302941, (0 missing)
```

```
268 < 65.5 to the right, improve=6.152381, (0 missing)
##
                     to the right, improve=5.533333, (0 missing)
##
         242 < 122
##
     Surrogate splits:
##
         242 < 122
                     to the right, agree=0.96, adj=0.889, (0 split)
##
         269 < 88.5 to the right, agree=0.96, adj=0.889, (0 split)
##
         261 < 103
                     to the left, agree=0.92, adj=0.778, (0 split)
##
         268 < 65.5 to the right, agree=0.92, adj=0.778, (0 split)
         296 < 233.5 to the right, agree=0.92, adj=0.778, (0 split)
##
##
## Node number 2717: 77 observations,
                                         complexity param=0.0002232741
##
     predicted class=5
                        expected loss=0.3896104 P(node) =0.003054949
                         5
                                                                          2
##
       class counts:
                               0
                                     0
                                            9
                                                  0
                                                       47
                                                              2
                                                                    3
9
##
      probabilities: 0.065 0.000 0.000 0.117 0.000 0.610 0.026 0.039 0.026
0.117
##
     left son=5434 (8 obs) right son=5435 (69 obs)
##
     Primary splits:
##
         455 < 193.5 to the right, improve=6.716685, (0 missing)
         329 < 218.5 to the right, improve=6.662338, (0 missing)
##
##
         358 < 11
                     to the right, improve=6.509649, (0 missing)
                     to the right, improve=6.348052, (0 missing)
##
         482 < 197
         597 < 38.5 to the right, improve=6.068789, (0 missing)
##
##
     Surrogate splits:
##
         456 < 196.5 to the right, agree=0.987, adj=0.875, (0 split)
##
         428 < 246.5 to the right, agree=0.974, adj=0.750, (0 split)
                     to the right, agree=0.961, adj=0.625, (0 split)
##
         454 < 80
         483 < 167.5 to the right, agree=0.961, adj=0.625, (0 split)
##
         484 < 251.5 to the right, agree=0.961, adj=0.625, (0 split)
##
##
## Node number 2718: 30 observations,
                                         complexity param=0.0001786193
##
     predicted class=8
                        expected loss=0.4666667 P(node) =0.00119024
##
       class counts:
                                            2
                                                                         16
6
##
      probabilities: 0.000 0.000 0.000 0.067 0.000 0.200 0.000 0.000 0.533
0.200
##
     left son=5436 (14 obs) right son=5437 (16 obs)
##
     Primary splits:
##
         431 < 10.5 to the left,
                                   improve=5.719048, (0 missing)
##
         433 < 9
                     to the left,
                                   improve=4.869985, (0 missing)
         432 < 92
                                   improve=4.851885, (0 missing)
##
                     to the left,
##
         405 < 194.5 to the left,
                                   improve=4.560128, (0 missing)
         466 < 105.5 to the right, improve=4.526094, (0 missing)
##
     Surrogate splits:
##
##
         432 < 27.5 to the left,
                                   agree=0.867, adj=0.714, (0 split)
##
         402 < 249.5 to the left,
                                   agree=0.833, adj=0.643, (0 split)
##
         403 < 161.5 to the left,
                                   agree=0.833, adj=0.643, (0 split)
##
         430 < 160
                     to the left,
                                   agree=0.833, adj=0.643, (0 split)
##
                                   agree=0.833, adj=0.643, (0 split)
         458 < 13
                     to the left,
##
## Node number 2719: 8 observations
```

```
expected loss=0 P(node) =0.0003173973
##
     predicted class=9
##
      class counts:
                        0
                              0
                                    0
                                          0
                                                0
                                                                        0
8
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
##
1.000
##
## Node number 2748: 20 observations,
                                        complexity param=0.0001488494
     predicted class=3 expected loss=0.4 P(node) =0.0007934934
      class counts:
##
                        0
                              0
                                         12
                                                0
                                                                        0
0
##
      probabilities: 0.000 0.000 0.000 0.600 0.000 0.350 0.050 0.000 0.000
0.000
##
     left son=5496 (13 obs) right son=5497 (7 obs)
##
     Primary splits:
##
        551 < 62.5 to the right, improve=5.047253, (0 missing)
##
        601 < 160
                    to the left, improve=3.800000, (0 missing)
        578 < 83.5 to the right, improve=3.800000, (0 missing)
##
##
        152 < 10.5 to the right, improve=3.772527, (0 missing)
        153 < 58.5 to the right, improve=3.772527, (0 missing)
##
##
     Surrogate splits:
##
        374 < 240
                    to the left, agree=0.9, adj=0.714, (0 split)
##
        492 < 32
                    to the left, agree=0.9, adj=0.714, (0 split)
##
        493 < 181.5 to the left, agree=0.9, adj=0.714, (0 split)
##
        520 < 126.5 to the left, agree=0.9, adj=0.714, (0 split)
                    to the right, agree=0.9, adj=0.714, (0 split)
##
##
## Node number 2749: 17 observations
##
     predicted class=5
                       expected loss=0 P(node) =0.0006744694
##
      class counts:
                                                     17
                        0
                              0
                                    0
                                          0
                                                0
0
      probabilities: 0.000 0.000 0.000 0.000 1.000 0.000 0.000 0.000
##
0.000
##
## Node number 2750: 378 observations
     predicted class=5 expected loss=0.01851852 P(node) =0.01499702
##
      class counts:
                        0
                              0
                                                    371
                                                            4
                                                                  0
                                    0
                                          3
                                                                        0
0
##
      probabilities: 0.000 0.000 0.000 0.008 0.000 0.981 0.011 0.000 0.000
0.000
##
## Node number 2751: 7 observations
##
     predicted class=8
                       expected loss=0.5714286 P(node) =0.0002777227
##
      class counts:
                              0
                                    0
                                                0
                                                      2
                                                                        3
2
      probabilities: 0.000 0.000 0.000 0.000 0.286 0.000 0.000 0.429
##
0.286
## Node number 3066: 8 observations
     predicted class=5 expected loss=0.375 P(node) =0.0003173973
## class counts: 0 0 0 0 5 1 0
```

```
1
      probabilities: 0.000 0.000 0.000 0.000 0.625 0.125 0.000 0.125
##
0.125
##
## Node number 3067: 17 observations
     predicted class=8 expected loss=0.05882353 P(node) =0.0006744694
##
##
       class counts:
                         0
                               0
                                     0
                                                 0
                                                       0
                                                             0
                                           1
                                                                        16
      probabilities: 0.000 0.000 0.000 0.059 0.000 0.000 0.000 0.000 0.941
##
0.000
##
## Node number 3068: 7 observations
     predicted class=6 expected loss=0.2857143 P(node) =0.0002777227
##
       class counts:
                         1
                               0
                                     0
                                           0
                                                       0
                                                             5
                                                                         1
0
      probabilities: 0.143 0.000 0.000 0.000 0.000 0.000 0.714 0.000 0.143
##
0.000
##
## Node number 3069: 30 observations
     predicted class=8 expected loss=0.1 P(node) =0.00119024
##
      class counts:
                         0
                                                                        27
                               0
                                     0
                                           0
                                                 0
                                                       0
                                                             2
1
##
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.067 0.000 0.900
0.033
##
## Node number 3074: 18 observations
     predicted class=0 expected loss=0.05555556 P(node) =0.000714144
                                                       0
##
       class counts:
                        17
                               0
                                     1
                                           0
                                                 0
                                                             0
                                                                         0
0
      probabilities: 0.944 0.000 0.056 0.000 0.000 0.000 0.000 0.000 0.000
##
0.000
##
## Node number 3075: 7 observations
     predicted class=6 expected loss=0.4285714 P(node) =0.0002777227
##
                                                       0
       class counts:
                         3
                               0
                                     0
                                           0
                                                 0
                                                             4
                                                                         0
0
      probabilities: 0.429 0.000 0.000 0.000 0.000 0.571 0.000 0.000
##
0.000
##
## Node number 3080: 201 observations
     predicted class=0 expected loss=0.009950249 P(node) =0.007974608
##
       class counts:
                       199
                                     0
0
##
      probabilities: 0.990 0.000 0.000 0.000 0.005 0.000 0.005 0.000
0.000
##
## Node number 3081: 66 observations,
                                       complexity param=0.000111637
     predicted class=0 expected loss=0.1969697 P(node) =0.002618528
##
       class counts:
                        53
                               0
                                     7
                                           1
                                                       1
                                                             3
                                                                         0
1
```

```
probabilities: 0.803 0.000 0.106 0.015 0.000 0.015 0.045 0.000 0.000
##
0.015
##
     left son=6162 (56 obs) right son=6163 (10 obs)
     Primary splits:
##
##
         149 < 10.5 to the left,
                                   improve=8.979437, (0 missing)
##
         176 < 55
                     to the left,
                                   improve=6.457040, (0 missing)
##
         203 < 17.5 to the left,
                                   improve=6.457040, (0 missing)
         177 < 158
##
                     to the left,
                                   improve=5.836789, (0 missing)
##
                                   improve=5.824955, (0 missing)
         150 < 43.5 to the left,
##
     Surrogate splits:
##
         122 < 14.5 to the left,
                                   agree=0.955, adj=0.7, (0 split)
##
         123 < 92.5 to the left,
                                   agree=0.939, adj=0.6, (0 split)
##
         150 < 131.5 to the left,
                                   agree=0.939, adj=0.6, (0 split)
##
         148 < 2
                     to the left,
                                   agree=0.924, adj=0.5, (0 split)
##
         177 < 114
                     to the left,
                                   agree=0.924, adj=0.5, (0 split)
##
## Node number 3082: 18 observations
##
     predicted class=0 expected loss=0.3888889 P(node) =0.000714144
##
       class counts:
                        11
                               0
                                     2
                                           5
                                                       0
                                                              0
                                                                          0
0
##
      probabilities: 0.611 0.000 0.111 0.278 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 3083: 14 observations
     predicted class=5 expected loss=0.1428571 P(node) =0.0005554453
##
       class counts:
                         1
                               0
                                     0
                                           1
                                                      12
                                                                    0
                                                                          0
0
##
      probabilities: 0.071 0.000 0.000 0.071 0.000 0.857 0.000 0.000 0.000
0.000
##
## Node number 3086: 14 observations
     predicted class=2 expected loss=0.07142857 P(node) =0.0005554453
##
       class counts:
                         1
                               0
                                    13
                                                 0
                                                       0
                                                              0
                                                                          0
0
##
      probabilities: 0.071 0.000 0.929 0.000 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 3087: 8 observations
##
     predicted class=7 expected loss=0.625 P(node) =0.0003173973
                               0
                                                       0
##
       class counts:
                         1
                                     2
                                                 0
                                                              2
0
##
      probabilities: 0.125 0.000 0.250 0.000 0.000 0.000 0.250 0.375 0.000
0.000
##
## Node number 3172: 27 observations
##
     predicted class=3
                        expected loss=0
                                         P(node) = 0.001071216
##
       class counts:
                         0
                               0
                                     0
                                          27
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 1.000 0.000 0.000 0.000 0.000 0.000
0.000
```

```
##
## Node number 3173: 9 observations
##
     predicted class=5 expected loss=0.5555556 P(node) =0.000357072
       class counts:
                         2
                               0
                                                        4
##
                                     0
                                           3
                                                              0
                                                                          0
                                                  0
0
      probabilities: 0.222 0.000 0.000 0.333 0.000 0.444 0.000 0.000 0.000
##
0.000
##
## Node number 3298: 10 observations
##
     predicted class=0
                        expected loss=0.6 P(node) =0.0003967467
##
       class counts:
                         4
                               0
                                     1
                                            1
                                                  0
                                                              2
                                                                          2
0
##
      probabilities: 0.400 0.000 0.100 0.100 0.000 0.000 0.200 0.000 0.200
0.000
##
## Node number 3299: 14 observations
     predicted class=5
                        expected loss=0.2857143 P(node) =0.0005554453
##
       class counts:
                         0
                               0
                                                  1
                                                       10
                                                                    0
                                     0
                                           1
                                                              1
                                                                          1
0
##
      probabilities: 0.000 0.000 0.000 0.071 0.071 0.714 0.071 0.000 0.071
0.000
##
## Node number 3584: 801 observations
     predicted class=2 expected loss=0.007490637 P(node) =0.03177941
##
##
       class counts:
                         0
                               0
                                   795
                                           2
                                                  0
                                                        0
                                                              0
                                                                    3
                                                                          1
0
      probabilities: 0.000 0.000 0.993 0.002 0.000 0.000 0.000 0.004 0.001
##
0.000
##
## Node number 3585: 68 observations,
                                         complexity param=8.930964e-05
##
     predicted class=2 expected loss=0.1470588 P(node) =0.002697877
##
       class counts:
                                    58
                                          10
                                                                          0
0
      probabilities: 0.000 0.000 0.853 0.147 0.000 0.000 0.000 0.000 0.000
##
0.000
##
     left son=7170 (56 obs) right son=7171 (12 obs)
##
     Primary splits:
##
         351 < 38.5 to the left,
                                   improve=7.868347, (0 missing)
##
         352 < 222.5 to the left,
                                   improve=7.868347, (0 missing)
         379 < 213
                     to the left,
                                   improve=7.868347, (0 missing)
##
##
         380 < 170
                     to the left,
                                   improve=6.582633, (0 missing)
##
         601 < 244
                     to the left, improve=6.149733, (0 missing)
##
     Surrogate splits:
         379 < 165
##
                                   agree=0.985, adj=0.917, (0 split)
                     to the left,
##
         350 < 8.5
                     to the left,
                                   agree=0.941, adj=0.667, (0 split)
##
         352 < 108
                     to the left,
                                   agree=0.941, adj=0.667, (0 split)
##
         380 < 243
                     to the left,
                                   agree=0.941, adj=0.667, (0 split)
##
                                   agree=0.897, adj=0.417, (0 split)
         323 < 19
                     to the left,
##
## Node number 3586: 28 observations
```

```
predicted class=2 expected loss=0.1071429 P(node) =0.001110891
##
##
       class counts:
                         0
                               0
                                    25
                                           2
                                                 0
                                                       0
                                                             0
                                                                          1
0
      probabilities: 0.000 0.000 0.893 0.071 0.000 0.000 0.000 0.000 0.036
##
0.000
##
## Node number 3587: 15 observations
##
     predicted class=7 expected loss=0.4 P(node) =0.00059512
       class counts:
                                                                          2
##
                         0
                               0
                                     3
                                           1
                                                 0
0
##
      probabilities: 0.000 0.000 0.200 0.067 0.000 0.000 0.000 0.600 0.133
0.000
##
## Node number 3616: 100 observations
     predicted class=1 expected loss=0.01 P(node) =0.003967467
##
       class counts:
                         0
                              99
                                     0
                                           0
                                                 0
                                                       1
                                                             0
0
##
      probabilities: 0.000 0.990 0.000 0.000 0.000 0.010 0.000 0.000 0.000
0.000
##
## Node number 3617: 7 observations
     predicted class=2 expected loss=0.5714286 P(node) =0.0002777227
##
       class counts:
                               0
                                     3
                                                 1
                         0
                                           0
                                                       0
                                                             0
                                                                    3
                                                                          0
0
      probabilities: 0.000 0.000 0.429 0.000 0.143 0.000 0.000 0.429 0.000
##
0.000
##
## Node number 3618: 14 observations
     predicted class=2 expected loss=0.1428571 P(node) =0.0005554453
##
##
       class counts:
                         0
                               0
                                    12
                                                 1
                                                       0
                                                             0
                                                                          0
                                           1
                                                                    0
a
      probabilities: 0.000 0.000 0.857 0.071 0.071 0.000 0.000 0.000 0.000
##
0.000
##
## Node number 3619: 14 observations
     predicted class=6 expected loss=0.5714286 P(node) =0.0005554453
##
##
       class counts:
                         0
                               1
                                     2
                                           0
                                                       2
                                                             6
                                                                          0
0
      probabilities: 0.000 0.071 0.143 0.000 0.000 0.143 0.429 0.214 0.000
##
0.000
##
## Node number 3620: 63 observations,
                                        complexity param=0.0001786193
     predicted class=4 expected loss=0.1428571 P(node) =0.002499504
##
       class counts:
                         0
                                     1
                                                54
                                                       0
                               0
                                           0
                                                             7
                                                                    0
                                                                          0
1
##
      probabilities: 0.000 0.000 0.016 0.000 0.857 0.000 0.111 0.000 0.000
0.016
##
     left son=7240 (56 obs) right son=7241 (7 obs)
##
     Primary splits:
##
         94 < 7.5 to the left, improve=8.404762, (0 missing)
```

```
to the right, improve=5.231293, (0 missing)
##
         438 < 65
##
         121 < 54
                     to the left, improve=4.680986, (0 missing)
                     to the right, improve=4.640147, (0 missing)
##
         410 < 16.5
##
         489 < 80.5 to the right, improve=4.554762, (0 missing)
##
     Surrogate splits:
         93 < 1.5
##
                     to the left,
                                   agree=0.984, adj=0.857, (0 split)
##
         95 < 19
                     to the left,
                                   agree=0.984, adj=0.857, (0 split)
         542 < 252.5 to the left,
                                   agree=0.952, adj=0.571, (0 split)
##
                                   agree=0.937, adj=0.429, (0 split)
##
         39 < 55
                     to the left,
                                   agree=0.937, adj=0.429, (0 split)
##
         40 < 5
                     to the left,
##
## Node number 3621: 9 observations
     predicted class=8 expected loss=0.6666667 P(node) =0.000357072
##
##
       class counts:
                         0
                               0
                                     1
                                           0
                                                       2
                                                                    2
                                                                          3
1
##
      probabilities: 0.000 0.000 0.111 0.000 0.000 0.222 0.000 0.222 0.333
0.111
##
## Node number 3622: 7 observations
     predicted class=4
                        expected loss=0.4285714 P(node) =0.0002777227
##
       class counts:
                         0
                                                 4
                               0
                                     0
                                           0
                                                       0
                                                             3
                                                                    0
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.571 0.000 0.429 0.000 0.000
0.000
##
## Node number 3623: 32 observations
     predicted class=6 expected loss=0
                                         P(node) = 0.001269589
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                 0
                                                       0
                                                             32
                                                                          0
0
      probabilities: 0.000 0.000 0.000 0.000 0.000 1.000 0.000 0.000
##
0.000
##
## Node number 3624: 109 observations,
                                          complexity param=0.0001339645
     predicted class=2 expected loss=0.266055
##
                                                P(node) =0.004324539
##
                               2
                                           5
                                                 0
                                                       0
       class counts:
                         0
                                    80
                                                                   10
                                                                          4
8
##
      probabilities: 0.000 0.018 0.734 0.046 0.000 0.000 0.000 0.092 0.037
0.073
##
     left son=7248 (78 obs) right son=7249 (31 obs)
     Primary splits:
##
##
         569 < 4.5
                     to the right, improve=7.479462, (0 missing)
         715 < 29.5
                     to the left, improve=7.120306, (0 missing)
##
##
         570 < 7.5
                     to the right, improve=6.973724, (0 missing)
##
         372 < 115
                     to the left,
                                   improve=6.386580, (0 missing)
##
         716 < 30
                     to the left,
                                   improve=6.316467, (0 missing)
##
     Surrogate splits:
##
         570 < 7.5
                     to the right, agree=0.917, adj=0.710, (0 split)
##
         568 < 20.5
                     to the right, agree=0.890, adj=0.613, (0 split)
##
         715 < 1.5
                     to the left, agree=0.807, adj=0.323, (0 split)
                     to the left, agree=0.807, adj=0.323, (0 split)
##
         716 < 0.5
```

```
571 < 3.5 to the right, agree=0.798, adj=0.290, (0 split)
##
##
## Node number 3625: 18 observations
     predicted class=7 expected loss=0.2222222 P(node) =0.000714144
##
       class counts:
                         0
                               0
                                     1
                                           0
                                                  0
                                                       0
                                                              0
                                                                   14
                                                                          2
1
      probabilities: 0.000 0.000 0.056 0.000 0.000 0.000 0.000 0.778 0.111
0.056
##
## Node number 3628: 14 observations
##
     predicted class=5 expected loss=0.6428571 P(node) =0.0005554453
                         2
                                                  1
                                                        5
                                                                          1
##
       class counts:
                               0
                                     1
                                           0
                                                              0
                                                                    2
2
##
      probabilities: 0.143 0.000 0.071 0.000 0.071 0.357 0.000 0.143 0.071
0.143
##
## Node number 3629: 14 observations
     predicted class=8 expected loss=0.1428571 P(node) =0.0005554453
##
       class counts:
                         0
                               0
                                     1
                                           0
                                                       0
                                                                         12
1
##
      probabilities: 0.000 0.000 0.071 0.000 0.000 0.000 0.000 0.000 0.857
0.071
##
## Node number 3666: 107 observations
     predicted class=4 expected loss=0.02803738 P(node) =0.004245189
##
       class counts:
                         0
                               0
                                     1
                                           0
                                               104
                                                       1
                                                                          1
0
      probabilities: 0.000 0.000 0.009 0.000 0.972 0.009 0.000 0.000 0.009
##
0.000
##
## Node number 3667: 7 observations
     predicted class=6 expected loss=0.2857143 P(node) =0.0002777227
##
       class counts:
                               0
                                     0
                                                  2
                                                       0
                                                              5
                                                                          0
0
      probabilities: 0.000 0.000 0.000 0.000 0.286 0.000 0.714 0.000 0.000
##
0.000
##
## Node number 3672: 43 observations
##
     predicted class=2 expected loss=0.06976744 P(node) =0.001706011
                                    40
##
       class counts:
                         2
                               0
                                           0
                                                                          1
0
##
      probabilities: 0.047 0.000 0.930 0.000 0.000 0.000 0.000 0.000 0.023
0.000
##
## Node number 3673: 13 observations
     predicted class=0 expected loss=0.6923077 P(node) =0.0005157707
##
##
       class counts:
                         4
                               0
                                     2
                                           0
                                                  1
                                                       1
                                                              1
                                                                    1
                                                                          2
1
##
      probabilities: 0.308 0.000 0.154 0.000 0.077 0.077 0.077 0.077 0.154
0.077
```

```
##
## Node number 3674: 9 observations
##
     predicted class=0 expected loss=0.3333333 P(node) =0.000357072
       class counts:
                         6
                               0
##
                                     2
                                           0
                                                       0
                                                              0
                                                                    1
                                                                          0
                                                  0
0
      probabilities: 0.667 0.000 0.222 0.000 0.000 0.000 0.000 0.111 0.000
##
0.000
##
## Node number 3675: 20 observations
     predicted class=8
                        expected loss=0
                                         P(node) = 0.0007934934
##
##
       class counts:
                         0
                               0
                                     0
                                                  0
                                                                         20
                                           0
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.000 1.000
0.000
##
## Node number 3676: 43 observations,
                                         complexity param=0.0001786193
     predicted class=7
                        expected loss=0.255814 P(node) =0.001706011
##
       class counts:
                         1
                               0
                                     4
                                           0
                                                  1
                                                                   32
                                                                          0
                                                       0
                                                              1
4
##
      probabilities: 0.023 0.000 0.093 0.000 0.023 0.000 0.023 0.744 0.000
0.093
##
     left son=7352 (10 obs) right son=7353 (33 obs)
##
     Primary splits:
##
         680 < 83
                     to the left,
                                   improve=9.232699, (0 missing)
##
         708 < 1
                     to the left, improve=8.162943, (0 missing)
                     to the right, improve=8.162943, (0 missing)
##
         513 < 26
         540 < 25
##
                     to the right, improve=8.162943, (0 missing)
                     to the left, improve=7.014517, (0 missing)
##
         709 < 4
##
     Surrogate splits:
##
         708 < 1
                     to the left, agree=0.977, adj=0.9, (0 split)
##
         709 < 4
                     to the left,
                                   agree=0.953, adj=0.8, (0 split)
##
         513 < 26
                     to the right, agree=0.930, adj=0.7, (0 split)
##
         540 < 25
                     to the right, agree=0.930, adj=0.7, (0 split)
##
         154 < 1.5
                     to the right, agree=0.907, adj=0.6, (0 split)
##
## Node number 3677: 28 observations,
                                         complexity param=0.0003572385
##
     predicted class=9
                        expected loss=0.5714286 P(node) =0.001110891
##
       class counts:
                         0
                               0
                                     2
                                           0
                                                  4
                                                        a
                                                              0
                                                                    1
                                                                          9
12
##
      probabilities: 0.000 0.000 0.071 0.000 0.143 0.000 0.000 0.036 0.321
0.429
##
     left son=7354 (15 obs) right son=7355 (13 obs)
##
     Primary splits:
##
         655 < 18.5 to the right, improve=6.875824, (0 missing)
##
         706 < 57.5 to the left,
                                   improve=6.056391, (0 missing)
##
         707 < 23.5 to the left,
                                   improve=5.839286, (0 missing)
##
         651 < 14.5
                    to the left,
                                   improve=5.642857, (0 missing)
##
                                   improve=5.564286, (0 missing)
         683 < 35.5 to the left,
##
     Surrogate splits:
##
         627 < 117 to the right, agree=0.964, adj=0.923, (0 split)
```

```
to the right, agree=0.929, adj=0.846, (0 split)
##
         654 < 196
##
         182 < 1.5
                     to the right, agree=0.893, adj=0.769, (0 split)
                     to the right, agree=0.893, adj=0.769, (0 split)
##
         183 < 92.5
                     to the left, agree=0.857, adj=0.692, (0 split)
##
         679 < 35.5
##
## Node number 3678: 24 observations,
                                         complexity param=0.0002456015
     predicted class=4 expected loss=0.4583333 P(node) =0.000952192
##
                                                        0
##
       class counts:
                         1
                               0
                                     1
                                                 13
                                                                          1
8
##
      probabilities: 0.042 0.000 0.042 0.000 0.542 0.000 0.000 0.000 0.042
0.333
##
     left son=7356 (15 obs) right son=7357 (9 obs)
##
     Primary splits:
##
         456 < 71
                     to the right, improve=5.633333, (0 missing)
##
         455 < 68.5 to the right, improve=5.117716, (0 missing)
##
                     to the right, improve=4.628205, (0 missing)
##
         428 < 180.5 to the right, improve=4.628205, (0 missing)
##
         485 < 54
                     to the right, improve=4.423810, (0 missing)
##
     Surrogate splits:
##
         428 < 91.5 to the right, agree=0.958, adj=0.889, (0 split)
##
         429 < 245.5 to the right, agree=0.958, adj=0.889, (0 split)
##
         455 < 8.5
                     to the right, agree=0.958, adj=0.889, (0 split)
##
         400 < 14.5 to the right, agree=0.917, adj=0.778, (0 split)
##
         401 < 191
                     to the right, agree=0.917, adj=0.778, (0 split)
##
## Node number 3679: 29 observations
##
     predicted class=9
                        expected loss=0.1034483
                                                 P(node) = 0.001150565
                                     2
                                                        0
##
       class counts:
                         0
                               0
                                           0
                                                  0
                                                              0
                                                                    0
                                                                          1
26
      probabilities: 0.000 0.000 0.069 0.000 0.000 0.000 0.000 0.004
##
0.897
##
## Node number 3690: 9 observations
##
     predicted class=5
                        expected loss=0.5555556 P(node) =0.000357072
##
                                                        4
                                                                          1
       class counts:
                         0
                               0
                                     1
                                           0
                                                              3
0
##
      probabilities: 0.000 0.000 0.111 0.000 0.000 0.444 0.333 0.000 0.111
0.000
##
## Node number 3691: 13 observations
     predicted class=8 expected loss=0.07692308 P(node) =0.0005157707
##
##
       class counts:
                                                                         12
0
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.077 0.000 0.923
##
0.000
##
## Node number 3720: 260 observations
     predicted class=2 expected loss=0.03846154 P(node) =0.01031541
##
       class counts:
                         0
                               3
                                   250
                                           1
                                                  1
                                                        0
                                                              1
                                                                          0
0
```

```
probabilities: 0.000 0.012 0.962 0.004 0.004 0.000 0.004 0.015 0.000
0.000
##
## Node number 3721: 8 observations
##
     predicted class=8 expected loss=0.625 P(node) =0.0003173973
##
       class counts:
                         0
                               0
                                     2
                                           1
                                                 2
                                                       0
                                                                         3
0
      probabilities: 0.000 0.000 0.250 0.125 0.250 0.000 0.000 0.000 0.375
##
0.000
##
## Node number 3820: 1471 observations
     predicted class=6 expected loss=0.01495581 P(node) =0.05836144
##
       class counts:
                         0
                               0
                                     4
                                                      12 1449
                                                                         2
                                           1
                                                 1
2
##
      probabilities: 0.000 0.000 0.003 0.001 0.001 0.008 0.985 0.000 0.001
0.001
##
## Node number 3821: 7 observations
##
     predicted class=8 expected loss=0.2857143 P(node) =0.0002777227
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                 0
                                                       0
                                                             2
                                                                         5
0
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.286 0.000 0.714
##
0.000
##
## Node number 3836: 13 observations
##
     predicted class=6 expected loss=0.5384615 P(node) =0.0005157707
##
       class counts:
                         0
                               0
                                     1
                                           2
                                                       1
                                                                         2
                                                             6
0
##
      probabilities: 0.000 0.000 0.077 0.154 0.000 0.077 0.462 0.077 0.154
0.000
##
## Node number 3837: 16 observations
##
     predicted class=5
                        expected loss=0.25 P(node) =0.0006347947
##
       class counts:
                         0
                                     0
                                                      12
                                                                         4
0
      probabilities: 0.000 0.000 0.000 0.000 0.750 0.000 0.000 0.250
##
0.000
##
## Node number 3872: 1313 observations,
                                          complexity param=8.930964e-05
     predicted class=4 expected loss=0.03198781 P(node) =0.05209284
##
       class counts:
                         0
                               6
                                     5
                                           7 1271
                                                       0
                                                             4
                                                                         5
15
      probabilities: 0.000 0.005 0.004 0.005 0.968 0.000 0.003 0.000 0.004
##
0.011
##
     left son=7744 (1269 obs) right son=7745 (44 obs)
##
     Primary splits:
##
         437 < 1
                     to the right, improve=8.008192, (0 missing)
##
         349 < 225.5 to the right, improve=6.747305, (0 missing)
##
         436 < 49.5 to the right, improve=5.412877, (0 missing)
         464 < 1 to the right, improve=4.583927, (0 missing)
##
```

```
##
         322 < 88
                     to the left, improve=4.414886, (0 missing)
##
     Surrogate splits:
##
         436 < 4
                     to the right, agree=0.970, adj=0.114, (0 split)
                     to the left, agree=0.968, adj=0.045, (0 split)
##
         92 < 88
##
         349 < 252.5 to the left, agree=0.967, adj=0.023, (0 split)
##
## Node number 3873: 12 observations
##
     predicted class=6 expected loss=0.1666667 P(node) =0.000476096
       class counts:
##
                         0
                               0
                                                 2
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.167 0.000 0.833 0.000 0.000
0.000
##
## Node number 3876: 24 observations,
                                         complexity param=4.465482e-05
                        expected loss=0.2916667 P(node) =0.000952192
##
     predicted class=5
##
       class counts:
                         0
                                     1
                                           2
                                                 2
                                                      17
                                                                          1
                               0
1
##
      probabilities: 0.000 0.000 0.042 0.083 0.083 0.708 0.000 0.000 0.042
0.042
##
     left son=7752 (17 obs) right son=7753 (7 obs)
##
     Primary splits:
##
         658 < 50.5 to the right, improve=3.903361, (0 missing)
##
         659 < 22.5 to the right, improve=3.125000, (0 missing)
##
         631 < 104.5 to the left, improve=2.954545, (0 missing)
                     to the left, improve=2.542017, (0 missing)
##
         214 < 6.5
                     to the right, improve=2.542017, (0 missing)
##
         656 < 26
##
     Surrogate splits:
##
         657 < 80
                     to the right, agree=0.958, adj=0.857, (0 split)
##
         659 < 22.5
                     to the right, agree=0.958, adj=0.857, (0 split)
##
         656 < 1
                     to the right, agree=0.917, adj=0.714, (0 split)
                     to the left, agree=0.875, adj=0.571, (0 split)
##
         520 < 241
##
         216 < 169.5 to the left, agree=0.833, adj=0.429, (0 split)
##
## Node number 3877: 24 observations,
                                         complexity param=0.0002232741
     predicted class=4 expected loss=0.75 P(node) =0.000952192
##
##
       class counts:
                         0
                               0
                                     4
                                           5
                                                 6
                                                       1
                                                             0
                                                                          5
                                                                    0
3
##
      probabilities: 0.000 0.000 0.167 0.208 0.250 0.042 0.000 0.000 0.208
0.125
##
     left son=7754 (7 obs) right son=7755 (17 obs)
##
     Primary splits:
##
         461 < 201.5 to the right, improve=4.677871, (0 missing)
##
                     to the right, improve=4.333333, (0 missing)
         378 < 199.5 to the right, improve=4.123249, (0 missing)
##
         186 < 26.5 to the left, improve=4.083333, (0 missing)
##
                     to the right, improve=3.958333, (0 missing)
##
         351 < 17
##
     Surrogate splits:
##
         185 < 71
                     to the left, agree=0.917, adj=0.714, (0 split)
##
         186 < 29
                     to the left,
                                   agree=0.917, adj=0.714, (0 split)
##
         207 < 5 to the left, agree=0.917, adj=0.714, (0 split)
```

```
488 < 14.5 to the right, agree=0.917, adj=0.714, (0 split)
##
                     to the left, agree=0.875, adj=0.571, (0 split)
##
         153 < 43
##
## Node number 3892: 24 observations
##
     predicted class=4 expected loss=0.1666667 P(node) =0.000952192
##
       class counts:
                         0
                               0
                                     1
                                           1
                                                20
                                                       1
                                                                          0
1
      probabilities: 0.000 0.000 0.042 0.042 0.833 0.042 0.000 0.000 0.000
##
0.042
##
## Node number 3893: 8 observations
     predicted class=9 expected loss=0.25 P(node) =0.0003173973
##
       class counts:
                         0
                               0
                                                 1
                                                       1
                                                                    0
                                                                          0
                                     0
                                           0
6
      probabilities: 0.000 0.000 0.000 0.025 0.125 0.000 0.000 0.000
##
0.750
##
## Node number 3894: 9 observations
##
     predicted class=7 expected loss=0.5555556 P(node) =0.000357072
##
       class counts:
                         0
                               0
                                     0
                                           1
                                                 0
                                                        2
                                                              0
                                                                          0
2
      probabilities: 0.000 0.000 0.000 0.111 0.000 0.222 0.000 0.444 0.000
##
0.222
##
## Node number 3895: 31 observations
     predicted class=9 expected loss=0.09677419 P(node) =0.001229915
##
       class counts:
                         0
                               0
                                     1
                                                 1
                                                       0
                                                                          0
                                           0
28
##
      probabilities: 0.000 0.000 0.032 0.000 0.032 0.000 0.000 0.032 0.000
0.903
##
## Node number 3904: 15 observations
     predicted class=3 expected loss=0 P(node) =0.00059512
##
       class counts:
                         0
                                     0
                                          15
0
##
      probabilities: 0.000 0.000 0.000 1.000 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 3905: 9 observations
     predicted class=5 expected loss=0.1111111 P(node) =0.000357072
##
       class counts:
                         0
                               0
                                     0
                                                       8
                                                              0
                                                                          0
##
      probabilities: 0.000 0.000 0.000 0.111 0.000 0.889 0.000 0.000 0.000
0.000
##
## Node number 3906: 9 observations
     predicted class=3
                        expected loss=0.2222222 P(node) =0.000357072
##
##
       class counts:
                         0
                               0
                                     0
                                           7
                                                 0
                                                       2
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 0.778 0.000 0.222 0.000 0.000 0.000
```

```
0.000
##
## Node number 3907: 461 observations,
                                           complexity param=0.0001786193
     predicted class=5 expected loss=0.06724512 P(node) =0.01829002
##
       class counts:
                         a
                               0
                                      1
                                           12
                                                  1
                                                      430
                                                              0
                                                                           0
16
##
      probabilities: 0.000 0.000 0.002 0.026 0.002 0.933 0.000 0.002 0.000
0.035
##
     left son=7814 (450 obs) right son=7815 (11 obs)
##
     Primary splits:
##
         718 < 37
                     to the left,
                                   improve=9.084851, (0 missing)
         326 < 7.5
                                    improve=7.839553, (0 missing)
##
                     to the left,
##
         717 < 195.5 to the left,
                                    improve=6.760310, (0 missing)
##
         628 < 0.5
                     to the right, improve=6.449194, (0 missing)
         627 < 0.5
                     to the right, improve=6.242185, (0 missing)
##
##
     Surrogate splits:
##
         717 < 195.5 to the left,
                                   agree=0.993, adj=0.727, (0 split)
         719 < 15
##
                     to the left,
                                    agree=0.989, adj=0.545, (0 split)
                                    agree=0.980, adj=0.182, (0 split)
##
         326 < 163.5 to the left,
##
         691 < 252.5 to the left,
                                   agree=0.980, adj=0.182, (0 split)
##
         720 < 14
                     to the left,
                                   agree=0.980, adj=0.182, (0 split)
##
## Node number 3928: 23 observations,
                                          complexity param=0.0002679289
     predicted class=3
                        expected loss=0.5217391 P(node) =0.0009125174
##
                                                  1
##
       class counts:
                         0
                               1
                                           11
                                                        0
                                                              1
                                                                    0
                                                                           2
7
      probabilities: 0.000 0.043 0.000 0.478 0.043 0.000 0.043 0.000 0.087
##
0.304
##
     left son=7856 (11 obs) right son=7857 (12 obs)
##
     Primary splits:
##
         180 < 95
                     to the right, improve=5.986166, (0 missing)
##
         179 < 36
                     to the right, improve=4.888963, (0 missing)
##
         347 < 13
                     to the left, improve=4.748792, (0 missing)
##
         350 < 42.5
                     to the right, improve=4.713439, (0 missing)
         292 < 5
##
                     to the left, improve=4.531621, (0 missing)
##
     Surrogate splits:
         179 < 36
##
                     to the right, agree=0.957, adj=0.909, (0 split)
##
                     to the left, agree=0.957, adj=0.909, (0 split)
         292 < 5
##
         181 < 110.5 to the right, agree=0.913, adj=0.818, (0 split)
                     to the left, agree=0.913, adj=0.818, (0 split)
##
         265 < 22
##
         152 < 2
                     to the right, agree=0.870, adj=0.727, (0 split)
##
## Node number 3929: 37 observations
##
     predicted class=7
                        expected loss=0.2972973 P(node) =0.001467963
##
       class counts:
                         0
                               0
                                      3
                                                                   26
                                                                           2
                                            3
3
##
      probabilities: 0.000 0.000 0.081 0.081 0.000 0.000 0.000 0.703 0.054
0.081
##
## Node number 3930: 13 observations
```

```
predicted class=4 expected loss=0 P(node) =0.0005157707
##
##
       class counts:
                                           0
                                                                          0
                         0
                               0
                                     0
                                                13
0
      probabilities: 0.000 0.000 0.000 0.000 1.000 0.000 0.000 0.000 0.000
##
0.000
##
## Node number 3931: 54 observations
##
     predicted class=9 expected loss=0.2777778 P(node) =0.002142432
       class counts:
##
                         0
                               0
                                     0
                                           2
                                                  6
                                                       0
                                                                          5
39
      probabilities: 0.000 0.000 0.000 0.037 0.111 0.000 0.000 0.037 0.093
##
0.722
##
## Node number 3938: 14 observations
     predicted class=5 expected loss=0.5 P(node) =0.0005554453
##
       class counts:
                         1
                                     1
                                           3
                                                                          1
                                                 1
                                                       7
0
##
      probabilities: 0.071 0.000 0.071 0.214 0.071 0.500 0.000 0.000 0.071
0.000
##
## Node number 3939: 8 observations
     predicted class=9 expected loss=0 P(node) =0.0003173973
##
       class counts:
                               0
                                           0
                         0
                                     0
                                                 0
                                                       0
                                                                          0
8
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
##
1.000
##
## Node number 3940: 38 observations
     predicted class=2 expected loss=0.02631579 P(node) =0.001507637
##
##
       class counts:
                         0
                               0
                                    37
                                           0
                                                 0
                                                       0
                                                              0
                                                                    0
                                                                          0
1
      probabilities: 0.000 0.000 0.974 0.000 0.000 0.000 0.000 0.000 0.000
##
0.026
##
## Node number 3941: 8 observations
     predicted class=3 expected loss=0.5 P(node) =0.0003173973
##
##
       class counts:
                         0
                               0
                                     2
                                           4
                                                 0
                                                       1
                                                                          1
0
      probabilities: 0.000 0.000 0.250 0.500 0.000 0.125 0.000 0.000 0.125
##
0.000
##
## Node number 3942: 10 observations
     predicted class=2 expected loss=0.7 P(node) =0.0003967467
##
       class counts:
                                                                          2
                         0
                               0
                                     3
                                           2
                                                 0
                                                       0
                                                              3
                                                                    0
0
##
      probabilities: 0.000 0.000 0.300 0.200 0.000 0.000 0.300 0.000 0.200
0.000
##
## Node number 3943: 23 observations
     predicted class=8 expected loss=0.04347826 P(node) =0.0009125174
```

```
##
       class counts: 1
0
##
      probabilities: 0.043 0.000 0.000 0.000 0.000 0.000 0.000 0.0057
0.000
##
## Node number 3946: 10 observations
     predicted class=4 expected loss=0.2 P(node) =0.0003967467
##
       class counts:
                         0
                               0
                                     1
                                           1
                                                                         0
0
##
      probabilities: 0.000 0.000 0.100 0.100 0.800 0.000 0.000 0.000 0.000
0.000
##
## Node number 3947: 38 observations,
                                         complexity param=0.0002679289
##
     predicted class=9 expected loss=0.4473684 P(node) =0.001507637
##
       class counts:
                         0
                               0
                                     1
                                           6
                                                 3
                                                       2
                                                                         5
21
##
      probabilities: 0.000 0.000 0.026 0.158 0.079 0.053 0.000 0.000 0.132
0.553
##
     left son=7894 (8 obs) right son=7895 (30 obs)
##
     Primary splits:
##
         372 < 11.5 to the left,
                                   improve=6.837719, (0 missing)
##
         378 < 85.5 to the right, improve=6.051305, (0 missing)
##
         178 < 250
                     to the right, improve=5.951007, (0 missing)
##
         151 < 9.5
                     to the right, improve=5.861529, (0 missing)
                     to the left, improve=5.740918, (0 missing)
##
         316 < 22
##
     Surrogate splits:
##
         400 < 35.5 to the left, agree=0.974, adj=0.875, (0 split)
         316 < 22
                     to the left, agree=0.921, adj=0.625, (0 split)
##
##
         317 < 32
                     to the left, agree=0.921, adj=0.625, (0 split)
##
         344 < 10
                     to the left, agree=0.921, adj=0.625, (0 split)
##
         345 < 18.5 to the left, agree=0.921, adj=0.625, (0 split)
##
## Node number 3948: 14 observations
##
     predicted class=3 expected loss=0.4285714 P(node) =0.0005554453
##
                                                       0
                                                                         2
       class counts:
                         0
                               0
                                     2
                                           8
                                                 1
                                                                   1
0
##
      probabilities: 0.000 0.000 0.143 0.571 0.071 0.000 0.000 0.071 0.143
0.000
##
## Node number 3949: 36 observations,
                                         complexity param=0.0003125837
     predicted class=9 expected loss=0.5 P(node) =0.001428288
##
       class counts:
                                     1
                                           1
                                                 8
                                                                         6
18
##
      probabilities: 0.000 0.000 0.028 0.028 0.222 0.056 0.000 0.000 0.167
0.500
##
     left son=7898 (9 obs) right son=7899 (27 obs)
##
     Primary splits:
##
         407 < 122
                    to the left, improve=6.796296, (0 missing)
##
         379 < 5.5
                     to the left,
                                   improve=5.553737, (0 missing)
##
         353 < 227.5 to the left, improve=5.236508, (0 missing)
```

```
improve=5.081530, (0 missing)
##
         242 < 2
                     to the left.
##
         297 < 28
                     to the left,
                                    improve=4.893651, (0 missing)
##
     Surrogate splits:
         379 < 5.5
##
                     to the left,
                                    agree=0.944, adj=0.778, (0 split)
##
         212 < 85.5 to the left,
                                    agree=0.889, adj=0.556, (0 split)
##
         380 < 116
                     to the left,
                                    agree=0.889, adj=0.556, (0 split)
##
         408 < 188
                     to the left,
                                    agree=0.889, adj=0.556, (0 split)
                                    agree=0.861, adj=0.444, (0 split)
##
         184 < 166
                     to the left,
##
## Node number 3952: 66 observations,
                                          complexity param=0.000491203
##
     predicted class=3
                        expected loss=0.3484848 P(node) =0.002618528
                                                  1
                                                        0
##
       class counts:
                         0
                               0
                                     14
                                           43
                                                              0
                                                                     3
                                                                           1
4
##
      probabilities: 0.000 0.000 0.212 0.652 0.015 0.000 0.000 0.045 0.015
0.061
##
     left son=7904 (12 obs) right son=7905 (54 obs)
##
     Primary splits:
##
         512 < 30
                     to the right, improve=13.66162, (0 missing)
                     to the right, improve=11.47786, (0 missing)
##
         658 < 0.5
##
         685 < 8
                     to the right, improve=10.72371, (0 missing)
         513 < 19.5
                     to the right, improve=10.60606, (0 missing)
##
                     to the right, improve=10.55051, (0 missing)
##
         511 < 3
##
     Surrogate splits:
##
         513 < 19.5
                     to the right, agree=0.970, adj=0.833, (0 split)
##
         511 < 10.5
                     to the right, agree=0.955, adj=0.750, (0 split)
                     to the right, agree=0.939, adj=0.667, (0 split)
##
         485 < 175
                     to the right, agree=0.924, adj=0.583, (0 split)
##
         539 < 25.5
                     to the right, agree=0.924, adj=0.583, (0 split)
##
         540 < 24
##
## Node number 3953: 53 observations,
                                          complexity param=0.0002232741
##
     predicted class=7
                        expected loss=0.3207547
                                                  P(node) =0.002102757
##
       class counts:
                                      2
                         1
                                                                           1
1
##
      probabilities: 0.019 0.000 0.038 0.132 0.094 0.000 0.000 0.679 0.019
0.019
##
     left son=7906 (9 obs) right son=7907 (44 obs)
##
     Primary splits:
##
         209 < 29
                                    improve=7.831999, (0 missing)
                     to the left,
##
         348 < 108
                     to the right, improve=7.496646, (0 missing)
         349 < 38
                     to the right, improve=7.496646, (0 missing)
##
##
         320 < 66
                     to the right, improve=7.223837, (0 missing)
##
         321 < 125
                     to the right, improve=7.223837, (0 missing)
##
     Surrogate splits:
##
         348 < 108
                     to the right, agree=0.981, adj=0.889, (0 split)
##
         349 < 38
                     to the right, agree=0.981, adj=0.889, (0 split)
##
         320 < 66
                     to the right, agree=0.962, adj=0.778, (0 split)
##
         321 < 125
                     to the right, agree=0.962, adj=0.778, (0 split)
##
                     to the right, agree=0.962, adj=0.778, (0 split)
         347 < 52.5
##
## Node number 3954: 10 observations
```

```
predicted class=8 expected loss=0.6 P(node) =0.0003967467
##
##
       class counts:
                                           1
                         0
                               0
                                     1
                                                 1
                                                                          4
3
      probabilities: 0.000 0.000 0.100 0.100 0.000 0.000 0.000 0.400
##
0.300
##
## Node number 3955: 47 observations
##
     predicted class=9 expected loss=0.0212766 P(node) =0.001864709
       class counts:
                                                 1
##
                         0
                               0
                                     0
                                           0
                                                       0
                                                                          0
46
      probabilities: 0.000 0.000 0.000 0.001 0.000 0.000 0.000 0.000
##
0.979
##
## Node number 3956: 11 observations
     predicted class=4 expected loss=0 P(node) =0.0004364213
##
       class counts:
                         0
                                                11
                                     0
                                           0
0
##
      probabilities: 0.000 0.000 0.000 0.000 1.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 3957: 9 observations
     predicted class=9 expected loss=0.4444444 P(node) =0.000357072
##
       class counts:
                               0
                                     0
                                                 2
                         0
                                           1
                                                       1
                                                             0
                                                                          0
5
      probabilities: 0.000 0.000 0.000 0.111 0.222 0.111 0.000 0.000 0.000
##
0.556
##
## Node number 3958: 12 observations
     predicted class=8 expected loss=0.4166667 P(node) =0.000476096
##
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                 1
                                                       0
                                                             0
                                                                          7
4
      probabilities: 0.000 0.000 0.000 0.000 0.083 0.000 0.000 0.000 0.583
##
0.333
##
## Node number 3959: 85 observations
     predicted class=9 expected loss=0.05882353 P(node) =0.003372347
##
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                 1
                                                                         0
80
##
      probabilities: 0.000 0.000 0.000 0.000 0.012 0.000 0.000 0.047 0.000
0.941
##
## Node number 3962: 7 observations
     predicted class=4 expected loss=0.5714286 P(node) =0.0002777227
##
       class counts:
                         0
                                                                          1
                               0
                                     0
                                           0
                                                 3
                                                       0
                                                             0
                                                                   1
2
##
      probabilities: 0.000 0.000 0.000 0.000 0.429 0.000 0.000 0.143 0.143
0.286
##
## Node number 3963: 28 observations
     predicted class=9 expected loss=0.03571429 P(node) =0.001110891
```

```
##
       class counts:
                                                  1
27
##
      probabilities: 0.000 0.000 0.000 0.000 0.036 0.000 0.000 0.000 0.000
0.964
##
## Node number 3964: 24 observations,
                                         complexity param=4.465482e-05
     predicted class=8 expected loss=0.3333333 P(node) =0.000952192
##
       class counts:
                         0
                               0
                                     0
                                            2
                                                        0
                                                                    1
                                                                         16
2
##
      probabilities: 0.000 0.000 0.000 0.083 0.125 0.000 0.000 0.042 0.667
0.083
##
     left son=7928 (10 obs) right son=7929 (14 obs)
##
     Primary splits:
##
         544 < 138
                     to the left,
                                   improve=4.783333, (0 missing)
##
         268 < 245.5 to the right, improve=4.196779, (0 missing)
##
                     to the left,
                                   improve=4.196779, (0 missing)
         271 < 33
##
         295 < 62.5 to the right, improve=4.196779, (0 missing)
##
         296 < 209.5 to the right, improve=4.196779, (0 missing)
##
     Surrogate splits:
##
         516 < 22
                     to the left,
                                   agree=0.958, adj=0.9, (0 split)
##
         572 < 67
                     to the left,
                                   agree=0.958, adj=0.9, (0 split)
##
         600 < 16
                     to the left,
                                   agree=0.958, adj=0.9, (0 split)
##
         657 < 73.5
                     to the left,
                                   agree=0.958, adj=0.9, (0 split)
##
         214 < 38
                     to the left, agree=0.917, adj=0.8, (0 split)
##
## Node number 3965: 48 observations,
                                         complexity param=4.465482e-05
                        expected loss=0.1875 P(node) =0.001904384
##
     predicted class=9
                               0
                                     0
                                            2
                                                  2
                                                        2
##
       class counts:
                         0
                                                              0
                                                                    2
                                                                          1
39
      probabilities: 0.000 0.000 0.000 0.042 0.042 0.042 0.000 0.042 0.021
##
0.812
##
     left son=7930 (8 obs) right son=7931 (40 obs)
##
     Primary splits:
##
         400 < 26
                     to the left,
                                   improve=5.608333, (0 missing)
                                   improve=4.822445, (0 missing)
##
         315 < 29.5 to the left,
##
         343 < 15
                                   improve=4.778846, (0 missing)
                     to the left,
         318 < 189.5 to the right, improve=4.778846, (0 missing)
##
##
         429 < 19.5 to the left,
                                   improve=4.058333, (0 missing)
##
     Surrogate splits:
         344 < 51
##
                     to the left,
                                   agree=0.958, adj=0.750, (0 split)
                                   agree=0.938, adj=0.625, (0 split)
##
         372 < 64
                     to the left,
                                   agree=0.917, adj=0.500, (0 split)
##
         316 < 23
                     to the left,
##
         371 < 1.5
                     to the left,
                                   agree=0.917, adj=0.500, (0 split)
                                   agree=0.917, adj=0.500, (0 split)
##
         401 < 71
                     to the left,
##
## Node number 3966: 7 observations
##
     predicted class=5
                        expected loss=0.5714286 P(node) =0.0002777227
##
                                                                          3
       class counts:
                         0
                               0
                                     0
                                            1
                                                  0
                                                        3
                                                              0
                                                                    0
0
##
      probabilities: 0.000 0.000 0.000 0.143 0.000 0.429 0.000 0.000 0.429
```

```
0.000
##
## Node number 3967: 1007 observations,
                                           complexity param=3.721235e-05
     predicted class=9 expected loss=0.05561072 P(node) =0.03995239
##
       class counts:
                         a
                               0
                                     1
                                            5
                                                 30
                                                        1
                                                              0
                                                                    7
                                                                         12
951
##
      probabilities: 0.000 0.000 0.001 0.005 0.030 0.001 0.000 0.007 0.012
0.944
##
     left son=7934 (18 obs) right son=7935 (989 obs)
##
     Primary splits:
##
         470 < 5
                     to the right, improve=6.184662, (0 missing)
                     to the right, improve=6.140252, (0 missing)
##
         415 < 2
         516 < 232
                     to the right, improve=5.854557, (0 missing)
##
##
         469 < 43.5
                     to the right, improve=5.795852, (0 missing)
         409 < 32
##
                     to the left, improve=5.627309, (0 missing)
     Surrogate splits:
##
##
         498 < 12.5 to the right, agree=0.995, adj=0.722, (0 split)
##
         442 < 12
                     to the right, agree=0.994, adj=0.667, (0 split)
##
         471 < 0.5
                     to the right, agree=0.990, adj=0.444, (0 split)
##
         414 < 94
                     to the right, agree=0.988, adj=0.333, (0 split)
         441 < 183.5 to the right, agree=0.988, adj=0.333, (0 split)
##
##
## Node number 3998: 7 observations
     predicted class=4
                                                 P(node) =0.0002777227
##
                        expected loss=0.7142857
                                                  2
##
       class counts:
                         0
                               0
                                     1
                                            0
                                                        0
                                                              0
                                                                    1
                                                                          2
1
##
      probabilities: 0.000 0.000 0.143 0.000 0.286 0.000 0.000 0.143 0.286
0.143
##
## Node number 3999: 46 observations
##
     predicted class=9
                        expected loss=0.1086957 P(node) =0.001825035
##
       class counts:
                                                                          1
                                     0
41
##
      probabilities: 0.000 0.000 0.000 0.005 0.000 0.000 0.022 0.022
0.891
##
## Node number 4030: 7 observations
                        expected loss=0.4285714 P(node) =0.0002777227
##
     predicted class=7
##
       class counts:
                         0
                               0
                                     0
                                            0
                                                  1
                                                        0
                                                              2
                                                                    4
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.143 0.000 0.286 0.571 0.000
0.000
##
## Node number 4031: 1307 observations,
                                            complexity param=2.232741e-05
     predicted class=7
                        expected loss=0.01683244 P(node) =0.05185479
##
##
       class counts:
                         0
                               1
                                     7
                                            2
                                                  2
                                                        0
                                                                 1285
10
##
      probabilities: 0.000 0.001 0.005 0.002 0.002 0.000 0.000 0.983 0.000
0.008
     left son=8062 (22 obs) right son=8063 (1285 obs)
```

```
Primary splits:
##
##
         488 < 106
                     to the right, improve=1.732287, (0 missing)
                     to the right, improve=1.637552, (0 missing)
##
         664 < 3.5
         461 < 206.5 to the right, improve=1.451330, (0 missing)
##
##
         265 < 10.5 to the left, improve=1.405136, (0 missing)
                     to the right, improve=1.336482, (0 missing)
##
         182 < 181
##
     Surrogate splits:
##
         487 < 4
                     to the right, agree=0.989, adj=0.318, (0 split)
##
         460 < 12.5
                     to the right, agree=0.988, adj=0.273, (0 split)
##
         516 < 250
                     to the right, agree=0.985, adj=0.136, (0 split)
##
         515 < 20.5 to the right, agree=0.985, adj=0.091, (0 split)
         496 < 196.5 to the right, agree=0.984, adj=0.045, (0 split)
##
##
## Node number 4096: 2198 observations,
                                           complexity param=4.465482e-05
                        expected loss=0.008189263 P(node) =0.08720492
##
     predicted class=1
##
       class counts:
                         0
                           2180
                                            2
                                                        0
                                                                         10
                                     1
                                                  1
                                                                    2
1
##
      probabilities: 0.000 0.992 0.000 0.001 0.000 0.000 0.000 0.001 0.005
0.000
##
     left son=8192 (2190 obs) right son=8193 (8 obs)
##
     Primary splits:
         433 < 2.5
##
                     to the right, improve=2.431318, (0 missing)
##
         300 < 1
                     to the left,
                                   improve=2.396220, (0 missing)
##
         271 < 246
                     to the left,
                                   improve=1.707422, (0 missing)
                                   improve=1.666540, (0 missing)
##
         430 < 132
                     to the left,
##
         378 < 141.5 to the right, improve=1.660150, (0 missing)
##
     Surrogate splits:
         461 < 16.5 to the right, agree=0.998, adj=0.375, (0 split)
##
##
         317 < 13
                     to the left,
                                   agree=0.997, adj=0.250, (0 split)
##
         318 < 76.5
                     to the left,
                                   agree=0.997, adj=0.250, (0 split)
##
         346 < 26.5
                     to the left,
                                   agree=0.997, adj=0.250, (0 split)
##
         262 < 22.5 to the left,
                                   agree=0.997, adj=0.125, (0 split)
##
## Node number 4097: 32 observations,
                                         complexity param=7.44247e-05
                        expected loss=0.3125 P(node) =0.001269589
##
     predicted class=1
##
       class counts:
                         0
                              22
                                            0
                                                  0
                                                        0
                                                              3
                                                                    3
                                                                          4
                                     0
0
##
      probabilities: 0.000 0.688 0.000 0.000 0.000 0.000 0.094 0.094 0.125
0.000
##
     left son=8194 (24 obs) right son=8195 (8 obs)
##
     Primary splits:
##
         546 < 193.5 to the right, improve=7.395833, (0 missing)
##
                     to the right, improve=7.103929, (0 missing)
                     to the right, improve=7.103929, (0 missing)
##
         518 < 153
         574 < 164.5 to the right, improve=7.103929, (0 missing)
##
##
         463 < 243
                     to the right, improve=5.851147, (0 missing)
##
     Surrogate splits:
##
         574 < 164.5 to the right, agree=0.969, adj=0.875, (0 split)
##
         294 < 242.5 to the right, agree=0.906, adj=0.625, (0 split)
##
         295 < 93.5 to the right, agree=0.906, adj=0.625, (0 split)
```

```
to the right, agree=0.906, adj=0.625, (0 split)
##
         463 < 243
##
         491 < 207
                     to the right, agree=0.906, adj=0.625, (0 split)
##
## Node number 4372: 20 observations,
                                         complexity param=0.0001786193
##
     predicted class=2 expected loss=0.65 P(node) =0.0007934934
##
       class counts:
                         3
                               0
                                     7
                                           3
                                                 4
                                                        2
                                                                          0
0
##
      probabilities: 0.150 0.000 0.350 0.150 0.200 0.100 0.050 0.000 0.000
0.000
##
     left son=8744 (8 obs) right son=8745 (12 obs)
##
     Primary splits:
         405 < 210
##
                     to the right, improve=4.683333, (0 missing)
##
         266 < 187
                     to the left,
                                   improve=3.400000, (0 missing)
##
         321 < 228
                     to the left,
                                   improve=3.400000, (0 missing)
         349 < 252.5 to the left,
                                   improve=3.400000, (0 missing)
##
##
         432 < 63
                     to the right, improve=3.400000, (0 missing)
##
     Surrogate splits:
##
         265 < 4
                                   agree=0.9, adj=0.75, (0 split)
                     to the left,
                                   agree=0.9, adj=0.75, (0 split)
         266 < 156.5 to the left,
##
##
         293 < 65
                     to the left, agree=0.9, adj=0.75, (0 split)
##
         321 < 124.5 to the left,
                                   agree=0.9, adj=0.75, (0 split)
##
         349 < 252.5 to the left,
                                   agree=0.9, adj=0.75, (0 split)
##
## Node number 4373: 11 observations
     predicted class=1 expected loss=0.4545455 P(node) =0.0004364213
##
       class counts:
                         1
                               6
                                     0
                                           0
                                                       0
                                                                    0
                                                                          4
0
##
      probabilities: 0.091 0.545 0.000 0.000 0.000 0.000 0.000 0.000 0.364
0.000
##
## Node number 4374: 7 observations
     predicted class=3
                        expected loss=0.5714286 P(node) =0.0002777227
##
       class counts:
                         1
                               0
                                     1
                                           3
                                                 0
                                                        1
                                                              0
                                                                          1
0
      probabilities: 0.143 0.000 0.143 0.429 0.000 0.143 0.000 0.000 0.143
##
0.000
##
## Node number 4375: 16 observations
##
     predicted class=5 expected loss=0
                                         P(node) = 0.0006347947
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                       16
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 0.000 1.000 0.000 0.000 0.000
0.000
##
## Node number 4380: 15 observations
     predicted class=1
                        expected loss=0.2666667
                                                 P(node) =0.00059512
##
##
       class counts:
                         0
                              11
                                     0
                                                              2
                                                                          0
2
##
      probabilities: 0.000 0.733 0.000 0.000 0.000 0.000 0.133 0.000 0.000
0.133
```

```
##
## Node number 4381: 22 observations, complexity param=0.0001339645
##
     predicted class=4 expected loss=0.6363636 P(node) =0.0008728427
       class counts:
                                                                    5
##
                         0
                               1
                                     1
                                           1
                                                  8
                                                        2
                                                              1
                                                                          0
3
      probabilities: 0.000 0.045 0.045 0.045 0.364 0.091 0.045 0.227 0.000
##
0.136
##
     left son=8762 (7 obs) right son=8763 (15 obs)
##
     Primary splits:
##
         403 < 204.5 to the right, improve=3.334199, (0 missing)
##
         375 < 120.5 to the left, improve=3.250194, (0 missing)
                     to the right, improve=3.233100, (0 missing)
##
         431 < 212
##
         321 < 202
                     to the right, improve=2.818182, (0 missing)
##
         316 < 1
                     to the left, improve=2.646104, (0 missing)
##
     Surrogate splits:
##
         431 < 212
                     to the right, agree=0.909, adj=0.714, (0 split)
##
         459 < 125
                     to the right, agree=0.909, adj=0.714, (0 split)
##
         292 < 40
                     to the left, agree=0.864, adj=0.571, (0 split)
         319 < 76
                     to the left, agree=0.864, adj=0.571, (0 split)
##
##
         375 < 217
                     to the right, agree=0.864, adj=0.571, (0 split)
##
## Node number 4382: 9 observations
     predicted class=4 expected loss=0.6666667 P(node) =0.000357072
##
##
       class counts:
                         0
                                     0
                                                  3
                                                                          1
2
##
      probabilities: 0.000 0.222 0.000 0.000 0.333 0.000 0.000 0.111 0.111
0.222
##
## Node number 4383: 24 observations
     predicted class=9 expected loss=0.08333333 P(node) =0.000952192
##
       class counts:
                         0
                               0
                                     0
                                            0
                                                  2
                                                        0
                                                              0
                                                                    0
                                                                          0
22
##
      probabilities: 0.000 0.000 0.000 0.000 0.083 0.000 0.000 0.000 0.000
0.917
##
## Node number 5372: 9 observations
##
     predicted class=3
                        expected loss=0.2222222 P(node) =0.000357072
##
       class counts:
                         0
                               0
                                     0
                                            7
                                                        0
                                                                          2
                                                  0
                                                              0
0
      probabilities: 0.000 0.000 0.000 0.778 0.000 0.000 0.000 0.000 0.222
##
0.000
##
## Node number 5373: 13 observations
##
     predicted class=9 expected loss=0.2307692 P(node) =0.0005157707
##
       class counts:
                         0
                               0
                                     0
                                            0
                                                  2
10
##
      probabilities: 0.000 0.000 0.000 0.000 0.154 0.000 0.000 0.077 0.000
0.769
##
## Node number 5432: 16 observations
```

```
##
     predicted class=3
                        expected loss=0.0625 P(node) =0.0006347947
##
       class counts:
                         0
                               0
                                     1
                                          15
                                                 0
                                                       0
                                                             0
                                                                         0
0
      probabilities: 0.000 0.000 0.062 0.937 0.000 0.000 0.000 0.000 0.000
##
0.000
##
## Node number 5433: 9 observations
##
     predicted class=5 expected loss=0.3333333 P(node) =0.000357072
       class counts:
##
                         0
                               1
                                     0
                                           1
                                                       6
                                                                         1
0
##
      probabilities: 0.000 0.111 0.000 0.111 0.000 0.667 0.000 0.000 0.111
0.000
##
## Node number 5434: 8 observations
##
     predicted class=0
                       expected loss=0.375 P(node) =0.0003173973
##
       class counts:
                         5
                                     0
                                                             2
1
      probabilities: 0.625 0.000 0.000 0.000 0.000 0.250 0.000 0.000
##
0.125
##
## Node number 5435: 69 observations,
                                         complexity param=0.0001786193
     predicted class=5 expected loss=0.3188406 P(node) =0.002737552
##
       class counts:
                         0
                               0
                                     0
                                           9
                                                      47
                                                                         2
                                                                   3
8
      probabilities: 0.000 0.000 0.000 0.130 0.000 0.681 0.000 0.043 0.029
##
0.116
##
     left son=10870 (54 obs) right son=10871 (15 obs)
##
     Primary splits:
##
         597 < 38.5 to the right, improve=7.369726, (0 missing)
##
         598 < 61
                     to the right, improve=7.113953, (0 missing)
##
         596 < 2.5
                     to the right, improve=6.577728, (0 missing)
##
         568 < 77
                     to the right, improve=5.824031, (0 missing)
##
         570 < 7
                     to the right, improve=5.577185, (0 missing)
##
     Surrogate splits:
##
         596 < 2.5
                     to the right, agree=0.928, adj=0.667, (0 split)
##
         568 < 2.5
                     to the right, agree=0.913, adj=0.600, (0 split)
         625 < 74
                     to the right, agree=0.913, adj=0.600, (0 split)
##
##
         598 < 32
                     to the right, agree=0.899, adj=0.533, (0 split)
##
         710 < 158.5 to the left, agree=0.884, adj=0.467, (0 split)
##
## Node number 5436: 14 observations
##
     predicted class=9
                        expected loss=0.5714286 P(node) =0.0005554453
##
       class counts:
                                           2
                                                 0
                                                       4
                                                                         2
6
      probabilities: 0.000 0.000 0.000 0.143 0.000 0.286 0.000 0.000 0.143
##
0.429
## Node number 5437: 16 observations
     predicted class=8 expected loss=0.125 P(node) =0.0006347947
      class counts: 0 0 0 0 0 2 0 0
```

```
0
      probabilities: 0.000 0.000 0.000 0.000 0.125 0.000 0.000 0.875
##
0.000
##
## Node number 5496: 13 observations
     predicted class=3 expected loss=0.1538462 P(node) =0.0005157707
##
##
       class counts:
                         0
                                                 0
                                                       1
                                                                          0
                               0
                                     0
                                          11
                                                              1
      probabilities: 0.000 0.000 0.000 0.846 0.000 0.077 0.077 0.000 0.000
##
0.000
##
## Node number 5497: 7 observations
     predicted class=5 expected loss=0.1428571 P(node) =0.0002777227
##
       class counts:
                         0
                               0
                                     0
                                           1
                                                       6
                                                              0
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 0.143 0.000 0.857 0.000 0.000 0.000
0.000
##
## Node number 6162: 56 observations
     predicted class=0 expected loss=0.07142857 P(node) =0.002221781
       class counts:
##
                        52
                                                       0
                               0
                                     1
                                           0
                                                 0
                                                              3
                                                                          0
0
##
      probabilities: 0.929 0.000 0.018 0.000 0.000 0.000 0.054 0.000 0.000
0.000
##
## Node number 6163: 10 observations
     predicted class=2 expected loss=0.4 P(node) =0.0003967467
##
       class counts:
                         1
                               0
                                     6
                                           1
                                                 0
                                                       1
                                                              0
                                                                    0
                                                                          0
1
      probabilities: 0.100 0.000 0.600 0.100 0.000 0.100 0.000 0.000 0.000
##
0.100
##
## Node number 7170: 56 observations
     predicted class=2 expected loss=0.03571429 P(node) =0.002221781
##
                         0
                                    54
                                                       0
       class counts:
                               0
                                           2
                                                 0
                                                                          0
0
      probabilities: 0.000 0.000 0.964 0.036 0.000 0.000 0.000 0.000 0.000
##
0.000
##
## Node number 7171: 12 observations
     predicted class=3 expected loss=0.3333333 P(node) =0.000476096
##
       class counts:
                                     4
                                           8
                                                                          0
0
##
      probabilities: 0.000 0.000 0.333 0.667 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 7240: 56 observations
     predicted class=4 expected loss=0.05357143 P(node) =0.002221781
##
       class counts:
                         0
                               0
                                     1
                                                53
                                                       0
                                                              1
                                                                          0
1
```

```
probabilities: 0.000 0.000 0.018 0.000 0.946 0.000 0.018 0.000 0.000
0.018
##
## Node number 7241: 7 observations
##
     predicted class=6
                        expected loss=0.1428571 P(node) =0.0002777227
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                 1
                                                       0
                                                             6
                                                                          0
0
      probabilities: 0.000 0.000 0.000 0.143 0.000 0.857 0.000 0.000
##
0.000
##
## Node number 7248: 78 observations
     predicted class=2 expected loss=0.1282051 P(node) =0.003094624
##
       class counts:
                         0
                               2
                                    68
                                           3
                                                       0
                                                                   2
                                                                          2
                                                             0
1
##
      probabilities: 0.000 0.026 0.872 0.038 0.000 0.000 0.000 0.026 0.026
0.013
##
## Node number 7249: 31 observations,
                                         complexity param=0.0001339645
##
     predicted class=2 expected loss=0.6129032 P(node) =0.001229915
##
       class counts:
                         0
                               0
                                    12
                                           2
                                                 0
                                                       0
                                                             0
                                                                   8
                                                                          2
7
      probabilities: 0.000 0.000 0.387 0.065 0.000 0.000 0.000 0.258 0.065
##
0.226
##
     left son=14498 (19 obs) right son=14499 (12 obs)
##
     Primary splits:
         575 < 111.5 to the left,
##
                                   improve=5.504244, (0 missing)
##
         602 < 16
                     to the left,
                                   improve=5.504244, (0 missing)
         630 < 5
                                   improve=5.504244, (0 missing)
##
                     to the left,
##
         603 < 105
                     to the left,
                                   improve=5.232315, (0 missing)
##
         263 < 131
                     to the left,
                                   improve=5.216319, (0 missing)
##
     Surrogate splits:
##
         547 < 229
                     to the left, agree=0.903, adj=0.750, (0 split)
         574 < 69.5 to the left,
##
                                   agree=0.903, adj=0.750, (0 split)
##
         231 < 105
                     to the left,
                                   agree=0.871, adj=0.667, (0 split)
##
                                   agree=0.871, adj=0.667, (0 split)
         603 < 45.5 to the left,
##
         232 < 44
                     to the left, agree=0.839, adj=0.583, (0 split)
##
## Node number 7352: 10 observations
##
     predicted class=2 expected loss=0.6 P(node) =0.0003967467
##
       class counts:
                         1
                               0
                                     4
                                           0
                                                       0
                                                             1
                                                                   0
                                                                          0
3
##
      probabilities: 0.100 0.000 0.400 0.000 0.100 0.000 0.100 0.000 0.000
0.300
##
## Node number 7353: 33 observations
##
     predicted class=7
                        expected loss=0.03030303 P(node) =0.001309264
##
       class counts:
                         0
                               0
                                     0
                                                                  32
                                                                          0
1
##
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.970 0.000
0.030
```

```
##
## Node number 7354: 15 observations
##
     predicted class=8 expected loss=0.4 P(node) =0.00059512
       class counts:
                         0
                               0
                                                                          9
##
                                     1
                                           0
                                                 3
                                                       0
                                                                    1
1
      probabilities: 0.000 0.000 0.067 0.000 0.200 0.000 0.000 0.067 0.600
##
0.067
##
## Node number 7355: 13 observations
##
     predicted class=9
                        expected loss=0.1538462 P(node) =0.0005157707
##
       class counts:
                         0
                               0
                                     1
                                                 1
                                                       0
                                                                          0
                                           0
11
##
      probabilities: 0.000 0.000 0.077 0.000 0.077 0.000 0.000 0.000 0.000
0.846
##
## Node number 7356: 15 observations
     predicted class=4 expected loss=0.2 P(node) =0.00059512
##
       class counts:
                         1
                               0
                                     1
                                           0
                                                12
                                                       0
                                                                          0
1
##
      probabilities: 0.067 0.000 0.067 0.000 0.800 0.000 0.000 0.000 0.000
0.067
##
## Node number 7357: 9 observations
     predicted class=9
                        expected loss=0.2222222 P(node) =0.000357072
##
                                                 1
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                       0
                                                                          1
7
      probabilities: 0.000 0.000 0.000 0.000 0.111 0.000 0.000 0.000 0.111
##
0.778
##
## Node number 7744: 1269 observations
##
     predicted class=4 expected loss=0.01891253 P(node) =0.05034715
##
       class counts:
                         0
                               0
                                     5
                                           5 1245
                                                                          2
11
      probabilities: 0.000 0.000 0.004 0.004 0.981 0.000 0.001 0.000 0.002
##
0.009
##
## Node number 7745: 44 observations,
                                         complexity param=8.930964e-05
     predicted class=4 expected loss=0.4090909 P(node) =0.001745685
##
##
       class counts:
                         0
                               6
                                     0
                                           2
                                                26
                                                       0
                                                              3
                                                                    0
                                                                          3
4
##
      probabilities: 0.000 0.136 0.000 0.045 0.591 0.000 0.068 0.000 0.068
0.091
##
     left son=15490 (16 obs) right son=15491 (28 obs)
##
     Primary splits:
##
         402 < 20
                     to the left, improve=7.365260, (0 missing)
         374 < 53.5 to the right, improve=7.204545, (0 missing)
##
##
         401 < 8.5
                     to the left, improve=6.475243, (0 missing)
##
                     to the left, improve=5.982323, (0 missing)
         431 < 1
##
         430 < 8.5
                     to the left, improve=5.793831, (0 missing)
##
     Surrogate splits:
```

```
to the left,
                                   agree=0.932, adj=0.812, (0 split)
##
         401 < 8.5
##
         430 < 26.5 to the left,
                                   agree=0.932, adj=0.812, (0 split)
                                   agree=0.886, adj=0.688, (0 split)
##
         373 < 12
                     to the left,
         374 < 14.5 to the left,
                                   agree=0.886, adj=0.688, (0 split)
##
##
         403 < 3
                     to the left,
                                   agree=0.864, adj=0.625, (0 split)
##
## Node number 7752: 17 observations
##
     predicted class=5 expected loss=0.05882353 P(node) =0.0006744694
       class counts:
                                                       16
##
                         0
                               0
                                     0
                                           1
0
##
      probabilities: 0.000 0.000 0.000 0.059 0.000 0.941 0.000 0.000 0.000
0.000
##
## Node number 7753: 7 observations
     predicted class=4
##
                        expected loss=0.7142857 P(node) =0.0002777227
##
       class counts:
                         0
                                     1
                                                 2
                                                                          1
                                           1
                                                       1
                                                                    0
1
##
      probabilities: 0.000 0.000 0.143 0.143 0.286 0.143 0.000 0.000 0.143
0.143
##
## Node number 7754: 7 observations
     predicted class=4 expected loss=0.1428571 P(node) =0.0002777227
##
       class counts:
                               0
                                     1
                         0
                                           0
                                                 6
                                                       0
                                                              0
                                                                    0
                                                                          0
0
      probabilities: 0.000 0.000 0.143 0.000 0.857 0.000 0.000 0.000 0.000
##
0.000
##
## Node number 7755: 17 observations
     predicted class=3
                        expected loss=0.7058824 P(node) =0.0006744694
##
##
       class counts:
                         0
                               0
                                     3
                                           5
                                                 0
                                                       1
                                                              0
                                                                          5
                                                                    0
3
##
      probabilities: 0.000 0.000 0.176 0.294 0.000 0.059 0.000 0.000 0.294
0.176
##
## Node number 7814: 450 observations,
                                          complexity param=8.930964e-05
     predicted class=5 expected loss=0.05111111 P(node) =0.0178536
##
##
       class counts:
                         0
                               0
                                     1
                                          12
                                                 1
                                                     427
                                                                          0
9
##
      probabilities: 0.000 0.000 0.002 0.027 0.002 0.949 0.000 0.000 0.000
0.020
##
     left son=15628 (433 obs) right son=15629 (17 obs)
##
     Primary splits:
##
         714 < 237
                     to the left,
                                   improve=4.274897, (0 missing)
                                   improve=4.092332, (0 missing)
##
         353 < 9.5
                     to the left,
         176 < 19
##
                     to the right, improve=4.071495, (0 missing)
##
         201 < 34
                     to the right, improve=4.038155, (0 missing)
##
         229 < 119
                     to the right, improve=4.038155, (0 missing)
##
     Surrogate splits:
##
         715 < 119
                     to the left, agree=0.982, adj=0.529, (0 split)
##
         716 < 3.5 to the left, agree=0.976, adj=0.353, (0 split)
```

```
713 < 249 to the left, agree=0.967, adj=0.118, (0 split)
##
##
         177 < 254.5 to the left, agree=0.964, adj=0.059, (0 split)
         718 < 3.5 to the left, agree=0.964, adj=0.059, (0 split)
##
##
## Node number 7815: 11 observations
##
     predicted class=9
                        expected loss=0.3636364 P(node) =0.0004364213
##
       class counts:
                         0
                                                 0
                                                       3
                                                                          0
                               0
                                     0
                                           0
                                                             0
                                                                   1
7
      probabilities: 0.000 0.000 0.000 0.000 0.273 0.000 0.091 0.000
##
0.636
##
## Node number 7856: 11 observations
     predicted class=3 expected loss=0.09090909 P(node) =0.0004364213
##
##
       class counts:
                         0
                               0
                                     0
                                          10
                                                 0
                                                                         1
0
##
      probabilities: 0.000 0.000 0.000 0.909 0.000 0.000 0.000 0.000 0.091
0.000
##
## Node number 7857: 12 observations
     predicted class=9 expected loss=0.4166667 P(node) =0.000476096
##
       class counts:
                         0
                               1
                                     0
                                           1
                                                 1
                                                       0
                                                             1
                                                                          1
7
##
      probabilities: 0.000 0.083 0.000 0.083 0.083 0.000 0.083 0.000 0.083
0.583
##
## Node number 7894: 8 observations
     predicted class=3 expected loss=0.25 P(node) =0.0003173973
##
       class counts:
                         0
                               0
                                     1
                                           6
                                                 0
                                                       0
                                                             0
                                                                   0
                                                                          1
0
      probabilities: 0.000 0.000 0.125 0.750 0.000 0.000 0.000 0.000 0.125
##
0.000
##
## Node number 7895: 30 observations,
                                         complexity param=8.930964e-05
##
     predicted class=9
                        expected loss=0.3 P(node) =0.00119024
##
                                                       2
                                                                          4
       class counts:
                         0
                               0
                                     0
                                           0
                                                 3
21
##
      probabilities: 0.000 0.000 0.000 0.000 0.100 0.067 0.000 0.000 0.133
0.700
     left son=15790 (8 obs) right son=15791 (22 obs)
##
     Primary splits:
##
##
         152 < 117
                     to the right, improve=4.151515, (0 missing)
         375 < 53.5 to the right, improve=4.047619, (0 missing)
##
##
         376 < 3.5
                     to the right, improve=4.047619, (0 missing)
                     to the right, improve=3.997930, (0 missing)
##
         238 < 201
         403 < 159
                     to the right, improve=3.952381, (0 missing)
##
##
     Surrogate splits:
##
         151 < 3
                     to the right, agree=0.967, adj=0.875, (0 split)
##
                     to the right, agree=0.967, adj=0.875, (0 split)
         179 < 233
##
         177 < 29.5 to the right, agree=0.933, adj=0.750, (0 split)
##
         178 < 30 to the right, agree=0.933, adj=0.750, (0 split)
```

```
205 < 168.5 to the right, agree=0.933, adj=0.750, (0 split)
##
##
## Node number 7898: 9 observations
     predicted class=4
                        expected loss=0.2222222 P(node) =0.000357072
##
       class counts:
                         0
                               0
                                     0
                                            0
                                                        1
                                                              0
                                                                    0
                                                                          1
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.778 0.111 0.000 0.000 0.111
0.000
##
## Node number 7899: 27 observations,
                                         complexity param=0.0001786193
##
     predicted class=9
                        expected loss=0.3333333 P(node) =0.001071216
                         0
                                                  1
                                                                          5
##
       class counts:
                               0
                                     1
                                            1
                                                        1
                                                              0
                                                                    0
18
##
      probabilities: 0.000 0.000 0.037 0.037 0.037 0.037 0.000 0.000 0.185
0.667
##
     left son=15798 (8 obs) right son=15799 (19 obs)
##
     Primary splits:
##
         551 < 139
                     to the right, improve=5.741715, (0 missing)
         552 < 7.5
                     to the right, improve=5.741715, (0 missing)
##
##
         579 < 150
                     to the right, improve=5.741715, (0 missing)
         580 < 7.5
                     to the right, improve=5.741715, (0 missing)
##
         495 < 29.5
                     to the right, improve=5.383069, (0 missing)
##
##
     Surrogate splits:
##
         552 < 7.5
                     to the right, agree=1.000, adj=1.000, (0 split)
##
         579 < 150
                     to the right, agree=1.000, adj=1.000, (0 split)
         580 < 7.5
##
                     to the right, agree=1.000, adj=1.000, (0 split)
         205 < 123.5 to the right, agree=0.963, adj=0.875, (0 split)
##
         495 < 29.5 to the right, agree=0.963, adj=0.875, (0 split)
##
##
## Node number 7904: 12 observations
##
     predicted class=2 expected loss=0.08333333 P(node) =0.000476096
##
       class counts:
                                                                          1
                                    11
0
      probabilities: 0.000 0.000 0.917 0.000 0.000 0.000 0.000 0.0083
##
0.000
##
## Node number 7905: 54 observations,
                                         complexity param=4.465482e-05
                        expected loss=0.2037037 P(node) =0.002142432
##
     predicted class=3
       class counts:
##
                         0
                               0
                                     3
                                           43
                                                  1
                                                        0
                                                              0
                                                                    3
                                                                          0
4
##
      probabilities: 0.000 0.000 0.056 0.796 0.019 0.000 0.000 0.056 0.000
0.074
##
     left son=15810 (41 obs) right son=15811 (13 obs)
##
     Primary splits:
##
         405 < 138.5 to the right, improve=7.467584, (0 missing)
         406 < 111
##
                     to the right, improve=6.429293, (0 missing)
##
         658 < 0.5
                     to the right, improve=6.287582, (0 missing)
##
         404 < 7
                     to the right, improve=6.089372, (0 missing)
##
         379 < 9.5
                     to the right, improve=5.377778, (0 missing)
##
     Surrogate splits:
```

```
406 < 146.5 to the right, agree=0.963, adj=0.846, (0 split)
##
##
         379 < 27
                     to the right, agree=0.944, adj=0.769, (0 split)
         404 < 51.5 to the right, agree=0.926, adj=0.692, (0 split)
##
                     to the right, agree=0.907, adj=0.615, (0 split)
##
         378 < 0.5
##
         380 < 176
                     to the right, agree=0.889, adj=0.538, (0 split)
##
## Node number 7906: 9 observations
##
     predicted class=4 expected loss=0.4444444 P(node) =0.000357072
       class counts:
                                                 5
##
                         1
                               0
                                     1
                                                                         1
1
##
      probabilities: 0.111 0.000 0.111 0.000 0.556 0.000 0.000 0.000 0.111
0.111
##
## Node number 7907: 44 observations,
                                         complexity param=0.0001786193
                       expected loss=0.1818182 P(node) =0.001745685
##
     predicted class=7
##
       class counts:
                         0
                                     1
                                                                         0
                               0
                                           7
                                                                  36
0
##
      probabilities: 0.000 0.000 0.023 0.159 0.000 0.000 0.000 0.818 0.000
0.000
##
     left son=15814 (9 obs) right son=15815 (35 obs)
##
     Primary splits:
##
         437 < 4
                     to the left,
                                   improve=7.021789, (0 missing)
##
         464 < 12.5 to the left,
                                   improve=6.482450, (0 missing)
##
         436 < 201
                     to the left,
                                   improve=6.067914, (0 missing)
##
         576 < 152.5 to the right, improve=6.067914, (0 missing)
         463 < 212.5 to the left,
##
                                   improve=5.381313, (0 missing)
##
     Surrogate splits:
##
         436 < 201
                     to the left,
                                   agree=0.977, adj=0.889, (0 split)
##
         464 < 38.5 to the left,
                                   agree=0.977, adj=0.889, (0 split)
##
         463 < 235
                     to the left,
                                   agree=0.955, adj=0.778, (0 split)
##
         410 < 3
                     to the left,
                                   agree=0.932, adj=0.667, (0 split)
##
         438 < 12.5 to the left, agree=0.932, adj=0.667, (0 split)
##
## Node number 7928: 10 observations
##
     predicted class=4
                       expected loss=0.7 P(node) =0.0003967467
##
       class counts:
                         0
                               0
                                     0
                                           2
                                                       0
                                                             0
                                                                   1
                                                                         2
                                                 3
2
##
      probabilities: 0.000 0.000 0.000 0.200 0.300 0.000 0.000 0.100 0.200
0.200
##
## Node number 7929: 14 observations
##
     predicted class=8
                        expected loss=0
                                         P(node) =0.0005554453
##
       class counts:
                               0
                                     0
                                           0
                                                                        14
0
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.000 1.000
##
0.000
##
## Node number 7930: 8 observations
     predicted class=3 expected loss=0.75 P(node) =0.0003173973
      class counts: 0 0 0 2 1 1
```

```
probabilities: 0.000 0.000 0.000 0.250 0.125 0.125 0.000 0.250 0.125
##
0.125
##
## Node number 7931: 40 observations
     predicted class=9
                        expected loss=0.05 P(node) =0.001586987
##
##
       class counts:
                         0
                                                                          0
                               0
                                     0
                                           0
                                                 1
                                                       1
38
      probabilities: 0.000 0.000 0.000 0.000 0.025 0.025 0.000 0.000 0.000
##
0.950
##
## Node number 7934: 18 observations
     predicted class=9 expected loss=0.5 P(node) =0.000714144
##
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                                          0
9
##
      probabilities: 0.000 0.000 0.000 0.389 0.000 0.000 0.111 0.000
0.500
##
## Node number 7935: 989 observations,
                                          complexity param=3.721235e-05
     predicted class=9 expected loss=0.04752275 P(node) =0.03923825
       class counts:
                                           5
                                                                         12
##
                         0
                               0
                                     1
                                                23
                                                       1
                                                                    5
942
      probabilities: 0.000 0.000 0.001 0.005 0.023 0.001 0.000 0.005 0.012
##
0.952
##
     left son=15870 (18 obs) right son=15871 (971 obs)
##
     Primary splits:
##
         409 < 32
                                   improve=5.765945, (0 missing)
                     to the left,
         320 < 253.5 to the right, improve=5.291096, (0 missing)
##
##
         437 < 2.5
                     to the left, improve=5.152832, (0 missing)
                     to the right, improve=4.625875, (0 missing)
##
         219 < 179
##
         516 < 232
                     to the right, improve=4.593280, (0 missing)
##
     Surrogate splits:
##
         437 < 2.5
                     to the left,
                                   agree=0.984, adj=0.111, (0 split)
##
         381 < 3
                     to the left, agree=0.983, adj=0.056, (0 split)
##
## Node number 8062: 22 observations,
                                         complexity param=2.232741e-05
##
     predicted class=7
                        expected loss=0.2272727 P(node) =0.0008728427
##
       class counts:
                         0
                               0
                                     4
                                           1
                                                 0
                                                       a
                                                              0
                                                                   17
                                                                          0
0
      probabilities: 0.000 0.000 0.182 0.045 0.000 0.000 0.000 0.773 0.000
##
0.000
##
     left son=16124 (7 obs) right son=16125 (15 obs)
##
     Primary splits:
##
         182 < 59
                     to the right, improve=4.090909, (0 missing)
         183 < 20.5 to the right, improve=4.090909, (0 missing)
##
##
         295 < 27
                     to the left, improve=4.090909, (0 missing)
                     to the right, improve=3.340909, (0 missing)
##
         180 < 14.5
##
                     to the right, improve=3.340909, (0 missing)
         181 < 71
##
     Surrogate splits:
##
         183 < 20.5 to the right, agree=1.000, adj=1.000, (0 split)
```

```
to the right, agree=0.955, adj=0.857, (0 split)
##
         180 < 14.5
##
         181 < 71
                     to the right, agree=0.955, adj=0.857, (0 split)
                     to the right, agree=0.955, adj=0.857, (0 split)
##
         208 < 231
                     to the right, agree=0.909, adj=0.714, (0 split)
##
         184 < 6
##
## Node number 8063: 1285 observations,
                                            complexity param=1.11637e-05
     predicted class=7
                        expected loss=0.01322957 P(node) =0.05098195
##
##
       class counts:
                         0
                               1
                                                        0
                                                                1268
10
##
      probabilities: 0.000 0.001 0.002 0.001 0.002 0.000 0.000 0.987 0.000
0.008
##
     left son=16126 (8 obs) right son=16127 (1277 obs)
##
     Primary splits:
##
         664 < 3.5
                     to the right, improve=1.670529, (0 missing)
##
                     to the right, improve=1.344728, (0 missing)
         691 < 13
##
         321 < 253.5 to the left, improve=1.175881, (0 missing)
                     to the right, improve=1.088241, (0 missing)
##
         720 < 35
##
         270 < 26.5 to the left, improve=1.052566, (0 missing)
##
     Surrogate splits:
##
         636 < 2.5
                     to the right, agree=0.997, adj=0.500, (0 split)
##
         635 < 133.5 to the right, agree=0.996, adj=0.375, (0 split)
##
         663 < 188
                     to the right, agree=0.996, adj=0.375, (0 split)
##
         692 < 168.5 to the right, agree=0.996, adj=0.375, (0 split)
##
         608 < 11.5 to the right, agree=0.995, adj=0.250, (0 split)
##
## Node number 8192: 2190 observations,
                                            complexity param=4.465482e-05
     predicted class=1 expected loss=0.006392694 P(node) =0.08688752
##
                                                        0
##
       class counts:
                         0 2176
                                      1
                                            1
                                                  0
                                                              1
                                                                    2
                                                                           9
0
      probabilities: 0.000 0.994 0.000 0.000 0.000 0.000 0.000 0.001 0.004
##
0.000
##
     left son=16384 (2170 obs) right son=16385 (20 obs)
##
     Primary splits:
##
         300 < 1
                     to the left,
                                   improve=2.418246, (0 missing)
##
         271 < 251.5 to the left,
                                   improve=1.642583, (0 missing)
         299 < 169
                                   improve=1.211290, (0 missing)
##
                     to the left,
         406 < 117
                     to the right, improve=1.104794, (0 missing)
##
##
         326 < 221
                     to the left,
                                   improve=1.034851, (0 missing)
##
     Surrogate splits:
         271 < 250
##
                     to the left,
                                   agree=0.993, adj=0.20, (0 split)
##
         272 < 150
                     to the left,
                                   agree=0.992, adj=0.10, (0 split)
##
         539 < 107.5 to the left,
                                   agree=0.992, adj=0.10, (0 split)
##
         327 < 180
                     to the left,
                                   agree=0.991, adj=0.05, (0 split)
##
                                   agree=0.991, adj=0.05, (0 split)
         621 < 135
                     to the left,
##
## Node number 8193: 8 observations
##
     predicted class=1
                        expected loss=0.5
                                            P(node) = 0.0003173973
##
       class counts:
                         0
                               4
                                      0
                                            1
                                                  1
                                                        0
                                                              0
                                                                    0
                                                                           1
1
##
      probabilities: 0.000 0.500 0.000 0.125 0.125 0.000 0.000 0.000 0.125
```

```
0.125
##
## Node number 8194: 24 observations
     predicted class=1 expected loss=0.08333333 P(node) =0.000952192
##
       class counts:
                         0
                              22
                                     0
                                           0
                                                 0
                                                       0
                                                             2
                                                                         0
0
      probabilities: 0.000 0.917 0.000 0.000 0.000 0.000 0.083 0.000 0.000
0.000
##
## Node number 8195: 8 observations
##
     predicted class=8 expected loss=0.5 P(node) =0.0003173973
                                                                         4
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                 0
                                                       0
                                                             1
                                                                   3
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.125 0.375 0.500
0.000
##
## Node number 8744: 8 observations
     predicted class=2 expected loss=0.125 P(node) =0.0003173973
##
       class counts:
                         0
                               0
                                     7
                                           1
                                                 0
                                                       0
0
##
      probabilities: 0.000 0.000 0.875 0.125 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 8745: 12 observations
     predicted class=4 expected loss=0.6666667 P(node) =0.000476096
##
       class counts:
                         3
                               0
                                     0
                                           2
                                                 4
                                                       2
                                                             1
                                                                         0
0
##
      probabilities: 0.250 0.000 0.000 0.167 0.333 0.167 0.083 0.000 0.000
0.000
##
## Node number 8762: 7 observations
     predicted class=4 expected loss=0.1428571 P(node) =0.0002777227
##
       class counts:
                               0
                                     0
                                                 6
                                                       1
                                                                         0
0
      probabilities: 0.000 0.000 0.000 0.000 0.857 0.143 0.000 0.000 0.000
##
0.000
##
## Node number 8763: 15 observations
##
     predicted class=7 expected loss=0.6666667 P(node) =0.00059512
##
       class counts:
                         0
                               1
                                     1
                                           1
                                                       1
3
##
      probabilities: 0.000 0.067 0.067 0.067 0.133 0.067 0.067 0.333 0.000
0.200
##
## Node number 10870: 54 observations
     predicted class=5 expected loss=0.1851852 P(node) =0.002142432
##
##
       class counts:
                         0
                               0
                                     0
                                           8
                                                      44
                                                                         1
1
      probabilities: 0.000 0.000 0.000 0.148 0.000 0.815 0.000 0.000 0.019
0.019
```

```
##
## Node number 10871: 15 observations
##
     predicted class=9 expected loss=0.5333333 P(node) =0.00059512
       class counts:
                         0
                               0
##
                                     0
                                           1
                                                  0
                                                       3
                                                              0
                                                                          1
7
      probabilities: 0.000 0.000 0.000 0.067 0.000 0.200 0.000 0.200 0.067
##
0.467
##
## Node number 14498: 19 observations
##
     predicted class=2 expected loss=0.4736842 P(node) =0.0007538187
##
       class counts:
                         0
                               0
                                    10
                                           0
                                                  0
                                                                          2
7
##
      probabilities: 0.000 0.000 0.526 0.000 0.000 0.000 0.000 0.000 0.105
0.368
##
## Node number 14499: 12 observations
     predicted class=7 expected loss=0.3333333 P(node) =0.000476096
##
       class counts:
                         0
                               0
                                     2
                                           2
                                                              0
                                                                    8
                                                                          0
                                                       0
0
##
      probabilities: 0.000 0.000 0.167 0.167 0.000 0.000 0.000 0.667 0.000
0.000
##
## Node number 15490: 16 observations
     predicted class=1 expected loss=0.625 P(node) =0.0006347947
##
                                                                          2
##
       class counts:
                         0
                               6
                                     0
                                           2
                                                 2
                                                       0
3
      probabilities: 0.000 0.375 0.000 0.125 0.125 0.000 0.062 0.000 0.125
##
0.188
##
## Node number 15491: 28 observations
##
     predicted class=4 expected loss=0.1428571 P(node) =0.001110891
##
       class counts:
                                     0
                                                 24
                                                                          1
1
      probabilities: 0.000 0.000 0.000 0.000 0.857 0.000 0.071 0.000 0.036
##
0.036
##
## Node number 15628: 433 observations,
                                          complexity param=8.930964e-05
     predicted class=5 expected loss=0.0369515 P(node) =0.01717913
##
##
       class counts:
                         0
                               0
                                     1
                                          11
                                                  1
                                                     417
                                                              0
                                                                          0
3
##
      probabilities: 0.000 0.000 0.002 0.025 0.002 0.963 0.000 0.000 0.000
0.007
##
     left son=31256 (26 obs) right son=31257 (407 obs)
##
     Primary splits:
         176 < 19
##
                     to the right, improve=4.233391, (0 missing)
                     to the right, improve=3.140614, (0 missing)
##
         175 < 134
##
         229 < 4
                     to the right, improve=3.140614, (0 missing)
##
         470 < 17
                     to the right, improve=2.763267, (0 missing)
##
         178 < 227
                     to the right, improve=2.596915, (0 missing)
##
     Surrogate splits:
```

```
204 < 200
                     to the right, agree=0.986, adj=0.769, (0 split)
##
##
         175 < 5.5
                     to the right, agree=0.977, adj=0.615, (0 split)
                     to the right, agree=0.977, adj=0.615, (0 split)
##
         177 < 213
                     to the right, agree=0.972, adj=0.538, (0 split)
##
         148 < 8.5
##
         205 < 237.5 to the right, agree=0.972, adj=0.538, (0 split)
##
## Node number 15629: 17 observations
##
     predicted class=5 expected loss=0.4117647 P(node) =0.0006744694
                                                      10
##
       class counts:
                         0
                               0
                                     0
                                           1
                                                                          0
6
##
      probabilities: 0.000 0.000 0.000 0.059 0.000 0.588 0.000 0.000 0.000
0.353
##
## Node number 15790: 8 observations
     predicted class=8 expected loss=0.5 P(node) =0.0003173973
##
       class counts:
                         0
                                                                          4
                                     0
                                           0
                                                 0
                                                       2
                                                             0
2
##
      probabilities: 0.000 0.000 0.000 0.000 0.250 0.000 0.000 0.500
0.250
##
## Node number 15791: 22 observations
     predicted class=9 expected loss=0.1363636 P(node) =0.0008728427
##
       class counts:
                               0
                                     0
                                                 3
                                                       0
                         0
                                           0
                                                             0
                                                                    0
                                                                          0
19
      probabilities: 0.000 0.000 0.000 0.000 0.136 0.000 0.000 0.000 0.000
##
0.864
##
## Node number 15798: 8 observations
     predicted class=8 expected loss=0.375 P(node) =0.0003173973
##
##
       class counts:
                         0
                               0
                                     0
                                           1
                                                 0
                                                       1
                                                                          5
1
      probabilities: 0.000 0.000 0.000 0.125 0.000 0.125 0.000 0.000 0.625
##
0.125
##
## Node number 15799: 19 observations
     predicted class=9 expected loss=0.1052632 P(node) =0.0007538187
##
##
       class counts:
                         0
                               0
                                     1
                                           0
                                                 1
                                                                          0
17
      probabilities: 0.000 0.000 0.053 0.000 0.053 0.000 0.000 0.000 0.000
##
0.895
##
## Node number 15810: 41 observations
##
     predicted class=3 expected loss=0.02439024 P(node) =0.001626661
##
       class counts:
                         0
                               0
                                     0
                                          40
                                                 1
                                                       0
                                                             0
                                                                   0
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 0.976 0.024 0.000 0.000 0.000 0.000
0.000
##
## Node number 15811: 13 observations
     predicted class=9 expected loss=0.6923077 P(node) =0.0005157707
```

```
3 3
                                                 0 0
##
       class counts: 0 0
4
##
      probabilities: 0.000 0.000 0.231 0.231 0.000 0.000 0.000 0.231 0.000
0.308
##
## Node number 15814: 9 observations
     predicted class=3 expected loss=0.3333333 P(node) =0.000357072
##
       class counts:
                         0
                               0
                                     1
                                           6
                                                       0
0
##
      probabilities: 0.000 0.000 0.111 0.667 0.000 0.000 0.000 0.222 0.000
0.000
##
## Node number 15815: 35 observations
##
     predicted class=7 expected loss=0.02857143 P(node) =0.001388613
##
                                                       0
                                                                  34
       class counts:
                         0
                               0
                                     0
                                           1
                                                 0
                                                             0
                                                                         0
0
##
      probabilities: 0.000 0.000 0.000 0.029 0.000 0.000 0.000 0.971 0.000
0.000
##
## Node number 15870: 18 observations
     predicted class=9 expected loss=0.5 P(node) =0.000714144
##
##
       class counts:
                         0
                               0
                                     0
                                           1
                                                 1
                                                       1
                                                                         6
9
##
      probabilities: 0.000 0.000 0.000 0.056 0.056 0.056 0.000 0.000 0.333
0.500
##
## Node number 15871: 971 observations,
                                           complexity param=3.721235e-05
##
     predicted class=9
                        expected loss=0.03913491 P(node) =0.0385241
##
       class counts:
                         0
                                           4
                                                22
                                                                         6
                               0
                                     1
                                                             0
933
##
      probabilities: 0.000 0.000 0.001 0.004 0.023 0.000 0.000 0.005 0.006
0.961
##
     left son=31742 (13 obs) right son=31743 (958 obs)
##
     Primary splits:
##
         320 < 253.5 to the right, improve=4.890087, (0 missing)
##
                    to the right, improve=4.720953, (0 missing)
         219 < 179
         263 < 65.5 to the left, improve=4.558863, (0 missing)
##
##
         248 < 108
                     to the right, improve=4.121700, (0 missing)
                     to the right, improve=3.996210, (0 missing)
##
         220 < 2
##
     Surrogate splits:
##
         293 < 254.5 to the right, agree=0.992, adj=0.385, (0 split)
         347 < 254.5 to the right, agree=0.992, adj=0.385, (0 split)
##
##
         247 < 253.5 to the right, agree=0.991, adj=0.308, (0 split)
         321 < 253.5 to the right, agree=0.991, adj=0.308, (0 split)
##
##
         294 < 254.5 to the right, agree=0.990, adj=0.231, (0 split)
##
## Node number 16124: 7 observations
     predicted class=2 expected loss=0.4285714 P(node) =0.0002777227
##
##
       class counts:
                         0
                               0
                                     4
                                           1
                                                 0
                                                       0
                                                             0
                                                                   2
                                                                         0
0
```

```
probabilities: 0.000 0.000 0.571 0.143 0.000 0.000 0.000 0.286 0.000
0.000
##
## Node number 16125: 15 observations
##
     predicted class=7 expected loss=0 P(node) =0.00059512
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                 0
                                                                  15
                                                                         0
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 1.000 0.000
0.000
##
## Node number 16126: 8 observations
     predicted class=7 expected loss=0.375 P(node) =0.0003173973
##
       class counts:
                         0
                               0
                                     2
                                                 1
                                                       0
                                                                   5
                                                                         0
                                           0
0
##
      probabilities: 0.000 0.000 0.250 0.000 0.125 0.000 0.000 0.625 0.000
0.000
##
## Node number 16127: 1277 observations,
                                           complexity param=1.11637e-05
     predicted class=7 expected loss=0.01096319 P(node) =0.05066455
##
##
       class counts:
                         0
                               1
                                     1
                                           1
                                                 1
                                                       0
                                                             0 1263
                                                                         0
10
      probabilities: 0.000 0.001 0.001 0.001 0.000 0.000 0.989 0.000
##
0.008
##
     left son=32254 (1263 obs) right son=32255 (14 obs)
##
     Primary splits:
##
         321 < 253.5 to the left,
                                   improve=1.1885560, (0 missing)
##
         349 < 74.5 to the left,
                                   improve=0.8473116, (0 missing)
##
         322 < 253.5 to the left,
                                   improve=0.8211557, (0 missing)
##
         270 < 26.5 to the right, improve=0.7557122, (0 missing)
         350 < 60
##
                     to the left,
                                   improve=0.7428425, (0 missing)
##
     Surrogate splits:
##
         322 < 254.5 to the left, agree=0.991, adj=0.143, (0 split)
##
## Node number 16384: 2170 observations
##
     predicted class=1 expected loss=0.004147465 P(node) =0.08609403
##
       class counts:
                         0 2161
                                     1
                                                       0
                                                             1
                                                                   2
                                                                         4
                                           1
0
##
      probabilities: 0.000 0.996 0.000 0.000 0.000 0.000 0.000 0.001 0.002
0.000
##
## Node number 16385: 20 observations,
                                          complexity param=4.465482e-05
##
     predicted class=1 expected loss=0.25 P(node) =0.0007934934
##
       class counts:
                         0
                              15
                                     0
                                           0
                                                 0
                                                                         5
0
##
      probabilities: 0.000 0.750 0.000 0.000 0.000 0.000 0.000 0.000 0.250
0.000
##
     left son=32770 (13 obs) right son=32771 (7 obs)
##
     Primary splits:
##
         160 < 17.5 to the right, improve=4.642857, (0 missing)
##
         268 < 62 to the right, improve=4.642857, (0 missing)
```

```
269 < 231.5 to the right, improve=4.642857, (0 missing)
##
##
         156 < 44.5 to the left, improve=4.642857, (0 missing)
         238 < 11.5 to the left, improve=4.642857, (0 missing)
##
##
     Surrogate splits:
##
         268 < 62
                     to the right, agree=1.00, adj=1.000, (0 split)
##
         269 < 200.5 to the right, agree=0.95, adj=0.857, (0 split)
##
         295 < 18.5 to the right, agree=0.95, adj=0.857, (0 split)
##
         296 < 178
                     to the right, agree=0.95, adj=0.857, (0 split)
                     to the right, agree=0.95, adj=0.857, (0 split)
##
         323 < 212
##
## Node number 31256: 26 observations,
                                          complexity param=8.930964e-05
     predicted class=5 expected loss=0.3076923 P(node) =0.001031541
##
##
       class counts:
                         0
                               0
                                     0
                                           8
                                                  0
                                                       18
                                                              0
                                                                          0
                                                                    0
0
##
      probabilities: 0.000 0.000 0.000 0.308 0.000 0.692 0.000 0.000 0.000
0.000
##
     left son=62512 (10 obs) right son=62513 (16 obs)
##
     Primary splits:
         292 < 135.5 to the right, improve=7.876923, (0 missing)
##
##
                     to the right, improve=7.876923, (0 missing)
         320 < 4.5
##
         347 < 232.5 to the right, improve=7.438034, (0 missing)
##
         348 < 135
                     to the right, improve=7.438034, (0 missing)
##
         293 < 33
                     to the right, improve=6.713287, (0 missing)
##
     Surrogate splits:
##
         320 < 4.5
                     to the right, agree=1.000, adj=1.0, (0 split)
                     to the right, agree=0.962, adj=0.9, (0 split)
##
         293 < 33
                     to the right, agree=0.923, adj=0.8, (0 split)
##
         265 < 135
         266 < 198
                     to the right, agree=0.923, adj=0.8, (0 split)
##
##
         294 < 17.5 to the right, agree=0.923, adj=0.8, (0 split)
##
## Node number 31257: 407 observations
     predicted class=5
                        expected loss=0.01965602 P(node) =0.01614759
##
##
       class counts:
                                     1
                                            3
                                                  1
                                                      399
                                                              0
                                                                          0
3
##
      probabilities: 0.000 0.000 0.002 0.007 0.002 0.980 0.000 0.000 0.000
0.007
##
## Node number 31742: 13 observations
##
     predicted class=9 expected loss=0.4615385 P(node) =0.0005157707
##
       class counts:
                         0
                               0
                                     0
                                            0
7
##
      probabilities: 0.000 0.000 0.000 0.462 0.000 0.000 0.000 0.000
0.538
##
## Node number 31743: 958 observations,
                                           complexity param=3.721235e-05
##
     predicted class=9
                        expected loss=0.03340292 P(node) =0.03800833
##
       class counts:
                         0
                                     1
                                            4
                                                16
                                                                          6
926
##
      probabilities: 0.000 0.000 0.001 0.004 0.017 0.000 0.000 0.005 0.006
0.967
```

```
left son=63486 (10 obs) right son=63487 (948 obs)
##
##
     Primary splits:
##
         524 < 139
                     to the right, improve=3.241535, (0 missing)
         263 < 65.5 to the left, improve=2.640287, (0 missing)
##
         552 < 148.5 to the right, improve=2.619930, (0 missing)
##
##
         437 < 2.5
                     to the left, improve=2.486148, (0 missing)
##
         237 < 2
                     to the left,
                                   improve=2.347475, (0 missing)
##
     Surrogate splits:
##
                     to the right, agree=0.997, adj=0.7, (0 split)
         552 < 116
##
         496 < 198.5 to the right, agree=0.995, adj=0.5, (0 split)
##
         525 < 114.5 to the right, agree=0.994, adj=0.4, (0 split)
                   to the right, agree=0.993, adj=0.3, (0 split)
##
         580 < 186
##
         497 < 199.5 to the right, agree=0.992, adj=0.2, (0 split)
##
## Node number 32254: 1263 observations,
                                            complexity param=1.11637e-05
##
     predicted class=7
                        expected loss=0.008709422 P(node) =0.05010911
##
       class counts:
                         0
                               1
                                     1
                                           1
                                                 1
                                                       0
                                                             0 1252
                                                                          0
7
##
      probabilities: 0.000 0.001 0.001 0.001 0.001 0.000 0.000 0.991 0.000
0.006
##
     left son=64508 (1155 obs) right son=64509 (108 obs)
##
     Primary splits:
##
         270 < 26.5 to the right, improve=0.8170668, (0 missing)
##
         298 < 13
                     to the right, improve=0.6474661, (0 missing)
##
         242 < 12
                     to the left, improve=0.6368836, (0 missing)
                     to the right, improve=0.5940123, (0 missing)
##
         326 < 0.5
##
         461 < 211.5 to the right, improve=0.5675799, (0 missing)
##
     Surrogate splits:
##
         298 < 0.5
                     to the right, agree=0.952, adj=0.435, (0 split)
##
         326 < 3.5
                     to the right, agree=0.942, adj=0.324, (0 split)
##
         242 < 0.5
                     to the right, agree=0.937, adj=0.269, (0 split)
##
         269 < 1
                     to the right, agree=0.926, adj=0.139, (0 split)
##
         241 < 6.5
                     to the right, agree=0.920, adj=0.065, (0 split)
##
## Node number 32255: 14 observations
     predicted class=7 expected loss=0.2142857 P(node) =0.0005554453
##
##
       class counts:
                         0
                                                                   11
                                                                          0
3
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.786 0.000
##
0.214
##
## Node number 32770: 13 observations
##
     predicted class=1 expected loss=0
                                         P(node) = 0.0005157707
##
       class counts:
                         0
                              13
                                     0
                                           0
                                                       0
                                                                          0
0
##
      probabilities: 0.000 1.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 32771: 7 observations
     predicted class=8 expected loss=0.2857143 P(node) =0.0002777227
```

```
0
##
       class counts: 0
                               2
0
##
      probabilities: 0.000 0.286 0.000 0.000 0.000 0.000 0.000 0.714
0.000
##
## Node number 62512: 10 observations
     predicted class=3 expected loss=0.2 P(node) =0.0003967467
##
       class counts:
                         0
                               0
                                     0
                                           8
                                                                         0
0
##
      probabilities: 0.000 0.000 0.000 0.800 0.000 0.200 0.000 0.000 0.000
0.000
##
## Node number 62513: 16 observations
##
     predicted class=5 expected loss=0
                                         P(node) = 0.0006347947
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                 0
                                                      16
                                                                         0
0
##
      probabilities: 0.000 0.000 0.000 0.000 1.000 0.000 0.000 0.000
0.000
##
## Node number 63486: 10 observations
     predicted class=9 expected loss=0.5 P(node) =0.0003967467
##
##
       class counts:
                         0
                               0
                                     1
                                           0
                                                 1
                                                       a
                                                                   0
                                                                         3
                                                             0
5
##
      probabilities: 0.000 0.000 0.100 0.000 0.100 0.000 0.000 0.000 0.300
0.500
##
## Node number 63487: 948 observations,
                                           complexity param=3.721235e-05
##
     predicted class=9
                        expected loss=0.02848101 P(node) =0.03761159
##
       class counts:
                         0
                                           4
                                                15
                                                                   5
                                                                         3
                               0
                                     0
                                                       а
                                                             0
921
##
      probabilities: 0.000 0.000 0.000 0.004 0.016 0.000 0.000 0.005 0.003
0.972
##
     left son=126974 (76 obs) right son=126975 (872 obs)
##
     Primary splits:
##
         263 < 65.5 to the left,
                                   improve=2.768910, (0 missing)
##
         237 < 2
                     to the left,
                                   improve=2.400426, (0 missing)
         236 < 0.5
                                   improve=2.134096, (0 missing)
##
                     to the left,
##
         290 < 23.5 to the left,
                                   improve=2.019205, (0 missing)
##
         262 < 1.5
                     to the left,
                                   improve=1.866636, (0 missing)
##
     Surrogate splits:
##
         290 < 36
                     to the left,
                                   agree=0.953, adj=0.408, (0 split)
                                   agree=0.948, adj=0.355, (0 split)
##
         236 < 32
                     to the left,
##
         264 < 1
                     to the left,
                                   agree=0.935, adj=0.184, (0 split)
                                   agree=0.934, adj=0.171, (0 split)
##
         210 < 17.5 to the left,
##
         237 < 31.5 to the left,
                                   agree=0.928, adj=0.105, (0 split)
##
## Node number 64508: 1155 observations
     predicted class=7 expected loss=0.002597403 P(node) =0.04582424
##
##
       class counts:
                         0
                               1
                                     0
                                           1
                                                 0
                                                       0
                                                             0 1152
                                                                         0
1
```

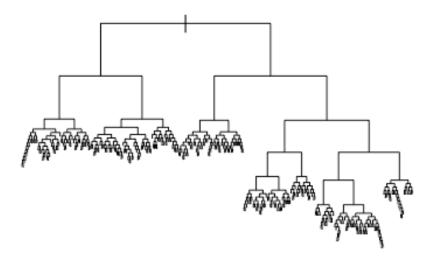
```
probabilities: 0.000 0.001 0.000 0.001 0.000 0.000 0.000 0.997 0.000
0.001
##
## Node number 64509: 108 observations,
                                            complexity param=1.11637e-05
##
     predicted class=7
                        expected loss=0.07407407 P(node) =0.004284864
##
       class counts:
                         0
                               0
                                     1
                                            0
                                                  1
                                                        0
                                                                  100
                                                                          0
6
##
      probabilities: 0.000 0.000 0.009 0.000 0.009 0.000 0.000 0.926 0.000
0.056
##
     left son=129018 (101 obs) right son=129019 (7 obs)
##
     Primary splits:
         321 < 173.5 to the left,
##
                                   improve=3.844806, (0 missing)
##
         320 < 215
                     to the left,
                                   improve=3.028025, (0 missing)
##
         347 < 45.5 to the left,
                                   improve=2.310990, (0 missing)
         348 < 44.5
                     to the left,
                                   improve=1.983420, (0 missing)
##
##
         319 < 80
                     to the left,
                                   improve=1.897957, (0 missing)
##
     Surrogate splits:
##
         349 < 7
                                   agree=0.972, adj=0.571, (0 split)
                     to the left,
                                   agree=0.963, adj=0.429, (0 split)
##
         320 < 250
                     to the left,
##
         275 < 149
                     to the left,
                                   agree=0.954, adj=0.286, (0 split)
##
         302 < 201.5 to the left,
                                   agree=0.954, adj=0.286, (0 split)
##
         322 < 237
                     to the left,
                                   agree=0.954, adj=0.286, (0 split)
##
## Node number 126974: 76 observations,
                                            complexity param=3.721235e-05
     predicted class=9
                        expected loss=0.1578947 P(node) =0.003015275
##
       class counts:
                         0
                               0
                                            0
                                                 11
                                                        0
                                                                          1
64
##
      probabilities: 0.000 0.000 0.000 0.000 0.145 0.000 0.000 0.000 0.013
0.842
##
     left son=253948 (9 obs) right son=253949 (67 obs)
##
     Primary splits:
##
         403 < 253.5 to the right, improve=8.015755, (0 missing)
##
         402 < 253.5 to the right, improve=6.055245, (0 missing)
##
         354 < 172
                     to the left, improve=5.925000, (0 missing)
##
                                   improve=4.889234, (0 missing)
         382 < 51.5 to the left,
         297 < 253.5 to the right, improve=4.889234, (0 missing)
##
##
     Surrogate splits:
##
         297 < 253.5 to the right, agree=0.947, adj=0.556, (0 split)
##
         402 < 253.5 to the right, agree=0.947, adj=0.556, (0 split)
         404 < 253.5 to the right, agree=0.947, adj=0.556, (0 split)
##
##
         405 < 253.5 to the right, agree=0.921, adj=0.333, (0 split)
##
         603 < 253.5 to the right, agree=0.921, adj=0.333, (0 split)
##
## Node number 126975: 872 observations
##
     predicted class=9
                        expected loss=0.01720183 P(node) =0.03459631
##
       class counts:
                         0
                               0
                                     0
                                            4
                                                  4
                                                        0
                                                              0
                                                                    5
                                                                          2
857
##
      probabilities: 0.000 0.000 0.000 0.005 0.005 0.000 0.000 0.006 0.002
0.983
##
```

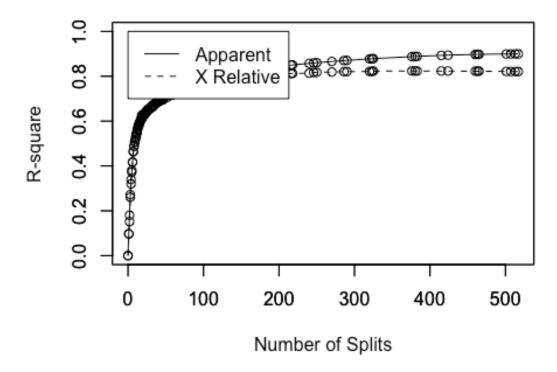
```
## Node number 129018: 101 observations
##
     predicted class=7 expected loss=0.03960396 P(node) =0.004007141
##
       class counts:
                         0
                               0
                                     1
                                           0
                                                 1
                                                       0
                                                                  97
                                                                         0
2
##
      probabilities: 0.000 0.000 0.010 0.000 0.010 0.000 0.000 0.960 0.000
0.020
##
## Node number 129019: 7 observations
     predicted class=9 expected loss=0.4285714 P(node) =0.0002777227
##
       class counts:
                         0
                               0
                                     0
                                                       0
                                                                   3
                                                                         0
                                           0
                                                 0
                                                             0
4
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.429 0.000
##
0.571
##
## Node number 253948: 9 observations
     predicted class=4 expected loss=0.2222222 P(node) =0.000357072
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                 7
                                                       0
                                                                         0
2
##
      probabilities: 0.000 0.000 0.000 0.000 0.778 0.000 0.000 0.000 0.000
0.222
##
## Node number 253949: 67 observations
     predicted class=9 expected loss=0.07462687 P(node) =0.002658203
##
       class counts:
                         0
                                                 4
                                     0
                                           0
62
##
      probabilities: 0.000 0.000 0.000 0.000 0.060 0.000 0.000 0.000 0.015
0.925
##
## Classification tree:
## rpart(formula = label ~ ., data = trainDF, method = "class",
       control = rpart.control(cp = 0))
##
## Variables actually used in tree construction:
     [1] 101 103 121 123 124 125 126 127 131 149 150 152 153 154 155 156 157
158
## [19] 159 160 176 179 180 182 183 185 186 188 202 204 205 206 207 208 209
210
## [37] 211 212 213 214 215 217 218 219 220 231 233 234 235 237 238 239 240
## [55] 242 243 244 247 263 264 265 266 267 268 269 270 271 272 273 274 276
287
   [73] 288 289 290 291 292 293 294 295 296 297 299 300 301 315 317 318 319
##
320
## [91] 321 322 323 324 325 326 327 328 329 341 342 343 344 345 346 347 348
349
## [109] 350 351 352 353 354 355 356 359 370 371 372 373 374 375 376 377 378
379
## [127] 380 381 382 384 386 398 400 401 402 403 404 405 406 407 408 409 410
```

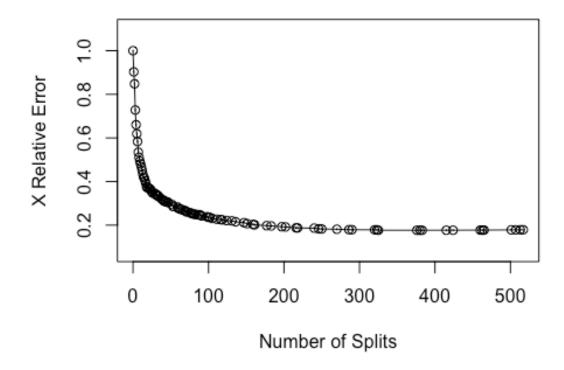
```
## [145] 412 413 427 428 429 431 432 433 434 435 436 437 438 439 441 442 454
455
## [163] 456 457 458 459 460 461 462 463 464 465 466 467 468 470 482 484 486
487
## [181] 488 489 490 491 492 493 494 512 513 514 515 516 518 520 522 524 527
537
## [199] 538 539 541 542 543 544 545 546 549 550 551 552 553 555 567 568 569
570
## [217] 572 573 574 575 576 580 584 595 596 597 599 600 601 602 603 608 623
624
## [235] 626 627 628 651 652 653 654 655 656 657 658 662 664 678 680 681 683
685
## [253] 686 709 711 712 714 717 718 94 95 96 98
##
## Root node error: 22394/25205 = 0.88847
##
## n= 25205
##
##
               CP nsplit rel error xerror
## 1
       9.7794e-02
                       0
                           1.00000 1.00000 0.0022316
## 2
       8.2567e-02
                       1
                           0.90221 0.90301 0.0028235
## 3
       8.0200e-02
                       2
                           0.81964 0.84822 0.0030549
## 4
       5.9570e-02
                       3
                           0.73944 0.72783 0.0033888
## 5
                       4
       5.1934e-02
                           0.67987 0.66040 0.0034910
## 6
       4.5727e-02
                       5
                           0.62794 0.61914 0.0035269
## 7
       4.5057e-02
                       6
                           0.58221 0.58337 0.0035423
## 8
       2.5453e-02
                       7
                           0.53715 0.53456 0.0035403
## 9
       2.1390e-02
                       8
                           0.51170 0.51112 0.0035298
                       9
## 10
                           0.49031 0.49361 0.0035179
       1.8666e-02
## 11
       1.5763e-02
                      10
                           0.47164 0.48102 0.0035071
## 12
       1.5495e-02
                           0.45588 0.46745 0.0034935
                      11
                           0.44039 0.45159 0.0034749
## 13
       1.3307e-02
                      12
## 14
                      13
                           0.42708 0.43391 0.0034506
       1.1074e-02
## 15
       8.3505e-03
                      14
                           0.41600 0.42051 0.0034296
## 16
       6.9662e-03
                      15
                           0.40765 0.41547 0.0034211
## 17
                      16
       6.1177e-03
                           0.40069 0.40350 0.0033998
## 18
       4.8227e-03
                      17
                           0.39457 0.39149 0.0033766
## 19
                      18
                           0.38975 0.37470 0.0033409
       4.7781e-03
      4.7334e-03
## 20
                      19
                           0.38497 0.37113 0.0033329
## 21
       4.6888e-03
                      21
                           0.37550 0.36916 0.0033284
## 22
                      22
       4.6441e-03
                           0.37081 0.36800 0.0033257
## 23
       4.4208e-03
                      23
                           0.36617 0.36461 0.0033177
## 24
       4.2869e-03
                      24
                           0.36175 0.35679 0.0032988
## 25
       3.9296e-03
                      25
                           0.35746 0.35286 0.0032889
## 26
       3.7957e-03
                      26
                           0.35353 0.34710 0.0032741
## 27
       3.7510e-03
                      29
                           0.34215 0.34594 0.0032711
## 28
                           0.33839 0.34183 0.0032601
       3.4831e-03
                      30
## 29
       3.3938e-03
                      31
                           0.33491 0.33661 0.0032459
## 30
       3.3491e-03
                      32
                           0.33152 0.33647 0.0032455
## 31 3.3045e-03
                      33
                           0.32817 0.33647 0.0032455
```

```
34
                            0.32486 0.33174 0.0032323
## 32
       2.8579e-03
## 33
       2.8356e-03
                       37
                            0.31629 0.32218 0.0032045
## 34
                       39
                            0.31062 0.31705 0.0031890
       2.6346e-03
## 35
       2.5900e-03
                       40
                            0.30798 0.31312 0.0031769
## 36
       2.5453e-03
                       41
                            0.30539 0.31053 0.0031687
## 37
       2.5007e-03
                       42
                            0.30285 0.30977 0.0031663
## 38
       2.4560e-03
                       43
                            0.30035 0.30848 0.0031622
## 39
       2.3890e-03
                       44
                            0.29789 0.30731 0.0031585
## 40
       2.3667e-03
                       46
                            0.29311 0.30450 0.0031494
## 41
       2.2774e-03
                       47
                            0.29075 0.30383 0.0031472
## 42
       2.0541e-03
                       52
                            0.27932 0.29401 0.0031144
## 43
       2.0095e-03
                       53
                            0.27726 0.28539 0.0030843
## 44
       1.8308e-03
                       59
                            0.26520 0.28320 0.0030764
## 45
                       60
                            0.26337 0.27713 0.0030542
       1.6969e-03
## 46
       1.6746e-03
                       62
                            0.25998 0.27396 0.0030423
                            0.25663 0.27226 0.0030359
       1.6299e-03
## 47
                       64
## 48
       1.6076e-03
                       66
                            0.25337 0.26936 0.0030248
## 49
       1.4736e-03
                       69
                            0.24855 0.26704 0.0030158
## 50
       1.4066e-03
                       70
                            0.24708 0.26230 0.0029972
## 51
                       72
       1.3843e-03
                            0.24426 0.26007 0.0029883
## 52
       1.2950e-03
                       76
                            0.23872 0.25677 0.0029749
## 53
                            0.23743 0.25431 0.0029648
       1.2503e-03
                       77
                       79
## 54
       1.1610e-03
                            0.23493 0.25230 0.0029565
## 55
       1.1164e-03
                       81
                            0.23261 0.24993 0.0029466
## 56
       1.0940e-03
                       83
                            0.23037 0.24931 0.0029439
## 57
       1.0717e-03
                       86
                            0.22689 0.24779 0.0029375
## 58
       1.0271e-03
                       88
                            0.22475 0.24761 0.0029368
## 59
       9.8241e-04
                       90
                            0.22269 0.24493 0.0029253
## 60
       9.3775e-04
                       91
                            0.22171 0.24221 0.0029135
                       98
                            0.21515 0.23846 0.0028969
## 61
       8.9310e-04
## 62
       8.7077e-04
                      100
                            0.21336 0.23636 0.0028876
## 63
       8.4844e-04
                      102
                            0.21162 0.23524 0.0028826
## 64
       8.0379e-04
                      105
                            0.20907 0.23095 0.0028630
## 65
       7.5913e-04
                      111
                            0.20425 0.22694 0.0028444
## 66
       7.3680e-04
                      116
                            0.20046 0.22595 0.0028398
## 67
       7.1448e-04
                      118
                            0.19898 0.22417 0.0028313
## 68
       6.6982e-04
                      124
                            0.19470 0.22109 0.0028166
## 69
       6.2517e-04
                      131
                            0.18938 0.21966 0.0028097
       5.8051e-04
## 70
                      136
                            0.18626 0.21537 0.0027887
## 71
       5.3586e-04
                      147
                            0.17987 0.21149 0.0027694
## 72
       4.9120e-04
                      151
                            0.17773 0.20693 0.0027462
## 73
       4.6888e-04
                      159
                            0.17380 0.20340 0.0027279
## 74
       4.4655e-04
                      161
                            0.17286 0.20157 0.0027183
## 75
       4.2422e-04
                      177
                            0.16562 0.19764 0.0026974
## 76
       4.0189e-04
                      183
                            0.16259 0.19644 0.0026909
## 77
       3.7957e-04
                      197
                            0.15696 0.19273 0.0026707
## 78
                            0.15504 0.19170 0.0026650
       3.5724e-04
                      202
## 79
       3.3491e-04
                      216
                            0.15004 0.18773 0.0026429
## 80
       3.1258e-04
                      218
                            0.14937 0.18733 0.0026406
## 81
      2.9770e-04
                      240
                            0.14245 0.18639 0.0026353
```

```
## 82
       2.9026e-04
                           0.14066 0.18295 0.0026157
                     246
## 83
       2.6793e-04
                     250
                           0.13950 0.18241 0.0026126
## 84
       2.4560e-04
                     270
                           0.13414 0.18116 0.0026053
## 85
       2.3444e-04
                     286
                           0.13017 0.17933 0.0025946
## 86
       2.2327e-04
                     290
                           0.12923 0.17916 0.0025936
                           0.12253 0.17857 0.0025902
## 87
       2.0839e-04
                     320
## 88
       2.0095e-04
                     323
                           0.12191 0.17857 0.0025902
## 89
       1.7862e-04
                     325
                           0.12151 0.17670 0.0025791
                           0.11226 0.17643 0.0025775
## 90
       1.5629e-04
                     376
## 91
       1.4885e-04
                     380
                           0.11164 0.17648 0.0025778
## 92
       1.3396e-04
                     383
                           0.11119 0.17665 0.0025788
                     415
                           0.10690 0.17674 0.0025794
## 93
       1.1164e-04
       8.9310e-05
                     424
                           0.10583 0.17679 0.0025796
## 94
## 95
       7.4425e-05
                     460
                           0.10262 0.17741 0.0025833
       6.6982e-05
                     463
                           0.10239 0.17706 0.0025812
## 96
## 97
       4.4655e-05
                     465
                           0.10226 0.17732 0.0025828
## 98
       3.7212e-05
                     501
                           0.10065 0.17840 0.0025891
## 99
       2.2327e-05
                     507
                           0.10043 0.17857 0.0025902
## 100 1.1164e-05
                     513
                           0.10029 0.17889 0.0025920
## 101 0.0000e+00
                     517
                            0.10025 0.17893 0.0025923
## Warning in rsq.rpart(treeModel): may not be applicable for this method
```

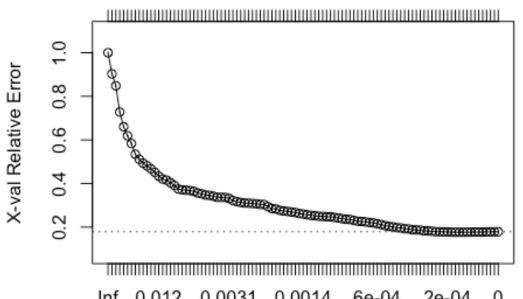






## size of tree

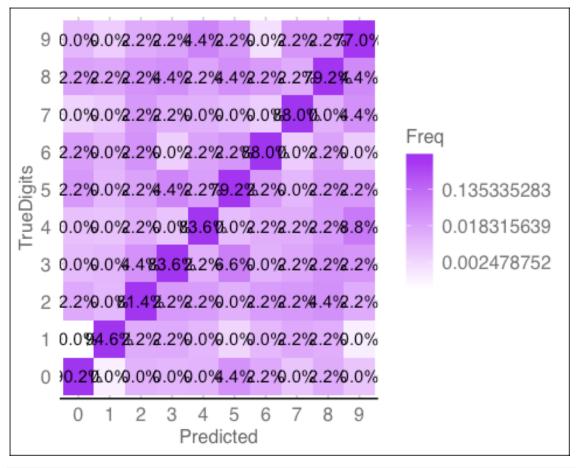




Inf 0.012 0.0031 0.0014 6e-04 2e-04 0

ср

7	[rueD	igits									
		•	2	3	4	5	6	7	8	9	
	_	_	_			_				_	
1		1751									
2	_			57						22	
3	14	23	42	1400	9			20		29	
4	15	14	36	18	1351	34		17	27	88	
5	49	4	16	94	10	1166	41	10	53	38	
6	23	13	36	17	19	39	1430	6	38	3	
7	9	25	47	28	22	15	7	1574	23	52	
8	20	18	54	47	38	39	28	16	1232	45	
9	9	2	23	51	139	46	7	61	77	1377	
## Accuracy			Карра			AccuracyLower			ıracyl	Jpper	AccuracyNull
## 8.426317e-01		8.2	8.250834e-01		8.370355e-01			8.481091e-01			1.115213e-01
## AccuracyPValue		McnemarPValue									
## 0.000000e+00		3.5	3.572480e-08								
	Predicted  0 1 2 3 4 5 6 7 8 9 AccuracyP\ AccuracyP\	Predicted 0 0 1494 1 2 2 17 3 14 4 15 5 49 6 23 7 9 8 20 9 9 Accuracy 8.426317e-01 AccuracyPValue	Predicted 0 1 0 1494 1 1 2 1751 2 17 22 3 14 23 4 15 14 5 49 4 6 23 13 7 9 25 8 20 18 9 9 2 Accuracy 8.426317e-01 8.2 AccuracyPValue Mcner	Predicted 0 1 2 0 1494 1 24 1 2 1751 15 2 17 22 1377 3 14 23 42 4 15 14 36 5 49 4 16 6 23 13 36 7 9 25 47 8 20 18 54 9 9 2 23 Accuracy 8.426317e-01 8.250834 AccuracyPValue McnemarPo	Predicted 0 1 2 3 0 1494 1 24 12 1 2 1751 15 16 2 17 22 1377 57 3 14 23 42 1400 4 15 14 36 18 5 49 4 16 94 6 23 13 36 17 7 9 25 47 28 8 20 18 54 47 9 9 2 23 51 Accuracy Kappa 8.426317e-01 8.250834e-01 AccuracyPValue	Predicted 0 1 2 3 4 0 1494 1 24 12 10 1 2 1751 15 16 10 2 17 22 1377 57 20 3 14 23 42 1400 9 4 15 14 36 18 1351 5 49 4 16 94 10 6 23 13 36 17 19 7 9 25 47 28 22 8 20 18 54 47 38 9 9 2 23 51 139 Accuracy Kappa Accuracy Rapa Accuracy Rapa Accuracy McnemarPValue	Predicted 0 1 2 3 4 5 0 1494 1 24 12 10 44 1 2 1751 15 16 10 16 2 17 22 1377 57 20 31 3 14 23 42 1400 9 88 4 15 14 36 18 1351 34 5 49 4 16 94 10 1166 6 23 13 36 17 19 39 7 9 25 47 28 22 15 8 20 18 54 47 38 39 9 9 2 23 51 139 46 Accuracy Kappa Accuracy 8.426317e-01 8.250834e-01 8.370358	Predicted 0 1 2 3 4 5 6 0 1494 1 24 12 10 44 35 1 2 1751 15 16 10 16 18 2 17 22 1377 57 20 31 53 3 14 23 42 1400 9 88 6 4 15 14 36 18 1351 34 29 5 49 4 16 94 10 1166 41 6 23 13 36 17 19 39 1430 7 9 25 47 28 22 15 7 8 20 18 54 47 38 39 28 9 9 2 23 51 139 46 7 Accuracy Kappa AccuracyLower 8.426317e-01 8.250834e-01 8.370355e-01 AccuracyPValue	Predicted 0 1 2 3 4 5 6 7 0 1494 1 24 12 10 44 35 5 1 2 1751 15 16 10 16 18 8 2 17 22 1377 57 20 31 53 43 3 14 23 42 1400 9 88 6 20 4 15 14 36 18 1351 34 29 17 5 49 4 16 94 10 1166 41 10 6 23 13 36 17 19 39 1430 6 7 9 25 47 28 22 15 7 1574 8 20 18 54 47 38 39 28 16 9 9 2 23 51 139 46 7 61 Accuracy Kappa AccuracyLower AccuracyPolue McnemarPValue	Predicted 0 1 2 3 4 5 6 7 8 0 1494 1 24 12 10 44 35 5 33 1 2 1751 15 16 10 16 18 8 29 1 2 17 22 1377 57 20 31 53 43 51 3 14 23 42 1400 9 88 6 20 62 4 15 14 36 18 1351 34 29 17 27 5 49 4 16 94 10 1166 41 10 53 6 23 13 36 17 19 39 1430 6 38 7 9 25 47 28 22 15 7 1574 23 8 20 18 54 47 38 39 28 16 1232 9 9 9 2 23 51 139 46 7 61 77 Accuracy Kappa AccuracyLower AccuracyLower 8.426317e-01 8.250834e-01 8.370355e-01 8.481093 AccuracyPValue McnemarPValue	Predicted       0       1       2       3       4       5       6       7       8       9         0       1494       1       24       12       10       44       35       5       33       14         1       2       1751       15       16       10       16       18       8       29       7         2       17       22       1377       57       20       31       53       43       51       22         3       14       23       42       1400       9       88       6       20       62       29         4       15       14       36       18       1351       34       29       17       27       88         5       49       4       16       94       10       1166       41       10       53       38         6       23       13       36       17       19       39       1430       6       38       3         7       9       25       47       28       22       15       7       1574       23       52         8       20       18       54       <



```
## n= 25205
##
## node), split, n, loss, yval, (yprob)
         * denotes terminal node
##
##
        1) root 25205 22394 1 (0.098 0.11 0.099 0.1 0.097 0.09 0.099 0.1
0.097 \ 0.1)
          2) 350>=120.5 9068 6479 1 (0.021 0.29 0.053 0.23 0.026 0.11 0.056
##
0.025 0.13 0.059)
            4) 489>=44.5 4400 1969 1 (0.0064 0.55 0.077 0.036 0.025 0.024
0.063 0.027 0.15 0.036)
              8) 234< 0.5 3250 861 1 (0.0055 0.74 0.048 0.017 0.023 0.028
0.049 0.0074 0.066 0.021)
               16) 347< 1.5 2607
                                   328 1 (0.00038 0.87 0.047 0.0077 0.0054
0.0092 0.012 0.0035 0.038 0.0027)
                 32) 550< 0.5 2456
                                     189 1 (0 0.92 0.013 0.0049 0.0041 0.0098
##
0.0033 0.0033 0.037 0.0024)
                   64) 300< 21.5 2312
                                         96 1 (0 0.96 0.013 0.003 0.003
0.0043 0.0035 0.0035 0.01 0.00087)
                                       77 1 (0 0.97 0.0052 0.0026 0.0031
                    128) 608< 6 2291
0.0044 0.0035 0.0035 0.01 0.00087)
                      256) 484< 8 2260
                                          51 1 (0 0.98 0.0018 0.0027 0.00088
0.0022 0.0022 0.0035 0.0084 0.00088)
```

```
##
0.00044 0.0018 0.0018 0.0036 0.0084 0.00044)
                    1024) 410< 32 2237
                                     32 1 (0 0.99 0.00045 0.00089
0.00045 0.0018 0.0018 0.0022 0.0063 0.00045)
                     0.0009 0.00045 0 0.0018 0.0022 0.0063 0.00045)
                       4096) 493< 64.5 2198 18 1 (0 0.99 0.00045
0.00091 0.00045 0 0.00045 0.00091 0.0045 0.00045)
                        0.00046 0 0 0.00046 0.00091 0.0041 0)
                         16384) 300< 1 2170
                                          9 1 (0 1 0.00046
0.00046 0 0 0.00046 0.00092 0.0018 0) *
                         16385) 300>=1 20
                                          5 1 (0 0.75 0 0 0 0 0 0
##
0.250)
                           32770) 160>=17.5 13 0 1 (0 1 0 0 0 0 0
##
0 0 0) *
##
                           32771) 160< 17.5 7 2 8 (0 0.29 0 0 0 0
0 0 0.71 0) *
                        8193) 433< 2.5 8 4 1 (0 0.5 0 0.12 0.12 0
##
0 0 0.12 0.12) *
                      ##
0.094 0.12 0)
                        8194) 546>=193.5 24 2 1 (0 0.92 0 0 0 0
0.083 0 0 0) *
                        8195) 546< 193.5 8 4 8 (0 0 0 0 0 0 0.12
0.38 0.5 0) *
                    2049) 219>=22.5 7 3 5 (0 0.43 0 0 0 0.57 0 0 0
##
0) *
                    1025) 410>=32 12 7 8 (0 0.25 0.083 0 0 0 0 0.25
##
0.420) *
                   513) 406< 48 11 7 3 (0 0.091 0.18 0.36 0.091
0.091 0.091 0 0 0.091) *
##
                 257) 484>=8 31 23 2 (0 0.16 0.26 0 0.16 0.16 0.097 0
0.160)
                   ##
0 0 0) *
##
                   515) 623>=14.5 12 7 1 (0 0.42 0 0 0 0.083 0.083 0
0.420) *
##
                129) 608>=6 21
                               3 2 (0 0.095 0.86 0.048 0 0 0 0 0 0) *
##
               65) 300>=21.5 144
                               78 8 (0 0.35 0.0069 0.035 0.021 0.097
0 0 0.46 0.028)
                130) 265< 1.5 72 21 1 (0 0.71 0.014 0.028 0.014 0.18 0
##
0 0.056 0)
                                 4 1 (0 0.93 0.018 0.018 0 0.018 0
                 260) 487>=145 55
0 0.018 0) *
##
                261) 487< 145 17 5 5 (0 0 0 0.059 0.059 0.71 0 0
0.180) *
                ##
0.86 0.056) *
             33) 550>=0.5 151 59 2 (0.0066 0.079 0.61 0.053 0.026 0
```

```
0.15 0.0066 0.066 0.0066)
                 ##
0.0740)
                 132) 292< 58.5 91 9 2 (0 0.022 0.9 0.055 0 0 0 0
##
0.0220)
                   264) 543>=24.5 83 3 2 (0 0.024 0.96 0 0 0 0 0.012
##
0) *
##
                   265) 543< 24.5 8
                                     3 3 (0 0 0.25 0.62 0 0 0 0 0.12 0)
*
                  133) 292>=58.5 17 8 1 (0 0.53 0.059 0 0.059 0 0 0
##
0.350) *
                 67) 152< 12 43 21 6 (0.023 0.023 0.21 0.07 0.07 0 0.51
##
0.023 0.047 0.023)
                  0.21 0.042 0.083 0)
                   268) 349< 206.5 13 5 2 (0.077 0 0.62 0 0.23 0 0
0.077 0 0) *
                   269) 349>=206.5 11 6 6 (0 0.091 0 0.27 0 0 0.45 0
##
0.180) *
##
                  135) 212< 22 19 2 6 (0 0 0.053 0 0 0 0.89 0 0 0.053)
             17) 347>=1.5 643 515 6 (0.026 0.17 0.053 0.056 0.096 0.1 0.2
##
0.023 0.18 0.093)
               34) 103< 1.5 564 451 8 (0.028 0.19 0.059 0.059 0.11 0.12
0.1 0.027 0.2 0.11)
                 68) 657< 1.5 286 232 5 (0.042 0.12 0.11 0.049 0.15 0.19
0.19 0.028 0.028 0.1)
                  136) 276< 44.5 252 198 6 (0.048 0.13 0.12 0.056 0.16
0.095 0.21 0.032 0.024 0.12)
                   272) 574>=233 93 43 6 (0.075 0.14 0.097 0.065 0.032
0.032 0.54 0.011 0 0.011)
                     544) 486< 67.5 25 12 1 (0 0.52 0.12 0.2 0.08 0.04
##
0 0.04 0 0)
                                        3 1 (0 0.81 0.062 0 0.12 0 0 0
##
                     1088) 603>=181 16
0 0) *
                     1089) 603< 181 9
                                        4 3 (0 0 0.22 0.56 0 0.11 0
##
0.11 0 0) *
                     545) 486>=67.5 68
                                        18 6 (0.1 0 0.088 0.015 0.015
##
0.029 0.74 0 0 0.015)
                      1090) 244>=56 12
                                        5 0 (0.58 0 0.083 0.083 0 0.083
0.17 0 0 0) *
                      1091) 244< 56 56 8 6 (0 0 0.089 0 0.018 0.018
##
0.86 0 0 0.018)
                       2182) 95>=41 7 2 2 (0 0 0.71 0 0 0 0.29 0 0 0)
##
##
                        2183) 95< 41 49 3 6 (0 0 0 0 0.02 0.02 0.94 0
0 0.02) *
                   273) 574< 233 159 122 4 (0.031 0.13 0.14 0.05 0.23
0.13 0.025 0.044 0.038 0.18)
                     546) 539>=2 67 46 2 (0.075 0.09 0.31 0.09 0.06
```

```
0.28 0.015 0 0.075 0)
##
                      ##
                      1093) 552< 26 54 35 5 (0.093 0.11 0.15 0.11 0.074
0.35 0.019 0 0.093 0)
##
                        2186) 458>=16.5 31 24 2 (0.13 0.19 0.23 0.097
0.13 0.065 0.032 0 0.13 0)
                         4372) 652< 147 20 13 2 (0.15 0 0.35 0.15 0.2
0.1 0.05 0 0 0)
                           ##
0 0 0) *
##
                           8745) 405< 210 12
                                             8 4 (0.25 0 0 0.17 0.33
0.17 0.083 0 0 0) *
                         4373) 652>=147 11 5 1 (0.091 0.55 0 0 0 0 0
##
0 0.36 0) *
                                            6 5 (0.043 0 0.043 0.13 0
##
                       2187) 458< 16.5 23
0.74 0 0 0.043 0)
                         4374) 157>=20.5 7
                                           4 3 (0.14 0 0.14 0.43 0
0.14 0 0 0.14 0) *
##
                         4375) 157< 20.5 16 0 5 (0 0 0 0 0 1 0 0 0 0)
                     547) 539< 2 92 59 4 (0 0.15 0.011 0.022 0.36 0.022
0.033 0.076 0.011 0.32)
                      1094) 456>=13.5 22 2 4 (0 0 0 0.045 0.91 0 0
0.045 0 0) *
                      1095) 456< 13.5 70 41 9 (0 0.2 0.014 0.014 0.19
0.029 0.043 0.086 0.014 0.41)
                        2190) 381< 210.5 37 25 1 (0 0.32 0.027 0.027
0.22 0.054 0.081 0.14 0 0.14)
                         4380) 405>=205.5 15 4 1 (0 0.73 0 0 0 0 0.13
##
0 0 0.13) *
                         4381) 405< 205.5 22 14 4 (0 0.045 0.045 0.045
0.36 0.091 0.045 0.23 0 0.14)
                           0 0 0 0) *
                           8763) 403< 204.5 15
                                               10 7 (0 0.067 0.067
0.067 0.13 0.067 0.067 0.33 0 0.2) *
                        2191) 381>=210.5 33 9 9 (0 0.061 0 0 0.15 0 0
0.03 0.03 0.73)
                                            6 4 (0 0.22 0 0 0.33 0 0
                         4382) 238< 175.5 9
0.11 0.11 0.22) *
                         4383) 238>=175.5 24 2 9 (0 0 0 0 0.083 0 0 0
##
0 0.92) *
##
                 137) 276>=44.5 34
                                    4 5 (0 0 0 0 0.059 0.88 0 0 0.059
0) *
                69) 657>=1.5 278 173 8 (0.014 0.27 0.0072 0.068 0.068
##
0.043 0.014 0.025 0.38 0.11)
                 138) 294>=216 134 61 1 (0.022 0.54 0.0075 0.03 0.075
0.067 0.03 0.03 0.12 0.075)
                   276) 429< 10.5 95 23 1 (0.011 0.76 0.011 0.011 0
0.032 0.011 0.042 0.084 0.042)
```

```
552) 299< 31 77 7 1 (0 0.91 0.013 0 0 0.013 0.013
##
0.026 0.013 0.013) *
                       553) 299>=31 18
                                         11 8 (0.056 0.11 0 0.056 0 0.11 0
0.11 0.39 0.17) *
##
                     277) 429>=10.5 39
                                         29 4 (0.051 0.026 0 0.077 0.26
0.15 0.077 0 0.21 0.15)
                                          2 4 (0 0 0 0 0.82 0 0.091 0 0
                       554) 627< 5.5 11
0.091) *
##
                       555) 627>=5.5 28
                                        20 8 (0.071 0.036 0 0.11 0.036
0.21 0.071 0 0.29 0.18)
##
                        1110) 379< 17.5 7
                                             1 5 (0 0 0 0.14 0 0.86 0 0 0
0) *
                        1111) 379>=17.5 21
                                             13 8 (0.095 0.048 0 0.095
##
0.048 0 0.095 0 0.38 0.24)
                          2222) 653>=111.5 10 3 8 (0.1 0.1 0 0 0.1 0 0 0
##
0.70) *
##
                          2223) 653< 111.5 11
                                                 6 9 (0.091 0 0 0.18 0 0
0.18 0 0.091 0.45) *
                   139) 294< 216 144 55 8 (0.0069 0.021 0.0069 0.1 0.062
0.021 0 0.021 0.62 0.14)
                     278) 711< 94.5 124 35 8 (0.0081 0.024 0.0081 0.12
0.073 0.024 0 0.0081 0.72 0.016)
                       556) 265< 15.5 37 24 3 (0.027 0.027 0.027 0.35
0.14 0.054 0 0.027 0.32 0.027)
                        1112) 317< 4.5 19
                                            6 3 (0 0.053 0.053 0.68 0.11
0.053 0 0 0 0.053) *
                        1113) 317>=4.5 18
                                             6 8 (0.056 0 0 0 0.17 0.056 0
##
0.056 0.67 0) *
                       557) 265>=15.5 87
                                           10 8 (0 0.023 0 0.023 0.046
##
0.011 0 0 0.89 0.011)
                        1114) 401>=186 8
                                           4 4 (0 0 0 0.12 0.5 0 0 0 0.38
##
0) *
##
                        1115) 401< 186 79
                                             5 8 (0 0.025 0 0.013 0 0.013 0
0 0.94 0.013) *
                                          2 9 (0 0 0 0 0 0 0 0.1 0 0.9) *
##
                     279) 711>=94.5 20
                35) 103>=1.5 79 9 6 (0.013 0.013 0.013 0.038 0.013 0.013
##
0.89 0 0.013 0)
                                     5 3 (0.14 0 0.14 0.29 0.14 0 0.14 0
                  70) 271>=74.5 7
##
0.140) *
                  71) 271< 74.5 72 3 6 (0 0.014 0 0.014 0 0.014 0.96 0 0
##
0) *
             9) 234>=0.5 1150 690 8 (0.0087 0.037 0.16 0.09 0.031 0.012
##
0.1 0.083 0.4 0.079)
              18) 658< 13.5 434 291 2 (0.012 0.044 0.33 0.035 0.03 0.014
0.26 0.065 0.085 0.12)
                36) 345< 18 228 94 2 (0 0.075 0.59 0.066 0.0044 0.0044
##
0.039 0.092 0.088 0.044)
                  72) 541>=1.5 142 23 2 (0 0 0.84 0.014 0 0.007 0.042
0.014 0.077 0.007)
                   144) 301< 3.5 122 6 2 (0 0 0.95 0.0082 0 0.0082
```

```
0.0082 0.016 0.0082 0) *
                 ##
0.05)
##
                   290) 291< 86 9
                                   4 6 (0 0 0.33 0.11 0 0 0.56 0 0 0) *
##
                   291) 291>=86 11
                                    1 8 (0 0 0 0 0 0 0 0 0.91 0.091) *
                73) 541< 1.5 86 67 7 (0 0.2 0.17 0.15 0.012 0 0.035
##
0.22 0.1 0.1)
##
                 146) 683< 18 57 40 1 (0 0.3 0.26 0.18 0 0 0.053 0.035
0.14 0.035)
                   292) 459< 5.5 21
                                    4 1 (0 0.81 0.095 0 0 0 0 0 0.048
##
0.048) *
                                    23 2 (0 0 0.36 0.28 0 0 0.083 0.056
##
                   293) 459>=5.5 36
0.19 0.028)
##
                     586) 516>=7 24
                                    11 2 (0 0 0.54 0.042 0 0 0.12 0.042
0.250)
                     1172) 270< 4.5 16
                                       5 2 (0 0 0.69 0.062 0 0 0.19
0.06200) *
                     1173) 270>=4.5 8 2 8 (0 0 0.25 0 0 0 0 0 0.75 0)
##
##
                     587) 516< 7 12
                                  3 3 (0 0 0 0.75 0 0 0 0.083 0.083
0.083) *
                 ##
0.24)
                   294) 349< 102.5 17
                                       1 7 (0 0 0 0.059 0 0 0 0.94 0 0)
##
*
##
                   295) 349>=102.5 12
                                       5 9 (0 0 0 0.17 0.083 0 0 0.083
0.083 0.58) *
##
               0.51 0.034 0.083 0.21)
                74) 575>=51.5 144 39 6 (0.035 0.014 0.021 0 0.021 0.035
0.73 0.035 0.069 0.042)
                 148) 213< 25.5 112
                                    13 6 (0.0089 0.018 0 0 0.027 0.018
0.88 0.036 0 0.0089)
                   296) 266>=154 14
                                    10 7 (0.071 0.14 0 0 0.14 0.071
0.21 0.29 0 0.071) *
##
                                    2 6 (0 0 0 0 0.01 0.01 0.98 0 0 0)
                   297) 266< 154 98
                 149) 213>=25.5 32
                                   22 8 (0.12 0 0.094 0 0 0.094 0.19
##
0.031 0.31 0.16)
##
                   298) 442>=27 12
                                    6 6 (0.33 0 0.17 0 0 0 0.5 0 0 0) *
##
                   299) 442< 27 20
                                    10 8 (0 0 0.05 0 0 0.15 0 0.05 0.5
0.25)
##
                    598) 432< 47.5 9
                                       5 9 (0 0 0.11 0 0 0.33 0 0.11 0
0.44) *
                     599) 432>=47.5 11 1 8 (0 0 0 0 0 0 0 0 0.91
##
0.091) *
##
                75) 575< 51.5 62 24 9 (0 0 0.097 0 0.15 0 0 0.032 0.11
0.61)
##
                 150) 210< 21.5 19 10 4 (0 0 0.16 0 0.47 0 0 0.053 0.16
0.16) *
```

```
151) 210>=21.5 43 8 9 (0 0 0.07 0 0 0 0 0.023 0.093
##
0.81) *
           19) 658>=13.5 716
                          293 8 (0.007 0.032 0.052 0.12 0.032 0.011
##
0.007 0.094 0.59 0.052)
##
             0.014 0.2 0.23 0.032)
               76) 344< 24 162 100 3 (0 0.056 0.2 0.38 0 0 0 0.27 0.08
0.0062)
##
               152) 404>=228 59
                               10 3 (0 0 0.12 0.83 0 0 0 0.034 0.017
0)
##
                 304) 527>=25.5 7
                                  1 2 (0 0 0.86 0.14 0 0 0 0 0 0) *
##
                 305) 527< 25.5 52
                                  4 3 (0 0 0.019 0.92 0 0 0 0.038
0.019 0) *
##
               153) 404< 228 103
                                61 7 (0 0.087 0.25 0.13 0 0 0 0.41
0.12 0.0097)
                 306) 153>=121 47
                                23 2 (0 0.085 0.51 0.17 0 0 0 0
##
0.230)
                                  10 2 (0 0.029 0.71 0.24 0 0 0 0
##
                   612) 321< 195 34
0.0290)
                   1224) 543>=81 24
                                    1 2 (0 0 0.96 0 0 0 0 0 0.042
##
0) *
                                   2 3 (0 0.1 0.1 0.8 0 0 0 0 0 0)
##
                   1225) 543< 81 10
                   613) 321>=195 13
                                   3 8 (0 0.23 0 0 0 0 0 0 0.77 0)
##
*
##
                 307) 153< 121 56
                                 14 7 (0 0.089 0.036 0.089 0 0 0
0.75 0.018 0.018)
##
                  614) 546< 15 7 2 3 (0 0 0 0.71 0 0 0 0.14 0.14 0)
##
                   615) 546>=15 49
                                  8 7 (0 0.1 0.041 0 0 0 0 0.84 0
0.02) *
               77) 344>=24 56
                             19 8 (0.018 0 0.018 0.036 0.089 0.018
##
0.054 0 0.66 0.11)
                               8 9 (0 0 0 0.071 0.36 0 0 0 0.14
##
               154) 516< 53 14
0.43) *
                ##
0.071 0 0.83 0)
                                  4 6 (0.14 0 0 0.14 0 0 0.43 0
                 310) 356>=118.5 7
##
0.290) *
                                   2 8 (0 0 0.029 0 0 0.029 0 0
##
                 311) 356< 118.5 35
0.940) *
             ##
0.004 0.046 0.75 0.06)
               0.016 0 0.097 0.36 0.22)
                156) 401< 173 80 39 8 (0 0.16 0.013 0.075 0.05 0.013 0
##
0.1 0.51 0.075)
                 0.23 0.26 0.029)
                 ##
```

```
0.350)
                    ##
0) *
                   1249) 269>=25.5 12
                                       4 8 (0 0 0 0.25 0 0.083 0 0
##
0.670) *
##
                   625) 180< 118.5 9
                                     1 7 (0 0 0 0 0 0 0 0.89 0 0.11)
*
##
                 0.71 0.11)
                  626) 461< 62.5 8 4 9 (0 0 0 0 0.38 0 0 0 0.12
##
0.5) *
                   627) 461>=62.5 37 6 8 (0 0 0.027 0.081 0.027 0 0
##
0 0.84 0.027) *
                157) 401>=173 44 23 9 (0.023 0 0 0.23 0.068 0.023 0
0.091 0.091 0.48)
                  314) 206>=125 18
                                  8 3 (0 0 0 0.56 0 0.056 0 0.17
0.17 0.056) *
                  315) 206< 125 26 6 9 (0.038 0 0 0 0.12 0 0 0.038
0.038 \ 0.77)
##
                   630) 325< 213.5 7 4 4 (0.14 0 0 0 0.43 0 0 0 0.14
0.29) *
##
                   631) 325>=213.5 19 1 9 (0 0 0 0 0 0 0 0.053 0
0.95) *
               79) 543>=9.5 374 46 8 (0.008 0.0027 0.0053 0.021 0.029
##
0.013 0.0053 0.029 0.88 0.008)
                0 0.32 0.11 0) *
                159) 470< 156.5 355 29 8 (0.0028 0.0028 0.0028 0.011
0.028 0.0056 0.0056 0.014 0.92 0.0085)
                                  4 7 (0 0 0 0.14 0.29 0.14 0 0.43 0
                  318) 461< 43.5 7
##
0) *
                  ##
0.023 0.0029 0.0057 0.0057 0.94 0.0086)
                   0.028 0.028 0.61 0.056)
                    1276) 269>=252.5 13 7 4 (0 0 0 0.077 0.46 0
0.077 0.077 0.15 0.15) *
                    1277) 269< 252.5 23 3 8 (0 0 0 0.043 0.043 0.043
##
0 0 0.87 0) *
                                      8 8 (0.0032 0.0032 0.0032
                   639) 401< 218.5 312
0.0032 0.0032 0 0.0032 0.0032 0.97 0.0032) *
         5) 489< 44.5 4668 2714 3 (0.036 0.034 0.032 0.42 0.027 0.18 0.05
0.024 0.11 0.082)
          10) 486< 76.5 3675 1787 3 (0.027 0.038 0.006 0.51 0.031 0.22
0.0095 0.03 0.031 0.094)
            20) 290< 42.5 2318 665 3 (0.015 0.057 0.0082 0.71 0.016 0.12
##
0.0082 0.013 0.023 0.028)
             40) 179>=1.5 1626 234 3 (0.0018 0.025 0.008 0.86 0.0031
0.065 0.0012 0.0043 0.019 0.017)
          80) 315< 84.5 1502 128 3 (0 0.027 0.0087 0.91 0 0.026 0
```

```
0.0047 0.015 0.0033)
##
                   160) 490>=139.5 64
                                       31 1 (0 0.52 0.047 0.31 0 0.016 0
0.078 0.031 0)
                    320) 297< 26.5 39 6 1 (0 0.85 0.077 0 0 0.026 0
##
0.051 0 0)
                      640) 264>=27.5 32
                                         1 1 (0 0.97 0 0 0 0.031 0 0 0
##
0) *
##
                      641) 264< 27.5 7
                                          4 2 (0 0.29 0.43 0 0 0 0 0.29 0
0) *
##
                    321) 297>=26.5 25
                                         5 3 (0 0 0 0.8 0 0 0 0.12 0.08 0)
##
                      642) 628>=164 18
                                          03(0001000000)*
##
                      643) 628< 164 7
                                         4 7 (0 0 0 0.29 0 0 0 0.43 0.29
0) *
##
                  161) 490< 139.5 1438 84 3 (0 0.0056 0.007 0.94 0 0.026
0 0.0014 0.015 0.0035)
                    322) 264< 244.5 1393
                                          56 3 (0 0.0014 0.0072 0.96 0
0.017 0 0 0.011 0.0036)
                      644) 317< 206 1370 38 3 (0 0.0015 0.0073 0.97 0
0.01 0 0 0.0088 0)
                       1288) 487< 148 1360 28 3 (0 0.0015 0.0059 0.98 0
##
0.0096 0 0 0.0037 0)
                                            19 3 (0 0.0015 0.0059 0.99 0
                         2576) 341< 70 1350
0.0044 0 0 0.0022 0) *
                         2577) 341>=70 10
                                             3 5 (0 0 0 0.1 0 0.7 0 0 0.2
##
0) *
##
                       1289) 487>=148 10
                                            3 8 (0 0 0.2 0 0 0.1 0 0 0.7
0) *
##
                      645) 317>=206 23
                                         14 5 (0 0 0 0.22 0 0.39 0 0 0.17
0.22)
                       1290) 524>=20 16
                                          7 5 (0 0 0 0.25 0 0.56 0 0 0.19
##
0) *
                       1291) 524< 20 7
                                          2 9 (0 0 0 0.14 0 0 0 0 0.14
##
0.71) *
##
                    323) 264>=244.5 45
                                       28 3 (0 0.13 0 0.38 0 0.33 0
0.044 0.11 0)
                                          3 3 (0 0 0 0.81 0 0 0 0.062
                      646) 296>=124.5 16
##
0.120) *
                                           14 5 (0 0.21 0 0.14 0 0.52 0
##
                      647) 296< 124.5 29
0.034 0.1 0)
                       1294) 185< 63.5 12
                                            6 1 (0 0.5 0 0.33 0 0 0 0.083
##
0.083 0) *
##
                       1295) 185>=63.5 17 2 5 (0 0 0 0 0 0.88 0 0 0.12
0) *
##
                 81) 315>=84.5 124
                                    58 5 (0.024 0 0 0.15 0.04 0.53 0.016
0 0.065 0.18)
                  162) 296< 54 78
                                    17 5 (0.013 0 0 0.038 0.051 0.78 0 0
##
0.051 0.064)
                                     5 5 (0.016 0 0 0.032 0.032 0.92 0 0
##
                    324) 300< 6 62
0 0) *
##
```

```
0.31) *
                 163) 296>=54 46 29 9 (0.043 0 0 0.33 0.022 0.11 0.043
##
0 0.087 0.37)
                  326) 493< 1 25 13 3 (0.08 0 0 0.48 0 0.2 0.04 0 0.16
##
0.04)
##
                    652) 401< 112.5 13
                                       1 3 (0.077 0 0 0.92 0 0 0 0 0
0) *
##
                    653) 401>=112.5 12
                                       7 5 (0.083 0 0 0 0 0.42 0.083
0 0.33 0.083) *
                  327) 493>=1 21 5 9 (0 0 0 0.14 0.048 0 0.048 0 0
##
0.76) *
              41) 179< 1.5 692 431 3 (0.045 0.13 0.0087 0.38 0.045 0.25
##
0.025 0.033 0.032 0.055)
                0.019 0.0096 0.029 0.0096)
                 164) 265< 148 261 51 3 (0.027 0.015 0.019 0.8 0 0.088
0.011 0.011 0.019 0.0038)
                  0.0099 0 0 0.02 0.005)
                    656) 428>=205 9
                                     5 2 (0.11 0 0.44 0.22 0 0.11 0 0
##
0.11\ 0)\ *
                    657) 428< 205 193 7 3 (0.0052 0.0052 0 0.96 0
##
0.0052 0 0 0.016 0.0052) *
                  329) 155< 3 59 37 3 (0.085 0.051 0.017 0.37 0 0.36
0.051 0.051 0.017 0)
                    658) 348< 235 29
                                     9 3 (0 0.1 0.034 0.69 0 0.069
0.1000
##
                     1316) 486>=1 7
                                     4 1 (0 0.43 0.14 0 0 0.14 0.29 0
0 0) *
                                     2 3 (0 0 0 0.91 0 0.045 0.045 0
                    1317) 486< 1 22
##
0 0) *
                    ##
0.0330)
##
                     1318) 412>=5.5 7
                                     2 0 (0.71 0 0 0.14 0 0 0 0.14 0
0) *
                     1319) 412< 5.5 23 4 5 (0 0 0 0.043 0 0.83 0
##
0.087 0.043 0) *
                 165) 265>=148 156 60 5 (0.12 0 0 0.16 0 0.62 0.032
0.0064 0.045 0.019)
                                      6 0 (0.76 0 0 0 0 0.04 0.08 0
##
                  330) 456>=235.5 25
0.120)
##
                    660) 214>=169 18
                                      00(1000000000)*
                                     4 8 (0.14 0 0 0 0 0.14 0.29 0
##
                    661) 214< 169 7
0.430) *
                  331) 456< 235.5 131 36 5 (0 0 0 0.19 0 0.73 0.023
##
0.0076 0.031 0.023)
                    ##
0.033 0.067 0.1)
                     1324) 324>=153.5 22 5 3 (0 0 0 0.77 0 0 0.091 0
0.091 0.045) *
```

```
1325) 324< 153.5 8 3 5 (0 0 0 0 0 0.62 0 0.12 0
##
0.25) *
                     663) 299< 40 101 11 5 (0 0 0 0.079 0 0.89 0.0099 0
##
0.020)
##
                      1326) 124>=83 8
                                        2 3 (0 0 0 0.75 0 0.12 0 0 0.12
0) *
                                        4 5 (0 0 0 0.022 0 0.96 0.011 0
##
                      1327) 124< 83 93
0.011\ 0) *
                 83) 626< 19.5 275
                                   188 1 (0.018 0.32 0.0036 0.095 0.11
0.19 0.033 0.069 0.036 0.12)
                  166) 376< 20 104 24 1 (0 0.77 0 0.038 0.0096 0.048
0.0096 0.067 0.029 0.029)
                   332) 462>=85.5 85 6 1 (0 0.93 0 0 0.012 0 0.012
0.047 0 0)
##
                     664) 324< 109.5 77
                                         01(0100000000)*
##
                     665) 324>=109.5 8
                                         4 7 (0 0.25 0 0 0.12 0 0.12 0.5
0 0) *
                   333) 462< 85.5 19 14 5 (0 0.053 0 0.21 0 0.26 0 0.16
##
0.16 0.16) *
                  167) 376>=20 171 123 5 (0.029 0.041 0.0058 0.13 0.18
##
0.28 0.047 0.07 0.041 0.18)
                   0.017 0.017 0.017 0)
                     668) 413>=194 7 2 0 (0.71 0 0 0.29 0 0 0 0 0 0) *
##
##
                     669) 413< 194 51
                                       8 5 (0 0 0.02 0.078 0 0.84 0.02
0.02 \ 0.02 \ 0)
                      1338) 352>=251.5 7 3 3 (0 0 0 0.57 0 0.29 0 0
##
0.140) *
                      1339) 352< 251.5 44
                                          3 5 (0 0 0.023 0 0 0.93
##
0.023 0.023 0 0) *
                   335) 539< 54.5 113 82 9 (0 0.062 0 0.14 0.27 0.044
0.062 0.097 0.053 0.27)
##
                     670) 237< 2 43
                                     17 4 (0 0 0 0.14 0.6 0 0.023 0.23 0
0)
##
                                        1 4 (0 0 0 0 0.96 0 0 0.043 0
                      1340) 231>=13 23
0) *
##
                      1341) 231< 13 20
                                        11 7 (0 0 0 0.3 0.2 0 0.05 0.45
0 0)
##
                        2682) 345< 12 11
                                          5 3 (0 0 0 0.55 0.36 0 0.091
0 0 0) *
                                          07 (0000000100) *
##
                        2683) 345>=12 9
                     671) 237>=2 70 39 9 (0 0.1 0 0.14 0.057 0.071
0.086 0.014 0.086 0.44)
                      1342) 325< 5 27 20 1 (0 0.26 0 0.11 0.074 0.19
0.22 0 0.15 0)
                        2684) 154>=20 13 6 1 (0 0.54 0 0 0 0.15 0
##
0.31 0) *
                        2685) 154< 20 14
                                          9 5 (0 0 0 0.21 0.14 0.36
##
0.29 0 0 0) *
##
```

```
0.047 \ 0.72)
                        2686) 288< 117 22 12 9 (0 0 0 0.32 0.091 0 0
##
0.045 0.091 0.45)
                          5372) 292< 132 9 2 3 (0 0 0 0.78 0 0 0 0
##
0.220) *
##
                          5373) 292>=132 13 3 9 (0 0 0 0 0.15 0 0
0.077 0 0.77) *
##
                        2687) 288>=117 21
                                            0 9 (0 0 0 0 0 0 0 0 0 1) *
             21) 290>=42.5 1357 824 5 (0.049 0.0044 0.0022 0.17 0.057
0.39 0.012 0.058 0.044 0.21)
               42) 626>=10.5 836 360 5 (0.071 0.0012 0.0012 0.24 0.0012
0.57 0.011 0.006 0.059 0.044)
                 84) 297>=29.5 324 179 3 (0.1 0.0031 0.0031 0.45 0 0.21
0.0093 0.015 0.12 0.09)
                                   4 0 (0.88 0 0 0 0 0 0.031 0.062 0.031
##
                  168) 359>=77 32
0) *
##
                  169) 359< 77 292 147 3 (0.017 0.0034 0.0034 0.5 0 0.24
0.0068 0.01 0.13 0.099)
                    338) 318< 219.5 112
                                         26 3 (0 0 0 0.77 0 0.036 0 0
0.14 0.054)
                                        15 3 (0 0 0 0.85 0 0.03 0 0
##
                     676) 484< 186 101
0.059 0.059)
                      1352) 488< 57.5 94
                                        10 3 (0 0 0 0.89 0 0.032 0 0
0.011 0.064) *
##
                      1353) 488>=57.5 7
                                           2 8 (0 0 0 0.29 0 0 0 0 0.71
0) *
                      677) 484>=186 11
                                         1 8 (0 0 0 0 0 0.091 0 0 0.91 0)
##
                    ##
0.36 0.011 0.017 0.12 0.13)
##
                      678) 176>=79.5 40 8 3 (0 0 0 0.8 0 0.15 0 0 0.05
0)
##
                      0) *
##
                      1357) 288>=216 8
                                         3 5 (0 0 0 0.12 0 0.62 0 0 0.25
0) *
##
                      679) 176< 79.5 140 81 5 (0.036 0.0071 0.0071 0.19
0 0.42 0.014 0.021 0.14 0.16)
                      1358) 294>=3 102
                                        49 5 (0.049 0.0098 0.0098 0.25 0
0.52 0.02 0.029 0.029 0.088)
                        2716) 125>=40.5 25 9 3 (0 0.04 0.04 0.64 0
##
0.24 0 0 0.04 0)
##
                          5432) 270>=13.5 16
                                              1 3 (0 0 0.062 0.94 0 0 0
0 0 0) *
                          5433) 270< 13.5 9
                                              3 5 (0 0.11 0 0.11 0 0.67
##
0 0 0.11 0) *
                        2717) 125< 40.5 77 30 5 (0.065 0 0 0.12 0 0.61
0.026 0.039 0.026 0.12)
##
                          5434) 455>=193.5 8 3 0 (0.62 0 0 0 0 0 0.25
0 0 0.12) *
```

```
5435) 455< 193.5 69 22 5 (0 0 0 0.13 0 0.68 0
##
0.043 0.029 0.12)
                         10870) 597>=38.5 54
                                            10 5 (0 0 0 0.15 0 0.81
0 0 0.019 0.019) *
##
                         10871) 597< 38.5 15 8 9 (0 0 0 0.067 0 0.2
0 0.2 0.067 0.47) *
                     1359) 294< 3 38 22 8 (0 0 0 0.053 0 0.16 0 0 0.42
0.37)
                       2718) 545< 45.5 30 14 8 (0 0 0 0.067 0 0.2 0 0
##
0.53 \ 0.2)
##
                        5436) 431< 10.5 14
                                            8 9 (0 0 0 0.14 0 0.29 0
0 0.14 0.43) *
                        5437) 431>=10.5 16
                                            28 (000000.1200
##
0.880) *
##
                                         09(0000000001)*
                       2719) 545>=45.5 8
##
                85) 297< 29.5 512
                                 105 5 (0.051 0 0 0.1 0.002 0.79 0.012
0 0.021 0.016)
                 ##
0.13 \ 0.13)
##
                  340) 293>=187 23
                                    00(1000000000)*
                  341) 293< 187 16
                                   11 8 (0.062 0 0 0.19 0.062 0.062 0
##
0 0.31 0.31) *
                 171) 301< 74 473 67 5 (0.0042 0 0 0.11 0 0.86 0.013 0
0.013 0.0063)
                                   11 3 (0.061 0 0 0.67 0 0.15 0.03 0
                  342) 295>=219 33
0.061 0.03)
                    684) 214< 206 23
                                      2 3 (0 0 0 0.91 0 0 0 0 0.043
##
0.043) *
##
                    685) 214>=206 10
                                      5 5 (0.2 0 0 0.1 0 0.5 0.1 0 0.1
0) *
                  343) 295< 219 440 39 5 (0 0 0 0.064 0 0.91 0.011 0
##
0.0091 0.0045)
##
                    686) 121>=122.5 18
                                        5 3 (0 0 0 0.72 0 0.22 0 0
0.056 0) *
                                        25 5 (0 0 0 0.036 0 0.94 0.012
                    687) 121< 122.5 422
0 0.0071 0.0047)
##
                     0)
                       ##
0 0)
                        5496) 551>=62.5 13 2 3 (0 0 0 0.85 0 0.077
##
0.077 0 0 0) *
##
                        5497) 551< 62.5 7
                                          1 5 (0 0 0 0.14 0 0.86 0 0
0 0) *
##
                       2749) 293< 176 17
                                          05 (0000010000) *
                     1375) 235>=1 385
                                    12 5 (0 0 0 0.0078 0 0.97 0.01 0
##
0.0078 0.0052)
                       2750) 299< 67 378
                                        7 5 (0 0 0 0.0079 0 0.98
0.011 0 0 0) *
                       2751) 299>=67 7 4 8 (0 0 0 0 0 0.29 0 0 0.43
##
```

```
0.29) *
##
               43) 626< 10.5 521 277 9 (0.015 0.0096 0.0038 0.071 0.15
0.11 0.013 0.14 0.021 0.47)
                                 102 7 (0.024 0.018 0 0.055 0.35 0.067
                 86) 210< 1 164
0.024 0.38 0.018 0.061)
                  172) 321< 202 85
                                     27 4 (0 0 0 0.047 0.68 0.082 0.047
0.035 0.012 0.094)
                    344) 266< 36 70
                                      13 4 (0 0 0 0.014 0.81 0.043 0.057
0.029 0 0.043)
                                       6 4 (0 0 0 0.016 0.9 0 0 0.032 0
##
                      688) 124< 37 63
0.048) *
##
                      689) 124>=37 7
                                       3 6 (0 0 0 0 0 0.43 0.57 0 0 0) *
                                     10 9 (0 0 0 0.2 0.067 0.27 0 0.067
##
                    345) 266>=36 15
0.067 0.33) *
                                     20 7 (0.051 0.038 0 0.063 0 0.051 0
##
                  173) 321>=202 79
0.75 0.025 0.025)
                    346) 570>=2 12
                                      8 0 (0.33 0 0 0.17 0 0.33 0 0 0.17
0) *
##
                    347) 570< 2 67
                                      8 7 (0 0.045 0 0.045 0 0 0 0.88 0
0.03) *
                 87) 210>=1 357 123 9 (0.011 0.0056 0.0056 0.078 0.05
0.13 0.0084 0.034 0.022 0.66)
                                      56 5 (0 0.02 0 0.16 0.1 0.44 0.03
                  174) 297< 5.5 100
0.02 0.03 0.2)
                    348) 295< 99 63
                                      20 5 (0 0 0 0.079 0.063 0.68 0.048
0.016 0.016 0.095)
                      696) 491< 144 52
                                        10 5 (0 0 0 0.096 0 0.81 0.058 0
##
0 0.038) *
                                         7 4 (0 0 0 0 0.36 0.091 0 0.091
##
                      697) 491>=144 11
0.091 0.36) *
                    349) 295>=99 37 23 9 (0 0.054 0 0.3 0.16 0.027 0
0.027 0.054 0.38)
##
                      698) 468>=26 9
                                       03 (000100000) *
##
                      699) 468< 26 28
                                       14 9 (0 0.071 0 0.071 0.21 0.036 0
0.036 0.071 0.5)
                       0.059 0 0.059 0.12 0.18) *
##
                       1399) 294< 197.5 11
                                             09(0000000001)*
                  175) 297>=5.5 257 43 9 (0.016 0 0.0078 0.047 0.031
0.0078 0 0.039 0.019 0.83)
                                       2 3 (0.1 0 0 0.8 0 0.1 0 0 0 0) *
##
                    350) 680>=29 10
                    351) 680< 29 247
                                       33 9 (0.012 0 0.0081 0.016 0.032
0.004 0 0.04 0.02 0.87)
##
                      702) 515>=44 9
                                      4 8 (0.22 0 0.22 0 0 0 0 0 0.56 0)
                      703) 515< 44 238 24 9 (0.0042 0 0 0.017 0.034
##
0.0042 0 0.042 0 0.9)
                       1406) 377< 21.5 16
                                            8 7 (0.062 0 0 0 0 0.062 0
0.5 0 0.38) *
##
```

```
0.009 0 0.94) *
            11) 486>=76.5 993 580 8 (0.065 0.02 0.13 0.066 0.014 0.053 0.2
0.001 0.42 0.035)
              22) 657< 5.5 423 238 6 (0.031 0.047 0.23 0.035 0.033 0.054
0.44 0 0.069 0.061)
                44) 270>=51.5 173
                                    104 2 (0.052 0.087 0.4 0.046 0.052 0.04
##
0.081 0 0.13 0.11)
##
                  88) 126>=10 73
                                    16 2 (0 0.014 0.78 0.068 0 0 0.055 0
0.0820)
                                         5 2 (0 0.017 0.92 0.033 0 0 0.033 0
##
                   176) 466< 39.5 60
0 0) *
                                         7 8 (0 0 0.15 0.23 0 0 0.15 0 0.46
##
                   177) 466>=39.5 13
0) *
##
                  89) 126< 10 100
                                     81 9 (0.09 0.14 0.12 0.03 0.09 0.07 0.1
0 0.17 0.19)
                   178) 717< 5 83
                                    67 8 (0.11 0.17 0.14 0.036 0.11 0.084
0.12 0 0.19 0.036)
                     356) 211< 22.5 39 25 1 (0 0.36 0 0 0.21 0.18 0.18 0
0.051 0.026)
                       712) 457< 14.5 14
                                           1 1 (0 0.93 0 0 0 0 0.071 0 0
##
0) *
                       713) 457>=14.5 25
                                           17 4 (0 0.04 0 0 0.32 0.28 0.24
##
0 0.08 0.04)
                        1426) 293< 127.5 17
                                               9 4 (0 0.059 0 0 0.47 0 0.35
##
0 0.059 0.059) *
##
                        1427) 293>=127.5 8
                                               1 5 (0 0 0 0 0 0.88 0 0 0.12
0) *
##
                     357) 211>=22.5 44 30 8 (0.2 0 0.27 0.068 0.023 0
0.068 0 0.32 0.045)
                                          1 0 (0.89 0 0 0 0 0 0.11 0 0 0) *
##
                       714) 406< 98 9
                                          21 8 (0.029 0 0.34 0.086 0.029 0
##
                       715) 406>=98 35
0.057 0 0.4 0.057)
                        1430) 550>=139 16
                                              5 2 (0 0 0.69 0.062 0.062 0
0.062 0 0.062 0.062) *
                        1431) 550< 139 19
                                              6 8 (0.053 0 0.053 0.11 0 0
0.053 0 0.68 0.053) *
##
                   179) 717>=5 17
                                    1 9 (0 0 0 0 0 0 0 0 0.059 0.94) *
                                     79 6 (0.016 0.02 0.12 0.028 0.02 0.064
##
                45) 270< 51.5 250
0.68 0 0.024 0.028)
                  90) 601< 36.5 41 32 2 (0.049 0.12 0.22 0.073 0.12 0.098
0.098 0 0.049 0.17)
##
                   180) 380< 19.5 18
                                         9 2 (0.056 0.28 0.5 0 0 0.11 0.056
0 0 0) *
                                       16 9 (0.043 0 0 0.13 0.22 0.087 0.13
##
                   181) 380>=19.5 23
0 0.087 0.3)
                     362) 428< 201 13
                                      9 4 (0 0 0 0.23 0.31 0.077 0.23 0
##
0.15 0) *
                     363) 428>=201 10
                                          3 9 (0.1 0 0 0 0.1 0.1 0 0 0 0.7)
##
##
                  91) 601>=36.5 209 42 6 (0.0096 0 0.096 0.019 0 0.057
```

```
0.8 0 0.019 0)
##
                  182) 584>=8 16
                                   3 2 (0 0 0.81 0 0 0 0.19 0 0 0) *
##
                  183) 584< 8 193
                                  29 6 (0.01 0 0.036 0.021 0 0.062 0.85
0 0.021 0)
##
                   366) 431< 1 21 11 5 (0 0 0 0.14 0 0.48 0.38 0 0 0)
                     ##
0 0) *
                     733) 321< 93.5 7
##
                                        06(000001000)*
##
                   367) 431>=1 172    16 6 (0.012 0 0.041 0.0058 0 0.012
0.91 0 0.023 0)
                     734) 273>=58.5 7
                                        4 8 (0.29 0 0 0.14 0 0.14 0 0
##
0.430) *
                     735) 273< 58.5 165 9 6 (0 0 0.042 0 0 0.0061 0.95
##
0 0.0061 0) *
             23) 657>=5.5 570 186 8 (0.091 0 0.049 0.089 0 0.053 0.026
0.0018 0.67 0.016)
               46) 407< 1.5 97
                                53 0 (0.45 0 0.082 0.062 0 0.15 0.031 0
0.220)
##
                 92) 329>=11 41 4 0 (0.9 0 0 0.024 0 0.049 0 0 0.024 0)
##
                93) 329< 11 56 36 8 (0.12 0 0.14 0.089 0 0.23 0.054 0
0.360)
                 186) 347>=0.5 40
                                  27 5 (0.17 0 0 0.12 0 0.33 0.075 0
##
0.30)
##
                   372) 351< 190 12
                                     5 0 (0.58 0 0 0.083 0 0.25 0.083 0
0 0) *
                   373) 351>=190 28
                                     16 8 (0 0 0 0.14 0 0.36 0.071 0
##
0.430)
                                        6 5 (0 0 0 0.12 0 0.62 0.062 0
##
                     746) 297< 178 16
0.190) *
                     747) 297>=178 12
                                        3 8 (0 0 0 0.17 0 0 0.083 0 0.75
##
0) *
##
                  187) 347< 0.5 16 8 2 (0 0 0.5 0 0 0 0 0 0.5 0) *
               0.0021 0.77 0.019)
##
                 94) 514< 1 43 21 3 (0 0 0.023 0.51 0 0.047 0 0 0.3
0.12)
##
                  188) 512< 70.5 27
                                     6 3 (0 0 0 0.78 0 0.037 0 0 0 0.19)
##
                   376) 320< 71.5 20
                                      03(0001000000)*
##
                   377) 320>=71.5 7
                                     2 9 (0 0 0 0.14 0 0.14 0 0 0 0.71)
*
##
                  189) 512>=70.5 16
                                     3 8 (0 0 0.062 0.062 0 0.062 0 0
0.81\ 0)\ *
                 95) 514>=1 430 80 8 (0.019 0 0.044 0.053 0 0.03 0.028
0.0023 0.81 0.0093)
                  190) 432< 1 28 20 3 (0.21 0 0.036 0.29 0 0.21 0.036 0
##
0.18 0.036)
                   380) 429>=101.5 13 7 0 (0.46 0 0.077 0 0 0 0.077 0
##
0.380) *
##
                   381) 429< 101.5 15 7 3 (0 0 0 0.53 0 0.4 0 0 0
```

```
0.067) *
                 191) 432>=1 402 57 8 (0.005 0 0.045 0.037 0 0.017
##
0.027 0.0025 0.86 0.0075)
                   382) 436< 7 57 25 8 (0.018 0 0.32 0.053 0 0.018
0.018 0.018 0.56 0)
##
                     0.210)
##
                      1528) 602>=175 17
                                       1 2 (0 0 0.94 0 0 0 0.059 0 0
0) *
                     1529) 602< 175 7 2 8 (0 0 0.14 0.14 0 0 0 0 0.71
##
0) *
                    765) 126< 44.5 33 6 8 (0.03 0 0.03 0.061 0 0.03 0
##
0.03 0.82 0) *
##
                   383) 436>=7 345 32 8 (0.0029 0 0 0.035 0 0.017 0.029
0 0.91 0.0087)
                     766) 439>=250.5 36
                                       18 8 (0 0 0 0.28 0 0.14 0.056 0
##
0.5 0.028)
                     1532) 289< 1.5 11 2 3 (0 0 0 0.82 0 0 0.091 0
0.0910) *
##
                     1533) 289>=1.5 25 8 8 (0 0 0 0.04 0 0.2 0.04 0
0.68 0.04)
                       3066) 270< 126 8 3 5 (0 0 0 0 0 0.62 0.12 0
##
0.12 0.12) *
                       ##
0.94\ 0) *
                     767) 439< 250.5 309 14 8 (0.0032 0 0 0.0065 0
0.0032 0.026 0 0.95 0.0065)
##
                      1534) 406< 171.5 37 9 8 (0.027 0 0 0 0 0 0.19 0
0.76 0.027)
                       3068) 131>=50 7
                                         2 6 (0.14 0 0 0 0 0 0.71 0
##
0.140) *
                       3069) 131< 50 30 3 8 (0 0 0 0 0 0 0.067 0 0.9
##
0.033) *
                      1535) 406>=171.5 272 5 8 (0 0 0 0.0074 0 0.0037
0.0037 0 0.98 0.0037) *
        3) 350< 120.5 16137 13725 7 (0.14 0.014 0.13 0.031 0.14 0.081 0.12
0.15 0.077 0.12)
          6) 435< 0.5 4294 2072 0 (0.52 0.004 0.066 0.03 0.039 0.086 0.053
0.15 0.0086 0.042)
           12) 597>=1.5 2737 684 0 (0.75 0.0022 0.084 0.031 0.0018 0.08
0.03 0.0058 0.011 0.0033)
             24) 489< 0.5 2295 319 0 (0.86 0.00044 0.021 0.033 0.00087
0.053 0.02 0.0052 0.0026 0.0026)
               48) 380< 1.5 2072 142 0 (0.93 0 0.015 0.015 0.00048 0.021
0.01 0.0048 0.00048 0.00097)
                96) 324< 172 1973 88 0 (0.96 0 0.015 0.0035 0.00051
0.0096 0.0091 0.0051 0.00051 0.001)
                 192) 463< 80 1955 73 0 (0.96 0 0.013 0.0036 0.00051
0.0082 0.0087 0.002 0 0.001)
```

```
0.0012 0.0074 0 0 0.00062)
                  768) 96< 93.5 1603 12 0 (0.99 0 0.00062 0 0.00062
0.0012 0.0044 0 0 0.00062)
                   1536) 101< 189 1578 7 0 (1 0 0 0 0.00063 0.0013
0.0019 0 0 0.00063) *
##
                   1537) 101>=189 25
                                    5 0 (0.8 0 0.04 0 0 0 0.16 0 0
0)
##
                    3074) 244>=5.5 18
                                     1 0 (0.94 0 0.056 0 0 0 0 0
0 0) *
                    3075) 244< 5.5 7 3 6 (0.43 0 0 0 0 0 0.57 0 0
##
0) *
##
                  769) 96>=93.5 20
                                  5 0 (0.75 0 0 0 0 0 0.25 0 0 0)
##
                   1538) 183>=24.5 13
                                    00(1000000000)*
##
                   1539) 183< 24.5 7
                                    2 6 (0.29 0 0 0 0 0 0.71 0 0
0) *
                 385) 400< 3.5 332 56 0 (0.83 0 0.075 0.021 0 0.042
0.015 0.012 0 0.003)
                  770) 545< 198.5 299 35 0 (0.88 0 0.03 0.023 0
0.047 0.01 0.0033 0 0.0033)
                   0.0075 0.011 0.0037 0 0.0037)
                    0.005 0 0) *
                    3081) 244< 1 66 13 0 (0.8 0 0.11 0.015 0 0.015
##
0.045 0 0 0.015)
                      6162) 149< 10.5 56
                                       4 0 (0.93 0 0.018 0 0 0
0.054 0 0 0) *
##
                      6163) 149>=10.5 10 4 2 (0.1 0 0.6 0.1 0 0.1
0 0 0 0.1) *
                   1541) 296>=135 32 20 0 (0.38 0 0.062 0.19 0 0.38
##
0 0 0 0)
                    3082) 239>=145 18 7 0 (0.61 0 0.11 0.28 0 0 0
##
0 0 0) *
##
                    3083) 239< 145 14 2 5 (0.071 0 0 0.071 0 0.86
0 0 0 0) *
                  ##
0.091 0 0)
                   1542) 455>=4 11
                                  1 0 (0.91 0 0.091 0 0 0 0 0 0 0)
##
                   1543) 455< 4 22 7 2 (0.091 0 0.68 0 0 0 0.091
##
0.14 0 0)
##
                    0 0) *
                    3087) 544< 170 8 5 7 (0.12 0 0.25 0 0 0 0.25
##
0.3800) *
               ##
0.056 0) *
              97) 324>=172 99 54 0 (0.45 0 0.02 0.24 0 0.25 0.03 0 0
##
0)
##
```

```
*
                195) 427< 40 57 33 5 (0.088 0 0.035 0.4 0 0.42 0.053 0
##
0 0)
                  390) 240>=64.5 30 9 3 (0.13 0 0.033 0.7 0 0.13 0 0
##
0 0)
                    780) 209>=148.5 11
                                       7 0 (0.36 0 0.091 0.18 0 0.36
##
0 0 0 0) *
##
                    781) 209< 148.5 19
                                       03(0001000000)*
##
                  391) 240< 64.5 27
                                    7 5 (0.037 0 0.037 0.074 0 0.74
0.11 0 0 0)
##
                    782) 541>=148 7
                                    4 6 (0.14 0 0.14 0 0 0.29 0.43 0
0 0) *
                                   2 5 (0 0 0 0.1 0 0.9 0 0 0 0) *
##
                    783) 541< 148 20
##
              49) 380>=1.5 223
                              146 5 (0.21 0.0045 0.076 0.2 0.0045 0.35
0.12 0.009 0.022 0.018)
               0 0.024 0.012)
                                   9 0 (0.8 0 0.067 0 0.022 0.044 0 0
                196) 270>=21.5 45
0.044 0.022)
                  392) 378< 76.5 38
                                   2 0 (0.95 0 0 0 0.026 0 0 0 0
##
0.026) *
##
                  393) 378>=76.5 7
                                  4 2 (0 0 0.43 0 0 0.29 0 0 0.29 0)
*
                197) 270< 21.5 39
                                  17 6 (0.077 0 0.077 0.051 0 0.23
##
0.56 0 0 0)
##
                  394) 325>=145 13
                                   7 5 (0.15 0 0.23 0.15 0 0.46 0 0 0
0) *
##
                  395) 325< 145 26 4 6 (0.038 0 0 0 0 0.12 0.85 0 0
0) *
               99) 484< 42 139 73 5 (0.05 0.0072 0.079 0.3 0 0.47
##
0.029 0.014 0.022 0.022)
                198) 375< 95 65 34 3 (0.046 0.015 0.15 0.48 0 0.22
0.046 0.031 0.015 0)
                  396) 287< 38.5 55 24 3 (0.055 0.018 0.18 0.56 0 0.13
0.018 0.036 0 0)
                    0.091 0 0 0) *
                    793) 514< 4 44
                                   13 3 (0.045 0 0.091 0.7 0 0.11 0
##
0.045 0 0)
                    1586) 544< 35 36 6 3 (0.056 0 0 0.83 0 0.11 0 0
##
0 0)
##
                      3172) 538< 56 27
                                       03(0001000000)*
##
                      3173) 538>=56 9
                                      5 5 (0.22 0 0 0.33 0 0.44 0 0
0 0) *
                    1587) 544>=35 8
                                     4 2 (0 0 0.5 0.12 0 0.12 0 0.25
##
0 0) *
##
                  199) 375>=95 74 22 5 (0.054 0 0.014 0.15 0 0.7 0.014 0
##
0.027 0.041)
##
```

```
0.048 0 0.095 0.14)
##
                    796) 381>=215.5 13 9 0 (0.31 0 0.077 0.31 0 0.077
0 0 0 0.23) *
                    797) 381< 215.5 8 3 5 (0 0 0 0 0 0.62 0.12 0 0.25
##
0) *
##
                   399) 326< 3.5 53
                                     7 5 (0 0 0 0.13 0 0.87 0 0 0 0)
                                     2 3 (0 0 0 0.71 0 0.29 0 0 0 0) *
##
                     798) 202>=10 7
##
                     799) 202< 10 46
                                     2 5 (0 0 0 0.043 0 0.96 0 0 0 0)
*
             25) 489>=0.5 442 261 2 (0.17 0.011 0.41 0.023 0.0068 0.22
0.081 0.009 0.054 0.0068)
                               48 2 (0.032 0.023 0.78 0.028 0.0092
              50) 347< 2.5 218
0.046 0.032 0.014 0.028 0.0092)
               100) 344< 154.5 192 23 2 (0 0.026 0.88 0.031 0.0052 0.01
0.0052 0.016 0.026 0)
                 200) 520>=34 169
                                  7 2 (0 0 0.96 0.012 0.0059 0 0.0059
0.018\ 0\ 0) *
                                 16 2 (0 0.22 0.3 0.17 0 0.087 0 0 0.22
##
                 201) 520< 34 23
0)
                  402) 351>=171.5 11
                                      5 2 (0 0.45 0.55 0 0 0 0 0 0 0)
##
                                      7 8 (0 0 0.083 0.33 0 0.17 0 0
##
                  403) 351< 171.5 12
0.420) *
               ##
0 0.038 0.077)
                 0.059 0.12) *
##
                 51) 347>=2.5 224 135 5 (0.31 0 0.049 0.018 0.0045 0.4 0.13
##
0.0045 0.08 0.0045)
                                 9 0 (0.88 0 0.014 0 0 0 0.068 0.014
##
               102) 386>=3.5 73
0.014 0.014)
##
                 204) 243>=2 64
                                 3 0 (0.95 0 0.016 0 0 0 0 0.016 0.016
0) *
##
                 205) 243< 2 9
                                4 6 (0.33 0 0 0 0 0 0.56 0 0 0.11) *
               103) 386< 3.5 151
                                 62 5 (0.04 0 0.066 0.026 0.0066 0.59
##
0.16 0 0.11 0)
                 206) 513>=12.5 64 41 6 (0.078 0 0.14 0.062 0.016 0.16
##
0.36 0 0.19 0)
                                   32 8 (0.091 0 0.18 0.068 0.023 0.23
##
                   412) 131< 89 44
0.14 0 0.27 0)
                    824) 407< 63 34
                                     24 5 (0.12 0 0.24 0.088 0.029 0.29
##
0.15 0 0.088 0)
                                       3 2 (0 0 0.7 0.1 0 0 0.2 0 0
##
                     1648) 580>=144 10
0) *
                     1649) 580< 144 24
                                       14 5 (0.17 0 0.042 0.083 0.042
##
0.42 0.12 0 0.12 0)
                       3298) 627>=242 10
                                          6 0 (0.4 0 0.1 0.1 0 0 0.2 0
##
0.20) *
##
```

```
0.071 0 0.071 0) *
##
                      825) 407>=63 10
                                        18 (0 0 0 0 0 0 0.1 0 0.9 0) *
##
                     413) 131>=89 20
                                        3 6 (0.05 0 0.05 0.05 0 0 0.85 0 0
0) *
##
                   207) 513< 12.5 87
                                       8 5 (0.011 0 0.011 0 0 0.91 0.011 0
0.0570) *
            13) 597< 1.5 1557 909 7 (0.11 0.0071 0.033 0.029 0.1 0.095
0.094 0.42 0.0045 0.11)
              26) 486>=0.5 603
                              470 6 (0.18 0.0017 0.073 0.018 0.21 0.1
0.22 0.043 0.0083 0.15)
                52) 572>=5.5 309
                                  186 6 (0.32 0.0032 0.097 0.019 0.029
0.061 0.4 0.0097 0.0097 0.052)
                 104) 241>=12 151 61 0 (0.6 0 0.11 0.02 0.02 0.093 0.033
0.02 0.013 0.099)
                                      13 0 (0.86 0 0.032 0.011 0 0.022
##
                   208) 518< 102 93
0.022 0.022 0.011 0.022)
                     416) 322< 103 86
                                        7 0 (0.92 0 0.023 0.012 0 0 0
0.023 0 0.023) *
##
                    417) 322>=103 7
                                        5 5 (0.14 0 0.14 0 0 0.29 0.29 0
0.140) *
                   209) 518>=102 58 45 2 (0.17 0 0.22 0.034 0.052 0.21
0.052 0.017 0.017 0.22)
                     ##
0.040)
##
                      836) 370>=3 8
                                        00(1000000000)*
##
                      837) 370< 3 17
                                        5 5 (0 0 0 0.059 0 0.71 0.18 0
0.059 0) *
##
                    419) 438>=23.5 33 20 2 (0.061 0 0.39 0.03 0.091 0 0
0.03 0 0.39)
                      838) 343< 29 19
                                         6 2 (0.11 0 0.68 0.053 0.11 0 0 0
##
0 0.053) *
                      839) 343>=29 14
                                          2 9 (0 0 0 0 0.071 0 0 0.071 0
##
0.86) *
                 105) 241< 12 158
                                    40 6 (0.057 0.0063 0.089 0.019 0.038
0.032 0.75 0 0.0063 0.0063)
                                     8 0 (0.47 0 0.2 0 0.13 0 0.067 0
                   210) 215>=15 15
##
0.067 0.067) *
                                      26 6 (0.014 0.007 0.077 0.021 0.028
##
                   211) 215< 15 143
0.035 0.82 0 0 0)
                                        11 2 (0.13 0.067 0.27 0.2 0 0.2
##
                    422) 322>=99.5 15
0.13 0 0 0) *
##
                    423) 322< 99.5 128
                                         13 6 (0 0 0.055 0 0.031 0.016 0.9
0 0 0)
##
                      846) 555>=194 8
                                         3 2 (0 0 0.62 0 0 0 0.38 0 0 0) *
                      847) 555< 194 120
                                           8 6 (0 0 0.017 0 0.033 0.017
##
0.93 0 0 0)
                       1694) 657>=4.5 7
                                          4 4 (0 0 0.14 0 0.43 0.14 0.29
##
0 0 0) *
##
                       1695) 657< 4.5 113 3 6 (0 0 0.0088 0 0.0088
0.0088 0.97 0 0 0) *
```

```
53) 572< 5.5 294 178 4 (0.031 0 0.048 0.017 0.39 0.14
0.034 0.078 0.0068 0.25)
               106) 211< 8 119 27 4 (0.017 0 0.05 0 0.77 0.025 0.042
0.05 0 0.042)
##
                 0 0 0.019)
                  424) 125>=149.5 7
                                    4 2 (0 0 0.43 0 0.29 0 0.29 0 0
##
0) *
##
                  425) 125< 149.5 96 6 4 (0.01 0 0 0.94 0 0.031 0 0
0.021) *
##
                 0.19) *
               0.097 0.011 0.39)
                                  31 5 (0.087 0 0.072 0.072 0.014 0.55
                 214) 465< 104 69
0.058 0.058 0.014 0.072)
                   428) 218>=1.5 35
                                   3 5 (0.057 0 0.029 0 0 0.91 0 0 0
0) *
                   429) 218< 1.5 34 28 5 (0.12 0 0.12 0.15 0.029 0.18
##
0.12 0.12 0.029 0.15)
                    858) 345< 146 25 20 3 (0.16 0 0.16 0.2 0.04 0 0.16
0.04 0.04 0.2)
                     1716) 324>=5.5 7 2 3 (0 0 0 0.71 0.14 0 0 0 0
##
0.14) *
##
                     1717) 324< 5.5 18
                                      14 0 (0.22 0 0.22 0 0 0 0.22
0.056 0.056 0.22) *
                    859) 345>=146 9 3 5 (0 0 0 0 0 0.67 0 0.33 0 0) *
##
                 215) 465>=104 106
                                   42 9 (0.0094 0 0.028 0 0.22 0 0.0094
0.12 0.0094 0.6)
                  430) 208< 2.5 24
                                   7 4 (0.042 0 0.042 0 0.71 0 0
##
0.083 0 0.12)
                    860) 328< 97.5 17 1 4 (0 0 0 0 0.94 0 0 0 0
##
0.059) *
##
                    861) 328>=97.5 7
                                       5 7 (0.14 0 0.14 0 0.14 0 0 0.29
0 0.29) *
                   431) 208>=2.5 82 21 9 (0 0 0.024 0 0.073 0 0.012
##
0.13 0.012 0.74)
                    862) 375>=62.5 9
                                       5 4 (0 0 0.11 0 0.44 0 0 0.22
##
0.11 0.11) *
                    863) 375< 62.5 73
                                      13 9 (0 0 0.014 0 0.027 0 0.014
##
0.12 0 0.82)
                     1726) 408>=130.5 11 5 7 (0 0 0 0 0 0 0 0.55 0
##
0.45) *
                     1727) 408< 130.5 62 7 9 (0 0 0.016 0 0.032 0
0.016 0.048 0 0.89) *
             27) 486< 0.5 954 332 7 (0.064 0.01 0.0084 0.036 0.038 0.092
##
0.014 0.65 0.0021 0.084)
              54) 404>=1 208 143 9 (0.019 0.034 0.014 0.12 0.11 0.3
0.043 0.043 0.0096 0.31)
               108) 354< 26 106 47 5 (0.019 0.066 0 0.16 0.019 0.56
```

```
0.085 0.019 0.019 0.057)
                   216) 290< 0.5 53 36 3 (0.019 0.13 0 0.32 0.019 0.32
##
0.15 0 0 0.038)
                                       3 3 (0 0 0 0.81 0.062 0.12 0 0 0
                    432) 205>=9.5 16
##
0) *
                    433) 205< 9.5 37
                                       22 5 (0.027 0.19 0 0.11 0 0.41 0.22
##
0 0 0.054)
##
                      866) 541< 12 28 20 6 (0.036 0.25 0 0.14 0 0.21
0.29 0 0 0.071)
                       1732) 515< 28.5 18
                                            12 1 (0.056 0.33 0 0.22 0 0.28
##
0 0 0 0.11) *
##
                       1733) 515>=28.5 10
                                            2 6 (0 0.1 0 0 0 0.1 0.8 0 0
0) *
##
                      867) 541>=12 9
                                      05 (0000010000) *
                                     11 5 (0.019 0 0 0 0.019 0.79 0.019
##
                  217) 290>=0.5 53
0.038 0.038 0.075)
                    434) 464< 87 46
                                      5 5 (0.022 0 0 0 0 0.89 0.022 0.022
0.043 0) *
                    435) 464>=87 7
                                      3 9 (0 0 0 0 0.14 0.14 0 0.14 0
##
0.57) *
                 109) 354>=26 102 43 9 (0.02 0 0.029 0.078 0.2 0.029 0
##
0.069 0 0.58)
                   218) 239< 1.5 31 12 4 (0 0 0.032 0.13 0.61 0.032 0
0.097 0 0.097)
##
                    436) 155>=78.5 7
                                        3 3 (0 0 0.14 0.57 0 0 0 0 0 0.29)
##
                    437) 155< 78.5 24
                                        5 4 (0 0 0 0 0.79 0.042 0 0.12 0
0.042) *
                                   15 9 (0.028 0 0.028 0.056 0.014 0.028
##
                  219) 239>=1.5 71
0 0.056 0 0.79) *
                55) 404< 1 746 133 7 (0.076 0.004 0.0067 0.012 0.019 0.035
0.0054 0.82 0 0.02)
##
                                 19 0 (0.72 0 0 0.015 0.029 0.13 0 0.059 0
                 110) 538>=1 68
0.044)
                                   10 0 (0.83 0 0 0 0.034 0.051 0 0.034
##
                  220) 323< 203 59
0 0.051)
                                        3 0 (0.94 0 0 0 0 0.02 0 0.039 0
##
                    440) 518< 37.5 51
0) *
                   441) 518>=37.5 8
##
                                        5 9 (0.12 0 0 0 0.25 0.25 0 0 0
0.38) *
                                     3 5 (0 0 0 0.11 0 0.67 0 0.22 0 0) *
##
                   221) 323>=203 9
                 111) 538< 1 678
                                  69 7 (0.012 0.0044 0.0074 0.012 0.018
0.025 0.0059 0.9 0 0.018)
                   0.033 0.067 0 0.17)
                    444) 381< 10.5 14 4 5 (0 0.14 0 0.071 0 0.71 0.071
##
0 0 0) *
                                         8 4 (0 0 0.062 0 0.5 0 0 0.12 0
##
                    445) 381>=10.5 16
0.31) *
##
                   223) 460< 13 648 41 7 (0.012 0.0015 0.0062 0.011
```

```
0.0062 0.011 0.0046 0.94 0 0.011)
                    446) 153>=27 19 14 3 (0.16 0.053 0.16 0.26 0 0.21 0
##
0.053 0 0.11) *
                    447) 153< 27 629 23 7 (0.0079 0 0.0016 0.0032 0.0064
##
0.0048 0.0048 0.96 0 0.0079)
##
                      894) 158>=2 7 4 0 (0.43 0 0 0 0.29 0.29 0 0 0 0)
*
##
                      895) 158< 2 622 16 7 (0.0032 0 0.0016 0.0032
0.0032 0.0016 0.0048 0.97 0 0.008)
                       1790) 542>=123 8 5 6 (0.12 0 0 0 0.12 0.12 0.38
0.12 0 0.12) *
                       1791) 542< 123 614 9 7 (0.0016 0 0.0016 0.0033
##
0.0016 0 0 0.99 0 0.0065) *
           7) 435>=0.5 11843 9804 4 (0.0054 0.017 0.15 0.031 0.17 0.079
0.15 0.15 0.1 0.15)
            14) 542>=1.5 5226 3621 6 (0.0094 0.025 0.28 0.0077 0.052 0.045
0.31 0.054 0.18 0.038)
              28) 271>=0.5 2838 1751 2 (0.014 0.036 0.38 0.0099 0.076 0.046
0.027 0.088 0.26 0.057)
               56) 347< 1.5 1644 635 2 (0.003 0.062 0.61 0.014 0.04
0.0073 0.03 0.12 0.057 0.055)
                112) 155>=1 1021 119 2 (0.0029 0 0.88 0.016 0.002 0.002
0.002 0.012 0.065 0.016)
                  224) 344< 82 936 54 2 (0 0 0.94 0.016 0 0.0011 0 0.013
##
0.027 0.0011)
                    448) 349< 134.5 922 40 2 (0 0 0.96 0.016 0 0.0011 0
0.013 0.012 0.0011)
##
                      896) 345< 104.5 912 31 2 (0 0 0.97 0.016 0 0 0
0.013 0.0044 0)
                       1792) 681< 37 869 16 2 (0 0 0.98 0.014 0 0 0
##
0.0035 0.0012 0)
                         3584) 488>=1.5 801 6 2 (0 0 0.99 0.0025 0 0 0
0.0037 0.0012 0) *
##
                        3585) 488< 1.5 68 10 2 (0 0 0.85 0.15 0 0 0 0 0
0)
                           7170) 351< 38.5 56 2 2 (0 0 0.96 0.036 0 0 0
##
0 0 0) *
                           7171) 351>=38.5 12 4 3 (0 0 0.33 0.67 0 0 0
##
0 0 0) *
                      ##
0.070)
##
                         3586) 206>=235.5 28 3 2 (0 0 0.89 0.071 0 0 0
0 0.036 0) *
                        3587) 206< 235.5 15 6 7 (0 0 0.2 0.067 0 0 0
0.6 0.13 0) *
                      897) 345>=104.5 10 3 8 (0 0 0.1 0 0 0.1 0 0 0.7
##
0.1) *
                    449) 349>=134.5 14
                                         08(000000010)*
##
                  225) 344>=82 85 44 8 (0.035 0 0.24 0.012 0.024 0.012
0.024 0 0.48 0.18)
```

```
450) 402< 51.5 35 18 2 (0.086 0 0.49 0 0.057 0 0.057
##
0 0 0.31)
##
                    900) 570>=169.5 22
                                        5 2 (0.14 0 0.77 0 0 0 0.091 0
0 0)
##
                     1800) 372< 138 15
                                       02(0010000000)*
                     1801) 372>=138 7
                                        4 0 (0.43 0 0.29 0 0 0 0.29 0 0
##
0) *
##
                    901) 570< 169.5 13
                                       2 9 (0 0 0 0 0.15 0 0 0 0
0.85) *
                  451) 402>=51.5 50
                                      9 8 (0 0 0.06 0.02 0 0.02 0 0
##
0.82 \ 0.08)
                                      5 2 (0 0 0.29 0.14 0 0.14 0 0
                    902) 318>=167.5 7
##
0.14 0.29) *
##
                    903) 318< 167.5 43 3 8 (0 0 0.023 0 0 0 0 0 0.93
0.047) *
               113) 155< 1 623 442 7 (0.0032 0.16 0.17 0.011 0.1 0.016
0.077 0.29 0.045 0.12)
                 226) 709< 1.5 487 383 2 (0.0041 0.21 0.21 0.012 0.13
0.021 0.099 0.12 0.045 0.15)
                   0.2 0.033 0.012 0.0081)
                                      35 1 (0 0.74 0.13 0.0074 0.015
                    904) 344< 1.5 135
0.022 0.044 0.044 0 0)
                     1808) 520< 3 107 8 1 (0 0.93 0.028 0 0.0093
0.0093 0 0.028 0 0)
                       3616) 411< 14.5 100
                                          1 1 (0 0.99 0 0 0 0.01 0 0
00)*
                      3617) 411>=14.5 7 4 2 (0 0 0.43 0 0.14 0 0
##
0.4300) *
                     ##
0.071 0.21 0.11 0 0)
                       3618) 431>=8.5 14
                                          2 2 (0 0 0.86 0.071 0.071 0
##
0 0 0 0) *
##
                       3619) 431< 8.5 14
                                         8 6 (0 0.071 0.14 0 0 0.14
0.43 0.21 0 0) *
                     905) 344>=1.5 111 53 4 (0 0 0.018 0 0.52 0.018
0.38 0.018 0.027 0.018)
                     0.097 0.028 0.042 0.028)
                       3620) 292< 124 63
                                          9 4 (0 0 0.016 0 0.86 0 0.11
##
0 0 0.016)
                         7240) 94< 7.5 56 3 4 (0 0 0.018 0 0.95 0
##
0.018 0 0 0.018) *
                                         1 6 (0 0 0 0 0.14 0 0.86 0 0
##
                         7241) 94>=7.5 7
0) *
                       3621) 292>=124 9 6 8 (0 0 0.11 0 0 0.22 0 0.22
##
0.33 0.11) *
                     1811) 573>=221 39
                                        4 6 (0 0 0 0 0.1 0 0.9 0 0 0)
##
##
                       3622) 576< 114 7
                                        3 4 (0 0 0 0 0.57 0 0.43 0 0
0) *
```

```
##
##
                    453) 211>=1 241 156 2 (0.0083 0.0083 0.35 0.021
0.0083 0.021 0 0.2 0.079 0.3)
                     906) 371< 1.5 150 69 2 (0 0.013 0.54 0.033 0.0067
0 0 0.31 0.04 0.06)
                      1812) 678< 45.5 127
                                           46 2 (0 0.016 0.64 0.039 0 0
##
0 0.19 0.047 0.071)
##
                        3624) 712< 40.5 109
                                             29 2 (0 0.018 0.73 0.046 0
0 0 0.092 0.037 0.073)
                          7248) 569>=4.5 78
                                             10 2 (0 0.026 0.87 0.038 0
0 0 0.026 0.026 0.013) *
                          7249) 569< 4.5 31
                                             19 2 (0 0 0.39 0.065 0 0 0
0.26 0.065 0.23)
##
                          14498) 575< 111.5 19
                                                  9 2 (0 0 0.53 0 0 0 0
0 0.11 0.37) *
                          14499) 575>=111.5 12
                                                4 7 (0 0 0.17 0.17 0 0
0 0.67 0 0) *
                        3625) 712>=40.5 18 4 7 (0 0 0.056 0 0 0 0 0.78
##
0.11 0.056) *
                                           1 7 (0 0 0 0 0.043 0 0 0.96 0
                      1813) 678>=45.5 23
##
0) *
                      907) 371>=1.5 91 28 9 (0.022 0 0.044 0 0.011 0.055
##
0 0.033 0.14 0.69)
                      1814) 599>=6.5 28
                                         15 8 (0.071 0 0.071 0 0.036
0.18 0 0.071 0.46 0.11)
                        3628) 467>=4 14
                                         9 5 (0.14 0 0.071 0 0.071 0.36
0 0.14 0.071 0.14) *
##
                        3629) 467< 4 14
                                          2 8 (0 0 0.071 0 0 0 0 0 0.86
0.071) *
                      1815) 599< 6.5 63
                                          3 9 (0 0 0.032 0 0 0 0 0.016 0
##
0.95) *
                  227) 709>=1.5 136
                                     12 7 (0 0 0.022 0.0074 0.0074 0 0
##
0.91 0.044 0.0074)
                                        4 7 (0 0 0.023 0.0078 0 0 0
##
                    454) 373< 182.5 128
0.97 0 0) *
                    455) 373>=182.5 8 2 8 (0 0 0 0 0.12 0 0 0 0.75
##
0.12) *
               57) 347>=1.5 1194 546 8 (0.03 0 0.065 0.0042 0.13 0.1
##
0.023 0.047 0.54 0.06)
                                 357 4 (0.039 0 0.15 0 0.26 0.2 0.039
                114) 657< 15 485
0.099 0.1 0.11)
                  228) 354< 1 121 27 5 (0.041 0 0.058 0 0.025 0.78 0.033
##
0 0.066 0)
                   ##
0.3 \ 0)
##
                     912) 522>=13.5 13 8 0 (0.38 0 0.38 0 0 0 0.23 0 0
0) *
                     913) 522< 13.5 7
                                        1 8 (0 0 0 0 0.14 0 0 0 0.86 0)
##
##
                    457) 384< 14 101 7 5 (0 0 0.02 0 0.02 0.93 0.0099 0
```

```
0.020)
                     914) 352>=52.5 7 5 2 (0 0 0.29 0 0.29 0.14 0 0
##
0.290) *
                     915) 352< 52.5 94 1 5 (0 0 0 0 0 0.99 0.011 0 0
##
0) *
                 229) 354>=1 364 239 4 (0.038 0 0.18 0 0.34 0.0055 0.041
##
0.13 0.11 0.15)
                   458) 212< 1.5 155 49 4 (0 0 0.084 0 0.68 0.0065
0.084 0.084 0.045 0.013)
                     916) 268< 136 132 26 4 (0 0 0.076 0 0.8 0.0076
0.098 0 0.015 0)
                                        9 2 (0 0 0.5 0 0 0 0.44 0
##
                      1832) 127>=2.5 18
0.056 0) *
                      1833) 127< 2.5 114 8 4 (0 0 0.0088 0 0.93 0.0088
##
0.044 0 0.0088 0)
                       3666) 124< 172 107
                                           3 4 (0 0 0.0093 0 0.97
0.0093 0 0 0.0093 0) *
                       3667) 124>=172 7 2 6 (0 0 0 0 0.29 0 0.71 0 0
##
0) *
                     ##
0.087)
                      1834) 486>=162.5 8 3 8 (0 0 0.38 0 0 0 0 0 0.62
##
0) *
                      1835) 486< 162.5 15 2 7 (0 0 0 0 0 0 0 0.87 0
##
0.13) *
                   459) 212>=1.5 209 156 2 (0.067 0 0.25 0 0.091 0.0048
0.0096 0.17 0.16 0.24)
##
                     918) 567>=25 85 41 2 (0.14 0 0.52 0 0.012 0.012
0.012 0.024 0.27 0.012)
                      0.018 0.018 0.054 0.018)
                       3672) 346< 236.5 43 3 2 (0.047 0 0.93 0 0 0 0
##
0 0.023 0) *
                       3673) 346>=236.5 13 9 0 (0.31 0 0.15 0 0.077
0.077 0.077 0.077 0.15 0.077) *
                      1837) 654>=33 29 9 8 (0.21 0 0.069 0 0 0 0.034
##
0.690)
                       3674) 492>=236 9 3 0 (0.67 0 0.22 0 0 0 0 0.11
##
0 0) *
                                          08(0000000010)*
##
                        3675) 492< 236 20
                     919) 567< 25 124 74 9 (0.016 0 0.073 0 0.15 0
0.0081 0.27 0.089 0.4)
                      1838) 458< 5 71 38 7 (0.014 0 0.085 0 0.07 0
0.014 0.46 0.13 0.23)
                       3676) 404< 25 43 11 7 (0.023 0 0.093 0 0.023 0
##
0.023 0.74 0 0.093)
                         7352) 680< 83 10
                                            6 2 (0.1 0 0.4 0 0.1 0 0.1
##
0 0 0.3) *
##
                         7353) 680>=83 33
                                            17 (00000000.970
0.03) *
```

```
##
0.036 0.32 0.43)
                       7354) 655>=18.5 15
                                         6 8 (0 0 0.067 0 0.2 0 0
0.067 0.6 0.067) *
##
                       7355) 655< 18.5 13 2 9 (0 0 0.077 0 0.077 0
0 0 0 0.85) *
                    1839) 458>=5 53 19 9 (0.019 0 0.057 0 0.25 0 0 0
##
0.038 0.64)
                      3678) 402>=234.5 24
                                        11 4 (0.042 0 0.042 0 0.54
0 0 0 0.042 0.33)
##
                       7356) 456>=71 15
                                       3 4 (0.067 0 0.067 0 0.8 0
0 0 0 0.067) *
                       7357) 456< 71 9
                                       2 9 (0 0 0 0 0.11 0 0 0 0.11
##
0.78) *
                      3679) 402< 234.5 29 3 9 (0 0 0.069 0 0 0 0 0
##
0.034 0.9) *
              0.013 0.011 0.84 0.027)
                230) 428>=111.5 74 53 4 (0.14 0 0.014 0 0.28 0.12
0.068 0 0.2 0.18)
                                  2 4 (0 0 0 0 0.9 0 0 0 0.095 0) *
##
                  460) 212< 40.5 21
##
                  0.094 0 0.25 0.25)
                   922) 597>=24.5 36 23 8 (0.28 0 0.028 0 0 0.22 0.11
##
0 0.36 0)
##
                   1844) 266>=251.5 14
                                      4 0 (0.71 0 0 0 0 0.29 0 0 0
0) *
##
                   1845) 266< 251.5 22 9 8 (0 0 0.045 0 0 0.18 0.18
0 0.59 0)
                     3690) 272< 158.5 9
                                       5 5 (0 0 0.11 0 0 0.44 0.33
##
0 0.11 0) *
                     ##
0.920) *
                   923) 597< 24.5 17 4 9 (0 0 0 0 0.12 0.059 0.059 0
##
0 0.76) *
                231) 428< 111.5 635 51 8 (0.011 0 0.0063 0.0079 0.0047
0.022 0.0063 0.013 0.92 0.0094)
                  462) 488< 14.5 47 24 8 (0.085 0 0 0.043 0.021 0.26
0.021 0.043 0.49 0.043)
                                   9 5 (0.2 0 0 0.1 0.05 0.55 0
                   924) 600>=214 20
0.05 0 0.05)
##
                   1848) 327>=46.5 8
                                    4 0 (0.5 0 0 0.25 0 0 0 0.12 0
0.12) *
                                      1 5 (0 0 0 0 0.083 0.92 0 0 0
##
                   1849) 327< 46.5 12
0) *
##
                   925) 600< 214 27
                                    4 8 (0 0 0 0 0 0.037 0.037 0.037
0.85 0.037) *
                                 27 8 (0.0051 0 0.0068 0.0051
                 463) 488>=14.5 588
0.0034 0.0034 0.0051 0.01 0.95 0.0068)
```

```
0.18 0.48 0.091)
                       1852) 294>=13 15 9 7 (0 0 0.27 0.067 0 0 0 0.4
##
0.067 0.2) *
                                         3 8 (0.056 0 0 0 0 0.056 0.056
                       1853) 294< 13 18
##
0 0.83 0) *
##
                      0.0018 0.0036 0 0.98 0.0018) *
              29) 271< 0.5 2388 861 6 (0.0034 0.012 0.16 0.005 0.023 0.044
0.64 0.015 0.086 0.014)
                58) 297>=53.5 447 177 2 (0.011 0.058 0.6 0.0089 0.076
0.0022 0.049 0.069 0.083 0.038)
                                    84 2 (0.0087 0.073 0.76 0.012 0.029 0
                116) 346< 7.5 344
0.0087 0.078 0.017 0.017)
                  232) 686< 2.5 318 58 2 (0.0063 0.079 0.82 0.0063 0.025
0 0.0094 0.028 0.013 0.016)
                    464) 159>=0.5 32
                                      10 1 (0.031 0.69 0.22 0 0.031 0 0 0
0.0310)
                                      2 1 (0 0.92 0 0 0.042 0 0 0 0.042
##
                      928) 127< 5 24
0) *
##
                      929) 127>=5 8
                                       1 2 (0.12 0 0.88 0 0 0 0 0 0 0) *
                    465) 159< 0.5 286 33 2 (0.0035 0.01 0.88 0.007 0.024
##
0 0.01 0.031 0.01 0.017)
                      930) 398< 100.5 275 22 2 (0.0036 0.011 0.92 0.0073
0.011 0 0.0036 0.033 0.011 0)
                       1860) 681< 13 268 16 2 (0 0.011 0.94 0.0075 0.011
0 0.0037 0.015 0.011 0)
                         3720) 320< 35.5 260
                                             10 2 (0 0.012 0.96 0.0038
0.0038 0 0.0038 0.015 0 0) *
                                             5 8 (0 0 0.25 0.12 0.25 0 0
##
                         3721) 320>=35.5 8
0 0.38 0) *
##
                       1861) 681>=13 7 2 7 (0.14 0 0.14 0 0 0 0 0.71 0
0) *
##
                      931) 398>=100.5 11 6 9 (0 0 0 0 0.36 0 0.18 0 0
0.45) *
                                    8 7 (0.038 0 0 0.077 0.077 0 0 0.69
##
                  233) 686>=2.5 26
0.077 0.038) *
                117) 346>=7.5 103 72 8 (0.019 0.0097 0.097 0 0.23 0.0097
0.18 0.039 0.3 0.11)
                  234) 656< 105 73 49 4 (0 0.014 0.12 0 0.33 0.014 0.26
0.055 0.055 0.15)
                    468) 573< 214 48 24 4 (0 0.021 0.1 0 0.5 0.021 0
0.042 0.083 0.23)
##
                      936) 465>=250 27
                                         6 4 (0 0 0.037 0 0.78 0 0 0 0
0.19)
##
                                            04(0000100000)*
                       1872) 209< 225.5 18
##
                       1873) 209>=225.5 9 4 9 (0 0 0.11 0 0.33 0 0 0 0
0.56) *
                      937) 465< 250 21 15 9 (0 0.048 0.19 0 0.14 0.048 0
0.095 0.19 0.29)
                     1874) 429< 5 10 7 2 (0 0.1 0.3 0 0 0.1 0 0.2 0.3
```

```
0) *
##
                      1875) 429>=5 11 5 9 (0 0 0.091 0 0.27 0 0 0
0.091 0.55) *
##
                   469) 573>=214 25
                                     6 6 (0 0 0.16 0 0 0 0.76 0.08 0 0)
                     938) 441< 2.5 7 3 2 (0 0 0.57 0 0 0 0.14 0.29 0
##
0) *
                                        06(000001000)*
##
                     939) 441>=2.5 18
##
                  235) 656>=105 30
                                   3 8 (0.067 0 0.033 0 0 0 0 0 0.9 0)
*
               59) 297< 53.5 1941 436 6 (0.0015 0.0015 0.057 0.0041 0.01
0.053 0.78 0.0021 0.087 0.0082)
                118) 274>=2.5 241 122 8 (0.012 0.0041 0.32 0.012 0.062
0.0041 0.058 0.0083 0.49 0.021)
                  236) 655< 30.5 127
                                     55 2 (0.024 0.0079 0.57 0.024 0.094
0.0079 0.11 0.0079 0.12 0.039)
                   0 0.06 0) *
                    473) 537< 23.5 44 32 4 (0 0.023 0.045 0 0.27 0.023
0.27 0.023 0.23 0.11)
                     ##
0) *
                     947) 220< 30 32 20 6 (0 0.031 0.062 0 0.062 0 0.38
##
0.031 0.28 0.16)
                      1894) 494>=33.5 15
                                           4 6 (0 0 0.067 0 0.13 0 0.73
##
0 0 0.067) *
                      1895) 494< 33.5 17
                                          8 8 (0 0.059 0.059 0 0 0
0.059 0.059 0.53 0.24) *
##
                  237) 655>=30.5 114
                                     10 8 (0 0 0.053 0 0.026 0 0 0.0088
0.91 \ 0)
##
                   474) 404< 4.5 20
                                     10 8 (0 0 0.3 0 0.15 0 0 0.05 0.5
0)
                     948) 626>=244 10
                                        4 2 (0 0 0.6 0 0.2 0 0 0.1 0.1
##
0) *
##
                     949) 626< 244 10
                                       18 (00000.10000.90) *
##
                   475) 404>=4.5 94
                                      08 (0000000010) *
                119) 274< 2.5 1700 209 6 (0 0.0012 0.019 0.0029 0.0029
0.06 0.88 0.0012 0.029 0.0065)
                                     83 6 (0 0.0013 0.02 0.00065 0.0026
                  238) 658< 1.5 1537
0.018 0.95 0.00065 0.0072 0.0046)
                                        8 2 (0 0.059 0.76 0 0.059 0
                    476) 323>=161.5 34
0.029 0.029 0.059 0) *
                    477) 323< 161.5 1503
                                        50 6 (0 0 0.0027 0.00067 0.0013
0.018 0.97 0 0.006 0.0047)
##
                     954) 217>=164 18
                                        5 5 (0 0 0 0 0 0.72 0.11 0 0.11
0.056) *
                     955) 217< 164 1485 34 6 (0 0 0.0027 0.00067 0.0013
##
0.0094 0.98 0 0.0047 0.004)
                      1910) 662< 2 1478 27 6 (0 0 0.0027 0.00068
0.00068 0.0081 0.98 0 0.0047 0.0014)
                        3820) 651< 2 1471 22 6 (0 0 0.0027 0.00068
```

```
0.00068 0.0082 0.99 0 0.0014 0.0014) *
                         3821) 651>=2 7 2 8 (0 0 0 0 0 0 0.29 0 0.71 0)
##
                       1911) 662>=2 7 3 9 (0 0 0 0 0.14 0.29 0 0 0
##
0.57) *
                  239) 658>=1.5 163 88 5 (0 0 0.012 0.025 0.0061 0.46
##
0.23 0.0061 0.24 0.025)
                                        11 5 (0 0 0 0.03 0.015 0.84 0.09 0
##
                    478) 515< 12.5 67
0.030)
                      956) 456< 140 58
                                       3 5 (0 0 0 0.034 0 0.95 0 0
##
0.0170) *
                                        3 6 (0 0 0 0 0.11 0.11 0.67 0
##
                     957) 456>=140 9
0.11\ 0)\ *
##
                    479) 515>=12.5 96 59 8 (0 0 0.021 0.021 0 0.2 0.32
0.01 0.39 0.042)
                      958) 457>=103 34
                                          9 6 (0 0 0 0 0 0.088 0.74 0 0.12
0.059)
                                           2 6 (0 0 0 0 0 0 0.93 0 0.074
##
                      1916) 243< 11.5 27
0) *
                       1917) 243>=11.5 7
                                           4 5 (0 0 0 0 0 0.43 0 0 0.29
##
0.29) *
                      959) 457< 103 62 29 8 (0 0 0.032 0.032 0 0.26
##
0.097 0.016 0.53 0.032)
                       1918) 354< 0.5 29
                                           16 5 (0 0 0.034 0.069 0 0.45
0.21 0.034 0.21 0)
                         3836) 186< 160 13
                                            7 6 (0 0 0.077 0.15 0 0.077
0.46 0.077 0.15 0) *
##
                         3837) 186>=160 16
                                          4 5 (0 0 0 0 0 0.75 0 0 0.25
0) *
##
                       1919) 354>=0.5 33
                                           6 8 (0 0 0.03 0 0 0.091 0 0
0.82 0.061) *
           15) 542< 1.5 6617 4849 4 (0.0023 0.011 0.041 0.05 0.27 0.11
0.021 0.22 0.038 0.24)
              30) 432>=0.5 4489 2890 4 (0.0016 0.0018 0.045 0.058 0.36 0.13
0.022 0.029 0.048 0.31)
                60) 211< 31.5 1830 519 4 (0 0.0033 0.061 0.024 0.72 0.067
0.037 0.024 0.031 0.037)
                ##
0.1 \ 0)
                  240) 346< 3 109 25 2 (0 0 0.77 0.16 0 0.018 0 0 0.055
##
0)
##
                    480) 379< 151.5 87
                                         5 2 (0 0 0.94 0.023 0 0.023 0 0
0.011\ 0) *
                                         7 3 (0 0 0.091 0.68 0 0 0 0 0.23
##
                   481) 379>=151.5 22
0)
##
                      962) 484< 42.5 15
                                          03(0001000000)*
##
                      963) 484>=42.5 7
                                          2 8 (0 0 0.29 0 0 0 0 0 0.71 0)
*
##
                  241) 346>=3 112 33 5 (0 0 0.036 0.062 0.036 0.71 0.018
0 0.14 0)
```

```
482) 355< 10 87 9 5 (0 0 0.023 0.057 0 0.9 0.011 0
##
0.011 0)
##
                      964) 126>=110 9
                                        5 3 (0 0 0.22 0.44 0 0.33 0 0 0
0) *
##
                      965) 126< 110 78 3 5 (0 0 0 0.013 0 0.96 0.013 0
0.013 0) *
                    483) 355>=10 25
                                      10 8 (0 0 0.08 0.08 0.16 0.04 0.04 0
##
0.60)
                                        3 4 (0 0 0.29 0.14 0.57 0 0 0 0
##
                      966) 400>=192 7
0) *
##
                      967) 400< 192 18
                                         3 8 (0 0 0 0.056 0 0.056 0.056 0
0.830) *
                121) 596< 1.5 1609 302 4 (0 0.0037 0.014 0.012 0.81 0.026
0.041 0.027 0.021 0.042)
                  242) 267< 139 1469 186 4 (0 0.0041 0.011 0.011 0.87
0.014 0.045 0.0068 0.021 0.014)
                    484) 98< 3 1415 133 4 (0 0.0042 0.0099 0.011 0.91
0.015 0.011 0.0071 0.022 0.014)
                      968) 155< 120.5 1344
                                           70 4 (0 0.0045 0.006 0.0067
0.95 0.0015 0.01 0.0074 0.0037 0.012)
                                           52 4 (0 0.0045 0.0038 0.0053
                       1936) 295< 222 1325
0.96 0 0.011 0 0.0038 0.011)
                                           42 4 (0 0.0046 0.0038 0.0053
                         3872) 95< 32 1313
0.97 0 0.003 0 0.0038 0.011)
                                             24 4 (0 0 0.0039 0.0039
                           7744) 437>=1 1269
0.98 0 0.00079 0 0.0016 0.0087) *
                                            18 4 (0 0.14 0 0.045 0.59 0
                           7745) 437< 1 44
0.068 0 0.068 0.091)
                                               10 1 (0 0.38 0 0.12 0.12 0
##
                           15490) 402< 20 16
0.062 0 0.12 0.19) *
                           15491) 402>=20 28
                                              4 4 (0 0 0 0 0.86 0 0.071
##
0 0.036 0.036) *
##
                         3873) 95>=32 12
                                           2 6 (0 0 0 0 0.17 0 0.83 0 0
0) *
                                           9 7 (0 0 0.16 0.11 0.053 0.11
##
                       1937) 295>=222 19
0 0.53 0 0.053) *
                      969) 155>=120.5 71
                                         45 8 (0 0 0.085 0.099 0.11 0.27
0.014 0 0.37 0.056)
##
                       1938) 516< 47 48
                                         30 5 (0 0 0.1 0.15 0.17 0.38 0 0
0.12 0.083)
                         3876) 354< 4 24 7 5 (0 0 0.042 0.083 0.083
##
0.71 0 0 0.042 0.042)
##
                          7752) 658>=50.5 17
                                              1 5 (0 0 0 0.059 0 0.94 0
0 0 0) *
                           7753) 658< 50.5 7
                                               5 4 (0 0 0.14 0.14 0.29
##
0.14 0 0 0.14 0.14) *
                         ##
0 0 0.21 0.12)
##
                          0 0 0) *
```

```
##
0.059 0 0 0.29 0.18) *
                       1939) 516>=47 23 3 8 (0 0 0.043 0 0 0.043 0.043
0 0.87 0) *
##
                     485) 98>=3 54
                                    3 6 (0 0 0.037 0 0.019 0 0.94 0 0 0)
                   243) 267>=139 140
                                     93 9 (0 0 0.05 0.029 0.17 0.15 0
##
0.24 0.021 0.34)
                                       54 9 (0 0 0.022 0.022 0.26 0.22 0
                     486) 401>=2.5 93
0.054 0.011 0.42)
##
                      972) 247>=1.5 21
                                          5 5 (0 0 0 0 0.095 0.76 0 0
0.048 0.095) *
                      973) 247< 1.5 72
                                       35 9 (0 0 0.028 0.028 0.31 0.056
##
0 0.069 0 0.51)
                                            11 4 (0 0 0.031 0.031 0.66
##
                       1946) 237< 23.5 32
0.062 0 0 0 0.22)
                         3892) 323>=1 24
                                            4 4 (0 0 0.042 0.042 0.83
0.042 0 0 0 0.042) *
##
                         3893) 323< 1 8
                                           2 9 (0 0 0 0 0.12 0.12 0 0 0
0.75) *
                       1947) 237>=23.5 40
                                            10 9 (0 0 0.025 0.025 0.025
##
0.05 0 0.12 0 0.75)
                         3894) 468>=101 9
                                            5 7 (0 0 0 0.11 0 0.22 0 0.44
##
0 0.22) *
##
                         3895) 468< 101 31
                                             3 9 (0 0 0.032 0 0.032 0 0
0.032 0 0.9) *
                     487) 401< 2.5 47
                                        18 7 (0 0 0.11 0.043 0 0.021 0 0.62
##
0.043 0.17)
                                           7 7 (0 0 0.056 0.056 0 0 0 0.81
##
                      974) 455< 81.5 36
0.056 0.028) *
                      975) 455>=81.5 11 4 9 (0 0 0.27 0 0 0.091 0 0 0
##
0.64) *
                61) 211>=31.5 2659 1347 9 (0.0026 0.00075 0.034 0.081 0.11
##
0.17 0.012 0.033 0.061 0.49)
                                  363 5 (0.0037 0.0025 0.024 0.068 0.12
                 122) 354< 2.5 808
0.55 0.035 0.041 0.046 0.11)
                   244) 352< 55 581 136 5 (0.0052 0 0.024 0.064 0.01 0.77
0.045 0.0017 0.015 0.069)
                     488) 384< 17.5 521 79 5 (0 0 0.0019 0.067 0.0019
0.85 0.046 0.0019 0 0.033)
                       976) 516< 166.5 494
                                             54 5 (0 0 0.002 0.071 0.002
0.89 0 0.002 0 0.032)
##
                       1952) 322>=187.5 24
                                              8 3 (0 0 0 0.67 0 0.33 0 0 0
0)
##
                         3904) 265< 169.5 15
                                                03(0001000000)
                         3905) 265>=169.5 9
                                               1 5 (0 0 0 0.11 0 0.89 0 0
##
0 0) *
##
                       1953) 322< 187.5 470 38 5 (0 0 0.0021 0.04 0.0021
0.92 0 0.0021 0 0.034)
```

```
3906) 123>=180.5 9 2 3 (0 0 0 0.78 0 0.22 0 0
##
0 0) *
                         3907) 123< 180.5 461
                                              31 5 (0 0 0.0022 0.026
0.0022 0.93 0 0.0022 0 0.035)
##
                           7814) 718< 37 450
                                              23 5 (0 0 0.0022 0.027
0.0022 0.95 0 0 0 0.02)
                            15628) 714< 237 433
                                                 16 5 (0 0 0.0023 0.025
0.0023 0.96 0 0 0 0.0069)
                              31256) 176>=19 26
                                               8 5 (0 0 0 0.31 0 0.69
0 0 0 0)
                               62512) 292>=135.5 10
                                                      2 3 (0 0 0 0.8 0
##
0.2 0 0 0 0) *
                               62513) 292< 135.5 16
                                                     05 (0000010
##
0 0 0) *
                              31257) 176< 19 407 8 5 (0 0 0.0025 0.0074
##
0.0025 0.98 0 0 0 0.0074) *
                            0 0 0 0.35) *
##
                           7815) 718>=37 11 4 9 (0 0 0 0 0 0.27 0 0.091
0 0.64) *
                      977) 516>=166.5 27 3 6 (0 0 0 0 0 0.074 0.89 0 0
##
0.037) *
                    489) 384>=17.5 60 37 9 (0.05 0 0.22 0.033 0.083 0.05
0.033 0 0.15 0.38)
                      978) 596>=14 25
                                        12 2 (0.12 0 0.52 0.04 0 0 0.08 0
##
0.240)
                                          5 2 (0.17 0 0.72 0 0 0 0.11 0
                       1956) 685< 1.5 18
##
00) *
##
                                          1 8 (0 0 0 0.14 0 0 0 0 0.86 0)
                       1957) 685>=1.5 7
*
##
                      979) 596< 14 35 12 9 (0 0 0 0.029 0.14 0.086 0 0
0.086 0.66)
                       1958) 242< 14.5 11 6 4 (0 0 0 0 0.45 0.18 0 0
0.27 0.091) *
                                            2 9 (0 0 0 0.042 0 0.042 0 0
                       1959) 242>=14.5 24
0 0.92) *
##
                  245) 352>=55 227 139 4 (0 0.0088 0.022 0.079 0.39 0
0.0088 0.14 0.12 0.23)
                    490) 209< 16.5 79 11 4 (0 0.013 0.013 0.013 0.86 0 0
0.051 0.013 0.038)
                      980) 265< 248 71
                                      5 4 (0 0.014 0.014 0.014 0.93 0
##
0 0 0.014 0.014) *
##
                      981) 265>=248 8
                                         4 7 (0 0 0 0 0.25 0 0 0.5 0 0.25)
                    491) 209>=16.5 148
                                       99 9 (0 0.0068 0.027 0.11 0.14 0
##
0.014 0.19 0.18 0.33)
                      982) 544< 172.5 127 78 9 (0 0.0079 0.024 0.13 0.16
0 0.0079 0.22 0.071 0.39)
                       1964) 373< 9.5 60 34 7 (0 0.017 0.05 0.23 0.017 0
0.017 0.43 0.067 0.17)
```

```
##
0.043 0 0.087 0.3)
                         7856) 180>=95 11
                                            1 3 (0 0 0 0.91 0 0 0 0
0.0910) *
##
                         7857) 180< 95 12
                                            5 9 (0 0.083 0 0.083 0.083
0 0.083 0 0.083 0.58) *
                       3929) 377< 4 37
                                        11 7 (0 0 0.081 0.081 0 0 0 0.7
0.054 0.081) *
                      1965) 373>=9.5 67
                                        28 9 (0 0 0 0.03 0.28 0 0 0.03
0.075 0.58)
##
                       3930) 454>=2 13
                                        04(0000100000)*
##
                       3931) 454< 2 54
                                        15 9 (0 0 0 0.037 0.11 0 0
0.037 0.093 0.72) *
##
                     983) 544>=172.5 21 3 8 (0 0 0.048 0.048 0 0 0.048
0 0.86 0) *
                123) 354>=2.5 1851 631 9 (0.0022 0 0.038 0.086 0.1 0.01
0.0022 0.03 0.067 0.66)
                 246) 156>=0.5 406 304 4 (0.0074 0 0.13 0.24 0.25 0.03
0.0099 0.0025 0.19 0.14)
                   0.017 0 0.15 0.062)
                     984) 484< 46 99 23 3 (0.01 0 0.02 0.77 0.01 0.071
##
0 0 0.02 0.1)
                      1968) 373< 63 77
                                       4 3 (0 0 0.013 0.95 0 0 0 0
##
0.013 0.026) *
                      1969) 373>=63 22 14 9 (0.045 0 0.045 0.14 0.045
0.32 0 0 0.045 0.36)
##
                       0.071 0.5 0 0 0.071 0) *
                                          09(0000000001)*
##
                       3939) 188< 3.5 8
                     985) 484>=46 79 37 2 (0.013 0 0.53 0.076 0 0.013
##
0.038 0 0.32 0.013)
                      1970) 465>=96.5 46
                                         7 2 (0 0 0.85 0.087 0 0.022 0
0 0.022 0.022)
                       3940) 351< 9 38
                                         1 2 (0 0 0.97 0 0 0 0 0 0
0.026) *
##
                       3941) 351>=9 8
                                       4 3 (0 0 0.25 0.5 0 0.12 0 0
0.120) *
##
                      1971) 465< 96.5 33
                                          9 8 (0.03 0 0.091 0.061 0 0
0.091 0 0.73 0)
                       3942) 549>=71 10
                                          7 2 (0 0 0.3 0.2 0 0 0.3 0
##
0.20) *
##
                       3943) 549< 71 23
                                          1 8 (0.043 0 0 0 0 0 0 0 0.96
0) *
                   493) 624< 1 228 127 4 (0.0044 0 0.039 0.07 0.44 0.018
##
0.0044 0.0044 0.22 0.2)
                     986) 428>=25 138
                                      46 4 (0 0 0.036 0.051 0.67 0.014
0.0072 0 0.036 0.19)
##
                      1972) 207< 10 90
                                       9 4 (0 0 0.033 0 0.9 0 0.011 0
0 0.056) *
```

```
1973) 207>=10 48 27 9 (0 0 0.042 0.15 0.23 0.042
##
0 0 0.1 0.44)
##
                        3946) 183< 239 10
                                          2 4 (0 0 0.1 0.1 0.8 0 0 0 0
0) *
##
                       0.053 0 0 0.13 0.55)
                         7894) 372< 11.5 8
                                           2 3 (0 0 0.12 0.75 0 0 0 0
0.12\ 0)\ *
                                             9 9 (0 0 0 0 0.1 0.067 0
##
                         7895) 372>=11.5 30
0 0.13 0.7)
##
                         15790) 152>=117 8
                                              4 8 (0 0 0 0 0 0.25 0 0
0.5 0.25) *
                          15791) 152< 117 22 3 9 (0 0 0 0 0.14 0 0 0
##
0 0.86) *
                     987) 428< 25 90 45 8 (0.011 0 0.044 0.1 0.1 0.022
##
0 0.011 0.5 0.21)
                      1974) 544< 147 50 32 9 (0 0 0.06 0.18 0.18 0.04 0
0.02 0.16 0.36)
##
                       3948) 374< 58 14 6 3 (0 0 0.14 0.57 0.071 0 0
0.071 0.14 0) *
                       0.056 0 0 0.17 0.5)
                         7898) 407< 122 9 2 4 (0 0 0 0 0.78 0.11 0 0
##
0.11\ 0)\ *
                                           9 9 (0 0 0.037 0.037 0.037
##
                         7899) 407>=122 27
0.037 0 0 0.19 0.67)
                         15798) 551>=139 8 3 8 (0 0 0 0.12 0 0.12 0
##
0 0.62 0.12) *
##
                          15799) 551< 139 19 2 9 (0 0 0.053 0 0.053 0
0 0 0 0.89) *
                      1975) 544>=147 40 3 8 (0.025 0 0.025 0 0 0 0 0
##
0.93 0.025) *
                 247) 156< 0.5 1445 281 9 (0.00069 0 0.012 0.043 0.064
0.0048 0 0.037 0.033 0.81)
                   494) 317< 1 293 150 9 (0.0034 0 0.058 0.18 0.078
0.0034 0 0.15 0.044 0.49)
                     988) 319< 108.5 176 122 9 (0.0057 0 0.097 0.29
0.045 0 0 0.22 0.034 0.31)
                      1976) 342< 10 119 69 3 (0.0084 0 0.13 0.42 0.05 0
0 0.33 0.017 0.042)
                       3952) 518< 96.5 66 23 3 (0 0 0.21 0.65 0.015 0
##
0 0.045 0.015 0.061)
                         7904) 512>=30 12
                                           1 2 (0 0 0.92 0 0 0 0 0
0.083 0) *
                         7905) 512< 30 54
                                           11 3 (0 0 0.056 0.8 0.019 0
##
0 0.056 0 0.074)
##
                         0 0 0 0 0) *
                         15811) 405< 138.5 13
                                                9 9 (0 0 0.23 0.23 0 0
0 0.23 0 0.31) *
```

```
##
0.094 0 0 0.68 0.019 0.019)
                        7906) 209< 29 9
                                          4 4 (0.11 0 0.11 0 0.56 0 0
0 0.11 0.11) *
##
                        7907) 209>=29 44 8 7 (0 0 0.023 0.16 0 0 0
0.8200)
                         15814) 437< 4 9
                                          3 3 (0 0 0.11 0.67 0 0 0
##
0.2200) *
                         ##
0.9700) *
##
                     1977) 342>=10 57
                                      8 9 (0 0 0.018 0.018 0.035 0 0
0 0.07 0.86)
                      3954) 546>=49 10
                                        6 8 (0 0 0.1 0.1 0.1 0 0
##
0.4 \ 0.3) *
                       3955) 546< 49 47
                                         1 9 (0 0 0 0 0.021 0 0 0
##
0.98) *
                    989) 319>=108.5 117
                                        28 9 (0 0 0 0.0085 0.13 0.0085
##
0 0.034 0.06 0.76)
##
                     1978) 428>=71.5 20
                                        7 4 (0 0 0 0.05 0.65 0.05 0 0
0 0.25)
                                         04(0000100000)*
##
                       3956) 213< 128 11
##
                       3957) 213>=128 9
                                        4 9 (0 0 0 0.11 0.22 0.11 0 0
0 0.56) *
                     1979) 428< 71.5 97
                                        13 9 (0 0 0 0 0.021 0 0 0.041
##
0.072 0.87)
                       3958) 436< 152 12
                                        5 8 (0 0 0 0 0.083 0 0 0
0.58 0.33) *
##
                       3959) 436>=152 85
                                         5 9 (0 0 0 0 0.012 0 0 0.047
0 0.94) *
                  ##
0.0052 0 0.0095 0.03 0.89)
                    990) 212< 14 66
                                    32 4 (0 0 0 0 0.52 0 0 0.015 0.03
##
0.44)
##
                     1980) 319>=195 31
                                        1 4 (0 0 0 0 0.97 0 0 0 0.032
0) *
                     1981) 319< 195 35 6 9 (0 0 0 0 0.11 0 0 0.029
##
0.029 0.83)
                      3962) 518>=79.5 7
                                        4 4 (0 0 0 0 0.43 0 0 0.14
##
0.14 0.29) *
                       3963) 518< 79.5 28
                                          1 9 (0 0 0 0 0.036 0 0 0 0
##
0.96) *
                    991) 212>=14 1086 94 9 (0 0 0.00092 0.0092 0.032
0.0055 0 0.0092 0.029 0.91)
                     1982) 204>=10.5 72 31 9 (0 0 0 0.056 0.069 0.028
0 0.042 0.24 0.57)
                       3964) 438< 130.5 24
                                          8 8 (0 0 0 0.083 0.12 0 0
##
0.042 0.67 0.083)
                        7928) 544< 138 10
                                           7 4 (0 0 0 0.2 0.3 0 0 0.1
##
0.2 \ 0.2) *
##
```

```
3965) 438>=130.5 48 9 9 (0 0 0 0.042 0.042
##
0.042 0 0.042 0.021 0.81)
                         7930) 400< 26 8
                                           6 3 (0 0 0 0.25 0.12 0.12 0
0.25 0.12 0.12) *
                         7931) 400>=26 40
                                            2 9 (0 0 0 0 0.025 0.025 0
##
0 0 0.95) *
                      1983) 204< 10.5 1014
                                           63 9 (0 0 0.00099 0.0059
0.03 0.0039 0 0.0069 0.015 0.94)
                                           4 5 (0 0 0 0.14 0 0.43 0 0
##
                        3966) 595>=21.5 7
0.430) *
                        3967) 595< 21.5 1007 56 9 (0 0 0.00099 0.005
##
0.03 0.00099 0 0.007 0.012 0.94)
                         7934) 470>=5 18
                                           9 9 (0 0 0 0 0.39 0 0 0.11 0
##
0.5) *
                         7935) 470< 5 989
                                           47 9 (0 0 0.001 0.0051 0.023
0.001 0 0.0051 0.012 0.95)
                          15870) 409< 32 18 9 9 (0 0 0 0.056 0.056
0.056 0 0 0.33 0.5) *
                          15871) 409>=32 971 38 9 (0 0 0.001 0.0041
0.023 0 0 0.0051 0.0062 0.96)
                            31742) 320>=253.5 13
                                                  6 9 (0 0 0 0 0.46 0
##
0 0 0 0.54) *
                            31743) 320< 253.5 958
                                                  32 9 (0 0 0.001
##
0.0042 0.017 0 0 0.0052 0.0063 0.97)
                              63486) 524>=139 10
                                                  5 9 (0 0 0.1 0 0.1 0
0 0 0.3 0.5) *
##
                              63487) 524< 139 948
                                                  27 9 (0 0 0 0.0042
0.016 0 0 0.0053 0.0032 0.97)
                              126974) 263< 65.5 76 12 9 (0 0 0 0 0.14
0 0 0 0.013 0.84)
                                 253948) 403>=253.5 9
                                                     24(0000
##
0.78 0 0 0 0 0.22) *
                                 253949) 403< 253.5 67
                                                        59 (0000
0.06 0 0 0 0.015 0.93) *
                               0.0046 0.0046 0 0 0.0057 0.0023 0.98) *
             31) 432< 0.5 2128 796 7 (0.0038 0.031 0.034 0.032 0.079
0.056 0.017 0.63 0.017 0.1)
               62) 487< 75.5 1766 457 7 (0.004 0.037 0.03 0.039 0.019
0.067 0.012 0.74 0.018 0.034)
                0.37 0.0064 0.026 0.096 0.16)
                  248) 353< 1 175 60 5 (0.0057 0.04 0.023 0.23 0.017
0.66 0.011 0 0.0057 0.011)
                                     16 3 (0.025 0.15 0 0.6 0.075 0.1
                   496) 323>=1.5 40
##
0.025 0 0 0.025)
                     992) 490< 1 26
                                     2 3 (0 0 0 0.92 0.038 0.038 0 0 0
##
0) *
##
```

```
0.071 0 0 0.071) *
##
                      497) 323< 1.5 135 24 5 (0 0.0074 0.03 0.12 0 0.82
0.0074 0 0.0074 0.0074)
                                           13 3 (0 0.04 0.08 0.48 0 0.36 0 0
                        994) 150>=65 25
0.040)
                         1988) 233< 6 16
                                            4 3 (0 0.062 0.12 0.75 0 0 0 0
##
0.0620) *
##
                         1989) 233>=6 9
                                            05 (0000010000) *
##
                        995) 150< 65 110
                                             8 5 (0 0 0.018 0.036 0 0.93
0.0091 0 0 0.0091) *
                    249) 353>=1 138
                                      91 9 (0 0.036 0.029 0.12 0.2 0.0072 0
0.058 0.21 0.34)
                      498) 434>=208.5 46
                                            20 8 (0 0.11 0.043 0.2 0 0 0
##
0.065 0.57 0.022)
                                             9 3 (0 0.28 0 0.5 0 0 0 0.17 0
##
                        996) 348< 11.5 18
0.056) *
##
                        997) 348>=11.5 28
                                             2 8 (0 0 0.071 0 0 0 0 0 0.93
0) *
                      499) 434< 208.5 92
                                          46 9 (0 0 0.022 0.087 0.29 0.011
##
0 0.054 0.033 0.5)
                                           10 4 (0 0 0.031 0.062 0.69 0.031 0
##
                        998) 210< 49 32
0.094 0 0.094) *
                        999) 210>=49 60
                                           17 9 (0 0 0.017 0.1 0.083 0 0
##
0.033 0.05 0.72)
##
                         1998) 623>=10 7
                                             1 3 (0 0 0 0.86 0 0 0 0 0 0.14)
##
                         1999) 623< 10 53
                                             11 9 (0 0 0.019 0 0.094 0 0
0.038 0.057 0.79)
                           3998) 379< 57 7
                                               5 4 (0 0 0.14 0 0.29 0 0 0.14
##
0.29 0.14) *
                           3999) 379>=57 46
                                              5 9 (0 0 0 0 0.065 0 0 0.022
##
0.022 \ 0.89) *
                  125) 377< 6.5 1453
                                       152 7 (0.0041 0.036 0.031 0.0076
0.0028 0.0014 0.013 0.9 0.00069 0.0076)
                    250) 156>=0.5 93
                                       52 1 (0.043 0.44 0.26 0.054 0 0.022
0.13 0.054 0 0)
                                        16 1 (0.037 0.7 0 0.019 0 0.037 0.2 0
##
                      500) 179< 7 54
0 0)
##
                       1000) 568< 14 39
                                            1 1 (0 0.97 0 0 0 0.026 0 0 0 0)
                      1001) 568>=14 15
                                            4 6 (0.13 0 0 0.067 0 0.067 0.73
##
0 0 0) *
##
                      501) 179>=7 39
                                       15 2 (0.051 0.077 0.62 0.1 0 0 0.026
0.1300)
                       1002) 545>=104 25
                                            3 2 (0 0.04 0.88 0 0 0 0 0.08 0
##
0) *
                       1003) 545< 104 14
                                         10 3 (0.14 0.14 0.14 0.29 0 0
##
0.071 0.21 0 0) *
                    251) 156< 0.5 1360
                                          64 7 (0.0015 0.0088 0.015 0.0044
0.0029 0 0.0051 0.95 0.00074 0.0081)
```

```
##
0.043 0.043 0)
##
                   ##
                   1005) 176< 25.5 11 6 6 (0 0.27 0 0 0.091 0 0.45
0.091 0.091 0) *
                   503) 153< 57 1337 42 7 (0.0015 0.0067 0.0082 0.003
0.0022 0 0.0015 0.97 0 0.0082)
                   1006) 158>=54 10
                                     2 1 (0.2 0.8 0 0 0 0 0 0 0 0) *
                   1007) 158< 54 1327 32 7 (0 0.00075 0.0083 0.003
0.0023 0 0.0015 0.98 0 0.0083)
                     2014) 553>=6 13 7 7 (0 0 0.31 0.15 0 0 0 0.46 0
0.077) *
                     2015) 553< 6 1314 25 7 (0 0.00076 0.0053 0.0015
##
0.0023 0 0.0015 0.98 0 0.0076)
                       4030) 482>=134.5 7 3 7 (0 0 0 0 0.14 0 0.29
0.57 0 0) *
                       4031) 482< 134.5 1307 22 7 (0 0.00077 0.0054
0.0015 0.0015 0 0 0.98 0 0.0077)
                        8062) 488>=106 22
                                           5 7 (0 0 0.18 0.045 0 0 0
0.77 0 0)
                                           3 2 (0 0 0.57 0.14 0 0 0
                         16124) 182>=59 7
##
0.2900) *
                         16125) 182< 59 15 0 7 (0 0 0 0 0 0 0 1 0 0)
##
*
                        8063) 488< 106 1285
                                           17 7 (0 0.00078 0.0023
0.00078 0.0016 0 0 0.99 0 0.0078)
                         16126) 664>=3.5 8 3 7 (0 0 0.25 0 0.12 0 0
##
0.62 0 0) *
                         ##
0.00078 0.00078 0 0 0.99 0 0.0078)
                           0.00079 0.00079 0.00079 0 0 0.99 0 0.0055)
                             64508) 270>=26.5 1155
                                                  3 7 (0 0.00087 0
0.00087 0 0 0 1 0 0.00087) *
                             64509) 270< 26.5 108 8 7 (0 0 0.0093 0
0.0093 0 0 0.93 0 0.056)
                             129018) 321< 173.5 101 4 7 (0 0 0.0099
##
0 0.0099 0 0 0.96 0 0.02) *
                              129019) 321>=173.5 7 3 9 (0 0 0 0 0 0
0 0.43 0 0.57) *
                           32255) 321>=253.5 14 3 7 (0 0 0 0 0 0 0
0.79 0 0.21) *
              63) 487>=75.5 362 202 9 (0.0028 0.0028 0.052 0.0028 0.37
0.0028 0.044 0.064 0.014 0.44)
               126) 211< 5.5 144 38 4 (0.0069 0.0069 0.076 0 0.74
0.0069 0.1 0.0069 0.0069 0.049)
                 252) 95< 6.5 132 26 4 (0.0076 0.0076 0.061 0 0.8
0.0076 0.045 0.0076 0.0076 0.053)
                   504) 429< 8 29 18 4 (0.034 0.034 0.28 0 0.38 0.034
```

```
0.1 0.034 0.034 0.069)
##
                       1008) 398>=2.5 11
                                         1 4 (0.091 0 0 0 0.91 0 0 0 0 0)
                       1009) 398< 2.5 18
                                          10 2 (0 0.056 0.44 0 0.056 0.056
##
0.17 0.056 0.056 0.11) *
                                         8 4 (0 0 0 0 0.92 0 0.029 0 0
##
                      505) 429>=8 103
0.049)
##
                       1010) 490>=97.5 96
                                            4 4 (0 0 0 0 0.96 0 0.031 0 0
0.01) *
##
                       1011) 490< 97.5 7
                                            3 9 (0 0 0 0 0.43 0 0 0 0 0.57)
##
                    253) 95>=6.5 12
                                       3 6 (0 0 0.25 0 0 0 0.75 0 0 0) *
                                       65 9 (0 0 0.037 0.0046 0.13 0 0.0046
##
                  127) 211>=5.5 218
0.1 0.018 0.7)
                                          34 7 (0 0 0.08 0 0.24 0 0 0.32 0.06
##
                    254) 518>=241.5 50
0.3)
##
                      508) 429< 48.5 24
                                           8 7 (0 0 0.17 0 0.083 0 0 0.67 0
0.083)
##
                       1016) 233< 2.5 8
                                           4 2 (0 0 0.5 0 0.12 0 0 0.12 0
0.25) *
##
                      1017) 233>=2.5 16
                                           1 7 (0 0 0 0 0.062 0 0 0.94 0 0)
##
                      509) 429>=48.5 26
                                          13 9 (0 0 0 0 0.38 0 0 0 0.12 0.5)
                       1018) 382< 178.5 12
                                               3 4 (0 0 0 0 0.75 0 0 0 0.17
##
0.083) *
##
                       1019) 382>=178.5 14
                                              2 9 (0 0 0 0 0.071 0 0 0 0.071
0.86) *
##
                    255) 518< 241.5 168 30 9 (0 0 0.024 0.006 0.1 0 0.006
0.036 0.006 0.82)
                      510) 235< 0.5 25
                                         11 4 (0 0 0.04 0 0.56 0 0 0.04 0
##
0.36)
                       1020) 434< 94 17
                                          3 4 (0 0 0.059 0 0.82 0 0 0.059 0
##
0.059) *
##
                      1021) 434>=94 8
                                           09 (0000000001) *
##
                      511) 235>=0.5 143
                                          14 9 (0 0 0.021 0.007 0.021 0
0.007 0.035 0.007 0.9) *
ptree<- prune(tree model 1,</pre>
cp=tree model 1$cptable[which.min(tree model 1$cptable[,"xerror"]),"CP"])
predictTreeModel(ptree)
## Call:
## rpart(formula = label ~ ., data = trainDF, method = "class",
       control = rpart.control(cp = 0))
##
     n= 25205
##
##
                CP nsplit rel error
                                       xerror
## 1 0.0977940520
                        0 1.0000000 1.0000000 0.002231625
## 2 0.0825667590
                       1 0.9022059 0.9030097 0.002823465
```

```
2 0.8196392 0.8482183 0.003054854
## 3 0.0802000536
## 4
     0.0595695276
                        3 0.7394391 0.7278289 0.003388807
## 5
                        4 0.6798696 0.6604001 0.003490960
      0.0519335536
##
                        5 0.6279361 0.6191391 0.003526886
   6
      0.0457265339
## 7
      0.0450567116
                        6 0.5822095 0.5833705 0.003542340
## 8
                        7 0.5371528 0.5345628 0.003540265
      0.0254532464
## 9
      0.0213896579
                        8 0.5116996 0.5111190 0.003529761
## 10 0.0186657140
                        9 0.4903099 0.4936144 0.003517858
   11 0.0157631508
                       10 0.4716442 0.4810217 0.003507127
## 12 0.0154952219
                       11 0.4558810 0.4674466 0.003493505
## 13 0.0133071358
                       12 0.4403858 0.4515942 0.003474869
## 14 0.0110743949
                       13 0.4270787 0.4339109 0.003450553
## 15 0.0083504510
                       14 0.4160043 0.4205144 0.003429611
## 16 0.0069661516
                       15 0.4076538 0.4154684 0.003421149
## 17 0.0061177101
                       16 0.4006877 0.4035009 0.003399810
## 18 0.0048227204
                       17 0.3945700 0.3914888 0.003376564
## 19 0.0047780656
                       18 0.3897473 0.3746986 0.003340930
## 20 0.0047334107
                       19 0.3849692 0.3711262 0.003332866
## 21 0.0046887559
                       21 0.3755024 0.3691614 0.003328358
                       22 0.3708136 0.3680004 0.003325669
## 22 0.0046441011
## 23 0.0044208270
                       23 0.3661695 0.3646066 0.003317706
                       24 0.3617487 0.3567920 0.003298769
## 24 0.0042868626
## 25 0.0039296240
                       25 0.3574618 0.3528624 0.003288927
## 26 0.0037956596
                       26 0.3535322 0.3471019 0.003274107
## 27 0.0037510047
                       29 0.3421452 0.3459409 0.003271064
## 28 0.0034830758
                       30 0.3383942 0.3418326 0.003260139
                       31 0.3349111 0.3366080 0.003245895
## 29 0.0033937662
## 30 0.0033491114
                       32 0.3315174 0.3364741 0.003245524
## 31 0.0033044566
                       33 0.3281683 0.3364741 0.003245524
## 32 0.0028579084
                       34 0.3248638 0.3317406 0.003232267
                       37 0.3162901 0.3221845 0.003204489
## 33 0.0028355810
## 34 0.0026346343
                       39 0.3106189 0.3170492 0.003188992
## 35 0.0025899795
                       40 0.3079843 0.3131196 0.003176860
## 36 0.0025453246
                       41 0.3053943 0.3105296 0.003168733
## 37 0.0025006698
                       42 0.3028490 0.3097705 0.003166331
## 38 0.0024560150
                       43 0.3003483 0.3084755 0.003162213
## 39 0.0023890328
                       44 0.2978923 0.3073145 0.003158498
## 40 0.0023667054
                       46 0.2931142 0.3045012 0.003149408
## 41 0.0022773957
                       47 0.2907475 0.3038314 0.003147225
## 42 0.0020541216
                       52 0.2793159 0.2940073 0.003114378
## 43 0.0020094668
                       53 0.2772618 0.2853889 0.003084253
## 44 0.0018308475
                       59 0.2652050 0.2832009 0.003076405
## 45 0.0016968831
                       60 0.2633741 0.2771278 0.003054191
## 46 0.0016745557
                       62 0.2599804 0.2739573 0.003042339
                       64 0.2566312 0.2722604 0.003035923
## 47 0.0016299009
## 48 0.0016075735
                       66 0.2533714 0.2693579 0.003024828
## 49 0.0014736090
                       69 0.2485487 0.2670358 0.003015843
## 50 0.0014066268
                       70 0.2470751 0.2623024 0.002997223
## 51 0.0013842994
                       72 0.2442619 0.2600697 0.002988297
## 52 0.0012949897
                       76 0.2387247 0.2567652 0.002974915
```

```
77 0.2374297 0.2543092 0.002964835
## 53 0.0012503349
## 54 0.0011610253
                       79 0.2349290 0.2522997 0.002956502
                       81 0.2326069 0.2499330 0.002946587
## 55 0.0011163705
                       83 0.2303742 0.2493079 0.002943950
## 56 0.0010940430
## 57 0.0010717156
                       86 0.2268911 0.2477896 0.002937514
## 58 0.0010270608
                       88 0.2247477 0.2476110 0.002936754
## 59 0.0009824060
                       90 0.2226936 0.2449317 0.002925275
## 60 0.0009377512
                       91 0.2217112 0.2422077 0.002913459
## 61 0.0008930964
                       98 0.2151469 0.2384567 0.002896943
                      100 0.2133607 0.2363580 0.002887576
## 62 0.0008707690
## 63 0.0008484415
                      102 0.2116192 0.2352416 0.002882556
## 64 0.0008037867
                      105 0.2090739 0.2309547 0.002863039
                      111 0.2042511 0.2269358 0.002844387
## 65 0.0007591319
## 66 0.0007368045
                      116 0.2004555 0.2259534 0.002839775
## 67 0.0007144771
                      118 0.1989819 0.2241672 0.002831335
## 68 0.0006698223
                      124 0.1946950 0.2210860 0.002816611
## 69 0.0006251675
                      131 0.1893811 0.2196571 0.002809711
## 70 0.0005805126
                      136 0.1862552 0.2153702 0.002788733
## 71 0.0005358578
                      147 0.1798696 0.2114852 0.002769358
                      151 0.1777262 0.2069304 0.002746191
## 72 0.0004912030
## 73 0.0004688756
                      159 0.1737966 0.2034027 0.002727905
## 74 0.0004465482
                      161 0.1728588 0.2015718 0.002718294
                      177 0.1656247 0.1976422 0.002697385
## 75 0.0004242208
                      183 0.1625882 0.1964365 0.002690892
## 76 0.0004018934
## 77 0.0003795660
                      197 0.1569617 0.1927302 0.002670696
## 78 0.0003572385
                      202 0.1550415 0.1917031 0.002665037
                      216 0.1500402 0.1877289 0.002642873
## 79 0.0003349111
## 80 0.0003125837
                      218 0.1493704 0.1873270 0.002640608
                      240 0.1424489 0.1863892 0.002635307
## 81 0.0002976988
## 82 0.0002902563
                      246 0.1406627 0.1829508 0.002615661
## 83 0.0002679289
                      250 0.1395017 0.1824149 0.002612570
                      270 0.1341431 0.1811646 0.002605326
## 84 0.0002456015
## 85 0.0002344378
                      286 0.1301688 0.1793338 0.002594640
## 86 0.0002232741
                      290 0.1292310 0.1791551 0.002593592
## 87 0.0002083892
                      320 0.1225328 0.1785746 0.002590181
                      323 0.1219077 0.1785746 0.002590181
## 88 0.0002009467
## 89 0.0001786193
                      325 0.1215058 0.1766991 0.002579093
## 90 0.0001562919
                      376 0.1122622 0.1764312 0.002577501
##
## Variable importance
## 489 517 490 350 461 435 514 347 211 434 462 597 542 323 516 378 210 351
515 319
##
     2
         1
             1
                 1
                     1
                         1
                             1
                                  1
                                      1
                                          1
                                              1
                                                  1
                                                      1
                                                          1
                                                              1
                                                                       1
                                                                           1
## 543 270 486 432 346 212 541 322 487 596 598 271 626 238 239 408 407 431
348 485
##
     1
                             1
         1
             1
                 1
                     1
                         1
                                  1
                                      1
                                          1
                                              1
                                                  1
                                                      1
                                                          1
                                                              1
                                                                           1
                                                                   1
                                                                       1
    1
## 570 568 375 349 436 262 298 155 433 463 458 657 243 299 297 156 234 656
154 658
```

```
1
                                1 1 1 1 1 1
        1 1 1
                    1
                        1
                                                        1
                                                            1
1
    1
## 354 320 324 240 269 459 325 353 272 207 430 488 569 296 157 317 206 381
235 290
##
    1
         1
             1
                 1
                    1
                         1
                             1
                                 1
                                     1
                                         1
                                             1
                                                 1
                                                     1
                                                         1
                                                             1
                                                                 1
                                                                     1
                                                                         1
1
    1
## 377 376
##
    1
##
## Node number 1: 25205 observations,
                                         complexity param=0.09779405
##
     predicted class=1 expected loss=0.8884745 P(node) =1
       class counts: 2480 2811 2507 2611 2444 2277 2483
##
                                                               2641
                                                                      2438
2513
##
      probabilities: 0.098 0.112 0.099 0.104 0.097 0.090 0.099 0.105 0.097
0.100
##
     left son=2 (9068 obs) right son=3 (16137 obs)
##
     Primary splits:
##
         350 < 120.5 to the right, improve=1009.8860, (0 missing)
                    to the left, improve= 999.1138, (0 missing)
##
         409 < 0.5
##
         461 < 1.5
                    to the left, improve= 990.1707, (0 missing)
         378 < 131.5 to the right, improve= 964.9390, (0 missing)
##
                    to the left, improve= 956.4358, (0 missing)
##
         433 < 0.5
##
     Surrogate splits:
##
         351 < 192.5 to the right, agree=0.864, adj=0.621, (0 split)
##
         378 < 237.5 to the right, agree=0.860, adj=0.610, (0 split)
##
         323 < 118.5 to the right, agree=0.845, adj=0.570, (0 split)
##
         322 < 40.5 to the right, agree=0.845, adj=0.570, (0 split)
         349 < 63.5 to the right, agree=0.844, adj=0.567, (0 split)
##
##
## Node number 2: 9068 observations,
                                       complexity param=0.08020005
##
     predicted class=1 expected loss=0.7144905 P(node) =0.3597699
       class counts:
##
                       194 2589
                                   485 2113
                                                     968
                                               239
                                                           512
                                                                      1200
539
##
      probabilities: 0.021 0.286 0.053 0.233 0.026 0.107 0.056 0.025 0.132
0.059
##
     left son=4 (4400 obs) right son=5 (4668 obs)
##
     Primary splits:
##
         489 < 44.5 to the right, improve=1014.6630, (0 missing)
##
         517 < 28.5 to the right, improve= 931.7002, (0 missing)
                    to the left, improve= 930.7003, (0 missing)
##
         375 < 0.5
##
         461 < 65.5 to the right, improve= 882.2089, (0 missing)
##
         462 < 96.5 to the right, improve= 869.9859, (0 missing)
##
     Surrogate splits:
##
         517 < 32.5 to the right, agree=0.904, adj=0.802, (0 split)
##
         461 < 124.5 to the right, agree=0.895, adj=0.785, (0 split)
##
         490 < 32.5 to the right, agree=0.868, adj=0.728, (0 split)
##
                    to the right, agree=0.867, adj=0.726, (0 split)
         462 < 96.5
##
         516 < 16.5 to the right, agree=0.844, adj=0.679, (0 split)
##
## Node number 3: 16137 observations, complexity param=0.08256676
```

```
predicted class=7 expected loss=0.8505298 P(node) =0.6402301
##
##
       class counts: 2286
                             222 2022
                                         498 2205 1309 1971 2412
                                                                       1238
1974
      probabilities: 0.142 0.014 0.125 0.031 0.137 0.081 0.122 0.149 0.077
##
0.122
##
     left son=6 (4294 obs) right son=7 (11843 obs)
##
     Primary splits:
##
         435 < 0.5
                     to the left,
                                   improve=997.0246, (0 missing)
                                   improve=993.5928, (0 missing)
##
         436 < 0.5
                     to the left,
                     to the right, improve=985.1319, (0 missing)
##
         569 < 0.5
##
         568 < 0.5
                     to the right, improve=981.9576, (0 missing)
         408 < 0.5
                                   improve=973.5181, (0 missing)
##
                     to the left,
##
     Surrogate splits:
##
         436 < 0.5
                     to the left,
                                   agree=0.892, adj=0.594, (0 split)
##
         408 < 0.5
                     to the left,
                                   agree=0.890, adj=0.588, (0 split)
##
         434 < 0.5
                     to the left,
                                   agree=0.888, adj=0.578, (0 split)
                                   agree=0.883, adj=0.559, (0 split)
##
         463 < 0.5
                     to the left,
                     to the left, agree=0.879, adj=0.545, (0 split)
##
         407 < 0.5
##
## Node number 4: 4400 observations,
                                        complexity param=0.01866571
     predicted class=1
                        expected loss=0.4475
                                              P(node) = 0.1745685
##
                                                                  119
##
       class counts:
                        28 2431
                                   337
                                         159
                                               112
                                                      105
                                                                        674
                                                            277
158
##
      probabilities: 0.006 0.552 0.077 0.036 0.025 0.024 0.063 0.027 0.153
0.036
##
     left son=8 (3250 obs) right son=9 (1150 obs)
##
     Primary splits:
         234 < 0.5
                                   improve=534.2896, (0 missing)
##
                     to the left,
##
         521 < 0.5
                     to the left,
                                   improve=526.6306, (0 missing)
##
         319 < 0.5
                     to the left,
                                   improve=524.5641, (0 missing)
##
         262 < 0.5
                     to the left,
                                   improve=524.1744, (0 missing)
##
         550 < 0.5
                     to the left,
                                   improve=523.3399, (0 missing)
##
     Surrogate splits:
##
         206 < 0.5
                     to the left,
                                   agree=0.934, adj=0.747, (0 split)
##
         262 < 1.5
                                   agree=0.930, adj=0.732, (0 split)
                     to the left,
                                   agree=0.930, adj=0.731, (0 split)
##
         235 < 132.5 to the left,
                                   agree=0.925, adj=0.715, (0 split)
##
         207 < 48.5
                     to the left,
##
         233 < 1.5
                     to the left,
                                   agree=0.922, adj=0.700, (0 split)
##
## Node number 5: 4668 observations,
                                        complexity param=0.01549522
##
     predicted class=3 expected loss=0.5814053 P(node) =0.1852013
##
       class counts:
                       166
                             158
                                   148 1954
                                               127
                                                      863
                                                            235
                                                                  110
                                                                        526
381
##
      probabilities: 0.036 0.034 0.032 0.419 0.027 0.185 0.050 0.024 0.113
0.082
##
     left son=10 (3675 obs) right son=11 (993 obs)
##
     Primary splits:
##
                                   improve=339.3307, (0 missing)
         486 < 76.5 to the left,
##
         290 < 34.5 to the left,
                                   improve=326.0021, (0 missing)
         487 < 11.5 to the left, improve=315.4504, (0 missing)
##
```

```
improve=282.8250, (0 missing)
##
         317 < 33.5 to the left,
##
         291 < 10.5 to the left,
                                   improve=281.4892, (0 missing)
##
     Surrogate splits:
##
         487 < 11.5 to the left,
                                   agree=0.941, adj=0.722, (0 split)
##
         514 < 141.5 to the left,
                                   agree=0.922, adj=0.631, (0 split)
##
         485 < 101.5 to the left,
                                   agree=0.911, adj=0.581, (0 split)
##
         459 < 201.5 to the left,
                                   agree=0.910, adj=0.577, (0 split)
                                   agree=0.908, adj=0.569, (0 split)
##
         458 < 202.5 to the left,
##
## Node number 6: 4294 observations,
                                         complexity param=0.02138966
##
     predicted class=0 expected loss=0.4825338 P(node) =0.170363
##
       class counts: 2222
                              17
                                    282
                                          130
                                                166
                                                      368
                                                            229
                                                                         37
                                                                  664
179
##
      probabilities: 0.517 0.004 0.066 0.030 0.039 0.086 0.053 0.155 0.009
0.042
##
     left son=12 (2737 obs) right son=13 (1557 obs)
     Primary splits:
##
##
         597 < 1.5
                     to the right, improve=603.7671, (0 missing)
                     to the right, improve=574.3586, (0 missing)
##
         598 < 2.5
##
         568 < 0.5
                     to the right, improve=537.4804, (0 missing)
         626 < 3.5
                     to the right, improve=524.5488, (0 missing)
##
                     to the right, improve=521.8409, (0 missing)
##
         511 < 2.5
##
     Surrogate splits:
##
         598 < 7.5
                     to the right, agree=0.930, adj=0.808, (0 split)
##
         596 < 0.5
                     to the right, agree=0.905, adj=0.739, (0 split)
##
         568 < 0.5
                     to the right, agree=0.898, adj=0.720, (0 split)
                     to the right, agree=0.895, adj=0.712, (0 split)
##
         626 < 6.5
                     to the right, agree=0.887, adj=0.689, (0 split)
##
         569 < 1.5
##
## Node number 7: 11843 observations,
                                          complexity param=0.05956953
##
     predicted class=4
                        expected loss=0.8278308 P(node) =0.4698671
##
       class counts:
                        64
                             205 1740
                                          368 2039
                                                      941 1742 1748
1795
##
      probabilities: 0.005 0.017 0.147 0.031 0.172 0.079 0.147 0.148 0.101
0.152
##
     left son=14 (5226 obs) right son=15 (6617 obs)
##
     Primary splits:
##
         542 < 1.5
                     to the right, improve=822.1865, (0 missing)
##
         570 < 1.5
                     to the right, improve=766.1911, (0 missing)
         127 < 0.5
                     to the right, improve=760.7062, (0 missing)
##
##
         569 < 0.5
                     to the right, improve=752.4553, (0 missing)
##
         541 < 0.5
                     to the right, improve=750.0038, (0 missing)
##
     Surrogate splits:
##
         541 < 0.5
                     to the right, agree=0.895, adj=0.762, (0 split)
##
         543 < 48.5
                     to the right, agree=0.893, adj=0.757, (0 split)
##
         570 < 20.5
                     to the right, agree=0.880, adj=0.729, (0 split)
##
         515 < 31.5
                     to the right, agree=0.854, adj=0.670, (0 split)
                     to the right, agree=0.852, adj=0.666, (0 split)
##
         514 < 1.5
##
## Node number 8: 3250 observations, complexity param=0.002277396
```

```
expected loss=0.2649231 P(node) =0.1289427
##
     predicted class=1
##
       class counts:
                                                                        214
                        18 2389
                                   157
                                           56
                                                 76
                                                       91
                                                            158
                                                                   24
67
      probabilities: 0.006 0.735 0.048 0.017 0.023 0.028 0.049 0.007 0.066
##
0.021
##
     left son=16 (2607 obs) right son=17 (643 obs)
##
     Primary splits:
         347 < 1.5
##
                     to the left,
                                   improve=298.0289, (0 missing)
##
                                   improve=281.7995, (0 missing)
         402 < 8
                     to the left,
##
         375 < 48.5
                     to the left,
                                   improve=280.9152, (0 missing)
##
         374 < 0.5
                     to the left,
                                   improve=277.2342, (0 missing)
         457 < 1.5
                                   improve=273.9629, (0 missing)
##
                     to the left,
##
     Surrogate splits:
##
         375 < 29.5 to the left,
                                   agree=0.943, adj=0.712, (0 split)
##
         319 < 0.5
                     to the left,
                                   agree=0.942, adj=0.709, (0 split)
##
         348 < 170.5 to the left,
                                   agree=0.930, adj=0.645, (0 split)
                                   agree=0.925, adj=0.621, (0 split)
##
         374 < 0.5
                     to the left,
##
         346 < 1
                     to the left,
                                   agree=0.923, adj=0.610, (0 split)
##
## Node number 9: 1150 observations,
                                         complexity param=0.004733411
     predicted class=8
                        expected loss=0.6 P(node) =0.04562587
##
##
       class counts:
                        10
                              42
                                   180
                                          103
                                                 36
                                                       14
                                                            119
                                                                   95
                                                                        460
91
##
      probabilities: 0.009 0.037 0.157 0.090 0.031 0.012 0.103 0.083 0.400
0.079
##
     left son=18 (434 obs) right son=19 (716 obs)
##
     Primary splits:
         658 < 13.5 to the left,
##
                                   improve=111.38900, (0 missing)
##
         657 < 1.5
                     to the left,
                                   improve=108.81070, (0 missing)
##
         659 < 1
                     to the left,
                                   improve=108.67210, (0 missing)
##
         656 < 4
                     to the left,
                                   improve= 97.54418, (0 missing)
##
         319 < 6.5
                     to the left,
                                   improve= 79.81577, (0 missing)
##
     Surrogate splits:
##
         659 < 1
                     to the left,
                                   agree=0.916, adj=0.776, (0 split)
##
                                   agree=0.910, adj=0.763, (0 split)
         657 < 5
                     to the left,
##
         630 < 66.5
                                   agree=0.860, adj=0.629, (0 split)
                     to the left,
                                   agree=0.846, adj=0.592, (0 split)
##
         631 < 5
                     to the left,
##
         656 < 1.5
                     to the left,
                                   agree=0.819, adj=0.521, (0 split)
##
## Node number 10: 3675 observations,
                                          complexity param=0.01330714
##
     predicted class=3 expected loss=0.4862585 P(node) =0.1458044
##
       class counts:
                       101
                             138
                                     22 1888
                                                113
                                                      810
                                                             35
                                                                  109
                                                                        113
346
##
      probabilities: 0.027 0.038 0.006 0.514 0.031 0.220 0.010 0.030 0.031
0.094
##
     left son=20 (2318 obs) right son=21 (1357 obs)
##
     Primary splits:
                                   improve=347.9199, (0 missing)
##
         290 < 42.5 to the left,
##
         317 < 33.5 to the left,
                                   improve=327.6350, (0 missing)
         296 < 12.5 to the right, improve=303.0004, (0 missing)
##
```

```
improve=302.9559, (0 missing)
##
         289 < 5.5
                     to the left,
##
         318 < 51.5 to the left,
                                    improve=279.4329, (0 missing)
##
     Surrogate splits:
##
         289 < 11.5 to the left,
                                    agree=0.875, adj=0.660, (0 split)
##
         318 < 138.5 to the left,
                                    agree=0.863, adj=0.629, (0 split)
##
         291 < 38.5
                     to the left,
                                    agree=0.861, adj=0.623, (0 split)
##
                     to the left,
                                    agree=0.858, adj=0.615, (0 split)
         317 < 68.5
                                    agree=0.850, adj=0.593, (0 split)
##
         262 < 68
                     to the left,
##
## Node number 11: 993 observations,
                                         complexity param=0.006966152
##
     predicted class=8
                        expected loss=0.5840886 P(node) =0.03939695
##
       class counts:
                        65
                              20
                                    126
                                           66
                                                 14
                                                       53
                                                            200
                                                                    1
                                                                        413
35
##
      probabilities: 0.065 0.020 0.127 0.066 0.014 0.053 0.201 0.001 0.416
0.035
##
     left son=22 (423 obs) right son=23 (570 obs)
     Primary splits:
##
##
         657 < 5.5
                                    improve=140.94030, (0 missing)
                     to the left,
##
         656 < 1
                     to the left,
                                    improve=138.99620, (0 missing)
##
         658 < 0.5
                     to the left,
                                    improve=123.86500, (0 missing)
         655 < 14
                     to the left,
                                    improve=122.38120, (0 missing)
##
         654 < 0.5
                                    improve= 90.32948, (0 missing)
##
                     to the left,
##
     Surrogate splits:
##
         656 < 1
                     to the left,
                                   agree=0.957, adj=0.898, (0 split)
##
         658 < 0.5
                     to the left,
                                   agree=0.934, adj=0.844, (0 split)
                                   agree=0.900, adj=0.766, (0 split)
##
         655 < 0.5
                     to the left,
                                    agree=0.845, adj=0.636, (0 split)
##
         659 < 0.5
                     to the left,
                                   agree=0.830, adj=0.600, (0 split)
##
         654 < 0.5
                     to the left,
##
## Node number 12: 2737 observations,
                                          complexity param=0.004644101
##
     predicted class=0 expected loss=0.2499087
                                                  P(node) =0.1085896
##
       class counts: 2053
                                    230
                                           85
                                                      220
                               6
                                                             83
                                                                   16
                                                                          30
9
      probabilities: 0.750 0.002 0.084 0.031 0.002 0.080 0.030 0.006 0.011
##
0.003
##
     left son=24 (2295 obs) right son=25 (442 obs)
##
     Primary splits:
##
         489 < 0.5
                                   improve=243.9992, (0 missing)
                     to the left,
##
         461 < 0.5
                     to the left,
                                    improve=224.9709, (0 missing)
         488 < 2.5
                     to the left,
                                    improve=222.8567, (0 missing)
##
##
         372 < 0.5
                     to the right, improve=215.5484, (0 missing)
##
         400 < 3.5
                     to the right, improve=215.4347, (0 missing)
##
     Surrogate splits:
##
         490 < 33.5
                     to the left,
                                    agree=0.955, adj=0.724, (0 split)
##
         488 < 0.5
                     to the left,
                                    agree=0.950, adj=0.688, (0 split)
##
         517 < 140.5 to the left,
                                    agree=0.936, adj=0.606, (0 split)
##
         462 < 1.5
                     to the left,
                                    agree=0.932, adj=0.581, (0 split)
##
                                    agree=0.931, adj=0.570, (0 split)
         461 < 0.5
                     to the left,
##
## Node number 13: 1557 observations, complexity param=0.004778066
```

```
##
     predicted class=7 expected loss=0.583815 P(node) =0.06177346
##
       class counts:
                                                                          7
                       169
                              11
                                     52
                                           45
                                                161
                                                      148
                                                            146
                                                                  648
170
      probabilities: 0.109 0.007 0.033 0.029 0.103 0.095 0.094 0.416 0.004
##
0.109
##
     left son=26 (603 obs) right son=27 (954 obs)
##
     Primary splits:
##
         486 < 0.5
                     to the right, improve=171.6117, (0 missing)
                     to the right, improve=170.5544, (0 missing)
##
         458 < 0.5
                     to the right, improve=170.2561, (0 missing)
##
         487 < 0.5
##
         515 < 1
                     to the right, improve=162.3623, (0 missing)
         459 < 1
                     to the right, improve=157.7163, (0 missing)
##
##
     Surrogate splits:
##
         487 < 0.5
                     to the right, agree=0.920, adj=0.793, (0 split)
##
         485 < 1
                     to the right, agree=0.903, adj=0.750, (0 split)
##
         514 < 0.5
                     to the right, agree=0.903, adj=0.750, (0 split)
##
         515 < 2.5
                     to the right, agree=0.900, adj=0.743, (0 split)
##
         458 < 0.5
                     to the right, agree=0.891, adj=0.718, (0 split)
##
## Node number 14: 5226 observations,
                                          complexity param=0.04505671
     predicted class=6
                        expected loss=0.6928817 P(node) =0.2073398
##
##
       class counts:
                        49
                             131 1467
                                           40
                                                      235
                                                          1605
                                                                  284
                                                                        948
                                                271
196
##
      probabilities: 0.009 0.025 0.281 0.008 0.052 0.045 0.307 0.054 0.181
0.038
##
     left son=28 (2838 obs) right son=29 (2388 obs)
##
     Primary splits:
         271 < 0.5
##
                     to the right, improve=604.5449, (0 missing)
##
         270 < 0.5
                     to the right, improve=599.7244, (0 missing)
##
         243 < 0.5
                     to the right, improve=593.0277, (0 missing)
                     to the left, improve=575.8547, (0 missing)
##
         347 < 0.5
##
         242 < 0.5
                     to the right, improve=568.0370, (0 missing)
##
     Surrogate splits:
##
         243 < 0.5
                     to the right, agree=0.910, adj=0.803, (0 split)
##
         299 < 0.5
                     to the right, agree=0.906, adj=0.794, (0 split)
         270 < 0.5
                     to the right, agree=0.857, adj=0.686, (0 split)
##
                     to the right, agree=0.854, adj=0.680, (0 split)
##
         298 < 3.5
##
                     to the right, agree=0.853, adj=0.678, (0 split)
         272 < 0.5
##
## Node number 15: 6617 observations,
                                          complexity param=0.05193355
     predicted class=4
                        expected loss=0.7328094 P(node) =0.2625273
##
##
       class counts:
                        15
                              74
                                    273
                                          328 1768
                                                      706
                                                            137 1464
                                                                         253
1599
##
      probabilities: 0.002 0.011 0.041 0.050 0.267 0.107 0.021 0.221 0.038
0.242
##
     left son=30 (4489 obs) right son=31 (2128 obs)
##
     Primary splits:
##
         432 < 0.5
                     to the right, improve=696.1747, (0 missing)
##
         431 < 0.5
                     to the right, improve=662.3729, (0 missing)
                     to the right, improve=658.4506, (0 missing)
##
         433 < 2.5
```

```
to the right, improve=646.2347, (0 missing)
##
         430 < 0.5
                     to the left, improve=617.7026, (0 missing)
##
         239 < 0.5
##
     Surrogate splits:
##
         431 < 0.5
                     to the right, agree=0.935, adj=0.798, (0 split)
##
         433 < 29.5
                     to the right, agree=0.922, adj=0.758, (0 split)
##
         430 < 0.5
                     to the right, agree=0.864, adj=0.577, (0 split)
##
         434 < 80.5
                     to the right, agree=0.823, adj=0.451, (0 split)
                     to the right, agree=0.821, adj=0.444, (0 split)
##
         460 < 0.5
##
## Node number 16: 2607 observations,
                                          complexity param=0.002277396
##
     predicted class=1
                        expected loss=0.1258151 P(node) =0.1034319
                         1 2279
##
       class counts:
                                    123
                                           20
                                                 14
                                                       24
                                                             30
                                                                         100
7
      probabilities: 0.000 0.874 0.047 0.008 0.005 0.009 0.012 0.003 0.038
##
0.003
##
     left son=32 (2456 obs) right son=33 (151 obs)
     Primary splits:
##
##
         550 < 0.5
                                    improve=155.3068, (0 missing)
                     to the left,
         580 < 0.5
##
                     to the left,
                                    improve=151.2452, (0 missing)
##
         551 < 6.5
                     to the left,
                                    improve=149.7522, (0 missing)
         579 < 1.5
                     to the left,
                                    improve=147.4893, (0 missing)
##
                                    improve=146.3479, (0 missing)
##
         149 < 5
                     to the left,
##
     Surrogate splits:
##
         551 < 0.5
                     to the left,
                                   agree=0.986, adj=0.755, (0 split)
                                   agree=0.979, adj=0.642, (0 split)
##
         578 < 44
                     to the left,
##
         549 < 160
                     to the left,
                                   agree=0.979, adj=0.636, (0 split)
                                    agree=0.978, adj=0.623, (0 split)
##
         522 < 2.5
                     to the left,
                                   agree=0.977, adj=0.609, (0 split)
##
         552 < 6
                     to the left,
##
## Node number 17: 643 observations,
                                         complexity param=0.002277396
##
     predicted class=6
                        expected loss=0.8009331 P(node) =0.02551081
##
       class counts:
                        17
                             110
                                     34
                                           36
                                                 62
                                                       67
                                                            128
                                                                   15
                                                                         114
60
      probabilities: 0.026 0.171 0.053 0.056 0.096 0.104 0.199 0.023 0.177
##
0.093
##
     left son=34 (564 obs) right son=35 (79 obs)
##
     Primary splits:
##
         103 < 1.5
                                    improve=49.62266, (0 missing)
                     to the left,
##
         102 < 4.5
                     to the left,
                                    improve=45.81023, (0 missing)
         657 < 1.5
                     to the left,
                                    improve=44.98221, (0 missing)
##
##
         467 < 2.5
                     to the right, improve=44.65403, (0 missing)
##
         522 < 37
                     to the left,
                                   improve=43.85053, (0 missing)
##
     Surrogate splits:
##
         104 < 5.5
                     to the left,
                                    agree=0.955, adj=0.633, (0 split)
##
         102 < 11.5 to the left,
                                    agree=0.953, adj=0.620, (0 split)
##
         131 < 213.5 to the left,
                                    agree=0.941, adj=0.519, (0 split)
##
         130 < 227.5 to the left,
                                    agree=0.935, adj=0.468, (0 split)
##
                                    agree=0.922, adj=0.367, (0 split)
         132 < 228
                     to the left,
##
## Node number 18: 434 observations, complexity param=0.004286863
```

```
##
     predicted class=2
                        expected loss=0.6705069 P(node) =0.01721881
##
       class counts:
                         5
                              19
                                    143
                                           15
                                                 13
                                                        6
                                                            114
                                                                   28
                                                                         37
54
##
      probabilities: 0.012 0.044 0.329 0.035 0.030 0.014 0.263 0.065 0.085
0.124
##
     left son=36 (228 obs) right son=37 (206 obs)
##
     Primary splits:
         345 < 18
##
                     to the left,
                                   improve=60.79050, (0 missing)
##
                                   improve=48.60646, (0 missing)
         384 < 7.5
                     to the left,
                                   improve=47.71478, (0 missing)
##
         373 < 32.5 to the left,
##
         318 < 36.5
                     to the left,
                                   improve=46.92627, (0 missing)
                                   improve=46.85354, (0 missing)
##
         317 < 8.5
                     to the left,
##
     Surrogate splits:
##
         317 < 18.5 to the left,
                                   agree=0.924, adj=0.840, (0 split)
##
         373 < 21
                     to the left,
                                   agree=0.924, adj=0.840, (0 split)
##
         344 < 0.5
                     to the left,
                                   agree=0.901, adj=0.791, (0 split)
                                   agree=0.878, adj=0.743, (0 split)
##
         346 < 11.5 to the left,
                                   agree=0.869, adj=0.723, (0 split)
##
         372 < 0.5
                     to the left,
##
## Node number 19: 716 observations,
                                         complexity param=0.001094043
     predicted class=8
                        expected loss=0.4092179 P(node) =0.02840706
##
##
       class counts:
                         5
                              23
                                    37
                                           88
                                                 23
                                                        8
                                                              5
                                                                   67
                                                                        423
37
##
      probabilities: 0.007 0.032 0.052 0.123 0.032 0.011 0.007 0.094 0.591
0.052
##
     left son=38 (218 obs) right son=39 (498 obs)
##
     Primary splits:
         319 < 2
##
                     to the left,
                                   improve=57.35732, (0 missing)
##
         543 < 10.5
                     to the left,
                                   improve=55.94126, (0 missing)
##
         515 < 66.5
                     to the left,
                                   improve=54.57325, (0 missing)
##
         516 < 50
                     to the left,
                                   improve=50.41320, (0 missing)
##
         318 < 1.5
                     to the left,
                                   improve=46.75767, (0 missing)
##
     Surrogate splits:
##
         318 < 0.5
                     to the left,
                                   agree=0.873, adj=0.583, (0 split)
##
         320 < 0.5
                                   agree=0.865, adj=0.555, (0 split)
                     to the left,
##
         347 < 7
                                   agree=0.856, adj=0.528, (0 split)
                     to the left,
                                   agree=0.855, adj=0.523, (0 split)
##
         291 < 79
                     to the left,
##
                     to the left,
                                   agree=0.837, adj=0.463, (0 split)
         290 < 2
##
## Node number 20: 2318 observations,
                                          complexity param=0.002009467
##
     predicted class=3
                        expected loss=0.2868852 P(node) =0.09196588
##
       class counts:
                        34
                             132
                                    19 1653
                                                 36
                                                      277
                                                             19
                                                                   30
                                                                         53
65
##
      probabilities: 0.015 0.057 0.008 0.713 0.016 0.119 0.008 0.013 0.023
0.028
##
     left son=40 (1626 obs) right son=41 (692 obs)
##
     Primary splits:
##
         179 < 1.5
                     to the right, improve=136.4540, (0 missing)
##
         296 < 12.5 to the right, improve=131.9266, (0 missing)
         655 < 3.5 to the right, improve=131.1460, (0 missing)
##
```

```
152 < 0.5 to the right, improve=130.7408, (0 missing)
##
         490 < 104.5 to the right, improve=128.5077, (0 missing)
##
##
     Surrogate splits:
##
         180 < 9.5
                     to the right, agree=0.910, adj=0.698, (0 split)
##
         178 < 0.5
                     to the right, agree=0.902, adj=0.672, (0 split)
##
         151 < 0.5
                     to the right, agree=0.837, adj=0.455, (0 split)
##
                     to the right, agree=0.830, adj=0.432, (0 split)
         181 < 17.5
                     to the right, agree=0.825, adj=0.415, (0 split)
##
         207 < 0.5
##
## Node number 21: 1357 observations,
                                          complexity param=0.008350451
##
     predicted class=5
                        expected loss=0.6072218 P(node) =0.05383852
                        67
##
       class counts:
                               6
                                     3
                                          235
                                                 77
                                                      533
                                                             16
                                                                   79
                                                                         60
281
##
      probabilities: 0.049 0.004 0.002 0.173 0.057 0.393 0.012 0.058 0.044
0.207
##
     left son=42 (836 obs) right son=43 (521 obs)
     Primary splits:
##
##
         626 < 10.5 to the right, improve=148.5743, (0 missing)
##
         297 < 13.5
                     to the left, improve=148.4859, (0 missing)
##
         625 < 0.5
                     to the right, improve=140.2124, (0 missing)
         296 < 10.5
                     to the left, improve=134.0005, (0 missing)
##
                     to the right, improve=130.5689, (0 missing)
##
         627 < 1
##
     Surrogate splits:
##
         625 < 0.5
                     to the right, agree=0.935, adj=0.831, (0 split)
##
         627 < 34.5
                     to the right, agree=0.931, adj=0.821, (0 split)
##
         598 < 1
                     to the right, agree=0.887, adj=0.704, (0 split)
                     to the right, agree=0.878, adj=0.683, (0 split)
##
         597 < 1
                     to the right, agree=0.866, adj=0.651, (0 split)
##
         654 < 0.5
##
## Node number 22: 423 observations,
                                        complexity param=0.002456015
##
     predicted class=6
                        expected loss=0.5626478 P(node) =0.01678238
##
       class counts:
                        13
                                    98
                                           15
                                                                         29
                              20
                                                 14
                                                       23
                                                            185
26
##
      probabilities: 0.031 0.047 0.232 0.035 0.033 0.054 0.437 0.000 0.069
0.061
##
     left son=44 (173 obs) right son=45 (250 obs)
##
     Primary splits:
##
         270 < 51.5 to the right, improve=48.04790, (0 missing)
                     to the right, improve=48.02302, (0 missing)
##
         242 < 2.5
         269 < 129.5 to the right, improve=46.32373, (0 missing)
##
##
         243 < 28.5 to the right, improve=39.71868, (0 missing)
         241 < 63.5 to the right, improve=39.07740, (0 missing)
##
##
     Surrogate splits:
##
         297 < 149
                     to the right, agree=0.898, adj=0.751, (0 split)
##
         271 < 1.5
                     to the right, agree=0.884, adj=0.717, (0 split)
##
         269 < 152.5 to the right, agree=0.882, adj=0.711, (0 split)
##
         243 < 4.5
                     to the right, agree=0.879, adj=0.705, (0 split)
##
                     to the right, agree=0.877, adj=0.699, (0 split)
         242 < 83
##
## Node number 23: 570 observations, complexity param=0.001027061
```

```
##
     predicted class=8
                        expected loss=0.3263158 P(node) =0.02261456
##
       class counts:
                                                       30
                                                                        384
                        52
                               0
                                    28
                                           51
                                                  0
                                                             15
9
      probabilities: 0.091 0.000 0.049 0.089 0.000 0.053 0.026 0.002 0.674
##
0.016
##
     left son=46 (97 obs) right son=47 (473 obs)
##
     Primary splits:
         407 < 1.5
##
                     to the left,
                                   improve=41.25076, (0 missing)
                     to the right, improve=40.94860, (0 missing)
##
         412 < 57.5
##
         435 < 44.5
                     to the left,
                                   improve=40.48067, (0 missing)
         436 < 7
##
                     to the left,
                                   improve=39.70404, (0 missing)
         440 < 51
##
                     to the right, improve=37.08431, (0 missing)
##
     Surrogate splits:
##
         406 < 59
                     to the left,
                                   agree=0.921, adj=0.536, (0 split)
##
         379 < 106.5 to the left,
                                   agree=0.907, adj=0.454, (0 split)
                     to the left,
##
         378 < 118
                                   agree=0.902, adj=0.423, (0 split)
                                   agree=0.870, adj=0.237, (0 split)
##
         405 < 39.5
                     to the left,
                                   agree=0.858, adj=0.165, (0 split)
##
         351 < 39.5 to the left,
##
## Node number 24: 2295 observations,
                                          complexity param=0.001384299
     predicted class=0 expected loss=0.1389978 P(node) =0.09105336
##
##
       class counts: 1976
                               1
                                    49
                                           75
                                                  2
                                                      121
                                                             47
                                                                   12
                                                                          6
6
##
      probabilities: 0.861 0.000 0.021 0.033 0.001 0.053 0.020 0.005 0.003
0.003
##
     left son=48 (2072 obs) right son=49 (223 obs)
##
     Primary splits:
         380 < 1.5
##
                     to the left,
                                   improve=136.9082, (0 missing)
##
         351 < 5.5
                     to the left,
                                   improve=120.5561, (0 missing)
##
         379 < 1.5
                     to the left,
                                   improve=111.7483, (0 missing)
##
         352 < 5.5
                     to the left,
                                   improve=107.7130, (0 missing)
##
         378 < 46.5 to the left,
                                   improve=106.0854, (0 missing)
##
     Surrogate splits:
##
         379 < 0.5
                     to the left,
                                   agree=0.959, adj=0.574, (0 split)
##
                                   agree=0.953, adj=0.511, (0 split)
         352 < 122.5 to the left,
                                   agree=0.953, adj=0.511, (0 split)
##
         381 < 181.5 to the left,
                                   agree=0.952, adj=0.507, (0 split)
##
         408 < 24.5 to the left,
##
         407 < 4
                     to the left,
                                   agree=0.949, adj=0.471, (0 split)
##
## Node number 25: 442 observations,
                                         complexity param=0.003483076
##
     predicted class=2 expected loss=0.5904977 P(node) =0.0175362
##
       class counts:
                        77
                               5
                                   181
                                           10
                                                  3
                                                       99
                                                             36
                                                                         24
3
##
      probabilities: 0.174 0.011 0.410 0.023 0.007 0.224 0.081 0.009 0.054
0.007
##
     left son=50 (218 obs) right son=51 (224 obs)
##
     Primary splits:
         347 < 2.5
##
                                   improve=82.75933, (0 missing)
                     to the left,
##
         319 < 2
                     to the left,
                                   improve=82.43492, (0 missing)
         320 < 1 to the left, improve=78.95617, (0 missing)
##
```

```
improve=77.95075, (0 missing)
##
         374 < 4.5
                     to the left,
##
         346 < 5.5
                     to the left,
                                    improve=73.21611, (0 missing)
##
     Surrogate splits:
         319 < 10.5
##
                     to the left,
                                   agree=0.930, adj=0.858, (0 split)
##
         320 < 14.5
                     to the left,
                                    agree=0.928, adj=0.853, (0 split)
##
         375 < 1
                     to the left,
                                    agree=0.912, adj=0.821, (0 split)
##
                     to the left,
                                    agree=0.907, adj=0.812, (0 split)
         348 < 1
##
         346 < 5.5
                     to the left,
                                   agree=0.882, adj=0.761, (0 split)
##
## Node number 26: 603 observations,
                                         complexity param=0.004733411
##
     predicted class=6 expected loss=0.7794362 P(node) =0.02392382
                                                                           5
##
       class counts:
                       108
                               1
                                     44
                                           11
                                                125
                                                       60
                                                            133
                                                                    26
90
##
      probabilities: 0.179 0.002 0.073 0.018 0.207 0.100 0.221 0.043 0.008
0.149
##
     left son=52 (309 obs) right son=53 (294 obs)
##
     Primary splits:
##
         572 < 5.5
                     to the right, improve=60.75282, (0 missing)
                     to the right, improve=60.30347, (0 missing)
##
         571 < 94.5
##
         600 < 21.5
                     to the right, improve=54.55946, (0 missing)
         99 < 1.5
                     to the left, improve=54.37963, (0 missing)
##
                     to the right, improve=50.66128, (0 missing)
##
         298 < 1.5
##
     Surrogate splits:
##
         571 < 0.5
                     to the right, agree=0.927, adj=0.850, (0 split)
##
         573 < 22
                     to the right, agree=0.894, adj=0.782, (0 split)
##
         543 < 148
                     to the right, agree=0.856, adj=0.704, (0 split)
                     to the right, agree=0.846, adj=0.684, (0 split)
##
         600 < 19
         601 < 13.5
                     to the right, agree=0.839, adj=0.670, (0 split)
##
##
## Node number 27: 954 observations,
                                         complexity param=0.00250067
##
     predicted class=7
                        expected loss=0.3480084 P(node) =0.03784963
##
       class counts:
                                      8
                        61
                               10
                                           34
                                                 36
                                                       88
                                                                           2
80
##
      probabilities: 0.064 0.010 0.008 0.036 0.038 0.092 0.014 0.652 0.002
0.084
##
     left son=54 (208 obs) right son=55 (746 obs)
##
     Primary splits:
##
         404 < 1
                     to the right, improve=127.8033, (0 missing)
##
         403 < 4
                     to the right, improve=126.7987, (0 missing)
         432 < 2
                     to the right, improve=117.4801, (0 missing)
##
##
         405 < 3
                     to the right, improve=115.9155, (0 missing)
         376 < 0.5
##
                     to the right, improve=106.3250, (0 missing)
##
     Surrogate splits:
         405 < 3
##
                     to the right, agree=0.954, adj=0.788, (0 split)
##
         403 < 45
                     to the right, agree=0.953, adj=0.784, (0 split)
##
         377 < 1.5
                     to the right, agree=0.939, adj=0.721, (0 split)
##
         376 < 5.5
                     to the right, agree=0.935, adj=0.702, (0 split)
                     to the right, agree=0.922, adj=0.644, (0 split)
##
         406 < 1
##
## Node number 28: 2838 observations, complexity param=0.02545325
```

```
##
     predicted class=2
                        expected loss=0.6169838 P(node) =0.1125967
##
       class counts:
                        41
                             102 1087
                                          28
                                                217
                                                      131
                                                             78
                                                                  249
                                                                        742
163
      probabilities: 0.014 0.036 0.383 0.010 0.076 0.046 0.027 0.088 0.261
##
0.057
##
     left son=56 (1644 obs) right son=57 (1194 obs)
##
     Primary splits:
         347 < 1.5
##
                     to the left,
                                   improve=389.0371, (0 missing)
                     to the right, improve=367.2948, (0 missing)
##
         127 < 1.5
                     to the right, improve=359.3462, (0 missing)
##
         126 < 0.5
##
         684 < 0.5
                     to the left,
                                   improve=345.3252, (0 missing)
         319 < 1.5
                                   improve=335.1514, (0 missing)
##
                     to the left,
##
     Surrogate splits:
##
         348 < 0.5
                     to the left,
                                   agree=0.898, adj=0.757, (0 split)
##
         319 < 10.5
                     to the left,
                                   agree=0.894, adj=0.748, (0 split)
                                   agree=0.893, adj=0.745, (0 split)
##
         346 < 7.5
                     to the left,
                                   agree=0.880, adj=0.714, (0 split)
##
         375 < 0.5
                     to the left,
##
         320 < 0.5
                     to the left,
                                   agree=0.857, adj=0.660, (0 split)
##
## Node number 29: 2388 observations,
                                         complexity param=0.01107439
     predicted class=6
                        expected loss=0.3605528 P(node) =0.09474311
##
##
       class counts:
                         8
                              29
                                   380
                                          12
                                                 54
                                                      104 1527
                                                                        206
33
##
      probabilities: 0.003 0.012 0.159 0.005 0.023 0.044 0.639 0.015 0.086
0.014
##
     left son=58 (447 obs) right son=59 (1941 obs)
##
     Primary splits:
##
         297 < 53.5 to the right, improve=306.1271, (0 missing)
##
         296 < 66.5 to the right, improve=303.9832, (0 missing)
         269 < 15.5 to the right, improve=285.7534, (0 missing)
##
                     to the right, improve=271.0391, (0 missing)
##
         324 < 96.5
##
         241 < 53.5 to the right, improve=215.7059, (0 missing)
##
     Surrogate splits:
##
         269 < 82
                     to the right, agree=0.953, adj=0.749, (0 split)
##
                     to the right, agree=0.951, adj=0.740, (0 split)
         296 < 61
         324 < 113.5 to the right, agree=0.948, adj=0.723, (0 split)
##
         325 < 141.5 to the right, agree=0.934, adj=0.647, (0 split)
##
##
                     to the right, agree=0.918, adj=0.562, (0 split)
         270 < 0.5
##
## Node number 30: 4489 observations,
                                         complexity param=0.04572653
##
     predicted class=4 expected loss=0.6437959 P(node) =0.1780996
##
       class counts:
                                   201
                                         259 1599
                                                      587
                                                            100
                                                                  132
                                                                        217
1379
##
      probabilities: 0.002 0.002 0.045 0.058 0.356 0.131 0.022 0.029 0.048
0.307
##
     left son=60 (1830 obs) right son=61 (2659 obs)
##
     Primary splits:
##
         211 < 31.5 to the left,
                                   improve=645.5260, (0 missing)
##
         210 < 4.5
                     to the left,
                                   improve=585.5882, (0 missing)
##
         238 < 5.5
                     to the left, improve=521.4250, (0 missing)
```

```
improve=517.7189, (0 missing)
##
         239 < 0.5
                     to the left.
##
         212 < 10.5
                     to the left,
                                   improve=496.3398, (0 missing)
##
     Surrogate splits:
##
         210 < 0.5
                     to the left,
                                   agree=0.892, adj=0.734, (0 split)
##
         212 < 10.5 to the left,
                                   agree=0.887, adj=0.723, (0 split)
##
         239 < 0.5
                     to the left,
                                   agree=0.871, adj=0.683, (0 split)
##
         238 < 1.5
                     to the left,
                                   agree=0.841, adj=0.609, (0 split)
                                   agree=0.798, adj=0.505, (0 split)
##
         240 < 0.5
                     to the left,
##
## Node number 31: 2128 observations,
                                          complexity param=0.00611771
##
     predicted class=7
                        expected loss=0.3740602 P(node) =0.08442769
##
       class counts:
                         8
                              66
                                    72
                                          69
                                                169
                                                      119
                                                             37 1332
                                                                         36
220
      probabilities: 0.004 0.031 0.034 0.032 0.079 0.056 0.017 0.626 0.017
##
0.103
##
     left son=62 (1766 obs) right son=63 (362 obs)
##
     Primary splits:
##
         487 < 75.5 to the left,
                                   improve=227.9958, (0 missing)
##
         486 < 63.5 to the left,
                                   improve=223.1893, (0 missing)
##
         458 < 47.5 to the left,
                                   improve=211.7383, (0 missing)
         488 < 105.5 to the right, improve=209.6276, (0 missing)
##
##
         459 < 1
                     to the left,
                                   improve=205.0181, (0 missing)
##
     Surrogate splits:
##
         486 < 40
                     to the left,
                                   agree=0.992, adj=0.950, (0 split)
                                   agree=0.981, adj=0.887, (0 split)
##
         459 < 1
                     to the left,
                                   agree=0.971, adj=0.831, (0 split)
##
         488 < 162
                     to the left,
                                   agree=0.971, adj=0.829, (0 split)
##
         458 < 26.5
                     to the left,
                                   agree=0.961, adj=0.771, (0 split)
##
         485 < 0.5
                     to the left,
##
## Node number 32: 2456 observations,
                                         complexity param=0.001384299
##
     predicted class=1 expected loss=0.0769544 P(node) =0.09744098
##
       class counts:
                            2267
                                    31
                                                       24
                                                                         90
                         0
                                           12
                                                 10
6
      probabilities: 0.000 0.923 0.013 0.005 0.004 0.010 0.003 0.003 0.037
##
0.002
##
     left son=64 (2312 obs) right son=65 (144 obs)
##
     Primary splits:
##
         300 < 21.5 to the left,
                                   improve=78.16071, (0 missing)
##
         355 < 32.5 to the left,
                                   improve=76.54136, (0 missing)
         484 < 5.5
                     to the left,
                                   improve=75.24698, (0 missing)
##
##
         301 < 2.5
                     to the left,
                                   improve=74.91437, (0 missing)
##
         511 < 6.5
                     to the left,
                                   improve=72.98386, (0 missing)
##
     Surrogate splits:
         327 < 81
##
                     to the left,
                                   agree=0.982, adj=0.694, (0 split)
         299 < 192
                                   agree=0.981, adj=0.681, (0 split)
##
                     to the left,
##
         272 < 98.5
                     to the left,
                                   agree=0.980, adj=0.667, (0 split)
##
         273 < 1
                     to the left,
                                   agree=0.979, adj=0.639, (0 split)
##
                     to the left,
                                   agree=0.975, adj=0.569, (0 split)
         301 < 5.5
##
## Node number 33: 151 observations, complexity param=0.0005805126
```

```
expected loss=0.3907285 P(node) =0.005990875
##
     predicted class=2
##
       class counts:
                               12
                         1
                                     92
                                            8
                                                  4
                                                        0
                                                             22
                                                                     1
                                                                          10
1
      probabilities: 0.007 0.079 0.609 0.053 0.026 0.000 0.146 0.007 0.066
##
0.007
##
     left son=66 (108 obs) right son=67 (43 obs)
##
     Primary splits:
                     to the right, improve=18.06109, (0 missing)
##
         152 < 12
                     to the right, improve=17.30327, (0 missing)
##
         153 < 10.5
                     to the right, improve=17.30274, (0 missing)
##
         154 < 12.5
##
         125 < 20.5
                     to the right, improve=17.24011, (0 missing)
         386 < 43
                     to the left, improve=16.81243, (0 missing)
##
##
     Surrogate splits:
##
         153 < 20
                     to the right, agree=0.954, adj=0.837, (0 split)
##
         154 < 12.5
                     to the right, agree=0.914, adj=0.698, (0 split)
##
         180 < 5
                     to the right, agree=0.894, adj=0.628, (0 split)
##
         125 < 6
                     to the right, agree=0.881, adj=0.581, (0 split)
##
                     to the right, agree=0.881, adj=0.581, (0 split)
         151 < 5
##
## Node number 34: 564 observations,
                                         complexity param=0.002277396
     predicted class=8
                        expected loss=0.7996454 P(node) =0.02237651
##
##
       class counts:
                        16
                             109
                                     33
                                           33
                                                 61
                                                       66
                                                             58
                                                                    15
                                                                         113
60
##
      probabilities: 0.028 0.193 0.059 0.059 0.108 0.117 0.103 0.027 0.200
0.106
##
     left son=68 (286 obs) right son=69 (278 obs)
##
     Primary splits:
         657 < 1.5
##
                     to the left,
                                    improve=30.51536, (0 missing)
##
         374 < 37.5 to the left,
                                    improve=28.44060, (0 missing)
##
         294 < 190
                     to the right, improve=27.20103, (0 missing)
         322 < 245.5 to the right, improve=26.74014, (0 missing)
##
##
         658 < 0.5
                     to the left,
                                   improve=26.27535, (0 missing)
##
     Surrogate splits:
##
         658 < 0.5
                     to the left,
                                   agree=0.888, adj=0.773, (0 split)
##
                                   agree=0.872, adj=0.741, (0 split)
         629 < 108.5 to the left,
##
         656 < 10.5 to the left,
                                   agree=0.860, adj=0.716, (0 split)
                                    agree=0.826, adj=0.647, (0 split)
##
         630 < 4
                     to the left,
##
         685 < 1
                     to the left,
                                   agree=0.766, adj=0.525, (0 split)
##
## Node number 35: 79 observations
##
     predicted class=6 expected loss=0.1139241 P(node) =0.003134299
##
       class counts:
                         1
                                1
                                      1
                                            3
                                                  1
                                                        1
                                                             70
                                                                           1
0
      probabilities: 0.013 0.013 0.013 0.038 0.013 0.013 0.886 0.000 0.013
##
0.000
##
## Node number 36: 228 observations,
                                         complexity param=0.0004242208
     predicted class=2 expected loss=0.4122807 P(node) =0.009045824
##
       class counts:
                         0
                               17
                                    134
                                           15
                                                  1
                                                        1
                                                              9
                                                                    21
                                                                          20
10
```

```
probabilities: 0.000 0.075 0.588 0.066 0.004 0.004 0.039 0.092 0.088
##
0.044
##
     left son=72 (142 obs) right son=73 (86 obs)
     Primary splits:
##
##
         541 < 1.5
                     to the right, improve=29.54094, (0 missing)
         514 < 218.5 to the right, improve=27.51901, (0 missing)
##
##
                     to the right, improve=26.83889, (0 missing)
         515 < 26
         513 < 61.5 to the right, improve=25.40063, (0 missing)
##
##
                     to the right, improve=24.69672, (0 missing)
         542 < 4.5
##
     Surrogate splits:
##
         513 < 8
                     to the right, agree=0.925, adj=0.802, (0 split)
         542 < 115.5 to the right, agree=0.925, adj=0.802, (0 split)
##
##
                     to the right, agree=0.904, adj=0.744, (0 split)
         540 < 0.5
##
         514 < 165.5 to the right, agree=0.895, adj=0.721, (0 split)
##
                     to the right, agree=0.882, adj=0.686, (0 split)
         569 < 3
##
## Node number 37: 206 observations,
                                         complexity param=0.001696883
##
     predicted class=6 expected loss=0.4902913 P(node) =0.008172982
##
       class counts:
                         5
                               2
                                     9
                                            0
                                                 12
                                                        5
                                                            105
                                                                         17
44
##
      probabilities: 0.024 0.010 0.044 0.000 0.058 0.024 0.510 0.034 0.083
0.214
##
     left son=74 (144 obs) right son=75 (62 obs)
##
     Primary splits:
##
         575 < 51.5 to the right, improve=38.30019, (0 missing)
                     to the right, improve=34.00853, (0 missing)
##
         576 < 149
##
                     to the right, improve=33.23562, (0 missing)
         574 < 201
         603 < 94.5
                     to the right, improve=33.02369, (0 missing)
##
##
         602 < 58
                     to the right, improve=32.25226, (0 missing)
##
     Surrogate splits:
         574 < 201
##
                     to the right, agree=0.913, adj=0.710, (0 split)
##
         603 < 2.5
                     to the right, agree=0.898, adj=0.661, (0 split)
                     to the right, agree=0.888, adj=0.629, (0 split)
##
         576 < 1
                     to the right, agree=0.879, adj=0.597, (0 split)
##
         602 < 33.5
##
                     to the right, agree=0.864, adj=0.548, (0 split)
         547 < 74.5
##
## Node number 38: 218 observations,
                                         complexity param=0.001094043
     predicted class=3
                        expected loss=0.706422 P(node) =0.008649078
##
       class counts:
##
                         1
                               9
                                    34
                                           64
                                                  5
                                                        1
                                                              3
                                                                   44
                                                                         50
7
##
      probabilities: 0.005 0.041 0.156 0.294 0.023 0.005 0.014 0.202 0.229
0.032
##
     left son=76 (162 obs) right son=77 (56 obs)
##
     Primary splits:
         344 < 24
##
                                   improve=24.57021, (0 missing)
                     to the left,
##
         345 < 8
                     to the left,
                                   improve=23.04704, (0 missing)
##
         373 < 85.5
                     to the left,
                                   improve=23.00540, (0 missing)
##
                                   improve=21.22790, (0 missing)
         544 < 57.5
                     to the left,
##
         543 < 138
                     to the left,
                                   improve=20.97228, (0 missing)
##
     Surrogate splits:
```

```
to the left,
                                    agree=0.954, adj=0.821, (0 split)
##
         345 < 8
##
         316 < 36.5
                     to the left,
                                    agree=0.950, adj=0.804, (0 split)
                                    agree=0.945, adj=0.786, (0 split)
##
         372 < 0.5
                     to the left,
         317 < 52.5
                     to the left,
                                    agree=0.936, adj=0.750, (0 split)
##
##
         373 < 85.5 to the left,
                                    agree=0.936, adj=0.750, (0 split)
##
## Node number 39: 498 observations,
                                         complexity param=0.000379566
##
     predicted class=8
                        expected loss=0.251004
                                                 P(node) =0.01975798
##
       class counts:
                         4
                               14
                                      3
                                           24
                                                 18
                                                                         373
30
##
      probabilities: 0.008 0.028 0.006 0.048 0.036 0.014 0.004 0.046 0.749
0.060
##
     left son=78 (124 obs) right son=79 (374 obs)
##
     Primary splits:
##
         543 < 9.5
                     to the left,
                                    improve=31.25450, (0 missing)
##
         515 < 13
                     to the left,
                                    improve=29.28271, (0 missing)
         518 < 248.5 to the right, improve=27.08767, (0 missing)
##
##
         155 < 4.5
                     to the left,
                                    improve=27.00839, (0 missing)
##
         516 < 46.5 to the left,
                                    improve=25.72759, (0 missing)
##
     Surrogate splits:
##
         515 < 13
                                    agree=0.918, adj=0.669, (0 split)
                     to the left,
##
         571 < 6
                     to the left,
                                    agree=0.892, adj=0.565, (0 split)
##
         516 < 45.5
                     to the left,
                                    agree=0.853, adj=0.411, (0 split)
##
         488 < 88.5
                     to the left,
                                    agree=0.851, adj=0.403, (0 split)
                                    agree=0.833, adj=0.331, (0 split)
##
         487 < 1
                     to the left,
##
## Node number 40: 1626 observations,
                                          complexity param=0.002009467
##
     predicted class=3
                        expected loss=0.1439114 P(node) =0.06451101
##
       class counts:
                         3
                              41
                                     13 1392
                                                  5
                                                      105
                                                              2
                                                                     7
                                                                          31
27
      probabilities: 0.002 0.025 0.008 0.856 0.003 0.065 0.001 0.004 0.019
##
0.017
##
     left son=80 (1502 obs) right son=81 (124 obs)
##
     Primary splits:
##
         315 < 84.5 to the left,
                                    improve=101.33530, (0 missing)
##
         316 < 163.5 to the left,
                                    improve= 93.73302, (0 missing)
                                    improve= 87.80485, (0 missing)
##
         288 < 120
                     to the left,
##
         343 < 129
                     to the left,
                                    improve= 83.76342, (0 missing)
##
         296 < 2.5
                     to the right, improve= 75.56257, (0 missing)
     Surrogate splits:
##
##
         343 < 129
                     to the left,
                                    agree=0.972, adj=0.637, (0 split)
                                    agree=0.972, adj=0.629, (0 split)
##
         316 < 72.5 to the left,
##
         287 < 151.5 to the left,
                                    agree=0.971, adj=0.621, (0 split)
                                    agree=0.967, adj=0.573, (0 split)
##
                     to the left,
         314 < 3.5
                                    agree=0.964, adj=0.532, (0 split)
##
         342 < 31.5 to the left,
##
## Node number 41: 692 observations,
                                         complexity param=0.002009467
     predicted class=3
                        expected loss=0.6228324 P(node) =0.02745487
##
##
       class counts:
                        31
                              91
                                      6
                                          261
                                                 31
                                                      172
                                                             17
                                                                    23
                                                                          22
38
```

```
probabilities: 0.045 0.132 0.009 0.377 0.045 0.249 0.025 0.033 0.032
##
0.055
##
     left son=82 (417 obs) right son=83 (275 obs)
     Primary splits:
##
##
         626 < 19.5 to the right, improve=58.69160, (0 missing)
                     to the right, improve=57.79988, (0 missing)
##
         627 < 36.5
##
         628 < 23
                     to the left, improve=56.53345, (0 missing)
                     to the right, improve=56.23608, (0 missing)
         625 < 1.5
##
##
         490 < 127.5 to the right, improve=53.88951, (0 missing)
##
     Surrogate splits:
##
         627 < 13.5 to the right, agree=0.952, adj=0.880, (0 split)
         625 < 1.5
                     to the right, agree=0.945, adj=0.862, (0 split)
##
##
         628 < 3
                     to the right, agree=0.910, adj=0.775, (0 split)
##
         624 < 0.5
                     to the right, agree=0.871, adj=0.676, (0 split)
##
                     to the right, agree=0.835, adj=0.585, (0 split)
         598 < 1
##
## Node number 42: 836 observations,
                                        complexity param=0.003393766
##
     predicted class=5
                        expected loss=0.430622 P(node) =0.03316802
##
       class counts:
                        59
                               1
                                     1
                                          198
                                                  1
                                                      476
                                                                         49
37
##
      probabilities: 0.071 0.001 0.001 0.237 0.001 0.569 0.011 0.006 0.059
0.044
##
     left son=84 (324 obs) right son=85 (512 obs)
##
     Primary splits:
##
         297 < 29.5 to the right, improve=94.16206, (0 missing)
                     to the right, improve=89.46983, (0 missing)
##
         298 < 0.5
##
         296 < 54.5 to the right, improve=89.39417, (0 missing)
         269 < 0.5
                     to the right, improve=76.41152, (0 missing)
##
##
         270 < 9.5
                     to the right, improve=73.21487, (0 missing)
##
     Surrogate splits:
##
         298 < 0.5
                     to the right, agree=0.916, adj=0.784, (0 split)
##
         296 < 111.5 to the right, agree=0.879, adj=0.688, (0 split)
                     to the right, agree=0.854, adj=0.623, (0 split)
##
         270 < 85
         269 < 191.5 to the right, agree=0.848, adj=0.608, (0 split)
##
##
                     to the right, agree=0.842, adj=0.593, (0 split)
         325 < 210
##
## Node number 43: 521 observations,
                                        complexity param=0.002389033
     predicted class=9
                        expected loss=0.5316699 P(node) =0.0206705
##
       class counts:
##
                         8
                               5
                                     2
                                          37
                                                 76
                                                       57
                                                                   74
                                                                         11
                                                              7
244
##
      probabilities: 0.015 0.010 0.004 0.071 0.146 0.109 0.013 0.142 0.021
0.468
##
     left son=86 (164 obs) right son=87 (357 obs)
##
     Primary splits:
##
         210 < 1
                                   improve=63.94359, (0 missing)
                     to the left,
##
         211 < 1.5
                     to the left,
                                   improve=56.21769, (0 missing)
##
         209 < 18.5
                     to the left,
                                   improve=53.53197, (0 missing)
##
                     to the right, improve=45.42103, (0 missing)
         321 < 234
##
         238 < 9.5
                     to the left,
                                   improve=42.78869, (0 missing)
##
     Surrogate splits:
```

```
to the left,
                                   agree=0.933, adj=0.787, (0 split)
##
         211 < 1.5
##
         209 < 18.5
                     to the left,
                                    agree=0.925, adj=0.762, (0 split)
                                    agree=0.850, adj=0.524, (0 split)
##
         238 < 1
                     to the left,
                     to the left,
                                    agree=0.839, adj=0.488, (0 split)
##
         237 < 1
##
         212 < 1
                     to the left,
                                    agree=0.829, adj=0.457, (0 split)
##
## Node number 44: 173 observations,
                                         complexity param=0.0004465482
##
     predicted class=2 expected loss=0.6011561 P(node) =0.006863718
##
       class counts:
                                     69
                         9
                               15
                                            8
                                                                          23
19
##
      probabilities: 0.052 0.087 0.399 0.046 0.052 0.040 0.081 0.000 0.133
0.110
##
     left son=88 (73 obs) right son=89 (100 obs)
##
     Primary splits:
##
         126 < 10
                     to the right, improve=21.98748, (0 missing)
##
         154 < 11.5
                     to the right, improve=21.90812, (0 missing)
                     to the right, improve=21.04590, (0 missing)
##
         156 < 5.5
##
         155 < 59.5
                     to the right, improve=20.71615, (0 missing)
                     to the right, improve=20.26070, (0 missing)
##
         573 < 94.5
##
     Surrogate splits:
##
         125 < 5.5
                     to the right, agree=0.942, adj=0.863, (0 split)
##
         127 < 6.5
                     to the right, agree=0.936, adj=0.849, (0 split)
##
                     to the right, agree=0.908, adj=0.781, (0 split)
         153 < 24
##
         154 < 129.5 to the right, agree=0.908, adj=0.781, (0 split)
                     to the right, agree=0.896, adj=0.753, (0 split)
##
##
## Node number 45: 250 observations,
                                         complexity param=0.0003349111
##
     predicted class=6
                        expected loss=0.316 P(node) =0.009918667
##
       class counts:
                         4
                                5
                                     29
                                                  5
                                                       16
                                            7
                                                            171
                                                                     0
                                                                           6
7
##
      probabilities: 0.016 0.020 0.116 0.028 0.020 0.064 0.684 0.000 0.024
0.028
##
     left son=90 (41 obs) right son=91 (209 obs)
     Primary splits:
##
##
         601 < 36.5
                     to the left,
                                    improve=19.64868, (0 missing)
##
         295 < 174
                     to the right, improve=19.07010, (0 missing)
         380 < 25
                                    improve=17.06546, (0 missing)
##
                     to the left,
##
         381 < 1
                     to the left,
                                    improve=16.91467, (0 missing)
##
         600 < 2.5
                     to the left,
                                   improve=16.78673, (0 missing)
     Surrogate splits:
##
##
         600 < 2.5
                     to the left,
                                   agree=0.980, adj=0.878, (0 split)
         602 < 0.5
                                   agree=0.956, adj=0.732, (0 split)
##
                     to the left,
                                    agree=0.944, adj=0.659, (0 split)
##
         599 < 2
                     to the left,
##
         573 < 1.5
                     to the left,
                                    agree=0.920, adj=0.512, (0 split)
                                    agree=0.916, adj=0.488, (0 split)
##
         572 < 1.5
                     to the left,
##
## Node number 46: 97 observations,
                                        complexity param=0.0005805126
     predicted class=0 expected loss=0.5463918 P(node) =0.003848443
##
##
       class counts:
                        44
                                0
                                      8
                                            6
                                                  0
                                                       15
                                                              3
                                                                     0
                                                                          21
0
```

```
probabilities: 0.454 0.000 0.082 0.062 0.000 0.155 0.031 0.000 0.216
##
0.000
##
     left son=92 (41 obs) right son=93 (56 obs)
     Primary splits:
##
                     to the right, improve=18.37385, (0 missing)
##
         329 < 11
         328 < 120.5 to the right, improve=18.09793, (0 missing)
##
         301 < 18.5 to the right, improve=17.28437, (0 missing)
##
                     to the right, improve=17.01085, (0 missing)
##
         300 < 67
##
         266 < 240.5 to the right, improve=16.89891, (0 missing)
##
     Surrogate splits:
##
         301 < 26
                     to the right, agree=0.938, adj=0.854, (0 split)
##
                     to the right, agree=0.938, adj=0.854, (0 split)
         357 < 8.5
##
         300 < 67
                     to the right, agree=0.928, adj=0.829, (0 split)
##
         328 < 85.5 to the right, agree=0.928, adj=0.829, (0 split)
##
         356 < 232.5 to the right, agree=0.887, adj=0.732, (0 split)
##
## Node number 47: 473 observations,
                                        complexity param=0.0004688756
##
     predicted class=8 expected loss=0.2325581 P(node) =0.01876612
##
       class counts:
                         8
                                    20
                                          45
                                                       15
                                                             12
                                                                        363
9
##
      probabilities: 0.017 0.000 0.042 0.095 0.000 0.032 0.025 0.002 0.767
0.019
##
     left son=94 (43 obs) right son=95 (430 obs)
##
     Primary splits:
##
         514 < 1
                     to the left, improve=18.95645, (0 missing)
         439 < 250.5 to the right, improve=18.87687, (0 missing)
##
##
                     to the right, improve=17.81530, (0 missing)
         440 < 60
         541 < 1
                     to the left, improve=16.73971, (0 missing)
##
##
         401 < 230.5 to the right, improve=15.72282, (0 missing)
##
     Surrogate splits:
         712 < 169
##
                     to the right, agree=0.918, adj=0.093, (0 split)
##
         507 < 32
                     to the right, agree=0.915, adj=0.070, (0 split)
                     to the right, agree=0.915, adj=0.070, (0 split)
##
         509 < 28
                     to the right, agree=0.915, adj=0.070, (0 split)
##
         537 < 118.5 to the right, agree=0.915, adj=0.070, (0 split)
##
##
## Node number 48: 2072 observations,
                                         complexity param=0.0004242208
##
     predicted class=0 expected loss=0.06853282 P(node) =0.08220591
##
       class counts: 1930
                               0
                                    32
                                          31
                                                  1
                                                       44
                                                             21
                                                                   10
                                                                          1
2
##
      probabilities: 0.931 0.000 0.015 0.015 0.000 0.021 0.010 0.005 0.000
0.001
##
     left son=96 (1973 obs) right son=97 (99 obs)
##
     Primary splits:
##
         324 < 172
                     to the left, improve=34.63603, (0 missing)
                     to the right, improve=31.48402, (0 missing)
##
         455 < 1
##
         323 < 147.5 to the left, improve=31.37636, (0 missing)
##
                     to the right, improve=30.52109, (0 missing)
         427 < 0.5
##
         428 < 0.5
                     to the right, improve=28.05817, (0 missing)
##
     Surrogate splits:
```

```
352 < 15.5 to the left,
                                   agree=0.977, adj=0.525, (0 split)
##
##
         323 < 216.5 to the left,
                                    agree=0.971, adj=0.394, (0 split)
                                    agree=0.967, adj=0.303, (0 split)
##
         325 < 241
                     to the left,
                                    agree=0.965, adj=0.273, (0 split)
##
         351 < 10
                     to the left,
##
         353 < 218.5 to the left,
                                    agree=0.959, adj=0.152, (0 split)
##
## Node number 49: 223 observations,
                                         complexity param=0.001250335
##
     predicted class=5
                        expected loss=0.6547085 P(node) =0.008847451
##
       class counts:
                        46
                                     17
                                           44
                                                                           5
4
##
      probabilities: 0.206 0.004 0.076 0.197 0.004 0.345 0.117 0.009 0.022
0.018
##
     left son=98 (84 obs) right son=99 (139 obs)
##
     Primary splits:
##
         484 < 42
                     to the right, improve=22.09355, (0 missing)
##
         485 < 63
                     to the right, improve=21.30952, (0 missing)
         513 < 105.5 to the right, improve=20.88248, (0 missing)
##
##
                     to the right, improve=20.27173, (0 missing)
         298 < 127
         456 < 13.5 to the right, improve=19.78078, (0 missing)
##
##
     Surrogate splits:
##
         456 < 7.5
                     to the right, agree=0.928, adj=0.810, (0 split)
                     to the right, agree=0.892, adj=0.714, (0 split)
##
         512 < 35
##
         457 < 29.5 to the right, agree=0.843, adj=0.583, (0 split)
##
         485 < 33.5 to the right, agree=0.839, adj=0.571, (0 split)
         513 < 105.5 to the right, agree=0.834, adj=0.560, (0 split)
##
##
## Node number 50: 218 observations,
                                        complexity param=0.0003125837
##
     predicted class=2
                        expected loss=0.2201835 P(node) =0.008649078
##
       class counts:
                         7
                               5
                                    170
                                                       10
                                                                    3
                                            6
                                                  2
                                                              7
                                                                          6
2
      probabilities: 0.032 0.023 0.780 0.028 0.009 0.046 0.032 0.014 0.028
##
0.009
##
     left son=100 (192 obs) right son=101 (26 obs)
     Primary splits:
##
##
         344 < 154.5 to the left,
                                    improve=21.28125, (0 missing)
##
                     to the left,
                                    improve=20.41915, (0 missing)
         372 < 32
         345 < 33.5
                                    improve=19.99551, (0 missing)
##
                     to the left,
##
         371 < 16
                     to the left,
                                    improve=19.79440, (0 missing)
##
         465 < 5
                     to the right, improve=18.42076, (0 missing)
     Surrogate splits:
##
                     to the left,
##
         372 < 32
                                    agree=0.982, adj=0.846, (0 split)
                                    agree=0.972, adj=0.769, (0 split)
##
         371 < 3
                     to the left,
##
         317 < 167.5 to the left,
                                    agree=0.968, adj=0.731, (0 split)
                                    agree=0.968, adj=0.731, (0 split)
##
         345 < 33.5 to the left,
                                    agree=0.959, adj=0.654, (0 split)
##
         316 < 93.5 to the left,
##
## Node number 51: 224 observations,
                                         complexity param=0.002857908
     predicted class=5
                        expected loss=0.6026786 P(node) =0.008887126
##
##
       class counts:
                        70
                               0
                                     11
                                            4
                                                  1
                                                       89
                                                             29
                                                                    1
                                                                         18
1
```

```
probabilities: 0.312 0.000 0.049 0.018 0.004 0.397 0.129 0.004 0.080
##
0.004
##
     left son=102 (73 obs) right son=103 (151 obs)
     Primary splits:
##
##
         386 < 3.5
                     to the right, improve=52.64302, (0 missing)
##
         358 < 6.5
                     to the right, improve=52.12740, (0 missing)
##
         413 < 36
                     to the right, improve=51.92639, (0 missing)
         357 < 26.5
                     to the right, improve=51.87439, (0 missing)
##
##
                     to the right, improve=51.27013, (0 missing)
         385 < 43
##
     Surrogate splits:
##
         358 < 13.5
                     to the right, agree=0.973, adj=0.918, (0 split)
         385 < 108
                     to the right, agree=0.964, adj=0.890, (0 split)
##
##
         413 < 36
                     to the right, agree=0.960, adj=0.877, (0 split)
##
         414 < 6.5
                     to the right, agree=0.960, adj=0.877, (0 split)
##
         441 < 19.5 to the right, agree=0.942, adj=0.822, (0 split)
##
## Node number 52: 309 observations,
                                         complexity param=0.00379566
##
     predicted class=6
                        expected loss=0.6019417 P(node) =0.01225947
##
       class counts:
                        99
                                1
                                     30
                                            6
                                                       19
                                                            123
                                                                           3
16
##
      probabilities: 0.320 0.003 0.097 0.019 0.029 0.061 0.398 0.010 0.010
0.052
     left son=104 (151 obs) right son=105 (158 obs)
##
##
     Primary splits:
##
         241 < 12
                     to the right, improve=62.80933, (0 missing)
                     to the right, improve=62.15147, (0 missing)
         270 < 2
##
                     to the right, improve=59.06631, (0 missing)
##
         242 < 2
         269 < 1
                     to the right, improve=56.39711, (0 missing)
##
##
         298 < 1.5
                     to the right, improve=55.86574, (0 missing)
##
     Surrogate splits:
         269 < 1
##
                     to the right, agree=0.942, adj=0.881, (0 split)
##
         242 < 2
                     to the right, agree=0.926, adj=0.848, (0 split)
                     to the right, agree=0.922, adj=0.841, (0 split)
##
         270 < 2
         240 < 0.5
##
                     to the right, agree=0.890, adj=0.775, (0 split)
##
         298 < 1.5
                     to the right, agree=0.887, adj=0.768, (0 split)
##
## Node number 53: 294 observations,
                                         complexity param=0.002009467
     predicted class=4
                        expected loss=0.6054422 P(node) =0.01166435
##
##
       class counts:
                         9
                               0
                                     14
                                            5
                                                116
                                                       41
                                                             10
                                                                    23
                                                                           2
74
##
      probabilities: 0.031 0.000 0.048 0.017 0.395 0.139 0.034 0.078 0.007
0.252
##
     left son=106 (119 obs) right son=107 (175 obs)
##
     Primary splits:
##
         211 < 8
                                    improve=40.32227, (0 missing)
                     to the left,
##
         210 < 9
                     to the left,
                                    improve=40.02085, (0 missing)
##
         238 < 1
                     to the left,
                                    improve=34.44240, (0 missing)
##
                     to the left,
                                   improve=31.73947, (0 missing)
         239 < 0.5
##
         465 < 34
                     to the left,
                                    improve=31.34210, (0 missing)
##
     Surrogate splits:
```

```
210 < 6.5
                     to the left,
                                   agree=0.895, adj=0.739, (0 split)
##
##
         212 < 0.5
                     to the left,
                                    agree=0.881, adj=0.706, (0 split)
                                    agree=0.874, adj=0.689, (0 split)
##
         239 < 0.5
                     to the left,
         238 < 4
                     to the left,
                                    agree=0.850, adj=0.630, (0 split)
##
##
         240 < 1
                     to the left,
                                    agree=0.844, adj=0.613, (0 split)
##
## Node number 54: 208 observations,
                                         complexity param=0.002366705
##
     predicted class=9
                        expected loss=0.6875 P(node) =0.008252331
##
       class counts:
                         4
                               7
                                      3
                                           25
                                                 22
                                                                           2
65
      probabilities: 0.019 0.034 0.014 0.120 0.106 0.298 0.043 0.043 0.010
##
0.312
##
     left son=108 (106 obs) right son=109 (102 obs)
##
     Primary splits:
##
         354 < 26
                     to the left,
                                    improve=31.37672, (0 missing)
##
         353 < 22.5
                     to the left,
                                    improve=28.44115, (0 missing)
                                    improve=24.04168, (0 missing)
##
         355 < 2
                     to the left,
                     to the left,
##
         465 < 80
                                    improve=23.43269, (0 missing)
         382 < 35.5
##
                     to the left,
                                    improve=21.14973, (0 missing)
##
     Surrogate splits:
##
         353 < 22.5
                                   agree=0.909, adj=0.814, (0 split)
                     to the left,
                                    agree=0.875, adj=0.745, (0 split)
##
         355 < 2
                     to the left,
##
         326 < 2
                     to the left,
                                    agree=0.870, adj=0.735, (0 split)
##
         382 < 146
                     to the left,
                                    agree=0.856, adj=0.706, (0 split)
                                    agree=0.817, adj=0.627, (0 split)
##
         465 < 80
                     to the left,
##
## Node number 55: 746 observations,
                                         complexity param=0.002009467
                        expected loss=0.1782842 P(node) =0.0295973
##
     predicted class=7
##
       class counts:
                        57
                                3
                                      5
                                            9
                                                 14
                                                       26
                                                                  613
                                                                           0
15
##
      probabilities: 0.076 0.004 0.007 0.012 0.019 0.035 0.005 0.822 0.000
0.020
##
     left son=110 (68 obs) right son=111 (678 obs)
##
     Primary splits:
##
         538 < 1
                     to the right, improve=75.36373, (0 missing)
##
         510 < 10.5
                    to the right, improve=71.88152, (0 missing)
                     to the right, improve=68.65317, (0 missing)
##
         539 < 2
##
         623 < 3
                     to the right, improve=67.04377, (0 missing)
                     to the right, improve=66.62073, (0 missing)
##
         566 < 7
     Surrogate splits:
##
##
         510 < 121.5 to the right, agree=0.981, adj=0.794, (0 split)
##
         566 < 1.5
                     to the right, agree=0.976, adj=0.735, (0 split)
##
         567 < 1
                     to the right, agree=0.971, adj=0.676, (0 split)
                     to the right, agree=0.968, adj=0.647, (0 split)
##
         539 < 56
                     to the right, agree=0.962, adj=0.588, (0 split)
##
         537 < 2
##
## Node number 56: 1644 observations,
                                          complexity param=0.003304457
     predicted class=2 expected loss=0.386253 P(node) =0.06522515
##
##
       class counts:
                         5
                             102 1009
                                           23
                                                 65
                                                       12
                                                             50
                                                                  193
                                                                          94
91
```

```
probabilities: 0.003 0.062 0.614 0.014 0.040 0.007 0.030 0.117 0.057
##
0.055
##
     left son=112 (1021 obs) right son=113 (623 obs)
     Primary splits:
##
##
         155 < 1
                     to the right, improve=246.8804, (0 missing)
                     to the right, improve=246.5524, (0 missing)
##
         156 < 0.5
                     to the right, improve=235.2572, (0 missing)
##
         154 < 0.5
         127 < 1.5
                     to the right, improve=212.1310, (0 missing)
##
                     to the right, improve=208.6518, (0 missing)
##
         157 < 2.5
##
     Surrogate splits:
##
         156 < 0.5
                     to the right, agree=0.969, adj=0.918, (0 split)
         154 < 0.5
                     to the right, agree=0.956, adj=0.884, (0 split)
##
##
         157 < 2.5
                     to the right, agree=0.917, adj=0.782, (0 split)
##
         153 < 0.5
                     to the right, agree=0.901, adj=0.738, (0 split)
##
                     to the right, agree=0.826, adj=0.541, (0 split)
         152 < 1
##
## Node number 57: 1194 observations,
                                          complexity param=0.00379566
##
     predicted class=8
                        expected loss=0.4572864 P(node) =0.04737155
##
       class counts:
                        36
                               0
                                     78
                                            5
                                                152
                                                      119
                                                             28
                                                                    56
                                                                         648
72
##
      probabilities: 0.030 0.000 0.065 0.004 0.127 0.100 0.023 0.047 0.543
0.060
##
     left son=114 (485 obs) right son=115 (709 obs)
##
     Primary splits:
##
         657 < 15
                     to the left,
                                    improve=192.8540, (0 missing)
                                    improve=182.8277, (0 missing)
##
         656 < 22.5 to the left,
##
                                    improve=168.9296, (0 missing)
         658 < 3.5
                     to the left,
         655 < 20
                                    improve=143.8821, (0 missing)
##
                     to the left,
##
         684 < 0.5
                     to the left,
                                    improve=142.4054, (0 missing)
##
     Surrogate splits:
         658 < 0.5
##
                     to the left,
                                    agree=0.934, adj=0.837, (0 split)
                                    agree=0.931, adj=0.831, (0 split)
##
         656 < 59
                     to the left,
                                    agree=0.879, adj=0.703, (0 split)
##
         630 < 7.5
                     to the left,
##
         629 < 4
                     to the left,
                                    agree=0.848, adj=0.627, (0 split)
##
         631 < 0.5
                                    agree=0.843, adj=0.612, (0 split)
                     to the left,
##
## Node number 58: 447 observations,
                                         complexity param=0.0009377512
     predicted class=2
                        expected loss=0.3959732 P(node) =0.01773458
##
##
       class counts:
                         5
                               26
                                    270
                                            4
                                                 34
                                                        1
                                                             22
                                                                    31
                                                                          37
17
##
      probabilities: 0.011 0.058 0.604 0.009 0.076 0.002 0.049 0.069 0.083
0.038
##
     left son=116 (344 obs) right son=117 (103 obs)
##
     Primary splits:
##
         346 < 7.5
                                    improve=47.61144, (0 missing)
                     to the left,
##
         347 < 0.5
                     to the left,
                                    improve=43.59109, (0 missing)
##
         348 < 2
                     to the left,
                                    improve=38.53257, (0 missing)
##
                     to the right, improve=38.15032, (0 missing)
         124 < 3
##
         345 < 5.5
                     to the left,
                                    improve=37.90400, (0 missing)
##
     Surrogate splits:
```

```
agree=0.937, adj=0.728, (0 split)
##
         347 < 0.5
                     to the left,
##
         318 < 24.5
                     to the left,
                                    agree=0.933, adj=0.709, (0 split)
                                    agree=0.915, adj=0.631, (0 split)
##
         345 < 2.5
                     to the left,
         374 < 4.5
                     to the left,
                                    agree=0.915, adj=0.631, (0 split)
##
##
         319 < 41
                     to the left,
                                    agree=0.904, adj=0.583, (0 split)
##
## Node number 59: 1941 observations,
                                          complexity param=0.004688756
                        expected loss=0.2246265 P(node) =0.07700853
##
     predicted class=6
##
       class counts:
                         3
                                3
                                    110
                                            8
                                                 20
                                                      103
                                                                         169
16
##
      probabilities: 0.002 0.002 0.057 0.004 0.010 0.053 0.775 0.002 0.087
0.008
##
     left son=118 (241 obs) right son=119 (1700 obs)
##
     Primary splits:
##
         274 < 2.5
                     to the right, improve=208.2075, (0 missing)
##
         655 < 1.5
                     to the left,
                                    improve=206.0021, (0 missing)
##
         654 < 0.5
                     to the left,
                                    improve=202.5597, (0 missing)
##
         246 < 5.5
                     to the right, improve=198.0558, (0 missing)
                                    improve=195.6095, (0 missing)
##
         656 < 2
                     to the left,
##
     Surrogate splits:
##
         273 < 3
                     to the right, agree=0.982, adj=0.855, (0 split)
                     to the right, agree=0.973, adj=0.780, (0 split)
##
         246 < 24
##
         301 < 137.5 to the right, agree=0.965, adj=0.722, (0 split)
##
         302 < 39
                     to the right, agree=0.961, adj=0.689, (0 split)
                     to the right, agree=0.958, adj=0.660, (0 split)
##
         245 < 14.5
##
## Node number 60: 1830 observations,
                                          complexity param=0.003751005
##
     predicted class=4
                        expected loss=0.2836066 P(node) =0.07260464
##
       class counts:
                         0
                               6
                                    111
                                           44 1311
                                                      123
                                                             68
                                                                    44
                                                                          56
67
##
      probabilities: 0.000 0.003 0.061 0.024 0.716 0.067 0.037 0.024 0.031
0.037
##
     left son=120 (221 obs) right son=121 (1609 obs)
     Primary splits:
##
##
         596 < 1.5
                     to the right, improve=177.3933, (0 missing)
##
         597 < 13
                     to the right, improve=171.0007, (0 missing)
         595 < 0.5
                     to the right, improve=167.7112, (0 missing)
##
##
         624 < 2.5
                     to the right, improve=167.5858, (0 missing)
                     to the right, improve=163.3194, (0 missing)
##
         625 < 35
##
     Surrogate splits:
##
         597 < 44
                     to the right, agree=0.981, adj=0.846, (0 split)
         595 < 0.5
                     to the right, agree=0.978, adj=0.819, (0 split)
##
##
         624 < 0.5
                     to the right, agree=0.973, adj=0.778, (0 split)
                     to the right, agree=0.967, adj=0.729, (0 split)
##
         568 < 0.5
                     to the right, agree=0.964, adj=0.701, (0 split)
##
         567 < 15.5
##
## Node number 61: 2659 observations,
                                          complexity param=0.01576315
     predicted class=9
                        expected loss=0.5065814 P(node) =0.1054949
##
##
       class counts:
                         7
                                2
                                     90
                                          215
                                                288
                                                      464
                                                              32
                                                                    88
                                                                         161
1312
```

```
probabilities: 0.003 0.001 0.034 0.081 0.108 0.175 0.012 0.033 0.061
##
0.493
##
     left son=122 (808 obs) right son=123 (1851 obs)
     Primary splits:
##
##
         354 < 2.5
                     to the left,
                                   improve=332.8322, (0 missing)
         353 < 1.5
##
                     to the left,
                                   improve=318.0870, (0 missing)
         326 < 0.5
##
                     to the left,
                                   improve=309.1417, (0 missing)
                                   improve=293.6687, (0 missing)
         381 < 9.5
##
                     to the left,
##
                                   improve=277.3368, (0 missing)
         382 < 1.5
                     to the left,
##
     Surrogate splits:
##
         326 < 0.5
                     to the left,
                                   agree=0.920, adj=0.736, (0 split)
         382 < 1.5
                                   agree=0.914, adj=0.715, (0 split)
##
                     to the left,
##
         381 < 91.5
                     to the left,
                                   agree=0.896, adj=0.658, (0 split)
##
         353 < 0.5
                     to the left,
                                   agree=0.881, adj=0.608, (0 split)
##
         327 < 1
                     to the left,
                                   agree=0.837, adj=0.464, (0 split)
##
## Node number 62: 1766 observations,
                                         complexity param=0.00482272
##
     predicted class=7
                        expected loss=0.2587769 P(node) =0.07006546
##
       class counts:
                         7
                              65
                                    53
                                          68
                                                 34
                                                      118
                                                             21 1309
                                                                         31
60
##
      probabilities: 0.004 0.037 0.030 0.039 0.019 0.067 0.012 0.741 0.018
0.034
##
     left son=124 (313 obs) right son=125 (1453 obs)
##
     Primary splits:
##
         377 < 6.5
                     to the right, improve=248.0977, (0 missing)
         405 < 23.5 to the right, improve=243.4815, (0 missing)
##
##
         376 < 73.5 to the right, improve=211.9655, (0 missing)
         378 < 100.5 to the right, improve=210.6609, (0 missing)
##
##
         404 < 4
                     to the right, improve=196.8469, (0 missing)
##
     Surrogate splits:
##
         405 < 39.5 to the right, agree=0.971, adj=0.834, (0 split)
##
         376 < 73.5 to the right, agree=0.967, adj=0.815, (0 split)
                     to the right, agree=0.959, adj=0.767, (0 split)
##
         404 < 2.5
         378 < 157.5 to the right, agree=0.935, adj=0.636, (0 split)
##
##
         406 < 202.5 to the right, agree=0.914, adj=0.514, (0 split)
##
## Node number 63: 362 observations,
                                        complexity param=0.004420827
     predicted class=9
                        expected loss=0.558011 P(node) =0.01436223
##
       class counts:
##
                         1
                               1
                                    19
                                            1
                                                135
                                                        1
                                                             16
                                                                   23
                                                                          5
160
##
      probabilities: 0.003 0.003 0.052 0.003 0.373 0.003 0.044 0.064 0.014
0.442
##
     left son=126 (144 obs) right son=127 (218 obs)
##
     Primary splits:
##
         211 < 5.5
                                   improve=70.33103, (0 missing)
                     to the left,
##
         210 < 9
                     to the left,
                                   improve=65.94942, (0 missing)
##
         212 < 9.5
                     to the left,
                                   improve=60.68276, (0 missing)
##
         209 < 12.5
                     to the left,
                                   improve=56.75568, (0 missing)
##
         239 < 4.5
                     to the left,
                                   improve=44.24857, (0 missing)
##
     Surrogate splits:
```

```
210 < 6.5
                     to the left,
                                    agree=0.903, adj=0.757, (0 split)
##
##
         212 < 9.5
                     to the left,
                                    agree=0.890, adj=0.722, (0 split)
                                    agree=0.862, adj=0.653, (0 split)
##
         239 < 0.5
                     to the left,
         209 < 11.5
                     to the left,
                                    agree=0.859, adj=0.646, (0 split)
##
##
         183 < 6
                     to the left,
                                    agree=0.823, adj=0.556, (0 split)
##
## Node number 64: 2312 observations,
                                          complexity param=0.0007144771
     predicted class=1 expected loss=0.04152249 P(node) =0.09172783
##
##
       class counts:
                                                       10
                            2216
                                     30
                                            7
                                                  7
                                                                          24
2
##
      probabilities: 0.000 0.958 0.013 0.003 0.003 0.004 0.003 0.003 0.010
0.001
##
     left son=128 (2291 obs) right son=129 (21 obs)
##
     Primary splits:
##
         608 < 6
                     to the left,
                                    improve=30.93996, (0 missing)
##
         177 < 36.5 to the left,
                                    improve=30.91269, (0 missing)
                                    improve=30.66493, (0 missing)
##
         607 < 114.5 to the left,
##
         176 < 63.5 to the left,
                                    improve=28.78651, (0 missing)
##
         609 < 21
                     to the left,
                                    improve=28.63209, (0 missing)
##
     Surrogate splits:
##
         607 < 114.5 to the left,
                                    agree=0.999, adj=0.905, (0 split)
##
         636 < 87.5 to the left,
                                    agree=0.999, adj=0.857, (0 split)
##
         609 < 21
                     to the left,
                                    agree=0.998, adj=0.762, (0 split)
##
         637 < 8.5
                     to the left,
                                    agree=0.998, adj=0.762, (0 split)
                                    agree=0.997, adj=0.714, (0 split)
##
         580 < 37
                     to the left,
##
## Node number 65: 144 observations,
                                         complexity param=0.001384299
##
     predicted class=8
                        expected loss=0.5416667 P(node) =0.005713152
##
       class counts:
                         0
                               51
                                      1
                                            5
                                                  3
                                                       14
                                                              0
                                                                          66
4
##
      probabilities: 0.000 0.354 0.007 0.035 0.021 0.097 0.000 0.000 0.458
0.028
##
     left son=130 (72 obs) right son=131 (72 obs)
##
     Primary splits:
##
         265 < 1.5
                     to the left,
                                    improve=42.55556, (0 missing)
##
         293 < 8
                     to the left,
                                    improve=41.14472, (0 missing)
         183 < 27
                                    improve=40.63166, (0 missing)
##
                     to the left,
##
         211 < 33.5
                     to the left,
                                    improve=40.50671, (0 missing)
                                    improve=40.02092, (0 missing)
##
         266 < 2.5
                     to the left,
     Surrogate splits:
##
##
         293 < 62
                     to the left,
                                    agree=0.965, adj=0.931, (0 split)
                                    agree=0.938, adj=0.875, (0 split)
##
         237 < 2
                     to the left,
##
         210 < 12
                     to the left,
                                    agree=0.903, adj=0.806, (0 split)
                                    agree=0.903, adj=0.806, (0 split)
##
         211 < 11.5
                     to the left,
                                    agree=0.903, adj=0.806, (0 split)
##
         238 < 5.5
                     to the left,
##
## Node number 66: 108 observations,
                                         complexity param=0.0003572385
     predicted class=2 expected loss=0.2314815 P(node) =0.004284864
##
##
       class counts:
                         0
                               11
                                     83
                                            5
                                                  1
                                                        0
                                                              0
                                                                     0
                                                                           8
0
```

```
probabilities: 0.000 0.102 0.769 0.046 0.009 0.000 0.000 0.000 0.074
##
0.000
##
     left son=132 (91 obs) right son=133 (17 obs)
     Primary splits:
##
##
         292 < 58.5 to the left,
                                   improve=15.51201, (0 missing)
##
         321 < 246.5 to the left,
                                   improve=15.02522, (0 missing)
##
         515 < 26.5 to the right, improve=14.98427, (0 missing)
         543 < 24.5 to the right, improve=14.48043, (0 missing)
##
##
                     to the left,
                                   improve=14.32744, (0 missing)
         264 < 69
##
     Surrogate splits:
##
         320 < 21.5 to the left,
                                   agree=0.981, adj=0.882, (0 split)
                                   agree=0.981, adj=0.882, (0 split)
##
         321 < 243
                     to the left,
##
         264 < 69
                     to the left,
                                   agree=0.972, adj=0.824, (0 split)
##
         293 < 171.5 to the left,
                                   agree=0.963, adj=0.765, (0 split)
##
         236 < 217.5 to the left,
                                   agree=0.954, adj=0.706, (0 split)
##
## Node number 67: 43 observations,
                                       complexity param=0.0001786193
##
     predicted class=6
                        expected loss=0.4883721 P(node) =0.001706011
##
       class counts:
                         1
                               1
                                     9
                                           3
                                                             22
                                                                          2
1
##
      probabilities: 0.023 0.023 0.209 0.070 0.070 0.000 0.512 0.023 0.047
0.023
     left son=134 (24 obs) right son=135 (19 obs)
##
##
     Primary splits:
##
         212 < 22
                     to the right, improve=6.321603, (0 missing)
                                   improve=6.219615, (0 missing)
##
         176 < 131.5 to the left,
##
         204 < 236.5 to the left,
                                   improve=6.152366, (0 missing)
         211 < 23.5 to the right, improve=6.013390, (0 missing)
##
##
         232 < 8.5
                     to the left, improve=5.575989, (0 missing)
##
     Surrogate splits:
##
         120 < 5.5
                     to the left,
                                   agree=0.930, adj=0.842, (0 split)
##
         239 < 9.5
                     to the right, agree=0.930, adj=0.842, (0 split)
                                   agree=0.907, adj=0.789, (0 split)
##
         148 < 7
                     to the left,
                                   agree=0.907, adj=0.789, (0 split)
##
         176 < 8
                     to the left,
##
                                   agree=0.907, adj=0.789, (0 split)
         232 < 8.5
                     to the left,
##
## Node number 68: 286 observations,
                                        complexity param=0.001406627
     predicted class=5
                        expected loss=0.8111888 P(node) =0.01134695
##
       class counts:
##
                        12
                              33
                                    31
                                          14
                                                42
                                                       54
                                                             54
                                                                    8
                                                                          8
30
##
      probabilities: 0.042 0.115 0.108 0.049 0.147 0.189 0.189 0.028 0.028
0.105
##
     left son=136 (252 obs) right son=137 (34 obs)
##
     Primary splits:
         276 < 44.5 to the left,
##
                                   improve=21.85412, (0 missing)
##
         574 < 233
                     to the right, improve=21.35074, (0 missing)
##
         247 < 1
                     to the left, improve=21.33641, (0 missing)
##
         539 < 85.5 to the right, improve=20.30011, (0 missing)
##
         275 < 23.5 to the left, improve=20.14673, (0 missing)
##
     Surrogate splits:
```

```
275 < 209.5 to the left,
                                   agree=0.965, adj=0.706, (0 split)
##
                                   agree=0.962, adj=0.676, (0 split)
##
         277 < 0.5
                     to the left,
                                   agree=0.955, adj=0.618, (0 split)
##
         248 < 120.5 to the left,
         304 < 67.5 to the left,
                                   agree=0.951, adj=0.588, (0 split)
##
##
         249 < 17
                     to the left,
                                   agree=0.941, adj=0.500, (0 split)
##
## Node number 69: 278 observations,
                                         complexity param=0.002277396
##
     predicted class=8
                        expected loss=0.6223022 P(node) =0.01102956
##
       class counts:
                              76
                                      2
                                           19
                                                 19
                                                                        105
30
##
      probabilities: 0.014 0.273 0.007 0.068 0.068 0.043 0.014 0.025 0.378
0.108
##
     left son=138 (134 obs) right son=139 (144 obs)
##
     Primary splits:
##
         294 < 216
                     to the right, improve=37.22654, (0 missing)
##
         322 < 237
                     to the right, improve=33.89610, (0 missing)
##
         295 < 249.5 to the right, improve=30.28190, (0 missing)
                     to the left, improve=28.16814, (0 missing)
##
         267 < 185.5 to the right, improve=27.96281, (0 missing)
##
##
     Surrogate splits:
##
         267 < 174.5 to the right, agree=0.892, adj=0.776, (0 split)
         266 < 245.5 to the right, agree=0.878, adj=0.746, (0 split)
##
##
                     to the right, agree=0.878, adj=0.746, (0 split)
         322 < 237
##
         295 < 249.5 to the right, agree=0.849, adj=0.687, (0 split)
         239 < 248.5 to the right, agree=0.784, adj=0.552, (0 split)
##
##
## Node number 72: 142 observations,
                                         complexity param=0.0003125837
##
     predicted class=2
                        expected loss=0.1619718 P(node) =0.005633803
##
       class counts:
                         0
                               0
                                   119
                                            2
                                                        1
                                                              6
                                                                    2
                                                                         11
1
      probabilities: 0.000 0.000 0.838 0.014 0.000 0.007 0.042 0.014 0.077
##
0.007
##
     left son=144 (122 obs) right son=145 (20 obs)
     Primary splits:
##
                                   improve=16.25925, (0 missing)
##
         301 < 3.5
                     to the left,
##
         274 < 1
                     to the left,
                                   improve=15.01724, (0 missing)
                                   improve=13.89224, (0 missing)
##
         356 < 37
                     to the left,
##
         302 < 12
                     to the left,
                                   improve=13.24347, (0 missing)
                                   improve=12.83977, (0 missing)
##
         273 < 36.5 to the left,
##
     Surrogate splits:
##
         329 < 17
                     to the left,
                                   agree=0.972, adj=0.80, (0 split)
##
         273 < 36.5 to the left,
                                   agree=0.965, adj=0.75, (0 split)
##
         300 < 117.5 to the left,
                                   agree=0.965, adj=0.75, (0 split)
                                   agree=0.965, adj=0.75, (0 split)
##
                     to the left,
         302 < 12
                                   agree=0.965, adj=0.75, (0 split)
##
         328 < 149.5 to the left,
##
## Node number 73: 86 observations,
                                        complexity param=0.0004242208
     predicted class=7
                        expected loss=0.7790698 P(node) =0.003412021
##
##
       class counts:
                         0
                              17
                                     15
                                           13
                                                  1
                                                        0
                                                              3
                                                                   19
                                                                          9
9
```

```
probabilities: 0.000 0.198 0.174 0.151 0.012 0.000 0.035 0.221 0.105
##
0.105
##
     left son=146 (57 obs) right son=147 (29 obs)
     Primary splits:
##
##
         683 < 18
                     to the left,
                                   improve=10.087930, (0 missing)
         516 < 37.5
##
                     to the left,
                                   improve= 9.245802, (0 missing)
##
         684 < 36
                     to the left,
                                   improve= 9.195264, (0 missing)
         515 < 5.5
                                   improve= 9.040953, (0 missing)
##
                     to the left,
##
                                   improve= 8.756569, (0 missing)
         488 < 168.5 to the left,
##
     Surrogate splits:
##
         682 < 1.5
                     to the left,
                                   agree=0.930, adj=0.793, (0 split)
         684 < 4.5
                                   agree=0.907, adj=0.724, (0 split)
##
                     to the left,
##
         710 < 8
                     to the left,
                                   agree=0.907, adj=0.724, (0 split)
##
         711 < 12.5
                     to the left,
                                   agree=0.907, adj=0.724, (0 split)
##
         242 < 126
                     to the left,
                                   agree=0.895, adj=0.690, (0 split)
##
## Node number 74: 144 observations,
                                        complexity param=0.0002232741
##
     predicted class=6 expected loss=0.2708333 P(node) =0.005713152
##
       class counts:
                         5
                               2
                                     3
                                            0
                                                  3
                                                        5
                                                            105
                                                                         10
6
##
      probabilities: 0.035 0.014 0.021 0.000 0.021 0.035 0.729 0.035 0.069
0.042
##
     left son=148 (112 obs) right son=149 (32 obs)
##
     Primary splits:
##
         213 < 25.5 to the left,
                                   improve=15.76587, (0 missing)
##
         240 < 105
                     to the left,
                                   improve=15.25453, (0 missing)
                     to the right, improve=15.19769, (0 missing)
##
         239 < 43
         241 < 12
##
                     to the left,
                                   improve=14.80026, (0 missing)
##
         212 < 21.5 to the left,
                                   improve=13.19373, (0 missing)
##
     Surrogate splits:
         214 < 13
##
                     to the left,
                                   agree=0.944, adj=0.750, (0 split)
##
         186 < 2.5
                     to the left,
                                   agree=0.938, adj=0.719, (0 split)
                                   agree=0.924, adj=0.656, (0 split)
##
         212 < 21.5 to the left,
##
         185 < 51.5
                     to the left,
                                   agree=0.917, adj=0.625, (0 split)
##
         241 < 29
                                   agree=0.910, adj=0.594, (0 split)
                     to the left,
##
## Node number 75: 62 observations,
                                       complexity param=0.0002679289
     predicted class=9
                        expected loss=0.3870968 P(node) =0.002459829
##
       class counts:
##
                         0
                               0
                                     6
                                            0
                                                  9
                                                        0
                                                              0
                                                                    2
                                                                          7
38
##
      probabilities: 0.000 0.000 0.097 0.000 0.145 0.000 0.000 0.032 0.113
0.613
##
     left son=150 (19 obs) right son=151 (43 obs)
##
     Primary splits:
##
         210 < 21.5 to the left,
                                   improve=8.797607, (0 missing)
##
         209 < 131.5 to the left,
                                   improve=7.533531, (0 missing)
##
         238 < 68.5 to the left,
                                   improve=6.490469, (0 missing)
##
         154 < 161.5 to the right, improve=5.666443, (0 missing)
##
         239 < 9.5
                     to the left,
                                   improve=5.648694, (0 missing)
##
     Surrogate splits:
```

```
to the left,
                                   agree=0.919, adj=0.737, (0 split)
##
         211 < 33.5
##
                                    agree=0.887, adj=0.632, (0 split)
         239 < 9.5
                     to the left,
                                    agree=0.871, adj=0.579, (0 split)
##
         209 < 2
                     to the left,
                     to the left,
                                    agree=0.871, adj=0.579, (0 split)
##
         238 < 21
##
         182 < 4
                     to the left,
                                    agree=0.839, adj=0.474, (0 split)
##
## Node number 76: 162 observations,
                                         complexity param=0.001094043
##
     predicted class=3 expected loss=0.617284 P(node) =0.006427296
##
       class counts:
                         0
                               9
                                     33
                                           62
                                                                          13
1
##
      probabilities: 0.000 0.056 0.204 0.383 0.000 0.000 0.000 0.272 0.080
0.006
##
     left son=152 (59 obs) right son=153 (103 obs)
##
     Primary splits:
##
         404 < 228
                     to the right, improve=25.18382, (0 missing)
##
         376 < 65
                     to the right, improve=25.02485, (0 missing)
                     to the right, improve=22.72821, (0 missing)
##
         403 < 59.5
                     to the right, improve=21.57795, (0 missing)
##
         578 < 20.5
                     to the right, improve=21.43827, (0 missing)
##
         606 < 2
##
     Surrogate splits:
##
         376 < 48
                     to the right, agree=0.932, adj=0.814, (0 split)
         403 < 29
                     to the right, agree=0.932, adj=0.814, (0 split)
##
##
                     to the right, agree=0.926, adj=0.797, (0 split)
         375 < 2.5
##
         377 < 230.5 to the right, agree=0.889, adj=0.695, (0 split)
         431 < 157.5 to the right, agree=0.870, adj=0.644, (0 split)
##
##
## Node number 77: 56 observations,
                                        complexity param=0.0001786193
##
     predicted class=8
                        expected loss=0.3392857 P(node) =0.002221781
##
       class counts:
                         1
                                0
                                      1
                                                  5
                                                        1
                                            2
                                                              3
                                                                          37
6
      probabilities: 0.018 0.000 0.018 0.036 0.089 0.018 0.054 0.000 0.661
##
0.107
##
     left son=154 (14 obs) right son=155 (42 obs)
##
     Primary splits:
                                    improve=8.369048, (0 missing)
##
         516 < 53
                     to the left,
##
         634 < 33.5
                     to the left,
                                    improve=8.243088, (0 missing)
                                    improve=7.903571, (0 missing)
##
         606 < 9
                     to the left,
##
         662 < 13
                     to the left,
                                    improve=7.322161, (0 missing)
##
         661 < 56
                     to the left,
                                    improve=6.989683, (0 missing)
     Surrogate splits:
##
##
         544 < 2
                     to the left,
                                   agree=0.964, adj=0.857, (0 split)
                                   agree=0.911, adj=0.643, (0 split)
         543 < 1.5
##
                     to the left,
##
         488 < 84.5
                     to the left,
                                    agree=0.875, adj=0.500, (0 split)
                                    agree=0.875, adj=0.500, (0 split)
##
         515 < 10
                     to the left,
                                    agree=0.857, adj=0.429, (0 split)
##
         433 < 192
                     to the left,
##
## Node number 78: 124 observations,
                                         complexity param=0.000379566
     predicted class=8 expected loss=0.6370968 P(node) =0.004919659
##
##
       class counts:
                         1
                               13
                                      1
                                           16
                                                  7
                                                        2
                                                              0
                                                                    12
                                                                          45
27
```

```
probabilities: 0.008 0.105 0.008 0.129 0.056 0.016 0.000 0.097 0.363
##
0.218
##
     left son=156 (80 obs) right son=157 (44 obs)
     Primary splits:
##
##
         401 < 173
                     to the left,
                                    improve=11.080790, (0 missing)
         180 < 115.5 to the right, improve=10.839260, (0 missing)
##
##
         179 < 4.5 to the right, improve=10.102630, (0 missing)
         207 < 207.5 to the right, improve= 9.505904, (0 missing)
##
##
         713 < 26.5 to the left, improve= 9.334151, (0 missing)
##
     Surrogate splits:
##
         400 < 1.5
                     to the left, agree=0.919, adj=0.773, (0 split)
                                    agree=0.887, adj=0.682, (0 split)
##
         402 < 248.5 to the left,
##
         373 < 178
                     to the left,
                                    agree=0.879, adj=0.659, (0 split)
##
         428 < 9.5
                     to the left,
                                    agree=0.879, adj=0.659, (0 split)
##
         429 < 17.5 to the left,
                                    agree=0.839, adj=0.545, (0 split)
##
## Node number 79: 374 observations,
                                         complexity param=0.0001786193
##
     predicted class=8 expected loss=0.1229947 P(node) =0.01483833
##
       class counts:
                          3
                                1
                                      2
                                            8
                                                  11
                                                                    11
                                                                         328
3
##
      probabilities: 0.008 0.003 0.005 0.021 0.029 0.013 0.005 0.029 0.877
0.008
##
     left son=158 (19 obs) right son=159 (355 obs)
##
     Primary splits:
##
         470 < 156.5 to the right, improve=14.94440, (0 missing)
                     to the right, improve=14.26268, (0 missing)
##
         471 < 5.5
                     to the right, improve=13.47169, (0 missing)
##
         440 < 65
         441 < 204.5 to the right, improve=13.26268, (0 missing)
##
##
         469 < 54.5 to the right, improve=13.15042, (0 missing)
##
     Surrogate splits:
         471 < 5.5
##
                     to the right, agree=0.997, adj=0.947, (0 split)
##
         442 < 80
                     to the right, agree=0.989, adj=0.789, (0 split)
                     to the right, agree=0.989, adj=0.789, (0 split)
##
         498 < 164
                     to the right, agree=0.989, adj=0.789, (0 split)
##
         499 < 2
##
         443 < 3.5
                     to the right, agree=0.984, adj=0.684, (0 split)
##
## Node number 80: 1502 observations,
                                          complexity param=0.0007368045
##
     predicted class=3
                        expected loss=0.08521971 P(node) =0.05959135
##
       class counts:
                          0
                               41
                                     13 1374
                                                        39
                                                               0
                                                                     7
                                                                          23
5
##
      probabilities: 0.000 0.027 0.009 0.915 0.000 0.026 0.000 0.005 0.015
0.003
##
     left son=160 (64 obs) right son=161 (1438 obs)
##
     Primary splits:
         490 < 139.5 to the right, improve=40.67295, (0 missing)
##
         264 < 147.5 to the left, improve=39.08559, (0 missing) 491 < 251.5 to the right, improve=35.00766, (0 missing)
##
##
##
         296 < 2.5 to the right, improve=33.06601, (0 missing)
##
         519 < 248.5 to the right, improve=28.93667, (0 missing)
##
     Surrogate splits:
```

```
491 < 251.5 to the right, agree=0.971, adj=0.328, (0 split)
##
##
                     to the right, agree=0.970, adj=0.297, (0 split)
         518 < 204
         519 < 252.5 to the right, agree=0.963, adj=0.141, (0 split)
##
         462 < 240.5 to the right, agree=0.961, adj=0.078, (0 split)
##
##
         489 < 17.5 to the right, agree=0.960, adj=0.062, (0 split)
##
## Node number 81: 124 observations,
                                         complexity param=0.0005358578
##
     predicted class=5
                        expected loss=0.4677419 P(node) =0.004919659
##
       class counts:
                         3
                               0
                                           18
                                                       66
                                                                           8
22
##
      probabilities: 0.024 0.000 0.000 0.145 0.040 0.532 0.016 0.000 0.065
0.177
##
     left son=162 (78 obs) right son=163 (46 obs)
##
     Primary splits:
##
         296 < 54
                     to the left,
                                    improve=18.35723, (0 missing)
##
         297 < 8.5
                     to the left,
                                    improve=13.84682, (0 missing)
##
         295 < 190.5 to the left,
                                    improve=13.33559, (0 missing)
                     to the left,
##
         493 < 1
                                    improve=13.15037, (0 missing)
         269 < 0.5
##
                     to the left,
                                    improve=13.05200, (0 missing)
##
     Surrogate splits:
##
         297 < 2
                                    agree=0.895, adj=0.717, (0 split)
                     to the left,
##
         295 < 36.5
                     to the left,
                                    agree=0.863, adj=0.630, (0 split)
##
         324 < 234
                     to the left,
                                    agree=0.855, adj=0.609, (0 split)
##
         269 < 0.5
                     to the left,
                                    agree=0.847, adj=0.587, (0 split)
         323 < 228.5 to the left,
                                    agree=0.831, adj=0.543, (0 split)
##
##
## Node number 82: 417 observations,
                                         complexity param=0.002009467
##
     predicted class=3
                        expected loss=0.4364508 P(node) =0.01654434
##
       class counts:
                        26
                                      5
                                          235
                                                      119
                               4
                                                  0
                                                              8
                                                                          12
4
      probabilities: 0.062 0.010 0.012 0.564 0.000 0.285 0.019 0.010 0.029
##
0.010
##
     left son=164 (261 obs) right son=165 (156 obs)
##
     Primary splits:
##
         265 < 148
                     to the left,
                                    improve=68.75340, (0 missing)
##
         292 < 98.5 to the left,
                                    improve=56.56522, (0 missing)
         293 < 119
                                    improve=50.53075, (0 missing)
##
                     to the left,
##
         266 < 218
                     to the left,
                                    improve=49.22403, (0 missing)
##
         238 < 178.5 to the left,
                                    improve=43.42265, (0 missing)
     Surrogate splits:
##
##
         264 < 17.5 to the left,
                                    agree=0.873, adj=0.660, (0 split)
                                    agree=0.868, adj=0.647, (0 split)
##
         238 < 201.5 to the left,
##
         292 < 124.5 to the left,
                                    agree=0.859, adj=0.622, (0 split)
##
         266 < 167
                     to the left,
                                    agree=0.842, adj=0.577, (0 split)
                                    agree=0.825, adj=0.532, (0 split)
##
         237 < 83
                     to the left,
##
## Node number 83: 275 observations,
                                         complexity param=0.001830848
     predicted class=1 expected loss=0.6836364 P(node) =0.01091053
##
##
       class counts:
                         5
                              87
                                      1
                                           26
                                                 31
                                                       53
                                                              9
                                                                    19
                                                                          10
34
```

```
probabilities: 0.018 0.316 0.004 0.095 0.113 0.193 0.033 0.069 0.036
##
0.124
##
     left son=166 (104 obs) right son=167 (171 obs)
     Primary splits:
##
##
         376 < 20
                     to the left,
                                   improve=41.76481, (0 missing)
         462 < 138.5 to the right, improve=39.92496, (0 missing)
##
##
                     to the left, improve=39.04379, (0 missing)
         375 < 1
                     to the right, improve=38.93607, (0 missing)
         154 < 2.5
##
##
                     to the right, improve=38.78834, (0 missing)
         153 < 2.5
##
     Surrogate splits:
##
         375 < 1
                     to the left,
                                   agree=0.938, adj=0.837, (0 split)
         348 < 7.5
                                   agree=0.884, adj=0.692, (0 split)
##
                     to the left,
##
         403 < 1.5
                     to the left,
                                   agree=0.880, adj=0.683, (0 split)
##
         374 < 2
                     to the left,
                                   agree=0.869, adj=0.654, (0 split)
##
         404 < 2.5
                     to the left,
                                   agree=0.869, adj=0.654, (0 split)
##
## Node number 84: 324 observations,
                                        complexity param=0.001250335
##
     predicted class=3
                        expected loss=0.5524691 P(node) =0.01285459
##
       class counts:
                        33
                               1
                                     1
                                         145
                                                       69
                                                                         38
29
##
      probabilities: 0.102 0.003 0.003 0.448 0.000 0.213 0.009 0.015 0.117
0.090
##
     left son=168 (32 obs) right son=169 (292 obs)
##
     Primary splits:
##
         359 < 77
                     to the right, improve=30.59009, (0 missing)
         330 < 172.5 to the right, improve=30.52172, (0 missing)
##
##
                     to the right, improve=29.98537, (0 missing)
         427 < 214.5 to the right, improve=29.80651, (0 missing)
##
##
         454 < 162.5 to the right, improve=29.57523, (0 missing)
##
     Surrogate splits:
##
         330 < 186.5 to the right, agree=0.981, adj=0.813, (0 split)
##
         358 < 237
                     to the right, agree=0.981, adj=0.813, (0 split)
##
         387 < 64
                     to the right, agree=0.981, adj=0.813, (0 split)
##
         331 < 79.5
                     to the right, agree=0.978, adj=0.781, (0 split)
##
                     to the right, agree=0.963, adj=0.625, (0 split)
         360 < 7
##
## Node number 85: 512 observations,
                                        complexity param=0.001027061
     predicted class=5
                        expected loss=0.2050781 P(node) =0.02031343
##
##
       class counts:
                        26
                               0
                                     0
                                          53
                                                  1
                                                      407
                                                              6
                                                                    0
                                                                         11
8
##
      probabilities: 0.051 0.000 0.000 0.104 0.002 0.795 0.012 0.000 0.021
0.016
##
     left son=170 (39 obs) right son=171 (473 obs)
     Primary splits:
##
##
         301 < 74
                     to the right, improve=39.51550, (0 missing)
##
         330 < 1.5
                     to the right, improve=37.61420, (0 missing)
##
         302 < 35
                     to the right, improve=36.12414, (0 missing)
##
                     to the right, improve=35.30698, (0 missing)
         329 < 2
##
         300 < 70.5 to the right, improve=34.88390, (0 missing)
##
     Surrogate splits:
```

```
to the right, agree=0.992, adj=0.897, (0 split)
##
         329 < 14
##
         302 < 8
                     to the right, agree=0.986, adj=0.821, (0 split)
                     to the right, agree=0.984, adj=0.795, (0 split)
##
         330 < 1.5
         273 < 211.5 to the right, agree=0.980, adj=0.744, (0 split)
##
##
         300 < 70.5 to the right, agree=0.975, adj=0.667, (0 split)
##
## Node number 86: 164 observations,
                                         complexity param=0.002389033
##
     predicted class=7
                        expected loss=0.6219512 P(node) =0.006506646
##
       class counts:
                         4
                               3
                                            9
                                                 58
                                                       11
                                                                           3
10
##
      probabilities: 0.024 0.018 0.000 0.055 0.354 0.067 0.024 0.378 0.018
0.061
##
     left son=172 (85 obs) right son=173 (79 obs)
##
     Primary splits:
##
         321 < 202
                                   improve=40.30244, (0 missing)
                     to the left,
##
         322 < 200
                     to the left,
                                   improve=37.31707, (0 missing)
                     to the right, improve=36.44269, (0 missing)
##
         405 < 6.5
##
         378 < 201.5 to the right, improve=35.36654, (0 missing)
                     to the right, improve=33.65017, (0 missing)
##
         404 < 59
##
     Surrogate splits:
##
         322 < 207.5 to the left,
                                   agree=0.939, adj=0.873, (0 split)
##
         320 < 214.5 to the left,
                                    agree=0.902, adj=0.797, (0 split)
##
         293 < 63.5 to the left,
                                   agree=0.896, adj=0.785, (0 split)
##
         294 < 99.5 to the left,
                                   agree=0.872, adj=0.734, (0 split)
                                   agree=0.860, adj=0.709, (0 split)
         323 < 233.5 to the left,
##
##
## Node number 87: 357 observations,
                                         complexity param=0.001071716
##
     predicted class=9
                        expected loss=0.3445378 P(node) =0.01416386
##
       class counts:
                         4
                                      2
                                           28
                                                       46
                               2
                                                 18
                                                              3
                                                                   12
                                                                           8
234
      probabilities: 0.011 0.006 0.006 0.078 0.050 0.129 0.008 0.034 0.022
##
0.655
##
     left son=174 (100 obs) right son=175 (257 obs)
##
     Primary splits:
                                    improve=43.67962, (0 missing)
##
         297 < 5.5
                     to the left,
##
         325 < 12.5 to the left,
                                    improve=38.79364, (0 missing)
         296 < 7.5
                                    improve=34.24751, (0 missing)
##
                     to the left,
##
         464 < 36
                     to the left,
                                    improve=33.64649, (0 missing)
##
         492 < 29
                     to the left,
                                    improve=33.25300, (0 missing)
     Surrogate splits:
##
##
         269 < 2.5
                     to the left,
                                   agree=0.908, adj=0.67, (0 split)
         325 < 73.5
                                    agree=0.894, adj=0.62, (0 split)
##
                     to the left,
##
         296 < 7.5
                     to the left,
                                    agree=0.863, adj=0.51, (0 split)
                                    agree=0.863, adj=0.51, (0 split)
##
         324 < 188.5 to the left,
                                    agree=0.818, adj=0.35, (0 split)
##
         298 < 3
                     to the left,
##
## Node number 88: 73 observations,
                                        complexity param=0.0001786193
     predicted class=2 expected loss=0.2191781 P(node) =0.002896251
##
##
       class counts:
                         0
                               1
                                     57
                                            5
                                                        0
                                                              4
                                                                    0
                                                                           6
0
```

```
probabilities: 0.000 0.014 0.781 0.068 0.000 0.000 0.055 0.000 0.082
##
0.000
##
     left son=176 (60 obs) right son=177 (13 obs)
     Primary splits:
##
##
         466 < 39.5 to the left,
                                    improve=9.068247, (0 missing)
##
         412 < 17.5 to the left,
                                   improve=8.709380, (0 missing)
##
         440 < 124.5 to the left,
                                   improve=8.709380, (0 missing)
##
         439 < 184.5 to the left,
                                   improve=8.646880, (0 missing)
##
                     to the left,
                                   improve=8.380669, (0 missing)
         411 < 12
##
     Surrogate splits:
##
         465 < 5
                     to the left,
                                   agree=0.959, adj=0.769, (0 split)
         494 < 184.5 to the left,
                                   agree=0.959, adj=0.769, (0 split)
##
##
         493 < 128
                     to the left,
                                   agree=0.945, adj=0.692, (0 split)
##
         436 < 58
                     to the left,
                                   agree=0.932, adj=0.615, (0 split)
##
         437 < 118
                     to the left,
                                   agree=0.932, adj=0.615, (0 split)
##
## Node number 89: 100 observations,
                                        complexity param=0.0004465482
##
     predicted class=9
                        expected loss=0.81 P(node) =0.003967467
##
       class counts:
                         9
                              14
                                    12
                                            3
                                                        7
                                                             10
                                                                         17
19
##
      probabilities: 0.090 0.140 0.120 0.030 0.090 0.070 0.100 0.000 0.170
0.190
     left son=178 (83 obs) right son=179 (17 obs)
##
##
     Primary splits:
##
         717 < 5
                     to the left,
                                   improve=13.162230, (0 missing)
         572 < 25.5 to the right, improve= 9.874790, (0 missing)
##
##
                     to the right, improve= 9.765385, (0 missing)
         573 < 12
         600 < 5
                     to the right, improve= 9.620000, (0 missing)
##
##
         541 < 20
                     to the right, improve= 9.477250, (0 missing)
##
     Surrogate splits:
##
         716 < 2
                     to the left,
                                   agree=0.95, adj=0.706, (0 split)
##
         689 < 166
                     to the left,
                                   agree=0.94, adj=0.647, (0 split)
##
         688 < 164
                     to the left,
                                   agree=0.92, adj=0.529, (0 split)
                                   agree=0.90, adj=0.412, (0 split)
##
         718 < 3.5
                     to the left,
##
         745 < 1
                                   agree=0.90, adj=0.412, (0 split)
                     to the left,
##
## Node number 90: 41 observations,
                                       complexity param=0.0003125837
     predicted class=2
                        expected loss=0.7804878 P(node) =0.001626661
##
##
       class counts:
                                                  5
                         2
                               5
                                     9
                                            3
                                                        4
                                                              4
                                                                    0
                                                                          2
7
##
      probabilities: 0.049 0.122 0.220 0.073 0.122 0.098 0.098 0.000 0.049
0.171
##
     left son=180 (18 obs) right son=181 (23 obs)
##
     Primary splits:
##
         380 < 19.5 to the left,
                                   improve=5.028161, (0 missing)
##
         400 < 63.5 to the left,
                                   improve=4.392656, (0 missing)
##
         352 < 43.5
                     to the left,
                                   improve=4.284634, (0 missing)
##
         409 < 68.5 to the left,
                                   improve=4.035147, (0 missing)
##
         408 < 125
                     to the left,
                                   improve=3.949634, (0 missing)
##
     Surrogate splits:
```

```
to the left,
                                   agree=0.902, adj=0.778, (0 split)
##
         381 < 8
##
         408 < 14
                     to the left,
                                   agree=0.878, adj=0.722, (0 split)
                                   agree=0.854, adj=0.667, (0 split)
##
         352 < 43.5
                     to the left,
         409 < 21
                     to the left,
                                   agree=0.854, adj=0.667, (0 split)
##
##
         262 < 68.5 to the left,
                                   agree=0.805, adj=0.556, (0 split)
##
## Node number 91: 209 observations,
                                        complexity param=0.0003349111
##
     predicted class=6 expected loss=0.2009569 P(node) =0.008292006
##
       class counts:
                         2
                                    20
                                           4
                                                                          4
0
##
      probabilities: 0.010 0.000 0.096 0.019 0.000 0.057 0.799 0.000 0.019
0.000
##
     left son=182 (16 obs) right son=183 (193 obs)
##
     Primary splits:
##
         584 < 8
                     to the right, improve=15.45373, (0 missing)
##
         583 < 102.5 to the right, improve=13.91228, (0 missing)
         582 < 26.5 to the right, improve=13.34968, (0 missing)
##
##
                     to the right, improve=13.25837, (0 missing)
         556 < 3.5
                     to the right, improve=12.23165, (0 missing)
##
         581 < 81
##
     Surrogate splits:
##
         583 < 120.5 to the right, agree=0.995, adj=0.937, (0 split)
##
         556 < 51.5 to the right, agree=0.986, adj=0.813, (0 split)
##
         555 < 149
                     to the right, agree=0.976, adj=0.687, (0 split)
##
         557 < 11
                     to the right, agree=0.976, adj=0.687, (0 split)
                     to the right, agree=0.976, adj=0.687, (0 split)
##
         611 < 35
##
## Node number 92: 41 observations
##
     predicted class=0
                        expected loss=0.09756098 P(node) =0.001626661
##
       class counts:
                        37
                               0
                                     0
                                            1
                                                  0
                                                                          1
0
##
      probabilities: 0.902 0.000 0.000 0.024 0.000 0.049 0.000 0.000 0.024
0.000
##
## Node number 93: 56 observations,
                                       complexity param=0.0002083892
     predicted class=8
                        expected loss=0.6428571 P(node) =0.002221781
##
       class counts:
                               0
                                     8
                                            5
                                                       13
                                                              3
                         7
                                                  0
                                                                    0
                                                                         20
0
##
      probabilities: 0.125 0.000 0.143 0.089 0.000 0.232 0.054 0.000 0.357
0.000
     left son=186 (40 obs) right son=187 (16 obs)
##
##
     Primary splits:
##
         347 < 0.5
                     to the right, improve=5.114286, (0 missing)
##
         431 < 11.5
                     to the left, improve=5.062771, (0 missing)
                     to the right, improve=4.992063, (0 missing)
##
         269 < 10.5
                     to the left, improve=4.928571, (0 missing)
##
         297 < 178
##
         346 < 22.5 to the left, improve=4.674179, (0 missing)
##
     Surrogate splits:
##
         320 < 14.5 to the right, agree=0.929, adj=0.750, (0 split)
##
         319 < 5
                     to the right, agree=0.893, adj=0.625, (0 split)
##
         348 < 110.5 to the right, agree=0.893, adj=0.625, (0 split)
```

```
to the right, agree=0.839, adj=0.438, (0 split)
##
         318 < 6
##
         354 < 1
                     to the right, agree=0.839, adj=0.438, (0 split)
##
## Node number 94: 43 observations,
                                        complexity param=0.0004688756
##
     predicted class=3
                        expected loss=0.4883721 P(node) =0.001706011
##
       class counts:
                         0
                               0
                                      1
                                           22
                                                        2
                                                                         13
5
      probabilities: 0.000 0.000 0.023 0.512 0.000 0.047 0.000 0.000 0.302
##
0.116
##
     left son=188 (27 obs) right son=189 (16 obs)
##
     Primary splits:
##
         512 < 70.5 to the left,
                                    improve=12.16258, (0 missing)
##
         513 < 8.5
                     to the left,
                                    improve=12.16258, (0 missing)
##
         539 < 195.5 to the left,
                                    improve=10.96037, (0 missing)
                                    improve=10.87067, (0 missing)
##
         485 < 207.5 to the left,
##
         511 < 67.5 to the left,
                                    improve=10.63056, (0 missing)
##
     Surrogate splits:
##
                                   agree=0.977, adj=0.937, (0 split)
         511 < 67.5 to the left,
                                   agree=0.953, adj=0.875, (0 split)
##
         484 < 163.5 to the left,
##
         513 < 8.5
                     to the left,
                                   agree=0.953, adj=0.875, (0 split)
         483 < 76
                                    agree=0.930, adj=0.812, (0 split)
##
                     to the left,
##
         268 < 9.5
                     to the right, agree=0.907, adj=0.750, (0 split)
##
## Node number 95: 430 observations,
                                         complexity param=0.0002344378
##
     predicted class=8
                        expected loss=0.1860465 P(node) =0.01706011
##
       class counts:
                         8
                               0
                                     19
                                           23
                                                       13
                                                             12
                                                                    1
                                                                        350
4
##
      probabilities: 0.019 0.000 0.044 0.053 0.000 0.030 0.028 0.002 0.814
0.009
##
     left son=190 (28 obs) right son=191 (402 obs)
##
     Primary splits:
##
         432 < 1
                     to the left,
                                    improve=15.89285, (0 missing)
##
         459 < 16.5
                     to the left,
                                    improve=15.80018, (0 missing)
##
         435 < 44.5
                     to the left,
                                    improve=14.50146, (0 missing)
         439 < 250.5 to the right, improve=13.62454, (0 missing)
##
##
         436 < 7
                     to the left,
                                   improve=13.55462, (0 missing)
##
     Surrogate splits:
##
         405 < 5
                     to the left,
                                   agree=0.967, adj=0.500, (0 split)
##
         431 < 1
                     to the left,
                                   agree=0.956, adj=0.321, (0 split)
         459 < 0.5
                                    agree=0.956, adj=0.321, (0 split)
##
                     to the left,
##
         385 < 241
                     to the right, agree=0.944, adj=0.143, (0 split)
                     to the right, agree=0.944, adj=0.143, (0 split)
##
         413 < 250
##
## Node number 96: 1973 observations,
                                          complexity param=0.0001786193
     predicted class=0 expected loss=0.04460213 P(node) =0.07827812
##
##
       class counts: 1885
                               0
                                     30
                                            7
                                                  1
                                                       19
                                                             18
                                                                   10
                                                                           1
2
##
      probabilities: 0.955 0.000 0.015 0.004 0.001 0.010 0.009 0.005 0.001
0.001
     left son=192 (1955 obs) right son=193 (18 obs)
```

```
Primary splits:
##
##
         463 < 80
                     to the left,
                                    improve=14.57930, (0 missing)
##
         707 < 3.5
                     to the left,
                                    improve=13.36910, (0 missing)
                     to the left,
##
         708 < 43
                                    improve=13.36910, (0 missing)
##
         427 < 0.5
                     to the right,
                                   improve=12.97644, (0 missing)
         464 < 193
##
                     to the left,
                                    improve=12.69634, (0 missing)
##
     Surrogate splits:
         464 < 242
##
                     to the left,
                                    agree=0.993, adj=0.278, (0 split)
##
         491 < 239.5 to the left,
                                    agree=0.993, adj=0.278, (0 split)
                                    agree=0.993, adj=0.222, (0 split)
##
         490 < 131.5 to the left,
##
         707 < 39
                     to the left,
                                    agree=0.993, adj=0.222, (0 split)
                                    agree=0.992, adj=0.167, (0 split)
##
         706 < 3.5
                     to the left,
##
## Node number 97: 99 observations,
                                        complexity param=0.0004242208
     predicted class=0
                        expected loss=0.5454545 P(node) =0.003927792
##
##
       class counts:
                        45
                               0
                                      2
                                           24
                                                       25
                                                                           0
                                                  0
                                                              3
0
##
      probabilities: 0.455 0.000 0.020 0.242 0.000 0.253 0.030 0.000 0.000
0.000
##
     left son=194 (42 obs) right son=195 (57 obs)
##
     Primary splits:
         427 < 40
##
                     to the right, improve=25.47832, (0 missing)
##
         455 < 3
                     to the right, improve=23.30820, (0 missing)
##
         399 < 73.5
                     to the right, improve=23.26249, (0 missing)
         428 < 103.5 to the right, improve=19.27411, (0 missing)
##
##
         271 < 118
                     to the right, improve=18.54264, (0 missing)
##
     Surrogate splits:
         399 < 65.5
##
                     to the right, agree=0.960, adj=0.905, (0 split)
##
         455 < 51
                     to the right, agree=0.949, adj=0.881, (0 split)
##
         426 < 1.5
                     to the right, agree=0.919, adj=0.810, (0 split)
##
         454 < 6.5
                     to the right, agree=0.909, adj=0.786, (0 split)
##
         371 < 21
                     to the right, agree=0.879, adj=0.714, (0 split)
##
## Node number 98: 84 observations,
                                        complexity param=0.0008484415
##
     predicted class=0
                        expected loss=0.5357143 P(node) =0.003332672
##
       class counts:
                        39
                               0
                                      6
                                            2
                                                  1
                                                       11
                                                             22
                                                                    0
                                                                           2
1
##
      probabilities: 0.464 0.000 0.071 0.024 0.012 0.131 0.262 0.000 0.024
0.012
     left son=196 (45 obs) right son=197 (39 obs)
##
##
     Primary splits:
##
         270 < 21.5 to the right, improve=18.41636, (0 missing)
##
         378 < 41
                     to the left, improve=16.00212, (0 missing)
                     to the right, improve=15.83202, (0 missing)
##
         269 < 72
##
         405 < 64
                     to the left,
                                   improve=15.81935, (0 missing)
##
         406 < 70
                     to the left, improve=15.81935, (0 missing)
##
     Surrogate splits:
##
                     to the right, agree=0.881, adj=0.744, (0 split)
         269 < 72
##
         241 < 15.5 to the right, agree=0.869, adj=0.718, (0 split)
##
         242 < 78 to the right, agree=0.857, adj=0.692, (0 split)
```

```
271 < 45.5 to the right, agree=0.857, adj=0.692, (0 split)
##
##
         298 < 37
                     to the right, agree=0.845, adj=0.667, (0 split)
##
## Node number 99: 139 observations,
                                         complexity param=0.0007591319
##
     predicted class=5
                        expected loss=0.5251799 P(node) =0.005514779
##
       class counts:
                         7
                               1
                                    11
                                           42
                                                       66
                                                                    2
                                                                          3
3
      probabilities: 0.050 0.007 0.079 0.302 0.000 0.475 0.029 0.014 0.022
##
0.022
##
     left son=198 (65 obs) right son=199 (74 obs)
##
     Primary splits:
         375 < 95
##
                     to the left,
                                   improve=12.76991, (0 missing)
##
         346 < 2
                     to the left,
                                   improve=12.54354, (0 missing)
##
         374 < 104
                     to the left,
                                   improve=11.65058, (0 missing)
##
         402 < 4.5
                     to the left,
                                   improve=11.49828, (0 missing)
##
         324 < 2.5
                     to the right, improve=11.04272, (0 missing)
##
     Surrogate splits:
##
         376 < 11.5
                                   agree=0.921, adj=0.831, (0 split)
                    to the left,
                                   agree=0.871, adj=0.723, (0 split)
##
         374 < 19.5
                     to the left,
##
         402 < 4.5
                     to the left,
                                   agree=0.856, adj=0.692, (0 split)
         403 < 35
                     to the left,
                                   agree=0.856, adj=0.692, (0 split)
##
##
         377 < 2
                     to the left,
                                   agree=0.827, adj=0.631, (0 split)
##
## Node number 100: 192 observations
##
     predicted class=2
                        expected loss=0.1197917
                                                  P(node) =0.007617536
##
       class counts:
                         0
                               5
                                   169
                                            6
                                                  1
                                                        2
                                                              1
                                                                    3
                                                                          5
0
##
      probabilities: 0.000 0.026 0.880 0.031 0.005 0.010 0.005 0.016 0.026
0.000
##
## Node number 101: 26 observations,
                                         complexity param=0.0003125837
     predicted class=5
                        expected loss=0.6923077 P(node) =0.001031541
##
##
       class counts:
                         7
                                     1
                                                  1
                                                        8
                                                              6
                                                                          1
2
##
      probabilities: 0.269 0.000 0.038 0.000 0.038 0.308 0.231 0.000 0.038
0.077
##
     left son=202 (17 obs) right son=203 (9 obs)
##
     Primary splits:
         512 < 14.5 to the right, improve=5.986928, (0 missing)
##
         440 < 170.5 to the right, improve=5.947712, (0 missing)
##
##
         540 < 19
                     to the right, improve=5.894737, (0 missing)
                     to the right, improve=5.869281, (0 missing)
##
         511 < 0.5
##
         412 < 185.5 to the right, improve=5.775000, (0 missing)
##
     Surrogate splits:
##
         523 < 31
                     to the right, agree=0.962, adj=0.889, (0 split)
##
         541 < 13.5
                     to the right, agree=0.962, adj=0.889, (0 split)
##
         355 < 9.5
                     to the right, agree=0.923, adj=0.778, (0 split)
##
                     to the left, agree=0.923, adj=0.778, (0 split)
         431 < 42.5
##
         495 < 3
                     to the right, agree=0.923, adj=0.778, (0 split)
##
```

```
## Node number 102: 73 observations
                        expected loss=0.1232877
##
     predicted class=0
                                                 P(node) =0.002896251
##
       class counts:
                        64
                               0
                                     1
                                           0
                                                 0
                                                       0
                                                             5
                                                                   1
                                                                         1
1
##
      probabilities: 0.877 0.000 0.014 0.000 0.000 0.000 0.068 0.014 0.014
0.014
##
## Node number 103: 151 observations,
                                         complexity param=0.0005805126
                        expected loss=0.410596 P(node) =0.005990875
     predicted class=5
##
       class counts:
                         6
                               0
                                    10
                                           4
                                                 1
                                                      89
                                                            24
                                                                        17
0
      probabilities: 0.040 0.000 0.066 0.026 0.007 0.589 0.159 0.000 0.113
##
0.000
##
     left son=206 (64 obs) right son=207 (87 obs)
##
     Primary splits:
##
         513 < 12.5 to the right, improve=26.85880, (0 missing)
                                   improve=22.88604, (0 missing)
##
         157 < 47
                     to the left,
##
         156 < 74.5
                    to the left,
                                   improve=21.54192, (0 missing)
##
         514 < 3.5
                     to the left,
                                   improve=21.01624, (0 missing)
##
         131 < 89
                     to the left, improve=20.69583, (0 missing)
##
     Surrogate splits:
                     to the right, agree=0.887, adj=0.734, (0 split)
##
         514 < 3.5
##
         485 < 108
                     to the right, agree=0.874, adj=0.703, (0 split)
##
         541 < 46
                     to the right, agree=0.854, adj=0.656, (0 split)
##
         512 < 55.5 to the right, agree=0.834, adj=0.609, (0 split)
##
         486 < 140.5 to the right, agree=0.828, adj=0.594, (0 split)
##
## Node number 104: 151 observations,
                                         complexity param=0.0004018934
##
     predicted class=0
                        expected loss=0.4039735 P(node) =0.005990875
##
       class counts:
                        90
                               0
                                    16
                                           3
                                                 3
                                                      14
                                                             5
                                                                         2
15
##
      probabilities: 0.596 0.000 0.106 0.020 0.020 0.093 0.033 0.020 0.013
0.099
##
     left son=208 (93 obs) right son=209 (58 obs)
##
     Primary splits:
         518 < 102
##
                                   improve=21.05911, (0 missing)
                     to the left,
                                   improve=15.24324, (0 missing)
##
         519 < 110.5 to the left,
##
                     to the right, improve=15.17687, (0 missing)
         571 < 118
##
         517 < 167.5 to the left,
                                   improve=15.05487, (0 missing)
##
                                   improve=14.75032, (0 missing)
         489 < 46.5 to the left,
##
     Surrogate splits:
##
         517 < 80
                     to the left,
                                   agree=0.901, adj=0.741, (0 split)
##
         490 < 1
                     to the left,
                                   agree=0.894, adj=0.724, (0 split)
                                   agree=0.894, adj=0.724, (0 split)
##
         519 < 110.5 to the left,
##
         489 < 1.5
                     to the left,
                                   agree=0.848, adj=0.603, (0 split)
##
         546 < 224.5 to the left,
                                   agree=0.834, adj=0.569, (0 split)
##
## Node number 105: 158 observations,
                                         complexity param=0.0002679289
##
     predicted class=6 expected loss=0.2531646 P(node) =0.006268598
##
       class counts: 9 1 14 3 6 5 118
```

```
1
##
      probabilities: 0.057 0.006 0.089 0.019 0.038 0.032 0.747 0.000 0.006
0.006
##
     left son=210 (15 obs) right son=211 (143 obs)
##
     Primary splits:
         215 < 15
##
                     to the right, improve=10.949600, (0 missing)
##
         99 < 1.5
                     to the left, improve=10.621320, (0 missing)
                     to the right, improve=10.141330, (0 missing)
##
         244 < 5
##
         657 < 4.5
                     to the right, improve= 9.843735, (0 missing)
                     to the right, improve= 9.691958, (0 missing)
##
         243 < 3
##
     Surrogate splits:
         243 < 3
##
                     to the right, agree=0.994, adj=0.933, (0 split)
##
         216 < 20.5
                     to the right, agree=0.981, adj=0.800, (0 split)
##
         187 < 22.5
                     to the right, agree=0.968, adj=0.667, (0 split)
##
                     to the right, agree=0.968, adj=0.667, (0 split)
         214 < 5
##
         242 < 3
                     to the right, agree=0.968, adj=0.667, (0 split)
##
## Node number 106: 119 observations,
                                          complexity param=0.0002679289
##
     predicted class=4
                        expected loss=0.2268908 P(node) =0.004721285
##
       class counts:
                         2
                               0
                                      6
                                            0
                                                 92
                                                        3
                                                              5
                                                                    6
                                                                           0
5
      probabilities: 0.017 0.000 0.050 0.000 0.773 0.025 0.042 0.050 0.000
##
0.042
##
     left son=212 (103 obs) right son=213 (16 obs)
##
     Primary splits:
##
         294 < 30.5 to the left,
                                    improve=14.29289, (0 missing)
##
         266 < 44.5 to the left,
                                    improve=13.49975, (0 missing)
         295 < 15
                                    improve=12.17027, (0 missing)
##
                     to the left,
##
         267 < 10.5
                     to the left,
                                    improve=11.11692, (0 missing)
         322 < 2.5
##
                     to the left,
                                    improve=10.30024, (0 missing)
##
     Surrogate splits:
##
         266 < 44.5 to the left,
                                   agree=0.975, adj=0.812, (0 split)
         295 < 15
##
                     to the left,
                                    agree=0.958, adj=0.688, (0 split)
##
         265 < 211
                     to the left,
                                    agree=0.950, adj=0.625, (0 split)
##
                                    agree=0.950, adj=0.625, (0 split)
         267 < 10.5
                     to the left,
##
         322 < 2.5
                     to the left,
                                   agree=0.950, adj=0.625, (0 split)
##
## Node number 107: 175 observations,
                                          complexity param=0.001473609
##
     predicted class=9
                        expected loss=0.6057143 P(node) =0.006943067
                                            5
##
       class counts:
                         7
                               0
                                      8
                                                 24
                                                       38
                                                              5
                                                                   17
                                                                           2
69
##
      probabilities: 0.040 0.000 0.046 0.029 0.137 0.217 0.029 0.097 0.011
0.394
##
     left son=214 (69 obs) right son=215 (106 obs)
##
     Primary splits:
##
         465 < 104
                     to the left,
                                    improve=27.01432, (0 missing)
##
         466 < 0.5
                     to the left,
                                    improve=25.30958, (0 missing)
##
         437 < 11.5
                     to the left,
                                    improve=25.03619, (0 missing)
##
         438 < 16
                     to the left,
                                    improve=24.84611, (0 missing)
                     to the right, improve=24.44695, (0 missing)
##
         218 < 1.5
```

```
##
     Surrogate splits:
##
         437 < 1
                     to the left,
                                   agree=0.943, adj=0.855, (0 split)
                                   agree=0.903, adj=0.754, (0 split)
##
         464 < 10.5
                     to the left,
                     to the left,
                                   agree=0.880, adj=0.696, (0 split)
##
         409 < 1
##
         438 < 52
                     to the left,
                                   agree=0.880, adj=0.696, (0 split)
##
         493 < 55.5 to the left,
                                   agree=0.880, adj=0.696, (0 split)
##
## Node number 108: 106 observations,
                                         complexity param=0.0002456015
                        expected loss=0.4433962 P(node) =0.004205515
##
     predicted class=5
##
       class counts:
                         2
                               7
                                     0
                                          17
                                                 2
                                                       59
                                                             9
                                                                    2
                                                                          2
6
      probabilities: 0.019 0.066 0.000 0.160 0.019 0.557 0.085 0.019 0.019
##
0.057
##
     left son=216 (53 obs) right son=217 (53 obs)
##
     Primary splits:
##
         290 < 0.5
                     to the left,
                                   improve=9.660377, (0 missing)
##
         263 < 3.5
                     to the left,
                                   improve=9.106793, (0 missing)
##
         203 < 5
                     to the right, improve=8.230857, (0 missing)
         205 < 12
##
                     to the right, improve=7.251435, (0 missing)
##
         291 < 46
                     to the left,
                                   improve=7.251267, (0 missing)
##
     Surrogate splits:
                                   agree=0.887, adj=0.774, (0 split)
##
         318 < 55
                     to the left,
##
         263 < 28
                     to the left,
                                   agree=0.830, adj=0.660, (0 split)
##
         317 < 3
                     to the left,
                                   agree=0.830, adj=0.660, (0 split)
##
         262 < 17.5
                     to the left,
                                   agree=0.821, adj=0.642, (0 split)
##
         289 < 13
                     to the left,
                                   agree=0.811, adj=0.623, (0 split)
##
## Node number 109: 102 observations,
                                         complexity param=0.0007144771
##
     predicted class=9
                        expected loss=0.4215686 P(node) =0.004046816
##
       class counts:
                         2
                               0
                                     3
                                           8
                                                20
                                                       3
                                                                    7
                                                                          0
59
##
      probabilities: 0.020 0.000 0.029 0.078 0.196 0.029 0.000 0.069 0.000
0.578
##
     left son=218 (31 obs) right son=219 (71 obs)
##
     Primary splits:
##
         239 < 1.5
                                   improve=18.23672, (0 missing)
                     to the left,
         238 < 17.5
##
                     to the left,
                                   improve=17.47031, (0 missing)
##
         210 < 2
                     to the left,
                                   improve=16.29280, (0 missing)
##
         211 < 4
                     to the left,
                                   improve=15.30392, (0 missing)
         237 < 69.5 to the left,
                                   improve=14.14787, (0 missing)
##
##
     Surrogate splits:
##
         238 < 2
                     to the left,
                                   agree=0.941, adj=0.806, (0 split)
##
         211 < 28.5
                     to the left,
                                   agree=0.922, adj=0.742, (0 split)
##
                     to the left,
                                   agree=0.922, adj=0.742, (0 split)
         240 < 3.5
                                   agree=0.902, adj=0.677, (0 split)
##
         210 < 2
                     to the left,
##
         237 < 8.5
                     to the left,
                                   agree=0.892, adj=0.645, (0 split)
##
## Node number 110: 68 observations,
                                        complexity param=0.0002679289
##
     predicted class=0 expected loss=0.2794118 P(node) =0.002697877
##
       class counts: 49 0 0 1 2
```

```
3
##
      probabilities: 0.721 0.000 0.000 0.015 0.029 0.132 0.000 0.059 0.000
0.044
##
     left son=220 (59 obs) right son=221 (9 obs)
##
     Primary splits:
         323 < 203
##
                     to the left,
                                    improve=8.749972, (0 missing)
##
         353 < 45.5 to the left,
                                    improve=8.666479, (0 missing)
##
         322 < 102.5 to the left,
                                    improve=8.395886, (0 missing)
                     to the right, improve=8.231900, (0 missing)
##
         237 < 24
##
         358 < 3.5
                     to the right, improve=7.987677, (0 missing)
##
     Surrogate splits:
         322 < 197.5 to the left,
##
                                   agree=0.971, adj=0.778, (0 split)
##
         321 < 229
                     to the left,
                                   agree=0.956, adj=0.667, (0 split)
##
         352 < 59.5 to the left,
                                    agree=0.956, adj=0.667, (0 split)
##
         353 < 75
                     to the left,
                                    agree=0.956, adj=0.667, (0 split)
##
         324 < 232.5 to the left,
                                   agree=0.941, adj=0.556, (0 split)
##
## Node number 111: 678 observations,
                                          complexity param=0.0003572385
##
     predicted class=7
                        expected loss=0.1017699 P(node) =0.02689942
##
       class counts:
                         8
                               3
                                      5
                                            8
                                                 12
                                                       17
                                                                  609
                                                                           0
12
      probabilities: 0.012 0.004 0.007 0.012 0.018 0.025 0.006 0.898 0.000
##
0.018
##
     left son=222 (30 obs) right son=223 (648 obs)
##
     Primary splits:
##
         460 < 13
                     to the right, improve=27.51554, (0 missing)
##
                     to the right, improve=27.47981, (0 missing)
         488 < 2
         461 < 5.5
                     to the right, improve=26.12030, (0 missing)
##
##
         432 < 13.5
                     to the right, improve=25.79541, (0 missing)
##
         459 < 17.5
                     to the right, improve=25.38516, (0 missing)
     Surrogate splits:
##
##
         459 < 33.5
                     to the right, agree=0.994, adj=0.867, (0 split)
##
         461 < 5.5
                     to the right, agree=0.993, adj=0.833, (0 split)
##
         431 < 75.5
                     to the right, agree=0.991, adj=0.800, (0 split)
##
                     to the right, agree=0.991, adj=0.800, (0 split)
         432 < 13.5
##
         433 < 1.5
                     to the right, agree=0.985, adj=0.667, (0 split)
##
## Node number 112: 1021 observations,
                                           complexity param=0.0009377512
##
     predicted class=2
                        expected loss=0.1165524 P(node) =0.04050784
##
       class counts:
                         3
                               0
                                    902
                                           16
                                                  2
                                                        2
                                                              2
                                                                   12
                                                                         66
16
##
      probabilities: 0.003 0.000 0.883 0.016 0.002 0.002 0.002 0.012 0.065
0.016
##
     left son=224 (936 obs) right son=225 (85 obs)
##
     Primary splits:
##
         344 < 82
                     to the left,
                                    improve=57.73321, (0 missing)
##
         372 < 94.5
                     to the left,
                                    improve=57.50269, (0 missing)
##
                                    improve=55.79061, (0 missing)
         373 < 134
                     to the left,
##
         345 < 6.5
                     to the left,
                                    improve=54.35326, (0 missing)
##
         343 < 27.5 to the left, improve=48.16892, (0 missing)
```

```
##
     Surrogate splits:
##
         345 < 6.5
                     to the left,
                                   agree=0.976, adj=0.706, (0 split)
                                   agree=0.975, adj=0.694, (0 split)
##
         343 < 4.5
                     to the left,
                     to the left,
                                   agree=0.966, adj=0.588, (0 split)
##
         316 < 141
##
         372 < 94.5
                     to the left,
                                   agree=0.966, adj=0.588, (0 split)
##
         317 < 137
                     to the left,
                                   agree=0.955, adj=0.459, (0 split)
##
## Node number 113: 623 observations,
                                         complexity param=0.002857908
     predicted class=7
                        expected loss=0.7094703 P(node) =0.02471732
##
##
       class counts:
                         2
                             102
                                   107
                                           7
                                                63
                                                       10
                                                             48
                                                                  181
                                                                         28
75
      probabilities: 0.003 0.164 0.172 0.011 0.101 0.016 0.077 0.291 0.045
##
0.120
##
     left son=226 (487 obs) right son=227 (136 obs)
##
     Primary splits:
##
         709 < 1.5
                     to the left,
                                   improve=80.54117, (0 missing)
##
         708 < 0.5
                     to the left,
                                   improve=78.89815, (0 missing)
##
         238 < 1
                     to the left,
                                   improve=74.85138, (0 missing)
##
         237 < 1
                     to the left,
                                   improve=71.72020, (0 missing)
##
         239 < 7.5
                     to the left,
                                   improve=70.12118, (0 missing)
##
     Surrogate splits:
##
         708 < 0.5
                     to the left,
                                   agree=0.949, adj=0.765, (0 split)
##
         681 < 204.5 to the left,
                                   agree=0.929, adj=0.676, (0 split)
##
         710 < 8
                     to the left,
                                   agree=0.912, adj=0.596, (0 split)
##
         680 < 92.5
                     to the left,
                                   agree=0.891, adj=0.500, (0 split)
##
         682 < 17.5 to the left,
                                   agree=0.884, adj=0.471, (0 split)
##
## Node number 114: 485 observations,
                                         complexity param=0.00379566
##
     predicted class=4
                        expected loss=0.7360825 P(node) =0.01924221
##
       class counts:
                        19
                               0
                                    73
                                           0
                                                      96
                                                             19
                                                                   48
                                                                         49
                                               128
53
##
      probabilities: 0.039 0.000 0.151 0.000 0.264 0.198 0.039 0.099 0.101
0.109
##
     left son=228 (121 obs) right son=229 (364 obs)
##
     Primary splits:
##
                                   improve=68.34460, (0 missing)
         354 < 1
                     to the left,
         353 < 10.5
                                   improve=55.12702, (0 missing)
##
                     to the left,
##
         382 < 0.5
                     to the right, improve=51.97462, (0 missing)
##
         381 < 13.5
                     to the left,
                                   improve=51.07833, (0 missing)
         488 < 0.5
                     to the left,
                                   improve=50.20387, (0 missing)
##
##
     Surrogate splits:
##
         381 < 13.5
                     to the left,
                                   agree=0.924, adj=0.694, (0 split)
##
         353 < 2.5
                     to the left,
                                   agree=0.920, adj=0.678, (0 split)
                                   agree=0.907, adj=0.628, (0 split)
##
                     to the left,
         382 < 0.5
         326 < 16
                                   agree=0.905, adj=0.620, (0 split)
##
                     to the left,
##
         327 < 1
                     to the left,
                                   agree=0.889, adj=0.554, (0 split)
##
## Node number 115: 709 observations,
                                         complexity param=0.0004465482
##
     predicted class=8 expected loss=0.1551481 P(node) =0.02812934
       class counts: 17 0 5 5 24 23 9
##
```

```
19
##
      probabilities: 0.024 0.000 0.007 0.007 0.034 0.032 0.013 0.011 0.845
0.027
##
     left son=230 (74 obs) right son=231 (635 obs)
##
     Primary splits:
         428 < 111.5 to the right, improve=43.00775, (0 missing)
##
##
                     to the right, improve=39.61953, (0 missing)
         456 < 224
                     to the right, improve=39.06051, (0 missing)
##
         427 < 3
                     to the right, improve=38.75969, (0 missing)
##
         400 < 57.5
##
         455 < 23.5 to the right, improve=35.15894, (0 missing)
##
     Surrogate splits:
         456 < 204
##
                     to the right, agree=0.976, adj=0.770, (0 split)
##
         427 < 9
                     to the right, agree=0.969, adj=0.703, (0 split)
##
         455 < 9
                     to the right, agree=0.968, adj=0.689, (0 split)
##
         429 < 247.5 to the right, agree=0.962, adj=0.635, (0 split)
##
         400 < 164.5 to the right, agree=0.952, adj=0.541, (0 split)
##
## Node number 116: 344 observations,
                                          complexity param=0.0008037867
##
     predicted class=2
                        expected loss=0.244186
                                                 P(node) = 0.01364809
##
       class counts:
                         3
                              25
                                    260
                                            4
                                                 10
                                                        0
                                                              3
                                                                   27
                                                                          6
6
      probabilities: 0.009 0.073 0.756 0.012 0.029 0.000 0.009 0.078 0.017
##
0.017
##
     left son=232 (318 obs) right son=233 (26 obs)
##
     Primary splits:
                                   improve=27.13588, (0 missing)
##
         686 < 2.5
                     to the left,
##
                     to the right, improve=25.48856, (0 missing)
         153 < 2
                     to the right, improve=25.38425, (0 missing)
##
         152 < 1
##
         159 < 0.5
                     to the right, improve=24.04874, (0 missing)
##
         187 < 16.5
                     to the right, improve=23.73987, (0 missing)
##
     Surrogate splits:
##
         687 < 7
                     to the left, agree=0.983, adj=0.769, (0 split)
         714 < 2.5
                                   agree=0.968, adj=0.577, (0 split)
##
                     to the left,
##
         659 < 165.5 to the left,
                                   agree=0.962, adj=0.500, (0 split)
##
         685 < 32
                                   agree=0.962, adj=0.500, (0 split)
                     to the left,
##
         688 < 9
                     to the left,
                                   agree=0.959, adj=0.462, (0 split)
##
## Node number 117: 103 observations,
                                          complexity param=0.0008930964
                        expected loss=0.6990291 P(node) =0.004086491
##
     predicted class=8
##
       class counts:
                         2
                               1
                                    10
                                            0
                                                 24
                                                        1
                                                             19
                                                                    4
                                                                         31
11
##
      probabilities: 0.019 0.010 0.097 0.000 0.233 0.010 0.184 0.039 0.301
0.107
##
     left son=234 (73 obs) right son=235 (30 obs)
##
     Primary splits:
##
         656 < 105
                     to the left,
                                   improve=19.74875, (0 missing)
##
         655 < 6.5
                     to the left,
                                   improve=18.45919, (0 missing)
                     to the left,
##
                                   improve=15.76298, (0 missing)
         627 < 4
##
         657 < 18
                     to the left,
                                   improve=15.70104, (0 missing)
##
         626 < 0.5
                     to the left, improve=15.06336, (0 missing)
```

```
##
     Surrogate splits:
##
         655 < 123
                     to the left,
                                   agree=0.971, adj=0.900, (0 split)
                                   agree=0.942, adj=0.800, (0 split)
##
         657 < 108.5 to the left,
                                   agree=0.913, adj=0.700, (0 split)
##
         627 < 183.5 to the left,
##
         654 < 2
                     to the left,
                                   agree=0.883, adj=0.600, (0 split)
                                   agree=0.874, adj=0.567, (0 split)
##
         628 < 140
                     to the left,
##
## Node number 118: 241 observations,
                                         complexity param=0.002545325
     predicted class=8
                        expected loss=0.5062241 P(node) =0.009561595
##
       class counts:
                         3
                               1
                                    78
                                           3
                                                15
                                                        1
                                                             14
                                                                    2
                                                                        119
5
      probabilities: 0.012 0.004 0.324 0.012 0.062 0.004 0.058 0.008 0.494
##
0.021
##
     left son=236 (127 obs) right son=237 (114 obs)
##
     Primary splits:
##
         655 < 30.5 to the left,
                                   improve=54.95627, (0 missing)
                                   improve=52.10515, (0 missing)
##
         654 < 6
                     to the left,
##
         537 < 131.5 to the right, improve=50.14114, (0 missing)
##
         656 < 6
                     to the left,
                                   improve=49.56066, (0 missing)
##
         509 < 3.5
                     to the right, improve=48.44629, (0 missing)
##
     Surrogate splits:
##
         654 < 6
                     to the left,
                                   agree=0.946, adj=0.886, (0 split)
##
         656 < 1.5
                     to the left,
                                   agree=0.942, adj=0.877, (0 split)
##
         629 < 2
                     to the left,
                                   agree=0.884, adj=0.754, (0 split)
##
         628 < 1
                     to the left,
                                   agree=0.880, adj=0.746, (0 split)
                                   agree=0.867, adj=0.719, (0 split)
##
         627 < 86.5 to the left,
##
## Node number 119: 1700 observations,
                                          complexity param=0.001696883
##
     predicted class=6
                        expected loss=0.1229412 P(node) =0.06744694
##
       class counts:
                         0
                               2
                                    32
                                           5
                                                  5
                                                      102 1491
                                                                         50
                                                                    2
11
##
      probabilities: 0.000 0.001 0.019 0.003 0.003 0.060 0.877 0.001 0.029
0.006
##
     left son=238 (1537 obs) right son=239 (163 obs)
##
     Primary splits:
##
         658 < 1.5
                     to the left,
                                   improve=113.14630, (0 missing)
         657 < 6
                                   improve=110.56940, (0 missing)
##
                     to the left,
##
         656 < 11
                     to the left,
                                   improve=107.75830, (0 missing)
##
         655 < 1.5
                     to the right, improve=100.02240, (0 missing)
         659 < 6.5
                     to the right, improve= 98.06006, (0 missing)
##
##
     Surrogate splits:
         657 < 2.5
##
                     to the left,
                                   agree=0.993, adj=0.926, (0 split)
                                   agree=0.985, adj=0.847, (0 split)
##
         659 < 3
                     to the left,
                                   agree=0.979, adj=0.785, (0 split)
##
         656 < 0.5
                     to the left,
                                   agree=0.971, adj=0.699, (0 split)
##
         660 < 3.5
                     to the left,
##
         655 < 1.5
                     to the left,
                                   agree=0.962, adj=0.607, (0 split)
##
## Node number 120: 221 observations,
                                         complexity param=0.003349111
##
     predicted class=2 expected loss=0.60181 P(node) =0.008768102
       class counts: 0 0 88 24 4 81
```

```
0
##
      probabilities: 0.000 0.000 0.398 0.109 0.018 0.367 0.009 0.000 0.100
0.000
##
     left son=240 (109 obs) right son=241 (112 obs)
##
     Primary splits:
         346 < 3
##
                     to the left,
                                    improve=56.90477, (0 missing)
##
                     to the left,
                                    improve=52.80342, (0 missing)
         319 < 5
##
         127 < 31.5
                     to the right, improve=49.12228, (0 missing)
##
         347 < 9
                     to the left,
                                    improve=48.68827, (0 missing)
                     to the right, improve=47.95154, (0 missing)
##
         157 < 2
##
     Surrogate splits:
         319 < 26
##
                     to the left,
                                   agree=0.914, adj=0.826, (0 split)
##
         347 < 9
                     to the left,
                                   agree=0.905, adj=0.807, (0 split)
##
         374 < 58
                     to the left,
                                    agree=0.905, adj=0.807, (0 split)
##
                     to the left,
                                    agree=0.882, adj=0.761, (0 split)
         318 < 1
##
         345 < 1.5
                     to the left,
                                   agree=0.882, adj=0.761, (0 split)
##
## Node number 121: 1609 observations,
                                           complexity param=0.001629901
##
     predicted class=4 expected loss=0.1876942 P(node) =0.06383654
##
       class counts:
                         0
                               6
                                     23
                                           20 1307
                                                       42
                                                             66
                                                                   44
                                                                          34
67
      probabilities: 0.000 0.004 0.014 0.012 0.812 0.026 0.041 0.027 0.021
##
0.042
##
     left son=242 (1469 obs) right son=243 (140 obs)
##
     Primary splits:
         267 < 139
##
                     to the left,
                                    improve=86.21374, (0 missing)
##
         98 < 3
                     to the left,
                                    improve=81.05098, (0 missing)
                                    improve=69.20911, (0 missing)
##
         97 < 1
                     to the left,
##
         266 < 173.5 to the left,
                                    improve=69.13510, (0 missing)
##
         400 < 6.5
                     to the right, improve=63.19168, (0 missing)
##
     Surrogate splits:
##
         239 < 74.5 to the left,
                                    agree=0.965, adj=0.600, (0 split)
                                    agree=0.959, adj=0.529, (0 split)
##
         266 < 191.5 to the left,
##
         295 < 176.5 to the left,
                                    agree=0.947, adj=0.386, (0 split)
##
                                    agree=0.937, adj=0.271, (0 split)
         294 < 132
                     to the left,
##
         268 < 250.5 to the left,
                                   agree=0.927, adj=0.164, (0 split)
##
## Node number 122: 808 observations,
                                          complexity param=0.003929624
                        expected loss=0.4492574 P(node) =0.03205713
##
     predicted class=5
##
       class counts:
                         3
                               2
                                     19
                                           55
                                                 94
                                                      445
                                                             28
                                                                   33
                                                                         37
92
##
      probabilities: 0.004 0.002 0.024 0.068 0.116 0.551 0.035 0.041 0.046
0.114
##
     left son=244 (581 obs) right son=245 (227 obs)
##
     Primary splits:
##
         352 < 55
                     to the left,
                                    improve=128.5179, (0 missing)
##
         324 < 30.5
                     to the left,
                                    improve=120.9151, (0 missing)
                                    improve=107.8040, (0 missing)
##
         351 < 42.5
                     to the left,
##
         353 < 1.5
                     to the left,
                                    improve=105.0853, (0 missing)
                                   improve=103.3771, (0 missing)
##
         325 < 1 to the left,
```

```
##
     Surrogate splits:
##
         324 < 129.5 to the left,
                                   agree=0.972, adj=0.899, (0 split)
                                   agree=0.968, adj=0.885, (0 split)
##
         351 < 42.5
                     to the left,
                                   agree=0.955, adj=0.841, (0 split)
##
         353 < 1.5
                     to the left,
##
         325 < 6.5
                     to the left,
                                   agree=0.941, adj=0.789, (0 split)
##
         323 < 0.5
                     to the left,
                                   agree=0.906, adj=0.665, (0 split)
##
## Node number 123: 1851 observations,
                                          complexity param=0.002835581
                        expected loss=0.3408968 P(node) =0.07343781
     predicted class=9
##
       class counts:
                         4
                               0
                                    71
                                         160
                                               194
                                                       19
                                                                   55
                                                                        124
1220
      probabilities: 0.002 0.000 0.038 0.086 0.105 0.010 0.002 0.030 0.067
##
0.659
     left son=246 (406 obs) right son=247 (1445 obs)
##
##
     Primary splits:
##
         156 < 0.5
                     to the right, improve=177.7674, (0 missing)
                     to the right, improve=172.9101, (0 missing)
##
         155 < 0.5
##
         154 < 1
                     to the right, improve=137.4916, (0 missing)
                     to the right, improve=135.3175, (0 missing)
##
         157 < 0.5
##
         623 < 1
                     to the right, improve=128.5714, (0 missing)
##
     Surrogate splits:
##
         155 < 0.5
                     to the right, agree=0.960, adj=0.818, (0 split)
##
         157 < 0.5
                     to the right, agree=0.949, adj=0.768, (0 split)
##
         154 < 1
                     to the right, agree=0.910, adj=0.589, (0 split)
##
         158 < 0.5
                     to the right, agree=0.900, adj=0.544, (0 split)
##
         153 < 0.5
                     to the right, agree=0.880, adj=0.451, (0 split)
##
## Node number 124: 313 observations,
                                         complexity param=0.002054122
##
     predicted class=5
                        expected loss=0.629393
                                                P(node) = 0.01241817
##
       class counts:
                         1
                              12
                                          57
                                                 30
                                                      116
                                                                    8
                                                                         30
                                     8
                                                              2
49
##
      probabilities: 0.003 0.038 0.026 0.182 0.096 0.371 0.006 0.026 0.096
0.157
##
     left son=248 (175 obs) right son=249 (138 obs)
##
     Primary splits:
##
         353 < 1
                                   improve=47.76335, (0 missing)
                     to the left,
         352 < 12
##
                     to the left,
                                   improve=44.04212, (0 missing)
##
         325 < 2.5
                     to the left,
                                   improve=34.45115, (0 missing)
##
         381 < 141.5 to the left,
                                   improve=32.65698, (0 missing)
         354 < 2.5
##
                     to the left,
                                   improve=31.10189, (0 missing)
##
     Surrogate splits:
##
         352 < 18
                     to the left,
                                   agree=0.920, adj=0.819, (0 split)
                                   agree=0.911, adj=0.797, (0 split)
##
         325 < 23.5
                     to the left,
##
         354 < 2.5
                                   agree=0.872, adj=0.710, (0 split)
                     to the left,
                                   agree=0.869, adj=0.703, (0 split)
##
         326 < 0.5
                     to the left,
         381 < 79.5 to the left,
##
                                   agree=0.856, adj=0.674, (0 split)
##
## Node number 125: 1453 observations,
                                          complexity param=0.001607573
##
     predicted class=7 expected loss=0.1046111 P(node) =0.05764729
       class counts: 6 53 45
                                          11 4 2
```

```
11
##
      probabilities: 0.004 0.036 0.031 0.008 0.003 0.001 0.013 0.895 0.001
0.008
##
     left son=250 (93 obs) right son=251 (1360 obs)
##
     Primary splits:
         156 < 0.5
                     to the right, improve=93.49668, (0 missing)
##
##
         155 < 3.5
                     to the right, improve=84.86421, (0 missing)
                     to the right, improve=83.35302, (0 missing)
##
         157 < 0.5
                     to the right, improve=71.99319, (0 missing)
##
         154 < 7
                     to the right, improve=65.40702, (0 missing)
##
         153 < 2
##
     Surrogate splits:
         155 < 3.5
##
                     to the right, agree=0.983, adj=0.742, (0 split)
##
         157 < 0.5
                     to the right, agree=0.982, adj=0.720, (0 split)
##
         154 < 10.5
                     to the right, agree=0.966, adj=0.473, (0 split)
##
                     to the right, agree=0.962, adj=0.409, (0 split)
         128 < 6.5
##
         158 < 1.5
                     to the right, agree=0.960, adj=0.376, (0 split)
##
## Node number 126: 144 observations,
                                         complexity param=0.0004018934
##
     predicted class=4 expected loss=0.2638889 P(node) =0.005713152
##
       class counts:
                         1
                               1
                                    11
                                            0
                                                106
                                                        1
                                                             15
                                                                    1
                                                                          1
7
##
      probabilities: 0.007 0.007 0.076 0.000 0.736 0.007 0.104 0.007 0.007
0.049
##
     left son=252 (132 obs) right son=253 (12 obs)
##
     Primary splits:
                                   improve=12.98232, (0 missing)
##
         95 < 6.5
                     to the left,
                                   improve=12.87266, (0 missing)
##
         96 < 2
                     to the left,
                     to the right, improve=12.59550, (0 missing)
##
         97 < 4.5
##
         597 < 35.5 to the right, improve=11.90941, (0 missing)
##
         567 < 164.5 to the right, improve=11.77222, (0 missing)
##
     Surrogate splits:
##
         94 < 4
                     to the left,
                                   agree=0.972, adj=0.667, (0 split)
                                   agree=0.972, adj=0.667, (0 split)
##
         122 < 64
                     to the left,
##
         67
            < 4
                     to the left,
                                   agree=0.965, adj=0.583, (0 split)
##
         96 < 36
                                   agree=0.965, adj=0.583, (0 split)
                     to the left,
##
         123 < 100.5 to the left,
                                   agree=0.958, adj=0.500, (0 split)
##
## Node number 127: 218 observations,
                                          complexity param=0.0003125837
                        expected loss=0.2981651 P(node) =0.008649078
##
     predicted class=9
##
       class counts:
                         0
                               0
                                     8
                                           1
                                                 29
                                                                   22
                                                                          4
153
##
      probabilities: 0.000 0.000 0.037 0.005 0.133 0.000 0.005 0.101 0.018
0.702
##
     left son=254 (50 obs) right son=255 (168 obs)
##
     Primary splits:
##
         518 < 241.5 to the right, improve=14.56990, (0 missing)
##
         235 < 3.5
                     to the left, improve=14.16128, (0 missing)
                     to the right, improve=13.12314, (0 missing)
##
         155 < 1
##
         354 < 4
                     to the left,
                                   improve=12.86037, (0 missing)
                     to the left, improve=12.85993, (0 missing)
##
         316 < 6
```

```
##
     Surrogate splits:
##
         545 < 30
                     to the right, agree=0.927, adj=0.68, (0 split)
         517 < 223.5 to the right, agree=0.899, adj=0.56, (0 split)
##
         546 < 171.5 to the right, agree=0.862, adj=0.40, (0 split)
##
         573 < 62.5 to the right, agree=0.862, adj=0.40, (0 split)
##
##
         572 < 24.5 to the right, agree=0.858, adj=0.38, (0 split)
##
## Node number 128: 2291 observations,
                                          complexity param=0.0001786193
     predicted class=1 expected loss=0.03360978 P(node) =0.09089466
##
       class counts:
                         0 2214
                                    12
                                            6
                                                  7
                                                       10
                                                              8
                                                                    8
                                                                         24
2
      probabilities: 0.000 0.966 0.005 0.003 0.003 0.004 0.003 0.003 0.010
##
0.001
##
     left son=256 (2260 obs) right son=257 (31 obs)
##
     Primary splits:
##
         484 < 8
                     to the left,
                                   improve=24.92766, (0 missing)
##
         456 < 8
                     to the left,
                                   improve=24.56170, (0 missing)
##
         483 < 1
                     to the left,
                                   improve=23.74161, (0 missing)
##
         457 < 81
                     to the left,
                                   improve=23.35611, (0 missing)
                     to the left,
##
         466 < 3
                                   improve=22.41290, (0 missing)
##
     Surrogate splits:
##
         485 < 179
                     to the left,
                                   agree=0.996, adj=0.677, (0 split)
##
         512 < 113
                     to the left,
                                   agree=0.996, adj=0.677, (0 split)
##
         457 < 57
                     to the left,
                                   agree=0.995, adj=0.645, (0 split)
##
         456 < 8
                     to the left,
                                   agree=0.994, adj=0.548, (0 split)
                                   agree=0.993, adj=0.516, (0 split)
##
         483 < 1
                     to the left,
##
## Node number 129: 21 observations
##
     predicted class=2
                        expected loss=0.1428571 P(node) =0.000833168
##
       class counts:
                         0
                               2
                                    18
                                                        0
                                                              0
                                                                          0
                                            1
                                                  0
0
      probabilities: 0.000 0.095 0.857 0.048 0.000 0.000 0.000 0.000 0.000
##
0.000
##
## Node number 130: 72 observations,
                                        complexity param=0.0005358578
     predicted class=1 expected loss=0.2916667 P(node) =0.002856576
##
##
       class counts:
                         0
                              51
                                     1
                                            2
                                                  1
                                                       13
                                                                          4
0
##
      probabilities: 0.000 0.708 0.014 0.028 0.014 0.181 0.000 0.000 0.056
0.000
##
     left son=260 (55 obs) right son=261 (17 obs)
##
     Primary splits:
##
         487 < 145
                     to the right, improve=17.70351, (0 missing)
         434 < 203.5 to the right, improve=17.37037, (0 missing)
##
##
         242 < 182
                     to the right, improve=17.02758, (0 missing)
##
         215 < 32
                     to the right, improve=16.82813, (0 missing)
##
         597 < 27
                     to the right, improve=16.07407, (0 missing)
##
     Surrogate splits:
##
         242 < 160.5 to the right, agree=0.958, adj=0.824, (0 split)
##
         460 < 225.5 to the right, agree=0.958, adj=0.824, (0 split)
```

```
488 < 221 to the right, agree=0.958, adj=0.824, (0 split)
##
##
         244 < 126.5 to the right, agree=0.944, adj=0.765, (0 split)
         243 < 44.5 to the right, agree=0.931, adj=0.706, (0 split)
##
##
## Node number 131: 72 observations
##
     predicted class=8
                        expected loss=0.1388889 P(node) =0.002856576
##
       class counts:
                         0
                                                 2
                               0
                                     0
                                           3
                                                       1
                                                             0
                                                                   0
                                                                         62
4
      probabilities: 0.000 0.000 0.000 0.042 0.028 0.014 0.000 0.000 0.861
##
0.056
##
## Node number 132: 91 observations
     predicted class=2 expected loss=0.0989011 P(node) =0.003610395
##
##
       class counts:
                         0
                               2
                                    82
                                           5
                                                                          2
0
##
      probabilities: 0.000 0.022 0.901 0.055 0.000 0.000 0.000 0.000 0.022
0.000
##
## Node number 133: 17 observations
                        expected loss=0.4705882 P(node) =0.0006744694
     predicted class=1
##
       class counts:
                         0
                               9
                                     1
                                           0
                                                 1
                                                       0
                                                                          6
0
##
      probabilities: 0.000 0.529 0.059 0.000 0.059 0.000 0.000 0.000 0.353
0.000
##
## Node number 134: 24 observations,
                                        complexity param=0.0001786193
     predicted class=2 expected loss=0.6666667 P(node) =0.000952192
                                                 3
                                                       0
                                                              5
##
       class counts:
                         1
                               1
                                     8
                                           3
                                                                    1
                                                                          2
0
      probabilities: 0.042 0.042 0.333 0.125 0.125 0.000 0.208 0.042 0.083
##
0.000
##
     left son=268 (13 obs) right son=269 (11 obs)
##
     Primary splits:
##
         349 < 206.5 to the left, improve=4.564685, (0 missing)
         546 < 99.5 to the right, improve=3.767483, (0 missing)
##
                     to the left,
                                   improve=3.583333, (0 missing)
##
         348 < 7
         551 < 18.5 to the right, improve=3.459790, (0 missing)
##
##
         376 < 75.5 to the left, improve=3.421429, (0 missing)
##
     Surrogate splits:
         348 < 7
                     to the left, agree=0.958, adj=0.909, (0 split)
##
                     to the left, agree=0.917, adj=0.818, (0 split)
##
         600 < 121
         296 < 188.5 to the right, agree=0.875, adj=0.727, (0 split)
##
##
         321 < 66
                     to the left, agree=0.875, adj=0.727, (0 split)
         376 < 75.5 to the left, agree=0.875, adj=0.727, (0 split)
##
##
## Node number 135: 19 observations
##
     predicted class=6
                        expected loss=0.1052632 P(node) =0.0007538187
##
       class counts:
                         0
                               0
                                     1
                                           0
                                                 0
                                                       0
                                                            17
                                                                          0
1
##
      probabilities: 0.000 0.000 0.053 0.000 0.000 0.000 0.895 0.000 0.000
```

```
0.053
##
## Node number 136: 252 observations,
                                         complexity param=0.001406627
                        expected loss=0.7857143 P(node) =0.009998016
     predicted class=6
##
       class counts:
                        12
                              33
                                    31
                                          14
                                                 40
                                                       24
                                                             54
                                                                    8
                                                                          6
30
##
      probabilities: 0.048 0.131 0.123 0.056 0.159 0.095 0.214 0.032 0.024
0.119
##
     left son=272 (93 obs) right son=273 (159 obs)
##
     Primary splits:
##
         574 < 233
                     to the right, improve=20.46787, (0 missing)
         602 < 74.5 to the right, improve=18.99616, (0 missing)
##
##
         573 < 248.5 to the left, improve=17.63102, (0 missing)
##
         601 < 127
                     to the left, improve=17.47485, (0 missing)
##
         550 < 65.5 to the right, improve=16.87836, (0 missing)
##
     Surrogate splits:
##
         602 < 52
                     to the right, agree=0.925, adj=0.796, (0 split)
##
         575 < 145.5 to the right, agree=0.913, adj=0.763, (0 split)
##
         603 < 1.5
                     to the right, agree=0.889, adj=0.699, (0 split)
##
         576 < 19.5 to the right, agree=0.865, adj=0.634, (0 split)
##
         573 < 250.5 to the right, agree=0.849, adj=0.591, (0 split)
##
## Node number 137: 34 observations
     predicted class=5
                        expected loss=0.1176471 P(node) =0.001348939
##
##
       class counts:
                         0
                               0
                                     0
                                            0
                                                  2
                                                       30
                                                                          2
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.059 0.882 0.000 0.000 0.059
0.000
##
## Node number 138: 134 observations,
                                         complexity param=0.0004018934
##
     predicted class=1 expected loss=0.4552239 P(node) =0.005316405
##
       class counts:
                         3
                              73
                                     1
                                                 10
                                                                         16
10
##
      probabilities: 0.022 0.545 0.007 0.030 0.075 0.067 0.030 0.030 0.119
0.075
##
     left son=276 (95 obs) right son=277 (39 obs)
##
     Primary splits:
##
         429 < 10.5 to the left,
                                   improve=18.14786, (0 missing)
##
         299 < 18
                     to the left,
                                   improve=17.89685, (0 missing)
         271 < 27.5
##
                    to the left,
                                   improve=17.79153, (0 missing)
##
         327 < 30.5
                     to the left,
                                   improve=17.44297, (0 missing)
##
         430 < 2.5
                     to the left,
                                   improve=16.75559, (0 missing)
##
     Surrogate splits:
         457 < 61
##
                     to the left,
                                   agree=0.963, adj=0.872, (0 split)
##
         430 < 160.5 to the left,
                                   agree=0.933, adj=0.769, (0 split)
##
         456 < 6.5
                     to the left,
                                   agree=0.933, adj=0.769, (0 split)
##
         428 < 3
                     to the left,
                                   agree=0.925, adj=0.744, (0 split)
                                   agree=0.910, adj=0.692, (0 split)
##
         401 < 61.5 to the left,
##
## Node number 139: 144 observations, complexity param=0.0008037867
```

```
expected loss=0.3819444 P(node) =0.005713152
##
     predicted class=8
##
       class counts:
                         1
                                                  9
                                                                          89
                                3
                                      1
                                           15
                                                        3
                                                              0
                                                                     3
20
      probabilities: 0.007 0.021 0.007 0.104 0.062 0.021 0.000 0.021 0.618
##
0.139
##
     left son=278 (124 obs) right son=279 (20 obs)
##
     Primary splits:
##
         711 < 94.5 to the left,
                                    improve=22.83728, (0 missing)
##
                                    improve=22.34791, (0 missing)
         712 < 2.5
                     to the left,
##
         461 < 170.5 to the left,
                                    improve=21.84393, (0 missing)
##
         488 < 15
                     to the right, improve=19.92244, (0 missing)
         433 < 166
                                    improve=19.58357, (0 missing)
##
                     to the left,
##
     Surrogate splits:
##
         712 < 69.5
                     to the left,
                                   agree=0.965, adj=0.75, (0 split)
##
         710 < 7.5
                     to the left,
                                   agree=0.958, adj=0.70, (0 split)
##
         739 < 44.5
                     to the left,
                                   agree=0.917, adj=0.40, (0 split)
##
         740 < 28
                     to the left,
                                    agree=0.910, adj=0.35, (0 split)
##
         433 < 1.5
                     to the right, agree=0.903, adj=0.30, (0 split)
##
## Node number 144: 122 observations
     predicted class=2
                        expected loss=0.04918033 P(node) =0.004840309
##
##
       class counts:
                         0
                               0
                                    116
                                            1
                                                        1
                                                              1
                                                                     2
                                                                           1
0
##
      probabilities: 0.000 0.000 0.951 0.008 0.000 0.008 0.008 0.016 0.008
0.000
##
## Node number 145: 20 observations,
                                         complexity param=0.0002232741
##
     predicted class=8
                        expected loss=0.5 P(node) =0.0007934934
##
       class counts:
                         0
                                      3
                                            1
                                                              5
                                                                          10
                                0
                                                  0
                                                        0
1
##
      probabilities: 0.000 0.000 0.150 0.050 0.000 0.000 0.250 0.000 0.500
0.050
##
     left son=290 (9 obs) right son=291 (11 obs)
##
     Primary splits:
##
         291 < 86
                     to the left,
                                    improve=6.270707, (0 missing)
##
         319 < 26
                     to the left,
                                    improve=6.270707, (0 missing)
         320 < 98
                                    improve=6.270707, (0 missing)
##
                     to the left,
##
         321 < 48
                     to the left,
                                   improve=6.270707, (0 missing)
##
         497 < 8
                     to the right, improve=6.270707, (0 missing)
##
     Surrogate splits:
##
         319 < 26
                     to the left,
                                   agree=1, adj=1, (0 split)
                                   agree=1, adj=1, (0 split)
##
         320 < 98
                     to the left,
##
         321 < 48
                     to the left,
                                   agree=1, adj=1, (0 split)
                     to the right, agree=1, adj=1, (0 split)
##
         497 < 8
                     to the right, agree=1, adj=1, (0 split)
##
         525 < 20
##
## Node number 146: 57 observations,
                                         complexity param=0.0004242208
     predicted class=1 expected loss=0.7017544 P(node) =0.002261456
##
##
       class counts:
                         0
                               17
                                     15
                                           10
                                                  0
                                                        0
                                                              3
                                                                     2
                                                                           8
2
```

```
probabilities: 0.000 0.298 0.263 0.175 0.000 0.000 0.053 0.035 0.140
##
0.035
##
     left son=292 (21 obs) right son=293 (36 obs)
##
     Primary splits:
##
         459 < 5.5
                     to the left,
                                   improve=11.076860, (0 missing)
##
         515 < 1.5
                     to the left,
                                   improve=10.451460, (0 missing)
##
                     to the left,
                                   improve=10.305740, (0 missing)
         487 < 0.5
         488 < 158.5 to the left,
##
                                   improve=10.213420, (0 missing)
                                   improve= 9.465748, (0 missing)
##
         233 < 23
                     to the left,
##
     Surrogate splits:
##
         460 < 126
                     to the left,
                                   agree=0.947, adj=0.857, (0 split)
         487 < 0.5
                                   agree=0.895, adj=0.714, (0 split)
##
                     to the left,
         233 < 23
                     to the left,
                                   agree=0.860, adj=0.619, (0 split)
##
##
         458 < 1
                     to the left,
                                   agree=0.860, adj=0.619, (0 split)
##
         431 < 1
                     to the left,
                                   agree=0.842, adj=0.571, (0 split)
##
## Node number 147: 29 observations,
                                        complexity param=0.0002679289
##
     predicted class=7
                        expected loss=0.4137931 P(node) =0.001150565
##
       class counts:
                         0
                                     0
                                            3
                                                  1
                                                                   17
                                                                          1
7
##
      probabilities: 0.000 0.000 0.000 0.103 0.034 0.000 0.000 0.586 0.034
0.241
##
     left son=294 (17 obs) right son=295 (12 obs)
##
     Primary splits:
##
         349 < 102.5 to the left, improve=7.749831, (0 missing)
         406 < 250.5 to the right, improve=7.298851, (0 missing)
##
                                   improve=7.112886, (0 missing)
##
                     to the left,
         434 < 230.5 to the right, improve=6.917898, (0 missing)
##
##
         318 < 90
                     to the left, improve=6.887595, (0 missing)
##
     Surrogate splits:
##
         348 < 7
                     to the left, agree=0.966, adj=0.917, (0 split)
         406 < 250.5 to the right, agree=0.966, adj=0.917, (0 split)
##
                     to the right, agree=0.931, adj=0.833, (0 split)
##
         434 < 250
##
         461 < 250
                     to the right, agree=0.931, adj=0.833, (0 split)
                     to the right, agree=0.931, adj=0.833, (0 split)
##
         488 < 142
##
## Node number 148: 112 observations
                        expected loss=0.1160714 P(node) =0.004443563
##
     predicted class=6
##
       class counts:
                         1
                               2
                                     0
                                            0
                                                  3
                                                        2
                                                             99
                                                                          0
                                                                    4
1
##
      probabilities: 0.009 0.018 0.000 0.000 0.027 0.018 0.884 0.036 0.000
0.009
##
## Node number 149: 32 observations,
                                        complexity param=0.0002232741
     predicted class=8
                        expected loss=0.6875 P(node) =0.001269589
##
##
       class counts:
                         4
                               0
                                     3
                                            0
                                                  0
                                                        3
                                                              6
                                                                    1
                                                                         10
5
##
      probabilities: 0.125 0.000 0.094 0.000 0.000 0.094 0.188 0.031 0.312
0.156
     left son=298 (12 obs) right son=299 (20 obs)
```

```
Primary splits:
##
##
         442 < 27
                     to the right, improve=5.341667, (0 missing)
                     to the right, improve=5.341667, (0 missing)
##
         470 < 21
         483 < 19
                     to the right, improve=5.278922, (0 missing)
##
                     to the right, improve=5.278922, (0 missing)
##
         511 < 138
         469 < 183
##
                     to the right, improve=5.154352, (0 missing)
##
     Surrogate splits:
         470 < 21
##
                     to the right, agree=1.000, adj=1.000, (0 split)
##
         426 < 16.5
                     to the right, agree=0.969, adj=0.917, (0 split)
                     to the right, agree=0.969, adj=0.917, (0 split)
##
         443 < 10.5
##
         454 < 69
                     to the right, agree=0.969, adj=0.917, (0 split)
         469 < 183
                     to the right, agree=0.969, adj=0.917, (0 split)
##
##
## Node number 150: 19 observations
##
     predicted class=4
                        expected loss=0.5263158 P(node) =0.0007538187
##
       class counts:
                         0
                                     3
                                                 9
                                                                          3
                                           0
                                                                   1
3
##
      probabilities: 0.000 0.000 0.158 0.000 0.474 0.000 0.000 0.053 0.158
0.158
##
## Node number 151: 43 observations
     predicted class=9
                        expected loss=0.1860465 P(node) =0.001706011
##
       class counts:
                               0
                                     3
                         0
                                           0
                                                       0
                                                             0
                                                                   1
                                                                          4
35
##
      probabilities: 0.000 0.000 0.070 0.000 0.000 0.000 0.000 0.023 0.093
0.814
##
## Node number 152: 59 observations,
                                        complexity param=0.0002232741
##
     predicted class=3
                        expected loss=0.1694915 P(node) =0.002340805
##
       class counts:
                         0
                               0
                                     7
                                          49
                                                       0
                                                                   2
                                                                          1
0
##
      probabilities: 0.000 0.000 0.119 0.831 0.000 0.000 0.000 0.034 0.017
0.000
##
     left son=304 (7 obs) right son=305 (52 obs)
##
     Primary splits:
##
         527 < 25.5 to the right, improve=8.098622, (0 missing)
                     to the right, improve=8.098622, (0 missing)
##
         555 < 25
##
         514 < 214
                     to the right, improve=6.821203, (0 missing)
         543 < 220.5 to the right, improve=6.821203, (0 missing)
##
         515 < 233.5 to the right, improve=6.590588, (0 missing)
##
##
     Surrogate splits:
##
         555 < 25
                     to the right, agree=1.000, adj=1.000, (0 split)
##
         583 < 14
                     to the right, agree=0.983, adj=0.857, (0 split)
##
                     to the right, agree=0.966, adj=0.714, (0 split)
         499 < 67
##
         554 < 153.5 to the right, agree=0.966, adj=0.714, (0 split)
##
         582 < 122
                     to the right, agree=0.966, adj=0.714, (0 split)
##
## Node number 153: 103 observations,
                                         complexity param=0.001071716
##
     predicted class=7 expected loss=0.592233 P(node) =0.004086491
       class counts: 0 9 26 13 0 0
```

```
1
##
      probabilities: 0.000 0.087 0.252 0.126 0.000 0.000 0.000 0.408 0.117
0.010
##
     left son=306 (47 obs) right son=307 (56 obs)
##
     Primary splits:
         153 < 121
##
                     to the right, improve=21.50764, (0 missing)
##
         152 < 13
                     to the right, improve=20.69896, (0 missing)
         154 < 2.5
                     to the right, improve=20.21410, (0 missing)
##
                     to the right, improve=18.46666, (0 missing)
##
         155 < 20
##
         151 < 0.5
                     to the right, improve=17.12519, (0 missing)
##
     Surrogate splits:
##
         152 < 35.5 to the right, agree=0.961, adj=0.915, (0 split)
##
         154 < 117.5 to the right, agree=0.932, adj=0.851, (0 split)
##
         155 < 38.5 to the right, agree=0.883, adj=0.745, (0 split)
##
                     to the right, agree=0.874, adj=0.723, (0 split)
         151 < 0.5
##
         238 < 148
                     to the left, agree=0.854, adj=0.681, (0 split)
##
## Node number 154: 14 observations
     predicted class=9
##
                        expected loss=0.5714286 P(node) =0.0005554453
##
       class counts:
                         0
                               0
                                     0
                                            1
                                                  5
                                                        0
                                                              0
                                                                    0
                                                                          2
6
      probabilities: 0.000 0.000 0.000 0.071 0.357 0.000 0.000 0.000 0.143
##
0.429
##
## Node number 155: 42 observations
##
     predicted class=8
                        expected loss=0.1666667 P(node) =0.001666336
##
       class counts:
                         1
                                                                         35
                               0
                                     1
                                           1
                                                              3
0
##
      probabilities: 0.024 0.000 0.024 0.024 0.000 0.024 0.071 0.000 0.833
0.000
##
## Node number 156: 80 observations,
                                        complexity param=0.0002976988
##
     predicted class=8
                        expected loss=0.4875 P(node) =0.003173973
##
       class counts:
                         0
                              13
                                     1
                                           6
                                                  4
                                                        1
                                                                         41
6
##
      probabilities: 0.000 0.163 0.013 0.075 0.050 0.013 0.000 0.100 0.513
0.075
##
     left son=312 (35 obs) right son=313 (45 obs)
##
     Primary splits:
         294 < 148.5 to the right, improve=8.124603, (0 missing)
##
##
         298 < 9
                     to the left, improve=8.043407, (0 missing)
##
         297 < 11.5 to the left,
                                  improve=7.834584, (0 missing)
                                  improve=7.771429, (0 missing)
##
         213 < 15
                     to the left,
         322 < 134.5 to the right, improve=7.548997, (0 missing)
##
##
     Surrogate splits:
##
         322 < 184
                     to the right, agree=0.938, adj=0.857, (0 split)
##
         293 < 176
                     to the right, agree=0.900, adj=0.771, (0 split)
##
         266 < 233.5 to the right, agree=0.887, adj=0.743, (0 split)
##
         185 < 20.5 to the left, agree=0.838, adj=0.629, (0 split)
##
         295 < 241.5 to the right, agree=0.825, adj=0.600, (0 split)
```

```
##
## Node number 157: 44 observations,
                                       complexity param=0.000379566
##
     predicted class=9
                        expected loss=0.5227273 P(node) =0.001745685
       class counts:
                                                                          4
##
                         1
                               0
                                     0
                                          10
                                                  3
                                                       1
                                                                    4
21
      probabilities: 0.023 0.000 0.000 0.227 0.068 0.023 0.000 0.091 0.091
##
0.477
##
     left son=314 (18 obs) right son=315 (26 obs)
##
     Primary splits:
##
         206 < 125
                     to the right, improve=9.240093, (0 missing)
##
         318 < 153
                     to the left, improve=8.282828, (0 missing)
         551 < 16.5 to the right, improve=7.761461, (0 missing)
##
                     to the right, improve=7.698701, (0 missing)
##
         627 < 221
##
         178 < 7
                     to the right, improve=7.584416, (0 missing)
##
     Surrogate splits:
##
         178 < 7
                     to the right, agree=0.955, adj=0.889, (0 split)
                     to the right, agree=0.932, adj=0.833, (0 split)
##
         205 < 11
##
         207 < 207.5 to the right, agree=0.932, adj=0.833, (0 split)
                     to the right, agree=0.909, adj=0.778, (0 split)
##
         179 < 4.5
##
         634 < 17
                     to the right, agree=0.909, adj=0.778, (0 split)
##
## Node number 158: 19 observations
##
     predicted class=7
                        expected loss=0.6842105 P(node) =0.0007538187
##
       class counts:
                         2
                                     1
                                                        3
                                                                          2
0
##
      probabilities: 0.105 0.000 0.053 0.211 0.053 0.158 0.000 0.316 0.105
0.000
##
## Node number 159: 355 observations
     predicted class=8
                        expected loss=0.08169014 P(node) =0.01408451
##
##
       class counts:
                         1
                               1
                                     1
                                                10
                                                        2
                                                              2
                                                                    5
                                                                        326
3
##
      probabilities: 0.003 0.003 0.003 0.011 0.028 0.006 0.006 0.014 0.918
0.008
##
## Node number 160: 64 observations,
                                        complexity param=0.0007368045
##
     predicted class=1
                        expected loss=0.484375
                                                P(node) =0.002539179
##
       class counts:
                         0
                              33
                                     3
                                          20
                                                  0
                                                              0
                                                                          2
                                                       1
0
##
      probabilities: 0.000 0.516 0.047 0.312 0.000 0.016 0.000 0.078 0.031
0.000
##
     left son=320 (39 obs) right son=321 (25 obs)
##
     Primary splits:
##
         297 < 26.5 to the left,
                                   improve=20.92705, (0 missing)
##
         270 < 9
                     to the left,
                                   improve=19.81591, (0 missing)
##
         242 < 18.5 to the left,
                                   improve=19.48048, (0 missing)
##
         656 < 6.5
                     to the left,
                                   improve=19.39167, (0 missing)
##
                                   improve=19.30833, (0 missing)
         325 < 3
                     to the left,
##
     Surrogate splits:
##
         325 < 3 to the left, agree=0.984, adj=0.96, (0 split)
```

```
to the left,
                                   agree=0.969, adj=0.92, (0 split)
##
         324 < 174
##
         269 < 11
                     to the left,
                                   agree=0.953, adj=0.88, (0 split)
                                   agree=0.938, adj=0.84, (0 split)
##
         184 < 2.5
                     to the left,
                     to the left,
                                   agree=0.938, adj=0.84, (0 split)
##
         213 < 3
##
## Node number 161: 1438 observations,
                                           complexity param=0.0002456015
     predicted class=3 expected loss=0.05841446 P(node) =0.05705217
##
##
       class counts:
                         0
                               8
                                    10 1354
                                                       38
                                                                    2
                                                                         21
5
##
      probabilities: 0.000 0.006 0.007 0.942 0.000 0.026 0.000 0.001 0.015
0.003
##
     left son=322 (1393 obs) right son=323 (45 obs)
##
     Primary splits:
         264 < 244.5 to the left,
##
                                   improve=20.42218, (0 missing)
##
                     to the right, improve=17.95148, (0 missing)
         296 < 1
##
         487 < 140.5 to the left,
                                   improve=17.62124, (0 missing)
##
         317 < 206
                     to the left,
                                   improve=17.03519, (0 missing)
##
         292 < 248.5 to the left,
                                   improve=16.23283, (0 missing)
##
     Surrogate splits:
##
         291 < 224
                     to the left,
                                   agree=0.973, adj=0.133, (0 split)
##
                     to the left,
                                   agree=0.971, adj=0.089, (0 split)
         263 < 251
         292 < 254.5 to the left,
                                   agree=0.971, adj=0.067, (0 split)
##
##
         265 < 254.5 to the left,
                                   agree=0.970, adj=0.044, (0 split)
##
         247 < 220.5 to the left,
                                   agree=0.969, adj=0.022, (0 split)
##
## Node number 162: 78 observations
     predicted class=5
##
                        expected loss=0.2179487
                                                  P(node) = 0.003094624
                                                       61
##
       class counts:
                         1
                               0
                                     0
                                            3
                                                  4
                                                              0
                                                                    0
                                                                          4
5
      probabilities: 0.013 0.000 0.000 0.038 0.051 0.782 0.000 0.000 0.051
##
0.064
##
## Node number 163: 46 observations,
                                        complexity param=0.000491203
##
     predicted class=9
                        expected loss=0.6304348
                                                 P(node) =0.001825035
##
                                                  1
                                                        5
       class counts:
                         2
                               0
                                     0
                                           15
                                                              2
                                                                          4
17
##
      probabilities: 0.043 0.000 0.000 0.326 0.022 0.109 0.043 0.000 0.087
0.370
     left son=326 (25 obs) right son=327 (21 obs)
##
##
     Primary splits:
##
         493 < 1
                     to the left,
                                   improve=8.093416, (0 missing)
                     to the right, improve=7.992977, (0 missing)
##
         497 < 1
##
         624 < 3.5
                     to the right, improve=7.076765, (0 missing)
                     to the right, improve=6.866115, (0 missing)
##
         525 < 32.5
         372 < 24.5 to the left, improve=6.768542, (0 missing)
##
##
     Surrogate splits:
##
         465 < 14.5 to the left,
                                   agree=0.891, adj=0.762, (0 split)
##
                                   agree=0.848, adj=0.667, (0 split)
         492 < 7.5
                     to the left,
##
         494 < 168.5 to the left,
                                   agree=0.848, adj=0.667, (0 split)
         520 < 14.5 to the left, agree=0.848, adj=0.667, (0 split)
##
```

```
437 < 115.5 to the left, agree=0.826, adj=0.619, (0 split)
##
##
## Node number 164: 261 observations,
                                          complexity param=0.000379566
                        expected loss=0.1954023 P(node) =0.01035509
     predicted class=3
##
##
       class counts:
                         7
                               4
                                      5
                                          210
                                                       23
                                                              3
                                                                           5
1
##
      probabilities: 0.027 0.015 0.019 0.805 0.000 0.088 0.011 0.011 0.019
0.004
##
     left son=328 (202 obs) right son=329 (59 obs)
##
     Primary splits:
##
         155 < 3
                     to the right, improve=20.26569, (0 missing)
         154 < 1.5
                     to the right, improve=17.63843, (0 missing)
##
         156 < 0.5
                     to the right, improve=17.55721, (0 missing)
##
##
         275 < 55
                     to the left, improve=16.22994, (0 missing)
         220 < 4.5
                     to the left,
                                   improve=15.23607, (0 missing)
##
     Surrogate splits:
##
##
         156 < 7.5
                     to the right, agree=0.943, adj=0.746, (0 split)
##
         154 < 1.5
                     to the right, agree=0.927, adj=0.678, (0 split)
                     to the right, agree=0.866, adj=0.407, (0 split)
##
         157 < 3
##
         184 < 14.5
                     to the right, agree=0.858, adj=0.373, (0 split)
                     to the left, agree=0.839, adj=0.288, (0 split)
##
         219 < 3.5
##
## Node number 165: 156 observations,
                                          complexity param=0.0008037867
     predicted class=5
                        expected loss=0.3846154 P(node) =0.006189248
##
##
       class counts:
                        19
                               0
                                           25
                                                       96
                                                              5
                                                                    1
                                                                           7
3
##
      probabilities: 0.122 0.000 0.000 0.160 0.000 0.615 0.032 0.006 0.045
0.019
##
     left son=330 (25 obs) right son=331 (131 obs)
##
     Primary splits:
         456 < 235.5 to the right, improve=22.99540, (0 missing)
##
##
         299 < 24
                     to the right, improve=22.37895, (0 missing)
##
         457 < 132
                     to the right, improve=21.66617, (0 missing)
##
         429 < 252.5 to the right, improve=20.38718, (0 missing)
         328 < 56.5 to the right, improve=20.05636, (0 missing)
##
##
     Surrogate splits:
##
         429 < 252.5 to the right, agree=0.968, adj=0.80, (0 split)
##
                     to the right, agree=0.962, adj=0.76, (0 split)
         457 < 132
##
         484 < 209.5 to the right, agree=0.949, adj=0.68, (0 split)
##
         428 < 174
                     to the right, agree=0.936, adj=0.60, (0 split)
##
         455 < 73
                     to the right, agree=0.929, adj=0.56, (0 split)
##
## Node number 166: 104 observations,
                                          complexity param=0.0001786193
##
                        expected loss=0.2307692 P(node) =0.004126165
     predicted class=1
                                                                           3
##
       class counts:
                         0
                              80
                                            4
                                      0
                                                  1
                                                              1
                                                                    7
3
##
      probabilities: 0.000 0.769 0.000 0.038 0.010 0.048 0.010 0.067 0.029
0.029
##
     left son=332 (85 obs) right son=333 (19 obs)
##
     Primary splits:
```

```
462 < 85.5 to the right, improve=14.67072, (0 missing)
##
                     to the right, improve=14.49487, (0 missing)
##
         266 < 63.5
##
         325 < 4
                     to the left, improve=13.46066, (0 missing)
         294 < 73
                     to the right, improve=13.14803, (0 missing)
##
##
         297 < 2
                     to the left, improve=13.10839, (0 missing)
##
     Surrogate splits:
##
         434 < 57
                     to the right, agree=0.952, adj=0.737, (0 split)
         490 < 21
##
                     to the right, agree=0.933, adj=0.632, (0 split)
                     to the right, agree=0.923, adj=0.579, (0 split)
##
         294 < 66
##
         463 < 20
                     to the right, agree=0.923, adj=0.579, (0 split)
##
         491 < 71.5 to the right, agree=0.913, adj=0.526, (0 split)
##
## Node number 167: 171 observations,
                                         complexity param=0.001161025
##
     predicted class=5 expected loss=0.7192982 P(node) =0.006784368
##
       class counts:
                         5
                                           22
                                                 30
                                                       48
                                                                   12
                                                                          7
                               7
                                     1
31
##
      probabilities: 0.029 0.041 0.006 0.129 0.175 0.281 0.047 0.070 0.041
0.181
##
     left son=334 (58 obs) right son=335 (113 obs)
##
     Primary splits:
##
         539 < 54.5 to the right, improve=25.08373, (0 missing)
                     to the right, improve=24.44883, (0 missing)
##
         570 < 79
##
                     to the right, improve=23.88734, (0 missing)
         569 < 8
##
         540 < 57.5
                     to the right, improve=23.88416, (0 missing)
                     to the right, improve=23.88416, (0 missing)
##
         541 < 70
##
     Surrogate splits:
##
         538 < 5.5
                     to the right, agree=0.977, adj=0.931, (0 split)
                     to the right, agree=0.953, adj=0.862, (0 split)
##
         540 < 31
##
         567 < 26.5 to the right, agree=0.953, adj=0.862, (0 split)
##
         568 < 74.5 to the right, agree=0.953, adj=0.862, (0 split)
##
         541 < 117.5 to the right, agree=0.936, adj=0.810, (0 split)
##
## Node number 168: 32 observations
##
     predicted class=0
                        expected loss=0.125 P(node) =0.001269589
##
                                                                    2
       class counts:
                        28
                               0
                                     0
                                            0
                                                                          1
0
##
      probabilities: 0.875 0.000 0.000 0.000 0.000 0.000 0.031 0.062 0.031
0.000
##
## Node number 169: 292 observations,
                                         complexity param=0.0007144771
     predicted class=3 expected loss=0.5034247 P(node) =0.011585
##
##
       class counts:
                         5
                                     1
                                          145
                                                       69
                                                                         37
29
##
      probabilities: 0.017 0.003 0.003 0.497 0.000 0.236 0.007 0.010 0.127
0.099
##
     left son=338 (112 obs) right son=339 (180 obs)
##
     Primary splits:
                                   improve=21.19424, (0 missing)
##
         318 < 219.5 to the left,
##
         346 < 156.5 to the left,
                                   improve=19.16912, (0 missing)
##
         247 < 16.5 to the left, improve=19.12572, (0 missing)
```

```
345 < 124.5 to the left,
                                   improve=18.26027, (0 missing)
##
##
         275 < 41
                     to the left,
                                   improve=16.79973, (0 missing)
##
     Surrogate splits:
         346 < 127.5 to the left,
                                   agree=0.877, adj=0.679, (0 split)
##
##
         317 < 22.5 to the left,
                                   agree=0.863, adj=0.643, (0 split)
##
         319 < 108
                     to the left,
                                   agree=0.856, adj=0.625, (0 split)
##
         345 < 5
                     to the left,
                                   agree=0.846, adj=0.598, (0 split)
         347 < 205
                                   agree=0.822, adj=0.536, (0 split)
##
                     to the left,
##
## Node number 170: 39 observations,
                                        complexity param=0.0001786193
##
     predicted class=0
                        expected loss=0.3846154 P(node) =0.001547312
       class counts:
                                                  1
                                                        1
                                                                          5
##
                        24
                               0
                                     0
                                            3
                                                              0
                                                                    0
5
##
      probabilities: 0.615 0.000 0.000 0.077 0.026 0.026 0.000 0.000 0.128
0.128
##
     left son=340 (23 obs) right son=341 (16 obs)
##
     Primary splits:
##
         293 < 187
                     to the right, improve=10.541670, (0 missing)
##
         381 < 28
                     to the left,
                                   improve=10.541670, (0 missing)
##
         409 < 144
                     to the left, improve= 9.820513, (0 missing)
         266 < 161.5 to the right, improve= 9.816667, (0 missing)
##
         294 < 42.5 to the right, improve= 9.550000, (0 missing)
##
##
     Surrogate splits:
##
         294 < 149
                     to the right, agree=0.949, adj=0.875, (0 split)
##
         381 < 28
                     to the left, agree=0.949, adj=0.875, (0 split)
                     to the right, agree=0.923, adj=0.813, (0 split)
##
         265 < 213
##
         266 < 161.5 to the right, agree=0.923, adj=0.813, (0 split)
                     to the left, agree=0.923, adj=0.813, (0 split)
##
         354 < 48
##
## Node number 171: 473 observations,
                                         complexity param=0.0007591319
##
     predicted class=5
                        expected loss=0.141649 P(node) =0.01876612
##
       class counts:
                         2
                                           50
                                                      406
                                                                          6
                                                  0
3
      probabilities: 0.004 0.000 0.000 0.106 0.000 0.858 0.013 0.000 0.013
##
0.006
##
     left son=342 (33 obs) right son=343 (440 obs)
##
     Primary splits:
##
         295 < 219
                     to the right, improve=29.11258, (0 missing)
##
         294 < 176.5 to the right, improve=24.87470, (0 missing)
                     to the left,
                                   improve=24.12164, (0 missing)
##
         186 < 2.5
##
         262 < 12.5 to the left,
                                   improve=23.88677, (0 missing)
         187 < 1
##
                     to the left, improve=23.43563, (0 missing)
##
     Surrogate splits:
##
         296 < 117.5 to the right, agree=0.960, adj=0.424, (0 split)
         267 < 245.5 to the right, agree=0.958, adj=0.394, (0 split)
##
##
         268 < 241
                     to the right, agree=0.953, adj=0.333, (0 split)
##
         294 < 251.5 to the right, agree=0.949, adj=0.273, (0 split)
##
                     to the left, agree=0.934, adj=0.061, (0 split)
         349 < 6
##
## Node number 172: 85 observations, complexity param=0.0001786193
```

```
##
     predicted class=4
                        expected loss=0.3176471 P(node) =0.003372347
##
       class counts:
                         0
                               0
                                     0
                                                 58
                                                        7
                                                              4
                                                                    3
                                                                          1
8
      probabilities: 0.000 0.000 0.000 0.047 0.682 0.082 0.047 0.035 0.012
##
0.094
##
     left son=344 (70 obs) right son=345 (15 obs)
##
     Primary splits:
##
         266 < 36
                     to the left,
                                   improve=9.104762, (0 missing)
                     to the right, improve=8.905141, (0 missing)
##
         405 < 10.5
                     to the right, improve=8.366917, (0 missing)
##
         409 < 242
##
         238 < 13.5
                     to the left, improve=8.280590, (0 missing)
         492 < 31
                     to the right, improve=8.164593, (0 missing)
##
##
     Surrogate splits:
##
         265 < 131
                     to the left,
                                   agree=0.976, adj=0.867, (0 split)
##
         238 < 4.5
                     to the left,
                                   agree=0.965, adj=0.800, (0 split)
                                   agree=0.941, adj=0.667, (0 split)
##
         237 < 151.5 to the left,
                                   agree=0.929, adj=0.600, (0 split)
##
         293 < 30
                     to the left,
##
         267 < 208
                     to the left, agree=0.918, adj=0.533, (0 split)
##
## Node number 173: 79 observations,
                                        complexity param=0.0001786193
     predicted class=7
                        expected loss=0.2531646 P(node) =0.003134299
##
##
       class counts:
                         4
                               3
                                     0
                                            5
                                                        4
                                                                   59
                                                                          2
2
##
      probabilities: 0.051 0.038 0.000 0.063 0.000 0.051 0.000 0.747 0.025
0.025
##
     left son=346 (12 obs) right son=347 (67 obs)
##
     Primary splits:
         570 < 2
##
                     to the right, improve=10.616920, (0 missing)
##
         571 < 64
                     to the right, improve=10.616920, (0 missing)
                     to the right, improve= 9.893048, (0 missing)
##
         598 < 8
                     to the right, improve= 9.529412, (0 missing)
##
         542 < 28.5
##
         569 < 64
                     to the right, improve= 9.426087, (0 missing)
##
     Surrogate splits:
##
         571 < 64
                     to the right, agree=1.000, adj=1.000, (0 split)
##
         542 < 28.5
                     to the right, agree=0.987, adj=0.917, (0 split)
         598 < 8
                     to the right, agree=0.987, adj=0.917, (0 split)
##
                     to the right, agree=0.975, adj=0.833, (0 split)
##
         543 < 3
##
                     to the right, agree=0.975, adj=0.833, (0 split)
         569 < 64
##
## Node number 174: 100 observations,
                                          complexity param=0.0005805126
##
     predicted class=5 expected loss=0.56 P(node) =0.003967467
##
       class counts:
                                           16
                                                 10
                                                       44
                                                                          3
20
##
      probabilities: 0.000 0.020 0.000 0.160 0.100 0.440 0.030 0.020 0.030
0.200
##
     left son=348 (63 obs) right son=349 (37 obs)
##
     Primary splits:
         295 < 99
                                   improve=13.37684, (0 missing)
##
                     to the left,
##
         491 < 144
                     to the left,
                                   improve=11.90888, (0 missing)
##
         186 < 5.5 to the right, improve=11.88813, (0 missing)
```

```
294 < 203.5 to the right, improve=11.38746, (0 missing)
##
                     to the left, improve=11.22879, (0 missing)
##
         296 < 3
##
     Surrogate splits:
##
         296 < 3
                     to the left,
                                   agree=0.94, adj=0.838, (0 split)
##
         267 < 167.5 to the left,
                                   agree=0.91, adj=0.757, (0 split)
##
         294 < 127
                     to the left,
                                   agree=0.90, adj=0.730, (0 split)
         323 < 223
##
                     to the left,
                                   agree=0.90, adj=0.730, (0 split)
##
         266 < 231
                     to the left,
                                   agree=0.80, adj=0.459, (0 split)
##
## Node number 175: 257 observations,
                                          complexity param=0.0003572385
##
     predicted class=9
                        expected loss=0.1673152 P(node) =0.01019639
                         4
                                                        2
                                                                          5
##
       class counts:
                               0
                                     2
                                          12
                                                  8
                                                              0
                                                                   10
214
##
      probabilities: 0.016 0.000 0.008 0.047 0.031 0.008 0.000 0.039 0.019
0.833
##
     left son=350 (10 obs) right son=351 (247 obs)
     Primary splits:
##
##
         680 < 29
                     to the right, improve=13.31189, (0 missing)
         681 < 106.5 to the right, improve=11.82432, (0 missing)
##
##
         651 < 29.5 to the right, improve=11.66365, (0 missing)
##
                     to the right, improve=11.59529, (0 missing)
         652 < 184.5 to the right, improve=11.51373, (0 missing)
##
##
     Surrogate splits:
##
         681 < 106.5 to the right, agree=0.996, adj=0.9, (0 split)
##
                     to the right, agree=0.992, adj=0.8, (0 split)
##
         679 < 0.5
                   to the right, agree=0.992, adj=0.8, (0 split)
         652 < 218.5 to the right, agree=0.988, adj=0.7, (0 split)
##
         682 < 243.5 to the right, agree=0.988, adj=0.7, (0 split)
##
##
## Node number 176: 60 observations
##
     predicted class=2 expected loss=0.08333333 P(node) =0.00238048
##
       class counts:
                                    55
                                           2
0
      probabilities: 0.000 0.017 0.917 0.033 0.000 0.000 0.033 0.000 0.000
##
0.000
##
## Node number 177: 13 observations
                        expected loss=0.5384615 P(node) =0.0005157707
##
     predicted class=8
       class counts:
##
                         0
                               0
                                     2
                                            3
                                                  0
                                                        0
                                                              2
                                                                    0
                                                                          6
0
##
      probabilities: 0.000 0.000 0.154 0.231 0.000 0.000 0.154 0.000 0.462
0.000
##
## Node number 178: 83 observations,
                                        complexity param=0.0004465482
     predicted class=8
                        expected loss=0.8072289 P(node) =0.003292997
##
##
       class counts:
                         9
                              14
                                    12
                                            3
                                                  9
                                                        7
                                                             10
                                                                    0
                                                                         16
3
##
      probabilities: 0.108 0.169 0.145 0.036 0.108 0.084 0.120 0.000 0.193
0.036
     left son=356 (39 obs) right son=357 (44 obs)
```

```
Primary splits:
##
##
         211 < 22.5 to the left,
                                   improve=8.254023, (0 missing)
##
         572 < 25.5
                    to the left,
                                   improve=7.771388, (0 missing)
                    to the left,
##
         210 < 37.5
                                   improve=7.755189, (0 missing)
##
         457 < 14.5
                    to the left,
                                   improve=7.718914, (0 missing)
##
         209 < 2
                     to the left,
                                   improve=7.624469, (0 missing)
##
     Surrogate splits:
         210 < 37.5 to the left,
##
                                   agree=0.940, adj=0.872, (0 split)
##
         237 < 20.5 to the left,
                                   agree=0.916, adj=0.821, (0 split)
                                   agree=0.916, adj=0.821, (0 split)
##
         238 < 91
                     to the left,
##
         209 < 0.5
                     to the left,
                                   agree=0.892, adj=0.769, (0 split)
                                   agree=0.880, adj=0.744, (0 split)
##
         183 < 5
                     to the left,
##
## Node number 179: 17 observations
     predicted class=9
##
                        expected loss=0.05882353 P(node) =0.0006744694
##
       class counts:
                         0
                                     0
                                           0
                                                 0
                                                                   0
                                                                         1
16
##
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0059
0.941
##
## Node number 180: 18 observations
     predicted class=2
                       expected loss=0.5 P(node) =0.000714144
##
       class counts:
                               5
                                     9
                                                       2
                         1
                                           0
                                                 0
                                                             1
                                                                         0
0
##
      probabilities: 0.056 0.278 0.500 0.000 0.000 0.111 0.056 0.000 0.000
0.000
##
## Node number 181: 23 observations,
                                        complexity param=0.0001786193
##
     predicted class=9
                        expected loss=0.6956522 P(node) =0.0009125174
##
       class counts:
                         1
                               0
                                     0
                                           3
                                                 5
                                                       2
                                                             3
                                                                   0
                                                                         2
7
##
      probabilities: 0.043 0.000 0.000 0.130 0.217 0.087 0.130 0.000 0.087
0.304
##
     left son=362 (13 obs) right son=363 (10 obs)
##
     Primary splits:
##
         428 < 201
                                   improve=3.808696, (0 missing)
                     to the left,
         208 < 74.5 to the left,
##
                                   improve=3.701003, (0 missing)
##
         319 < 94.5
                    to the right, improve=3.320817, (0 missing)
##
         344 < 48.5
                    to the left,
                                   improve=3.305665, (0 missing)
##
         347 < 112
                     to the right, improve=3.301003, (0 missing)
##
     Surrogate splits:
##
         371 < 5.5
                     to the left,
                                   agree=0.957, adj=0.9, (0 split)
##
         400 < 78
                     to the left,
                                   agree=0.957, adj=0.9, (0 split)
                                   agree=0.913, adj=0.8, (0 split)
##
         316 < 4.5
                     to the left,
##
         343 < 51
                     to the left,
                                   agree=0.913, adj=0.8, (0 split)
##
         344 < 15.5 to the left,
                                   agree=0.913, adj=0.8, (0 split)
##
## Node number 182: 16 observations
##
     predicted class=2 expected loss=0.1875 P(node) =0.0006347947
      class counts: 0 0 13 0 0 0
```

```
0
##
      probabilities: 0.000 0.000 0.813 0.000 0.000 0.000 0.188 0.000 0.000
0.000
##
## Node number 183: 193 observations,
                                         complexity param=0.0002009467
##
     predicted class=6
                        expected loss=0.1502591 P(node) =0.007657211
##
       class counts:
                         2
                               0
                                                            164
                                                                          4
                                     7
                                                       12
                                                                    0
0
##
      probabilities: 0.010 0.000 0.036 0.021 0.000 0.062 0.850 0.000 0.021
0.000
##
     left son=366 (21 obs) right son=367 (172 obs)
##
     Primary splits:
##
         431 < 1
                     to the left,
                                   improve=9.612658, (0 missing)
         430 < 9.5
##
                     to the left,
                                   improve=8.260657, (0 missing)
##
         245 < 23
                     to the right, improve=7.806778, (0 missing)
##
         459 < 15
                     to the left,
                                   improve=7.540244, (0 missing)
                     to the right, improve=7.168708, (0 missing)
##
         272 < 65
##
     Surrogate splits:
##
         404 < 3.5
                     to the left,
                                   agree=0.964, adj=0.667, (0 split)
##
         403 < 4.5
                     to the left,
                                   agree=0.953, adj=0.571, (0 split)
##
         459 < 4
                     to the left,
                                   agree=0.943, adj=0.476, (0 split)
##
         458 < 1.5
                     to the left,
                                   agree=0.933, adj=0.381, (0 split)
##
         376 < 1.5
                     to the left,
                                   agree=0.922, adj=0.286, (0 split)
##
## Node number 186: 40 observations,
                                        complexity param=0.0002083892
##
     predicted class=5
                        expected loss=0.675 P(node) =0.001586987
##
       class counts:
                                     0
                                            5
                                                  0
                                                       13
                         7
                               0
                                                                         12
0
##
      probabilities: 0.175 0.000 0.000 0.125 0.000 0.325 0.075 0.000 0.300
0.000
##
     left son=372 (12 obs) right son=373 (28 obs)
##
     Primary splits:
                                   improve=4.528571, (0 missing)
##
         351 < 190
                     to the left,
                                   improve=4.407692, (0 missing)
##
         379 < 16
                     to the left.
##
         297 < 178
                     to the left,
                                   improve=3.880051, (0 missing)
##
         431 < 27.5 to the left,
                                   improve=3.766667, (0 missing)
         352 < 79.5 to the left,
##
                                   improve=3.684416, (0 missing)
##
     Surrogate splits:
##
         379 < 18.5 to the left,
                                   agree=0.950, adj=0.833, (0 split)
                                   agree=0.900, adj=0.667, (0 split)
         352 < 111
                     to the left,
##
##
         299 < 58
                     to the right, agree=0.825, adj=0.417, (0 split)
                                   agree=0.825, adj=0.417, (0 split)
##
         350 < 199.5 to the left,
##
         353 < 2.5
                     to the left,
                                   agree=0.825, adj=0.417, (0 split)
##
## Node number 187: 16 observations
##
     predicted class=2
                        expected loss=0.5
                                           P(node) = 0.0006347947
##
       class counts:
                         0
                                     8
                                            0
                                                                    0
                                                                          8
0
##
      probabilities: 0.000 0.000 0.500 0.000 0.000 0.000 0.000 0.500
0.000
```

```
##
## Node number 188: 27 observations,
                                       complexity param=0.0001786193
##
     predicted class=3
                        expected loss=0.2222222 P(node) =0.001071216
       class counts:
##
                         0
                               0
                                     0
                                          21
                                                       1
                                                                          0
                                                 0
5
      probabilities: 0.000 0.000 0.000 0.778 0.000 0.037 0.000 0.000 0.000
##
0.185
##
     left son=376 (20 obs) right son=377 (7 obs)
##
     Primary splits:
##
         320 < 71.5 to the left,
                                   improve=6.560847, (0 missing)
         265 < 233.5 to the left,
##
                                   improve=5.453704, (0 missing)
                                   improve=5.453704, (0 missing)
##
         292 < 131.5 to the left,
##
         319 < 74
                     to the left,
                                   improve=5.453704, (0 missing)
##
         653 < 6
                     to the right, improve=5.453704, (0 missing)
##
     Surrogate splits:
##
         265 < 233.5 to the left, agree=0.963, adj=0.857, (0 split)
##
         292 < 131.5 to the left,
                                   agree=0.963, adj=0.857, (0 split)
##
                                   agree=0.963, adj=0.857, (0 split)
         319 < 74
                     to the left,
         183 < 146.5 to the right, agree=0.926, adj=0.714, (0 split)
##
##
         291 < 15.5 to the left, agree=0.926, adj=0.714, (0 split)
##
## Node number 189: 16 observations
                        expected loss=0.1875 P(node) =0.0006347947
##
     predicted class=8
##
       class counts:
                         0
                                     1
                                                                         13
0
##
      probabilities: 0.000 0.000 0.062 0.062 0.000 0.062 0.000 0.000 0.813
0.000
##
## Node number 190: 28 observations,
                                        complexity param=0.0002344378
     predicted class=3 expected loss=0.7142857 P(node) =0.001110891
##
##
       class counts:
                         6
                               0
                                     1
                                           8
                                                 0
                                                       6
                                                             1
                                                                    0
                                                                          5
1
##
      probabilities: 0.214 0.000 0.036 0.286 0.000 0.214 0.036 0.000 0.179
0.036
##
     left son=380 (13 obs) right son=381 (15 obs)
##
     Primary splits:
##
         429 < 101.5 to the right, improve=5.722344, (0 missing)
##
         457 < 228.5 to the right, improve=5.722344, (0 missing)
         402 < 196.5 to the right, improve=5.684524, (0 missing)
##
         430 < 119.5 to the right, improve=5.684524, (0 missing)
##
##
         317 < 20.5 to the right, improve=5.559524, (0 missing)
##
     Surrogate splits:
##
         457 < 228.5 to the right, agree=1.000, adj=1.000, (0 split)
##
                     to the right, agree=0.964, adj=0.923, (0 split)
##
         402 < 196.5 to the right, agree=0.964, adj=0.923, (0 split)
##
         428 < 17.5 to the right, agree=0.964, adj=0.923, (0 split)
##
         430 < 53
                     to the right, agree=0.964, adj=0.923, (0 split)
##
## Node number 191: 402 observations,
                                         complexity param=0.0002344378
     predicted class=8 expected loss=0.141791 P(node) =0.01594922
```

```
##
       class counts:
                         2
                                     18
                                           15
                                                             11
                                                                         345
3
##
      probabilities: 0.005 0.000 0.045 0.037 0.000 0.017 0.027 0.002 0.858
0.007
##
     left son=382 (57 obs) right son=383 (345 obs)
##
     Primary splits:
##
                                   improve=10.780420, (0 missing)
         436 < 7
                     to the left,
         439 < 250.5 to the right, improve= 9.744096, (0 missing)
##
##
         611 < 5.5
                     to the right, improve= 9.738585, (0 missing)
##
                     to the left,
                                   improve= 9.566444, (0 missing)
         435 < 44.5
##
         464 < 0.5
                     to the left,
                                   improve= 8.444042, (0 missing)
##
     Surrogate splits:
##
         407 < 114.5 to the left, agree=0.876, adj=0.123, (0 split)
##
         408 < 0.5
                     to the left, agree=0.876, adj=0.123, (0 split)
                     to the right, agree=0.871, adj=0.088, (0 split)
##
         584 < 57
##
                     to the right, agree=0.871, adj=0.088, (0 split)
         611 < 5.5
##
         556 < 121.5 to the right, agree=0.868, adj=0.070, (0 split)
##
## Node number 192: 1955 observations,
                                           complexity param=0.0001786193
     predicted class=0 expected loss=0.03734015 P(node) =0.07756398
##
##
                                                  1
       class counts: 1882
                               0
                                     26
                                            7
                                                       16
                                                             17
                                                                           0
2
##
      probabilities: 0.963 0.000 0.013 0.004 0.001 0.008 0.009 0.002 0.000
0.001
##
     left son=384 (1623 obs) right son=385 (332 obs)
##
     Primary splits:
##
         400 < 3.5
                     to the right, improve=9.077685, (0 missing)
                     to the right, improve=8.966215, (0 missing)
##
         427 < 0.5
##
         563 < 11.5
                     to the left, improve=8.723178, (0 missing)
                     to the right, improve=8.318778, (0 missing)
##
         455 < 1
##
         214 < 0.5
                     to the right, improve=8.285884, (0 missing)
##
     Surrogate splits:
##
         428 < 1.5
                     to the right, agree=0.935, adj=0.614, (0 split)
##
         372 < 5.5
                     to the right, agree=0.912, adj=0.482, (0 split)
##
                     to the right, agree=0.908, adj=0.458, (0 split)
         345 < 3.5
                     to the right, agree=0.881, adj=0.301, (0 split)
##
         373 < 3.5
                     to the right, agree=0.874, adj=0.256, (0 split)
##
         456 < 0.5
##
## Node number 193: 18 observations
##
     predicted class=7
                        expected loss=0.6666667
                                                  P(node) =0.000714144
##
       class counts:
                         3
                               0
                                      4
                                            0
                                                        3
                                                              1
                                                                    6
                                                                           1
0
##
      probabilities: 0.167 0.000 0.222 0.000 0.000 0.167 0.056 0.333 0.056
0.000
##
## Node number 194: 42 observations
##
     predicted class=0
                        expected loss=0.04761905
                                                  P(node) =0.001666336
##
       class counts:
                        40
                               0
                                      0
                                            1
                                                  0
                                                        1
                                                                           0
0
##
      probabilities: 0.952 0.000 0.000 0.024 0.000 0.024 0.000 0.000 0.000
```

```
0.000
##
## Node number 195: 57 observations,
                                        complexity param=0.0004242208
                        expected loss=0.5789474 P(node) =0.002261456
     predicted class=5
##
       class counts:
                         5
                               0
                                     2
                                          23
                                                       24
                                                              3
                                                                          0
0
##
      probabilities: 0.088 0.000 0.035 0.404 0.000 0.421 0.053 0.000 0.000
0.000
##
     left son=390 (30 obs) right son=391 (27 obs)
##
     Primary splits:
##
         240 < 64.5 to the right, improve=11.117740, (0 missing)
                     to the right, improve=10.379130, (0 missing)
##
         241 < 12
##
         208 < 18
                     to the left, improve= 9.593314, (0 missing)
##
         267 < 123.5 to the right, improve= 8.864035, (0 missing)
##
         239 < 11.5 to the right, improve= 8.677368, (0 missing)
     Surrogate splits:
##
##
         239 < 11.5 to the right, agree=0.930, adj=0.852, (0 split)
##
                     to the right, agree=0.860, adj=0.704, (0 split)
         241 < 1
                     to the right, agree=0.860, adj=0.704, (0 split)
##
         267 < 190
##
         212 < 148.5 to the right, agree=0.825, adj=0.630, (0 split)
##
                     to the right, agree=0.825, adj=0.630, (0 split)
         213 < 12
##
## Node number 196: 45 observations
     predicted class=0
                        expected loss=0.2 P(node) =0.00178536
##
##
       class counts:
                        36
                               0
                                     3
                                           0
                                                 1
                                                        2
                                                                          2
1
##
      probabilities: 0.800 0.000 0.067 0.000 0.022 0.044 0.000 0.000 0.044
0.022
##
## Node number 197: 39 observations,
                                        complexity param=0.0002679289
##
     predicted class=6 expected loss=0.4358974 P(node) =0.001547312
##
       class counts:
                                     3
                                           2
                                                                          0
0
##
      probabilities: 0.077 0.000 0.077 0.051 0.000 0.231 0.564 0.000 0.000
0.000
##
     left son=394 (13 obs) right son=395 (26 obs)
##
     Primary splits:
##
         325 < 145
                     to the right, improve=8.025641, (0 missing)
##
         324 < 49.5 to the right, improve=7.632051, (0 missing)
         408 < 15.5 to the left, improve=6.932414, (0 missing)
##
##
         296 < 67.5 to the right, improve=6.494172, (0 missing)
##
         323 < 134.5 to the right, improve=6.370940, (0 missing)
##
     Surrogate splits:
##
         297 < 4.5
                     to the right, agree=0.949, adj=0.846, (0 split)
##
         324 < 49.5 to the right, agree=0.949, adj=0.846, (0 split)
##
         296 < 71
                     to the right, agree=0.923, adj=0.769, (0 split)
##
                     to the left, agree=0.872, adj=0.615, (0 split)
         401 < 4
         323 < 134.5 to the right, agree=0.846, adj=0.538, (0 split)
##
##
## Node number 198: 65 observations, complexity param=0.0003125837
```

```
expected loss=0.5230769 P(node) =0.002578853
##
     predicted class=3
##
       class counts:
                                                       14
                         3
                               1
                                    10
                                          31
                                                 0
                                                              3
                                                                    2
                                                                          1
0
##
      probabilities: 0.046 0.015 0.154 0.477 0.000 0.215 0.046 0.031 0.015
0.000
##
     left son=396 (55 obs) right son=397 (10 obs)
##
     Primary splits:
##
         287 < 38.5 to the left,
                                   improve=6.146853, (0 missing)
                     to the right, improve=6.090287, (0 missing)
##
         485 < 9.5
                                   improve=5.958974, (0 missing)
##
         322 < 21.5 to the left,
         571 < 198
##
                     to the left,
                                   improve=5.746089, (0 missing)
         514 < 4
                     to the right, improve=5.712476, (0 missing)
##
##
     Surrogate splits:
##
         288 < 180
                     to the left,
                                   agree=0.969, adj=0.8, (0 split)
##
         315 < 3
                     to the left,
                                   agree=0.954, adj=0.7, (0 split)
##
         260 < 171.5 to the left,
                                   agree=0.938, adj=0.6, (0 split)
##
         342 < 13
                     to the left,
                                   agree=0.938, adj=0.6, (0 split)
##
         371 < 71
                     to the left, agree=0.923, adj=0.5, (0 split)
##
## Node number 199: 74 observations
     predicted class=5
                        expected loss=0.2972973 P(node) =0.002935925
##
##
       class counts:
                         4
                               0
                                     1
                                          11
                                                       52
                                                              1
                                                                          2
                                                                    0
3
##
      probabilities: 0.054 0.000 0.014 0.149 0.000 0.703 0.014 0.000 0.027
0.041
##
## Node number 202: 17 observations
##
     predicted class=0
                        expected loss=0.5882353 P(node) =0.0006744694
##
       class counts:
                         7
                               0
                                     1
                                                 1
                                                              5
                                                                          1
                                           0
2
      probabilities: 0.412 0.000 0.059 0.000 0.059 0.000 0.294 0.000 0.059
##
0.118
##
## Node number 203: 9 observations
     predicted class=5
                        expected loss=0.1111111 P(node) =0.000357072
##
       class counts:
                         0
                               0
                                                       8
                                                              1
                                                                    0
                                                                          0
                                     0
                                           0
                                                 0
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.889 0.111 0.000 0.000
0.000
##
## Node number 206: 64 observations,
                                        complexity param=0.0002976988
##
     predicted class=6
                        expected loss=0.640625 P(node) =0.002539179
##
       class counts:
                         5
                               0
                                     9
                                           4
                                                 1
                                                       10
                                                             23
                                                                         12
0
      probabilities: 0.078 0.000 0.141 0.062 0.016 0.156 0.359 0.000 0.188
##
0.000
##
     left son=412 (44 obs) right son=413 (20 obs)
##
     Primary splits:
##
         131 < 89
                     to the left, improve=9.009091, (0 missing)
##
         132 < 19.5 to the left, improve=8.963636, (0 missing)
```

```
improve=8.156725, (0 missing)
##
         432 < 229.5 to the left.
##
         103 < 9.5
                     to the left,
                                   improve=8.133333, (0 missing)
                                   improve=7.714286, (0 missing)
##
         682 < 20.5 to the left,
##
     Surrogate splits:
##
         132 < 19.5 to the left,
                                   agree=0.938, adj=0.80, (0 split)
##
         103 < 49
                     to the left,
                                   agree=0.891, adj=0.65, (0 split)
##
         130 < 157
                     to the left,
                                   agree=0.891, adj=0.65, (0 split)
                                   agree=0.875, adj=0.60, (0 split)
##
         104 < 8
                     to the left,
                                   agree=0.859, adj=0.55, (0 split)
##
         159 < 210
                     to the left,
##
## Node number 207: 87 observations
##
     predicted class=5
                        expected loss=0.09195402 P(node) =0.003451696
##
       class counts:
                         1
                               0
                                     1
                                                       79
                                                              1
                                                                    0
                                                                          5
                                            0
0
##
      probabilities: 0.011 0.000 0.011 0.000 0.000 0.908 0.011 0.000 0.057
0.000
##
## Node number 208: 93 observations
##
     predicted class=0
                        expected loss=0.1397849
                                                 P(node) =0.003689744
##
       class counts:
                        80
                               0
                                     3
                                            1
                                                  0
                                                        2
                                                              2
                                                                    2
                                                                          1
2
      probabilities: 0.860 0.000 0.032 0.011 0.000 0.022 0.022 0.022 0.011
##
0.022
##
## Node number 209: 58 observations,
                                        complexity param=0.0004018934
##
     predicted class=2 expected loss=0.7758621 P(node) =0.002301131
##
       class counts:
                        10
                                    13
                                           2
                                                  3
                                                       12
                                                                          1
                               0
                                                              3
13
##
      probabilities: 0.172 0.000 0.224 0.034 0.052 0.207 0.052 0.017 0.017
0.224
##
     left son=418 (25 obs) right son=419 (33 obs)
##
     Primary splits:
##
         438 < 23.5 to the left,
                                   improve=9.008694, (0 missing)
                     to the right, improve=7.751724, (0 missing)
##
         443 < 22
                     to the right, improve=7.646461, (0 missing)
##
         494 < 2
##
         466 < 25.5 to the left, improve=7.511320, (0 missing)
##
         411 < 9
                     to the left, improve=7.316573, (0 missing)
##
     Surrogate splits:
##
         410 < 5
                     to the left,
                                   agree=0.948, adj=0.88, (0 split)
         411 < 22.5 to the left,
                                   agree=0.948, adj=0.88, (0 split)
##
##
         437 < 1.5
                     to the left,
                                   agree=0.914, adj=0.80, (0 split)
                                   agree=0.914, adj=0.80, (0 split)
##
         466 < 25.5
                     to the left,
##
         439 < 39
                     to the left,
                                   agree=0.897, adj=0.76, (0 split)
##
## Node number 210: 15 observations
##
     predicted class=0
                        expected loss=0.5333333
                                                 P(node) =0.00059512
##
       class counts:
                         7
                                     3
                                                  2
                                                              1
                                                                          1
1
##
      probabilities: 0.467 0.000 0.200 0.000 0.133 0.000 0.067 0.000 0.067
0.067
```

```
##
## Node number 211: 143 observations
##
     predicted class=6 expected loss=0.1818182 P(node) =0.005673477
       class counts:
                         2
                               1
                                                       5
##
                                    11
                                           3
                                                 4
                                                           117
                                                                          0
0
      probabilities: 0.014 0.007 0.077 0.021 0.028 0.035 0.818 0.000 0.000
##
0.000
##
## Node number 212: 103 observations
     predicted class=4
                        expected loss=0.1067961 P(node) =0.004086491
##
##
       class counts:
                         1
                               0
                                     3
                                                92
                                                              5
                                                                          0
                                           0
2
##
      probabilities: 0.010 0.000 0.029 0.000 0.893 0.000 0.049 0.000 0.000
0.019
##
## Node number 213: 16 observations
     predicted class=7
                        expected loss=0.625 P(node) =0.0006347947
##
       class counts:
                         1
                               0
                                     3
                                                 0
                                                       3
                                                                    6
                                           0
                                                                          0
3
##
      probabilities: 0.062 0.000 0.188 0.000 0.000 0.188 0.000 0.375 0.000
0.188
##
## Node number 214: 69 observations
     predicted class=5
                        expected loss=0.4492754 P(node) =0.002737552
##
##
       class counts:
                         6
                               0
                                     5
                                           5
                                                 1
                                                      38
                                                                          1
5
      probabilities: 0.087 0.000 0.072 0.072 0.014 0.551 0.058 0.058 0.014
##
0.072
##
## Node number 215: 106 observations,
                                         complexity param=0.0006251675
##
     predicted class=9 expected loss=0.3962264 P(node) =0.004205515
##
       class counts:
                         1
                                     3
                                           0
                                                23
                                                                          1
64
      probabilities: 0.009 0.000 0.028 0.000 0.217 0.000 0.009 0.123 0.009
##
0.604
##
     left son=430 (24 obs) right son=431 (82 obs)
##
     Primary splits:
##
         208 < 2.5
                     to the left, improve=14.69290, (0 missing)
##
         235 < 3
                     to the left,
                                   improve=13.55717, (0 missing)
         156 < 10.5 to the right, improve=12.51154, (0 missing)
##
##
         374 < 121
                     to the right, improve=12.34940, (0 missing)
##
         320 < 89
                     to the right, improve=12.34725, (0 missing)
##
     Surrogate splits:
         209 < 17
##
                     to the left, agree=0.962, adj=0.833, (0 split)
##
         210 < 72
                     to the left,
                                   agree=0.906, adj=0.583, (0 split)
##
         207 < 2.5
                     to the left,
                                   agree=0.877, adj=0.458, (0 split)
##
         235 < 3
                     to the left, agree=0.877, adj=0.458, (0 split)
##
         157 < 59.5 to the right, agree=0.858, adj=0.375, (0 split)
##
## Node number 216: 53 observations, complexity param=0.0002456015
```

```
expected loss=0.6792453 P(node) =0.002102757
##
     predicted class=3
##
       class counts:
                         1
                               7
                                      0
                                           17
                                                  1
                                                       17
                                                              8
                                                                           0
2
      probabilities: 0.019 0.132 0.000 0.321 0.019 0.321 0.151 0.000 0.000
##
0.038
##
     left son=432 (16 obs) right son=433 (37 obs)
##
     Primary splits:
##
         205 < 9.5
                     to the right, improve=7.426759, (0 missing)
                                   improve=6.576329, (0 missing)
##
         541 < 18.5
                     to the left,
##
         574 < 1.5
                     to the left,
                                   improve=6.534771, (0 missing)
##
         517 < 31
                     to the left,
                                   improve=6.495608, (0 missing)
         544 < 2.5
##
                     to the left,
                                   improve=6.334176, (0 missing)
##
     Surrogate splits:
##
         232 < 13
                     to the right, agree=0.943, adj=0.813, (0 split)
##
         204 < 10
                     to the right, agree=0.925, adj=0.750, (0 split)
##
         206 < 23.5
                     to the right, agree=0.925, adj=0.750, (0 split)
##
         203 < 5
                     to the right, agree=0.906, adj=0.688, (0 split)
##
         231 < 2
                     to the right, agree=0.906, adj=0.688, (0 split)
##
## Node number 217: 53 observations
     predicted class=5
                        expected loss=0.2075472 P(node) =0.002102757
##
##
       class counts:
                         1
                               0
                                      0
                                            0
                                                  1
                                                       42
                                                              1
                                                                           2
                                                                    2
4
##
      probabilities: 0.019 0.000 0.000 0.000 0.019 0.792 0.019 0.038 0.038
0.075
##
## Node number 218: 31 observations,
                                         complexity param=0.0001786193
##
     predicted class=4
                        expected loss=0.3870968 P(node) =0.001229915
##
       class counts:
                         0
                                      1
                                            4
                                                 19
                                                        1
                               0
                                                                    3
                                                                           0
3
##
      probabilities: 0.000 0.000 0.032 0.129 0.613 0.032 0.000 0.097 0.000
0.097
##
     left son=436 (7 obs) right son=437 (24 obs)
##
     Primary splits:
##
         155 < 78.5 to the right, improve=5.693548, (0 missing)
##
         183 < 35
                     to the right, improve=5.693548, (0 missing)
         184 < 114
                     to the right, improve=4.508766, (0 missing)
##
##
         381 < 251
                     to the right, improve=4.219189, (0 missing)
                     to the right, improve=4.213750, (0 missing)
##
         464 < 13
##
     Surrogate splits:
##
         154 < 90.5 to the right, agree=0.968, adj=0.857, (0 split)
         156 < 104.5 to the right, agree=0.968, adj=0.857, (0 split)
##
##
         153 < 77.5
                     to the right, agree=0.935, adj=0.714, (0 split)
                     to the right, agree=0.935, adj=0.714, (0 split)
##
         183 < 35
                     to the right, agree=0.935, adj=0.714, (0 split)
##
         622 < 9
##
## Node number 219: 71 observations
     predicted class=9
                        expected loss=0.2112676 P(node) =0.002816901
##
##
       class counts:
                         2
                               0
                                      2
                                            4
                                                  1
                                                        2
                                                              0
                                                                    4
                                                                           0
56
```

```
probabilities: 0.028 0.000 0.028 0.056 0.014 0.028 0.000 0.056 0.000
0.789
##
## Node number 220: 59 observations
##
     predicted class=0
                        expected loss=0.1694915 P(node) =0.002340805
                        49
##
       class counts:
                               0
                                     0
                                           0
                                                  2
                                                        3
                                                                          0
3
      probabilities: 0.831 0.000 0.000 0.000 0.034 0.051 0.000 0.034 0.000
##
0.051
##
## Node number 221: 9 observations
     predicted class=5 expected loss=0.3333333 P(node) =0.000357072
##
       class counts:
                         0
                               0
                                                       6
                                                                    2
                                                                          0
                                     0
                                           1
0
##
      probabilities: 0.000 0.000 0.000 0.111 0.000 0.667 0.000 0.222 0.000
0.000
##
## Node number 222: 30 observations,
                                        complexity param=0.0003572385
##
     predicted class=5
                        expected loss=0.6666667 P(node) =0.00119024
##
       class counts:
                         0
                               2
                                     1
                                           1
                                                  8
                                                       10
                                                              1
                                                                    2
                                                                          0
5
      probabilities: 0.000 0.067 0.033 0.033 0.267 0.333 0.033 0.067 0.000
##
0.167
##
     left son=444 (14 obs) right son=445 (16 obs)
##
     Primary splits:
##
         381 < 10.5 to the left,
                                   improve=6.779762, (0 missing)
##
                                   improve=6.779762, (0 missing)
         409 < 65
                     to the left,
         437 < 77
                                   improve=6.779762, (0 missing)
##
                     to the left,
##
         465 < 168.5 to the left,
                                   improve=6.779762, (0 missing)
##
         464 < 205
                     to the right, improve=6.733333, (0 missing)
##
     Surrogate splits:
##
         409 < 65
                     to the left,
                                   agree=1.000, adj=1.000, (0 split)
         437 < 77
##
                     to the left,
                                   agree=1.000, adj=1.000, (0 split)
##
         465 < 168.5 to the left,
                                   agree=1.000, adj=1.000, (0 split)
##
                                   agree=0.967, adj=0.929, (0 split)
         493 < 115.5 to the left,
##
         353 < 3.5
                     to the left, agree=0.933, adj=0.857, (0 split)
##
## Node number 223: 648 observations,
                                         complexity param=0.0001786193
                        expected loss=0.0632716 P(node) =0.02570918
##
     predicted class=7
##
       class counts:
                         8
                               1
                                     4
                                           7
                                                       7
                                                                  607
                                                                          0
7
##
      probabilities: 0.012 0.002 0.006 0.011 0.006 0.011 0.005 0.937 0.000
0.011
##
     left son=446 (19 obs) right son=447 (629 obs)
##
     Primary splits:
##
         153 < 27
                     to the right, improve=18.41900, (0 missing)
##
         155 < 11.5
                     to the right, improve=17.95829, (0 missing)
##
                     to the right, improve=17.53289, (0 missing)
         154 < 1
##
         157 < 1.5
                     to the right, improve=16.51543, (0 missing)
         156 < 6.5 to the right, improve=16.38860, (0 missing)
##
```

```
Surrogate splits:
##
##
         154 < 1
                     to the right, agree=0.998, adj=0.947, (0 split)
                     to the right, agree=0.994, adj=0.789, (0 split)
##
         152 < 29
                     to the right, agree=0.991, adj=0.684, (0 split)
##
         151 < 1
##
         150 < 4
                     to the right, agree=0.988, adj=0.579, (0 split)
##
         155 < 27
                     to the right, agree=0.988, adj=0.579, (0 split)
##
## Node number 224: 936 observations,
                                          complexity param=0.0006251675
                        expected loss=0.05769231 P(node) =0.03713549
##
     predicted class=2
##
       class counts:
                         0
                                0
                                    882
                                           15
                                                  0
                                                        1
                                                                    12
                                                                          25
                                                              0
1
      probabilities: 0.000 0.000 0.942 0.016 0.000 0.001 0.000 0.013 0.027
##
0.001
##
     left son=448 (922 obs) right son=449 (14 obs)
##
     Primary splits:
##
         349 < 134.5 to the left,
                                    improve=26.08949, (0 missing)
##
         348 < 51
                     to the left,
                                    improve=20.47057, (0 missing)
##
         321 < 169.5 to the left,
                                    improve=17.05345, (0 missing)
##
         320 < 143
                     to the left,
                                    improve=15.22744, (0 missing)
##
         345 < 104.5 to the left,
                                    improve=11.95572, (0 missing)
##
     Surrogate splits:
##
         348 < 51
                     to the left,
                                    agree=0.997, adj=0.786, (0 split)
##
                                    agree=0.995, adj=0.643, (0 split)
         321 < 169.5 to the left,
##
         320 < 143
                     to the left,
                                    agree=0.994, adj=0.571, (0 split)
##
         377 < 253.5 to the left,
                                    agree=0.987, adj=0.143, (0 split)
##
## Node number 225: 85 observations,
                                         complexity param=0.0007591319
     predicted class=8
##
                        expected loss=0.5176471 P(node) =0.003372347
##
       class counts:
                         3
                                     20
                                                        1
                                0
                                            1
                                                  2
                                                              2
                                                                          41
15
##
      probabilities: 0.035 0.000 0.235 0.012 0.024 0.012 0.024 0.000 0.482
0.176
##
     left son=450 (35 obs) right son=451 (50 obs)
##
     Primary splits:
##
         402 < 51.5 to the left,
                                    improve=19.00706, (0 missing)
##
         403 < 5.5
                     to the left,
                                    improve=17.87550, (0 missing)
         657 < 157.5 to the left,
##
                                    improve=15.56613, (0 missing)
##
         431 < 182
                     to the left,
                                    improve=15.56511, (0 missing)
##
         432 < 128
                     to the left,
                                    improve=15.20337, (0 missing)
##
     Surrogate splits:
##
         403 < 5.5
                     to the left,
                                    agree=0.918, adj=0.800, (0 split)
         430 < 50.5
                                    agree=0.906, adj=0.771, (0 split)
##
                     to the left,
##
         431 < 24
                     to the left,
                                    agree=0.894, adj=0.743, (0 split)
##
         432 < 128
                     to the left,
                                    agree=0.882, adj=0.714, (0 split)
                                    agree=0.871, adj=0.686, (0 split)
##
         404 < 11
                     to the left,
##
## Node number 226: 487 observations,
                                          complexity param=0.002857908
     predicted class=2 expected loss=0.7864476 P(node) =0.01932156
##
##
       class counts:
                         2
                             102
                                    104
                                            6
                                                 62
                                                       10
                                                              48
                                                                    57
                                                                          22
74
```

```
probabilities: 0.004 0.209 0.214 0.012 0.127 0.021 0.099 0.117 0.045
##
0.152
##
     left son=452 (246 obs) right son=453 (241 obs)
     Primary splits:
##
##
         211 < 1
                     to the left,
                                   improve=54.34980, (0 missing)
         344 < 21.5
##
                     to the left,
                                   improve=52.68771, (0 missing)
##
                     to the left,
                                   improve=52.56168, (0 missing)
         238 < 1
         210 < 5.5
##
                     to the left,
                                   improve=52.23305, (0 missing)
##
                                   improve=50.24258, (0 missing)
         237 < 1
                     to the left,
##
     Surrogate splits:
##
         210 < 0.5
                     to the left,
                                   agree=0.973, adj=0.946, (0 split)
         212 < 63
                                   agree=0.951, adj=0.900, (0 split)
##
                     to the left,
##
         209 < 1
                     to the left,
                                   agree=0.940, adj=0.880, (0 split)
##
         237 < 26.5
                     to the left,
                                   agree=0.940, adj=0.880, (0 split)
##
                     to the left,
                                   agree=0.938, adj=0.876, (0 split)
         238 < 1
##
## Node number 227: 136 observations,
                                          complexity param=0.0002679289
##
     predicted class=7
                        expected loss=0.08823529 P(node) =0.005395755
##
       class counts:
                         0
                               0
                                      3
                                            1
                                                  1
                                                                  124
                                                                           6
1
##
      probabilities: 0.000 0.000 0.022 0.007 0.007 0.000 0.000 0.912 0.044
0.007
##
     left son=454 (128 obs) right son=455 (8 obs)
##
     Primary splits:
##
         373 < 182.5 to the left,
                                   improve=11.541360, (0 missing)
                                   improve=10.126290, (0 missing)
##
         374 < 46
                     to the left,
##
         401 < 51.5 to the left,
                                   improve= 9.641326, (0 missing)
         402 < 128
##
                     to the left,
                                   improve= 8.369485, (0 missing)
##
         603 < 54
                     to the right, improve= 8.036963, (0 missing)
##
     Surrogate splits:
         374 < 46
##
                     to the left,
                                   agree=0.993, adj=0.875, (0 split)
##
         402 < 128
                     to the left,
                                   agree=0.985, adj=0.750, (0 split)
                                   agree=0.978, adj=0.625, (0 split)
##
         345 < 233.5 to the left,
                                   agree=0.978, adj=0.625, (0 split)
##
         401 < 51.5 to the left,
##
                                   agree=0.971, adj=0.500, (0 split)
         346 < 106.5 to the left,
##
## Node number 228: 121 observations,
                                          complexity param=0.0002679289
##
     predicted class=5
                        expected loss=0.2231405 P(node) =0.004800635
##
       class counts:
                         5
                               0
                                      7
                                            0
                                                  3
                                                       94
                                                              4
                                                                    0
                                                                           8
0
##
      probabilities: 0.041 0.000 0.058 0.000 0.025 0.777 0.033 0.000 0.066
0.000
##
     left son=456 (20 obs) right son=457 (101 obs)
##
     Primary splits:
         384 < 14
##
                     to the right, improve=18.04196, (0 missing)
##
         413 < 1
                     to the right, improve=17.66176, (0 missing)
##
         412 < 5
                     to the right, improve=17.56195, (0 missing)
##
                     to the right, improve=17.43202, (0 missing)
         385 < 43.5
##
         356 < 2.5
                     to the right, improve=16.41559, (0 missing)
##
     Surrogate splits:
```

```
to the right, agree=0.992, adj=0.95, (0 split)
##
         385 < 43.5
##
         356 < 2.5
                     to the right, agree=0.983, adj=0.90, (0 split)
                     to the right, agree=0.983, adj=0.90, (0 split)
##
         357 < 5
                     to the right, agree=0.983, adj=0.90, (0 split)
##
         412 < 130
         413 < 1
##
                     to the right, agree=0.983, adj=0.90, (0 split)
##
## Node number 229: 364 observations,
                                          complexity param=0.001674556
##
     predicted class=4
                        expected loss=0.6565934 P(node) =0.01444158
##
       class counts:
                        14
                                0
                                     66
                                                125
                                                                          41
53
##
      probabilities: 0.038 0.000 0.181 0.000 0.343 0.005 0.041 0.132 0.113
0.146
##
     left son=458 (155 obs) right son=459 (209 obs)
##
     Primary splits:
##
         212 < 1.5
                                    improve=41.35091, (0 missing)
                     to the left,
##
         240 < 16.5
                     to the left,
                                    improve=40.03897, (0 missing)
                                    improve=34.08154, (0 missing)
##
         213 < 6.5
                     to the left,
##
         184 < 55
                     to the right, improve=33.64439, (0 missing)
         429 < 64
##
                     to the right, improve=32.44985, (0 missing)
##
     Surrogate splits:
##
         211 < 7.5
                     to the left,
                                    agree=0.896, adj=0.755, (0 split)
##
         213 < 6.5
                     to the left,
                                    agree=0.882, adj=0.723, (0 split)
##
         184 < 4.5
                     to the left,
                                    agree=0.857, adj=0.665, (0 split)
##
         240 < 6
                     to the left,
                                    agree=0.843, adj=0.632, (0 split)
                                    agree=0.832, adj=0.606, (0 split)
##
         239 < 103.5 to the left,
##
## Node number 230: 74 observations,
                                         complexity param=0.0004465482
##
     predicted class=4
                        expected loss=0.7162162 P(node) =0.002935925
##
       class counts:
                        10
                                      1
                                                 21
                                                               5
                                0
                                            0
                                                                          15
13
##
      probabilities: 0.135 0.000 0.014 0.000 0.284 0.122 0.068 0.000 0.203
0.176
##
     left son=460 (21 obs) right son=461 (53 obs)
##
     Primary splits:
##
         212 < 40.5
                     to the left,
                                    improve=13.65836, (0 missing)
##
         213 < 11
                     to the left,
                                    improve=11.76198, (0 missing)
                                    improve=11.71766, (0 missing)
##
         211 < 40.5
                     to the left,
##
         597 < 35
                     to the right, improve=11.04087, (0 missing)
##
         185 < 107
                     to the left,
                                    improve=10.69842, (0 missing)
##
     Surrogate splits:
##
         211 < 40.5
                     to the left,
                                    agree=0.946, adj=0.810, (0 split)
                                    agree=0.946, adj=0.810, (0 split)
##
         239 < 21.5
                     to the left,
##
         213 < 20
                     to the left,
                                    agree=0.932, adj=0.762, (0 split)
                     to the left,
                                    agree=0.919, adj=0.714, (0 split)
##
         210 < 50
                                    agree=0.905, adj=0.667, (0 split)
##
         184 < 3
                     to the left,
##
## Node number 231: 635 observations,
                                          complexity param=0.0002456015
     predicted class=8
                        expected loss=0.08031496 P(node) =0.02519341
##
##
       class counts:
                         7
                                0
                                      4
                                            5
                                                  3
                                                       14
                                                               4
                                                                     8
                                                                         584
6
```

```
probabilities: 0.011 0.000 0.006 0.008 0.005 0.022 0.006 0.013 0.920
##
0.009
##
     left son=462 (47 obs) right son=463 (588 obs)
##
     Primary splits:
##
         488 < 14.5 to the left,
                                   improve=12.62911, (0 missing)
##
         404 < 2
                     to the left,
                                   improve=12.45999, (0 missing)
##
         487 < 2.5
                     to the left,
                                   improve=11.15042, (0 missing)
         434 < 27
##
                     to the left,
                                   improve=10.17359, (0 missing)
                                   improve=10.09254, (0 missing)
##
         461 < 56.5 to the left,
##
     Surrogate splits:
##
         461 < 67.5
                    to the left,
                                   agree=0.965, adj=0.532, (0 split)
                                   agree=0.961, adj=0.468, (0 split)
##
         515 < 8.5
                     to the left,
##
         489 < 0.5
                     to the left,
                                   agree=0.943, adj=0.234, (0 split)
##
         462 < 0.5
                     to the left,
                                   agree=0.942, adj=0.213, (0 split)
##
                     to the right, agree=0.932, adj=0.085, (0 split)
         121 < 6.5
##
## Node number 232: 318 observations,
                                         complexity param=0.0006698223
##
     predicted class=2 expected loss=0.1823899 P(node) =0.01261654
##
       class counts:
                         2
                              25
                                   260
                                            2
                                                  8
                                                                          4
5
##
      probabilities: 0.006 0.079 0.818 0.006 0.025 0.000 0.009 0.028 0.013
0.016
##
     left son=464 (32 obs) right son=465 (286 obs)
##
     Primary splits:
##
         159 < 0.5
                     to the right, improve=26.02915, (0 missing)
         187 < 16.5 to the right, improve=25.86607, (0 missing)
##
                     to the right, improve=24.47659, (0 missing)
##
         215 < 28
         186 < 129
                     to the right, improve=22.71974, (0 missing)
##
##
         158 < 132.5 to the right, improve=19.37000, (0 missing)
##
     Surrogate splits:
         187 < 16.5 to the right, agree=0.987, adj=0.875, (0 split)
##
         186 < 215
##
                     to the right, agree=0.965, adj=0.656, (0 split)
                     to the right, agree=0.959, adj=0.594, (0 split)
##
         131 < 12.5
##
         158 < 143
                     to the right, agree=0.956, adj=0.562, (0 split)
##
                     to the right, agree=0.953, adj=0.531, (0 split)
         215 < 4
##
## Node number 233: 26 observations
                        expected loss=0.3076923
##
     predicted class=7
                                                 P(node) =0.001031541
       class counts:
##
                         1
                               0
                                     0
                                            2
                                                  2
                                                        0
                                                              0
                                                                   18
                                                                          2
1
##
      probabilities: 0.038 0.000 0.000 0.077 0.077 0.000 0.000 0.692 0.077
0.038
##
## Node number 234: 73 observations,
                                        complexity param=0.0008484415
     predicted class=4
                        expected loss=0.6712329 P(node) =0.002896251
##
##
       class counts:
                         0
                               1
                                     9
                                            0
                                                 24
                                                        1
                                                             19
                                                                    4
                                                                          4
11
##
      probabilities: 0.000 0.014 0.123 0.000 0.329 0.014 0.260 0.055 0.055
0.151
     left son=468 (48 obs) right son=469 (25 obs)
```

```
Primary splits:
##
##
         573 < 214
                     to the left,
                                   improve=14.67151, (0 missing)
                     to the right, improve=13.28790, (0 missing)
##
         571 < 79
         356 < 63.5 to the left,
                                   improve=12.90220, (0 missing)
##
         572 < 108.5 to the right, improve=12.42019, (0 missing)
##
##
         269 < 4
                     to the right, improve=11.92731, (0 missing)
     Surrogate splits:
##
##
         572 < 232.5 to the left, agree=0.932, adj=0.80, (0 split)
##
         601 < 26.5 to the left,
                                   agree=0.904, adj=0.72, (0 split)
##
         574 < 182
                     to the left,
                                   agree=0.890, adj=0.68, (0 split)
##
         600 < 96
                     to the left,
                                   agree=0.890, adj=0.68, (0 split)
                     to the right, agree=0.863, adj=0.60, (0 split)
##
         269 < 4
##
## Node number 235: 30 observations
##
     predicted class=8
                        expected loss=0.1 P(node) =0.00119024
##
       class counts:
                         2
                                                                        27
                                     1
0
##
      probabilities: 0.067 0.000 0.033 0.000 0.000 0.000 0.000 0.000 0.900
0.000
##
## Node number 236: 127 observations,
                                         complexity param=0.0004465482
                        expected loss=0.4330709 P(node) =0.005038683
     predicted class=2
##
       class counts:
                         3
                               1
                                    72
                                                            14
                                           3
                                                12
                                                       1
                                                                   1
                                                                        15
5
      probabilities: 0.024 0.008 0.567 0.024 0.094 0.008 0.110 0.008 0.118
##
0.039
##
     left son=472 (83 obs) right son=473 (44 obs)
##
     Primary splits:
##
         537 < 23.5 to the right, improve=23.51794, (0 missing)
##
         565 < 20
                     to the right, improve=22.83947, (0 missing)
                     to the right, improve=19.65800, (0 missing)
##
         158 < 9
##
         159 < 9.5
                     to the right, improve=19.65800, (0 missing)
##
         157 < 67.5 to the right, improve=18.50751, (0 missing)
##
     Surrogate splits:
##
         565 < 2.5
                     to the right, agree=0.937, adj=0.818, (0 split)
##
         566 < 17
                     to the right, agree=0.921, adj=0.773, (0 split)
                     to the right, agree=0.913, adj=0.750, (0 split)
##
         509 < 3
##
                     to the right, agree=0.913, adj=0.750, (0 split)
         538 < 61.5
##
         594 < 3
                     to the right, agree=0.890, adj=0.682, (0 split)
##
## Node number 237: 114 observations
##
     predicted class=8
                        expected loss=0.0877193
                                                 P(node) =0.004522912
##
       class counts:
                                     6
                                                 3
                                                       0
                                                                       104
0
      probabilities: 0.000 0.000 0.053 0.000 0.026 0.000 0.000 0.009 0.912
##
0.000
##
## Node number 238: 1537 observations,
                                          complexity param=0.00111637
     predicted class=6 expected loss=0.0540013 P(node) =0.06097996
       class counts: 0 2 30 1 4 27 1454
```

```
##
      probabilities: 0.000 0.001 0.020 0.001 0.003 0.018 0.946 0.001 0.007
0.005
##
     left son=476 (34 obs) right son=477 (1503 obs)
##
     Primary splits:
         323 < 161.5 to the right, improve=48.87607, (0 missing)
##
         296 < 141.5 to the right, improve=26.03819, (0 missing)
##
                     to the right, improve=25.77839, (0 missing)
##
         324 < 155
                     to the right, improve=21.99027, (0 missing)
##
         217 < 164
##
         218 < 139
                     to the right, improve=21.17130, (0 missing)
##
     Surrogate splits:
##
         351 < 250
                     to the right, agree=0.985, adj=0.324, (0 split)
##
         296 < 141.5 to the right, agree=0.984, adj=0.294, (0 split)
##
         295 < 250.5 to the right, agree=0.983, adj=0.235, (0 split)
##
         324 < 166
                     to the right, agree=0.982, adj=0.206, (0 split)
##
         201 < 212
                     to the right, agree=0.979, adj=0.059, (0 split)
##
## Node number 239: 163 observations,
                                         complexity param=0.000870769
##
     predicted class=5
                        expected loss=0.5398773 P(node) =0.006466971
##
       class counts:
                         0
                               0
                                     2
                                            4
                                                  1
                                                       75
                                                             37
                                                                    1
                                                                         39
4
      probabilities: 0.000 0.000 0.012 0.025 0.006 0.460 0.227 0.006 0.239
##
0.025
##
     left son=478 (67 obs) right son=479 (96 obs)
##
     Primary splits:
##
         515 < 12.5 to the left,
                                   improve=23.29689, (0 missing)
##
         355 < 30.5 to the left,
                                   improve=23.03449, (0 missing)
         488 < 23.5
##
                     to the left,
                                   improve=22.22119, (0 missing)
##
         487 < 5
                     to the left,
                                   improve=21.91009, (0 missing)
##
         328 < 10
                     to the left,
                                   improve=21.24660, (0 missing)
##
     Surrogate splits:
##
         487 < 5
                     to the left,
                                   agree=0.883, adj=0.716, (0 split)
##
         514 < 65.5
                     to the left,
                                   agree=0.883, adj=0.716, (0 split)
##
         516 < 1.5
                     to the left,
                                   agree=0.871, adj=0.687, (0 split)
##
                                   agree=0.865, adj=0.672, (0 split)
         488 < 0.5
                     to the left,
##
         486 < 41.5
                    to the left,
                                   agree=0.810, adj=0.537, (0 split)
##
## Node number 240: 109 observations,
                                          complexity param=0.0005805126
                        expected loss=0.2293578 P(node) =0.004324539
##
     predicted class=2
##
       class counts:
                         0
                               0
                                    84
                                          17
                                                        2
                                                                          6
0
##
      probabilities: 0.000 0.000 0.771 0.156 0.000 0.018 0.000 0.000 0.055
0.000
##
     left son=480 (87 obs) right son=481 (22 obs)
##
     Primary splits:
##
         379 < 151.5 to the left, improve=21.18397, (0 missing)
##
         456 < 3
                     to the right, improve=17.86108, (0 missing)
##
                     to the right, improve=15.49374, (0 missing)
         484 < 2
##
         483 < 1.5
                     to the right, improve=14.94328, (0 missing)
         351 < 1 to the left, improve=14.40911, (0 missing)
##
```

```
##
     Surrogate splits:
##
         351 < 1
                     to the left,
                                   agree=0.954, adj=0.773, (0 split)
                                   agree=0.945, adj=0.727, (0 split)
##
         378 < 162.5 to the left,
                                   agree=0.917, adj=0.591, (0 split)
##
         380 < 155
                     to the left,
##
         352 < 66
                     to the left,
                                   agree=0.908, adj=0.545, (0 split)
##
         377 < 162.5 to the left,
                                   agree=0.908, adj=0.545, (0 split)
##
## Node number 241: 112 observations,
                                         complexity param=0.0006251675
     predicted class=5
                        expected loss=0.2946429 P(node) =0.004443563
##
##
       class counts:
                         0
                               0
                                     4
                                           7
                                                 4
                                                      79
                                                             2
                                                                   0
                                                                         16
0
##
      probabilities: 0.000 0.000 0.036 0.062 0.036 0.705 0.018 0.000 0.143
0.000
##
     left son=482 (87 obs) right son=483 (25 obs)
##
     Primary splits:
##
         355 < 10
                     to the left,
                                   improve=21.55950, (0 missing)
                                   improve=21.24793, (0 missing)
##
         381 < 6
                     to the left,
##
         382 < 4.5
                                   improve=20.59950, (0 missing)
                     to the left,
         354 < 7
##
                     to the left,
                                   improve=19.31057, (0 missing)
                    to the left,
##
         356 < 14.5
                                   improve=17.67997, (0 missing)
##
     Surrogate splits:
##
         354 < 63
                     to the left,
                                   agree=0.973, adj=0.88, (0 split)
         381 < 74
##
                     to the left,
                                   agree=0.964, adj=0.84, (0 split)
##
         382 < 4.5
                     to the left,
                                   agree=0.964, adj=0.84, (0 split)
##
         383 < 6
                     to the left,
                                   agree=0.955, adj=0.80, (0 split)
##
         353 < 14
                     to the left,
                                   agree=0.929, adj=0.68, (0 split)
##
## Node number 242: 1469 observations,
                                          complexity param=0.001629901
##
     predicted class=4
                        expected loss=0.1266167 P(node) =0.05828209
##
       class counts:
                         0
                               6
                                          16 1283
                                                                         31
                                    16
                                                      21
                                                            66
                                                                  10
20
##
      probabilities: 0.000 0.004 0.011 0.011 0.873 0.014 0.045 0.007 0.021
0.014
##
     left son=484 (1415 obs) right son=485 (54 obs)
##
     Primary splits:
##
         98 < 3
                                   improve=86.42458, (0 missing)
                     to the left,
         97 < 1
                                   improve=73.90600, (0 missing)
##
                     to the left,
##
         155 < 99.5
                     to the left,
                                   improve=72.01172, (0 missing)
##
         126 < 2
                     to the left,
                                   improve=70.29448, (0 missing)
##
         154 < 64.5
                     to the left,
                                   improve=67.46091, (0 missing)
##
     Surrogate splits:
            < 24
##
         99
                     to the left,
                                   agree=0.990, adj=0.722, (0 split)
##
         97
            < 1
                     to the left,
                                   agree=0.988, adj=0.685, (0 split)
##
            < 2
                     to the left,
                                   agree=0.982, adj=0.500, (0 split)
         70
##
         126 < 215
                     to the left,
                                   agree=0.980, adj=0.463, (0 split)
##
         71 < 7
                     to the left,
                                   agree=0.980, adj=0.444, (0 split)
##
## Node number 243: 140 observations,
                                         complexity param=0.0009377512
##
     predicted class=9 expected loss=0.6642857 P(node) =0.005554453
       class counts: 0 0 7 4 24 21
```

```
47
##
      probabilities: 0.000 0.000 0.050 0.029 0.171 0.150 0.000 0.243 0.021
0.336
##
     left son=486 (93 obs) right son=487 (47 obs)
##
     Primary splits:
         401 < 2.5
##
                     to the right, improve=15.36521, (0 missing)
         373 < 12
##
                     to the left,
                                   improve=15.21905, (0 missing)
         372 < 3
##
                     to the left,
                                   improve=14.71924, (0 missing)
                                   improve=13.38245, (0 missing)
##
         428 < 2
                     to the left,
##
         429 < 5
                     to the left,
                                   improve=13.28977, (0 missing)
##
     Surrogate splits:
         402 < 3
##
                     to the right, agree=0.907, adj=0.723, (0 split)
##
         373 < 1
                     to the right, agree=0.886, adj=0.660, (0 split)
##
         374 < 1.5
                     to the right, agree=0.857, adj=0.574, (0 split)
##
         429 < 91.5
                     to the right, agree=0.857, adj=0.574, (0 split)
##
         430 < 94
                     to the right, agree=0.857, adj=0.574, (0 split)
##
## Node number 244: 581 observations,
                                          complexity param=0.0009377512
##
     predicted class=5
                        expected loss=0.2340792 P(node) =0.02305098
##
       class counts:
                         3
                               0
                                    14
                                           37
                                                  6
                                                      445
                                                             26
                                                                    1
                                                                          9
40
      probabilities: 0.005 0.000 0.024 0.064 0.010 0.766 0.045 0.002 0.015
##
0.069
##
     left son=488 (521 obs) right son=489 (60 obs)
##
     Primary splits:
                                   improve=45.16512, (0 missing)
##
         384 < 17.5 to the left,
##
         356 < 2
                     to the left,
                                   improve=44.03084, (0 missing)
         385 < 1.5
                     to the left,
                                   improve=42.43825, (0 missing)
##
##
         357 < 4.5
                     to the left,
                                   improve=41.53327, (0 missing)
##
         383 < 49.5
                     to the left,
                                   improve=37.52325, (0 missing)
##
     Surrogate splits:
##
         385 < 1.5
                     to the left,
                                   agree=0.981, adj=0.817, (0 split)
                                   agree=0.979, adj=0.800, (0 split)
##
         383 < 49.5
                     to the left,
##
         412 < 78
                     to the left,
                                   agree=0.978, adj=0.783, (0 split)
##
         356 < 2
                                   agree=0.976, adj=0.767, (0 split)
                     to the left,
         357 < 4.5
##
                     to the left,
                                   agree=0.974, adj=0.750, (0 split)
##
## Node number 245: 227 observations,
                                          complexity param=0.00129499
                        expected loss=0.6123348 P(node) =0.00900615
##
     predicted class=4
##
       class counts:
                               2
                                                        0
                         0
                                     5
                                           18
                                                 88
                                                                   32
                                                                         28
52
##
      probabilities: 0.000 0.009 0.022 0.079 0.388 0.000 0.009 0.141 0.123
0.229
##
     left son=490 (79 obs) right son=491 (148 obs)
##
     Primary splits:
         209 < 16.5 to the left,
##
                                   improve=34.57810, (0 missing)
##
         208 < 14.5
                     to the left,
                                   improve=33.34277, (0 missing)
##
                                   improve=22.91833, (0 missing)
         210 < 95
                     to the left,
##
         156 < 1
                     to the right, improve=20.89619, (0 missing)
                     to the right, improve=18.83432, (0 missing)
##
         373 < 40
```

```
##
     Surrogate splits:
##
         210 < 82.5
                     to the left,
                                   agree=0.912, adj=0.747, (0 split)
                                   agree=0.881, adj=0.658, (0 split)
##
         208 < 1
                     to the left,
                     to the left,
                                   agree=0.819, adj=0.481, (0 split)
##
         181 < 5
##
         182 < 1
                     to the left,
                                   agree=0.802, adj=0.430, (0 split)
##
         237 < 18
                     to the left,
                                   agree=0.780, adj=0.367, (0 split)
##
## Node number 246: 406 observations,
                                         complexity param=0.002835581
     predicted class=4
                        expected loss=0.7487685 P(node) =0.01610792
##
       class counts:
                         3
                               0
                                    53
                                          98
                                               102
                                                       12
                                                                         77
56
      probabilities: 0.007 0.000 0.131 0.241 0.251 0.030 0.010 0.002 0.190
##
0.138
##
     left son=492 (178 obs) right son=493 (228 obs)
##
     Primary splits:
##
         624 < 1
                     to the right, improve=41.06848, (0 missing)
##
         400 < 6.5
                     to the left,
                                   improve=41.06288, (0 missing)
##
         372 < 2.5
                     to the left,
                                   improve=40.49366, (0 missing)
##
         345 < 1
                     to the left,
                                   improve=40.21070, (0 missing)
##
         373 < 65
                     to the left,
                                   improve=40.00554, (0 missing)
##
     Surrogate splits:
##
         625 < 90.5
                     to the right, agree=0.941, adj=0.865, (0 split)
##
         623 < 1
                     to the right, agree=0.936, adj=0.854, (0 split)
##
         595 < 0.5
                     to the right, agree=0.904, adj=0.781, (0 split)
##
         596 < 3.5
                     to the right, agree=0.904, adj=0.781, (0 split)
                     to the right, agree=0.887, adj=0.742, (0 split)
##
         652 < 0.5
##
## Node number 247: 1445 observations,
                                          complexity param=0.0006698223
##
     predicted class=9
                        expected loss=0.1944637 P(node) =0.05732989
##
       class counts:
                         1
                               0
                                    18
                                          62
                                                92
                                                       7
                                                                   54
                                                                         47
1164
##
      probabilities: 0.001 0.000 0.012 0.043 0.064 0.005 0.000 0.037 0.033
0.806
##
     left son=494 (293 obs) right son=495 (1152 obs)
##
     Primary splits:
##
         317 < 1
                                   improve=48.99596, (0 missing)
                     to the left,
                                   improve=45.68732, (0 missing)
##
         290 < 3.5
                     to the left,
##
         345 < 0.5
                     to the left,
                                   improve=44.17524, (0 missing)
##
         289 < 8.5
                     to the left,
                                   improve=39.02495, (0 missing)
##
         373 < 0.5
                     to the left,
                                   improve=36.31497, (0 missing)
##
     Surrogate splits:
##
         290 < 13.5
                     to the left,
                                   agree=0.905, adj=0.532, (0 split)
##
         345 < 0.5
                     to the left,
                                   agree=0.901, adj=0.512, (0 split)
                                   agree=0.878, adj=0.399, (0 split)
##
         289 < 0.5
                     to the left,
                                   agree=0.854, adj=0.280, (0 split)
##
         344 < 0.5
                     to the left,
##
         263 < 0.5
                     to the left,
                                   agree=0.846, adj=0.239, (0 split)
##
## Node number 248: 175 observations,
                                         complexity param=0.0008930964
##
     predicted class=5 expected loss=0.3428571 P(node) =0.006943067
       class counts: 1 7 4 40 3 115
                                                             2
```

```
2
##
      probabilities: 0.006 0.040 0.023 0.229 0.017 0.657 0.011 0.000 0.006
0.011
##
     left son=496 (40 obs) right son=497 (135 obs)
##
     Primary splits:
         323 < 1.5
##
                     to the right, improve=24.11683, (0 missing)
##
         322 < 52
                     to the right, improve=23.30486, (0 missing)
                     to the right, improve=17.90386, (0 missing)
##
         150 < 65
         295 < 126
                     to the right, improve=17.71134, (0 missing)
##
##
         321 < 210
                     to the right, improve=16.90571, (0 missing)
##
     Surrogate splits:
         295 < 140
##
                     to the right, agree=0.914, adj=0.625, (0 split)
##
         322 < 76
                     to the right, agree=0.897, adj=0.550, (0 split)
##
         324 < 2.5
                     to the right, agree=0.897, adj=0.550, (0 split)
##
         296 < 97
                     to the right, agree=0.880, adj=0.475, (0 split)
##
         294 < 252.5 to the right, agree=0.851, adj=0.350, (0 split)
##
## Node number 249: 138 observations,
                                          complexity param=0.00111637
##
     predicted class=9
                        expected loss=0.6594203 P(node) =0.005475104
##
       class counts:
                         0
                               5
                                     4
                                           17
                                                 27
                                                        1
                                                              0
                                                                    8
                                                                         29
47
      probabilities: 0.000 0.036 0.029 0.123 0.196 0.007 0.000 0.058 0.210
##
0.341
##
     left son=498 (46 obs) right son=499 (92 obs)
##
     Primary splits:
         434 < 208.5 to the right, improve=19.10145, (0 missing)
##
##
                     to the right, improve=17.09489, (0 missing)
         433 < 12
         154 < 1.5
                     to the right, improve=14.04231, (0 missing)
##
##
         376 < 47.5 to the left, improve=13.70145, (0 missing)
##
         375 < 129.5 to the left, improve=13.29010, (0 missing)
##
     Surrogate splits:
##
         461 < 63
                     to the right, agree=0.899, adj=0.696, (0 split)
##
         433 < 17
                     to the right, agree=0.891, adj=0.674, (0 split)
         489 < 183.5 to the right, agree=0.862, adj=0.587, (0 split)
##
##
         462 < 193.5 to the right, agree=0.848, adj=0.543, (0 split)
##
         488 < 8.5
                     to the right, agree=0.833, adj=0.500, (0 split)
##
## Node number 250: 93 observations,
                                         complexity param=0.0009377512
##
     predicted class=1
                        expected loss=0.5591398 P(node) =0.003689744
                                    24
##
       class counts:
                         4
                              41
                                            5
                                                        2
                                                             12
                                                                    5
                                                                          0
0
##
      probabilities: 0.043 0.441 0.258 0.054 0.000 0.022 0.129 0.054 0.000
0.000
##
     left son=500 (54 obs) right son=501 (39 obs)
##
     Primary splits:
                                   improve=18.75774, (0 missing)
##
         179 < 7
                     to the left,
##
         351 < 244
                     to the right, improve=18.16590, (0 missing)
##
                     to the right, improve=18.01097, (0 missing)
         378 < 71.5
##
         323 < 173
                     to the right, improve=17.50988, (0 missing)
                     to the left, improve=17.14835, (0 missing)
##
         178 < 29
```

```
##
     Surrogate splits:
##
         180 < 49
                     to the left,
                                   agree=0.968, adj=0.923, (0 split)
                                   agree=0.946, adj=0.872, (0 split)
##
         153 < 53
                     to the left,
                                   agree=0.946, adj=0.872, (0 split)
##
         178 < 4
                     to the left,
##
         152 < 19
                     to the left,
                                   agree=0.925, adj=0.821, (0 split)
                                   agree=0.925, adj=0.821, (0 split)
##
         206 < 1
                     to the left,
##
## Node number 251: 1360 observations,
                                           complexity param=0.0004018934
                        expected loss=0.04705882 P(node) =0.05395755
     predicted class=7
##
       class counts:
                         2
                              12
                                    21
                                            6
                                                  4
                                                        0
                                                              7 1296
                                                                          1
11
      probabilities: 0.001 0.009 0.015 0.004 0.003 0.000 0.005 0.953 0.001
##
0.008
##
     left son=502 (23 obs) right son=503 (1337 obs)
##
     Primary splits:
                     to the right, improve=25.10725, (0 missing)
##
         153 < 57
                     to the right, improve=20.15141, (0 missing)
##
         154 < 7
##
         152 < 18
                     to the right, improve=19.96451, (0 missing)
                     to the right, improve=17.55849, (0 missing)
##
         151 < 5.5
##
         150 < 219
                     to the right, improve=17.38734, (0 missing)
##
     Surrogate splits:
##
         154 < 3
                     to the right, agree=0.996, adj=0.783, (0 split)
##
         152 < 98.5
                     to the right, agree=0.996, adj=0.739, (0 split)
##
         124 < 6.5
                     to the right, agree=0.991, adj=0.478, (0 split)
##
         125 < 1.5
                     to the right, agree=0.991, adj=0.478, (0 split)
                     to the right, agree=0.991, adj=0.478, (0 split)
##
         151 < 87
##
## Node number 252: 132 observations
     predicted class=4
                        expected loss=0.1969697 P(node) =0.005237056
##
##
       class counts:
                         1
                               1
                                     8
                                                106
                                                        1
                                                                          1
                                            0
                                                              6
                                                                    1
7
##
      probabilities: 0.008 0.008 0.061 0.000 0.803 0.008 0.045 0.008 0.008
0.053
##
## Node number 253: 12 observations
     predicted class=6 expected loss=0.25 P(node) =0.000476096
##
##
       class counts:
                         0
                               0
                                     3
                                            0
                                                                          0
0
      probabilities: 0.000 0.000 0.250 0.000 0.000 0.000 0.750 0.000 0.000
##
0.000
##
## Node number 254: 50 observations,
                                        complexity param=0.0003125837
     predicted class=7
                        expected loss=0.68 P(node) =0.001983733
##
       class counts:
                         0
                               0
                                     4
                                            0
                                                 12
                                                        0
                                                              0
                                                                   16
                                                                          3
15
##
      probabilities: 0.000 0.000 0.080 0.000 0.240 0.000 0.000 0.320 0.060
0.300
##
     left son=508 (24 obs) right son=509 (26 obs)
##
     Primary splits:
         429 < 48.5 to the left, improve=9.358974, (0 missing)
##
```

```
457 < 169.5 to the left,
                                   improve=9.358974, (0 missing)
##
##
         205 < 45
                     to the left,
                                   improve=9.039216, (0 missing)
##
         428 < 42
                     to the left,
                                   improve=8.314103, (0 missing)
##
         232 < 76.5 to the left,
                                   improve=7.873016, (0 missing)
##
     Surrogate splits:
         457 < 169.5 to the left,
##
                                   agree=0.96, adj=0.917, (0 split)
##
         401 < 31
                     to the left,
                                   agree=0.92, adj=0.833, (0 split)
                                   agree=0.92, adj=0.833, (0 split)
##
         428 < 42
                     to the left,
                                   agree=0.88, adj=0.750, (0 split)
##
         400 < 3.5
                     to the left,
                                   agree=0.88, adj=0.750, (0 split)
##
         456 < 15.5 to the left,
##
## Node number 255: 168 observations,
                                         complexity param=0.0002902563
     predicted class=9
                        expected loss=0.1785714 P(node) =0.006665344
##
##
       class counts:
                         0
                               0
                                     4
                                           1
                                                17
                                                                          1
138
##
      probabilities: 0.000 0.000 0.024 0.006 0.101 0.000 0.006 0.036 0.006
0.821
##
     left son=510 (25 obs) right son=511 (143 obs)
##
     Primary splits:
##
         235 < 0.5
                     to the left,
                                   improve=12.447550, (0 missing)
##
         320 < 91.5
                     to the right, improve=11.288570, (0 missing)
                                   improve=10.129240, (0 missing)
##
         326 < 2
                     to the left,
##
         354 < 3
                     to the left,
                                   improve= 9.811462, (0 missing)
##
         293 < 72
                     to the right, improve= 9.306647, (0 missing)
     Surrogate splits:
##
         320 < 81.5 to the right, agree=0.911, adj=0.40, (0 split)
##
##
                     to the left, agree=0.905, adj=0.36, (0 split)
         208 < 1.5
         292 < 181
                     to the right, agree=0.905, adj=0.36, (0 split)
##
##
         293 < 72
                     to the right, agree=0.905, adj=0.36, (0 split)
##
         347 < 192
                     to the right, agree=0.899, adj=0.32, (0 split)
##
## Node number 256: 2260 observations
##
     predicted class=1
                        expected loss=0.02256637 P(node) =0.08966475
##
                           2209
       class counts:
                         0
                                     4
                                           6
                                                  2
                                                              5
                                                                         19
2
##
      probabilities: 0.000 0.977 0.002 0.003 0.001 0.002 0.002 0.004 0.008
0.001
##
## Node number 257: 31 observations,
                                        complexity param=0.0001786193
     predicted class=2 expected loss=0.7419355 P(node) =0.001229915
##
##
       class counts:
                         0
                               5
                                     8
                                           0
                                                  5
                                                       5
                                                              3
                                                                          5
0
      probabilities: 0.000 0.161 0.258 0.000 0.161 0.161 0.097 0.000 0.161
##
0.000
##
     left son=514 (19 obs) right son=515 (12 obs)
##
     Primary splits:
##
         623 < 14.5 to the left, improve=4.489530, (0 missing)
##
         457 < 152.5 to the right, improve=4.227688, (0 missing)
##
         652 < 12.5 to the left, improve=4.095545, (0 missing)
         432 < 115 to the right, improve=4.062212, (0 missing)
##
```

```
##
         322 < 159 to the left,
                                   improve=4.038402, (0 missing)
##
     Surrogate splits:
##
         595 < 136.5 to the left,
                                   agree=0.935, adj=0.833, (0 split)
                                   agree=0.935, adj=0.833, (0 split)
##
         624 < 168.5 to the left,
##
         652 < 12.5 to the left,
                                   agree=0.935, adj=0.833, (0 split)
##
         622 < 5.5
                     to the left,
                                   agree=0.903, adj=0.750, (0 split)
##
         651 < 0.5
                     to the left,
                                   agree=0.903, adj=0.750, (0 split)
##
## Node number 260: 55 observations
##
     predicted class=1
                        expected loss=0.07272727 P(node) =0.002182107
##
       class counts:
                         0
                              51
                                     1
                                           1
                                                 0
                                                        1
                                                                          1
0
      probabilities: 0.000 0.927 0.018 0.018 0.000 0.018 0.000 0.000 0.018
##
0.000
##
## Node number 261: 17 observations
     predicted class=5
                        expected loss=0.2941176 P(node) =0.0006744694
##
       class counts:
                         0
                               0
                                                  1
                                                       12
                                                              0
                                                                    0
                                                                          3
                                     0
                                           1
0
##
      probabilities: 0.000 0.000 0.000 0.059 0.059 0.706 0.000 0.000 0.176
0.000
##
## Node number 268: 13 observations
     predicted class=2
                        expected loss=0.3846154 P(node) =0.0005157707
##
                                                  3
##
       class counts:
                         1
                               0
                                     8
                                           0
                                                       0
                                                              0
                                                                          0
0
      probabilities: 0.077 0.000 0.615 0.000 0.231 0.000 0.000 0.077 0.000
##
0.000
##
## Node number 269: 11 observations
##
     predicted class=6 expected loss=0.5454545 P(node) =0.0004364213
##
       class counts:
                                     0
                                           3
                                                                          2
0
      probabilities: 0.000 0.091 0.000 0.273 0.000 0.000 0.455 0.000 0.182
##
0.000
##
## Node number 272: 93 observations,
                                        complexity param=0.0005805126
     predicted class=6
                        expected loss=0.4623656 P(node) =0.003689744
##
       class counts:
##
                         7
                              13
                                     9
                                           6
                                                  3
                                                        3
                                                             50
                                                                    1
                                                                          0
1
##
      probabilities: 0.075 0.140 0.097 0.065 0.032 0.032 0.538 0.011 0.000
0.011
##
     left son=544 (25 obs) right son=545 (68 obs)
##
     Primary splits:
##
         486 < 67.5 to the left,
                                   improve=15.77872, (0 missing)
##
         514 < 7
                     to the left,
                                   improve=13.63803, (0 missing)
##
         458 < 48.5 to the left,
                                   improve=12.53402, (0 missing)
##
                                   improve=12.32299, (0 missing)
         487 < 30
                     to the left,
##
         459 < 119.5 to the left,
                                   improve=11.10767, (0 missing)
##
     Surrogate splits:
```

```
agree=0.946, adj=0.80, (0 split)
##
         487 < 30
                     to the left,
##
         514 < 7
                     to the left,
                                    agree=0.946, adj=0.80, (0 split)
         458 < 14.5
                                    agree=0.914, adj=0.68, (0 split)
##
                     to the left,
         485 < 2.5
                     to the left,
                                    agree=0.903, adj=0.64, (0 split)
##
##
         515 < 24.5 to the left,
                                    agree=0.882, adj=0.56, (0 split)
##
## Node number 273: 159 observations,
                                          complexity param=0.0007591319
                        expected loss=0.7672956 P(node) =0.006308272
##
     predicted class=4
##
       class counts:
                         5
                               20
                                     22
                                            8
                                                 37
                                                                           6
29
##
      probabilities: 0.031 0.126 0.138 0.050 0.233 0.132 0.025 0.044 0.038
0.182
##
     left son=546 (67 obs) right son=547 (92 obs)
##
     Primary splits:
##
         539 < 2
                     to the right, improve=14.46493, (0 missing)
##
         540 < 48
                     to the right, improve=14.31537, (0 missing)
                     to the right, improve=12.80517, (0 missing)
##
         567 < 10.5
##
         681 < 73
                     to the left, improve=12.69986, (0 missing)
                     to the right, improve=12.23804, (0 missing)
##
         538 < 0.5
##
     Surrogate splits:
##
         540 < 2.5
                     to the right, agree=0.962, adj=0.910, (0 split)
                     to the right, agree=0.931, adj=0.836, (0 split)
##
         512 < 37.5
##
         511 < 59.5
                     to the right, agree=0.906, adj=0.776, (0 split)
##
         541 < 57.5
                     to the right, agree=0.906, adj=0.776, (0 split)
                     to the right, agree=0.906, adj=0.776, (0 split)
##
         567 < 2.5
##
## Node number 276: 95 observations,
                                         complexity param=0.0002232741
     predicted class=1
##
                        expected loss=0.2421053 P(node) =0.003769093
##
       class counts:
                         1
                              72
                                      1
                                                        3
                                                              1
                                            1
                                                                           8
4
      probabilities: 0.011 0.758 0.011 0.011 0.000 0.032 0.011 0.042 0.084
##
0.042
##
     left son=552 (77 obs) right son=553 (18 obs)
##
     Primary splits:
##
         299 < 31
                     to the left,
                                    improve=12.03746, (0 missing)
##
         300 < 2
                     to the left,
                                    improve=11.65921, (0 missing)
         155 < 1.5
                     to the right, improve=11.20692, (0 missing)
##
##
         271 < 27.5
                     to the left,
                                    improve=11.11690, (0 missing)
##
         272 < 170
                     to the left,
                                    improve=10.82839, (0 missing)
     Surrogate splits:
##
##
         271 < 43
                     to the left,
                                    agree=0.979, adj=0.889, (0 split)
         298 < 219
                                    agree=0.968, adj=0.833, (0 split)
##
                     to the left,
##
         300 < 2
                     to the left,
                                    agree=0.968, adj=0.833, (0 split)
                                    agree=0.968, adj=0.833, (0 split)
         327 < 19
                     to the left,
##
                                    agree=0.958, adj=0.778, (0 split)
##
         272 < 60
                     to the left,
##
## Node number 277: 39 observations,
                                         complexity param=0.0003125837
     predicted class=4 expected loss=0.7435897 P(node) =0.001547312
##
##
       class counts:
                         2
                                1
                                      0
                                            3
                                                 10
                                                        6
                                                               3
                                                                     0
                                                                           8
6
```

```
probabilities: 0.051 0.026 0.000 0.077 0.256 0.154 0.077 0.000 0.205
##
0.154
##
     left son=554 (11 obs) right son=555 (28 obs)
##
     Primary splits:
##
         627 < 5.5
                     to the left,
                                   improve=6.047286, (0 missing)
##
         628 < 87.5 to the left,
                                   improve=5.647863, (0 missing)
##
         655 < 10.5 to the left,
                                   improve=5.136752, (0 missing)
##
         625 < 40.5 to the right, improve=5.043185, (0 missing)
##
                                   improve=4.815496, (0 missing)
         653 < 106.5 to the left,
##
     Surrogate splits:
##
         655 < 10.5 to the left,
                                   agree=0.974, adj=0.909, (0 split)
                                   agree=0.949, adj=0.818, (0 split)
##
         628 < 87.5
                     to the left,
##
         626 < 13
                     to the left,
                                   agree=0.923, adj=0.727, (0 split)
##
         598 < 5.5
                     to the left,
                                   agree=0.897, adj=0.636, (0 split)
##
         600 < 77.5 to the left,
                                   agree=0.897, adj=0.636, (0 split)
##
## Node number 278: 124 observations,
                                         complexity param=0.0002902563
##
     predicted class=8
                        expected loss=0.2822581 P(node) =0.004919659
##
       class counts:
                         1
                               3
                                     1
                                          15
                                                                         89
2
##
      probabilities: 0.008 0.024 0.008 0.121 0.073 0.024 0.000 0.008 0.718
0.016
##
     left son=556 (37 obs) right son=557 (87 obs)
##
     Primary splits:
##
         265 < 15.5 to the left,
                                   improve=11.27827, (0 missing)
                     to the right, improve=11.17824, (0 missing)
##
         373 < 6
##
         401 < 123
                     to the right, improve=10.98102, (0 missing)
         378 < 196
##
                     to the left,
                                   improve=10.40339, (0 missing)
##
         292 < 98.5 to the left,
                                   improve=10.24454, (0 missing)
##
     Surrogate splits:
         237 < 49
##
                     to the left,
                                   agree=0.935, adj=0.784, (0 split)
##
         264 < 25
                     to the left,
                                   agree=0.935, adj=0.784, (0 split)
                                   agree=0.919, adj=0.730, (0 split)
##
         292 < 126.5 to the left,
##
         238 < 4
                     to the left,
                                   agree=0.895, adj=0.649, (0 split)
##
                                   agree=0.887, adj=0.622, (0 split)
         236 < 40.5 to the left,
##
## Node number 279: 20 observations
                        expected loss=0.1
                                          P(node) =0.0007934934
##
     predicted class=9
       class counts:
##
                         0
                               0
                                     0
                                           0
                                                 0
                                                       0
                                                              0
                                                                    2
                                                                          0
18
##
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.100 0.000
0.900
##
## Node number 290: 9 observations
##
     predicted class=6
                        expected loss=0.4444444
                                                 P(node) = 0.000357072
##
       class counts:
                         0
                               0
                                     3
                                           1
                                                 0
                                                       0
                                                              5
                                                                    0
                                                                          0
0
##
      probabilities: 0.000 0.000 0.333 0.111 0.000 0.000 0.556 0.000 0.000
0.000
##
```

```
## Node number 291: 11 observations
     predicted class=8 expected loss=0.09090909 P(node) =0.0004364213
##
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                  0
                                                        0
                                                              0
                                                                    0
                                                                         10
1
##
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.909
0.091
##
## Node number 292: 21 observations
     predicted class=1 expected loss=0.1904762 P(node) =0.000833168
##
       class counts:
                         0
                              17
                                     2
                                                        0
                                                                          1
                                            0
                                                  0
                                                              0
1
      probabilities: 0.000 0.810 0.095 0.000 0.000 0.000 0.000 0.0048
##
0.048
##
                                        complexity param=0.0004018934
## Node number 293: 36 observations,
     predicted class=2 expected loss=0.6388889 P(node) =0.001428288
##
       class counts:
                         0
                               0
                                    13
                                          10
                                                  0
                                                        0
                                                              3
                                                                          7
1
##
      probabilities: 0.000 0.000 0.361 0.278 0.000 0.000 0.083 0.056 0.194
0.028
     left son=586 (24 obs) right son=587 (12 obs)
##
##
     Primary splits:
##
         516 < 7
                     to the right, improve=6.777778, (0 missing)
##
         517 < 88
                     to the right, improve=6.777778, (0 missing)
##
         515 < 1.5
                     to the right, improve=6.383129, (0 missing)
         488 < 234
##
                     to the right, improve=6.377778, (0 missing)
##
                     to the left, improve=5.863492, (0 missing)
         544 < 8
     Surrogate splits:
##
##
         517 < 88
                     to the right, agree=1.000, adj=1.00, (0 split)
##
         488 < 234
                     to the right, agree=0.917, adj=0.75, (0 split)
##
         489 < 152.5 to the right, agree=0.917, adj=0.75, (0 split)
##
         515 < 1.5
                     to the right, agree=0.917, adj=0.75, (0 split)
##
         544 < 8
                     to the right, agree=0.917, adj=0.75, (0 split)
##
## Node number 294: 17 observations
     predicted class=7
                        expected loss=0.05882353 P(node) =0.0006744694
##
##
       class counts:
                         0
                                     0
                                            1
                                                  0
                                                                   16
0
      probabilities: 0.000 0.000 0.000 0.059 0.000 0.000 0.000 0.941 0.000
##
0.000
##
## Node number 295: 12 observations
##
     predicted class=9
                        expected loss=0.4166667 P(node) =0.000476096
##
       class counts:
                         0
                               0
                                     0
                                           2
                                                  1
                                                        0
                                                              0
                                                                    1
                                                                          1
7
##
      probabilities: 0.000 0.000 0.000 0.167 0.083 0.000 0.000 0.083 0.083
0.583
##
## Node number 298: 12 observations
     predicted class=6 expected loss=0.5 P(node) =0.000476096
```

```
2
##
       class counts: 4
0
##
      probabilities: 0.333 0.000 0.167 0.000 0.000 0.000 0.500 0.000 0.000
0.000
##
## Node number 299: 20 observations,
                                        complexity param=0.0001786193
     predicted class=8 expected loss=0.5 P(node) =0.0007934934
                                     1
##
       class counts:
                         0
                               0
                                                 0
                                                                        10
5
##
      probabilities: 0.000 0.000 0.050 0.000 0.000 0.150 0.000 0.050 0.500
0.250
##
     left son=598 (9 obs) right son=599 (11 obs)
##
     Primary splits:
         432 < 47.5 to the left,
##
                                   improve=5.381818, (0 missing)
##
         433 < 173.5 to the left,
                                   improve=5.381818, (0 missing)
##
         434 < 181.5 to the left,
                                   improve=5.381818, (0 missing)
##
         409 < 183
                   to the left,
                                   improve=5.000000, (0 missing)
##
         410 < 50.5 to the left,
                                   improve=5.000000, (0 missing)
##
     Surrogate splits:
##
         433 < 173.5 to the left,
                                   agree=1.00, adj=1.000, (0 split)
##
         434 < 181.5 to the left,
                                   agree=1.00, adj=1.000, (0 split)
##
         406 < 216
                     to the left,
                                   agree=0.95, adj=0.889, (0 split)
##
                     to the left,
                                   agree=0.95, adj=0.889, (0 split)
         461 < 48
##
         431 < 37.5 to the left, agree=0.90, adj=0.778, (0 split)
##
## Node number 304: 7 observations
##
     predicted class=2
                        expected loss=0.1428571 P(node) =0.0002777227
                                                       0
##
       class counts:
                         0
                               0
                                     6
                                           1
                                                 0
                                                             0
                                                                   0
                                                                         0
0
      probabilities: 0.000 0.000 0.857 0.143 0.000 0.000 0.000 0.000 0.000
##
0.000
##
## Node number 305: 52 observations
##
     predicted class=3 expected loss=0.07692308 P(node) =0.002063083
##
                                                                         1
       class counts:
                         0
                               0
                                     1
                                          48
                                                 0
                                                       0
0
##
      probabilities: 0.000 0.000 0.019 0.923 0.000 0.000 0.000 0.038 0.019
0.000
##
## Node number 306: 47 observations,
                                        complexity param=0.0004465482
     predicted class=2 expected loss=0.4893617 P(node) =0.001864709
##
       class counts:
                               4
                                    24
                                           8
                                                                        11
0
##
      probabilities: 0.000 0.085 0.511 0.170 0.000 0.000 0.000 0.000 0.234
0.000
##
     left son=612 (34 obs) right son=613 (13 obs)
##
     Primary splits:
##
         321 < 195
                    to the left, improve=10.735050, (0 missing)
##
         293 < 55.5 to the left,
                                   improve= 9.355531, (0 missing)
##
         292 < 19.5 to the left, improve= 8.993085, (0 missing)
```

```
to the right, improve= 8.151418, (0 missing)
##
         600 < 133
                                   improve= 8.006097, (0 missing)
##
         320 < 30
                     to the left,
##
     Surrogate splits:
##
         293 < 55.5
                    to the left,
                                   agree=0.979, adj=0.923, (0 split)
##
         292 < 19.5
                     to the left,
                                   agree=0.957, adj=0.846, (0 split)
##
         264 < 80.5
                     to the left,
                                   agree=0.936, adj=0.769, (0 split)
##
         320 < 9.5
                     to the left,
                                   agree=0.936, adj=0.769, (0 split)
                                   agree=0.915, adj=0.692, (0 split)
##
         265 < 57.5 to the left,
##
## Node number 307: 56 observations,
                                        complexity param=0.0001786193
##
     predicted class=7
                        expected loss=0.25 P(node) =0.002221781
                         0
                                     2
                                            5
                                                                   42
##
       class counts:
                               5
                                                  0
                                                        0
                                                              0
                                                                          1
1
##
      probabilities: 0.000 0.089 0.036 0.089 0.000 0.000 0.000 0.750 0.018
0.018
##
     left son=614 (7 obs) right son=615 (49 obs)
##
     Primary splits:
                                   improve=6.275510, (0 missing)
##
         546 < 15
                     to the left,
         578 < 59
                     to the right, improve=5.541667, (0 missing)
##
##
         634 < 94
                     to the right, improve=4.397959, (0 missing)
         606 < 105.5 to the right, improve=4.275510, (0 missing)
##
                     to the left, improve=4.208333, (0 missing)
##
         518 < 116
##
     Surrogate splits:
##
         518 < 116
                     to the left, agree=0.946, adj=0.571, (0 split)
                     to the left, agree=0.929, adj=0.429, (0 split)
##
         573 < 16
##
         574 < 90
                     to the left,
                                   agree=0.929, adj=0.429, (0 split)
                     to the right, agree=0.911, adj=0.286, (0 split)
##
         315 < 196
         316 < 178.5 to the right, agree=0.911, adj=0.286, (0 split)
##
##
## Node number 312: 35 observations,
                                        complexity param=0.0002976988
##
     predicted class=1
                        expected loss=0.6285714 P(node) =0.001388613
##
       class counts:
                         0
                              13
                                            3
                                                                          9
1
      probabilities: 0.000 0.371 0.000 0.086 0.000 0.029 0.000 0.229 0.257
##
0.029
##
     left son=624 (26 obs) right son=625 (9 obs)
##
     Primary splits:
##
         180 < 118.5 to the right, improve=7.936508, (0 missing)
##
         269 < 25.5 to the left,
                                   improve=7.431391, (0 missing)
                     to the left,
                                   improve=7.098344, (0 missing)
##
         268 < 26
##
         377 < 134.5 to the right, improve=7.071429, (0 missing)
##
         233 < 126
                     to the left, improve=6.786181, (0 missing)
##
     Surrogate splits:
##
         179 < 7
                     to the right, agree=0.943, adj=0.778, (0 split)
##
         181 < 43
                     to the right, agree=0.943, adj=0.778, (0 split)
##
         377 < 134.5 to the right, agree=0.943, adj=0.778, (0 split)
##
         349 < 138.5 to the right, agree=0.914, adj=0.667, (0 split)
##
         352 < 251.5 to the left, agree=0.914, adj=0.667, (0 split)
##
## Node number 313: 45 observations
```

```
predicted class=8 expected loss=0.2888889 P(node) =0.00178536
##
##
       class counts:
                         0
                               0
                                     1
                                           3
                                                  4
                                                       0
                                                              0
                                                                         32
5
      probabilities: 0.000 0.000 0.022 0.067 0.089 0.000 0.000 0.000 0.711
##
0.111
##
## Node number 314: 18 observations
##
     predicted class=3 expected loss=0.4444444 P(node) =0.000714144
       class counts:
##
                         0
                               0
                                     0
                                          10
                                                       1
                                                                          3
1
##
      probabilities: 0.000 0.000 0.000 0.556 0.000 0.056 0.000 0.167 0.167
0.056
##
## Node number 315: 26 observations
     predicted class=9
                        expected loss=0.2307692 P(node) =0.001031541
##
       class counts:
                         1
                                                  3
                                                                          1
                                     0
                                           0
20
##
      probabilities: 0.038 0.000 0.000 0.000 0.115 0.000 0.000 0.038 0.038
0.769
##
## Node number 320: 39 observations
     predicted class=1 expected loss=0.1538462 P(node) =0.001547312
##
       class counts:
                              33
                         0
                                     3
                                           0
                                                  0
                                                       1
                                                              0
                                                                    2
                                                                          0
0
##
      probabilities: 0.000 0.846 0.077 0.000 0.000 0.026 0.000 0.051 0.000
0.000
##
## Node number 321: 25 observations
     predicted class=3
                        expected loss=0.2 P(node) =0.0009918667
##
##
       class counts:
                         0
                               0
                                     0
                                                                    3
                                                                          2
                                          20
                                                 0
                                                       0
a
##
      probabilities: 0.000 0.000 0.000 0.800 0.000 0.000 0.000 0.120 0.080
0.000
##
## Node number 322: 1393 observations,
                                          complexity param=0.0002456015
     predicted class=3 expected loss=0.04020101 P(node) =0.05526681
##
##
       class counts:
                         0
                               2
                                    10 1337
                                                 0
                                                       23
                                                                         16
5
##
      probabilities: 0.000 0.001 0.007 0.960 0.000 0.017 0.000 0.000 0.011
0.004
##
     left son=644 (1370 obs) right son=645 (23 obs)
##
     Primary splits:
##
         317 < 206
                   to the left,
                                   improve=17.86201, (0 missing)
                                   improve=16.71907, (0 missing)
##
         289 < 174
                     to the left,
##
         487 < 140.5 to the left,
                                   improve=16.29442, (0 missing)
##
         488 < 58.5 to the left,
                                   improve=14.98376, (0 missing)
##
         316 < 156
                     to the left, improve=13.71488, (0 missing)
##
     Surrogate splits:
##
         289 < 151.5 to the left,
                                   agree=0.992, adj=0.522, (0 split)
##
         316 < 132 to the left, agree=0.992, adj=0.522, (0 split)
```

```
to the left,
                                   agree=0.986, adj=0.174, (0 split)
##
         288 < 211
##
                                   agree=0.984, adj=0.043, (0 split)
         290 < 40.5
                     to the left,
                                   agree=0.984, adj=0.043, (0 split)
##
         717 < 142
                     to the left,
##
## Node number 323: 45 observations,
                                        complexity param=0.0002456015
                        expected loss=0.6222222 P(node) =0.00178536
##
     predicted class=3
##
       class counts:
                         0
                                          17
                                                       15
                                                                          5
                               6
                                                                    2
0
##
      probabilities: 0.000 0.133 0.000 0.378 0.000 0.333 0.000 0.044 0.111
0.000
##
     left son=646 (16 obs) right son=647 (29 obs)
     Primary splits:
##
##
         296 < 124.5 to the right, improve=7.904885, (0 missing)
##
         297 < 146
                     to the right, improve=7.849679, (0 missing)
##
         205 < 103
                     to the right, improve=7.737020, (0 missing)
##
         324 < 169.5 to the right, improve=7.651852, (0 missing)
         323 < 191.5 to the right, improve=7.538192, (0 missing)
##
##
     Surrogate splits:
##
         297 < 25.5 to the right, agree=0.978, adj=0.937, (0 split)
##
         268 < 10.5 to the right, agree=0.956, adj=0.875, (0 split)
##
         324 < 169.5 to the right, agree=0.956, adj=0.875, (0 split)
##
         323 < 191.5 to the right, agree=0.933, adj=0.812, (0 split)
##
         269 < 58
                     to the right, agree=0.911, adj=0.750, (0 split)
##
## Node number 326: 25 observations,
                                        complexity param=0.0002232741
##
     predicted class=3
                        expected loss=0.52 P(node) =0.0009918667
##
       class counts:
                         2
                               0
                                     0
                                          12
                                                                          4
1
##
      probabilities: 0.080 0.000 0.000 0.480 0.000 0.200 0.040 0.000 0.160
0.040
##
     left son=652 (13 obs) right son=653 (12 obs)
##
     Primary splits:
                                   improve=7.180513, (0 missing)
##
         401 < 112.5 to the left,
                                   improve=7.180513, (0 missing)
##
         428 < 4
                     to the left,
##
         429 < 41
                     to the left,
                                   improve=6.840519, (0 missing)
##
         400 < 67
                     to the left,
                                   improve=6.697662, (0 missing)
         399 < 42
                                   improve=4.960000, (0 missing)
##
                     to the left,
##
     Surrogate splits:
##
         428 < 4
                     to the left,
                                   agree=1.00, adj=1.000, (0 split)
         400 < 67
                     to the left,
                                   agree=0.96, adj=0.917, (0 split)
##
##
         429 < 41
                     to the left,
                                   agree=0.96, adj=0.917, (0 split)
##
         399 < 42
                     to the left,
                                   agree=0.92, adj=0.833, (0 split)
                                   agree=0.92, adj=0.833, (0 split)
##
         427 < 4
                     to the left,
##
## Node number 327: 21 observations
##
     predicted class=9
                        expected loss=0.2380952 P(node) =0.000833168
##
       class counts:
                         0
                                     0
                                            3
                                                  1
                                                              1
                                                                          0
16
##
      probabilities: 0.000 0.000 0.000 0.143 0.048 0.000 0.048 0.000 0.000
0.762
```

```
##
## Node number 328: 202 observations
##
     predicted class=3 expected loss=0.06930693 P(node) =0.008014283
       class counts:
                         2
                               1
##
                                     4
                                          188
                                                        2
                                                              0
                                                                          4
1
      probabilities: 0.010 0.005 0.020 0.931 0.000 0.010 0.000 0.000 0.020
##
0.005
##
## Node number 329: 59 observations,
                                        complexity param=0.000379566
##
     predicted class=3
                        expected loss=0.6271186 P(node) =0.002340805
##
       class counts:
                         5
                               3
                                     1
                                           22
                                                       21
                                                              3
                                                                          1
                                                  a
0
##
      probabilities: 0.085 0.051 0.017 0.373 0.000 0.356 0.051 0.051 0.017
0.000
##
     left son=658 (29 obs) right son=659 (30 obs)
##
     Primary splits:
##
         348 < 235
                     to the left,
                                   improve=11.326320, (0 missing)
                                   improve=10.406780, (0 missing)
##
                     to the left,
         321 < 120
##
         320 < 11.5 to the left,
                                   improve= 9.742619, (0 missing)
##
         209 < 30
                     to the right, improve= 9.666942, (0 missing)
##
         294 < 71
                                   improve= 9.123446, (0 missing)
                     to the left,
##
     Surrogate splits:
##
                                   agree=0.898, adj=0.793, (0 split)
         320 < 105.5 to the left,
##
         347 < 108.5 to the left,
                                   agree=0.898, adj=0.793, (0 split)
##
         319 < 2
                     to the left,
                                   agree=0.864, adj=0.724, (0 split)
                                   agree=0.831, adj=0.655, (0 split)
##
         321 < 207
                     to the left,
                                   agree=0.814, adj=0.621, (0 split)
##
         349 < 250.5 to the left,
##
## Node number 330: 25 observations
##
     predicted class=0 expected loss=0.24 P(node) =0.0009918667
##
       class counts:
                        19
                               0
                                     0
                                            0
                                                  0
                                                        1
                                                              2
                                                                    0
                                                                          3
0
##
      probabilities: 0.760 0.000 0.000 0.000 0.000 0.040 0.080 0.000 0.120
0.000
##
## Node number 331: 131 observations,
                                          complexity param=0.0005358578
##
     predicted class=5
                        expected loss=0.2748092 P(node) =0.005197381
##
       class counts:
                         0
                               0
                                     0
                                           25
                                                       95
                                                              3
                                                                    1
                                                                          4
                                                  0
3
      probabilities: 0.000 0.000 0.000 0.191 0.000 0.725 0.023 0.008 0.031
##
0.023
##
     left son=662 (30 obs) right son=663 (101 obs)
     Primary splits:
##
##
         299 < 40
                     to the right, improve=18.01656, (0 missing)
         298 < 162
##
                     to the right, improve=17.94568, (0 missing)
##
         326 < 98
                     to the right, improve=14.96753, (0 missing)
##
         327 < 8.5
                     to the right, improve=13.19848, (0 missing)
##
         328 < 56.5 to the right, improve=12.87945, (0 missing)
##
     Surrogate splits:
##
         298 < 80.5 to the right, agree=0.954, adj=0.800, (0 split)
```

```
to the right, agree=0.916, adj=0.633, (0 split)
##
         271 < 217
##
         297 < 131
                     to the right, agree=0.916, adj=0.633, (0 split)
                     to the right, agree=0.908, adj=0.600, (0 split)
##
         300 < 0.5
         270 < 202.5 to the right, agree=0.885, adj=0.500, (0 split)
##
##
## Node number 332: 85 observations
     predicted class=1 expected loss=0.07058824 P(node) =0.003372347
##
##
       class counts:
                         0
                              79
                                     0
                                                  1
                                                        0
                                                                          0
0
##
      probabilities: 0.000 0.929 0.000 0.000 0.012 0.000 0.012 0.047 0.000
0.000
##
## Node number 333: 19 observations
##
     predicted class=5
                        expected loss=0.7368421 P(node) =0.0007538187
##
                                                        5
       class counts:
                         0
                               1
                                     0
                                            4
                                                  0
                                                              0
                                                                    3
                                                                          3
3
##
      probabilities: 0.000 0.053 0.000 0.211 0.000 0.263 0.000 0.158 0.158
0.158
##
## Node number 334: 58 observations,
                                        complexity param=0.0002232741
                        expected loss=0.2586207 P(node) =0.002301131
##
     predicted class=5
##
       class counts:
                         5
                               0
                                     1
                                            6
                                                       43
                                                              1
                                                                          1
                                                                    1
0
##
      probabilities: 0.086 0.000 0.017 0.103 0.000 0.741 0.017 0.017 0.017
0.000
##
     left son=668 (7 obs) right son=669 (51 obs)
##
     Primary splits:
         413 < 194
##
                     to the right, improve=7.789916, (0 missing)
##
         507 < 5.5
                     to the right, improve=7.442577, (0 missing)
##
         456 < 243
                     to the right, improve=7.220000, (0 missing)
         455 < 228.5 to the right, improve=6.977324, (0 missing)
##
##
         385 < 3.5
                     to the right, improve=6.832200, (0 missing)
##
     Surrogate splits:
##
         385 < 28
                     to the right, agree=0.983, adj=0.857, (0 split)
##
         414 < 28.5 to the right, agree=0.983, adj=0.857, (0 split)
         330 < 169.5 to the right, agree=0.966, adj=0.714, (0 split)
##
         358 < 128.5 to the right, agree=0.966, adj=0.714, (0 split)
##
##
         359 < 52.5 to the right, agree=0.966, adj=0.714, (0 split)
##
## Node number 335: 113 observations,
                                         complexity param=0.001161025
     predicted class=9 expected loss=0.7256637 P(node) =0.004483237
##
##
       class counts:
                                           16
                                                 30
                                                                   11
31
##
      probabilities: 0.000 0.062 0.000 0.142 0.265 0.044 0.062 0.097 0.053
0.274
##
     left son=670 (43 obs) right son=671 (70 obs)
##
     Primary splits:
         237 < 2
                                   improve=15.18030, (0 missing)
##
                     to the left,
##
         210 < 1
                     to the left,
                                   improve=14.74200, (0 missing)
##
         238 < 17 to the left, improve=14.30474, (0 missing)
```

```
to the left.
                                    improve=12.95114, (0 missing)
##
         209 < 3
##
         236 < 5.5
                     to the left,
                                    improve=12.88428, (0 missing)
##
     Surrogate splits:
         210 < 1
##
                     to the left,
                                    agree=0.956, adj=0.884, (0 split)
##
         238 < 17
                     to the left,
                                    agree=0.938, adj=0.837, (0 split)
##
         209 < 3
                     to the left,
                                    agree=0.920, adj=0.791, (0 split)
##
         236 < 5.5
                     to the left,
                                    agree=0.858, adj=0.628, (0 split)
                                   agree=0.850, adj=0.605, (0 split)
##
         211 < 2.5
                     to the left,
##
## Node number 338: 112 observations,
                                          complexity param=0.0004465482
##
     predicted class=3
                        expected loss=0.2321429 P(node) =0.004443563
                         0
                                                        4
##
       class counts:
                               0
                                      0
                                           86
                                                  0
                                                                    0
                                                                          16
6
##
      probabilities: 0.000 0.000 0.000 0.768 0.000 0.036 0.000 0.000 0.143
0.054
##
     left son=676 (101 obs) right son=677 (11 obs)
##
     Primary splits:
##
         484 < 186
                                    improve=14.425810, (0 missing)
                     to the left,
         485 < 113
                                    improve=12.845660, (0 missing)
##
                     to the left,
##
         483 < 100
                     to the left,
                                    improve=11.382120, (0 missing)
         456 < 204.5 to the left,
                                    improve=10.193880, (0 missing)
##
##
         457 < 141
                     to the left,
                                    improve= 9.204099, (0 missing)
##
     Surrogate splits:
##
         485 < 113
                     to the left,
                                   agree=0.991, adj=0.909, (0 split)
##
         483 < 100
                     to the left,
                                   agree=0.964, adj=0.636, (0 split)
##
         456 < 204.5 to the left,
                                   agree=0.955, adj=0.545, (0 split)
                                    agree=0.955, adj=0.545, (0 split)
##
         457 < 252.5 to the left,
                                    agree=0.955, adj=0.545, (0 split)
##
         512 < 218
                     to the left,
##
## Node number 339: 180 observations,
                                          complexity param=0.0007144771
##
     predicted class=5
                        expected loss=0.6388889 P(node) =0.00714144
##
       class counts:
                         5
                                      1
                                           59
                                                       65
                                                                          21
23
##
      probabilities: 0.028 0.006 0.006 0.328 0.000 0.361 0.011 0.017 0.117
0.128
##
     left son=678 (40 obs) right son=679 (140 obs)
##
     Primary splits:
##
         176 < 79.5 to the right, improve=14.89206, (0 missing)
                     to the right, improve=14.58492, (0 missing)
##
         149 < 81
         262 < 5
                                   improve=13.83847, (0 missing)
##
                     to the left,
##
         263 < 51.5
                     to the left, improve=13.79172, (0 missing)
                     to the right, improve=13.79111, (0 missing)
##
         148 < 48
##
     Surrogate splits:
##
         175 < 3
                     to the right, agree=0.972, adj=0.875, (0 split)
##
         148 < 5.5
                     to the right, agree=0.944, adj=0.750, (0 split)
##
         177 < 213
                     to the right, agree=0.933, adj=0.700, (0 split)
##
         147 < 0.5
                     to the right, agree=0.922, adj=0.650, (0 split)
##
                     to the right, agree=0.922, adj=0.650, (0 split)
         149 < 46
##
## Node number 340: 23 observations
```

```
P(node) =0.0009125174
##
     predicted class=0
                        expected loss=0
##
       class counts:
                        23
                               0
                                     0
                                            0
                                                 0
                                                        0
                                                                          0
0
      probabilities: 1.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
##
0.000
##
## Node number 341: 16 observations
##
     predicted class=8
                        expected loss=0.6875 P(node) =0.0006347947
       class counts:
##
                         1
                               0
                                     0
                                           3
                                                  1
                                                                          5
5
##
      probabilities: 0.062 0.000 0.000 0.188 0.062 0.062 0.000 0.000 0.312
0.312
##
## Node number 342: 33 observations,
                                        complexity param=0.0001786193
                        expected loss=0.3333333 P(node) =0.001309264
##
     predicted class=3
##
       class counts:
                         2
                                     0
                                          22
                                                        5
                                                                          2
                                                              1
1
##
      probabilities: 0.061 0.000 0.000 0.667 0.000 0.152 0.030 0.000 0.061
0.030
##
     left son=684 (23 obs) right son=685 (10 obs)
     Primary splits:
##
         214 < 206
##
                     to the left,
                                   improve=6.733597, (0 missing)
##
         242 < 146
                     to the left,
                                   improve=6.217172, (0 missing)
##
         187 < 34.5 to the left,
                                   improve=6.133597, (0 missing)
##
         243 < 100
                     to the left,
                                   improve=6.041958, (0 missing)
         244 < 6.5
##
                     to the left,
                                   improve=6.041958, (0 missing)
##
     Surrogate splits:
##
         187 < 96
                     to the left,
                                   agree=0.97, adj=0.9, (0 split)
##
         215 < 65.5 to the left,
                                   agree=0.97, adj=0.9, (0 split)
##
         216 < 10
                     to the left,
                                   agree=0.97, adj=0.9, (0 split)
##
         242 < 104.5 to the left,
                                   agree=0.97, adj=0.9, (0 split)
##
         243 < 10.5 to the left,
                                   agree=0.97, adj=0.9, (0 split)
##
## Node number 343: 440 observations,
                                         complexity param=0.0004018934
                        expected loss=0.08863636 P(node) =0.01745685
##
     predicted class=5
##
       class counts:
                         0
                               0
                                           28
                                                      401
                                                              5
                                                                    0
                                                                          4
                                     0
                                                  0
2
##
      probabilities: 0.000 0.000 0.000 0.064 0.000 0.911 0.011 0.000 0.009
0.005
##
     left son=686 (18 obs) right son=687 (422 obs)
##
     Primary splits:
##
         121 < 122.5 to the right, improve=17.09669, (0 missing)
##
         262 < 12.5 to the left, improve=14.56608, (0 missing)
         148 < 159.5 to the right, improve=12.84638, (0 missing)
##
                     to the left, improve=12.75933, (0 missing)
##
         186 < 1
                     to the right, improve=12.66861, (0 missing)
##
         120 < 3.5
##
     Surrogate splits:
         120 < 19.5 to the right, agree=0.989, adj=0.722, (0 split)
##
##
         122 < 193.5 to the right, agree=0.982, adj=0.556, (0 split)
##
         148 < 232.5 to the right, agree=0.980, adj=0.500, (0 split)
```

```
119 < 3.5 to the right, agree=0.973, adj=0.333, (0 split)
##
##
         118 < 64.5 to the right, agree=0.970, adj=0.278, (0 split)
##
## Node number 344: 70 observations,
                                        complexity param=0.0001786193
##
     predicted class=4
                        expected loss=0.1857143 P(node) =0.002777227
##
       class counts:
                         0
                               0
                                     0
                                            1
                                                 57
                                                        3
                                                                    2
                                                                          0
3
##
      probabilities: 0.000 0.000 0.000 0.014 0.814 0.043 0.057 0.029 0.000
0.043
##
     left son=688 (63 obs) right son=689 (7 obs)
##
     Primary splits:
         124 < 37
##
                     to the left,
                                   improve=8.393651, (0 missing)
                                   improve=8.393651, (0 missing)
##
         543 < 17.5 to the left,
##
         544 < 32
                     to the left,
                                   improve=8.393651, (0 missing)
##
         571 < 5
                     to the left,
                                   improve=8.393651, (0 missing)
##
         152 < 187.5 to the left,
                                   improve=6.585023, (0 missing)
##
     Surrogate splits:
##
         543 < 17.5 to the left,
                                   agree=1.000, adj=1.000, (0 split)
                                   agree=1.000, adj=1.000, (0 split)
         544 < 32
##
                     to the left,
##
         571 < 5
                     to the left,
                                   agree=1.000, adj=1.000, (0 split)
##
         123 < 17
                     to the left,
                                   agree=0.986, adj=0.857, (0 split)
##
         125 < 76
                     to the left,
                                   agree=0.986, adj=0.857, (0 split)
##
## Node number 345: 15 observations
     predicted class=9
                        expected loss=0.6666667
                                                 P(node) =0.00059512
##
       class counts:
                         0
                               0
                                     0
                                           3
                                                  1
                                                        4
                                                                          1
5
##
      probabilities: 0.000 0.000 0.000 0.200 0.067 0.267 0.000 0.067 0.067
0.333
##
## Node number 346: 12 observations
     predicted class=0
                        expected loss=0.6666667
                                                 P(node) = 0.000476096
##
       class counts:
                         4
                               0
                                     0
                                            2
                                                  0
                                                        4
                                                                          2
0
      probabilities: 0.333 0.000 0.000 0.167 0.000 0.333 0.000 0.000 0.167
##
0.000
##
## Node number 347: 67 observations
##
     predicted class=7
                        expected loss=0.119403
                                                P(node) = 0.002658203
                               3
##
       class counts:
                         0
                                     0
                                            3
                                                                   59
                                                                          0
2
##
      probabilities: 0.000 0.045 0.000 0.045 0.000 0.000 0.000 0.881 0.000
0.030
##
## Node number 348: 63 observations
##
     predicted class=5
                        expected loss=0.3174603 P(node) =0.002499504
##
       class counts:
                         0
                                     0
                                            5
                                                  4
                                                       43
                                                              3
                                                                          1
                                                                    1
6
##
      probabilities: 0.000 0.000 0.000 0.079 0.063 0.683 0.048 0.016 0.016
0.095
```

```
##
## Node number 349: 37 observations,
                                       complexity param=0.0004018934
##
     predicted class=9
                        expected loss=0.6216216 P(node) =0.001467963
       class counts:
                                                                          2
##
                         0
                               2
                                           11
                                                        1
                                                                    1
                                     0
                                                  6
14
      probabilities: 0.000 0.054 0.000 0.297 0.162 0.027 0.000 0.027 0.054
##
0.378
##
     left son=698 (9 obs) right son=699 (28 obs)
##
     Primary splits:
##
         468 < 26
                     to the right, improve=7.974903, (0 missing)
##
         496 < 101
                     to the right, improve=7.974903, (0 missing)
         294 < 197.5 to the right, improve=7.958420, (0 missing)
##
##
         349 < 249.5 to the right, improve=7.570142, (0 missing)
##
         321 < 196
                     to the right, improve=6.995072, (0 missing)
##
     Surrogate splits:
##
         496 < 101
                     to the right, agree=1.000, adj=1.000, (0 split)
##
         524 < 69
                     to the right, agree=0.946, adj=0.778, (0 split)
##
         467 < 227.5 to the right, agree=0.919, adj=0.667, (0 split)
                     to the right, agree=0.919, adj=0.667, (0 split)
##
         469 < 23
##
         497 < 17
                     to the right, agree=0.919, adj=0.667, (0 split)
##
## Node number 350: 10 observations
     predicted class=3
##
                        expected loss=0.2 P(node) =0.0003967467
##
       class counts:
                         1
                                     0
0
##
      probabilities: 0.100 0.000 0.000 0.800 0.000 0.100 0.000 0.000 0.000
0.000
##
## Node number 351: 247 observations,
                                         complexity param=0.0002232741
     predicted class=9
                        expected loss=0.1336032 P(node) =0.009799643
##
##
       class counts:
                         3
                               0
                                     2
                                            4
                                                  8
                                                        1
                                                              0
                                                                   10
                                                                          5
214
##
      probabilities: 0.012 0.000 0.008 0.016 0.032 0.004 0.000 0.040 0.020
0.866
##
     left son=702 (9 obs) right son=703 (238 obs)
##
     Primary splits:
         515 < 44
##
                     to the right, improve=10.555990, (0 missing)
##
         543 < 61
                     to the right, improve= 9.894746, (0 missing)
##
         571 < 23.5 to the right, improve= 9.894746, (0 missing)
         516 < 10.5
                     to the right, improve= 9.302766, (0 missing)
##
##
         544 < 79
                     to the right, improve= 8.892397, (0 missing)
##
     Surrogate splits:
##
         516 < 10.5
                     to the right, agree=0.996, adj=0.889, (0 split)
##
                     to the right, agree=0.992, adj=0.778, (0 split)
         543 < 61
         571 < 23.5
##
                     to the right, agree=0.992, adj=0.778, (0 split)
##
         514 < 5.5
                     to the right, agree=0.988, adj=0.667, (0 split)
##
         542 < 0.5
                     to the right, agree=0.988, adj=0.667, (0 split)
##
## Node number 356: 39 observations,
                                        complexity param=0.0003125837
     predicted class=1 expected loss=0.6410256 P(node) =0.001547312
```

```
##
       class counts:
                              14
1
##
      probabilities: 0.000 0.359 0.000 0.000 0.205 0.179 0.179 0.000 0.051
0.026
##
     left son=712 (14 obs) right son=713 (25 obs)
##
     Primary splits:
##
         457 < 14.5
                                    improve=9.035165, (0 missing)
                     to the left,
##
         402 < 16
                     to the left,
                                    improve=8.007525, (0 missing)
##
         572 < 25.5
                     to the left,
                                    improve=7.542308, (0 missing)
##
         548 < 3.5
                     to the left,
                                    improve=7.200244, (0 missing)
##
         429 < 32
                     to the left,
                                    improve=6.976518, (0 missing)
##
     Surrogate splits:
##
         429 < 8
                     to the left, agree=0.923, adj=0.786, (0 split)
##
         458 < 205.5 to the left,
                                    agree=0.923, adj=0.786, (0 split)
##
         160 < 13
                     to the right, agree=0.897, adj=0.714, (0 split)
##
         161 < 25
                     to the right, agree=0.897, adj=0.714, (0 split)
##
         402 < 16
                     to the left,
                                    agree=0.897, adj=0.714, (0 split)
##
## Node number 357: 44 observations,
                                         complexity param=0.0004018934
     predicted class=8
                        expected loss=0.6818182 P(node) =0.001745685
##
##
       class counts:
                         9
                                                  1
                               0
                                     12
                                            3
                                                        0
                                                              3
                                                                     0
                                                                          14
2
##
      probabilities: 0.205 0.000 0.273 0.068 0.023 0.000 0.068 0.000 0.318
0.045
##
     left son=714 (9 obs) right son=715 (35 obs)
##
     Primary splits:
##
         406 < 98
                                    improve=7.388456, (0 missing)
                     to the left,
         380 < 1.5
##
                     to the left,
                                    improve=6.828010, (0 missing)
##
         386 < 75
                     to the right, improve=6.214646, (0 missing)
##
         414 < 43
                     to the right, improve=6.214646, (0 missing)
         429 < 50.5
##
                     to the right, improve=6.132249, (0 missing)
##
     Surrogate splits:
##
         386 < 75
                     to the right, agree=0.977, adj=0.889, (0 split)
##
         414 < 43
                     to the right, agree=0.977, adj=0.889, (0 split)
##
         358 < 82
                     to the right, agree=0.955, adj=0.778, (0 split)
         380 < 1.5
##
                     to the left, agree=0.955, adj=0.778, (0 split)
                     to the right, agree=0.932, adj=0.667, (0 split)
##
         385 < 31
##
## Node number 362: 13 observations
##
     predicted class=4
                        expected loss=0.6923077
                                                  P(node) =0.0005157707
##
       class counts:
                         0
                               0
                                      0
                                            3
                                                  4
                                                        1
                                                               3
                                                                     0
                                                                           2
0
##
      probabilities: 0.000 0.000 0.000 0.231 0.308 0.077 0.231 0.000 0.154
0.000
##
## Node number 363: 10 observations
##
     predicted class=9
                        expected loss=0.3
                                            P(node) = 0.0003967467
##
                                                                           0
       class counts:
                         1
                               0
                                      0
                                            0
                                                  1
                                                        1
                                                              0
7
##
      probabilities: 0.100 0.000 0.000 0.000 0.100 0.100 0.000 0.000 0.000
```

```
0.700
##
## Node number 366: 21 observations,
                                        complexity param=0.0002009467
     predicted class=5 expected loss=0.5238095 P(node) =0.000833168
##
       class counts:
                         0
                               0
                                     0
                                           3
                                                 0
                                                       10
                                                              8
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 0.143 0.000 0.476 0.381 0.000 0.000
0.000
##
     left son=732 (14 obs) right son=733 (7 obs)
##
     Primary splits:
##
         321 < 93.5 to the right, improve=6.619048, (0 missing)
         598 < 138.5 to the right, improve=5.011905, (0 missing)
##
##
         400 < 62.5 to the left, improve=5.011905, (0 missing)
##
         597 < 135
                     to the right, improve=4.984127, (0 missing)
##
         293 < 84.5 to the right, improve=4.761905, (0 missing)
     Surrogate splits:
##
##
         293 < 11.5 to the right, agree=0.952, adj=0.857, (0 split)
##
                     to the left, agree=0.952, adj=0.857, (0 split)
         430 < 97
                     to the right, agree=0.905, adj=0.714, (0 split)
##
         294 < 44.5
##
         401 < 208
                     to the left, agree=0.905, adj=0.714, (0 split)
##
         429 < 190.5 to the left, agree=0.905, adj=0.714, (0 split)
##
## Node number 367: 172 observations
##
     predicted class=6
                        expected loss=0.09302326 P(node) =0.006824043
##
       class counts:
                         2
                               0
                                     7
                                           1
                                                 0
                                                        2
                                                            156
                                                                          4
0
      probabilities: 0.012 0.000 0.041 0.006 0.000 0.012 0.907 0.000 0.023
##
0.000
##
## Node number 372: 12 observations
##
     predicted class=0
                        expected loss=0.4166667
                                                 P(node) =0.000476096
##
       class counts:
0
      probabilities: 0.583 0.000 0.000 0.083 0.000 0.250 0.083 0.000 0.000
##
0.000
##
## Node number 373: 28 observations,
                                        complexity param=0.0002083892
                        expected loss=0.5714286 P(node) =0.001110891
##
     predicted class=8
       class counts:
##
                         0
                               0
                                     0
                                           4
                                                       10
                                                              2
                                                                    0
                                                                         12
0
##
      probabilities: 0.000 0.000 0.000 0.143 0.000 0.357 0.071 0.000 0.429
0.000
##
     left son=746 (16 obs) right son=747 (12 obs)
##
     Primary splits:
##
         297 < 178
                                   improve=4.863095, (0 missing)
                     to the left,
##
         468 < 197.5 to the right, improve=4.089377, (0 missing)
##
         269 < 10.5 to the left, improve=3.863095, (0 missing)
##
                     to the left, improve=3.863095, (0 missing)
         270 < 1
##
         431 < 27.5 to the left, improve=3.771429, (0 missing)
##
     Surrogate splits:
```

```
298 < 3.5
                     to the left,
                                   agree=0.929, adj=0.833, (0 split)
##
##
         269 < 10.5 to the left, agree=0.857, adj=0.667, (0 split)
                                   agree=0.857, adj=0.667, (0 split)
##
         270 < 1
                     to the left,
                     to the left,
         296 < 181
                                   agree=0.857, adj=0.667, (0 split)
##
##
         548 < 14
                     to the left,
                                   agree=0.821, adj=0.583, (0 split)
##
## Node number 376: 20 observations
##
     predicted class=3 expected loss=0 P(node) =0.0007934934
       class counts:
##
                         0
                               0
                                          20
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 1.000 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 377: 7 observations
##
     predicted class=9
                        expected loss=0.2857143 P(node) =0.0002777227
##
       class counts:
                         0
                                     0
                                           1
                                                 0
                                                       1
5
##
      probabilities: 0.000 0.000 0.000 0.143 0.000 0.143 0.000 0.000 0.000
0.714
##
## Node number 380: 13 observations
     predicted class=0 expected loss=0.5384615 P(node) =0.0005157707
##
       class counts:
                               0
                                                                          5
                         6
                                     1
                                           0
                                                 0
                                                       0
                                                             1
                                                                    0
0
      probabilities: 0.462 0.000 0.077 0.000 0.000 0.000 0.077 0.000 0.385
##
0.000
##
## Node number 381: 15 observations
     predicted class=3
                        expected loss=0.4666667
                                                 P(node) =0.00059512
##
##
       class counts:
                         0
                               0
                                     0
                                           8
                                                 0
                                                       6
                                                                          0
1
      probabilities: 0.000 0.000 0.000 0.533 0.000 0.400 0.000 0.000 0.000
##
0.067
##
## Node number 382: 57 observations,
                                        complexity param=0.0002344378
     predicted class=8 expected loss=0.4385965 P(node) =0.002261456
##
##
       class counts:
                         1
                               0
                                    18
                                           3
                                                       1
                                                                         32
0
##
      probabilities: 0.018 0.000 0.316 0.053 0.000 0.018 0.018 0.018 0.561
0.000
##
     left son=764 (24 obs) right son=765 (33 obs)
##
     Primary splits:
##
         126 < 44.5 to the right, improve=11.622810, (0 missing)
                     to the right, improve=11.084970, (0 missing)
##
         154 < 246.5 to the right, improve=10.226700, (0 missing)
##
##
         606 < 250.5 to the right, improve= 9.847131, (0 missing)
##
         608 < 57
                     to the right, improve= 9.819103, (0 missing)
##
     Surrogate splits:
##
         127 < 24
                     to the right, agree=0.965, adj=0.917, (0 split)
##
         128 < 5.5 to the right, agree=0.947, adj=0.875, (0 split)
```

```
to the right, agree=0.930, adj=0.833, (0 split)
##
         125 < 1.5
##
         129 < 2.5
                     to the right, agree=0.912, adj=0.792, (0 split)
                     to the right, agree=0.877, adj=0.708, (0 split)
##
         154 < 237
##
## Node number 383: 345 observations,
                                         complexity param=0.0001786193
                        expected loss=0.09275362 P(node) =0.01368776
##
     predicted class=8
##
       class counts:
                         1
                                           12
                                                  0
                               0
                                                        6
                                                             10
                                                                    0
                                                                        313
3
      probabilities: 0.003 0.000 0.000 0.035 0.000 0.017 0.029 0.000 0.907
##
0.009
##
     left son=766 (36 obs) right son=767 (309 obs)
##
     Primary splits:
##
         439 < 250.5 to the right, improve=9.676202, (0 missing)
##
         459 < 15
                     to the left, improve=8.315192, (0 missing)
                     to the right, improve=7.693051, (0 missing)
         428 < 119
##
##
         440 < 156.5 to the right, improve=7.585100, (0 missing)
         468 < 249.5 to the right, improve=7.509916, (0 missing)
##
##
     Surrogate splits:
         440 < 72.5
##
                     to the right, agree=0.965, adj=0.667, (0 split)
##
         468 < 242
                     to the right, agree=0.965, adj=0.667, (0 split)
##
         412 < 4
                     to the right, agree=0.945, adj=0.472, (0 split)
##
         411 < 130
                     to the right, agree=0.942, adj=0.444, (0 split)
##
                     to the right, agree=0.936, adj=0.389, (0 split)
         441 < 1
##
## Node number 384: 1623 observations
##
     predicted class=0 expected loss=0.01047443 P(node) =0.06439199
##
       class counts: 1606
                                     1
                               0
                                            0
                                                                          0
1
##
      probabilities: 0.990 0.000 0.001 0.000 0.001 0.001 0.007 0.000 0.000
0.001
##
## Node number 385: 332 observations,
                                         complexity param=0.0001786193
##
     predicted class=0 expected loss=0.1686747 P(node) =0.01317199
       class counts:
##
                       276
                               0
                                    25
                                            7
                                                       14
                                                                          0
1
      probabilities: 0.831 0.000 0.075 0.021 0.000 0.042 0.015 0.012 0.000
##
0.003
##
     left son=770 (299 obs) right son=771 (33 obs)
##
     Primary splits:
         545 < 198.5 to the left,
                                   improve=14.54646, (0 missing)
##
##
         517 < 13
                     to the left,
                                   improve=13.77057, (0 missing)
##
         544 < 83.5 to the left,
                                   improve=13.00613, (0 missing)
##
         398 < 10.5
                     to the right, improve=12.99808, (0 missing)
##
                     to the right, improve=12.75578, (0 missing)
         370 < 8
##
     Surrogate splits:
##
         517 < 7
                     to the left,
                                   agree=0.961, adj=0.606, (0 split)
##
         546 < 239.5 to the left,
                                   agree=0.961, adj=0.606, (0 split)
##
         544 < 145.5 to the left,
                                   agree=0.958, adj=0.576, (0 split)
##
         518 < 93.5 to the left,
                                   agree=0.949, adj=0.485, (0 split)
##
         490 < 13.5 to the left, agree=0.934, adj=0.333, (0 split)
```

```
##
## Node number 390: 30 observations
##
     predicted class=3 expected loss=0.3 P(node) =0.00119024
       class counts:
                         4
##
                               0
                                     1
                                          21
                                                 0
                                                       4
                                                                          0
0
      probabilities: 0.133 0.000 0.033 0.700 0.000 0.133 0.000 0.000 0.000
##
0.000
##
## Node number 391: 27 observations
##
     predicted class=5
                        expected loss=0.2592593 P(node) =0.001071216
##
       class counts:
                         1
                               0
                                     1
                                           2
                                                       20
                                                                          0
                                                  0
                                                              3
0
##
      probabilities: 0.037 0.000 0.037 0.074 0.000 0.741 0.111 0.000 0.000
0.000
##
## Node number 394: 13 observations
     predicted class=5
                        expected loss=0.5384615 P(node) =0.0005157707
##
       class counts:
                         2
                               0
                                     3
                                           2
                                                                    0
                                                                          0
                                                       6
                                                              0
0
##
      probabilities: 0.154 0.000 0.231 0.154 0.000 0.462 0.000 0.000 0.000
0.000
##
## Node number 395: 26 observations
     predicted class=6 expected loss=0.1538462 P(node) =0.001031541
##
##
       class counts:
                         1
                               0
                                     0
                                           0
                                                  0
                                                       3
                                                             22
                                                                          0
0
##
      probabilities: 0.038 0.000 0.000 0.000 0.000 0.115 0.846 0.000 0.000
0.000
##
## Node number 396: 55 observations,
                                       complexity param=0.0002679289
##
     predicted class=3 expected loss=0.4363636 P(node) =0.002182107
##
       class counts:
                         3
                                    10
                                          31
0
      probabilities: 0.055 0.018 0.182 0.564 0.000 0.127 0.018 0.036 0.000
##
0.000
##
     left son=792 (11 obs) right son=793 (44 obs)
##
     Primary splits:
##
         514 < 4
                     to the right, improve=6.409091, (0 missing)
##
         485 < 9.5
                     to the right, improve=6.357049, (0 missing)
         513 < 37.5 to the right, improve=6.234343, (0 missing)
##
##
         571 < 209.5 to the left, improve=6.188865, (0 missing)
                     to the right, improve=6.146518, (0 missing)
##
         541 < 187
##
     Surrogate splits:
##
         513 < 37.5 to the right, agree=0.982, adj=0.909, (0 split)
##
         485 < 9.5
                     to the right, agree=0.964, adj=0.818, (0 split)
##
         486 < 44.5
                     to the right, agree=0.964, adj=0.818, (0 split)
##
         487 < 22
                     to the right, agree=0.945, adj=0.727, (0 split)
##
                     to the right, agree=0.945, adj=0.727, (0 split)
         515 < 2
##
## Node number 397: 10 observations
```

```
expected loss=0.3 P(node) =0.0003967467
##
     predicted class=5
##
       class counts:
                                                                          1
                         0
                               0
                                     0
                                            0
                                                  0
                                                        7
                                                              2
0
      probabilities: 0.000 0.000 0.000 0.000 0.700 0.200 0.000 0.100
##
0.000
##
## Node number 412: 44 observations,
                                        complexity param=0.0002976988
##
     predicted class=8 expected loss=0.7272727 P(node) =0.001745685
##
       class counts:
                         4
                               0
                                     8
                                            3
                                                  1
                                                       10
                                                                         12
0
##
      probabilities: 0.091 0.000 0.182 0.068 0.023 0.227 0.136 0.000 0.273
0.000
##
     left son=824 (34 obs) right son=825 (10 obs)
##
     Primary splits:
##
         407 < 63
                     to the left,
                                   improve=6.379144, (0 missing)
##
         682 < 20.5 to the left,
                                   improve=6.313131, (0 missing)
##
         684 < 31.5 to the left,
                                   improve=5.933341, (0 missing)
##
         685 < 43.5 to the left,
                                   improve=5.933341, (0 missing)
         380 < 118.5 to the left,
                                   improve=5.772727, (0 missing)
##
##
     Surrogate splits:
##
         380 < 118.5 to the left,
                                   agree=0.977, adj=0.9, (0 split)
##
         378 < 89.5 to the left,
                                   agree=0.955, adj=0.8, (0 split)
##
         379 < 107.5 to the left,
                                   agree=0.955, adj=0.8, (0 split)
##
         405 < 197.5 to the left,
                                   agree=0.955, adj=0.8, (0 split)
                                   agree=0.955, adj=0.8, (0 split)
##
         406 < 130.5 to the left,
##
## Node number 413: 20 observations
##
     predicted class=6
                        expected loss=0.15 P(node) =0.0007934934
##
       class counts:
                         1
                               0
                                     1
                                            1
                                                        0
                                                             17
                                                                          0
0
##
      probabilities: 0.050 0.000 0.050 0.050 0.000 0.000 0.850 0.000 0.000
0.000
##
## Node number 418: 25 observations,
                                        complexity param=0.0003572385
                        expected loss=0.52 P(node) =0.0009918667
     predicted class=5
##
       class counts:
                         8
                               0
                                            1
                                                  0
                                                       12
                                                              3
                                                                          1
                                     0
                                                                    0
0
##
      probabilities: 0.320 0.000 0.000 0.040 0.000 0.480 0.120 0.000 0.040
0.000
##
     left son=836 (8 obs) right son=837 (17 obs)
##
     Primary splits:
##
         370 < 3
                     to the right, improve=8.357647, (0 missing)
##
         386 < 2
                     to the right, improve=8.357647, (0 missing)
         443 < 22
##
                     to the right, improve=8.357647, (0 missing)
         470 < 1
                     to the right, improve=8.357647, (0 missing)
##
##
         398 < 36
                     to the right, improve=8.087222, (0 missing)
##
     Surrogate splits:
##
                     to the right, agree=1.00, adj=1.000, (0 split)
         386 < 2
##
         443 < 22
                     to the right, agree=1.00, adj=1.000, (0 split)
         470 < 1 to the right, agree=1.00, adj=1.000, (0 split)
##
```

```
358 < 62 to the right, agree=0.96, adj=0.875, (0 split)
##
##
         359 < 16.5 to the right, agree=0.96, adj=0.875, (0 split)
##
## Node number 419: 33 observations,
                                       complexity param=0.0004018934
##
     predicted class=2 expected loss=0.6060606 P(node) =0.001309264
                                    13
##
       class counts:
                         2
                               0
                                           1
                                                 3
                                                       0
                                                                   1
                                                                          0
13
##
      probabilities: 0.061 0.000 0.394 0.030 0.091 0.000 0.000 0.030 0.000
0.394
##
     left son=838 (19 obs) right son=839 (14 obs)
##
     Primary splits:
         343 < 29
##
                     to the left,
                                   improve=9.152654, (0 missing)
##
         371 < 64.5 to the left,
                                   improve=9.152654, (0 missing)
##
         315 < 3.5
                     to the left,
                                   improve=7.658586, (0 missing)
##
         372 < 2.5
                     to the left,
                                   improve=7.560383, (0 missing)
##
         261 < 72.5 to the left, improve=7.560383, (0 missing)
##
     Surrogate splits:
##
         371 < 6
                     to the left, agree=0.939, adj=0.857, (0 split)
                                   agree=0.909, adj=0.786, (0 split)
         315 < 3.5
                     to the left,
##
##
         316 < 38
                     to the left,
                                   agree=0.909, adj=0.786, (0 split)
         261 < 72.5 to the left,
                                   agree=0.879, adj=0.714, (0 split)
##
##
         288 < 62.5 to the left,
                                   agree=0.879, adj=0.714, (0 split)
##
## Node number 430: 24 observations
     predicted class=4 expected loss=0.2916667 P(node) =0.000952192
##
       class counts:
                         1
                               0
                                     1
                                                17
                                                       0
                                                                   2
                                                                          0
3
##
      probabilities: 0.042 0.000 0.042 0.000 0.708 0.000 0.000 0.083 0.000
0.125
##
## Node number 431: 82 observations
     predicted class=9
                        expected loss=0.2560976 P(node) =0.003253323
##
       class counts:
                               0
                                     2
                                                 6
                                                       0
                                                             1
                                                                  11
                                                                          1
61
##
      probabilities: 0.000 0.000 0.024 0.000 0.073 0.000 0.012 0.134 0.012
0.744
##
## Node number 432: 16 observations
##
     predicted class=3 expected loss=0.1875
                                              P(node) =0.0006347947
##
       class counts:
                         0
                               0
                                     0
                                          13
                                                 1
                                                       2
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 0.813 0.062 0.125 0.000 0.000 0.000
0.000
##
## Node number 433: 37 observations,
                                        complexity param=0.0001786193
                        expected loss=0.5945946 P(node) =0.001467963
##
     predicted class=5
##
       class counts:
                         1
                               7
                                           4
                                                      15
                                                             8
                                                                          0
2
##
      probabilities: 0.027 0.189 0.000 0.108 0.000 0.405 0.216 0.000 0.000
0.054
```

```
##
     left son=866 (28 obs) right son=867 (9 obs)
##
     Primary splits:
##
         541 < 12
                     to the left,
                                   improve=5.368726, (0 missing)
         550 < 9.5
##
                     to the left,
                                   improve=5.322938, (0 missing)
##
         487 < 65
                     to the left,
                                   improve=5.116345, (0 missing)
##
         488 < 40.5 to the left,
                                   improve=4.987356, (0 missing)
##
         551 < 1.5
                     to the left,
                                   improve=4.917297, (0 missing)
##
     Surrogate splits:
##
         540 < 46.5 to the left,
                                   agree=0.973, adj=0.889, (0 split)
                                   agree=0.946, adj=0.778, (0 split)
##
         482 < 12.5 to the left,
##
         510 < 40
                     to the left,
                                   agree=0.946, adj=0.778, (0 split)
         511 < 13
                                   agree=0.946, adj=0.778, (0 split)
##
                     to the left,
##
         512 < 91
                     to the left, agree=0.946, adj=0.778, (0 split)
##
## Node number 436: 7 observations
##
     predicted class=3 expected loss=0.4285714 P(node) =0.0002777227
##
       class counts:
                         0
                               0
                                     1
                                           4
                                                  0
                                                        0
                                                                    0
                                                                          0
2
##
      probabilities: 0.000 0.000 0.143 0.571 0.000 0.000 0.000 0.000 0.000
0.286
##
## Node number 437: 24 observations
     predicted class=4
                        expected loss=0.2083333 P(node) =0.000952192
##
       class counts:
                         0
                                     0
                                                 19
                                                                          0
1
##
      probabilities: 0.000 0.000 0.000 0.000 0.792 0.042 0.000 0.125 0.000
0.042
##
## Node number 444: 14 observations
     predicted class=5 expected loss=0.2857143 P(node) =0.0005554453
##
##
       class counts:
                         0
                               2
                                     0
                                           1
                                                  0
                                                       10
                                                              1
                                                                    0
                                                                          0
0
##
      probabilities: 0.000 0.143 0.000 0.071 0.000 0.714 0.071 0.000 0.000
0.000
##
## Node number 445: 16 observations
##
     predicted class=4
                        expected loss=0.5 P(node) =0.0006347947
##
       class counts:
                         0
                               0
                                     1
                                                  8
                                                                    2
                                                                          0
                                            0
                                                        0
5
      probabilities: 0.000 0.000 0.062 0.000 0.500 0.000 0.000 0.125 0.000
##
0.312
##
## Node number 446: 19 observations
     predicted class=3
##
                        expected loss=0.7368421 P(node) =0.0007538187
##
       class counts:
                         3
                               1
                                     3
                                           5
                                                                          0
                                                                    1
2
##
      probabilities: 0.158 0.053 0.158 0.263 0.000 0.211 0.000 0.053 0.000
0.105
##
## Node number 447: 629 observations
```

```
expected loss=0.03656598 P(node) =0.02495537
##
     predicted class=7
##
       class counts:
                         5
                               0
                                     1
                                           2
                                                  4
                                                        3
                                                              3
                                                                  606
                                                                          0
5
      probabilities: 0.008 0.000 0.002 0.003 0.006 0.005 0.005 0.963 0.000
##
0.008
##
## Node number 448: 922 observations,
                                         complexity param=0.0002679289
     predicted class=2 expected loss=0.04338395 P(node) =0.03658004
##
##
       class counts:
                         0
                               0
                                   882
                                          15
                                                                         11
1
##
      probabilities: 0.000 0.000 0.957 0.016 0.000 0.001 0.000 0.013 0.012
0.001
##
     left son=896 (912 obs) right son=897 (10 obs)
##
     Primary splits:
##
         345 < 104.5 to the left,
                                   improve=12.406900, (0 missing)
##
         346 < 70.5 to the left,
                                   improve=12.406900, (0 missing)
##
         681 < 18
                     to the left,
                                   improve= 6.490996, (0 missing)
                     to the left,
##
         680 < 41
                                   improve= 5.718800, (0 missing)
##
         683 < 44.5 to the left,
                                   improve= 5.615033, (0 missing)
##
     Surrogate splits:
##
         346 < 70.5 to the left,
                                   agree=1.000, adj=1.0, (0 split)
##
         318 < 245.5 to the left,
                                   agree=0.991, adj=0.2, (0 split)
##
         373 < 241.5 to the left,
                                   agree=0.991, adj=0.2, (0 split)
##
         317 < 230
                     to the left,
                                   agree=0.990, adj=0.1, (0 split)
                                   agree=0.990, adj=0.1, (0 split)
##
         374 < 230.5 to the left,
##
## Node number 449: 14 observations
##
     predicted class=8
                        expected loss=0
                                         P(node) = 0.0005554453
##
       class counts:
                         0
                                                                         14
                               0
                                     0
                                           0
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.000 1.000
0.000
##
## Node number 450: 35 observations,
                                        complexity param=0.000491203
                        expected loss=0.5142857 P(node) =0.001388613
     predicted class=2
##
       class counts:
                         3
                               0
                                    17
                                           0
                                                  2
                                                       0
                                                              2
                                                                    0
                                                                          0
11
##
      probabilities: 0.086 0.000 0.486 0.000 0.057 0.000 0.057 0.000 0.000
0.314
     left son=900 (22 obs) right son=901 (13 obs)
##
##
     Primary splits:
##
         570 < 169.5 to the right, improve=11.14266, (0 missing)
##
                     to the right, improve=11.14266, (0 missing)
         598 < 93.5 to the right, improve=11.14266, (0 missing)
##
         599 < 19.5 to the right, improve=11.14058, (0 missing)
##
##
         626 < 2.5
                     to the right, improve=11.14058, (0 missing)
##
     Surrogate splits:
##
                     to the right, agree=1.000, adj=1.000, (0 split)
         597 < 4.5
##
         598 < 93.5 to the right, agree=1.000, adj=1.000, (0 split)
##
         599 < 19.5 to the right, agree=0.971, adj=0.923, (0 split)
```

```
to the right, agree=0.971, adj=0.923, (0 split)
##
         625 < 2.5
##
                     to the right, agree=0.971, adj=0.923, (0 split)
         626 < 2.5
##
## Node number 451: 50 observations
##
     predicted class=8
                        expected loss=0.18 P(node) =0.001983733
##
       class counts:
                         0
                                0
                                      3
                                            1
                                                        1
                                                                     0
                                                                          41
4
      probabilities: 0.000 0.000 0.060 0.020 0.000 0.020 0.000 0.000 0.820
##
0.080
##
## Node number 452: 246 observations,
                                          complexity param=0.002589979
                        expected loss=0.5934959 P(node) =0.009759968
##
     predicted class=1
##
       class counts:
                         0
                             100
                                     19
                                            1
                                                 60
                                                        5
                                                             48
                                                                     8
                                                                           3
2
##
      probabilities: 0.000 0.407 0.077 0.004 0.244 0.020 0.195 0.033 0.012
0.008
##
     left son=904 (135 obs) right son=905 (111 obs)
##
     Primary splits:
                                    improve=56.73869, (0 missing)
##
         344 < 1.5
                     to the left,
##
         456 < 1
                     to the left,
                                    improve=55.85903, (0 missing)
##
         372 < 10
                     to the left,
                                    improve=55.65413, (0 missing)
##
         428 < 2
                     to the left,
                                    improve=55.43471, (0 missing)
##
         316 < 1
                     to the left,
                                    improve=55.18781, (0 missing)
##
     Surrogate splits:
##
         316 < 1
                     to the left,
                                    agree=0.967, adj=0.928, (0 split)
                                    agree=0.967, adj=0.928, (0 split)
##
         372 < 10
                     to the left,
##
                                    agree=0.947, adj=0.883, (0 split)
         400 < 4.5
                     to the left,
         288 < 0.5
                                    agree=0.939, adj=0.865, (0 split)
##
                     to the left,
##
         289 < 0.5
                     to the left,
                                    agree=0.935, adj=0.856, (0 split)
##
## Node number 453: 241 observations,
                                          complexity param=0.002634634
##
     predicted class=2 expected loss=0.6473029 P(node) =0.009561595
##
       class counts:
                         2
                                2
                                     85
                                            5
                                                  2
                                                        5
                                                                    49
                                                                          19
72
##
      probabilities: 0.008 0.008 0.353 0.021 0.008 0.021 0.000 0.203 0.079
0.299
##
     left son=906 (150 obs) right son=907 (91 obs)
##
     Primary splits:
##
         371 < 1.5
                     to the left,
                                    improve=41.69612, (0 missing)
                                    improve=41.20927, (0 missing)
         344 < 110
                     to the left,
##
##
         372 < 67
                     to the left,
                                    improve=39.75462, (0 missing)
                                    improve=35.41713, (0 missing)
##
         343 < 1
                     to the left,
##
         399 < 3
                     to the left,
                                    improve=34.26607, (0 missing)
##
     Surrogate splits:
##
         343 < 1
                     to the left,
                                    agree=0.946, adj=0.857, (0 split)
##
         399 < 8.5
                     to the left,
                                    agree=0.934, adj=0.824, (0 split)
##
         344 < 66.5
                     to the left,
                                    agree=0.925, adj=0.802, (0 split)
##
                     to the left,
                                    agree=0.913, adj=0.769, (0 split)
         316 < 139
##
         372 < 58
                     to the left,
                                    agree=0.909, adj=0.758, (0 split)
##
```

```
## Node number 454: 128 observations
     predicted class=7 expected loss=0.03125 P(node) =0.005078357
##
##
       class counts:
                         0
                               0
                                     3
                                                 0
                                                       0
                                                              0
                                                                          0
                                           1
                                                                  124
0
##
      probabilities: 0.000 0.000 0.023 0.008 0.000 0.000 0.000 0.969 0.000
0.000
##
## Node number 455: 8 observations
     predicted class=8
                        expected loss=0.25 P(node) =0.0003173973
##
       class counts:
                         0
                               0
                                     0
                                                 1
                                                                          6
                                           0
1
      probabilities: 0.000 0.000 0.000 0.000 0.125 0.000 0.000 0.000 0.750
##
0.125
##
## Node number 456: 20 observations,
                                        complexity param=0.0002232741
     predicted class=8
                        expected loss=0.7 P(node) =0.0007934934
##
       class counts:
                         5
                               0
                                     5
                                           0
                                                 1
                                                              3
                                                                          6
0
##
      probabilities: 0.250 0.000 0.250 0.000 0.050 0.000 0.150 0.000 0.300
0.000
##
     left son=912 (13 obs) right son=913 (7 obs)
##
     Primary splits:
##
         522 < 13.5 to the right, improve=5.024176, (0 missing)
##
         495 < 32.5 to the right, improve=5.024176, (0 missing)
##
         493 < 165.5 to the right, improve=4.800000, (0 missing)
##
         494 < 80
                     to the right, improve=4.450000, (0 missing)
##
                     to the right, improve=4.450000, (0 missing)
         521 < 125
##
     Surrogate splits:
##
         495 < 32.5 to the right, agree=1.00, adj=1.000, (0 split)
##
         440 < 205
                     to the right, agree=0.95, adj=0.857, (0 split)
##
         441 < 13.5 to the right, agree=0.95, adj=0.857, (0 split)
##
         467 < 121.5 to the right, agree=0.95, adj=0.857, (0 split)
##
         468 < 19
                     to the right, agree=0.95, adj=0.857, (0 split)
##
## Node number 457: 101 observations
     predicted class=5 expected loss=0.06930693 P(node) =0.004007141
##
##
       class counts:
                         0
                               0
                                     2
                                           0
                                                 2
                                                      94
                                                                          2
0
      probabilities: 0.000 0.000 0.020 0.000 0.020 0.931 0.010 0.000 0.020
##
0.000
##
## Node number 458: 155 observations,
                                         complexity param=0.0005805126
##
     predicted class=4
                        expected loss=0.316129 P(node) =0.006149573
##
       class counts:
                         0
                                                                          7
                               0
                                    13
                                           0
                                               106
                                                       1
                                                             13
                                                                   13
2
##
      probabilities: 0.000 0.000 0.084 0.000 0.684 0.006 0.084 0.084 0.045
0.013
     left son=916 (132 obs) right son=917 (23 obs)
##
##
     Primary splits:
##
         268 < 136 to the left, improve=20.08729, (0 missing)
```

```
295 < 173
                     to the left, improve=17.80890, (0 missing)
##
##
         429 < 55
                     to the right, improve=16.97293, (0 missing)
                     to the right, improve=16.01735, (0 missing)
##
         126 < 6.5
##
         127 < 2.5
                     to the right, improve=15.84815, (0 missing)
##
     Surrogate splits:
##
         295 < 173
                     to the left,
                                   agree=0.981, adj=0.870, (0 split)
                                   agree=0.961, adj=0.739, (0 split)
##
         267 < 184.5 to the left,
                                   agree=0.948, adj=0.652, (0 split)
##
         296 < 210.5 to the left,
                                   agree=0.942, adj=0.609, (0 split)
##
         240 < 68.5 to the left,
##
         294 < 228
                     to the left,
                                   agree=0.935, adj=0.565, (0 split)
##
## Node number 459: 209 observations,
                                         complexity param=0.001674556
     predicted class=2
                        expected loss=0.7464115 P(node) =0.008292006
##
##
       class counts:
                        14
                               0
                                    53
                                           0
                                                 19
                                                                   35
                                                                         34
51
##
      probabilities: 0.067 0.000 0.254 0.000 0.091 0.005 0.010 0.167 0.163
0.244
##
     left son=918 (85 obs) right son=919 (124 obs)
##
     Primary splits:
##
         567 < 25
                     to the right, improve=24.04753, (0 missing)
##
         568 < 77
                     to the right, improve=22.73472, (0 missing)
         708 < 1.5
                     to the left, improve=22.62774, (0 missing)
##
##
         709 < 6.5
                     to the left,
                                   improve=21.41509, (0 missing)
##
         155 < 9.5
                     to the right, improve=20.79665, (0 missing)
##
     Surrogate splits:
         568 < 172.5 to the right, agree=0.919, adj=0.800, (0 split)
##
##
                     to the right, agree=0.904, adj=0.765, (0 split)
         566 < 2
                     to the right, agree=0.895, adj=0.741, (0 split)
##
         595 < 8.5
##
         539 < 7.5
                     to the right, agree=0.876, adj=0.694, (0 split)
##
         594 < 0.5
                     to the right, agree=0.871, adj=0.682, (0 split)
##
## Node number 460: 21 observations
##
     predicted class=4
                        expected loss=0.0952381 P(node) =0.000833168
##
       class counts:
                         0
                                     0
                                           0
                                                 19
                                                                          2
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.905 0.000 0.000 0.000 0.095
0.000
##
## Node number 461: 53 observations,
                                        complexity param=0.0004465482
                        expected loss=0.754717 P(node) =0.002102757
##
     predicted class=8
##
       class counts:
                        10
                               0
                                     1
                                           0
                                                  2
                                                       9
                                                              5
                                                                         13
13
      probabilities: 0.189 0.000 0.019 0.000 0.038 0.170 0.094 0.000 0.245
##
0.245
##
     left son=922 (36 obs) right son=923 (17 obs)
##
     Primary splits:
##
         597 < 24.5 to the right, improve=9.657849, (0 missing)
##
         570 < 22.5 to the right, improve=9.326491, (0 missing)
##
         598 < 10.5 to the right, improve=9.164385, (0 missing)
         569 < 2.5 to the right, improve=9.100859, (0 missing)
##
```

```
##
         627 < 2.5
                     to the right, improve=8.688021, (0 missing)
##
     Surrogate splits:
##
         569 < 96
                     to the right, agree=0.943, adj=0.824, (0 split)
         598 < 39
                     to the right, agree=0.943, adj=0.824, (0 split)
##
##
         626 < 16
                     to the right, agree=0.943, adj=0.824, (0 split)
##
         568 < 7
                     to the right, agree=0.906, adj=0.706, (0 split)
##
                     to the right, agree=0.906, adj=0.706, (0 split)
         570 < 22.5
##
## Node number 462: 47 observations,
                                        complexity param=0.0002456015
##
     predicted class=8
                        expected loss=0.5106383 P(node) =0.001864709
##
       class counts:
                         4
                               0
                                      0
                                            2
                                                  1
                                                       12
                                                              1
                                                                    2
                                                                         23
2
##
      probabilities: 0.085 0.000 0.000 0.043 0.021 0.255 0.021 0.043 0.489
0.043
##
     left son=924 (20 obs) right son=925 (27 obs)
##
     Primary splits:
##
         600 < 214
                     to the right, improve=11.983290, (0 missing)
         485 < 32.5 to the left, improve= 8.681651, (0 missing)
##
##
         486 < 1.5
                     to the left, improve= 8.681651, (0 missing)
##
         572 < 6
                     to the right, improve= 8.433531, (0 missing)
##
         628 < 251.5 to the right, improve= 7.878917, (0 missing)
##
     Surrogate splits:
##
         572 < 132
                     to the right, agree=0.894, adj=0.75, (0 split)
##
         599 < 226.5 to the right, agree=0.894, adj=0.75, (0 split)
##
                     to the right, agree=0.851, adj=0.65, (0 split)
                     to the right, agree=0.830, adj=0.60, (0 split)
##
         373 < 145.5 to the right, agree=0.830, adj=0.60, (0 split)
##
##
## Node number 463: 588 observations
##
     predicted class=8
                        expected loss=0.04591837 P(node) =0.0233287
##
       class counts:
                         3
                               0
                                      4
                                            3
                                                  2
                                                        2
                                                              3
                                                                    6
                                                                        561
4
##
      probabilities: 0.005 0.000 0.007 0.005 0.003 0.003 0.005 0.010 0.954
0.007
##
## Node number 464: 32 observations,
                                        complexity param=0.0003125837
##
     predicted class=1
                        expected loss=0.3125 P(node) =0.001269589
##
       class counts:
                         1
                              22
                                      7
                                            0
                                                  1
                                                        0
                                                                           1
                                                              0
0
##
      probabilities: 0.031 0.688 0.219 0.000 0.031 0.000 0.000 0.000 0.031
0.000
##
     left son=928 (24 obs) right son=929 (8 obs)
##
     Primary splits:
##
         127 < 5
                     to the left,
                                    improve=9.750000, (0 missing)
##
         128 < 106.5 to the left,
                                    improve=9.750000, (0 missing)
##
         154 < 2.5
                     to the left,
                                    improve=9.750000, (0 missing)
##
         577 < 48
                     to the left,
                                    improve=9.730000, (0 missing)
##
                                   improve=8.177536, (0 missing)
         155 < 1
                     to the left,
##
     Surrogate splits:
##
         128 < 106.5 to the left, agree=1.000, adj=1.000, (0 split)
```

```
to the left,
                                   agree=1.000, adj=1.000, (0 split)
##
         154 < 2.5
##
         126 < 11
                     to the left,
                                   agree=0.969, adj=0.875, (0 split)
                                   agree=0.969, adj=0.875, (0 split)
##
         155 < 1
                     to the left,
                     to the left,
                                   agree=0.969, adj=0.875, (0 split)
##
         577 < 48
##
## Node number 465: 286 observations,
                                         complexity param=0.0002232741
     predicted class=2 expected loss=0.1153846 P(node) =0.01134695
##
                                            2
                                                        0
                                                                          3
##
       class counts:
                         1
                               3
                                   253
                                                              3
                                                                    9
5
##
      probabilities: 0.003 0.010 0.885 0.007 0.024 0.000 0.010 0.031 0.010
0.017
##
     left son=930 (275 obs) right son=931 (11 obs)
##
     Primary splits:
##
         398 < 100.5 to the left,
                                   improve=12.80392, (0 missing)
##
         371 < 119
                     to the left,
                                   improve=12.03539, (0 missing)
##
         370 < 183
                     to the left,
                                   improve=11.69353, (0 missing)
         343 < 21.5 to the left,
                                   improve=11.44725, (0 missing)
##
##
         399 < 157
                     to the left,
                                   improve=11.43237, (0 missing)
##
     Surrogate splits:
##
         370 < 183
                     to the left,
                                   agree=0.997, adj=0.909, (0 split)
##
         399 < 230
                     to the left,
                                   agree=0.990, adj=0.727, (0 split)
##
         315 < 251
                     to the left,
                                   agree=0.986, adj=0.636, (0 split)
##
         371 < 245.5 to the left,
                                   agree=0.986, adj=0.636, (0 split)
##
         397 < 10.5 to the left,
                                   agree=0.986, adj=0.636, (0 split)
##
## Node number 468: 48 observations
##
     predicted class=4
                        expected loss=0.5
                                           P(node) =0.001904384
                               1
                                     5
                                                 24
##
       class counts:
                         0
                                            0
                                                        1
                                                              0
                                                                    2
                                                                          4
11
      probabilities: 0.000 0.021 0.104 0.000 0.500 0.021 0.000 0.042 0.083
##
0.229
##
## Node number 469: 25 observations
##
     predicted class=6
                        expected loss=0.24 P(node) =0.0009918667
##
                         0
                                                                    2
                                                                          0
       class counts:
                               0
                                     4
                                           0
                                                  0
                                                        0
                                                             19
0
##
      probabilities: 0.000 0.000 0.160 0.000 0.000 0.000 0.760 0.080 0.000
0.000
##
## Node number 472: 83 observations
##
     predicted class=2 expected loss=0.1566265
                                                 P(node) = 0.003292997
##
       class counts:
                         3
                                    70
                                            3
                                                              2
                                                                          5
0
##
      probabilities: 0.036 0.000 0.843 0.036 0.000 0.000 0.024 0.000 0.060
0.000
##
## Node number 473: 44 observations,
                                        complexity param=0.0004465482
     predicted class=4 expected loss=0.7272727 P(node) =0.001745685
##
       class counts:
                         0
                               1
                                     2
                                            0
                                                 12
                                                        1
                                                             12
                                                                    1
                                                                         10
5
```

```
probabilities: 0.000 0.023 0.045 0.000 0.273 0.023 0.273 0.023 0.227
##
0.114
##
     left son=946 (12 obs) right son=947 (32 obs)
##
     Primary splits:
                     to the right, improve=7.079545, (0 missing)
##
         220 < 30
##
         415 < 42.5
                     to the right, improve=5.933911, (0 missing)
##
                     to the right, improve=5.933911, (0 missing)
         443 < 3.5
                     to the right, improve=5.933911, (0 missing)
##
         470 < 27
                     to the right, improve=5.848485, (0 missing)
##
         442 < 40.5
##
     Surrogate splits:
##
         248 < 98
                     to the right, agree=0.932, adj=0.750, (0 split)
                     to the right, agree=0.886, adj=0.583, (0 split)
##
         221 < 15.5
         247 < 107
                     to the right, agree=0.864, adj=0.500, (0 split)
##
##
         275 < 242.5 to the right, agree=0.864, adj=0.500, (0 split)
##
                     to the right, agree=0.841, adj=0.417, (0 split)
         249 < 14
##
## Node number 476: 34 observations
     predicted class=2 expected loss=0.2352941 P(node) =0.001348939
##
##
       class counts:
                         0
                               2
                                    26
                                                  2
                                                              1
                                                                           2
0
##
      probabilities: 0.000 0.059 0.765 0.000 0.059 0.000 0.029 0.029 0.059
0.000
##
## Node number 477: 1503 observations,
                                           complexity param=0.000491203
     predicted class=6 expected loss=0.0332668 P(node) =0.05963103
##
       class counts:
                         0
                               0
                                      4
                                            1
                                                  2
                                                       27
                                                           1453
                                                                           9
7
##
      probabilities: 0.000 0.000 0.003 0.001 0.001 0.018 0.967 0.000 0.006
0.005
##
     left son=954 (18 obs) right son=955 (1485 obs)
##
     Primary splits:
##
         217 < 164
                     to the right, improve=22.62187, (0 missing)
##
         218 < 139
                     to the right, improve=21.71964, (0 missing)
##
         215 < 165
                     to the right, improve=20.87881, (0 missing)
##
                     to the right, improve=19.28097, (0 missing)
         191 < 40
##
         192 < 25
                     to the right, improve=18.87744, (0 missing)
##
     Surrogate splits:
##
         218 < 139
                     to the right, agree=0.997, adj=0.778, (0 split)
##
         216 < 194.5 to the right, agree=0.997, adj=0.722, (0 split)
                     to the right, agree=0.995, adj=0.556, (0 split)
##
         219 < 34
##
         215 < 236.5 to the right, agree=0.994, adj=0.500, (0 split)
                     to the right, agree=0.994, adj=0.500, (0 split)
##
         220 < 82
##
## Node number 478: 67 observations,
                                        complexity param=0.0002232741
     predicted class=5
                        expected loss=0.1641791 P(node) =0.002658203
##
##
       class counts:
                         0
                               0
                                      0
                                            2
                                                  1
                                                       56
                                                              6
                                                                           2
0
##
      probabilities: 0.000 0.000 0.000 0.030 0.015 0.836 0.090 0.000 0.030
0.000
     left son=956 (58 obs) right son=957 (9 obs)
```

```
Primary splits:
##
##
         456 < 140
                     to the left,
                                   improve=9.097101, (0 missing)
##
         484 < 104.5 to the left,
                                   improve=6.276934, (0 missing)
##
         485 < 100.5 to the left,
                                   improve=4.330817, (0 missing)
##
         427 < 39
                     to the left,
                                   improve=4.108595, (0 missing)
##
         428 < 154
                     to the left,
                                   improve=3.775949, (0 missing)
##
     Surrogate splits:
         427 < 39
##
                     to the left,
                                   agree=0.940, adj=0.556, (0 split)
##
         455 < 35.5 to the left,
                                   agree=0.940, adj=0.556, (0 split)
                     to the right, agree=0.925, adj=0.444, (0 split)
##
         405 < 16
##
         484 < 104.5 to the left,
                                   agree=0.925, adj=0.444, (0 split)
                                   agree=0.910, adj=0.333, (0 split)
##
         428 < 154
                     to the left,
##
## Node number 479: 96 observations,
                                        complexity param=0.000870769
                        expected loss=0.6145833 P(node) =0.003808768
##
     predicted class=8
##
       class counts:
                         0
                                     2
                                            2
                                                       19
                                                                         37
                               0
                                                             31
                                                                    1
4
##
      probabilities: 0.000 0.000 0.021 0.021 0.000 0.198 0.323 0.010 0.385
0.042
##
     left son=958 (34 obs) right son=959 (62 obs)
##
     Primary splits:
         457 < 103
##
                     to the right, improve=13.42750, (0 missing)
##
         429 < 14
                     to the right, improve=13.11877, (0 missing)
##
         328 < 10
                     to the left, improve=12.90833, (0 missing)
                     to the right, improve=12.26006, (0 missing)
##
         131 < 9.5
##
         430 < 226
                     to the right, improve=11.99758, (0 missing)
##
     Surrogate splits:
##
         429 < 22.5 to the right, agree=0.885, adj=0.676, (0 split)
##
         485 < 150.5 to the right, agree=0.885, adj=0.676, (0 split)
##
         456 < 9.5
                     to the right, agree=0.854, adj=0.588, (0 split)
                     to the right, agree=0.854, adj=0.588, (0 split)
##
         458 < 246
##
         484 < 17
                     to the right, agree=0.833, adj=0.529, (0 split)
##
## Node number 480: 87 observations
##
     predicted class=2
                        expected loss=0.05747126 P(node) =0.003451696
##
       class counts:
                         0
                               0
                                    82
                                           2
                                                        2
                                                              0
                                                                    0
                                                                          1
0
##
      probabilities: 0.000 0.000 0.943 0.023 0.000 0.023 0.000 0.000 0.011
0.000
##
## Node number 481: 22 observations,
                                        complexity param=0.0002232741
##
     predicted class=3
                        expected loss=0.3181818 P(node) =0.0008728427
##
       class counts:
                         0
                                     2
                                          15
                                                                          5
0
      probabilities: 0.000 0.000 0.091 0.682 0.000 0.000 0.000 0.000 0.227
##
0.000
##
     left son=962 (15 obs) right son=963 (7 obs)
##
     Primary splits:
##
         484 < 42.5 to the left,
                                   improve=7.597403, (0 missing)
##
         485 < 86 to the left, improve=7.597403, (0 missing)
```

```
improve=7.597403, (0 missing)
##
         512 < 106
                     to the left,
##
         511 < 45.5
                     to the left,
                                   improve=6.204545, (0 missing)
                                   improve=6.204545, (0 missing)
##
         513 < 2.5
                     to the left,
##
     Surrogate splits:
##
         485 < 86
                     to the left,
                                   agree=1.000, adj=1.000, (0 split)
##
         512 < 106
                     to the left,
                                   agree=1.000, adj=1.000, (0 split)
##
         511 < 45.5
                     to the left,
                                   agree=0.955, adj=0.857, (0 split)
         513 < 2.5
                                   agree=0.955, adj=0.857, (0 split)
##
                     to the left,
                                   agree=0.909, adj=0.714, (0 split)
##
         321 < 12
                     to the left,
##
## Node number 482: 87 observations
##
     predicted class=5
                        expected loss=0.1034483 P(node) =0.003451696
##
       class counts:
                         0
                               0
                                     2
                                           5
                                                       78
                                                                          1
                                                  0
                                                              1
                                                                    0
0
##
      probabilities: 0.000 0.000 0.023 0.057 0.000 0.897 0.011 0.000 0.011
0.000
##
## Node number 483: 25 observations,
                                        complexity param=0.0001786193
##
     predicted class=8
                        expected loss=0.4 P(node) =0.0009918667
##
       class counts:
                         0
                               0
                                     2
                                           2
                                                  4
                                                        1
                                                              1
                                                                    0
                                                                         15
0
      probabilities: 0.000 0.000 0.080 0.080 0.160 0.040 0.040 0.000 0.600
##
0.000
##
     left son=966 (7 obs) right son=967 (18 obs)
##
     Primary splits:
                     to the right, improve=5.626667, (0 missing)
##
         400 < 192
##
         485 < 88.5 to the left, improve=5.055238, (0 missing)
         401 < 201.5 to the right, improve=4.890556, (0 missing)
##
##
         512 < 17.5 to the left, improve=4.769524, (0 missing)
                     to the right, improve=4.652308, (0 missing)
##
         439 < 38
##
     Surrogate splits:
##
         427 < 25.5 to the right, agree=0.96, adj=0.857, (0 split)
##
         398 < 3
                     to the right, agree=0.92, adj=0.714, (0 split)
         399 < 97.5 to the right, agree=0.92, adj=0.714, (0 split)
##
##
         401 < 201.5 to the right, agree=0.92, adj=0.714, (0 split)
##
                     to the right, agree=0.92, adj=0.714, (0 split)
         426 < 3
##
## Node number 484: 1415 observations,
                                          complexity param=0.0008037867
##
     predicted class=4 expected loss=0.09399293 P(node) =0.05613965
##
       class counts:
                         0
                               6
                                    14
                                          16 1282
                                                       21
                                                             15
                                                                   10
                                                                         31
20
##
      probabilities: 0.000 0.004 0.010 0.011 0.906 0.015 0.011 0.007 0.022
0.014
##
     left son=968 (1344 obs) right son=969 (71 obs)
##
     Primary splits:
##
         155 < 120.5 to the left,
                                   improve=61.80734, (0 missing)
##
         183 < 31.5 to the left,
                                   improve=46.27412, (0 missing)
##
                                   improve=37.69171, (0 missing)
         154 < 128
                     to the left,
##
         156 < 179
                     to the left,
                                   improve=33.33936, (0 missing)
         429 < 29.5 to the right, improve=24.05030, (0 missing)
##
```

```
##
     Surrogate splits:
##
         183 < 82
                     to the left,
                                   agree=0.983, adj=0.662, (0 split)
                                   agree=0.972, adj=0.437, (0 split)
##
         154 < 169.5 to the left,
                                   agree=0.970, adj=0.394, (0 split)
##
         156 < 221
                     to the left,
##
         127 < 72
                     to the left,
                                   agree=0.965, adj=0.296, (0 split)
##
         182 < 240.5 to the left,
                                   agree=0.963, adj=0.268, (0 split)
##
## Node number 485: 54 observations
     predicted class=6
##
                        expected loss=0.05555556 P(node) =0.002142432
##
       class counts:
                         0
                               0
                                     2
                                                  1
                                                        0
                                                             51
                                                                          0
0
      probabilities: 0.000 0.000 0.037 0.000 0.019 0.000 0.944 0.000 0.000
##
0.000
##
## Node number 486: 93 observations,
                                         complexity param=0.0006251675
##
     predicted class=9
                        expected loss=0.5806452 P(node) =0.003689744
##
       class counts:
                         0
                               0
                                     2
                                            2
                                                 24
                                                       20
                                                                          1
39
##
      probabilities: 0.000 0.000 0.022 0.022 0.258 0.215 0.000 0.054 0.011
0.419
##
     left son=972 (21 obs) right son=973 (72 obs)
##
     Primary splits:
##
         247 < 1.5
                     to the right, improve=11.82066, (0 missing)
##
         381 < 4
                     to the left, improve=11.37190, (0 missing)
##
         353 < 5
                     to the left, improve=10.84927, (0 missing)
                     to the right, improve=10.22326, (0 missing)
##
         248 < 1.5
                     to the left, improve=10.20015, (0 missing)
##
         354 < 2
##
     Surrogate splits:
##
         246 < 68.5
                     to the right, agree=0.968, adj=0.857, (0 split)
##
         248 < 1.5
                     to the right, agree=0.946, adj=0.762, (0 split)
##
         275 < 10.5
                     to the right, agree=0.935, adj=0.714, (0 split)
##
         218 < 29
                     to the right, agree=0.925, adj=0.667, (0 split)
##
         219 < 2
                     to the right, agree=0.925, adj=0.667, (0 split)
##
## Node number 487: 47 observations,
                                         complexity param=0.0003125837
     predicted class=7
                        expected loss=0.3829787 P(node) =0.001864709
##
##
       class counts:
                         0
                                     5
                                            2
                                                        1
                                                                   29
                                                                          2
8
      probabilities: 0.000 0.000 0.106 0.043 0.000 0.021 0.000 0.617 0.043
##
0.170
##
     left son=974 (36 obs) right son=975 (11 obs)
##
     Primary splits:
##
         455 < 81.5 to the left,
                                   improve=9.107135, (0 missing)
                                   improve=8.740324, (0 missing)
         426 < 9
##
                     to the left,
                     to the left,
##
         427 < 1
                                   improve=8.740324, (0 missing)
##
         370 < 112
                     to the left,
                                   improve=8.707174, (0 missing)
##
         371 < 190.5 to the left,
                                   improve=8.707174, (0 missing)
##
     Surrogate splits:
##
         426 < 26
                     to the left,
                                   agree=0.957, adj=0.818, (0 split)
##
         427 < 1 to the left,
                                   agree=0.936, adj=0.727, (0 split)
```

```
to the left,
                                   agree=0.915, adj=0.636, (0 split)
##
         370 < 144
##
         398 < 90
                     to the left,
                                   agree=0.915, adj=0.636, (0 split)
                                   agree=0.915, adj=0.636, (0 split)
##
         454 < 5.5
                     to the left,
##
## Node number 488: 521 observations,
                                          complexity param=0.0009377512
##
     predicted class=5
                        expected loss=0.1516315 P(node) =0.0206705
##
       class counts:
                         0
                                           35
                                                  1
                                                      442
                                                                           0
                               0
                                      1
                                                             24
                                                                    1
17
      probabilities: 0.000 0.000 0.002 0.067 0.002 0.848 0.046 0.002 0.000
##
0.033
##
     left son=976 (494 obs) right son=977 (27 obs)
     Primary splits:
##
##
         516 < 166.5 to the left,
                                    improve=37.42924, (0 missing)
##
         544 < 240.5 to the left,
                                    improve=35.78384, (0 missing)
##
         100 < 22
                     to the left,
                                    improve=35.66911, (0 missing)
##
         101 < 1.5
                     to the left,
                                    improve=33.93476, (0 missing)
                                    improve=28.88534, (0 missing)
##
         543 < 40
                     to the left,
##
     Surrogate splits:
##
         100 < 22
                     to the left,
                                   agree=0.988, adj=0.778, (0 split)
##
         544 < 240.5 to the left,
                                   agree=0.988, adj=0.778, (0 split)
##
         101 < 1.5
                     to the left,
                                    agree=0.987, adj=0.741, (0 split)
##
         515 < 67.5 to the left,
                                    agree=0.981, adj=0.630, (0 split)
##
         543 < 40
                     to the left,
                                   agree=0.981, adj=0.630, (0 split)
##
## Node number 489: 60 observations,
                                         complexity param=0.0005805126
##
     predicted class=9
                        expected loss=0.6166667 P(node) =0.00238048
##
       class counts:
                         3
                                     13
                                            2
                                                  5
                                                                           9
                               0
                                                        3
23
##
      probabilities: 0.050 0.000 0.217 0.033 0.083 0.050 0.033 0.000 0.150
0.383
##
     left son=978 (25 obs) right son=979 (35 obs)
##
     Primary splits:
##
         596 < 14
                     to the right, improve=11.298100, (0 missing)
                     to the right, improve= 9.944947, (0 missing)
##
         155 < 24
##
         597 < 21.5
                     to the right, improve= 9.661661, (0 missing)
##
         595 < 9
                     to the right, improve= 9.196044, (0 missing)
         154 < 7
                     to the right, improve= 9.104167, (0 missing)
##
##
     Surrogate splits:
##
         597 < 44.5
                     to the right, agree=0.950, adj=0.88, (0 split)
                     to the right, agree=0.933, adj=0.84, (0 split)
##
         595 < 9
##
         539 < 13.5
                     to the right, agree=0.900, adj=0.76, (0 split)
                     to the right, agree=0.900, adj=0.76, (0 split)
##
         567 < 4.5
##
         568 < 2
                     to the right, agree=0.900, adj=0.76, (0 split)
##
## Node number 490: 79 observations
                        expected loss=0.1392405 P(node) =0.003134299
##
     predicted class=4
##
       class counts:
                         0
                               1
                                      1
                                            1
                                                 68
                                                                           1
3
##
      probabilities: 0.000 0.013 0.013 0.013 0.861 0.000 0.000 0.051 0.013
0.038
```

```
##
## Node number 491: 148 observations,
                                          complexity param=0.0008037867
##
     predicted class=9
                        expected loss=0.6689189 P(node) =0.005871851
       class counts:
##
                         0
                               1
                                     4
                                           17
                                                 20
                                                        0
                                                                   28
                                                                         27
                                                              2
49
      probabilities: 0.000 0.007 0.027 0.115 0.135 0.000 0.014 0.189 0.182
##
0.331
##
     left son=982 (127 obs) right son=983 (21 obs)
##
     Primary splits:
##
         544 < 172.5 to the left,
                                    improve=15.29669, (0 missing)
##
         346 < 0.5
                     to the left,
                                   improve=14.10428, (0 missing)
                                   improve=13.30087, (0 missing)
##
         345 < 4
                     to the left,
##
         572 < 43
                     to the left,
                                   improve=13.08108, (0 missing)
##
         373 < 3.5
                     to the left,
                                   improve=12.66705, (0 missing)
##
     Surrogate splits:
##
         516 < 159
                     to the left,
                                   agree=0.966, adj=0.762, (0 split)
##
         543 < 1
                     to the left,
                                   agree=0.939, adj=0.571, (0 split)
                                   agree=0.939, adj=0.571, (0 split)
##
                     to the left,
         571 < 7.5
                                   agree=0.932, adj=0.524, (0 split)
##
         572 < 165.5 to the left,
##
         517 < 252.5 to the left,
                                   agree=0.926, adj=0.476, (0 split)
##
## Node number 492: 178 observations,
                                          complexity param=0.001607573
                        expected loss=0.5393258 P(node) =0.007062091
##
     predicted class=3
##
       class counts:
                         2
                                    44
                                           82
                                                  1
                                                        8
                                                                         27
11
##
      probabilities: 0.011 0.000 0.247 0.461 0.006 0.045 0.017 0.000 0.152
0.062
##
     left son=984 (99 obs) right son=985 (79 obs)
##
     Primary splits:
##
         484 < 46
                     to the left,
                                   improve=36.93243, (0 missing)
         483 < 2.5
##
                     to the left,
                                   improve=34.73228, (0 missing)
##
         485 < 2
                     to the left,
                                   improve=29.35907, (0 missing)
##
         379 < 121
                     to the left,
                                   improve=29.01655, (0 missing)
##
         511 < 69.5 to the left,
                                   improve=28.38304, (0 missing)
##
     Surrogate splits:
##
         483 < 2.5
                     to the left,
                                   agree=0.938, adj=0.861, (0 split)
                                   agree=0.904, adj=0.785, (0 split)
         485 < 2
##
                     to the left,
##
                     to the left,
                                   agree=0.904, adj=0.785, (0 split)
         511 < 31.5
##
         512 < 6
                     to the left,
                                   agree=0.904, adj=0.785, (0 split)
         457 < 47.5 to the left,
                                   agree=0.876, adj=0.722, (0 split)
##
##
## Node number 493: 228 observations,
                                          complexity param=0.001607573
##
     predicted class=4
                        expected loss=0.5570175 P(node) =0.009045824
##
       class counts:
                         1
                                                        4
                               0
                                     9
                                           16
                                                101
                                                              1
                                                                    1
                                                                         50
45
##
      probabilities: 0.004 0.000 0.039 0.070 0.443 0.018 0.004 0.004 0.219
0.197
##
     left son=986 (138 obs) right son=987 (90 obs)
##
     Primary splits:
         428 < 25 to the right, improve=29.39194, (0 missing)
##
```

```
improve=29.31754, (0 missing)
                     to the left,
##
         658 < 3.5
##
         544 < 104
                     to the left,
                                    improve=29.17931, (0 missing)
##
         427 < 2.5
                     to the right, improve=27.69817, (0 missing)
##
         657 < 62
                     to the left,
                                    improve=27.61997, (0 missing)
##
     Surrogate splits:
##
         456 < 1.5
                     to the right, agree=0.912, adj=0.778, (0 split)
##
                     to the right, agree=0.904, adj=0.756, (0 split)
         400 < 31
         429 < 109.5 to the right, agree=0.882, adj=0.700, (0 split)
##
                     to the right, agree=0.877, adj=0.689, (0 split)
##
         427 < 2.5
##
         457 < 32
                     to the right, agree=0.873, adj=0.678, (0 split)
##
## Node number 494: 293 observations,
                                          complexity param=0.0006698223
     predicted class=9
                        expected loss=0.5119454 P(node) =0.01162468
##
##
       class counts:
                         1
                               0
                                     17
                                           52
                                                 23
                                                                   43
                                                                          13
143
##
      probabilities: 0.003 0.000 0.058 0.177 0.078 0.003 0.000 0.147 0.044
0.488
##
     left son=988 (176 obs) right son=989 (117 obs)
##
     Primary splits:
##
         319 < 108.5 to the left,
                                    improve=23.69464, (0 missing)
##
         320 < 2.5
                     to the left,
                                    improve=22.47628, (0 missing)
##
         318 < 3.5
                     to the left,
                                    improve=21.91279, (0 missing)
##
         347 < 71
                     to the left,
                                    improve=21.76380, (0 missing)
##
         292 < 66.5 to the left,
                                   improve=20.70928, (0 missing)
##
     Surrogate splits:
##
         347 < 71
                     to the left,
                                   agree=0.973, adj=0.932, (0 split)
##
         320 < 2.5
                     to the left,
                                    agree=0.959, adj=0.897, (0 split)
         292 < 85.5
                                   agree=0.952, adj=0.880, (0 split)
##
                     to the left,
##
         318 < 1
                     to the left,
                                    agree=0.939, adj=0.846, (0 split)
##
         291 < 13.5
                     to the left,
                                    agree=0.928, adj=0.821, (0 split)
##
## Node number 495: 1152 observations,
                                           complexity param=0.0006698223
##
     predicted class=9
                        expected loss=0.1137153 P(node) =0.04570522
       class counts:
##
                         0
                               0
                                           10
                                                 69
                                                                   11
                                                                          34
1021
      probabilities: 0.000 0.000 0.001 0.009 0.060 0.005 0.000 0.010 0.030
##
0.886
##
     left son=990 (66 obs) right son=991 (1086 obs)
##
     Primary splits:
##
         212 < 14
                                   improve=28.50180, (0 missing)
                     to the left,
##
         219 < 193
                     to the right, improve=22.58637, (0 missing)
                     to the right, improve=22.43587, (0 missing)
##
         191 < 63
##
         220 < 2
                     to the right, improve=20.35757, (0 missing)
##
                     to the left, improve=18.59774, (0 missing)
         213 < 0.5
##
     Surrogate splits:
##
         191 < 166
                     to the right, agree=0.948, adj=0.091, (0 split)
##
         154 < 96
                     to the right, agree=0.947, adj=0.076, (0 split)
##
                     to the right, agree=0.947, adj=0.076, (0 split)
         164 < 9.5
##
         192 < 27.5 to the right, agree=0.946, adj=0.061, (0 split)
##
         219 < 200.5 to the right, agree=0.946, adj=0.061, (0 split)
```

```
##
## Node number 496: 40 observations,
                                        complexity param=0.0002679289
##
     predicted class=3
                        expected loss=0.4 P(node) =0.001586987
       class counts:
##
                         1
                               6
                                          24
                                                 3
                                                              1
                                                                    0
                                                                          0
                                     0
1
      probabilities: 0.025 0.150 0.000 0.600 0.075 0.100 0.025 0.000 0.000
##
0.025
##
     left son=992 (26 obs) right son=993 (14 obs)
##
     Primary splits:
##
         490 < 1
                     to the left,
                                   improve=9.945055, (0 missing)
##
         462 < 37.5 to the left,
                                   improve=9.367521, (0 missing)
                     to the right, improve=9.133903, (0 missing)
##
         518 < 24
##
         517 < 7
                     to the right, improve=8.523810, (0 missing)
##
         545 < 19.5 to the right, improve=8.523810, (0 missing)
##
     Surrogate splits:
##
         462 < 37.5
                    to the left, agree=0.975, adj=0.929, (0 split)
##
         518 < 24
                     to the left,
                                   agree=0.975, adj=0.929, (0 split)
                                   agree=0.950, adj=0.857, (0 split)
##
         517 < 7
                     to the left,
                                   agree=0.950, adj=0.857, (0 split)
##
         545 < 19.5
                     to the left,
##
         546 < 15.5
                     to the left, agree=0.925, adj=0.786, (0 split)
##
## Node number 497: 135 observations,
                                         complexity param=0.0002679289
     predicted class=5 expected loss=0.1777778 P(node) =0.00535608
##
##
       class counts:
                         0
                                     4
                                          16
                                                      111
                                                                          1
1
##
      probabilities: 0.000 0.007 0.030 0.119 0.000 0.822 0.007 0.000 0.007
0.007
##
     left son=994 (25 obs) right son=995 (110 obs)
##
     Primary splits:
##
         150 < 65
                     to the right, improve=10.710710, (0 missing)
##
         151 < 133.5 to the right, improve=10.355560, (0 missing)
##
                     to the right, improve=10.235900, (0 missing)
##
         176 < 25.5 to the right, improve= 8.979616, (0 missing)
         152 < 138.5 to the right, improve= 8.784127, (0 missing)
##
##
     Surrogate splits:
##
         151 < 227.5 to the right, agree=0.948, adj=0.72, (0 split)
         149 < 25.5 to the right, agree=0.941, adj=0.68, (0 split)
##
##
                     to the right, agree=0.933, adj=0.64, (0 split)
         123 < 9.5
         122 < 3.5
##
                     to the right, agree=0.926, adj=0.60, (0 split)
         152 < 138.5 to the right, agree=0.904, adj=0.48, (0 split)
##
##
## Node number 498: 46 observations,
                                        complexity param=0.0004018934
##
     predicted class=8
                        expected loss=0.4347826 P(node) =0.001825035
##
       class counts:
                         0
                                     2
                                                       0
                               5
                                           9
                                                              0
                                                                    3
                                                                         26
1
##
      probabilities: 0.000 0.109 0.043 0.196 0.000 0.000 0.000 0.065 0.565
0.022
##
     left son=996 (18 obs) right son=997 (28 obs)
##
     Primary splits:
         348 < 11.5 to the left, improve=13.425810, (0 missing)
##
```

```
to the left,
                                    improve=10.983680, (0 missing)
##
         347 < 20.5
##
         376 < 113
                     to the left,
                                    improve=10.578990, (0 missing)
##
         319 < 3
                     to the left,
                                    improve=10.226420, (0 missing)
##
         377 < 111.5 to the left,
                                    improve= 9.637319, (0 missing)
##
     Surrogate splits:
         347 < 20.5 to the left,
##
                                   agree=0.935, adj=0.833, (0 split)
                                    agree=0.913, adj=0.778, (0 split)
##
         376 < 113
                     to the left,
                                    agree=0.913, adj=0.778, (0 split)
##
         377 < 111.5 to the left,
                     to the right, agree=0.891, adj=0.722, (0 split)
##
         351 < 148
##
         319 < 3
                     to the left,
                                    agree=0.870, adj=0.667, (0 split)
##
## Node number 499: 92 observations,
                                         complexity param=0.0008484415
     predicted class=9
                        expected loss=0.5 P(node) =0.003650069
##
##
       class counts:
                         0
                               0
                                      2
                                            8
                                                 27
                                                                           3
46
##
      probabilities: 0.000 0.000 0.022 0.087 0.293 0.011 0.000 0.054 0.033
0.500
##
     left son=998 (32 obs) right son=999 (60 obs)
##
     Primary splits:
##
         210 < 49
                     to the left,
                                    improve=15.898190, (0 missing)
##
         211 < 18
                     to the left,
                                    improve=14.630380, (0 missing)
##
         237 < 12.5
                     to the left,
                                    improve=12.035720, (0 missing)
##
         212 < 19
                     to the left,
                                    improve=10.219870, (0 missing)
##
         238 < 8
                     to the left,
                                   improve= 9.997799, (0 missing)
##
     Surrogate splits:
##
         209 < 3
                     to the left,
                                   agree=0.891, adj=0.687, (0 split)
##
                                    agree=0.891, adj=0.687, (0 split)
         211 < 11.5
                     to the left,
         237 < 1.5
                                    agree=0.848, adj=0.562, (0 split)
##
                     to the left,
##
         212 < 19
                     to the left,
                                    agree=0.815, adj=0.469, (0 split)
##
         238 < 0.5
                     to the left,
                                    agree=0.815, adj=0.469, (0 split)
##
## Node number 500: 54 observations,
                                         complexity param=0.000491203
##
     predicted class=1
                        expected loss=0.2962963 P(node) =0.002142432
       class counts:
##
                         2
                              38
                                      0
                                            1
                                                        2
                                                             11
0
      probabilities: 0.037 0.704 0.000 0.019 0.000 0.037 0.204 0.000 0.000
##
0.000
##
     left son=1000 (39 obs) right son=1001 (15 obs)
##
     Primary splits:
##
         568 < 14
                                   improve=16.36980, (0 missing)
                     to the left,
##
         268 < 40
                     to the right, improve=15.85899, (0 missing)
##
         296 < 37.5
                     to the right, improve=15.65485, (0 missing)
##
         295 < 10.5
                     to the right, improve=15.54233, (0 missing)
##
         323 < 23
                     to the right, improve=15.54233, (0 missing)
##
     Surrogate splits:
##
         567 < 18.5
                     to the left,
                                   agree=0.981, adj=0.933, (0 split)
##
         569 < 28
                     to the left,
                                   agree=0.981, adj=0.933, (0 split)
##
                                   agree=0.981, adj=0.933, (0 split)
         596 < 77
                     to the left,
##
         597 < 144
                     to the left,
                                   agree=0.981, adj=0.933, (0 split)
         296 < 37.5 to the right, agree=0.963, adj=0.867, (0 split)
##
```

```
##
## Node number 501: 39 observations
##
     predicted class=2 expected loss=0.3846154 P(node) =0.001547312
       class counts:
                         2
                               3
                                    24
##
                                            4
                                                        0
                                                              1
                                                                          0
0
      probabilities: 0.051 0.077 0.615 0.103 0.000 0.000 0.026 0.128 0.000
##
0.000
##
## Node number 502: 23 observations,
                                        complexity param=0.0002232741
##
     predicted class=2
                        expected loss=0.5652174 P(node) =0.0009125174
##
       class counts:
                         0
                                    10
                                            2
                                                  1
                                                        0
                                                              5
                                                                    1
                                                                          1
                               3
0
##
      probabilities: 0.000 0.130 0.435 0.087 0.043 0.000 0.217 0.043 0.043
0.000
##
     left son=1004 (12 obs) right son=1005 (11 obs)
##
     Primary splits:
##
         176 < 25.5 to the right, improve=5.899868, (0 missing)
##
         202 < 6.5
                     to the right, improve=5.899868, (0 missing)
                     to the right, improve=5.899868, (0 missing)
##
         203 < 13
##
         177 < 77.5
                     to the right, improve=5.546488, (0 missing)
         210 < 201
                     to the right, improve=5.369565, (0 missing)
##
##
     Surrogate splits:
##
         202 < 6.5
                     to the right, agree=1.000, adj=1.000, (0 split)
##
         203 < 13
                     to the right, agree=1.000, adj=1.000, (0 split)
##
         175 < 27
                     to the right, agree=0.957, adj=0.909, (0 split)
##
         177 < 77.5
                     to the right, agree=0.957, adj=0.909, (0 split)
                     to the right, agree=0.957, adj=0.909, (0 split)
##
         240 < 50
##
## Node number 503: 1337 observations,
                                           complexity param=0.0003572385
##
     predicted class=7
                        expected loss=0.03141361 P(node) =0.05304503
##
       class counts:
                         2
                               9
                                    11
                                            4
                                                  3
                                                        0
                                                              2 1295
                                                                          0
11
##
      probabilities: 0.001 0.007 0.008 0.003 0.002 0.000 0.001 0.969 0.000
0.008
##
     left son=1006 (10 obs) right son=1007 (1327 obs)
     Primary splits:
##
##
         158 < 54
                     to the right, improve=16.191000, (0 missing)
##
         159 < 24.5 to the right, improve=14.330360, (0 missing)
##
                     to the right, improve=12.494870, (0 missing)
         461 < 219.5 to the right, improve=11.010110, (0 missing)
##
##
         433 < 113.5 to the right, improve= 6.680192, (0 missing)
##
     Surrogate splits:
##
         159 < 24.5
                    to the right, agree=0.999, adj=0.9, (0 split)
##
                     to the right, agree=0.999, adj=0.8, (0 split)
         157 < 3
##
                     to the right, agree=0.996, adj=0.4, (0 split)
         130 < 4.5
##
         131 < 35.5 to the right, agree=0.996, adj=0.4, (0 split)
##
         160 < 78.5
                    to the right, agree=0.995, adj=0.3, (0 split)
##
## Node number 508: 24 observations
     predicted class=7 expected loss=0.3333333 P(node) =0.000952192
```

```
##
       class counts:
                                                 2
                                                                   16
2
##
      probabilities: 0.000 0.000 0.167 0.000 0.083 0.000 0.000 0.667 0.000
0.083
##
## Node number 509: 26 observations,
                                        complexity param=0.0003125837
     predicted class=9
                        expected loss=0.5 P(node) =0.001031541
##
       class counts:
                         0
                                     0
                                                10
                                                                          3
13
##
      probabilities: 0.000 0.000 0.000 0.385 0.000 0.000 0.000 0.115
0.500
##
     left son=1018 (12 obs) right son=1019 (14 obs)
##
     Primary splits:
##
         382 < 178.5 to the left,
                                   improve=6.902930, (0 missing)
##
         355 < 79
                     to the left,
                                   improve=6.786480, (0 missing)
##
         383 < 20.5 to the left,
                                   improve=6.786480, (0 missing)
##
         410 < 175
                     to the left,
                                   improve=5.615385, (0 missing)
##
         344 < 3
                                   improve=4.557692, (0 missing)
                     to the left,
##
     Surrogate splits:
##
         355 < 79
                     to the left,
                                   agree=0.962, adj=0.917, (0 split)
##
         383 < 20.5 to the left,
                                   agree=0.962, adj=0.917, (0 split)
##
         410 < 51
                     to the left,
                                   agree=0.885, adj=0.750, (0 split)
##
         354 < 243.5 to the left,
                                   agree=0.846, adj=0.667, (0 split)
##
         327 < 35
                     to the left, agree=0.808, adj=0.583, (0 split)
##
## Node number 510: 25 observations,
                                        complexity param=0.0002902563
##
     predicted class=4
                        expected loss=0.44 P(node) =0.0009918667
                                                14
##
       class counts:
                         0
                               0
                                     1
                                           0
                                                       0
                                                              0
                                                                    1
                                                                          0
9
      probabilities: 0.000 0.000 0.040 0.000 0.560 0.000 0.000 0.040 0.000
##
0.360
##
     left son=1020 (17 obs) right son=1021 (8 obs)
##
     Primary splits:
##
         434 < 94
                     to the left, improve=8.545882, (0 missing)
         267 < 139.5 to the right, improve=4.590000, (0 missing)
##
##
                    to the right, improve=4.590000, (0 missing)
         351 < 104
         456 < 179.5 to the right, improve=4.411429, (0 missing)
##
##
         492 < 225.5 to the right, improve=4.333506, (0 missing)
##
     Surrogate splits:
         433 < 49
##
                     to the left, agree=0.92, adj=0.750, (0 split)
##
         406 < 4
                     to the left, agree=0.88, adj=0.625, (0 split)
         464 < 218
                     to the right, agree=0.88, adj=0.625, (0 split)
##
##
         490 < 102
                     to the right, agree=0.88, adj=0.625, (0 split)
##
         243 < 132.5 to the left, agree=0.84, adj=0.500, (0 split)
##
## Node number 511: 143 observations
##
     predicted class=9
                        expected loss=0.0979021 P(node) =0.005673477
##
                                                 3
       class counts:
                         0
                               0
                                     3
                                           1
                                                       0
                                                              1
                                                                          1
129
##
      probabilities: 0.000 0.000 0.021 0.007 0.021 0.000 0.007 0.035 0.007
```

```
0.902
##
## Node number 514: 19 observations
     predicted class=2 expected loss=0.5789474 P(node) =0.0007538187
##
       class counts:
                         0
                               0
                                     8
                                            0
                                                  5
                                                        4
                                                              2
                                                                          0
0
      probabilities: 0.000 0.000 0.421 0.000 0.263 0.211 0.105 0.000 0.000
0.000
##
## Node number 515: 12 observations
##
     predicted class=1
                        expected loss=0.5833333 P(node) =0.000476096
                                                                          5
##
       class counts:
                         0
                               5
                                     0
                                            0
                                                  0
                                                        1
                                                              1
0
##
      probabilities: 0.000 0.417 0.000 0.000 0.000 0.083 0.083 0.000 0.417
0.000
##
## Node number 544: 25 observations,
                                        complexity param=0.0002232741
     predicted class=1 expected loss=0.48 P(node) =0.0009918667
##
       class counts:
                         0
                              13
                                     3
                                            5
                                                  2
                                                                          0
0
##
      probabilities: 0.000 0.520 0.120 0.200 0.080 0.040 0.000 0.040 0.000
0.000
##
     left son=1088 (16 obs) right son=1089 (9 obs)
##
     Primary splits:
##
         603 < 181
                     to the right, improve=5.959444, (0 missing)
         631 < 32.5 to the right, improve=5.959444, (0 missing)
##
                     to the left, improve=5.782857, (0 missing)
##
         185 < 9.5
         374 < 32.5 to the left,
##
                                   improve=5.211429, (0 missing)
##
         265 < 230
                     to the right, improve=5.211429, (0 missing)
##
     Surrogate splits:
##
         631 < 32.5
                     to the right, agree=1.00, adj=1.000, (0 split)
##
         325 < 10.5 to the left, agree=0.92, adj=0.778, (0 split)
##
         326 < 8
                     to the left, agree=0.92, adj=0.778, (0 split)
         599 < 25.5 to the left, agree=0.92, adj=0.778, (0 split)
##
##
         604 < 102.5 to the right, agree=0.92, adj=0.778, (0 split)
##
## Node number 545: 68 observations,
                                        complexity param=0.0002232741
                        expected loss=0.2647059 P(node) =0.002697877
##
     predicted class=6
##
       class counts:
                         7
                               0
                                     6
                                            1
                                                  1
                                                        2
                                                             50
                                                                    0
                                                                          0
1
##
      probabilities: 0.103 0.000 0.088 0.015 0.015 0.029 0.735 0.000 0.000
0.015
##
     left son=1090 (12 obs) right son=1091 (56 obs)
##
     Primary splits:
##
         244 < 56
                     to the right, improve=8.191877, (0 missing)
##
         567 < 224.5 to the right, improve=7.572943, (0 missing)
##
         123 < 192.5 to the right, improve=7.446756, (0 missing)
##
         150 < 251.5 to the right, improve=7.446756, (0 missing)
##
         151 < 133
                     to the right, improve=7.446756, (0 missing)
##
     Surrogate splits:
```

```
243 < 190.5 to the right, agree=0.956, adj=0.750, (0 split)
##
##
         245 < 10
                     to the right, agree=0.956, adj=0.750, (0 split)
                     to the right, agree=0.941, adj=0.667, (0 split)
##
         272 < 2.5
                     to the right, agree=0.926, adj=0.583, (0 split)
##
         217 < 97
##
         271 < 142.5 to the right, agree=0.926, adj=0.583, (0 split)
##
## Node number 546: 67 observations,
                                         complexity param=0.000491203
##
     predicted class=2 expected loss=0.6865672 P(node) =0.002658203
##
       class counts:
                         5
                               6
                                     21
                                            6
                                                       19
                                                                           5
0
##
      probabilities: 0.075 0.090 0.313 0.090 0.060 0.284 0.015 0.000 0.075
0.000
##
     left son=1092 (13 obs) right son=1093 (54 obs)
##
     Primary splits:
##
         552 < 26
                     to the right, improve=9.399668, (0 missing)
##
         553 < 31.5
                     to the right, improve=9.399668, (0 missing)
                     to the right, improve=9.399668, (0 missing)
##
         554 < 40
##
         555 < 12.5
                     to the right, improve=9.399668, (0 missing)
                     to the right, improve=8.635048, (0 missing)
##
         524 < 8
##
     Surrogate splits:
##
         553 < 79.5
                     to the right, agree=0.970, adj=0.846, (0 split)
##
         524 < 197
                     to the right, agree=0.940, adj=0.692, (0 split)
##
                     to the right, agree=0.940, adj=0.692, (0 split)
         554 < 40
##
         555 < 12.5
                     to the right, agree=0.940, adj=0.692, (0 split)
##
         525 < 186
                     to the right, agree=0.925, adj=0.615, (0 split)
##
## Node number 547: 92 observations,
                                         complexity param=0.0007144771
##
     predicted class=4
                        expected loss=0.6413043 P(node) =0.003650069
##
       class counts:
                              14
                                      1
                         0
                                            2
                                                 33
                                                        2
                                                              3
                                                                    7
                                                                           1
29
##
      probabilities: 0.000 0.152 0.011 0.022 0.359 0.022 0.033 0.076 0.011
0.315
##
     left son=1094 (22 obs) right son=1095 (70 obs)
##
     Primary splits:
##
         456 < 13.5 to the right, improve=12.39633, (0 missing)
##
         429 < 115.5 to the right, improve=12.32083, (0 missing)
         401 < 130.5 to the right, improve=11.91346, (0 missing)
##
##
                     to the right, improve=11.63469, (0 missing)
         428 < 0.5
                     to the right, improve=11.42450, (0 missing)
##
         467 < 2.5
     Surrogate splits:
##
##
         428 < 60
                     to the right, agree=0.957, adj=0.818, (0 split)
         457 < 198.5 to the right, agree=0.946, adj=0.773, (0 split)
##
##
         429 < 160
                     to the right, agree=0.935, adj=0.727, (0 split)
         455 < 2
                     to the right, agree=0.935, adj=0.727, (0 split)
##
                     to the right, agree=0.935, adj=0.727, (0 split)
##
         484 < 7
##
## Node number 552: 77 observations
     predicted class=1 expected loss=0.09090909 P(node) =0.003054949
##
##
       class counts:
                         0
                              70
                                      1
                                            0
                                                  0
                                                        1
                                                              1
                                                                    2
                                                                           1
1
```

```
probabilities: 0.000 0.909 0.013 0.000 0.000 0.013 0.013 0.026 0.013
0.013
##
## Node number 553: 18 observations
##
     predicted class=8
                        expected loss=0.6111111 P(node) =0.000714144
                                                                          7
##
       class counts:
                         1
                               2
                                     0
                                           1
                                                       2
3
      probabilities: 0.056 0.111 0.000 0.056 0.000 0.111 0.000 0.111 0.389
##
0.167
##
## Node number 554: 11 observations
                        expected loss=0.1818182 P(node) =0.0004364213
     predicted class=4
##
       class counts:
                         0
                               0
                                                 9
                                                       0
                                                                          0
                                     0
                                           0
                                                             1
                                                                    0
1
##
      probabilities: 0.000 0.000 0.000 0.000 0.818 0.000 0.091 0.000 0.000
0.091
##
## Node number 555: 28 observations,
                                        complexity param=0.0002679289
##
     predicted class=8
                        expected loss=0.7142857 P(node) =0.001110891
##
       class counts:
                         2
                               1
                                     0
                                           3
                                                 1
                                                       6
                                                             2
                                                                          8
5
      probabilities: 0.071 0.036 0.000 0.107 0.036 0.214 0.071 0.000 0.286
##
0.179
##
     left son=1110 (7 obs) right son=1111 (21 obs)
##
     Primary splits:
         379 < 17.5 to the left,
##
                                   improve=5.047619, (0 missing)
##
         378 < 119
                     to the left,
                                   improve=4.857143, (0 missing)
         406 < 165
                                   improve=4.279365, (0 missing)
##
                     to the left,
##
         407 < 62
                     to the left,
                                   improve=4.279365, (0 missing)
##
         408 < 141.5 to the left,
                                   improve=3.913553, (0 missing)
##
     Surrogate splits:
##
         378 < 119
                     to the left, agree=0.964, adj=0.857, (0 split)
                                   agree=0.929, adj=0.714, (0 split)
##
         240 < 232.5 to the left,
##
         267 < 214
                     to the left,
                                   agree=0.893, adj=0.571, (0 split)
##
                     to the right, agree=0.893, adj=0.571, (0 split)
         277 < 3.5
##
         380 < 15.5 to the left, agree=0.893, adj=0.571, (0 split)
##
## Node number 556: 37 observations,
                                        complexity param=0.0002902563
     predicted class=3 expected loss=0.6486486 P(node) =0.001467963
##
##
       class counts:
                         1
                               1
                                     1
                                          13
                                                 5
                                                       2
                                                                    1
                                                                         12
1
##
      probabilities: 0.027 0.027 0.027 0.351 0.135 0.054 0.000 0.027 0.324
0.027
##
     left son=1112 (19 obs) right son=1113 (18 obs)
##
     Primary splits:
##
         317 < 4.5
                     to the left,
                                   improve=8.604078, (0 missing)
##
         232 < 12
                     to the left,
                                   improve=8.288288, (0 missing)
##
                                   improve=7.824003, (0 missing)
         318 < 65.5 to the left,
##
         544 < 31
                     to the left,
                                   improve=7.645013, (0 missing)
         289 < 12.5 to the left, improve=7.627682, (0 missing)
##
```

```
##
     Surrogate splits:
##
         289 < 3.5
                     to the left, agree=0.973, adj=0.944, (0 split)
         318 < 164.5 to the left,
                                   agree=0.973, adj=0.944, (0 split)
##
                                   agree=0.892, adj=0.778, (0 split)
##
         290 < 3
                     to the left,
##
         316 < 6.5
                     to the left,
                                   agree=0.865, adj=0.722, (0 split)
##
         403 < 153
                     to the right, agree=0.865, adj=0.722, (0 split)
##
## Node number 557: 87 observations
     predicted class=8
##
                        expected loss=0.1149425 P(node) =0.003451696
##
       class counts:
                         0
                               2
                                     0
                                           2
                                                       1
                                                                         77
                                                 4
                                                              0
1
      probabilities: 0.000 0.023 0.000 0.023 0.046 0.011 0.000 0.000 0.885
##
0.011
##
## Node number 586: 24 observations,
                                        complexity param=0.0001786193
     predicted class=2 expected loss=0.4583333 P(node) =0.000952192
##
       class counts:
                         0
                               0
                                    13
                                           1
                                                 0
                                                       0
                                                              3
                                                                          6
0
      probabilities: 0.000 0.000 0.542 0.042 0.000 0.000 0.125 0.042 0.250
##
0.000
##
     left son=1172 (16 obs) right son=1173 (8 obs)
##
     Primary splits:
##
         270 < 4.5
                     to the left, improve=4.25, (0 missing)
##
         470 < 11.5 to the right, improve=3.50, (0 missing)
##
         471 < 11.5 to the right, improve=3.50, (0 missing)
##
         472 < 1.5
                     to the right, improve=3.50, (0 missing)
##
         498 < 68.5 to the right, improve=3.50, (0 missing)
##
     Surrogate splits:
##
         242 < 3
                     to the left, agree=0.958, adj=0.875, (0 split)
##
         214 < 2.5
                     to the left,
                                   agree=0.917, adj=0.750, (0 split)
##
         241 < 120.5 to the left,
                                   agree=0.917, adj=0.750, (0 split)
##
         269 < 136
                   to the left, agree=0.917, adj=0.750, (0 split)
##
         607 < 221.5 to the left,
                                   agree=0.917, adj=0.750, (0 split)
##
## Node number 587: 12 observations
     predicted class=3 expected loss=0.25 P(node) =0.000476096
##
                                           9
##
       class counts:
                         0
                                     0
                                                                    1
                                                                          1
1
      probabilities: 0.000 0.000 0.000 0.750 0.000 0.000 0.000 0.083 0.083
##
0.083
##
## Node number 598: 9 observations
##
     predicted class=9
                        expected loss=0.5555556 P(node) =0.000357072
##
       class counts:
                         0
                               0
                                     1
                                           0
                                                        3
                                                              0
                                                                    1
                                                                          0
4
##
      probabilities: 0.000 0.000 0.111 0.000 0.000 0.333 0.000 0.111 0.000
0.444
##
## Node number 599: 11 observations
     predicted class=8 expected loss=0.09090909 P(node) =0.0004364213
```

```
##
       class counts: 0
                                     0
1
##
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.909
0.091
##
## Node number 612: 34 observations,
                                        complexity param=0.0003125837
     predicted class=2 expected loss=0.2941176 P(node) =0.001348939
##
       class counts:
                         0
                               1
                                    24
                                           8
                                                        0
                                                                          1
0
##
      probabilities: 0.000 0.029 0.706 0.235 0.000 0.000 0.000 0.000 0.029
0.000
##
     left son=1224 (24 obs) right son=1225 (10 obs)
##
     Primary splits:
##
         543 < 81
                     to the right, improve=9.800980, (0 missing)
##
         544 < 69
                     to the right, improve=8.477331, (0 missing)
##
         516 < 79.5
                     to the right, improve=8.024314, (0 missing)
##
         571 < 14.5
                     to the right, improve=7.921880, (0 missing)
##
         600 < 120
                     to the right, improve=7.921880, (0 missing)
##
     Surrogate splits:
##
         516 < 79.5
                    to the right, agree=0.971, adj=0.9, (0 split)
##
         544 < 69
                     to the right, agree=0.971, adj=0.9, (0 split)
         571 < 185
##
                     to the right, agree=0.941, adj=0.8, (0 split)
##
         600 < 120
                     to the right, agree=0.912, adj=0.7, (0 split)
##
         572 < 3.5
                     to the right, agree=0.882, adj=0.6, (0 split)
##
## Node number 613: 13 observations
##
     predicted class=8 expected loss=0.2307692 P(node) =0.0005157707
##
       class counts:
                         0
                               3
                                     0
                                            0
                                                  0
                                                        0
                                                              0
                                                                    0
                                                                         10
0
      probabilities: 0.000 0.231 0.000 0.000 0.000 0.000 0.000 0.000 0.769
##
0.000
##
## Node number 614: 7 observations
     predicted class=3 expected loss=0.2857143 P(node) =0.0002777227
##
##
                                                        0
                                                                          1
       class counts:
                         0
                               0
                                     0
                                           5
0
##
      probabilities: 0.000 0.000 0.000 0.714 0.000 0.000 0.000 0.143 0.143
0.000
##
## Node number 615: 49 observations
     predicted class=7
                        expected loss=0.1632653
                                                 P(node) =0.001944059
##
##
       class counts:
                               5
                                     2
                                                                   41
                                                                          0
1
##
      probabilities: 0.000 0.102 0.041 0.000 0.000 0.000 0.000 0.837 0.000
0.020
##
## Node number 624: 26 observations,
                                        complexity param=0.0002976988
     predicted class=1 expected loss=0.5 P(node) =0.001031541
##
       class counts:
                         0
                              13
                                     0
                                            3
                                                        1
                                                              0
                                                                    0
                                                                          9
0
```

```
probabilities: 0.000 0.500 0.000 0.115 0.000 0.038 0.000 0.000 0.346
##
0.000
##
     left son=1248 (14 obs) right son=1249 (12 obs)
     Primary splits:
##
##
         269 < 25.5 to the left,
                                   improve=8.309524, (0 missing)
##
         573 < 251.5 to the left,
                                   improve=7.825000, (0 missing)
##
         268 < 169
                     to the left,
                                   improve=6.923077, (0 missing)
         241 < 7.5
##
                     to the left,
                                   improve=6.896970, (0 missing)
##
                                   improve=6.896970, (0 missing)
         374 < 14.5 to the left,
##
     Surrogate splits:
##
         241 < 7.5
                     to the left,
                                   agree=0.962, adj=0.917, (0 split)
         268 < 169
                                   agree=0.962, adj=0.917, (0 split)
##
                     to the left,
##
         212 < 99
                     to the left,
                                   agree=0.923, adj=0.833, (0 split)
##
         213 < 19.5
                     to the left,
                                   agree=0.923, adj=0.833, (0 split)
##
         240 < 115
                     to the left,
                                   agree=0.923, adj=0.833, (0 split)
##
## Node number 625: 9 observations
##
     predicted class=7
                        expected loss=0.1111111 P(node) =0.000357072
##
       class counts:
                         0
                               0
                                                                          0
                                     0
1
##
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.889 0.000
0.111
##
## Node number 644: 1370 observations,
                                          complexity param=0.0002456015
     predicted class=3
                        expected loss=0.02773723 P(node) =0.05435429
##
       class counts:
                         0
                               2
                                    10 1332
                                                      14
                                                                         12
0
##
      probabilities: 0.000 0.001 0.007 0.972 0.000 0.010 0.000 0.000 0.009
0.000
##
     left son=1288 (1360 obs) right son=1289 (10 obs)
##
     Primary splits:
##
         487 < 148
                     to the left,
                                   improve=14.791020, (0 missing)
##
         488 < 58.5 to the left,
                                   improve=13.689060, (0 missing)
##
         341 < 70
                     to the left,
                                   improve=12.826310, (0 missing)
                                   improve=10.885130, (0 missing)
##
         342 < 147.5 to the left,
##
         313 < 154
                     to the left, improve= 9.880721, (0 missing)
##
     Surrogate splits:
##
         488 < 63
                                   agree=0.997, adj=0.6, (0 split)
                     to the left,
##
         515 < 248.5 to the left,
                                   agree=0.996, adj=0.4, (0 split)
##
## Node number 645: 23 observations,
                                        complexity param=0.0002232741
##
     predicted class=5
                        expected loss=0.6086957 P(node) =0.0009125174
##
       class counts:
                         0
                               0
                                           5
                                                 0
                                                       9
                                                             0
                                                                          4
5
      probabilities: 0.000 0.000 0.000 0.217 0.000 0.391 0.000 0.000 0.174
##
0.217
##
     left son=1290 (16 obs) right son=1291 (7 obs)
##
     Primary splits:
##
         524 < 20
                     to the right, improve=4.090839, (0 missing)
##
         496 < 36 to the right, improve=3.958696, (0 missing)
```

```
to the left, improve=3.701003, (0 missing)
##
         296 < 16
##
         580 < 1
                     to the right, improve=3.558696, (0 missing)
         294 < 109.5 to the right, improve=3.555124, (0 missing)
##
##
     Surrogate splits:
##
         496 < 36
                     to the right, agree=0.957, adj=0.857, (0 split)
##
         552 < 23.5
                     to the right, agree=0.957, adj=0.857, (0 split)
##
         205 < 66
                     to the right, agree=0.870, adj=0.571, (0 split)
         468 < 36
                     to the right, agree=0.870, adj=0.571, (0 split)
##
         492 < 29
##
                     to the left, agree=0.870, adj=0.571, (0 split)
##
## Node number 646: 16 observations
##
     predicted class=3 expected loss=0.1875 P(node) =0.0006347947
##
       class counts:
                         0
                               0
                                     0
                                          13
                                                 0
                                                       0
                                                             0
                                                                   1
                                                                          2
0
##
      probabilities: 0.000 0.000 0.000 0.813 0.000 0.000 0.000 0.062 0.125
0.000
##
## Node number 647: 29 observations,
                                        complexity param=0.0002456015
##
     predicted class=5
                        expected loss=0.4827586 P(node) =0.001150565
##
       class counts:
                         0
                               6
                                     0
                                           4
                                                 0
                                                      15
                                                             0
                                                                    1
                                                                          3
0
      probabilities: 0.000 0.207 0.000 0.138 0.000 0.517 0.000 0.034 0.103
##
0.000
##
     left son=1294 (12 obs) right son=1295 (17 obs)
##
     Primary splits:
                                   improve=8.074037, (0 missing)
##
         185 < 63.5 to the left,
##
         213 < 0.5
                     to the left,
                                   improve=6.834218, (0 missing)
         466 < 27.5 to the left,
                                   improve=6.752799, (0 missing)
##
##
         628 < 16.5
                     to the left,
                                   improve=6.752799, (0 missing)
##
         629 < 27
                     to the left,
                                   improve=6.752799, (0 missing)
##
     Surrogate splits:
##
         213 < 0.5
                     to the left,
                                   agree=0.966, adj=0.917, (0 split)
                                   agree=0.931, adj=0.833, (0 split)
##
         157 < 9
                     to the left,
##
         158 < 4
                     to the left,
                                   agree=0.931, adj=0.833, (0 split)
##
         186 < 18
                                   agree=0.931, adj=0.833, (0 split)
                     to the left,
##
         156 < 8
                     to the left, agree=0.897, adj=0.750, (0 split)
##
## Node number 652: 13 observations
##
     predicted class=3
                        expected loss=0.07692308 P(node) =0.0005157707
##
       class counts:
                         1
                               0
                                     0
                                          12
0
##
      probabilities: 0.077 0.000 0.000 0.923 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 653: 12 observations
##
     predicted class=5
                        expected loss=0.5833333 P(node) =0.000476096
##
       class counts:
                         1
                                     0
                                                             1
                                                                          4
1
##
      probabilities: 0.083 0.000 0.000 0.000 0.417 0.083 0.000 0.333
0.083
```

```
##
## Node number 658: 29 observations
##
     predicted class=3
                        expected loss=0.3103448 P(node) =0.001150565
       class counts:
                               3
##
                         0
                                     1
                                          20
                                                        2
                                                              3
                                                                          0
0
      probabilities: 0.000 0.103 0.034 0.690 0.000 0.069 0.103 0.000 0.000
##
0.000
##
## Node number 659: 30 observations,
                                        complexity param=0.0002232741
##
     predicted class=5
                        expected loss=0.3666667 P(node) =0.00119024
##
       class counts:
                         5
                               0
                                     0
                                           2
                                                  0
                                                       19
                                                                          1
0
##
      probabilities: 0.167 0.000 0.000 0.067 0.000 0.633 0.000 0.100 0.033
0.000
##
     left son=1318 (7 obs) right son=1319 (23 obs)
##
     Primary splits:
##
         412 < 5.5
                     to the right, improve=6.480331, (0 missing)
##
         384 < 6
                     to the right, improve=5.536232, (0 missing)
                     to the right, improve=5.416667, (0 missing)
##
         356 < 8.5
##
         357 < 2.5
                     to the right, improve=5.416667, (0 missing)
##
         440 < 15.5 to the right, improve=5.089027, (0 missing)
##
     Surrogate splits:
##
         330 < 239.5 to the right, agree=0.967, adj=0.857, (0 split)
##
         357 < 111.5 to the right, agree=0.967, adj=0.857, (0 split)
##
         384 < 70.5 to the right, agree=0.967, adj=0.857, (0 split)
         385 < 40.5 to the right, agree=0.967, adj=0.857, (0 split)
##
         413 < 95.5 to the right, agree=0.967, adj=0.857, (0 split)
##
##
## Node number 662: 30 observations,
                                        complexity param=0.0002232741
##
     predicted class=3
                        expected loss=0.4333333 P(node) =0.00119024
                                                       5
##
       class counts:
                         0
                               0
                                     0
                                          17
                                                  0
                                                              2
                                                                    1
                                                                          2
3
##
      probabilities: 0.000 0.000 0.000 0.567 0.000 0.167 0.067 0.033 0.067
0.100
##
     left son=1324 (22 obs) right son=1325 (8 obs)
##
     Primary splits:
##
         324 < 153.5 to the right, improve=6.228788, (0 missing)
##
                     to the right, improve=6.058333, (0 missing)
         352 < 239
         187 < 208.5 to the right, improve=5.403922, (0 missing)
##
         439 < 26.5 to the right, improve=5.403922, (0 missing)
##
##
         353 < 117
                     to the right, improve=5.333333, (0 missing)
##
     Surrogate splits:
##
         323 < 120.5 to the right, agree=0.933, adj=0.750, (0 split)
##
         325 < 66.5 to the right, agree=0.933, adj=0.750, (0 split)
##
         236 < 3.5
                     to the right, agree=0.900, adj=0.625, (0 split)
##
         247 < 60.5
                     to the left, agree=0.900, adj=0.625, (0 split)
##
         274 < 187
                     to the left, agree=0.900, adj=0.625, (0 split)
##
## Node number 663: 101 observations,
                                         complexity param=0.0002232741
     predicted class=5 expected loss=0.1089109 P(node) =0.004007141
```

```
##
       class counts:
                                                       90
0
##
      probabilities: 0.000 0.000 0.000 0.079 0.000 0.891 0.010 0.000 0.020
0.000
##
     left son=1326 (8 obs) right son=1327 (93 obs)
##
     Primary splits:
##
         124 < 83
                     to the right, improve=9.105371, (0 missing)
##
         125 < 130
                     to the right, improve=6.255909, (0 missing)
         97 < 12.5 to the right, improve=4.693280, (0 missing)
##
         440 < 252.5 to the right, improve=4.693280, (0 missing)
##
##
         552 < 170
                     to the right, improve=4.693280, (0 missing)
##
     Surrogate splits:
##
         122 < 0.5
                     to the right, agree=0.98, adj=0.750, (0 split)
##
         123 < 60
                     to the right, agree=0.98, adj=0.750, (0 split)
                     to the right, agree=0.97, adj=0.625, (0 split)
##
         96 < 43
##
         152 < 116.5 to the right, agree=0.97, adj=0.625, (0 split)
##
         94 < 61.5 to the right, agree=0.96, adj=0.500, (0 split)
##
## Node number 668: 7 observations
##
     predicted class=0
                        expected loss=0.2857143 P(node) =0.0002777227
##
       class counts:
                         5
                               0
                                     0
                                            2
                                                  0
                                                        0
                                                              0
                                                                    0
                                                                          0
0
##
      probabilities: 0.714 0.000 0.000 0.286 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 669: 51 observations
##
     predicted class=5
                        expected loss=0.1568627
                                                  P(node) =0.002023408
                                                       43
##
       class counts:
                         0
                               0
                                     1
                                            4
                                                              1
                                                                    1
                                                                          1
0
      probabilities: 0.000 0.000 0.020 0.078 0.000 0.843 0.020 0.020 0.020
##
0.000
##
## Node number 670: 43 observations,
                                         complexity param=0.0002456015
                        expected loss=0.3953488 P(node) =0.001706011
##
     predicted class=4
##
                                                        0
       class counts:
                         0
                               0
                                     0
                                            6
                                                 26
                                                                   10
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 0.140 0.605 0.000 0.023 0.233 0.000
0.000
##
     left son=1340 (23 obs) right son=1341 (20 obs)
##
     Primary splits:
##
         231 < 13
                     to the right, improve=8.879980, (0 missing)
##
         203 < 3
                     to the right, improve=7.843023, (0 missing)
##
         259 < 5
                     to the right, improve=7.584251, (0 missing)
                     to the right, improve=7.133023, (0 missing)
##
         204 < 9.5
                     to the left, improve=6.586236, (0 missing)
##
         322 < 136
##
     Surrogate splits:
##
         259 < 5
                     to the right, agree=0.977, adj=0.95, (0 split)
##
                     to the right, agree=0.930, adj=0.85, (0 split)
         232 < 13.5
##
         260 < 11.5
                     to the right, agree=0.930, adj=0.85, (0 split)
##
         287 < 60.5 to the right, agree=0.930, adj=0.85, (0 split)
```

```
##
         203 < 3 to the right, agree=0.907, adj=0.80, (0 split)
##
## Node number 671: 70 observations,
                                        complexity param=0.0003125837
                        expected loss=0.5571429 P(node) =0.002777227
     predicted class=9
##
       class counts:
                         0
                               7
                                     0
                                          10
                                                  4
                                                        5
                                                              6
                                                                    1
                                                                          6
31
##
      probabilities: 0.000 0.100 0.000 0.143 0.057 0.071 0.086 0.014 0.086
0.443
##
     left son=1342 (27 obs) right son=1343 (43 obs)
##
     Primary splits:
##
         325 < 5
                     to the left,
                                   improve=11.360110, (0 missing)
                     to the right, improve=10.020820, (0 missing)
##
         182 < 5
##
         324 < 167.5 to the left,
                                   improve= 8.603102, (0 missing)
##
         155 < 60.5 to the right, improve= 8.141367, (0 missing)
##
         353 < 42
                     to the left,
                                   improve= 8.109524, (0 missing)
##
     Surrogate splits:
##
         324 < 80.5 to the left, agree=0.900, adj=0.741, (0 split)
         297 < 11
##
                     to the left,
                                   agree=0.871, adj=0.667, (0 split)
                                   agree=0.871, adj=0.667, (0 split)
##
         353 < 31.5 to the left,
##
         352 < 127.5 to the left, agree=0.843, adj=0.593, (0 split)
##
         155 < 25.5 to the right, agree=0.814, adj=0.519, (0 split)
##
## Node number 676: 101 observations
##
     predicted class=3
                        expected loss=0.1485149 P(node) =0.004007141
##
       class counts:
                         0
                               0
                                     0
                                          86
                                                  0
                                                        3
                                                              0
                                                                    0
                                                                          6
6
      probabilities: 0.000 0.000 0.000 0.851 0.000 0.030 0.000 0.000 0.059
##
0.059
##
## Node number 677: 11 observations
##
     predicted class=8
                        expected loss=0.09090909 P(node) =0.0004364213
##
       class counts:
                                     0
                                                                         10
0
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.091 0.000 0.000 0.909
##
0.000
##
## Node number 678: 40 observations,
                                        complexity param=0.0001786193
                        expected loss=0.2 P(node) =0.001586987
##
     predicted class=3
       class counts:
##
                         0
                               0
                                     0
                                          32
                                                 0
                                                        6
                                                              0
                                                                    0
                                                                          2
0
##
      probabilities: 0.000 0.000 0.000 0.800 0.000 0.150 0.000 0.000 0.050
0.000
##
     left son=1356 (32 obs) right son=1357 (8 obs)
##
     Primary splits:
##
         288 < 216
                                   improve=7.212500, (0 missing)
                     to the left,
##
         260 < 176.5 to the left,
                                   improve=6.131183, (0 missing)
##
         289 < 234.5 to the left,
                                   improve=5.642424, (0 missing)
##
                                   improve=5.337500, (0 missing)
         261 < 168.5 to the left,
##
         287 < 29.5 to the left,
                                   improve=5.266667, (0 missing)
##
     Surrogate splits:
```

```
289 < 234.5 to the left,
                                   agree=0.975, adj=0.875, (0 split)
##
##
         287 < 29.5 to the left,
                                   agree=0.950, adj=0.750, (0 split)
                                   agree=0.925, adj=0.625, (0 split)
##
         260 < 110
                     to the left,
                                   agree=0.900, adj=0.500, (0 split)
##
         316 < 239
                     to the left,
##
         428 < 222.5 to the left,
                                   agree=0.900, adj=0.500, (0 split)
##
## Node number 679: 140 observations,
                                         complexity param=0.0004465482
     predicted class=5 expected loss=0.5785714 P(node) =0.005554453
##
##
       class counts:
                         5
                               1
                                          27
                                                      59
                                                                        19
23
##
      probabilities: 0.036 0.007 0.007 0.193 0.000 0.421 0.014 0.021 0.136
0.164
##
     left son=1358 (102 obs) right son=1359 (38 obs)
##
     Primary splits:
##
         294 < 3
                     to the right, improve=11.174260, (0 missing)
##
         293 < 70
                     to the right, improve=11.042710, (0 missing)
         320 < 182.5 to the right, improve=10.150730, (0 missing)
##
##
         247 < 16.5 to the right, improve=10.000000, (0 missing)
                     to the right, improve= 9.077527, (0 missing)
##
         596 < 15
##
     Surrogate splits:
##
         295 < 32
                     to the right, agree=0.914, adj=0.684, (0 split)
##
         293 < 42
                     to the right, agree=0.907, adj=0.658, (0 split)
##
         322 < 192
                     to the right, agree=0.864, adj=0.500, (0 split)
##
         321 < 166
                     to the right, agree=0.843, adj=0.421, (0 split)
                     to the right, agree=0.829, adj=0.368, (0 split)
##
         320 < 164
##
## Node number 684: 23 observations
##
     predicted class=3
                        expected loss=0.08695652 P(node) =0.0009125174
##
       class counts:
                                          21
                         0
                               0
                                     0
                                                                         1
1
##
      probabilities: 0.000 0.000 0.000 0.913 0.000 0.000 0.000 0.000 0.043
0.043
##
## Node number 685: 10 observations
     predicted class=5
                       expected loss=0.5 P(node) =0.0003967467
##
       class counts:
                         2
                               0
                                           1
                                                 0
                                                       5
                                                             1
                                                                         1
                                     0
                                                                   0
0
##
      probabilities: 0.200 0.000 0.000 0.100 0.000 0.500 0.100 0.000 0.100
0.000
##
## Node number 686: 18 observations
##
     predicted class=3
                        expected loss=0.2777778
                                                P(node) =0.000714144
##
       class counts:
                               0
                                     0
                                          13
                                                       4
                                                                         1
      probabilities: 0.000 0.000 0.000 0.722 0.000 0.222 0.000 0.000 0.056
##
0.000
## Node number 687: 422 observations
     predicted class=5 expected loss=0.05924171 P(node) =0.01674271
## class counts: 0 0 0 15 0 397
                                                             5 0
```

```
2
      probabilities: 0.000 0.000 0.000 0.036 0.000 0.941 0.012 0.000 0.007
##
0.005
##
## Node number 688: 63 observations
     predicted class=4 expected loss=0.0952381 P(node) =0.002499504
##
##
       class counts:
                         0
                               0
                                     0
                                                57
                                                       0
                                                                          0
                                           1
                                                             0
3
      probabilities: 0.000 0.000 0.000 0.016 0.905 0.000 0.000 0.032 0.000
##
0.048
##
## Node number 689: 7 observations
     predicted class=6 expected loss=0.4285714 P(node) =0.0002777227
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                       3
                                                             4
0
      probabilities: 0.000 0.000 0.000 0.000 0.429 0.571 0.000 0.000
##
0.000
##
## Node number 698: 9 observations
     predicted class=3 expected loss=0 P(node) =0.000357072
       class counts:
##
                         0
                                           9
                               0
                                     0
                                                 0
                                                       0
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 1.000 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 699: 28 observations
     predicted class=9 expected loss=0.5 P(node) =0.001110891
                                                                          2
##
       class counts:
                         0
                               2
                                     0
                                           2
                                                 6
                                                       1
                                                                    1
14
      probabilities: 0.000 0.071 0.000 0.071 0.214 0.036 0.000 0.036 0.071
##
0.500
##
## Node number 702: 9 observations
     predicted class=8 expected loss=0.4444444 P(node) =0.000357072
##
                         2
                               0
                                     2
                                                       0
                                                                          5
       class counts:
                                           0
                                                 0
0
      probabilities: 0.222 0.000 0.222 0.000 0.000 0.000 0.000 0.000 0.556
##
0.000
##
## Node number 703: 238 observations
     predicted class=9 expected loss=0.1008403 P(node) =0.009442571
##
       class counts:
                         1
                                     0
                                           4
                                                       1
                                                                  10
214
##
      probabilities: 0.004 0.000 0.000 0.017 0.034 0.004 0.000 0.042 0.000
0.899
##
## Node number 712: 14 observations
     predicted class=1 expected loss=0.07142857 P(node) =0.0005554453
##
       class counts:
                         0
                              13
                                     0
                                           0
                                                 0
                                                       0
                                                             1
                                                                    0
                                                                          0
0
```

```
probabilities: 0.000 0.929 0.000 0.000 0.000 0.000 0.071 0.000 0.000
0.000
##
## Node number 713: 25 observations,
                                        complexity param=0.0003125837
##
     predicted class=4
                        expected loss=0.68 P(node) =0.0009918667
##
       class counts:
                         0
                               1
                                     0
                                           0
                                                       7
                                                                         2
1
##
      probabilities: 0.000 0.040 0.000 0.000 0.320 0.280 0.240 0.000 0.080
0.040
##
     left son=1426 (17 obs) right son=1427 (8 obs)
##
     Primary splits:
         293 < 127.5 to the left,
##
                                   improve=6.108824, (0 missing)
                                   improve=5.319481, (0 missing)
##
         572 < 19.5 to the left,
##
         294 < 94
                     to the left,
                                   improve=5.235897, (0 missing)
##
         320 < 22.5 to the left,
                                   improve=5.235897, (0 missing)
##
         321 < 63
                     to the left,
                                   improve=5.235897, (0 missing)
##
     Surrogate splits:
##
         273 < 155
                                   agree=0.92, adj=0.750, (0 split)
                     to the left,
##
         274 < 20.5 to the left,
                                   agree=0.92, adj=0.750, (0 split)
##
         292 < 20.5 to the left,
                                   agree=0.92, adj=0.750, (0 split)
##
                    to the left,
                                   agree=0.88, adj=0.625, (0 split)
         246 < 18.5
##
         265 < 14.5 to the left,
                                   agree=0.88, adj=0.625, (0 split)
##
## Node number 714: 9 observations
     predicted class=0
                        expected loss=0.1111111 P(node) =0.000357072
##
       class counts:
                         8
                               0
                                                       0
                                                             1
                                                                         0
0
##
      probabilities: 0.889 0.000 0.000 0.000 0.000 0.111 0.000 0.000
0.000
##
## Node number 715: 35 observations,
                                        complexity param=0.0004018934
     predicted class=8
                        expected loss=0.6 P(node) =0.001388613
##
       class counts:
                         1
                                    12
                                           3
                                                 1
                                                             2
                                                                        14
2
##
      probabilities: 0.029 0.000 0.343 0.086 0.029 0.000 0.057 0.000 0.400
0.057
##
     left son=1430 (16 obs) right son=1431 (19 obs)
##
     Primary splits:
##
         550 < 139
                   to the right, improve=6.933647, (0 missing)
         577 < 205.5 to the right, improve=6.177640, (0 missing)
##
##
         551 < 219.5 to the right, improve=5.885714, (0 missing)
         552 < 217.5 to the right, improve=5.134161, (0 missing)
##
##
         545 < 59.5 to the right, improve=5.004295, (0 missing)
##
     Surrogate splits:
##
         551 < 41
                     to the right, agree=0.943, adj=0.875, (0 split)
##
         578 < 3.5
                     to the right, agree=0.886, adj=0.750, (0 split)
##
         579 < 21.5 to the right, agree=0.886, adj=0.750, (0 split)
##
                     to the left, agree=0.829, adj=0.625, (0 split)
         464 < 1.5
##
         523 < 37.5 to the right, agree=0.829, adj=0.625, (0 split)
##
```

```
## Node number 732: 14 observations
     predicted class=5 expected loss=0.2857143 P(node) =0.0005554453
##
##
       class counts:
                         0
                               0
                                     0
                                           3
                                                 0
                                                       10
                                                              1
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 0.214 0.000 0.714 0.071 0.000 0.000
0.000
##
## Node number 733: 7 observations
     predicted class=6 expected loss=0
                                         P(node) = 0.0002777227
##
       class counts:
                         0
                               0
                                                 0
                                                       0
                                                                          0
                                     0
                                           0
0
      probabilities: 0.000 0.000 0.000 0.000 0.000 1.000 0.000 0.000
##
0.000
##
## Node number 746: 16 observations
     predicted class=5 expected loss=0.375 P(node) =0.0006347947
##
       class counts:
                         0
                               0
                                     0
                                           2
                                                 0
                                                       10
                                                                          3
0
##
      probabilities: 0.000 0.000 0.000 0.125 0.000 0.625 0.062 0.000 0.188
0.000
##
## Node number 747: 12 observations
     predicted class=8
                        expected loss=0.25 P(node) =0.000476096
##
       class counts:
                         0
                                     0
                                           2
                                                                          9
0
##
      probabilities: 0.000 0.000 0.000 0.167 0.000 0.000 0.083 0.000 0.750
0.000
##
## Node number 764: 24 observations,
                                        complexity param=0.0001786193
     predicted class=2 expected loss=0.2916667 P(node) =0.000952192
##
##
       class counts:
                         0
                               0
                                    17
                                           1
                                                 a
                                                       0
                                                              1
                                                                    0
                                                                          5
0
##
      probabilities: 0.000 0.000 0.708 0.042 0.000 0.000 0.042 0.000 0.208
0.000
##
     left son=1528 (17 obs) right son=1529 (7 obs)
##
     Primary splits:
         602 < 175
##
                     to the right, improve=5.808123, (0 missing)
##
         212 < 2
                     to the right, improve=4.708333, (0 missing)
##
         574 < 0.5
                     to the right, improve=4.708333, (0 missing)
         603 < 251.5 to the right, improve=4.708333, (0 missing)
##
##
         347 < 36.5 to the left, improve=4.665266, (0 missing)
##
     Surrogate splits:
##
         574 < 0.5
                     to the right, agree=0.958, adj=0.857, (0 split)
##
         603 < 207.5 to the right, agree=0.958, adj=0.857, (0 split)
                     to the right, agree=0.917, adj=0.714, (0 split)
##
         184 < 160
##
         486 < 246
                     to the right, agree=0.917, adj=0.714, (0 split)
##
         575 < 25
                     to the right, agree=0.917, adj=0.714, (0 split)
##
## Node number 765: 33 observations
     predicted class=8 expected loss=0.1818182 P(node) =0.001309264
```

```
##
       class counts: 1
                                     1
                                           2
0
##
      probabilities: 0.030 0.000 0.030 0.061 0.000 0.030 0.000 0.030 0.818
0.000
##
## Node number 766: 36 observations,
                                        complexity param=0.0001786193
     predicted class=8
                        expected loss=0.5 P(node) =0.001428288
##
       class counts:
                         0
                                     0
                                          10
                                                 0
                                                       5
                                                                         18
1
##
      probabilities: 0.000 0.000 0.000 0.278 0.000 0.139 0.056 0.000 0.500
0.028
##
     left son=1532 (11 obs) right son=1533 (25 obs)
##
     Primary splits:
##
         289 < 1.5
                     to the left,
                                   improve=7.614343, (0 missing)
##
         260 < 30
                     to the left,
                                   improve=6.635642, (0 missing)
##
         288 < 8.5
                     to the left,
                                   improve=6.539391, (0 missing)
                                   improve=5.462963, (0 missing)
##
         298 < 5.5
                     to the left,
##
         268 < 147.5 to the right, improve=5.388889, (0 missing)
##
     Surrogate splits:
##
         261 < 2
                     to the left, agree=0.944, adj=0.818, (0 split)
##
         288 < 8.5
                     to the left,
                                   agree=0.944, adj=0.818, (0 split)
##
         268 < 147.5 to the right, agree=0.889, adj=0.636, (0 split)
##
         290 < 19
                     to the left,
                                   agree=0.889, adj=0.636, (0 split)
##
         295 < 232
                     to the right, agree=0.889, adj=0.636, (0 split)
##
## Node number 767: 309 observations
     predicted class=8
##
                        expected loss=0.04530744 P(node) =0.01225947
                                                       1
##
       class counts:
                         1
                               0
                                     0
                                           2
                                                 0
                                                             8
                                                                    0
                                                                        295
2
      probabilities: 0.003 0.000 0.000 0.006 0.000 0.003 0.026 0.000 0.955
##
0.006
##
## Node number 770: 299 observations,
                                         complexity param=0.0001786193
##
     predicted class=0 expected loss=0.1170569 P(node) =0.01186273
##
                                           7
                                                                          0
       class counts:
                       264
                               0
                                     9
                                                      14
                                                             3
1
##
      probabilities: 0.883 0.000 0.030 0.023 0.000 0.047 0.010 0.003 0.000
0.003
##
     left son=1540 (267 obs) right son=1541 (32 obs)
##
     Primary splits:
##
         296 < 135
                     to the left,
                                   improve=14.112060, (0 missing)
##
         295 < 40.5
                    to the left,
                                   improve=10.053470, (0 missing)
##
         323 < 37
                     to the left,
                                   improve= 8.928094, (0 missing)
##
         324 < 29.5 to the left,
                                   improve= 8.732347, (0 missing)
##
         214 < 0.5
                     to the right, improve= 8.321044, (0 missing)
     Surrogate splits:
##
##
         324 < 29.5 to the left,
                                   agree=0.963, adj=0.656, (0 split)
##
         295 < 237.5 to the left,
                                   agree=0.950, adj=0.531, (0 split)
##
         323 < 37
                     to the left,
                                   agree=0.936, adj=0.406, (0 split)
##
         268 < 248 to the left,
                                   agree=0.926, adj=0.313, (0 split)
```

```
563 < 11.5 to the left, agree=0.913, adj=0.187, (0 split)
##
##
## Node number 771: 33 observations,
                                        complexity param=0.0001786193
                        expected loss=0.5151515 P(node) =0.001309264
     predicted class=2
##
       class counts:
                        12
                               0
                                    16
                                            0
                                                  a
                                                        0
                                                              2
                                                                          0
0
##
      probabilities: 0.364 0.000 0.485 0.000 0.000 0.000 0.061 0.091 0.000
0.000
##
     left son=1542 (11 obs) right son=1543 (22 obs)
##
     Primary splits:
##
         455 < 4
                     to the right, improve=7.666667, (0 missing)
                     to the right, improve=7.666667, (0 missing)
##
         482 < 13.5
         483 < 76
                     to the right, improve=7.666667, (0 missing)
##
##
         214 < 158
                     to the right, improve=7.521613, (0 missing)
##
         369 < 40.5 to the right, improve=6.884848, (0 missing)
     Surrogate splits:
##
##
         483 < 76
                     to the right, agree=1.000, adj=1.000, (0 split)
##
         482 < 45.5 to the right, agree=0.970, adj=0.909, (0 split)
         511 < 207.5 to the right, agree=0.970, adj=0.909, (0 split)
##
##
         510 < 172.5 to the right, agree=0.939, adj=0.818, (0 split)
##
         454 < 3
                     to the right, agree=0.909, adj=0.727, (0 split)
##
## Node number 792: 11 observations
     predicted class=2
                        expected loss=0.4545455 P(node) =0.0004364213
##
##
       class counts:
                         1
                               1
                                     6
                                            0
                                                  0
                                                        2
                                                              1
                                                                    0
                                                                          0
0
##
      probabilities: 0.091 0.091 0.545 0.000 0.000 0.182 0.091 0.000 0.000
0.000
##
## Node number 793: 44 observations
##
     predicted class=3
                        expected loss=0.2954545 P(node) =0.001745685
##
       class counts:
                         2
                                     4
                                           31
0
      probabilities: 0.045 0.000 0.091 0.705 0.000 0.114 0.000 0.045 0.000
##
0.000
##
## Node number 824: 34 observations,
                                        complexity param=0.0002976988
                        expected loss=0.7058824 P(node) =0.001348939
##
     predicted class=5
       class counts:
##
                         4
                               0
                                     8
                                            3
                                                  1
                                                       10
                                                              5
                                                                    0
                                                                          3
0
##
      probabilities: 0.118 0.000 0.235 0.088 0.029 0.294 0.147 0.000 0.088
0.000
##
     left son=1648 (10 obs) right son=1649 (24 obs)
##
     Primary splits:
##
         580 < 144
                     to the right, improve=4.645098, (0 missing)
##
         554 < 19
                     to the right, improve=4.438220, (0 missing)
##
         582 < 7.5
                     to the right, improve=4.438220, (0 missing)
##
                     to the left, improve=4.200226, (0 missing)
         247 < 3
##
         579 < 69
                     to the right, improve=4.189542, (0 missing)
##
     Surrogate splits:
```

```
581 < 28 to the right, agree=0.971, adj=0.9, (0 split)
##
##
         552 < 116.5 to the right, agree=0.941, adj=0.8, (0 split)
         553 < 20.5 to the right, agree=0.941, adj=0.8, (0 split)
##
                     to the right, agree=0.912, adj=0.7, (0 split)
##
         554 < 19
##
         582 < 7.5
                     to the right, agree=0.912, adj=0.7, (0 split)
##
## Node number 825: 10 observations
##
     predicted class=8 expected loss=0.1 P(node) =0.0003967467
       class counts:
                                           0
##
                         0
                               0
                                     0
                                                                          9
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.100 0.000 0.900
0.000
##
## Node number 836: 8 observations
     predicted class=0 expected loss=0 P(node) =0.0003173973
##
       class counts:
                         8
                                     0
                                           0
                                                 0
                                                       0
0
##
      probabilities: 1.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 837: 17 observations
     predicted class=5 expected loss=0.2941176 P(node) =0.0006744694
##
       class counts:
                               0
                                                       12
                         0
                                     0
                                           1
                                                 0
                                                              3
                                                                    0
                                                                          1
0
      probabilities: 0.000 0.000 0.000 0.059 0.000 0.706 0.176 0.000 0.059
##
0.000
##
## Node number 838: 19 observations
     predicted class=2
                        expected loss=0.3157895 P(node) =0.0007538187
##
##
       class counts:
                         2
                               0
                                    13
                                                 2
                                                       0
                                                             0
                                                                          0
                                           1
                                                                    0
1
      probabilities: 0.105 0.000 0.684 0.053 0.105 0.000 0.000 0.000 0.000
##
0.053
##
## Node number 839: 14 observations
     predicted class=9 expected loss=0.1428571 P(node) =0.0005554453
##
##
       class counts:
                         0
                                     0
                                                 1
                                                                          0
12
      probabilities: 0.000 0.000 0.000 0.000 0.071 0.000 0.000 0.071 0.000
##
0.857
##
## Node number 866: 28 observations,
                                        complexity param=0.0001786193
     predicted class=6
                        expected loss=0.7142857 P(node) =0.001110891
##
       class counts:
                         1
                               7
                                     0
                                           4
                                                 0
                                                       6
                                                             8
                                                                    0
                                                                          0
2
##
      probabilities: 0.036 0.250 0.000 0.143 0.000 0.214 0.286 0.000 0.000
0.071
##
     left son=1732 (18 obs) right son=1733 (10 obs)
##
     Primary splits:
##
         515 < 28.5 to the left, improve=5.084127, (0 missing)
```

```
##
         544 < 196.5 to the left.
                                   improve=4.978571, (0 missing)
##
         657 < 96
                     to the left,
                                   improve=4.747285, (0 missing)
                                   improve=4.678571, (0 missing)
##
         188 < 14.5 to the right,
##
                     to the left,
                                   improve=4.602368, (0 missing)
         656 < 8.5
##
     Surrogate splits:
         516 < 173.5 to the left,
##
                                   agree=0.964, adj=0.9, (0 split)
                     to the left,
##
         487 < 16
                                   agree=0.929, adj=0.8, (0 split)
         488 < 203.5 to the left,
                                   agree=0.929, adj=0.8, (0 split)
##
                                   agree=0.929, adj=0.8, (0 split)
##
         544 < 12
                     to the left,
##
         543 < 22
                     to the left,
                                   agree=0.893, adj=0.7, (0 split)
##
## Node number 867: 9 observations
##
     predicted class=5 expected loss=0 P(node) =0.000357072
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                 0
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 0.000 1.000 0.000 0.000 0.000
0.000
##
## Node number 896: 912 observations
     predicted class=2 expected loss=0.03399123 P(node) =0.0361833
##
       class counts:
                         0
                               0
                                                       0
                                                                          4
                                   881
                                          15
                                                 0
                                                              0
                                                                   12
0
##
      probabilities: 0.000 0.000 0.966 0.016 0.000 0.000 0.000 0.013 0.004
0.000
##
## Node number 897: 10 observations
     predicted class=8 expected loss=0.3 P(node) =0.0003967467
                                                                          7
##
       class counts:
                         0
                               0
                                     1
                                           0
                                                 0
                                                       1
                                                              0
                                                                    0
1
      probabilities: 0.000 0.000 0.100 0.000 0.100 0.100 0.000 0.000 0.700
##
0.100
##
## Node number 900: 22 observations
     predicted class=2 expected loss=0.2272727
##
                                                 P(node) =0.0008728427
##
                                    17
                                                       0
       class counts:
                         3
                               0
                                           0
                                                              2
                                                                          0
0
##
      probabilities: 0.136 0.000 0.773 0.000 0.000 0.000 0.091 0.000 0.000
0.000
##
## Node number 901: 13 observations
     predicted class=9
                        expected loss=0.1538462 P(node) =0.0005157707
##
       class counts:
                                     0
                                                 2
                                                                          0
11
##
      probabilities: 0.000 0.000 0.000 0.000 0.154 0.000 0.000 0.000 0.000
0.846
##
## Node number 904: 135 observations,
                                         complexity param=0.0005805126
     predicted class=1 expected loss=0.2592593 P(node) =0.00535608
##
       class counts:
                         0
                             100
                                    17
                                           1
                                                 2
                                                       3
                                                              6
                                                                    6
                                                                          0
0
```

```
probabilities: 0.000 0.741 0.126 0.007 0.015 0.022 0.044 0.044 0.000
##
0.000
##
     left son=1808 (107 obs) right son=1809 (28 obs)
     Primary splits:
##
##
         520 < 3
                     to the left,
                                   improve=23.79034, (0 missing)
                     to the right, improve=23.07407, (0 missing)
##
         351 < 79
##
         519 < 49.5
                     to the left,
                                   improve=23.00462, (0 missing)
                                   improve=22.79906, (0 missing)
         510 < 2.5
##
                     to the left,
##
                     to the right, improve=22.79529, (0 missing)
         352 < 194
##
     Surrogate splits:
##
         519 < 69.5
                     to the left,
                                   agree=0.963, adj=0.821, (0 split)
         547 < 2.5
                                   agree=0.956, adj=0.786, (0 split)
##
                     to the left,
##
         492 < 71
                     to the left,
                                   agree=0.948, adj=0.750, (0 split)
##
         521 < 3
                     to the left,
                                   agree=0.941, adj=0.714, (0 split)
##
         464 < 139.5 to the left,
                                   agree=0.933, adj=0.679, (0 split)
##
## Node number 905: 111 observations,
                                         complexity param=0.001384299
##
     predicted class=4
                        expected loss=0.4774775 P(node) =0.004403888
##
       class counts:
                         0
                                     2
                                           0
                                                 58
                                                             42
                                                                          3
2
##
      probabilities: 0.000 0.000 0.018 0.000 0.523 0.018 0.378 0.018 0.027
0.018
##
     left son=1810 (72 obs) right son=1811 (39 obs)
##
     Primary splits:
##
         573 < 221
                     to the left,
                                   improve=26.92487, (0 missing)
                     to the right, improve=26.23956, (0 missing)
##
         216 < 3.5
##
         438 < 73
                     to the right, improve=24.46467, (0 missing)
         574 < 101
                                   improve=23.81049, (0 missing)
##
                     to the left,
##
         488 < 105.5 to the right, improve=23.70271, (0 missing)
##
     Surrogate splits:
##
         572 < 142
                     to the left,
                                   agree=0.883, adj=0.667, (0 split)
                                   agree=0.865, adj=0.615, (0 split)
##
         574 < 142.5 to the left,
                                   agree=0.865, adj=0.615, (0 split)
##
         601 < 70.5 to the left,
                     to the right, agree=0.847, adj=0.564, (0 split)
##
         488 < 43.5
##
         459 < 5
                     to the right, agree=0.829, adj=0.513, (0 split)
##
## Node number 906: 150 observations,
                                         complexity param=0.000982406
##
     predicted class=2
                        expected loss=0.46 P(node) =0.0059512
##
       class counts:
                                           5
                         0
                               2
                                    81
                                                  1
                                                        0
                                                                   46
                                                                          6
9
##
      probabilities: 0.000 0.013 0.540 0.033 0.007 0.000 0.000 0.307 0.040
0.060
##
     left son=1812 (127 obs) right son=1813 (23 obs)
##
     Primary splits:
         678 < 45.5 to the left,
##
                                   improve=19.60675, (0 missing)
##
         566 < 74
                     to the right, improve=17.50022, (0 missing)
##
         706 < 3.5
                     to the left, improve=16.47333, (0 missing)
##
                     to the right, improve=16.11102, (0 missing)
         538 < 25
##
         679 < 102.5 to the left, improve=15.70316, (0 missing)
##
     Surrogate splits:
```

```
to the left,
                                   agree=0.973, adj=0.826, (0 split)
##
         677 < 3
##
         706 < 3.5
                     to the left,
                                   agree=0.967, adj=0.783, (0 split)
                                   agree=0.960, adj=0.739, (0 split)
##
         650 < 50.5
                     to the left,
                     to the left,
                                   agree=0.960, adj=0.739, (0 split)
##
         705 < 8
         679 < 0.5
##
                     to the left,
                                   agree=0.953, adj=0.696, (0 split)
##
## Node number 907: 91 observations,
                                        complexity param=0.0004465482
##
     predicted class=9
                        expected loss=0.3076923 P(node) =0.003610395
##
       class counts:
                         2
                                     4
                                           0
                                                  1
                                                                         13
63
##
      probabilities: 0.022 0.000 0.044 0.000 0.011 0.055 0.000 0.033 0.143
0.692
##
     left son=1814 (28 obs) right son=1815 (63 obs)
##
     Primary splits:
##
         599 < 6.5
                     to the right, improve=18.85958, (0 missing)
##
         627 < 74.5
                     to the right, improve=14.62795, (0 missing)
                     to the right, improve=14.29277, (0 missing)
##
         598 < 26
##
         626 < 29.5
                     to the right, improve=14.18974, (0 missing)
                     to the right, improve=13.52410, (0 missing)
##
         403 < 0.5
##
     Surrogate splits:
##
         598 < 26
                     to the right, agree=0.945, adj=0.821, (0 split)
##
         627 < 74.5
                     to the right, agree=0.934, adj=0.786, (0 split)
##
                     to the right, agree=0.923, adj=0.750, (0 split)
         600 < 4
##
         626 < 29.5
                     to the right, agree=0.923, adj=0.750, (0 split)
##
         570 < 36.5
                     to the right, agree=0.912, adj=0.714, (0 split)
##
## Node number 912: 13 observations
     predicted class=0
##
                        expected loss=0.6153846 P(node) =0.0005157707
##
       class counts:
                         5
                                     5
                                                              3
                               0
                                           0
                                                  0
                                                                          0
0
##
      probabilities: 0.385 0.000 0.385 0.000 0.000 0.000 0.231 0.000 0.000
0.000
##
## Node number 913: 7 observations
     predicted class=8 expected loss=0.1428571 P(node) =0.0002777227
##
       class counts:
                         0
                               0
                                                  1
                                                       0
                                                              0
                                                                    0
                                                                          6
                                     0
                                           0
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.143 0.000 0.000 0.000 0.857
0.000
##
## Node number 916: 132 observations,
                                         complexity param=0.0004018934
##
     predicted class=4
                        expected loss=0.1969697 P(node) =0.005237056
##
       class counts:
                         0
                                    10
                                               106
                                                                          2
0
      probabilities: 0.000 0.000 0.076 0.000 0.803 0.008 0.098 0.000 0.015
##
0.000
##
     left son=1832 (18 obs) right son=1833 (114 obs)
##
     Primary splits:
##
         127 < 2.5
                     to the right, improve=19.72116, (0 missing)
         126 < 6.5 to the left, improve=19.47208, (0 missing)
##
```

```
to the left.
                                   improve=18.35517, (0 missing)
##
         125 < 34
##
                                    improve=16.73281, (0 missing)
         97 < 2
                     to the left,
                     to the right, improve=15.73523, (0 missing)
##
         128 < 6.5
##
     Surrogate splits:
##
         99 < 1
                     to the right, agree=0.970, adj=0.778, (0 split)
##
         128 < 6.5
                     to the right, agree=0.970, adj=0.778, (0 split)
##
         126 < 6.5
                     to the right, agree=0.962, adj=0.722, (0 split)
                     to the right, agree=0.947, adj=0.611, (0 split)
##
         129 < 19
                     to the right, agree=0.939, adj=0.556, (0 split)
##
         98 < 68.5
##
## Node number 917: 23 observations,
                                         complexity param=0.0002232741
                        expected loss=0.4347826 P(node) =0.0009125174
##
     predicted class=7
##
       class counts:
                         0
                               0
                                      3
                                            0
                                                  0
                                                        0
                                                              0
                                                                   13
                                                                           5
2
##
      probabilities: 0.000 0.000 0.130 0.000 0.000 0.000 0.000 0.565 0.217
0.087
##
     left son=1834 (8 obs) right son=1835 (15 obs)
##
     Primary splits:
         486 < 162.5 to the right, improve=6.783333, (0 missing)
##
##
         376 < 55
                     to the left, improve=6.283333, (0 missing)
                                   improve=6.267857, (0 missing)
##
         430 < 5.5
                     to the left,
                     to the right, improve=6.150000, (0 missing)
##
         458 < 56
##
         290 < 13.5 to the right, improve=5.732143, (0 missing)
##
     Surrogate splits:
##
         485 < 50
                     to the right, agree=0.957, adj=0.875, (0 split)
                     to the right, agree=0.957, adj=0.875, (0 split)
##
         513 < 132
                     to the right, agree=0.913, adj=0.750, (0 split)
##
         458 < 56
         459 < 187.5 to the right, agree=0.913, adj=0.750, (0 split)
##
##
         460 < 247.5 to the right, agree=0.913, adj=0.750, (0 split)
##
## Node number 918: 85 observations,
                                         complexity param=0.0008037867
##
     predicted class=2
                        expected loss=0.4823529 P(node) =0.003372347
##
       class counts:
                        12
                                     44
                                                  1
                                                        1
                                                              1
                                                                    2
                                                                          23
1
##
      probabilities: 0.141 0.000 0.518 0.000 0.012 0.012 0.012 0.024 0.271
0.012
##
     left son=1836 (56 obs) right son=1837 (29 obs)
##
     Primary splits:
##
         654 < 33
                     to the left,
                                    improve=16.81152, (0 missing)
         653 < 28.5 to the left,
                                    improve=14.56957, (0 missing)
##
##
         655 < 20
                     to the left,
                                    improve=14.16532, (0 missing)
##
         348 < 206.5 to the left,
                                    improve=13.32259, (0 missing)
##
         525 < 33.5 to the right, improve=12.24566, (0 missing)
##
     Surrogate splits:
##
         653 < 28.5 to the left,
                                    agree=0.953, adj=0.862, (0 split)
##
         655 < 4.5
                     to the left,
                                    agree=0.953, adj=0.862, (0 split)
##
         652 < 56.5
                     to the left,
                                    agree=0.906, adj=0.724, (0 split)
##
                                    agree=0.906, adj=0.724, (0 split)
         656 < 5.5
                     to the left,
##
         627 < 180.5 to the left,
                                    agree=0.871, adj=0.621, (0 split)
##
```

```
## Node number 919: 124 observations,
                                        complexity param=0.0007591319
                        expected loss=0.5967742 P(node) =0.004919659
##
     predicted class=9
##
       class counts:
                         2
                               0
                                     9
                                           0
                                                18
                                                       0
                                                                  33
                                                                        11
50
##
      probabilities: 0.016 0.000 0.073 0.000 0.145 0.000 0.008 0.266 0.089
0.403
##
     left son=1838 (71 obs) right son=1839 (53 obs)
##
     Primary splits:
##
         458 < 5
                     to the left,
                                   improve=13.01018, (0 missing)
##
         457 < 5.5
                     to the right, improve=12.63663, (0 missing)
##
         429 < 9.5
                     to the left,
                                   improve=12.35484, (0 missing)
         681 < 233.5 to the right, improve=11.61812, (0 missing)
##
##
         709 < 168.5 to the left,
                                   improve=11.53778, (0 missing)
##
     Surrogate splits:
##
         457 < 17.5 to the left,
                                   agree=0.919, adj=0.811, (0 split)
                                   agree=0.895, adj=0.755, (0 split)
##
         459 < 13.5 to the left,
                                   agree=0.879, adj=0.717, (0 split)
##
         429 < 20.5 to the left,
                     to the left,
##
         456 < 5.5
                                   agree=0.863, adj=0.679, (0 split)
                                   agree=0.855, adj=0.660, (0 split)
##
         430 < 88.5 to the left,
##
## Node number 922: 36 observations,
                                        complexity param=0.0004465482
##
     predicted class=8
                        expected loss=0.6388889 P(node) =0.001428288
##
       class counts:
                        10
                               0
                                     1
                                           0
                                                       8
                                                                        13
0
      probabilities: 0.278 0.000 0.028 0.000 0.000 0.222 0.111 0.000 0.361
##
0.000
##
     left son=1844 (14 obs) right son=1845 (22 obs)
##
     Primary splits:
##
         266 < 251.5 to the right, improve=7.745310, (0 missing)
##
         434 < 5
                     to the left, improve=7.349206, (0 missing)
                     to the right, improve=6.699182, (0 missing)
##
         382 < 7
##
         293 < 218
                     to the right, improve=6.102778, (0 missing)
##
         354 < 29.5 to the right, improve=5.940115, (0 missing)
##
     Surrogate splits:
##
         293 < 218
                     to the right, agree=0.889, adj=0.714, (0 split)
         294 < 223
                     to the right, agree=0.889, adj=0.714, (0 split)
##
         574 < 225
                     to the right, agree=0.889, adj=0.714, (0 split)
##
##
         295 < 21
                     to the right, agree=0.861, adj=0.643, (0 split)
##
         322 < 3
                     to the right, agree=0.861, adj=0.643, (0 split)
##
## Node number 923: 17 observations
##
     predicted class=9
                        expected loss=0.2352941
                                                 P(node) =0.0006744694
##
       class counts:
                               0
                                     0
                                                 2
                                                       1
                                                             1
                                                                          0
13
##
      probabilities: 0.000 0.000 0.000 0.000 0.118 0.059 0.059 0.000 0.000
0.765
##
## Node number 924: 20 observations,
                                        complexity param=0.0001786193
     predicted class=5 expected loss=0.45 P(node) =0.0007934934
       class counts: 4 0 0 2 1 11
```

```
1
##
      probabilities: 0.200 0.000 0.000 0.100 0.050 0.550 0.000 0.050 0.000
0.050
##
     left son=1848 (8 obs) right son=1849 (12 obs)
##
     Primary splits:
##
         327 < 46.5 to the right, improve=5.716667, (0 missing)
##
         355 < 30.5 to the right, improve=5.716667, (0 missing)
         382 < 12
                     to the right, improve=5.200000, (0 missing)
##
         435 < 204.5 to the left, improve=4.975824, (0 missing)
##
                     to the right, improve=4.966667, (0 missing)
##
         354 < 58
##
     Surrogate splits:
##
         355 < 30.5
                    to the right, agree=1.00, adj=1.000, (0 split)
##
         328 < 26.5
                     to the right, agree=0.95, adj=0.875, (0 split)
##
         289 < 20
                     to the left, agree=0.90, adj=0.750, (0 split)
##
         354 < 58
                     to the right, agree=0.90, adj=0.750, (0 split)
##
         382 < 12
                     to the right, agree=0.90, adj=0.750, (0 split)
##
## Node number 925: 27 observations
##
     predicted class=8 expected loss=0.1481481 P(node) =0.001071216
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                 0
                                                       1
                                                              1
                                                                    1
                                                                         23
1
      probabilities: 0.000 0.000 0.000 0.000 0.0037 0.037 0.037 0.852
##
0.037
##
## Node number 928: 24 observations
##
     predicted class=1 expected loss=0.08333333 P(node) =0.000952192
##
       class counts:
                         0
                              22
                                                                          1
                                     0
                                           0
                                                 1
0
##
      probabilities: 0.000 0.917 0.000 0.000 0.042 0.000 0.000 0.000 0.042
0.000
##
## Node number 929: 8 observations
##
     predicted class=2
                        expected loss=0.125 P(node) =0.0003173973
##
       class counts:
                         1
                                     7
0
##
      probabilities: 0.125 0.000 0.875 0.000 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 930: 275 observations,
                                         complexity param=0.0001786193
     predicted class=2 expected loss=0.08 P(node) =0.01091053
##
##
       class counts:
                         1
                               3
                                   253
                                           2
                                                 3
                                                       0
                                                                          3
0
      probabilities: 0.004 0.011 0.920 0.007 0.011 0.000 0.004 0.033 0.011
##
0.000
##
     left son=1860 (268 obs) right son=1861 (7 obs)
##
     Primary splits:
##
         681 < 13
                     to the left,
                                   improve=7.816926, (0 missing)
##
                                   improve=6.281745, (0 missing)
         348 < 41
                     to the left,
##
         349 < 37.5 to the left,
                                   improve=6.281745, (0 missing)
##
         320 < 35.5 to the left, improve=6.132054, (0 missing)
```

```
##
         321 < 12.5 to the left,
                                   improve=5.425455, (0 missing)
##
     Surrogate splits:
##
         680 < 11.5 to the left,
                                   agree=0.985, adj=0.429, (0 split)
                                   agree=0.985, adj=0.429, (0 split)
##
         682 < 42.5 to the left,
##
         679 < 56
                     to the left,
                                   agree=0.982, adj=0.286, (0 split)
##
         708 < 26.5 to the left,
                                   agree=0.982, adj=0.286, (0 split)
##
         709 < 77.5 to the left,
                                   agree=0.982, adj=0.286, (0 split)
##
## Node number 931: 11 observations
##
     predicted class=9
                        expected loss=0.5454545 P(node) =0.0004364213
##
       class counts:
                         0
                               0
                                     0
                                                 4
                                                       0
                                                             2
                                                                         0
                                           0
5
##
      probabilities: 0.000 0.000 0.000 0.364 0.000 0.182 0.000 0.000
0.455
##
## Node number 946: 12 observations
     predicted class=4
                        expected loss=0.1666667 P(node) =0.000476096
##
       class counts:
                         0
                               0
                                                10
                                                             0
                                                                   0
                                     0
                                           0
                                                       1
                                                                         1
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.833 0.083 0.000 0.000 0.083
0.000
##
## Node number 947: 32 observations,
                                       complexity param=0.0003572385
     predicted class=6
                        expected loss=0.625 P(node) =0.001269589
##
##
                                                 2
                                                                         9
       class counts:
                         0
                               1
                                     2
                                           0
                                                       0
                                                            12
                                                                   1
5
##
      probabilities: 0.000 0.031 0.062 0.000 0.062 0.000 0.375 0.031 0.281
0.156
##
     left son=1894 (15 obs) right son=1895 (17 obs)
##
     Primary splits:
         494 < 33.5 to the right, improve=6.282843, (0 missing)
##
##
         456 < 30.5 to the right, improve=5.583502, (0 missing)
##
         484 < 131.5 to the right, improve=5.583502, (0 missing)
                     to the right, improve=5.087121, (0 missing)
##
         442 < 40.5 to the right, improve=5.087121, (0 missing)
##
##
     Surrogate splits:
         467 < 13
##
                     to the right, agree=0.906, adj=0.800, (0 split)
##
         468 < 3.5
                     to the right, agree=0.906, adj=0.800, (0 split)
##
         495 < 3.5
                     to the right, agree=0.906, adj=0.800, (0 split)
         428 < 121.5 to the right, agree=0.875, adj=0.733, (0 split)
##
##
         455 < 43.5 to the right, agree=0.875, adj=0.733, (0 split)
##
## Node number 954: 18 observations
##
     predicted class=5 expected loss=0.2777778 P(node) =0.000714144
##
       class counts:
                         0
                               0
                                                      13
                                                                         2
                                     0
                                           0
                                                             2
1
##
      probabilities: 0.000 0.000 0.000 0.000 0.722 0.111 0.000 0.111
0.056
##
## Node number 955: 1485 observations, complexity param=0.0001786193
```

```
expected loss=0.02289562 P(node) =0.05891688
##
     predicted class=6
##
       class counts:
                                                       14 1451
                                                                          7
                         0
                               0
                                     4
                                           1
                                                 2
6
##
      probabilities: 0.000 0.000 0.003 0.001 0.001 0.009 0.977 0.000 0.005
0.004
##
     left son=1910 (1478 obs) right son=1911 (7 obs)
##
     Primary splits:
##
         662 < 2
                     to the left,
                                   improve=9.656883, (0 missing)
##
         651 < 2
                     to the left,
                                   improve=6.903935, (0 missing)
                                   improve=6.903935, (0 missing)
##
         652 < 132.5 to the left,
         653 < 122
##
                     to the left,
                                   improve=6.903935, (0 missing)
                                   improve=4.762589, (0 missing)
##
         624 < 225.5 to the left,
##
     Surrogate splits:
##
         661 < 3
                     to the left,
                                   agree=0.999, adj=0.857, (0 split)
##
         690 < 9.5
                     to the left,
                                   agree=0.998, adj=0.571, (0 split)
                                   agree=0.997, adj=0.429, (0 split)
##
         660 < 1
                     to the left,
##
         663 < 30
                     to the left,
                                   agree=0.997, adj=0.429, (0 split)
                                   agree=0.997, adj=0.429, (0 split)
##
         689 < 4
                     to the left,
##
## Node number 956: 58 observations
     predicted class=5 expected loss=0.05172414 P(node) =0.002301131
##
##
       class counts:
                         0
                               0
                                     0
                                           2
                                                      55
                                                                          1
0
##
      probabilities: 0.000 0.000 0.000 0.034 0.000 0.948 0.000 0.000 0.017
0.000
##
## Node number 957: 9 observations
##
     predicted class=6
                        expected loss=0.3333333 P(node) =0.000357072
##
       class counts:
                         0
                               0
                                                 1
                                                       1
                                                                          1
                                     0
                                           0
                                                              6
0
      probabilities: 0.000 0.000 0.000 0.011 0.111 0.667 0.000 0.111
##
0.000
##
## Node number 958: 34 observations
     predicted class=6
                        expected loss=0.2647059 P(node) =0.001348939
##
       class counts:
                         0
                               0
                                           0
                                                       3
                                                            25
                                                                    0
                                                                          4
                                     0
                                                 0
2
##
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.088 0.735 0.000 0.118
0.059
##
## Node number 959: 62 observations,
                                        complexity param=0.0003125837
##
     predicted class=8
                        expected loss=0.4677419 P(node) =0.002459829
##
       class counts:
                         0
                               0
                                     2
                                           2
                                                      16
                                                                         33
2
      probabilities: 0.000 0.000 0.032 0.032 0.000 0.258 0.097 0.016 0.532
##
0.032
##
     left son=1918 (29 obs) right son=1919 (33 obs)
##
     Primary splits:
##
         354 < 0.5
                     to the left, improve=8.548522, (0 missing)
##
         355 < 30.5 to the left, improve=8.537137, (0 missing)
```

```
to the right, improve=8.294507, (0 missing)
##
         467 < 5.5
                     to the left, improve=7.360993, (0 missing)
##
         488 < 0.5
         466 < 218.5 to the right, improve=6.812832, (0 missing)
##
##
     Surrogate splits:
##
         355 < 3.5
                     to the left,
                                   agree=0.984, adj=0.966, (0 split)
##
         356 < 1.5
                     to the left,
                                   agree=0.919, adj=0.828, (0 split)
##
         382 < 137.5 to the left,
                                   agree=0.903, adj=0.793, (0 split)
                                   agree=0.855, adj=0.690, (0 split)
##
         381 < 30
                     to the left,
                     to the left, agree=0.839, adj=0.655, (0 split)
##
         383 < 1
##
## Node number 962: 15 observations
##
     predicted class=3
                        expected loss=0
                                         P(node) = 0.00059512
##
       class counts:
                         0
                               0
                                          15
                                                              0
                                                                          0
                                     0
                                                        a
0
##
      probabilities: 0.000 0.000 0.000 1.000 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 963: 7 observations
##
     predicted class=8
                        expected loss=0.2857143 P(node) =0.0002777227
##
       class counts:
                         0
                               0
                                     2
                                            0
                                                  0
                                                        0
                                                              0
                                                                    0
                                                                          5
0
      probabilities: 0.000 0.000 0.286 0.000 0.000 0.000 0.000 0.000 0.714
##
0.000
##
## Node number 966: 7 observations
##
     predicted class=4 expected loss=0.4285714 P(node) =0.0002777227
##
       class counts:
                         0
                               0
                                     2
                                                        0
                                                                          0
                                           1
                                                  4
0
##
      probabilities: 0.000 0.000 0.286 0.143 0.571 0.000 0.000 0.000 0.000
0.000
##
## Node number 967: 18 observations
##
     predicted class=8
                        expected loss=0.1666667
                                                 P(node) = 0.000714144
##
       class counts:
                         0
                                     0
                                            1
                                                        1
                                                              1
                                                                         15
0
##
      probabilities: 0.000 0.000 0.000 0.056 0.000 0.056 0.056 0.000 0.833
0.000
##
## Node number 968: 1344 observations,
                                          complexity param=0.0004018934
     predicted class=4 expected loss=0.05208333 P(node) =0.05332275
##
       class counts:
                         0
                               6
                                     8
                                            9
                                              1274
                                                             14
                                                                   10
                                                                          5
16
      probabilities: 0.000 0.004 0.006 0.007 0.948 0.001 0.010 0.007 0.004
##
0.012
##
     left son=1936 (1325 obs) right son=1937 (19 obs)
##
     Primary splits:
##
         295 < 222
                     to the left,
                                   improve=21.51074, (0 missing)
##
         294 < 222.5 to the left,
                                   improve=20.11547, (0 missing)
##
         322 < 47
                     to the left,
                                   improve=16.49136, (0 missing)
##
         95 < 32 to the left, improve=15.59351, (0 missing)
```

```
##
         96 < 2 to the left,
                                   improve=15.59351, (0 missing)
##
     Surrogate splits:
##
         294 < 245.5 to the left,
                                   agree=0.992, adj=0.421, (0 split)
                                   agree=0.992, adj=0.421, (0 split)
##
         322 < 210.5 to the left,
##
         323 < 253.5 to the left,
                                   agree=0.987, adj=0.105, (0 split)
##
         740 < 159
                     to the left,
                                   agree=0.987, adj=0.105, (0 split)
##
         255 < 222
                     to the left,
                                   agree=0.987, adj=0.053, (0 split)
##
## Node number 969: 71 observations,
                                        complexity param=0.0005358578
##
     predicted class=8
                        expected loss=0.6338028 P(node) =0.002816901
##
       class counts:
                         0
                               0
                                     6
                                           7
                                                  8
                                                       19
                                                              1
                                                                         26
4
##
      probabilities: 0.000 0.000 0.085 0.099 0.113 0.268 0.014 0.000 0.366
0.056
##
     left son=1938 (48 obs) right son=1939 (23 obs)
##
     Primary splits:
##
         516 < 47
                     to the left,
                                   improve=11.28641, (0 missing)
##
         544 < 95.5 to the left,
                                   improve=10.56403, (0 missing)
##
         517 < 20
                     to the left,
                                   improve=10.35095, (0 missing)
##
         572 < 46
                     to the left,
                                   improve=10.16924, (0 missing)
##
         489 < 177.5 to the left,
                                   improve=10.07118, (0 missing)
##
     Surrogate splits:
##
         544 < 131.5 to the left,
                                   agree=0.958, adj=0.870, (0 split)
##
         489 < 177.5 to the left,
                                   agree=0.930, adj=0.783, (0 split)
##
         543 < 16.5 to the left,
                                   agree=0.930, adj=0.783, (0 split)
                                   agree=0.901, adj=0.696, (0 split)
##
         517 < 28.5
                     to the left,
                                   agree=0.887, adj=0.652, (0 split)
##
         515 < 3
                     to the left,
##
## Node number 972: 21 observations
##
     predicted class=5
                        expected loss=0.2380952 P(node) =0.000833168
##
       class counts:
                         0
                               0
                                     0
                                            0
                                                  2
                                                       16
                                                              0
                                                                    0
                                                                          1
2
##
      probabilities: 0.000 0.000 0.000 0.000 0.095 0.762 0.000 0.000 0.048
0.095
##
## Node number 973: 72 observations,
                                        complexity param=0.0006251675
##
     predicted class=9
                        expected loss=0.4861111 P(node) =0.002856576
##
       class counts:
                         0
                               0
                                     2
                                            2
                                                 22
                                                        4
                                                              0
                                                                    5
                                                                          0
37
      probabilities: 0.000 0.000 0.028 0.028 0.306 0.056 0.000 0.069 0.000
##
0.514
##
     left son=1946 (32 obs) right son=1947 (40 obs)
##
     Primary splits:
##
         237 < 23.5 to the left,
                                   improve=12.383330, (0 missing)
##
         238 < 158.5 to the left,
                                   improve=10.583330, (0 missing)
         375 < 35.5 to the right, improve= 9.861111, (0 missing)
##
##
                     to the right, improve= 8.873974, (0 missing)
         186 < 4
##
                     to the left, improve= 8.694444, (0 missing)
         263 < 5.5
##
     Surrogate splits:
         238 < 142.5 to the left, agree=0.944, adj=0.875, (0 split)
##
```

```
to the left,
                                   agree=0.917, adj=0.812, (0 split)
##
         236 < 2
##
         263 < 15
                     to the left,
                                   agree=0.861, adj=0.688, (0 split)
         347 < 137.5 to the right, agree=0.861, adj=0.688, (0 split)
##
                     to the left, agree=0.847, adj=0.656, (0 split)
##
         265 < 235
##
## Node number 974: 36 observations
     predicted class=7
                        expected loss=0.1944444 P(node) =0.001428288
##
##
       class counts:
                         0
                               0
                                     2
                                                        0
                                                                   29
                                                                          2
1
##
      probabilities: 0.000 0.000 0.056 0.056 0.000 0.000 0.000 0.806 0.056
0.028
##
## Node number 975: 11 observations
##
     predicted class=9
                        expected loss=0.3636364 P(node) =0.0004364213
##
       class counts:
                                                        1
                         0
                               0
                                     3
                                            0
                                                  0
                                                              0
                                                                          0
7
##
      probabilities: 0.000 0.000 0.273 0.000 0.000 0.091 0.000 0.000 0.000
0.636
##
## Node number 976: 494 observations,
                                         complexity param=0.0003572385
     predicted class=5
                        expected loss=0.1093117 P(node) =0.01959929
##
##
       class counts:
                         0
                               0
                                     1
                                          35
                                                  1
                                                      440
                                                                    1
                                                                          0
16
##
      probabilities: 0.000 0.000 0.002 0.071 0.002 0.891 0.000 0.002 0.000
0.032
##
     left son=1952 (24 obs) right son=1953 (470 obs)
##
     Primary splits:
##
         322 < 187.5 to the right, improve=16.81794, (0 missing)
##
         217 < 1
                     to the left, improve=15.29740, (0 missing)
##
         216 < 1.5
                     to the left,
                                   improve=15.15130, (0 missing)
##
         188 < 2
                     to the left,
                                   improve=14.52128, (0 missing)
##
         263 < 8.5
                     to the left, improve=14.33422, (0 missing)
##
     Surrogate splits:
##
         321 < 252.5 to the right, agree=0.962, adj=0.208, (0 split)
##
         323 < 62.5 to the right, agree=0.957, adj=0.125, (0 split)
         649 < 245
                     to the right, agree=0.957, adj=0.125, (0 split)
##
         203 < 253.5 to the right, agree=0.953, adj=0.042, (0 split)
##
##
         324 < 117.5 to the right, agree=0.953, adj=0.042, (0 split)
##
## Node number 977: 27 observations
##
     predicted class=6 expected loss=0.1111111 P(node) =0.001071216
##
       class counts:
                                                        2
                                                             24
                                                                          0
1
##
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.074 0.889 0.000 0.000
0.037
##
## Node number 978: 25 observations,
                                        complexity param=0.0002679289
     predicted class=2 expected loss=0.48 P(node) =0.0009918667
##
       class counts:
                         3
                               0
                                    13
                                            1
                                                  0
                                                        0
                                                              2
                                                                    0
                                                                          6
0
```

```
probabilities: 0.120 0.000 0.520 0.040 0.000 0.000 0.080 0.000 0.240
##
0.000
##
     left son=1956 (18 obs) right son=1957 (7 obs)
     Primary splits:
##
##
         685 < 1.5
                     to the left,
                                   improve=6.636825, (0 missing)
##
         684 < 3
                     to the left,
                                   improve=6.414603, (0 missing)
##
         683 < 8.5
                     to the left,
                                   improve=6.401765, (0 missing)
##
         358 < 61.5
                     to the left,
                                   improve=6.084156, (0 missing)
##
                     to the right, improve=5.483590, (0 missing)
         466 < 239
##
     Surrogate splits:
##
         436 < 252.5 to the left,
                                   agree=0.96, adj=0.857, (0 split)
                                   agree=0.96, adj=0.857, (0 split)
##
         683 < 8.5
                     to the left,
##
         684 < 7
                     to the left,
                                   agree=0.96, adj=0.857, (0 split)
##
         232 < 2.5
                     to the left,
                                   agree=0.92, adj=0.714, (0 split)
##
                     to the left,
                                   agree=0.92, adj=0.714, (0 split)
         233 < 58
##
## Node number 979: 35 observations,
                                        complexity param=0.0001786193
##
     predicted class=9
                        expected loss=0.3428571 P(node) =0.001388613
##
       class counts:
                         0
                                     0
                                            1
                                                                          3
23
##
      probabilities: 0.000 0.000 0.000 0.029 0.143 0.086 0.000 0.000 0.086
0.657
##
     left son=1958 (11 obs) right son=1959 (24 obs)
##
     Primary splits:
##
         242 < 14.5 to the left, improve=7.424026, (0 missing)
         347 < 176.5 to the right, improve=6.867888, (0 missing)
##
##
                     to the left, improve=6.508571, (0 missing)
         243 < 0.5
                     to the right, improve=5.841534, (0 missing)
         155 < 24
##
##
         320 < 144.5 to the right, improve=5.708571, (0 missing)
##
     Surrogate splits:
         243 < 0.5
##
                     to the left,
                                   agree=0.971, adj=0.909, (0 split)
##
         241 < 2
                     to the left,
                                   agree=0.943, adj=0.818, (0 split)
                     to the right, agree=0.914, adj=0.727, (0 split)
##
         347 < 221
                     to the right, agree=0.857, adj=0.545, (0 split)
##
         154 < 7
##
         213 < 57
                     to the left, agree=0.857, adj=0.545, (0 split)
##
## Node number 982: 127 observations,
                                         complexity param=0.0007144771
     predicted class=9
                        expected loss=0.6141732 P(node) =0.005038683
##
       class counts:
##
                         0
                               1
                                     3
                                          16
                                                 20
                                                        0
                                                              1
                                                                   28
                                                                          9
49
##
      probabilities: 0.000 0.008 0.024 0.126 0.157 0.000 0.008 0.220 0.071
0.386
##
     left son=1964 (60 obs) right son=1965 (67 obs)
##
     Primary splits:
         373 < 9.5
##
                                   improve=14.28025, (0 missing)
                     to the left,
##
         345 < 4
                     to the left,
                                   improve=14.01165, (0 missing)
##
         346 < 1
                     to the left,
                                   improve=13.03548, (0 missing)
##
                     to the right, improve=11.38308, (0 missing)
         205 < 46
##
         318 < 1
                     to the left,
                                   improve=11.35079, (0 missing)
##
     Surrogate splits:
```

```
to the left,
                                   agree=0.929, adj=0.850, (0 split)
##
         345 < 4
##
         401 < 30.5
                     to the left,
                                   agree=0.874, adj=0.733, (0 split)
                                   agree=0.858, adj=0.700, (0 split)
##
         317 < 1
                     to the left,
                     to the left,
         374 < 55
                                   agree=0.835, adj=0.650, (0 split)
##
##
         346 < 1
                     to the left,
                                   agree=0.811, adj=0.600, (0 split)
##
## Node number 983: 21 observations
##
     predicted class=8
                        expected loss=0.1428571 P(node) =0.000833168
##
       class counts:
                         0
                               0
                                     1
                                            1
                                                                         18
0
##
      probabilities: 0.000 0.000 0.048 0.048 0.000 0.000 0.048 0.000 0.857
0.000
##
## Node number 984: 99 observations,
                                        complexity param=0.0002679289
                        expected loss=0.2323232 P(node) =0.003927792
##
     predicted class=3
##
       class counts:
                         1
                                     2
                                          76
                                                  1
                                                                          2
                                                        7
10
##
      probabilities: 0.010 0.000 0.020 0.768 0.010 0.071 0.000 0.000 0.020
0.101
##
     left son=1968 (77 obs) right son=1969 (22 obs)
     Primary splits:
##
         373 < 63
##
                     to the left,
                                   improve=15.06349, (0 missing)
##
         318 < 22
                     to the left,
                                   improve=13.10780, (0 missing)
##
         346 < 167.5 to the left,
                                   improve=12.38503, (0 missing)
##
         345 < 13
                     to the left,
                                   improve=12.08025, (0 missing)
         319 < 116.5 to the left,
##
                                   improve=11.25532, (0 missing)
##
     Surrogate splits:
         345 < 13
##
                     to the left,
                                   agree=0.949, adj=0.773, (0 split)
##
         374 < 209
                     to the left,
                                   agree=0.949, adj=0.773, (0 split)
##
         346 < 83.5 to the left,
                                   agree=0.919, adj=0.636, (0 split)
##
         372 < 16
                     to the left,
                                   agree=0.909, adj=0.591, (0 split)
##
         402 < 251.5 to the left,
                                   agree=0.909, adj=0.591, (0 split)
##
## Node number 985: 79 observations,
                                        complexity param=0.0009377512
##
     predicted class=2
                        expected loss=0.4683544 P(node) =0.003134299
##
       class counts:
                         1
                               0
                                    42
                                            6
                                                        1
                                                              3
                                                                    0
                                                                         25
                                                  0
1
##
      probabilities: 0.013 0.000 0.532 0.076 0.000 0.013 0.038 0.000 0.316
0.013
     left son=1970 (46 obs) right son=1971 (33 obs)
##
##
     Primary splits:
##
         465 < 96.5 to the right, improve=20.78167, (0 missing)
##
                     to the right, improve=19.34563, (0 missing)
         492 < 114.5 to the right, improve=18.17561, (0 missing)
##
         379 < 146.5 to the left, improve=17.94013, (0 missing)
##
         599 < 126.5 to the right, improve=17.68251, (0 missing)
##
##
     Surrogate splits:
##
                     to the right, agree=0.937, adj=0.848, (0 split)
         493 < 41
##
         437 < 121
                     to the right, agree=0.911, adj=0.788, (0 split)
##
         492 < 59.5 to the right, agree=0.899, adj=0.758, (0 split)
```

```
to the right, agree=0.886, adj=0.727, (0 split)
##
##
         520 < 86.5 to the right, agree=0.861, adj=0.667, (0 split)
##
## Node number 986: 138 observations,
                                          complexity param=0.0004465482
##
     predicted class=4
                        expected loss=0.3333333 P(node) =0.005475104
##
       class counts:
                         0
                                0
                                      5
                                            7
                                                 92
                                                        2
                                                                           5
26
##
      probabilities: 0.000 0.000 0.036 0.051 0.667 0.014 0.007 0.000 0.036
0.188
##
     left son=1972 (90 obs) right son=1973 (48 obs)
##
     Primary splits:
         207 < 10
                                    improve=19.72005, (0 missing)
##
                     to the left,
##
         181 < 126
                     to the left,
                                    improve=18.83848, (0 missing)
##
         180 < 1.5
                     to the left,
                                    improve=18.44868, (0 missing)
                     to the left,
##
         208 < 31
                                    improve=17.91859, (0 missing)
##
         179 < 6
                     to the left,
                                    improve=15.51269, (0 missing)
##
     Surrogate splits:
##
         208 < 88.5 to the left,
                                    agree=0.942, adj=0.833, (0 split)
         180 < 1.5
                                    agree=0.920, adj=0.771, (0 split)
##
                     to the left,
##
         179 < 2.5
                     to the left,
                                    agree=0.913, adj=0.750, (0 split)
                                    agree=0.899, adj=0.708, (0 split)
##
         235 < 109
                     to the left,
##
         181 < 152.5 to the left,
                                    agree=0.891, adj=0.687, (0 split)
##
## Node number 987: 90 observations,
                                         complexity param=0.0004465482
##
     predicted class=8
                        expected loss=0.5 P(node) =0.00357072
##
       class counts:
                         1
                               0
                                      4
                                            9
                                                  9
                                                        2
                                                                     1
                                                                          45
19
##
      probabilities: 0.011 0.000 0.044 0.100 0.100 0.022 0.000 0.011 0.500
0.211
##
     left son=1974 (50 obs) right son=1975 (40 obs)
##
     Primary splits:
##
         544 < 147
                     to the left,
                                    improve=17.02444, (0 missing)
##
         516 < 55
                     to the left,
                                    improve=14.42222, (0 missing)
##
         517 < 192.5 to the left,
                                    improve=12.81599, (0 missing)
##
         543 < 12
                     to the left,
                                    improve=11.52738, (0 missing)
##
         545 < 131
                     to the left,
                                    improve=10.43108, (0 missing)
##
     Surrogate splits:
##
         516 < 55
                     to the left,
                                    agree=0.900, adj=0.775, (0 split)
##
         543 < 12
                     to the left,
                                    agree=0.900, adj=0.775, (0 split)
         572 < 239.5 to the left,
                                    agree=0.878, adj=0.725, (0 split)
##
##
         517 < 149
                     to the left,
                                    agree=0.867, adj=0.700, (0 split)
##
         571 < 52
                     to the left,
                                    agree=0.867, adj=0.700, (0 split)
##
## Node number 988: 176 observations,
                                          complexity param=0.0006698223
     predicted class=9
                        expected loss=0.6931818 P(node) =0.006982742
##
##
       class counts:
                         1
                               0
                                     17
                                           51
                                                  8
                                                        0
                                                              0
                                                                    39
                                                                           6
54
##
      probabilities: 0.006 0.000 0.097 0.290 0.045 0.000 0.000 0.222 0.034
0.307
     left son=1976 (119 obs) right son=1977 (57 obs)
```

```
Primary splits:
##
##
         342 < 10
                     to the left,
                                    improve=36.80002, (0 missing)
##
         371 < 3
                     to the left,
                                    improve=36.32649, (0 missing)
                     to the left,
         370 < 2.5
##
                                    improve=33.43193, (0 missing)
##
         399 < 5.5
                     to the left,
                                    improve=33.30885, (0 missing)
##
         315 < 51
                     to the left,
                                    improve=32.74784, (0 missing)
##
     Surrogate splits:
         371 < 3
##
                     to the left,
                                    agree=0.972, adj=0.912, (0 split)
##
         370 < 2.5
                     to the left,
                                    agree=0.960, adj=0.877, (0 split)
                                    agree=0.949, adj=0.842, (0 split)
##
         314 < 5.5
                     to the left,
##
         343 < 10
                     to the left,
                                    agree=0.949, adj=0.842, (0 split)
                                    agree=0.938, adj=0.807, (0 split)
##
         315 < 32
                     to the left,
##
## Node number 989: 117 observations,
                                          complexity param=0.0003572385
                        expected loss=0.2393162 P(node) =0.004641936
##
     predicted class=9
                                                 15
##
       class counts:
                         0
                                            1
                                                                           7
                               0
                                      0
                                                        1
89
##
      probabilities: 0.000 0.000 0.000 0.009 0.128 0.009 0.000 0.034 0.060
0.761
##
     left son=1978 (20 obs) right son=1979 (97 obs)
##
     Primary splits:
         428 < 71.5
##
                     to the right, improve=13.05703, (0 missing)
##
         456 < 1
                     to the right, improve=11.83117, (0 missing)
##
         213 < 3.5
                     to the left,
                                   improve=11.66334, (0 missing)
##
         212 < 83
                     to the left,
                                   improve=11.41880, (0 missing)
##
         427 < 0.5
                     to the right, improve=10.77495, (0 missing)
##
     Surrogate splits:
         400 < 12
##
                     to the right, agree=0.966, adj=0.80, (0 split)
##
         427 < 0.5
                     to the right, agree=0.966, adj=0.80, (0 split)
##
         456 < 2.5
                     to the right, agree=0.949, adj=0.70, (0 split)
##
         401 < 244.5 to the right, agree=0.940, adj=0.65, (0 split)
##
         455 < 16
                     to the right, agree=0.932, adj=0.60, (0 split)
##
## Node number 990: 66 observations,
                                         complexity param=0.0006698223
##
     predicted class=4
                        expected loss=0.4848485 P(node) =0.002618528
##
       class counts:
                         0
                               0
                                      0
                                            0
                                                 34
                                                        0
                                                              0
                                                                    1
                                                                           2
29
##
      probabilities: 0.000 0.000 0.000 0.515 0.000 0.000 0.015 0.030
0.439
##
     left son=1980 (31 obs) right son=1981 (35 obs)
##
     Primary splits:
##
         319 < 195
                     to the right, improve=23.27404, (0 missing)
##
         206 < 5.5
                     to the left,
                                   improve=22.77634, (0 missing)
                                   improve=21.84444, (0 missing)
##
         261 < 29
                     to the left,
##
         291 < 141.5 to the right, improve=21.32479, (0 missing)
                     to the left,
##
         234 < 142
                                   improve=21.27350, (0 missing)
##
     Surrogate splits:
##
                     to the right, agree=0.939, adj=0.871, (0 split)
         292 < 99.5
##
         320 < 6
                     to the right, agree=0.939, adj=0.871, (0 split)
##
         346 < 235.5 to the right, agree=0.939, adj=0.871, (0 split)
```

```
347 < 33.5 to the right, agree=0.939, adj=0.871, (0 split)
##
##
                     to the left, agree=0.924, adj=0.839, (0 split)
         261 < 29
##
## Node number 991: 1086 observations,
                                          complexity param=0.0003125837
##
     predicted class=9 expected loss=0.08655617 P(node) =0.04308669
##
       class counts:
                         0
                               0
                                     1
                                          10
                                                35
                                                        6
                                                                   10
                                                                         32
992
##
      probabilities: 0.000 0.000 0.001 0.009 0.032 0.006 0.000 0.009 0.029
0.913
##
     left son=1982 (72 obs) right son=1983 (1014 obs)
##
     Primary splits:
         204 < 10.5 to the right, improve=12.80996, (0 missing)
##
         437 < 2.5
                     to the left, improve=12.02509, (0 missing)
##
##
         203 < 12
                     to the right, improve=11.64847, (0 missing)
##
         232 < 132.5 to the right, improve=11.64608, (0 missing)
##
         177 < 119
                     to the right, improve=11.10262, (0 missing)
##
     Surrogate splits:
##
         232 < 212.5 to the right, agree=0.977, adj=0.653, (0 split)
         205 < 91.5 to the right, agree=0.975, adj=0.625, (0 split)
##
##
         231 < 16.5 to the right, agree=0.969, adj=0.528, (0 split)
##
                     to the right, agree=0.967, adj=0.500, (0 split)
         203 < 0.5
##
         259 < 195
                     to the right, agree=0.966, adj=0.486, (0 split)
##
## Node number 992: 26 observations
     predicted class=3
                        expected loss=0.07692308 P(node) =0.001031541
##
       class counts:
                         0
                               0
                                          24
                                                 1
                                                       1
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 0.923 0.038 0.038 0.000 0.000 0.000
0.000
##
## Node number 993: 14 observations
     predicted class=1
                        expected loss=0.5714286
                                                 P(node) =0.0005554453
##
##
       class counts:
                         1
                               6
                                     0
                                                  2
                                                        3
                                                              1
                                                                          0
1
      probabilities: 0.071 0.429 0.000 0.000 0.143 0.214 0.071 0.000 0.000
##
0.071
##
## Node number 994: 25 observations,
                                        complexity param=0.0002679289
##
     predicted class=3
                        expected loss=0.52 P(node) =0.0009918667
##
       class counts:
                         0
                               1
                                     2
                                          12
                                                                          1
0
##
      probabilities: 0.000 0.040 0.080 0.480 0.000 0.360 0.000 0.000 0.040
0.000
##
     left son=1988 (16 obs) right son=1989 (9 obs)
##
     Primary splits:
##
         233 < 6
                     to the left,
                                   improve=9.135000, (0 missing)
##
         261 < 11.5 to the left,
                                   improve=8.893333, (0 missing)
##
                                   improve=7.357222, (0 missing)
         234 < 58.5 to the left,
##
         289 < 21
                     to the left,
                                   improve=7.305455, (0 missing)
##
         262 < 83.5 to the left, improve=6.315556, (0 missing)
```

```
##
     Surrogate splits:
##
         261 < 11.5 to the left, agree=0.96, adj=0.889, (0 split)
##
         234 < 58.5 to the left,
                                   agree=0.92, adj=0.778, (0 split)
                                   agree=0.92, adj=0.778, (0 split)
##
         262 < 83.5 to the left,
##
         289 < 21
                     to the left,
                                   agree=0.92, adj=0.778, (0 split)
##
         205 < 227.5 to the left, agree=0.88, adj=0.667, (0 split)
##
## Node number 995: 110 observations
     predicted class=5
                        expected loss=0.07272727 P(node) =0.004364213
##
       class counts:
                         0
                               0
                                     2
                                                     102
                                                                   0
                                                                          0
                                           4
                                                 0
                                                             1
1
      probabilities: 0.000 0.000 0.018 0.036 0.000 0.927 0.009 0.000 0.000
##
0.009
##
## Node number 996: 18 observations
     predicted class=3 expected loss=0.5 P(node) =0.000714144
##
       class counts:
                         0
                               5
                                     0
                                           9
                                                 0
                                                       0
                                                                    3
                                                                          0
1
##
      probabilities: 0.000 0.278 0.000 0.500 0.000 0.000 0.000 0.167 0.000
0.056
##
## Node number 997: 28 observations
     predicted class=8 expected loss=0.07142857 P(node) =0.001110891
##
       class counts:
                         0
                               0
                                     2
                                                                         26
                                                 0
0
      probabilities: 0.000 0.000 0.071 0.000 0.000 0.000 0.000 0.000 0.929
##
0.000
##
## Node number 998: 32 observations
     predicted class=4 expected loss=0.3125 P(node) =0.001269589
##
##
       class counts:
                         0
                               0
                                     1
                                           2
                                                22
                                                       1
                                                             0
                                                                    3
                                                                          0
3
##
      probabilities: 0.000 0.000 0.031 0.062 0.688 0.031 0.000 0.094 0.000
0.094
##
## Node number 999: 60 observations,
                                       complexity param=0.0002232741
##
     predicted class=9
                        expected loss=0.2833333 P(node) =0.00238048
##
       class counts:
                         0
                               0
                                     1
                                           6
                                                 5
                                                       a
                                                             0
                                                                    2
                                                                          3
43
##
      probabilities: 0.000 0.000 0.017 0.100 0.083 0.000 0.000 0.033 0.050
0.717
##
     left son=1998 (7 obs) right son=1999 (53 obs)
##
     Primary splits:
##
         623 < 10
                     to the right, improve=7.237916, (0 missing)
##
         375 < 20.5 to the left, improve=6.194771, (0 missing)
                     to the right, improve=6.194771, (0 missing)
##
         624 < 9
##
         567 < 11.5 to the right, improve=5.809344, (0 missing)
##
         595 < 33.5 to the right, improve=5.809344, (0 missing)
##
     Surrogate splits:
##
         157 < 96 to the right, agree=0.983, adj=0.857, (0 split)
```

```
158 < 25 to the right, agree=0.983, adj=0.857, (0 split)
##
##
         376 < 47.5 to the left, agree=0.967, adj=0.714, (0 split)
         494 < 248.5 to the right, agree=0.967, adj=0.714, (0 split)
##
         567 < 11.5 to the right, agree=0.967, adj=0.714, (0 split)
##
##
## Node number 1000: 39 observations
     predicted class=1 expected loss=0.02564103 P(node) =0.001547312
##
       class counts:
                        0
                             38
                                    0
                                          0
                                                      1
0
##
      probabilities: 0.000 0.974 0.000 0.000 0.000 0.026 0.000 0.000 0.000
0.000
##
## Node number 1001: 15 observations
##
     predicted class=6 expected loss=0.2666667 P(node) =0.00059512
##
                                                      1
       class counts:
                         2
                               0
                                    0
                                          1
                                                0
                                                           11
                                                                        0
0
##
      probabilities: 0.133 0.000 0.000 0.067 0.000 0.067 0.733 0.000 0.000
0.000
##
## Node number 1004: 12 observations
     predicted class=2 expected loss=0.1666667 P(node) =0.000476096
##
##
       class counts:
                        0
                              0
                                   10
                                          2
                                                      0
                                                                        a
0
##
      probabilities: 0.000 0.000 0.833 0.167 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 1005: 11 observations
##
     predicted class=6
                       expected loss=0.5454545 P(node) =0.0004364213
##
       class counts:
                        0
                              3
                                                            5
                                                                        1
                                    0
                                          0
                                                1
                                                      а
                                                                  1
0
##
      probabilities: 0.000 0.273 0.000 0.000 0.091 0.000 0.455 0.091 0.091
0.000
##
## Node number 1006: 10 observations
     predicted class=1 expected loss=0.2 P(node) =0.0003967467
##
      class counts:
                        2
                              8
                                          0
                                                0
                                                      0
                                                            0
                                    0
                                                                  0
                                                                        0
0
##
      probabilities: 0.200 0.800 0.000 0.000 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 1007: 1327 observations
##
     predicted class=7
                       expected loss=0.02411454 P(node) =0.05264828
##
       class counts:
                              1
                                   11
                                          4
                                                3
                                                               1295
                                                                        0
11
      probabilities: 0.000 0.001 0.008 0.003 0.002 0.000 0.002 0.976 0.000
##
0.008
## Node number 1018: 12 observations
     predicted class=4 expected loss=0.25 P(node) =0.000476096
## class counts: 0 0 0 0 9 0 0 0 2
```

```
1
      probabilities: 0.000 0.000 0.000 0.000 0.750 0.000 0.000 0.000 0.167
##
0.083
##
## Node number 1019: 14 observations
     predicted class=9 expected loss=0.1428571 P(node) =0.0005554453
##
##
       class counts:
                         0
                               0
                                     0
                                                  1
                                                       0
                                                                          1
                                           0
                                                              0
                                                                    0
12
      probabilities: 0.000 0.000 0.000 0.000 0.071 0.000 0.000 0.000 0.071
##
0.857
##
## Node number 1020: 17 observations
     predicted class=4 expected loss=0.1764706 P(node) =0.0006744694
##
       class counts:
                         0
                               0
                                     1
                                           0
                                                14
                                                              0
1
##
      probabilities: 0.000 0.000 0.059 0.000 0.824 0.000 0.000 0.059 0.000
0.059
##
## Node number 1021: 8 observations
     predicted class=9 expected loss=0 P(node) =0.0003173973
##
       class counts:
                         0
                                           0
                                                                          0
                               0
                                     0
                                                 0
                                                       0
8
##
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
1.000
##
## Node number 1088: 16 observations
     predicted class=1 expected loss=0.1875 P(node) =0.0006347947
                                                  2
##
       class counts:
                         0
                              13
                                     1
                                           0
                                                       0
                                                              0
                                                                          0
0
      probabilities: 0.000 0.813 0.062 0.000 0.125 0.000 0.000 0.000 0.000
##
0.000
##
## Node number 1089: 9 observations
     predicted class=3 expected loss=0.4444444 P(node) =0.000357072
##
                         0
                                     2
                                           5
                                                       1
       class counts:
                               0
                                                 0
                                                              0
                                                                          0
0
      probabilities: 0.000 0.000 0.222 0.556 0.000 0.111 0.000 0.111 0.000
##
0.000
##
## Node number 1090: 12 observations
     predicted class=0 expected loss=0.4166667 P(node) =0.000476096
##
       class counts:
                                     1
                                           1
                                                       1
0
##
      probabilities: 0.583 0.000 0.083 0.083 0.000 0.083 0.167 0.000 0.000
0.000
##
## Node number 1091: 56 observations
     predicted class=6 expected loss=0.1428571 P(node) =0.002221781
##
       class counts:
                         0
                               0
                                     5
                                           0
                                                  1
                                                       1
                                                             48
                                                                          0
1
```

```
probabilities: 0.000 0.000 0.089 0.000 0.018 0.018 0.857 0.000 0.000
0.018
##
## Node number 1092: 13 observations
##
     predicted class=2
                        expected loss=0
                                         P(node) = 0.0005157707
##
       class counts:
                         0
                               0
                                    13
                                           0
                                                                          0
0
      probabilities: 0.000 0.000 1.000 0.000 0.000 0.000 0.000 0.000 0.000
##
0.000
##
## Node number 1093: 54 observations,
                                         complexity param=0.0002456015
     predicted class=5 expected loss=0.6481481 P(node) =0.002142432
##
       class counts:
                         5
                               6
                                     8
                                           6
                                                 4
                                                       19
                                                              1
                                                                          5
0
##
      probabilities: 0.093 0.111 0.148 0.111 0.074 0.352 0.019 0.000 0.093
0.000
##
     left son=2186 (31 obs) right son=2187 (23 obs)
##
     Primary splits:
         458 < 16.5 to the right, improve=7.384448, (0 missing)
##
##
         459 < 70.5 to the right, improve=7.209402, (0 missing)
##
         460 < 205 to the right, improve=7.043791, (0 missing)
##
         431 < 134.5 to the right, improve=5.979118, (0 missing)
##
         430 < 113.5 to the right, improve=5.956678, (0 missing)
##
     Surrogate splits:
##
         459 < 27
                     to the right, agree=0.907, adj=0.783, (0 split)
         486 < 209.5 to the right, agree=0.889, adj=0.739, (0 split)
##
                     to the right, agree=0.870, adj=0.696, (0 split)
##
         460 < 40.5 to the right, agree=0.833, adj=0.609, (0 split)
##
##
         485 < 171.5 to the right, agree=0.833, adj=0.609, (0 split)
##
## Node number 1094: 22 observations
##
     predicted class=4 expected loss=0.09090909 P(node) =0.0008728427
##
       class counts:
                               0
                                     0
                                                20
                                                        0
                                                              0
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 0.045 0.909 0.000 0.000 0.045 0.000
0.000
##
## Node number 1095: 70 observations,
                                         complexity param=0.0003125837
##
     predicted class=9 expected loss=0.5857143 P(node) =0.002777227
##
       class counts:
                         0
                              14
                                     1
                                           1
                                                13
                                                       2
                                                                          1
29
##
      probabilities: 0.000 0.200 0.014 0.014 0.186 0.029 0.043 0.086 0.014
0.414
##
     left son=2190 (37 obs) right son=2191 (33 obs)
     Primary splits:
##
         381 < 210.5 to the left,
##
                                   improve=7.800889, (0 missing)
##
         321 < 230
                     to the right, improve=7.766667, (0 missing)
##
                     to the left, improve=7.444655, (0 missing)
         237 < 75
##
         322 < 217
                     to the right, improve=7.150018, (0 missing)
##
         681 < 72 to the left, improve=7.022782, (0 missing)
```

```
##
     Surrogate splits:
##
         353 < 249.5 to the left,
                                   agree=0.900, adj=0.788, (0 split)
         354 < 109
                                   agree=0.886, adj=0.758, (0 split)
##
                     to the left,
                                   agree=0.871, adj=0.727, (0 split)
##
         382 < 15.5 to the left,
##
         326 < 129.5 to the left,
                                   agree=0.857, adj=0.697, (0 split)
##
         408 < 230
                     to the left,
                                   agree=0.843, adj=0.667, (0 split)
##
## Node number 1110: 7 observations
##
     predicted class=5
                        expected loss=0.1428571 P(node) =0.0002777227
##
       class counts:
                         0
                               0
                                     0
                                                        6
                                                                    0
                                                                          0
                                            1
                                                              0
0
      probabilities: 0.000 0.000 0.000 0.143 0.000 0.857 0.000 0.000 0.000
##
0.000
##
## Node number 1111: 21 observations,
                                         complexity param=0.0001786193
     predicted class=8
                        expected loss=0.6190476 P(node) =0.000833168
##
       class counts:
                         2
                               1
                                     0
                                            2
                                                  1
                                                        0
                                                                          8
5
      probabilities: 0.095 0.048 0.000 0.095 0.048 0.000 0.095 0.000 0.381
##
0.238
##
     left son=2222 (10 obs) right son=2223 (11 obs)
##
     Primary splits:
##
         653 < 111.5 to the right, improve=3.477056, (0 missing)
##
         625 < 80
                     to the right, improve=3.383700, (0 missing)
##
         487 < 134
                     to the right, improve=3.373016, (0 missing)
                     to the right, improve=3.095238, (0 missing)
##
         330 < 2.5
##
         566 < 79.5 to the right, improve=3.095238, (0 missing)
##
     Surrogate splits:
##
         623 < 19
                     to the right, agree=0.952, adj=0.9, (0 split)
##
         624 < 189
                     to the right, agree=0.952, adj=0.9, (0 split)
##
         625 < 151.5 to the right, agree=0.952, adj=0.9, (0 split)
##
                     to the right, agree=0.952, adj=0.9, (0 split)
         651 < 0.5
##
         652 < 53
                     to the right, agree=0.952, adj=0.9, (0 split)
##
## Node number 1112: 19 observations
     predicted class=3 expected loss=0.3157895
##
                                                 P(node) =0.0007538187
##
       class counts:
                         0
                               1
                                     1
                                           13
                                                  2
                                                                          0
1
      probabilities: 0.000 0.053 0.053 0.684 0.105 0.053 0.000 0.000 0.000
##
0.053
##
## Node number 1113: 18 observations
##
     predicted class=8
                        expected loss=0.3333333
                                                 P(node) =0.000714144
##
       class counts:
                         1
                               0
                                     0
                                            0
                                                  3
                                                        1
                                                              0
                                                                    1
                                                                         12
0
##
      probabilities: 0.056 0.000 0.000 0.000 0.167 0.056 0.000 0.056 0.667
0.000
##
## Node number 1172: 16 observations
     predicted class=2 expected loss=0.3125 P(node) =0.0006347947
```

```
class counts: 0 0
                                 11 1 0 0
                                                            3 1 0
##
0
##
      probabilities: 0.000 0.000 0.688 0.062 0.000 0.000 0.188 0.062 0.000
0.000
##
## Node number 1173: 8 observations
     predicted class=8 expected loss=0.25 P(node) =0.0003173973
##
       class counts:
                        0
                              0
                                    2
                                                0
                                                                        6
0
##
      probabilities: 0.000 0.000 0.250 0.000 0.000 0.000 0.000 0.000 0.750
0.000
##
## Node number 1224: 24 observations
##
     predicted class=2 expected loss=0.04166667 P(node) =0.000952192
##
                                   23
                                                      0
       class counts:
                        0
                              0
                                          0
                                                0
                                                            0
                                                                        1
0
##
      probabilities: 0.000 0.000 0.958 0.000 0.000 0.000 0.000 0.000 0.042
0.000
##
## Node number 1225: 10 observations
     predicted class=3 expected loss=0.2 P(node) =0.0003967467
##
##
       class counts:
                        0
                              1
                                    1
                                          8
                                                0
                                                      0
                                                                        a
0
##
      probabilities: 0.000 0.100 0.100 0.800 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 1248: 14 observations
##
     predicted class=1 expected loss=0.07142857 P(node) =0.0005554453
##
       class counts:
                             13
                        0
                                    0
                                          0
                                                0
                                                                        1
0
##
      probabilities: 0.000 0.929 0.000 0.000 0.000 0.000 0.000 0.001
0.000
##
## Node number 1249: 12 observations
     predicted class=8 expected loss=0.3333333 P(node) =0.000476096
##
      class counts:
                        0
                              0
                                                      1
                                                            0
                                                                  0
                                                                        8
                                    0
                                          3
                                                0
0
##
      probabilities: 0.000 0.000 0.000 0.250 0.000 0.083 0.000 0.000 0.667
0.000
##
## Node number 1288: 1360 observations, complexity param=0.0002456015
##
     predicted class=3 expected loss=0.02058824 P(node) =0.05395755
##
       class counts:
                        0
                              2
                                    8 1332
                                                     13
                                                                        5
0
      probabilities: 0.000 0.001 0.006 0.979 0.000 0.010 0.000 0.000 0.004
##
0.000
##
     left son=2576 (1350 obs) right son=2577 (10 obs)
##
     Primary splits:
##
        341 < 70
                    to the left, improve=12.981990, (0 missing)
##
        342 < 147.5 to the left, improve=11.016070, (0 missing)
```

```
improve=10.020510, (0 missing)
##
         313 < 154
                     to the left,
##
         369 < 98
                     to the left,
                                   improve= 8.555135, (0 missing)
##
         314 < 160.5 to the left,
                                   improve= 8.256068, (0 missing)
##
     Surrogate splits:
##
         313 < 154
                     to the left,
                                   agree=0.999, adj=0.8, (0 split)
##
         369 < 98
                     to the left,
                                   agree=0.998, adj=0.7, (0 split)
         314 < 160.5 to the left,
                                   agree=0.997, adj=0.6, (0 split)
##
                                   agree=0.997, adj=0.6, (0 split)
##
         342 < 147.5 to the left,
##
         340 < 5
                     to the left,
                                   agree=0.996, adj=0.5, (0 split)
##
## Node number 1289: 10 observations
##
     predicted class=8 expected loss=0.3 P(node) =0.0003967467
##
       class counts:
                         0
                               0
                                     2
                                                        1
                                                              0
                                                                    0
                                                                          7
                                            0
0
##
      probabilities: 0.000 0.000 0.200 0.000 0.000 0.100 0.000 0.000 0.700
0.000
##
## Node number 1290: 16 observations
##
     predicted class=5
                        expected loss=0.4375 P(node) =0.0006347947
##
       class counts:
                         0
                               0
                                     0
                                            4
                                                  0
                                                        9
                                                              0
                                                                          3
0
      probabilities: 0.000 0.000 0.000 0.250 0.000 0.562 0.000 0.000 0.188
##
0.000
##
## Node number 1291: 7 observations
##
     predicted class=9 expected loss=0.2857143 P(node) =0.0002777227
##
       class counts:
                         0
                               0
                                                        0
                                                                          1
                                     0
                                           1
5
##
      probabilities: 0.000 0.000 0.000 0.143 0.000 0.000 0.000 0.000 0.143
0.714
##
## Node number 1294: 12 observations
##
     predicted class=1
                        expected loss=0.5 P(node) =0.000476096
##
       class counts:
                         0
                               6
                                     0
                                            4
                                                              0
                                                                    1
                                                                          1
0
##
      probabilities: 0.000 0.500 0.000 0.333 0.000 0.000 0.000 0.083 0.083
0.000
##
## Node number 1295: 17 observations
##
     predicted class=5
                        expected loss=0.1176471 P(node) =0.0006744694
##
       class counts:
                         0
                               0
                                     0
                                            0
                                                       15
                                                              0
                                                                          2
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.882 0.000 0.000 0.118
0.000
##
## Node number 1318: 7 observations
     predicted class=0
                        expected loss=0.2857143 P(node) =0.0002777227
##
##
                                                                          0
       class counts:
                         5
                               0
                                     0
                                            1
                                                  0
                                                        0
                                                              0
                                                                    1
0
##
      probabilities: 0.714 0.000 0.000 0.143 0.000 0.000 0.000 0.143 0.000
```

```
0.000
##
## Node number 1319: 23 observations
     predicted class=5 expected loss=0.173913 P(node) =0.0009125174
##
      class counts:
                        0
                              0
                                    0
                                          1
                                                0
                                                     19
                                                                        1
0
      probabilities: 0.000 0.000 0.000 0.043 0.000 0.826 0.000 0.087 0.043
0.000
##
## Node number 1324: 22 observations
     predicted class=3 expected loss=0.2272727 P(node) =0.0008728427
                        0
                                                      0
                                                                        2
##
      class counts:
                              0
                                    0
                                         17
                                                0
                                                            2
                                                                  0
1
##
      probabilities: 0.000 0.000 0.000 0.773 0.000 0.000 0.091 0.000 0.091
0.045
##
## Node number 1325: 8 observations
     predicted class=5 expected loss=0.375 P(node) =0.0003173973
##
      class counts:
                        0
                              0
                                    0
                                          0
                                                0
                                                     5
2
##
      probabilities: 0.000 0.000 0.000 0.000 0.625 0.000 0.125 0.000
0.250
##
## Node number 1326: 8 observations
     predicted class=3 expected loss=0.25 P(node) =0.0003173973
##
      class counts:
                        0
                              0
                                    0
                                          6
                                                0
                                                    1
                                                                        1
0
      probabilities: 0.000 0.000 0.000 0.750 0.000 0.125 0.000 0.000 0.125
##
0.000
##
## Node number 1327: 93 observations
     predicted class=5 expected loss=0.04301075 P(node) =0.003689744
##
      class counts:
                        0
                              0
                                    0
                                          2
                                                0
                                                     89
                                                            1
                                                                        1
      probabilities: 0.000 0.000 0.000 0.022 0.000 0.957 0.011 0.000 0.011
##
0.000
##
## Node number 1340: 23 observations
##
     predicted class=4 expected loss=0.04347826 P(node) =0.0009125174
                                          0
                                                      0
##
      class counts:
                        0
                              0
                                    0
                                               22
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.957 0.000 0.000 0.043 0.000
0.000
##
## Node number 1341: 20 observations, complexity param=0.0002456015
     predicted class=7 expected loss=0.55 P(node) =0.0007934934
##
##
      class counts:
                        0
                              0
                                    0
                                          6
                                                                        0
0
      probabilities: 0.000 0.000 0.000 0.300 0.200 0.000 0.050 0.450 0.000
0.000
```

```
left son=2682 (11 obs) right son=2683 (9 obs)
##
##
     Primary splits:
         345 < 12
                                   improve=7.118182, (0 missing)
##
                     to the left,
##
         346 < 93
                     to the left,
                                   improve=6.700000, (0 missing)
##
         183 < 18
                     to the right, improve=6.047253, (0 missing)
         327 < 13.5
##
                     to the left,
                                   improve=5.800000, (0 missing)
##
         328 < 2.5
                     to the left,
                                   improve=5.800000, (0 missing)
##
     Surrogate splits:
##
         327 < 13.5
                    to the left,
                                   agree=0.95, adj=0.889, (0 split)
##
         328 < 2.5
                     to the left,
                                   agree=0.95, adj=0.889, (0 split)
         343 < 18
##
                     to the left,
                                   agree=0.95, adj=0.889, (0 split)
                                   agree=0.95, adj=0.889, (0 split)
##
         344 < 42.5
                     to the left,
##
         346 < 93
                     to the left,
                                   agree=0.95, adj=0.889, (0 split)
##
## Node number 1342: 27 observations,
                                         complexity param=0.0002232741
##
     predicted class=1
                        expected loss=0.7407407 P(node) =0.001071216
##
       class counts:
                         0
                               7
                                     0
                                            3
                                                  2
                                                        5
                                                              6
                                                                    0
                                                                          4
0
##
      probabilities: 0.000 0.259 0.000 0.111 0.074 0.185 0.222 0.000 0.148
0.000
##
     left son=2684 (13 obs) right son=2685 (14 obs)
##
     Primary splits:
                     to the right, improve=4.016687, (0 missing)
##
         154 < 20
##
         521 < 3.5
                     to the left,
                                   improve=4.016687, (0 missing)
##
         214 < 19.5
                     to the left,
                                   improve=3.962963, (0 missing)
##
         465 < 3
                     to the left,
                                   improve=3.862841, (0 missing)
##
                     to the left, improve=3.806397, (0 missing)
         572 < 142
##
     Surrogate splits:
##
         465 < 3
                     to the left, agree=0.926, adj=0.846, (0 split)
                     to the right, agree=0.889, adj=0.769, (0 split)
##
         182 < 97.5
                                   agree=0.889, adj=0.769, (0 split)
##
         437 < 11
                     to the left,
##
         493 < 17
                     to the left, agree=0.852, adj=0.692, (0 split)
##
         155 < 75
                     to the right, agree=0.815, adj=0.615, (0 split)
##
## Node number 1343: 43 observations
     predicted class=9
                        expected loss=0.2790698 P(node) =0.001706011
##
##
       class counts:
                         0
                               0
                                     0
                                            7
                                                  2
                                                                          2
31
      probabilities: 0.000 0.000 0.000 0.163 0.047 0.000 0.000 0.023 0.047
##
0.721
##
## Node number 1356: 32 observations
##
     predicted class=3
                        expected loss=0.03125
                                               P(node) = 0.001269589
##
       class counts:
                         0
                                                        1
                               0
                                     0
                                          31
                                                  0
                                                              0
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 0.969 0.000 0.031 0.000 0.000 0.000
0.000
##
## Node number 1357: 8 observations
     predicted class=5 expected loss=0.375 P(node) =0.0003173973
```

```
##
       class counts:
0
##
      probabilities: 0.000 0.000 0.000 0.125 0.000 0.625 0.000 0.000 0.250
0.000
##
## Node number 1358: 102 observations,
                                           complexity param=0.0004465482
                        expected loss=0.4803922 P(node) =0.004046816
     predicted class=5
##
       class counts:
                         5
                               1
                                     1
                                           25
                                                       53
                                                                          3
9
##
      probabilities: 0.049 0.010 0.010 0.245 0.000 0.520 0.020 0.029 0.029
0.088
##
     left son=2716 (25 obs) right son=2717 (77 obs)
##
     Primary splits:
##
         125 < 40.5 to the right, improve=8.196486, (0 missing)
##
         535 < 1.5
                     to the right, improve=7.889258, (0 missing)
##
                     to the right, improve=7.225490, (0 missing)
         124 < 62.5
##
         247 < 16.5
                     to the left, improve=7.091031, (0 missing)
##
         263 < 52.5 to the left, improve=6.857765, (0 missing)
##
     Surrogate splits:
##
         124 < 0.5
                     to the right, agree=0.961, adj=0.84, (0 split)
##
         126 < 40
                     to the right, agree=0.922, adj=0.68, (0 split)
##
         123 < 8.5
                     to the right, agree=0.902, adj=0.60, (0 split)
##
                     to the right, agree=0.892, adj=0.56, (0 split)
         153 < 222
##
         127 < 163.5 to the right, agree=0.882, adj=0.52, (0 split)
##
## Node number 1359: 38 observations,
                                          complexity param=0.0003572385
                        expected loss=0.5789474 P(node) =0.001507637
##
     predicted class=8
                                                        6
##
       class counts:
                         0
                               0
                                     0
                                            2
                                                  0
                                                              0
                                                                    0
                                                                         16
14
      probabilities: 0.000 0.000 0.000 0.053 0.000 0.158 0.000 0.000 0.421
##
0.368
##
     left son=2718 (30 obs) right son=2719 (8 obs)
##
     Primary splits:
##
         545 < 45.5 to the left,
                                   improve=6.119298, (0 missing)
##
         546 < 170
                     to the left,
                                   improve=6.119298, (0 missing)
##
         157 < 11
                     to the left,
                                   improve=5.778785, (0 missing)
         156 < 77.5
##
                     to the left,
                                   improve=5.692632, (0 missing)
##
         431 < 13
                     to the left,
                                   improve=5.684211, (0 missing)
##
     Surrogate splits:
         546 < 170
##
                     to the left,
                                   agree=1.000, adj=1.000, (0 split)
                                   agree=0.974, adj=0.875, (0 split)
##
         490 < 41
                     to the left,
                                   agree=0.974, adj=0.875, (0 split)
##
         518 < 32
                     to the left,
##
         573 < 186
                     to the left,
                                   agree=0.974, adj=0.875, (0 split)
##
                                   agree=0.947, adj=0.750, (0 split)
         464 < 247.5 to the left,
##
## Node number 1426: 17 observations
##
     predicted class=4
                        expected loss=0.5294118 P(node) =0.0006744694
##
       class counts:
                         0
                               1
                                     0
                                            0
                                                  8
                                                        0
                                                              6
                                                                    0
                                                                          1
1
##
      probabilities: 0.000 0.059 0.000 0.000 0.471 0.000 0.353 0.000 0.059
```

```
0.059
##
## Node number 1427: 8 observations
     predicted class=5 expected loss=0.125 P(node) =0.0003173973
##
       class counts:
                         0
                              0
                                    0
                                           0
                                                0
                                                      7
                                                                         1
0
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.875 0.000 0.000 0.125
0.000
##
## Node number 1430: 16 observations
     predicted class=2 expected loss=0.3125 P(node) =0.0006347947
                                                1
##
      class counts:
                        0
                              0
                                   11
                                         1
                                                      0
                                                            1
                                                                         1
1
##
      probabilities: 0.000 0.000 0.688 0.062 0.062 0.000 0.062 0.000 0.062
0.062
##
## Node number 1431: 19 observations
     predicted class=8 expected loss=0.3157895 P(node) =0.0007538187
##
      class counts:
                        1
                              0
                                     1
                                          2
                                                      0
                                                            1
                                                                        13
1
##
      probabilities: 0.053 0.000 0.053 0.105 0.000 0.000 0.053 0.000 0.684
0.053
##
## Node number 1528: 17 observations
     predicted class=2 expected loss=0.05882353 P(node) =0.0006744694
##
      class counts:
                        0
                              0
                                   16
                                          0
                                                0
                                                      0
                                                           1
0
      probabilities: 0.000 0.000 0.941 0.000 0.000 0.000 0.059 0.000 0.000
##
0.000
##
## Node number 1529: 7 observations
     predicted class=8 expected loss=0.2857143 P(node) =0.0002777227
##
       class counts:
                         0
                              0
                                     1
                                           1
                                                 0
                                                      0
                                                                         5
      probabilities: 0.000 0.000 0.143 0.143 0.000 0.000 0.000 0.000 0.714
##
0.000
##
## Node number 1532: 11 observations
##
     predicted class=3 expected loss=0.1818182 P(node) =0.0004364213
                                          9
                                                      0
##
       class counts:
                        0
                              0
                                    0
0
##
      probabilities: 0.000 0.000 0.000 0.818 0.000 0.000 0.091 0.000 0.091
0.000
##
## Node number 1533: 25 observations,
                                       complexity param=0.0001786193
     predicted class=8 expected loss=0.32 P(node) =0.0009918667
##
##
      class counts:
                        0
                              0
                                    0
                                          1
                                                0
                                                      5
                                                                        17
1
      probabilities: 0.000 0.000 0.000 0.040 0.000 0.200 0.040 0.000 0.680
0.040
```

```
left son=3066 (8 obs) right son=3067 (17 obs)
##
##
     Primary splits:
                                   improve=5.937647, (0 missing)
##
         270 < 126
                     to the left,
##
         130 < 11
                     to the right, improve=5.510476, (0 missing)
##
         297 < 48
                     to the left,
                                   improve=5.510476, (0 missing)
##
         298 < 23.5 to the left, improve=5.510476, (0 missing)
##
         158 < 203.5 to the right, improve=4.889444, (0 missing)
##
     Surrogate splits:
##
         298 < 180
                     to the left, agree=0.96, adj=0.875, (0 split)
         130 < 40.5 to the right, agree=0.92, adj=0.750, (0 split)
##
##
         129 < 80.5 to the right, agree=0.88, adj=0.625, (0 split)
                     to the right, agree=0.88, adj=0.625, (0 split)
##
         131 < 6
##
         242 < 112.5 to the left, agree=0.88, adj=0.625, (0 split)
##
## Node number 1540: 267 observations
##
     predicted class=0 expected loss=0.05617978 P(node) =0.01059314
##
       class counts:
                       252
                               0
                                     7
                                           1
                                                        2
                                                              3
                                                                          0
1
##
      probabilities: 0.944 0.000 0.026 0.004 0.000 0.007 0.011 0.004 0.000
0.004
##
## Node number 1541: 32 observations,
                                         complexity param=0.0001786193
     predicted class=0 expected loss=0.625 P(node) =0.001269589
##
##
       class counts:
                        12
                                     2
                                                       12
                                                                          0
0
##
      probabilities: 0.375 0.000 0.062 0.188 0.000 0.375 0.000 0.000 0.000
0.000
##
     left son=3082 (18 obs) right son=3083 (14 obs)
##
     Primary splits:
                     to the right, improve=8.511905, (0 missing)
##
         239 < 145
##
         241 < 21
                     to the right, improve=8.250000, (0 missing)
##
         238 < 157
                     to the right, improve=7.750000, (0 missing)
                     to the right, improve=6.816667, (0 missing)
##
         240 < 1.5
##
         267 < 251
                     to the right, improve=6.575397, (0 missing)
##
     Surrogate splits:
##
         212 < 30.5 to the right, agree=0.938, adj=0.857, (0 split)
         238 < 157
                     to the right, agree=0.938, adj=0.857, (0 split)
##
##
                     to the right, agree=0.906, adj=0.786, (0 split)
         240 < 61.5
##
         211 < 30
                     to the right, agree=0.875, adj=0.714, (0 split)
         241 < 26.5 to the right, agree=0.844, adj=0.643, (0 split)
##
##
## Node number 1542: 11 observations
                        expected loss=0.09090909 P(node) =0.0004364213
##
     predicted class=0
##
                                                       0
       class counts:
                        10
                               0
                                     1
                                           0
                                                 0
                                                              0
                                                                    0
                                                                          0
0
##
      probabilities: 0.909 0.000 0.091 0.000 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 1543: 22 observations
     predicted class=2 expected loss=0.3181818 P(node) =0.0008728427
```

```
0
##
       class counts: 2 0
                                    15
                                                             2
0
##
      probabilities: 0.091 0.000 0.682 0.000 0.000 0.000 0.091 0.136 0.000
0.000
##
## Node number 1648: 10 observations
     predicted class=2 expected loss=0.3 P(node) =0.0003967467
##
       class counts:
                         0
                               0
                                     7
                                           1
                                                             2
                                                                         0
0
##
      probabilities: 0.000 0.000 0.700 0.100 0.000 0.000 0.200 0.000 0.000
0.000
##
## Node number 1649: 24 observations,
                                         complexity param=0.0001786193
     predicted class=5 expected loss=0.5833333 P(node) =0.000952192
##
       class counts:
                         4
                                     1
                                           2
                                                 1
                                                      10
                               0
                                                             3
                                                                         3
0
##
      probabilities: 0.167 0.000 0.042 0.083 0.042 0.417 0.125 0.000 0.125
0.000
##
     left son=3298 (10 obs) right son=3299 (14 obs)
##
     Primary splits:
##
         627 < 242
                     to the right, improve=4.195238, (0 missing)
##
         247 < 3
                     to the left, improve=4.049020, (0 missing)
##
                     to the right, improve=4.000000, (0 missing)
         184 < 227
##
         430 < 193.5 to the right, improve=3.528011, (0 missing)
         183 < 137.5 to the right, improve=3.131702, (0 missing)
##
##
     Surrogate splits:
##
         214 < 148.5 to the right, agree=0.917, adj=0.8, (0 split)
         403 < 240 to the right, agree=0.917, adj=0.8, (0 split)
##
##
         184 < 240.5 to the right, agree=0.875, adj=0.7, (0 split)
##
         431 < 108.5 to the right, agree=0.875, adj=0.7, (0 split)
         183 < 219.5 to the right, agree=0.833, adj=0.6, (0 split)
##
##
## Node number 1732: 18 observations
##
     predicted class=1 expected loss=0.6666667
                                                 P(node) =0.000714144
##
                                                       5
       class counts:
                         1
                               6
                                     0
                                           4
                                                                         0
2
      probabilities: 0.056 0.333 0.000 0.222 0.000 0.278 0.000 0.000 0.000
##
0.111
## Node number 1733: 10 observations
     predicted class=6 expected loss=0.2 P(node) =0.0003967467
##
       class counts:
                               1
                                                                         0
0
##
      probabilities: 0.000 0.100 0.000 0.000 0.100 0.800 0.000 0.000
0.000
##
## Node number 1808: 107 observations
     predicted class=1 expected loss=0.07476636 P(node) =0.004245189
##
       class counts:
                         0
                              99
                                     3
                                           0
                                                 1
                                                       1
                                                             0
                                                                   3
                                                                         0
0
```

```
probabilities: 0.000 0.925 0.028 0.000 0.009 0.009 0.000 0.028 0.000
0.000
##
## Node number 1809: 28 observations,
                                          complexity param=0.0001786193
##
     predicted class=2
                        expected loss=0.5
                                            P(node) =0.001110891
##
       class counts:
                         0
                               1
                                    14
                                            1
                                                  1
                                                        2
                                                              6
                                                                    3
                                                                          0
0
##
      probabilities: 0.000 0.036 0.500 0.036 0.036 0.071 0.214 0.107 0.000
0.000
##
     left son=3618 (14 obs) right son=3619 (14 obs)
##
     Primary splits:
         431 < 8.5
                     to the right, improve=5.428571, (0 missing)
##
         410 < 3
##
                     to the right, improve=5.346066, (0 missing)
##
         331 < 48
                     to the left,
                                   improve=5.238095, (0 missing)
         359 < 14.5 to the left,
                                   improve=5.238095, (0 missing)
##
##
         387 < 42
                     to the left, improve=5.238095, (0 missing)
##
     Surrogate splits:
##
         430 < 32.5 to the right, agree=0.964, adj=0.929, (0 split)
         429 < 11.5 to the right, agree=0.929, adj=0.857, (0 split)
##
##
         432 < 11.5 to the right, agree=0.893, adj=0.786, (0 split)
         458 < 149.5 to the right, agree=0.893, adj=0.786, (0 split)
##
##
         459 < 216
                     to the right, agree=0.893, adj=0.786, (0 split)
##
## Node number 1810: 72 observations,
                                         complexity param=0.0001786193
     predicted class=4
                        expected loss=0.25 P(node) =0.002856576
##
       class counts:
                         0
                               0
                                     2
                                            0
                                                 54
                                                        2
                                                              7
                                                                    2
                                                                          3
2
      probabilities: 0.000 0.000 0.028 0.000 0.750 0.028 0.097 0.028 0.042
##
0.028
##
     left son=3620 (63 obs) right son=3621 (9 obs)
##
     Primary splits:
##
         292 < 124
                     to the left,
                                   improve=7.678571, (0 missing)
##
         293 < 96
                     to the left,
                                   improve=7.678571, (0 missing)
##
         294 < 33.5
                     to the left,
                                   improve=7.678571, (0 missing)
##
         265 < 89
                     to the left,
                                   improve=7.456349, (0 missing)
##
         266 < 56.5 to the left,
                                   improve=7.456349, (0 missing)
##
     Surrogate splits:
##
         293 < 96
                                   agree=1.000, adj=1.000, (0 split)
                     to the left,
##
         294 < 33.5 to the left,
                                   agree=1.000, adj=1.000, (0 split)
         320 < 14.5 to the left,
                                   agree=0.986, adj=0.889, (0 split)
##
##
         321 < 7.5
                     to the left,
                                   agree=0.986, adj=0.889, (0 split)
         265 < 89
##
                     to the left,
                                   agree=0.972, adj=0.778, (0 split)
##
## Node number 1811: 39 observations
##
     predicted class=6
                        expected loss=0.1025641
                                                 P(node) =0.001547312
##
       class counts:
                         0
                               0
                                     0
                                            0
                                                  4
                                                        0
                                                             35
                                                                    0
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.103 0.000 0.897 0.000 0.000
0.000
##
```

```
## Node number 1812: 127 observations,
                                         complexity param=0.0005805126
     predicted class=2 expected loss=0.3622047 P(node) =0.005038683
##
##
       class counts:
                         0
                               2
                                    81
                                           5
                                                       0
                                                                  24
                                                                         6
9
##
      probabilities: 0.000 0.016 0.638 0.039 0.000 0.000 0.000 0.189 0.047
0.071
##
     left son=3624 (109 obs) right son=3625 (18 obs)
##
     Primary splits:
##
         712 < 40.5 to the left,
                                   improve=14.50879, (0 missing)
##
         713 < 7
                     to the left,
                                   improve=13.22317, (0 missing)
##
         568 < 142.5 to the right, improve=11.55354, (0 missing)
                     to the right, improve=11.38362, (0 missing)
##
         569 < 17
##
         566 < 74
                     to the right, improve=10.29529, (0 missing)
##
     Surrogate splits:
##
         711 < 21.5 to the left,
                                   agree=0.953, adj=0.667, (0 split)
                     to the left,
##
         710 < 1.5
                                   agree=0.945, adj=0.611, (0 split)
##
         684 < 94.5 to the left,
                                   agree=0.937, adj=0.556, (0 split)
##
         713 < 149
                     to the left,
                                   agree=0.937, adj=0.556, (0 split)
                                   agree=0.921, adj=0.444, (0 split)
##
         683 < 224.5 to the left,
##
## Node number 1813: 23 observations
##
     predicted class=7
                       expected loss=0.04347826 P(node) =0.0009125174
##
       class counts:
                               0
                                     0
                                                 1
                                                       0
                                                                  22
                         0
                                           0
                                                                         0
0
      probabilities: 0.000 0.000 0.000 0.000 0.043 0.000 0.000 0.957 0.000
##
0.000
##
## Node number 1814: 28 observations,
                                         complexity param=0.0001786193
##
     predicted class=8
                        expected loss=0.5357143 P(node) =0.001110891
##
       class counts:
                         2
                               0
                                     2
                                           0
                                                 1
                                                       5
                                                             0
                                                                   2
                                                                        13
3
##
      probabilities: 0.071 0.000 0.071 0.000 0.036 0.179 0.000 0.071 0.464
0.107
##
     left son=3628 (14 obs) right son=3629 (14 obs)
##
     Primary splits:
##
         467 < 4
                     to the right, improve=5.571429, (0 missing)
         398 < 105.5 to the right, improve=4.663492, (0 missing)
##
##
                     to the left, improve=4.535714, (0 missing)
         487 < 1
         496 < 49.5 to the right, improve=4.374603, (0 missing)
##
         426 < 17.5 to the right, improve=4.157059, (0 missing)
##
##
     Surrogate splits:
##
         440 < 14.5 to the right, agree=0.893, adj=0.786, (0 split)
##
         468 < 16.5 to the right, agree=0.893, adj=0.786, (0 split)
         398 < 105.5 to the right, agree=0.857, adj=0.714, (0 split)
##
                     to the right, agree=0.857, adj=0.714, (0 split)
##
         439 < 12
##
         496 < 13.5 to the right, agree=0.857, adj=0.714, (0 split)
##
## Node number 1815: 63 observations
##
     predicted class=9 expected loss=0.04761905 P(node) =0.002499504
      class counts: 0 0 2 0 0 0 0
```

```
60
##
      probabilities: 0.000 0.000 0.032 0.000 0.000 0.000 0.000 0.016 0.000
0.952
##
## Node number 1832: 18 observations
     predicted class=2 expected loss=0.5 P(node) =0.000714144
##
##
       class counts:
                         0
                               0
                                     9
                                           0
                                                 0
                                                                          1
                                                       0
      probabilities: 0.000 0.000 0.500 0.000 0.000 0.000 0.444 0.000 0.056
##
0.000
##
## Node number 1833: 114 observations
     predicted class=4 expected loss=0.07017544 P(node) =0.004522912
##
       class counts:
                         0
                               0
                                     1
                                           0
                                               106
                                                       1
                                                                         1
0
##
      probabilities: 0.000 0.000 0.009 0.000 0.930 0.009 0.044 0.000 0.009
0.000
##
## Node number 1834: 8 observations
     predicted class=8 expected loss=0.375 P(node) =0.0003173973
       class counts:
##
                                     3
                                                                          5
                         0
                               0
                                           0
                                                 0
                                                       0
0
##
      probabilities: 0.000 0.000 0.375 0.000 0.000 0.000 0.000 0.000 0.625
0.000
##
## Node number 1835: 15 observations
     predicted class=7 expected loss=0.1333333 P(node) =0.00059512
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                 0
                                                       0
                                                             0
                                                                  13
                                                                          0
2
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.867 0.000
##
0.133
##
## Node number 1836: 56 observations
     predicted class=2 expected loss=0.25 P(node) =0.002221781
##
                                    42
                                                                          3
       class counts:
                         6
                               0
                                           0
                                                 1
                                                       1
                                                             1
1
##
      probabilities: 0.107 0.000 0.750 0.000 0.018 0.018 0.018 0.018 0.054
0.018
##
## Node number 1837: 29 observations,
                                        complexity param=0.0002679289
     predicted class=8 expected loss=0.3103448 P(node) =0.001150565
##
       class counts:
                         6
                                     2
                                                                         20
0
##
      probabilities: 0.207 0.000 0.069 0.000 0.000 0.000 0.000 0.034 0.690
0.000
##
     left son=3674 (9 obs) right son=3675 (20 obs)
##
     Primary splits:
         492 < 236 to the right, improve=9.348659, (0 missing)
##
##
         464 < 251.5 to the right, improve=8.888342, (0 missing)
         520 < 247 to the right, improve=8.888342, (0 missing)
##
```

```
to the left, improve=8.638342, (0 missing)
##
         406 < 18
##
                     to the right, improve=8.638342, (0 missing)
         438 < 232
##
     Surrogate splits:
##
         406 < 18
                     to the left, agree=0.966, adj=0.889, (0 split)
                     to the right, agree=0.966, adj=0.889, (0 split)
##
         438 < 232
##
         464 < 242.5 to the right, agree=0.966, adj=0.889, (0 split)
##
                     to the right, agree=0.966, adj=0.889, (0 split)
         520 < 247
         433 < 95.5 to the left, agree=0.931, adj=0.778, (0 split)
##
##
## Node number 1838: 71 observations,
                                         complexity param=0.000491203
##
     predicted class=7
                        expected loss=0.5352113 P(node) =0.002816901
       class counts:
                         1
                                                  5
                                                        0
##
                               0
                                     6
                                            0
                                                              1
                                                                   33
                                                                          9
16
##
      probabilities: 0.014 0.000 0.085 0.000 0.070 0.000 0.014 0.465 0.127
0.225
##
     left son=3676 (43 obs) right son=3677 (28 obs)
##
     Primary splits:
##
         404 < 25
                                   improve=12.44179, (0 missing)
                     to the left,
##
         709 < 4
                     to the left,
                                   improve=11.68334, (0 missing)
##
         708 < 1
                     to the left,
                                   improve=11.53947, (0 missing)
##
         405 < 123.5 to the left,
                                   improve=10.77252, (0 missing)
##
         710 < 7.5
                     to the left,
                                   improve=10.09426, (0 missing)
##
     Surrogate splits:
##
         376 < 40
                     to the left,
                                   agree=0.958, adj=0.893, (0 split)
                                   agree=0.958, adj=0.893, (0 split)
##
         405 < 123.5 to the left,
                                   agree=0.944, adj=0.857, (0 split)
##
         377 < 15.5 to the left,
                                   agree=0.930, adj=0.821, (0 split)
##
         403 < 43
                     to the left,
         432 < 13
                                   agree=0.930, adj=0.821, (0 split)
##
                     to the left,
##
## Node number 1839: 53 observations,
                                         complexity param=0.0002456015
##
     predicted class=9
                        expected loss=0.3584906 P(node) =0.002102757
##
       class counts:
                         1
                                     3
                                                 13
                                                                          2
34
##
      probabilities: 0.019 0.000 0.057 0.000 0.245 0.000 0.000 0.000 0.038
0.642
##
     left son=3678 (24 obs) right son=3679 (29 obs)
##
     Primary splits:
##
         402 < 234.5 to the right, improve=8.051941, (0 missing)
##
         237 < 21
                     to the left,
                                   improve=7.578157, (0 missing)
         264 < 34
                     to the left,
                                   improve=7.493425, (0 missing)
##
##
         375 < 166.5 to the right, improve=6.766152, (0 missing)
##
         349 < 13
                     to the right, improve=6.300890, (0 missing)
##
     Surrogate splits:
##
         375 < 60.5 to the right, agree=0.887, adj=0.750, (0 split)
         403 < 63.5 to the right, agree=0.868, adj=0.708, (0 split)
##
##
         374 < 227.5 to the right, agree=0.849, adj=0.667, (0 split)
##
         347 < 152.5 to the right, agree=0.830, adj=0.625, (0 split)
##
                     to the right, agree=0.830, adj=0.625, (0 split)
         376 < 9
##
## Node number 1844: 14 observations
```

```
predicted class=0 expected loss=0.2857143 P(node) =0.0005554453
##
##
       class counts:
                        10
                                                       4
                               0
                                     0
                                           0
                                                 0
                                                              0
                                                                          0
0
      probabilities: 0.714 0.000 0.000 0.000 0.286 0.000 0.000 0.000
##
0.000
##
## Node number 1845: 22 observations
##
     predicted class=8 expected loss=0.4090909 P(node) =0.0008728427
       class counts:
##
                         0
                               0
                                     1
                                           0
                                                       4
                                                              4
                                                                         13
0
      probabilities: 0.000 0.000 0.045 0.000 0.000 0.182 0.182 0.000 0.591
##
0.000
##
## Node number 1848: 8 observations
     predicted class=0 expected loss=0.5 P(node) =0.0003173973
##
       class counts:
                         4
                                           2
                                                                    1
                                     0
                                                       0
                                                              0
1
##
      probabilities: 0.500 0.000 0.000 0.250 0.000 0.000 0.000 0.125 0.000
0.125
##
## Node number 1849: 12 observations
     predicted class=5 expected loss=0.08333333 P(node) =0.000476096
##
       class counts:
                               0
                                     0
                                                 1
                                                       11
                         0
                                           0
                                                                          0
0
      probabilities: 0.000 0.000 0.000 0.000 0.083 0.917 0.000 0.000 0.000
##
0.000
##
## Node number 1860: 268 observations
     predicted class=2 expected loss=0.05970149 P(node) =0.01063281
##
##
       class counts:
                         0
                               3
                                   252
                                           2
                                                 3
                                                       0
                                                              1
                                                                          3
a
      probabilities: 0.000 0.011 0.940 0.007 0.011 0.000 0.004 0.015 0.011
##
0.000
##
## Node number 1861: 7 observations
     predicted class=7 expected loss=0.2857143 P(node) =0.0002777227
##
##
       class counts:
                         1
                               0
                                     1
                                           0
                                                       0
                                                              0
                                                                          0
0
      probabilities: 0.143 0.000 0.143 0.000 0.000 0.000 0.000 0.714 0.000
##
0.000
##
## Node number 1894: 15 observations
     predicted class=6 expected loss=0.2666667 P(node) =0.00059512
##
       class counts:
                         0
                                                 2
                                                       0
                               0
                                     1
                                           0
                                                             11
                                                                          0
1
##
      probabilities: 0.000 0.000 0.067 0.000 0.133 0.000 0.733 0.000 0.000
0.067
##
## Node number 1895: 17 observations
     predicted class=8 expected loss=0.4705882 P(node) =0.0006744694
```

```
##
       class counts: 0
                               1
                                     1
4
##
      probabilities: 0.000 0.059 0.059 0.000 0.000 0.000 0.059 0.059 0.529
0.235
##
## Node number 1910: 1478 observations
     predicted class=6 expected loss=0.01826793 P(node) =0.05863916
                                                                          7
##
       class counts:
                         0
                               0
                                     4
                                           1
                                                       12 1451
2
##
      probabilities: 0.000 0.000 0.003 0.001 0.001 0.008 0.982 0.000 0.005
0.001
##
## Node number 1911: 7 observations
##
     predicted class=9 expected loss=0.4285714 P(node) =0.0002777227
##
       class counts:
                                                 1
                                                        2
                         0
                               0
                                     0
                                           0
                                                              0
                                                                    0
                                                                          0
4
##
      probabilities: 0.000 0.000 0.000 0.000 0.143 0.286 0.000 0.000 0.000
0.571
##
## Node number 1918: 29 observations,
                                         complexity param=0.0002232741
                        expected loss=0.5517241 P(node) =0.001150565
##
     predicted class=5
##
       class counts:
                         0
                               0
                                     1
                                           2
                                                       13
                                                                    1
                                                                          6
0
##
      probabilities: 0.000 0.000 0.034 0.069 0.000 0.448 0.207 0.034 0.207
0.000
##
     left son=3836 (13 obs) right son=3837 (16 obs)
##
     Primary splits:
         186 < 160
##
                     to the left,
                                   improve=5.098143, (0 missing)
##
         346 < 142
                     to the right, improve=4.416092, (0 missing)
##
         187 < 3
                     to the right, improve=4.412052, (0 missing)
##
         374 < 133
                     to the right, improve=4.319297, (0 missing)
##
         128 < 127
                     to the left, improve=4.261706, (0 missing)
##
     Surrogate splits:
##
         214 < 41
                     to the left, agree=0.897, adj=0.769, (0 split)
##
         187 < 130
                                   agree=0.862, adj=0.692, (0 split)
                     to the left,
         374 < 133
                     to the left, agree=0.862, adj=0.692, (0 split)
##
                                   agree=0.828, adj=0.615, (0 split)
##
         185 < 157
                     to the left,
##
         402 < 132.5 to the left,
                                   agree=0.828, adj=0.615, (0 split)
##
## Node number 1919: 33 observations
     predicted class=8 expected loss=0.1818182 P(node) =0.001309264
##
##
       class counts:
                                     1
                                                                         27
2
##
      probabilities: 0.000 0.000 0.030 0.000 0.000 0.091 0.000 0.000 0.818
0.061
##
## Node number 1936: 1325 observations,
                                           complexity param=0.0003572385
     predicted class=4 expected loss=0.03924528 P(node) =0.05256893
##
       class counts:
                         0
                               6
                                     5
                                           7 1273
                                                             14
                                                                    0
                                                                          5
15
```

```
probabilities: 0.000 0.005 0.004 0.005 0.961 0.000 0.011 0.000 0.004
##
0.011
##
     left son=3872 (1313 obs) right son=3873 (12 obs)
##
     Primary splits:
##
         95 < 32
                     to the left,
                                    improve=15.836140, (0 missing)
##
         96
            < 2
                     to the left,
                                    improve=15.836140, (0 missing)
##
                     to the left,
                                    improve=10.278060, (0 missing)
         94 < 3.5
##
         437 < 1
                     to the right, improve=10.010500, (0 missing)
                                    improve= 9.190573, (0 missing)
##
         123 < 251.5 to the left,
##
     Surrogate splits:
##
         94
            < 3.5
                     to the left,
                                   agree=0.998, adj=0.750, (0 split)
                                    agree=0.998, adj=0.750, (0 split)
##
         96
            < 39
                     to the left,
##
            < 11
                     to the left,
                                    agree=0.995, adj=0.500, (0 split)
         67
##
         68 < 47
                     to the left,
                                    agree=0.995, adj=0.417, (0 split)
##
         123 < 251.5 to the left,
                                    agree=0.994, adj=0.333, (0 split)
##
## Node number 1937: 19 observations
##
     predicted class=7
                        expected loss=0.4736842 P(node) =0.0007538187
##
       class counts:
                         0
                               0
                                      3
                                            2
                                                  1
                                                        2
                                                                   10
                                                                           0
1
##
      probabilities: 0.000 0.000 0.158 0.105 0.053 0.105 0.000 0.526 0.000
0.053
##
## Node number 1938: 48 observations,
                                          complexity param=0.0002232741
     predicted class=5
                        expected loss=0.625 P(node) =0.001904384
##
       class counts:
                         0
                               0
                                      5
                                            7
                                                  8
                                                       18
                                                              0
                                                                    0
                                                                           6
4
##
      probabilities: 0.000 0.000 0.104 0.146 0.167 0.375 0.000 0.000 0.125
0.083
##
     left son=3876 (24 obs) right son=3877 (24 obs)
##
     Primary splits:
##
         354 < 4
                     to the left,
                                   improve=6.458333, (0 missing)
##
         215 < 11
                     to the right, improve=6.229167, (0 missing)
##
         492 < 53.5
                     to the left,
                                   improve=6.136111, (0 missing)
##
                                    improve=5.991667, (0 missing)
         326 < 43
                     to the left,
##
         327 < 9.5
                     to the right, improve=5.901467, (0 missing)
##
     Surrogate splits:
##
         326 < 43
                     to the left,
                                   agree=0.917, adj=0.833, (0 split)
##
         327 < 32
                     to the left,
                                    agree=0.875, adj=0.750, (0 split)
         382 < 23
                     to the left,
                                    agree=0.875, adj=0.750, (0 split)
##
##
         381 < 31
                     to the left,
                                   agree=0.854, adj=0.708, (0 split)
                                   agree=0.833, adj=0.667, (0 split)
##
         298 < 5
                     to the left,
##
## Node number 1939: 23 observations
##
     predicted class=8
                        expected loss=0.1304348
                                                  P(node) = 0.0009125174
##
       class counts:
                         0
                               0
                                      1
                                            0
                                                  0
                                                        1
                                                              1
                                                                    0
                                                                          20
0
##
      probabilities: 0.000 0.000 0.043 0.000 0.000 0.043 0.043 0.000 0.870
0.000
##
```

```
## Node number 1946: 32 observations,
                                       complexity param=0.0002232741
     predicted class=4 expected loss=0.34375 P(node) =0.001269589
##
##
       class counts:
                         0
                               0
                                     1
                                           1
                                                21
                                                       2
                                                                         0
7
##
      probabilities: 0.000 0.000 0.031 0.031 0.656 0.062 0.000 0.000 0.000
0.219
##
     left son=3892 (24 obs) right son=3893 (8 obs)
##
     Primary splits:
##
         323 < 1
                     to the right, improve=6.083333, (0 missing)
##
         244 < 73.5
                     to the left,
                                   improve=5.435065, (0 missing)
         324 < 39
##
                     to the right, improve=4.884314, (0 missing)
                     to the left, improve=4.833333, (0 missing)
         300 < 6.5
##
##
         245 < 14
                     to the left, improve=4.637143, (0 missing)
##
     Surrogate splits:
##
         295 < 90.5
                    to the right, agree=0.938, adj=0.750, (0 split)
##
         296 < 17
                     to the right, agree=0.938, adj=0.750, (0 split)
                                   agree=0.906, adj=0.625, (0 split)
##
         244 < 73.5
                    to the left,
##
         245 < 14
                     to the left,
                                   agree=0.906, adj=0.625, (0 split)
                     to the left, agree=0.906, adj=0.625, (0 split)
##
         265 < 186
##
## Node number 1947: 40 observations
##
     predicted class=9
                       expected loss=0.25 P(node) =0.001586987
##
       class counts:
                         0
                               0
                                     1
                                                       2
                                                                   5
                                           1
                                                 1
                                                                         0
30
##
      probabilities: 0.000 0.000 0.025 0.025 0.025 0.050 0.000 0.125 0.000
0.750
##
## Node number 1952: 24 observations,
                                         complexity param=0.0003125837
##
     predicted class=3
                        expected loss=0.3333333 P(node) =0.000952192
##
       class counts:
                         0
                               0
                                          16
                                                       8
                                                                         0
                                     0
0
##
      probabilities: 0.000 0.000 0.000 0.667 0.000 0.333 0.000 0.000 0.000
0.000
##
     left son=3904 (15 obs) right son=3905 (9 obs)
##
     Primary splits:
##
         265 < 169.5 to the left,
                                   improve=8.888889, (0 missing)
         179 < 3.5
                     to the right, improve=8.784314, (0 missing)
##
##
         180 < 3.5
                     to the right, improve=8.784314, (0 missing)
         217 < 48.5
##
                    to the left,
                                   improve=8.784314, (0 missing)
         218 < 38.5
                    to the left,
                                   improve=8.784314, (0 missing)
##
##
     Surrogate splits:
##
         264 < 8.5
                     to the left, agree=0.958, adj=0.889, (0 split)
##
         573 < 56
                     to the left,
                                   agree=0.958, adj=0.889, (0 split)
                                   agree=0.958, adj=0.889, (0 split)
##
         574 < 126
                     to the left,
                     to the right, agree=0.917, adj=0.778, (0 split)
##
         179 < 3.5
##
         180 < 3.5
                     to the right, agree=0.917, adj=0.778, (0 split)
##
## Node number 1953: 470 observations,
                                          complexity param=0.0002232741
##
     predicted class=5 expected loss=0.08085106 P(node) =0.01864709
      class counts: 0 0 1 19 1 432 0
```

```
16
##
      probabilities: 0.000 0.000 0.002 0.040 0.002 0.919 0.000 0.002 0.000
0.034
##
     left son=3906 (9 obs) right son=3907 (461 obs)
##
     Primary splits:
##
         123 < 180.5 to the right, improve=9.456185, (0 missing)
##
                     to the left, improve=8.900252, (0 missing)
                     to the right, improve=8.580909, (0 missing)
##
         188 < 2
                     to the left, improve=8.377046, (0 missing)
##
         215 < 27
                     to the left, improve=7.969778, (0 missing)
##
         216 < 1.5
##
     Surrogate splits:
##
         122 < 11
                     to the right, agree=0.998, adj=0.889, (0 split)
##
         124 < 251.5 to the right, agree=0.994, adj=0.667, (0 split)
##
         121 < 13
                     to the right, agree=0.991, adj=0.556, (0 split)
         125 < 121.5 to the right, agree=0.991, adj=0.556, (0 split)
##
##
         120 < 1.5
                     to the right, agree=0.989, adj=0.444, (0 split)
##
## Node number 1956: 18 observations
##
     predicted class=2 expected loss=0.2777778 P(node) =0.000714144
##
       class counts:
                         3
                               0
                                    13
                                            0
                                                  0
                                                        0
                                                              2
                                                                          0
0
      probabilities: 0.167 0.000 0.722 0.000 0.000 0.000 0.111 0.000 0.000
##
0.000
##
## Node number 1957: 7 observations
##
     predicted class=8 expected loss=0.1428571 P(node) =0.0002777227
##
       class counts:
                         0
                               0
                                                                          6
                                     0
                                            1
0
##
      probabilities: 0.000 0.000 0.000 0.143 0.000 0.000 0.000 0.000 0.857
0.000
##
## Node number 1958: 11 observations
##
     predicted class=4
                        expected loss=0.5454545 P(node) =0.0004364213
##
       class counts:
                         0
                                     0
                                            0
                                                  5
                                                        2
                                                                          3
1
      probabilities: 0.000 0.000 0.000 0.455 0.182 0.000 0.000 0.273
##
0.091
##
## Node number 1959: 24 observations
     predicted class=9 expected loss=0.08333333 P(node) =0.000952192
##
       class counts:
                               0
                                     0
                                                        1
                                                              0
                                                                          0
                                                  0
22
##
      probabilities: 0.000 0.000 0.000 0.042 0.000 0.042 0.000 0.000 0.000
0.917
##
## Node number 1964: 60 observations,
                                         complexity param=0.000491203
##
     predicted class=7
                        expected loss=0.5666667
                                                 P(node) =0.00238048
##
       class counts:
                                                  1
                                                                          4
                         0
                               1
                                     3
                                          14
                                                        0
                                                                   26
10
##
      probabilities: 0.000 0.017 0.050 0.233 0.017 0.000 0.017 0.433 0.067
```

```
0.167
##
     left son=3928 (23 obs) right son=3929 (37 obs)
##
     Primary splits:
##
                     to the right, improve=10.137090, (0 missing)
         377 < 4
         406 < 243
##
                     to the right, improve= 9.846812, (0 missing)
##
         405 < 95.5 to the right, improve= 9.406748, (0 missing)
##
         574 < 18.5
                     to the left, improve= 8.147813, (0 missing)
##
         546 < 8
                     to the left, improve= 7.998405, (0 missing)
##
     Surrogate splits:
##
         405 < 163
                     to the right, agree=0.917, adj=0.783, (0 split)
##
         378 < 142.5 to the right, agree=0.867, adj=0.652, (0 split)
         406 < 223.5 to the right, agree=0.867, adj=0.652, (0 split)
##
##
         376 < 17.5 to the right, agree=0.850, adj=0.609, (0 split)
##
         461 < 124
                     to the left, agree=0.833, adj=0.565, (0 split)
##
## Node number 1965: 67 observations,
                                         complexity param=0.0005805126
     predicted class=9
                        expected loss=0.4179104 P(node) =0.002658203
##
       class counts:
                         0
                               0
                                            2
                                                                    2
                                                                          5
                                     0
                                                 19
                                                        0
                                                              0
39
##
      probabilities: 0.000 0.000 0.000 0.030 0.284 0.000 0.000 0.030 0.075
0.582
##
     left son=3930 (13 obs) right son=3931 (54 obs)
##
     Primary splits:
##
         454 < 2
                     to the right, improve=13.86235, (0 missing)
##
         455 < 101.5 to the right, improve=13.86235, (0 missing)
         483 < 11.5 to the right, improve=13.86235, (0 missing)
##
                     to the right, improve=12.56336, (0 missing)
##
         456 < 226.5 to the right, improve=12.10794, (0 missing)
##
##
     Surrogate splits:
##
         455 < 101.5 to the right, agree=1.000, adj=1.000, (0 split)
##
         483 < 11.5 to the right, agree=1.000, adj=1.000, (0 split)
##
         456 < 226.5 to the right, agree=0.985, adj=0.923, (0 split)
##
         482 < 3
                     to the right, agree=0.985, adj=0.923, (0 split)
         484 < 82.5 to the right, agree=0.970, adj=0.846, (0 split)
##
##
## Node number 1968: 77 observations
##
     predicted class=3
                        expected loss=0.05194805 P(node) =0.003054949
##
       class counts:
                         0
                               0
                                     1
                                          73
                                                        0
                                                                          1
                                                  0
                                                              0
2
      probabilities: 0.000 0.000 0.013 0.948 0.000 0.000 0.000 0.000 0.013
##
0.026
##
## Node number 1969: 22 observations,
                                         complexity param=0.0002679289
##
     predicted class=9 expected loss=0.6363636 P(node) =0.0008728427
##
       class counts:
                         1
                                     1
                                           3
                                                                          1
                               0
                                                  1
8
      probabilities: 0.045 0.000 0.045 0.136 0.045 0.318 0.000 0.000 0.045
##
0.364
##
     left son=3938 (14 obs) right son=3939 (8 obs)
##
     Primary splits:
```

```
to the right, improve=6.701299, (0 missing)
##
         188 < 3.5
                     to the right, improve=6.187257, (0 missing)
##
         376 < 110
                     to the right, improve=5.951299, (0 missing)
##
         160 < 85.5
         467 < 194
                     to the right, improve=5.951299, (0 missing)
##
                     to the right, improve=5.708625, (0 missing)
##
         161 < 68.5
##
     Surrogate splits:
##
         376 < 110
                     to the right, agree=0.955, adj=0.875, (0 split)
##
         681 < 6.5
                     to the left, agree=0.955, adj=0.875, (0 split)
##
         158 < 65
                     to the right, agree=0.909, adj=0.750, (0 split)
                     to the right, agree=0.909, adj=0.750, (0 split)
##
         159 < 16
##
         187 < 96
                     to the right, agree=0.909, adj=0.750, (0 split)
##
## Node number 1970: 46 observations
##
     predicted class=2 expected loss=0.1521739 P(node) =0.001825035
##
       class counts:
                                    39
                                                        1
                         0
                               0
                                                  0
                                                              0
                                                                          1
1
##
      probabilities: 0.000 0.000 0.848 0.087 0.000 0.022 0.000 0.000 0.022
0.022
##
## Node number 1971: 33 observations
     predicted class=8
                        expected loss=0.2727273 P(node) =0.001309264
##
##
       class counts:
                         1
                               0
                                     3
                                            2
                                                        0
                                                              3
                                                                         24
0
##
      probabilities: 0.030 0.000 0.091 0.061 0.000 0.000 0.091 0.000 0.727
0.000
##
## Node number 1972: 90 observations
##
     predicted class=4
                        expected loss=0.1
                                           P(node) = 0.00357072
##
       class counts:
                         0
                               0
                                     3
                                                 81
                                            0
                                                              1
                                                                          0
5
##
      probabilities: 0.000 0.000 0.033 0.000 0.900 0.000 0.011 0.000 0.000
0.056
##
## Node number 1973: 48 observations,
                                         complexity param=0.0003572385
                        expected loss=0.5625 P(node) =0.001904384
     predicted class=9
##
       class counts:
                         0
                               0
                                     2
                                            7
                                                 11
                                                        2
                                                              0
                                                                          5
                                                                    0
21
##
      probabilities: 0.000 0.000 0.042 0.146 0.229 0.042 0.000 0.000 0.104
0.438
##
     left son=3946 (10 obs) right son=3947 (38 obs)
##
     Primary splits:
##
         183 < 239
                     to the left, improve=6.762281, (0 missing)
##
         403 < 157
                     to the right, improve=6.670290, (0 missing)
                     to the right, improve=5.578042, (0 missing)
##
         376 < 2.5
##
         372 < 11.5 to the left, improve=5.352564, (0 missing)
                     to the right, improve=5.238386, (0 missing)
##
         178 < 250
##
     Surrogate splits:
##
         182 < 34.5
                    to the left, agree=0.896, adj=0.5, (0 split)
##
         181 < 15.5 to the left,
                                   agree=0.875, adj=0.4, (0 split)
##
         155 < 33 to the left, agree=0.854, adj=0.3, (0 split)
```

```
to the left,
                                   agree=0.854, adj=0.3, (0 split)
##
         156 < 9
##
         208 < 31.5 to the left,
                                   agree=0.854, adj=0.3, (0 split)
##
## Node number 1974: 50 observations,
                                         complexity param=0.0003572385
##
     predicted class=9
                        expected loss=0.64 P(node) =0.001983733
                                           9
##
       class counts:
                         0
                               0
                                     3
                                                        2
                                                                    1
                                                                          8
18
##
      probabilities: 0.000 0.000 0.060 0.180 0.180 0.040 0.000 0.020 0.160
0.360
##
     left son=3948 (14 obs) right son=3949 (36 obs)
##
     Primary splits:
         374 < 58
##
                     to the left,
                                   improve=5.950159, (0 missing)
                                   improve=5.825263, (0 missing)
##
         407 < 139.5 to the left,
##
         179 < 239
                     to the right, improve=5.676341, (0 missing)
##
                     to the right, improve=5.131765, (0 missing)
         151 < 8
##
         178 < 62.5 to the right, improve=5.131765, (0 missing)
##
     Surrogate splits:
##
         346 < 8
                                   agree=0.98, adj=0.929, (0 split)
                     to the left,
##
         318 < 4
                     to the left,
                                   agree=0.94, adj=0.786, (0 split)
##
         375 < 4
                     to the left,
                                   agree=0.94, adj=0.786, (0 split)
##
         347 < 3.5
                     to the left,
                                   agree=0.90, adj=0.643, (0 split)
##
         402 < 2.5
                     to the left,
                                   agree=0.90, adj=0.643, (0 split)
##
## Node number 1975: 40 observations
##
     predicted class=8
                        expected loss=0.075 P(node) =0.001586987
##
       class counts:
                         1
                               0
                                     1
                                           0
                                                       0
                                                                    0
                                                                         37
1
##
      probabilities: 0.025 0.000 0.025 0.000 0.000 0.000 0.000 0.000 0.925
0.025
##
## Node number 1976: 119 observations,
                                          complexity param=0.0006698223
     predicted class=3
                        expected loss=0.5798319 P(node) =0.004721285
##
##
       class counts:
                         1
                               0
                                    16
                                          50
                                                  6
                                                       0
                                                                   39
                                                                          2
5
##
      probabilities: 0.008 0.000 0.134 0.420 0.050 0.000 0.000 0.328 0.017
0.042
##
     left son=3952 (66 obs) right son=3953 (53 obs)
##
     Primary splits:
##
         518 < 96.5 to the left,
                                   improve=20.87927, (0 missing)
                                   improve=18.94055, (0 missing)
##
         545 < 130.5 to the left,
##
         573 < 90.5 to the left,
                                   improve=18.81878, (0 missing)
         577 < 10.5
                     to the right, improve=18.25678, (0 missing)
##
##
         550 < 3
                     to the right, improve=18.11945, (0 missing)
##
     Surrogate splits:
                     to the left,
##
         546 < 101
                                   agree=0.924, adj=0.830, (0 split)
##
         517 < 1.5
                     to the left,
                                   agree=0.882, adj=0.736, (0 split)
##
         490 < 217.5 to the left,
                                   agree=0.874, adj=0.717, (0 split)
##
                     to the left,
                                   agree=0.866, adj=0.698, (0 split)
         545 < 7.5
##
         573 < 160
                     to the left,
                                   agree=0.824, adj=0.604, (0 split)
##
```

```
## Node number 1977: 57 observations
     predicted class=9 expected loss=0.1403509 P(node) =0.002261456
##
##
       class counts:
                         0
                               0
                                     1
                                           1
                                                 2
                                                       0
                                                             0
                                                                          4
49
##
      probabilities: 0.000 0.000 0.018 0.018 0.035 0.000 0.000 0.000 0.070
0.860
##
## Node number 1978: 20 observations
     predicted class=4 expected loss=0.35 P(node) =0.0007934934
##
       class counts:
                         0
                               0
                                     0
                                                13
                                                                   0
                                                                          0
                                           1
                                                       1
5
      probabilities: 0.000 0.000 0.000 0.650 0.650 0.050 0.000 0.000 0.000
##
0.250
##
## Node number 1979: 97 observations
     predicted class=9 expected loss=0.1340206 P(node) =0.003848443
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                 2
                                                       0
                                                             0
                                                                          7
84
      probabilities: 0.000 0.000 0.000 0.000 0.021 0.000 0.000 0.041 0.072
##
0.866
##
## Node number 1980: 31 observations
     predicted class=4 expected loss=0.03225806 P(node) =0.001229915
##
       class counts:
                         0
                                     0
                                                30
                                                                          1
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.968 0.000 0.000 0.000 0.032
0.000
##
## Node number 1981: 35 observations
     predicted class=9 expected loss=0.1714286 P(node) =0.001388613
##
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                 4
                                                       0
                                                             0
                                                                    1
                                                                          1
29
##
      probabilities: 0.000 0.000 0.000 0.114 0.000 0.000 0.029 0.029
0.829
##
## Node number 1982: 72 observations,
                                       complexity param=0.0003125837
##
     predicted class=9
                        expected loss=0.4305556 P(node) =0.002856576
##
       class counts:
                         0
                               0
                                     0
                                           4
                                                 5
                                                       2
                                                             0
                                                                         17
                                                                    3
41
##
      probabilities: 0.000 0.000 0.000 0.056 0.069 0.028 0.000 0.042 0.236
0.569
##
     left son=3964 (24 obs) right son=3965 (48 obs)
##
     Primary splits:
##
         438 < 130.5 to the left,
                                   improve=15.34722, (0 missing)
         400 < 25
##
                     to the left,
                                   improve=14.57825, (0 missing)
##
         544 < 138
                     to the left,
                                   improve=14.19766, (0 missing)
##
         429 < 19.5 to the left,
                                   improve=13.87868, (0 missing)
                     to the right, improve=13.83532, (0 missing)
##
         517 < 198
##
     Surrogate splits:
##
         410 < 165 to the left, agree=0.875, adj=0.625, (0 split)
```

```
466 < 75 to the left, agree=0.875, adj=0.625, (0 split)
##
##
         544 < 107.5 to the right, agree=0.861, adj=0.583, (0 split)
         411 < 13.5 to the left, agree=0.847, adj=0.542, (0 split)
##
         430 < 45.5 to the left,
                                   agree=0.847, adj=0.542, (0 split)
##
##
## Node number 1983: 1014 observations
     predicted class=9 expected loss=0.06213018 P(node) =0.04023011
##
       class counts:
                         0
                               0
                                     1
                                           6
                                                30
                                                       4
                                                                        15
951
##
      probabilities: 0.000 0.000 0.001 0.006 0.030 0.004 0.000 0.007 0.015
0.938
##
## Node number 1988: 16 observations
##
     predicted class=3 expected loss=0.25 P(node) =0.0006347947
##
                                          12
       class counts:
                         0
                               1
                                     2
                                                 0
                                                       0
                                                                   0
                                                                          1
0
##
      probabilities: 0.000 0.062 0.125 0.750 0.000 0.000 0.000 0.000 0.062
0.000
##
## Node number 1989: 9 observations
     predicted class=5 expected loss=0 P(node) =0.000357072
##
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                       9
                                                                          a
0
##
      probabilities: 0.000 0.000 0.000 0.000 1.000 0.000 0.000 0.000
0.000
##
## Node number 1998: 7 observations
##
     predicted class=3
                        expected loss=0.1428571 P(node) =0.0002777227
##
       class counts:
                         0
                               0
                                     0
                                           6
                                                 0
                                                       а
                                                                          0
1
##
      probabilities: 0.000 0.000 0.000 0.857 0.000 0.000 0.000 0.000 0.000
0.143
##
## Node number 1999: 53 observations
     predicted class=9 expected loss=0.2075472 P(node) =0.002102757
##
       class counts:
                         0
                               0
                                     1
                                                 5
                                                       0
                                                             0
                                                                   2
                                                                          3
                                           0
42
##
      probabilities: 0.000 0.000 0.019 0.000 0.094 0.000 0.000 0.038 0.057
0.792
##
## Node number 2186: 31 observations,
                                       complexity param=0.0002456015
##
     predicted class=2 expected loss=0.7741935 P(node) =0.001229915
##
       class counts:
                         4
                               6
                                     7
                                           3
                                                 4
                                                       2
                                                             1
                                                                          4
0
      probabilities: 0.129 0.194 0.226 0.097 0.129 0.065 0.032 0.000 0.129
##
0.000
##
     left son=4372 (20 obs) right son=4373 (11 obs)
##
     Primary splits:
##
         652 < 147
                     to the left, improve=4.476246, (0 missing)
##
         653 < 128.5 to the left, improve=4.476246, (0 missing)
```

```
to the left.
                                   improve=4.476246, (0 missing)
##
         654 < 14
##
         160 < 49.5 to the left,
                                   improve=4.155500, (0 missing)
##
         626 < 149
                     to the left,
                                   improve=4.126486, (0 missing)
##
     Surrogate splits:
##
         653 < 128.5 to the left,
                                   agree=1.000, adj=1.000, (0 split)
##
         654 < 14
                     to the left,
                                   agree=1.000, adj=1.000, (0 split)
##
         626 < 149
                     to the left,
                                   agree=0.968, adj=0.909, (0 split)
                                   agree=0.935, adj=0.818, (0 split)
##
         160 < 49.5 to the left,
                                   agree=0.935, adj=0.818, (0 split)
##
         651 < 34
                     to the left,
##
## Node number 2187: 23 observations
     predicted class=5 expected loss=0.2608696 P(node) =0.0009125174
##
##
       class counts:
                         1
                               0
                                     1
                                           3
                                                  0
                                                       17
                                                                    0
                                                                          1
                                                              0
0
##
      probabilities: 0.043 0.000 0.043 0.130 0.000 0.739 0.000 0.000 0.043
0.000
##
## Node number 2190: 37 observations,
                                         complexity param=0.0003125837
##
     predicted class=1 expected loss=0.6756757 P(node) =0.001467963
##
       class counts:
                         0
                              12
                                     1
                                            1
                                                  8
                                                        2
                                                              3
                                                                    5
                                                                          0
5
      probabilities: 0.000 0.324 0.027 0.027 0.216 0.054 0.081 0.135 0.000
##
0.135
##
     left son=4380 (15 obs) right son=4381 (22 obs)
##
     Primary splits:
         405 < 205.5 to the right, improve=6.039803, (0 missing)
##
##
                     to the right, improve=5.747548, (0 missing)
         377 < 245
                     to the right, improve=5.137150, (0 missing)
##
         349 < 248
##
         321 < 189.5 to the right, improve=4.770690, (0 missing)
##
         375 < 155
                     to the left, improve=4.407336, (0 missing)
##
     Surrogate splits:
##
         377 < 62
                     to the right, agree=0.838, adj=0.600, (0 split)
##
         180 < 54
                     to the right, agree=0.811, adj=0.533, (0 split)
##
         433 < 240.5 to the right, agree=0.811, adj=0.533, (0 split)
##
         153 < 159.5 to the right, agree=0.784, adj=0.467, (0 split)
##
         181 < 97.5 to the right, agree=0.784, adj=0.467, (0 split)
##
## Node number 2191: 33 observations
##
     predicted class=9
                        expected loss=0.2727273
                                                 P(node) = 0.001309264
                               2
##
       class counts:
                         0
                                     0
                                            0
                                                  5
                                                                    1
                                                                          1
24
##
      probabilities: 0.000 0.061 0.000 0.000 0.152 0.000 0.000 0.030 0.030
0.727
##
## Node number 2222: 10 observations
##
     predicted class=8
                        expected loss=0.3 P(node) =0.0003967467
##
       class counts:
                         1
                               1
                                     0
                                                  1
                                                                          7
                                            0
                                                                    0
0
##
      probabilities: 0.100 0.100 0.000 0.000 0.100 0.000 0.000 0.000 0.700
0.000
```

```
##
## Node number 2223: 11 observations
##
     predicted class=9 expected loss=0.5454545 P(node) =0.0004364213
                         1
                               0
                                                       0
                                                             2
##
       class counts:
                                     0
                                          2
                                                 0
                                                                   0
                                                                         1
5
      probabilities: 0.091 0.000 0.000 0.182 0.000 0.000 0.182 0.000 0.091
##
0.455
##
## Node number 2576: 1350 observations
     predicted class=3 expected loss=0.01407407 P(node) =0.0535608
##
##
       class counts:
                         0
                               2
                                     8 1331
                                                 0
                                                       6
                                                                         3
0
##
      probabilities: 0.000 0.001 0.006 0.986 0.000 0.004 0.000 0.000 0.002
0.000
##
## Node number 2577: 10 observations
     predicted class=5 expected loss=0.3 P(node) =0.0003967467
##
       class counts:
                         0
                               0
                                           1
                                                       7
                                                             0
                                                                         2
                                     0
                                                 0
0
##
      probabilities: 0.000 0.000 0.000 0.100 0.000 0.700 0.000 0.000 0.200
0.000
##
## Node number 2682: 11 observations
     predicted class=3 expected loss=0.4545455 P(node) =0.0004364213
##
##
       class counts:
                         0
                               0
                                     0
                                           6
                                                 4
                                                       0
                                                             1
                                                                         0
0
      probabilities: 0.000 0.000 0.000 0.545 0.364 0.000 0.091 0.000 0.000
##
0.000
##
## Node number 2683: 9 observations
##
     predicted class=7 expected loss=0 P(node) =0.000357072
##
       class counts:
                               0
0
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 1.000 0.000
##
0.000
##
## Node number 2684: 13 observations
     predicted class=1 expected loss=0.4615385 P(node) =0.0005157707
##
       class counts:
##
                         0
                               7
                                     0
                                           0
                                                 0
                                                       0
                                                             2
                                                                   0
0
##
      probabilities: 0.000 0.538 0.000 0.000 0.000 0.000 0.154 0.000 0.308
0.000
##
## Node number 2685: 14 observations
     predicted class=5 expected loss=0.6428571 P(node) =0.0005554453
##
##
       class counts:
                         0
                               0
                                     0
                                           3
                                                 2
                                                       5
                                                             4
                                                                   0
                                                                         0
0
      probabilities: 0.000 0.000 0.000 0.214 0.143 0.357 0.286 0.000 0.000
##
0.000
##
```

```
## Node number 2716: 25 observations,
                                        complexity param=0.0002232741
                        expected loss=0.36 P(node) =0.0009918667
##
     predicted class=3
##
       class counts:
                         0
                               1
                                     1
                                          16
                                                 0
                                                       6
                                                                          1
0
##
      probabilities: 0.000 0.040 0.040 0.640 0.000 0.240 0.000 0.000 0.040
0.000
##
     left son=5432 (16 obs) right son=5433 (9 obs)
##
     Primary splits:
##
         270 < 13.5 to the right, improve=6.658333, (0 missing)
                     to the right, improve=6.302941, (0 missing)
##
         269 < 88.5
##
         262 < 248
                     to the left, improve=6.302941, (0 missing)
                     to the right, improve=6.152381, (0 missing)
##
         268 < 65.5
##
         242 < 122
                     to the right, improve=5.533333, (0 missing)
##
     Surrogate splits:
##
         242 < 122
                     to the right, agree=0.96, adj=0.889, (0 split)
##
         269 < 88.5
                     to the right, agree=0.96, adj=0.889, (0 split)
##
         261 < 103
                     to the left, agree=0.92, adj=0.778, (0 split)
##
         268 < 65.5 to the right, agree=0.92, adj=0.778, (0 split)
##
         296 < 233.5 to the right, agree=0.92, adj=0.778, (0 split)
##
## Node number 2717: 77 observations,
                                         complexity param=0.0002232741
                        expected loss=0.3896104 P(node) =0.003054949
##
     predicted class=5
##
       class counts:
                         5
                               0
                                     0
                                           9
                                                       47
                                                                          2
                                                              2
                                                                    3
9
      probabilities: 0.065 0.000 0.000 0.117 0.000 0.610 0.026 0.039 0.026
##
0.117
##
     left son=5434 (8 obs) right son=5435 (69 obs)
##
     Primary splits:
##
         455 < 193.5 to the right, improve=6.716685, (0 missing)
         329 < 218.5 to the right, improve=6.662338, (0 missing)
##
                     to the right, improve=6.509649, (0 missing)
##
         358 < 11
##
         482 < 197
                     to the right, improve=6.348052, (0 missing)
##
         597 < 38.5 to the right, improve=6.068789, (0 missing)
##
     Surrogate splits:
##
         456 < 196.5 to the right, agree=0.987, adj=0.875, (0 split)
         428 < 246.5 to the right, agree=0.974, adj=0.750, (0 split)
##
                     to the right, agree=0.961, adj=0.625, (0 split)
##
         454 < 80
##
         483 < 167.5 to the right, agree=0.961, adj=0.625, (0 split)
         484 < 251.5 to the right, agree=0.961, adj=0.625, (0 split)
##
##
## Node number 2718: 30 observations,
                                         complexity param=0.0001786193
##
     predicted class=8
                        expected loss=0.4666667 P(node) =0.00119024
##
       class counts:
                         0
                               0
                                           2
                                                                         16
6
      probabilities: 0.000 0.000 0.000 0.067 0.000 0.200 0.000 0.000 0.533
##
0.200
##
     left son=5436 (14 obs) right son=5437 (16 obs)
##
     Primary splits:
##
         431 < 10.5 to the left,
                                   improve=5.719048, (0 missing)
##
         433 < 9 to the left, improve=4.869985, (0 missing)
```

```
improve=4.851885, (0 missing)
##
         432 < 92 to the left,
##
         405 < 194.5 to the left,
                                   improve=4.560128, (0 missing)
##
         466 < 105.5 to the right, improve=4.526094, (0 missing)
##
     Surrogate splits:
##
         432 < 27.5 to the left,
                                   agree=0.867, adj=0.714, (0 split)
##
         402 < 249.5 to the left,
                                   agree=0.833, adj=0.643, (0 split)
         403 < 161.5 to the left,
                                   agree=0.833, adj=0.643, (0 split)
##
                                   agree=0.833, adj=0.643, (0 split)
##
         430 < 160
                     to the left,
##
         458 < 13
                     to the left,
                                   agree=0.833, adj=0.643, (0 split)
##
## Node number 2719: 8 observations
##
     predicted class=9 expected loss=0 P(node) =0.0003173973
##
       class counts:
                         0
                               0
                                                       0
                                                                          0
                                     0
                                           0
                                                              0
                                                                    0
8
##
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
1.000
##
## Node number 3066: 8 observations
##
     predicted class=5
                        expected loss=0.375 P(node) =0.0003173973
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                 0
                                                        5
                                                              1
                                                                          1
1
      probabilities: 0.000 0.000 0.000 0.000 0.625 0.125 0.000 0.125
##
0.125
##
## Node number 3067: 17 observations
##
     predicted class=8 expected loss=0.05882353 P(node) =0.0006744694
##
       class counts:
                         0
                                                       0
                               0
                                     0
                                           1
                                                                         16
0
##
      probabilities: 0.000 0.000 0.000 0.059 0.000 0.000 0.000 0.000 0.941
0.000
##
## Node number 3082: 18 observations
     predicted class=0
                        expected loss=0.3888889 P(node) =0.000714144
##
##
       class counts:
                        11
                               0
                                     2
                                           5
                                                              0
0
##
      probabilities: 0.611 0.000 0.111 0.278 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 3083: 14 observations
##
     predicted class=5 expected loss=0.1428571 P(node) =0.0005554453
##
       class counts:
                         1
                               0
                                     0
                                           1
                                                       12
                                                              0
                                                                          0
0
      probabilities: 0.071 0.000 0.000 0.071 0.000 0.857 0.000 0.000 0.000
##
0.000
##
## Node number 3298: 10 observations
     predicted class=0
                        expected loss=0.6 P(node) =0.0003967467
##
##
                                                                          2
       class counts:
                         4
                               0
                                     1
                                           1
                                                 0
                                                       0
                                                              2
0
##
      probabilities: 0.400 0.000 0.100 0.100 0.000 0.000 0.200 0.000 0.200
```

```
0.000
##
## Node number 3299: 14 observations
     predicted class=5 expected loss=0.2857143 P(node) =0.0005554453
##
       class counts:
                         0
                               0
                                     0
                                            1
                                                  1
                                                       10
                                                              1
                                                                    0
                                                                          1
0
      probabilities: 0.000 0.000 0.000 0.071 0.071 0.714 0.071 0.000 0.071
##
0.000
##
## Node number 3618: 14 observations
##
     predicted class=2
                        expected loss=0.1428571 P(node) =0.0005554453
                                                        0
##
       class counts:
                         0
                               0
                                    12
                                            1
                                                  1
                                                              0
                                                                    0
                                                                          0
0
##
      probabilities: 0.000 0.000 0.857 0.071 0.071 0.000 0.000 0.000 0.000
0.000
##
## Node number 3619: 14 observations
     predicted class=6 expected loss=0.5714286 P(node) =0.0005554453
##
##
       class counts:
                         0
                               1
                                     2
                                                        2
                                                              6
                                                                          0
0
##
      probabilities: 0.000 0.071 0.143 0.000 0.000 0.143 0.429 0.214 0.000
0.000
##
## Node number 3620: 63 observations,
                                         complexity param=0.0001786193
     predicted class=4 expected loss=0.1428571 P(node) =0.002499504
##
       class counts:
                         0
                               0
                                     1
                                                 54
                                                        0
                                                              7
                                                                    0
                                                                          0
1
      probabilities: 0.000 0.000 0.016 0.000 0.857 0.000 0.111 0.000 0.000
##
0.016
##
     left son=7240 (56 obs) right son=7241 (7 obs)
##
     Primary splits:
##
         94 < 7.5
                     to the left,
                                   improve=8.404762, (0 missing)
##
         438 < 65
                     to the right, improve=5.231293, (0 missing)
##
         121 < 54
                     to the left, improve=4.680986, (0 missing)
         410 < 16.5 to the right, improve=4.640147, (0 missing)
##
##
         489 < 80.5 to the right, improve=4.554762, (0 missing)
##
     Surrogate splits:
##
         93 < 1.5
                                   agree=0.984, adj=0.857, (0 split)
                     to the left,
##
         95 < 19
                     to the left,
                                   agree=0.984, adj=0.857, (0 split)
         542 < 252.5 to the left,
                                   agree=0.952, adj=0.571, (0 split)
##
##
         39 < 55
                     to the left,
                                   agree=0.937, adj=0.429, (0 split)
##
         40 < 5
                     to the left, agree=0.937, adj=0.429, (0 split)
##
## Node number 3621: 9 observations
     predicted class=8
                        expected loss=0.6666667
                                                 P(node) = 0.000357072
##
##
       class counts:
                         0
                               0
                                     1
                                            0
                                                  0
                                                        2
                                                              0
                                                                    2
                                                                          3
1
      probabilities: 0.000 0.000 0.111 0.000 0.000 0.222 0.000 0.222 0.333
##
0.111
##
```

```
## Node number 3624: 109 observations
     predicted class=2 expected loss=0.266055 P(node) =0.004324539
##
##
       class counts:
                         0
                               2
                                    80
                                          5
                                                 0
                                                      0
                                                                         4
                                                                  10
8
##
      probabilities: 0.000 0.018 0.734 0.046 0.000 0.000 0.000 0.092 0.037
0.073
##
## Node number 3625: 18 observations
     predicted class=7 expected loss=0.2222222 P(node) =0.000714144
##
       class counts:
                         0
                               0
                                     1
                                                 0
                                                       0
                                                                         2
                                           0
                                                                  14
1
      probabilities: 0.000 0.000 0.056 0.000 0.000 0.000 0.000 0.778 0.111
##
0.056
##
## Node number 3628: 14 observations
     predicted class=5 expected loss=0.6428571 P(node) =0.0005554453
##
       class counts:
                         2
                               0
                                     1
                                          0
                                                 1
                                                       5
                                                                         1
2
      probabilities: 0.143 0.000 0.071 0.000 0.071 0.357 0.000 0.143 0.071
##
0.143
##
## Node number 3629: 14 observations
     predicted class=8 expected loss=0.1428571 P(node) =0.0005554453
##
       class counts:
                         0
                                     1
                                                                        12
1
##
      probabilities: 0.000 0.000 0.071 0.000 0.000 0.000 0.000 0.000 0.857
0.071
##
## Node number 3674: 9 observations
     predicted class=0 expected loss=0.3333333 P(node) =0.000357072
##
      class counts:
                         6
                               0
                                     2
                                           0
                                                 0
                                                       0
                                                             0
                                                                   1
                                                                         0
0
##
      probabilities: 0.667 0.000 0.222 0.000 0.000 0.000 0.000 0.111 0.000
0.000
##
## Node number 3675: 20 observations
##
     predicted class=8 expected loss=0 P(node) =0.0007934934
##
       class counts:
                         0
                               0
                                           0
                                                                        20
                                     0
                                                 0
                                                       0
0
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.000 1.000
##
0.000
##
## Node number 3676: 43 observations,
                                       complexity param=0.0001786193
     predicted class=7 expected loss=0.255814 P(node) =0.001706011
##
##
       class counts:
                         1
                               0
                                    4
                                           0
                                                 1
                                                                         0
                                                             1
4
##
      probabilities: 0.023 0.000 0.093 0.000 0.023 0.000 0.023 0.744 0.000
0.093
##
     left son=7352 (10 obs) right son=7353 (33 obs)
##
     Primary splits:
```

```
to the left,
                                   improve=9.232699, (0 missing)
##
         680 < 83
##
         708 < 1
                     to the left,
                                   improve=8.162943, (0 missing)
##
         513 < 26
                     to the right, improve=8.162943, (0 missing)
         540 < 25
                     to the right, improve=8.162943, (0 missing)
##
##
         709 < 4
                     to the left,
                                   improve=7.014517, (0 missing)
##
     Surrogate splits:
##
         708 < 1
                     to the left, agree=0.977, adj=0.9, (0 split)
                                   agree=0.953, adj=0.8, (0 split)
##
         709 < 4
                     to the left,
                     to the right, agree=0.930, adj=0.7, (0 split)
##
         513 < 26
##
         540 < 25
                     to the right, agree=0.930, adj=0.7, (0 split)
##
         154 < 1.5
                     to the right, agree=0.907, adj=0.6, (0 split)
##
## Node number 3677: 28 observations,
                                         complexity param=0.0003572385
##
     predicted class=9 expected loss=0.5714286 P(node) =0.001110891
##
       class counts:
                         0
                               0
                                     2
                                                  4
                                                        0
                                            0
                                                              0
                                                                    1
                                                                          9
12
##
      probabilities: 0.000 0.000 0.071 0.000 0.143 0.000 0.000 0.036 0.321
0.429
##
     left son=7354 (15 obs) right son=7355 (13 obs)
##
     Primary splits:
##
         655 < 18.5 to the right, improve=6.875824, (0 missing)
##
         706 < 57.5
                     to the left,
                                   improve=6.056391, (0 missing)
##
         707 < 23.5
                     to the left,
                                   improve=5.839286, (0 missing)
##
         651 < 14.5
                     to the left,
                                   improve=5.642857, (0 missing)
                                   improve=5.564286, (0 missing)
##
         683 < 35.5
                     to the left,
##
     Surrogate splits:
##
         627 < 117
                     to the right, agree=0.964, adj=0.923, (0 split)
         654 < 196
                     to the right, agree=0.929, adj=0.846, (0 split)
##
##
         182 < 1.5
                     to the right, agree=0.893, adj=0.769, (0 split)
##
         183 < 92.5
                     to the right, agree=0.893, adj=0.769, (0 split)
##
         679 < 35.5
                     to the left, agree=0.857, adj=0.692, (0 split)
##
## Node number 3678: 24 observations,
                                          complexity param=0.0002456015
     predicted class=4
                        expected loss=0.4583333 P(node) =0.000952192
##
##
                         1
                                                        0
                                                                          1
       class counts:
                               0
                                     1
                                            0
                                                 13
8
##
      probabilities: 0.042 0.000 0.042 0.000 0.542 0.000 0.000 0.000 0.042
0.333
     left son=7356 (15 obs) right son=7357 (9 obs)
##
     Primary splits:
##
##
         456 < 71
                     to the right, improve=5.633333, (0 missing)
##
         455 < 68.5
                     to the right, improve=5.117716, (0 missing)
##
                     to the right, improve=4.628205, (0 missing)
         428 < 180.5 to the right, improve=4.628205, (0 missing)
##
                     to the right, improve=4.423810, (0 missing)
##
         485 < 54
##
     Surrogate splits:
##
         428 < 91.5 to the right, agree=0.958, adj=0.889, (0 split)
##
         429 < 245.5 to the right, agree=0.958, adj=0.889, (0 split)
##
         455 < 8.5
                     to the right, agree=0.958, adj=0.889, (0 split)
         400 < 14.5 to the right, agree=0.917, adj=0.778, (0 split)
##
```

```
401 < 191 to the right, agree=0.917, adj=0.778, (0 split)
##
##
## Node number 3679: 29 observations
     predicted class=9 expected loss=0.1034483 P(node) =0.001150565
##
       class counts:
                         0
                               0
                                     2
                                           0
                                                 0
                                                       0
                                                             0
                                                                         1
26
##
      probabilities: 0.000 0.000 0.069 0.000 0.000 0.000 0.000 0.000 0.034
0.897
##
## Node number 3836: 13 observations
##
     predicted class=6 expected loss=0.5384615 P(node) =0.0005157707
                                                       1
                                                                         2
##
       class counts:
                         0
                               0
                                     1
                                           2
                                                 0
                                                             6
                                                                   1
0
##
      probabilities: 0.000 0.000 0.077 0.154 0.000 0.077 0.462 0.077 0.154
0.000
##
## Node number 3837: 16 observations
     predicted class=5 expected loss=0.25 P(node) =0.0006347947
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                      12
                                                                         4
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.750 0.000 0.000 0.250
0.000
##
## Node number 3872: 1313 observations
     predicted class=4 expected loss=0.03198781 P(node) =0.05209284
##
       class counts:
                         0
                               6
                                     5
                                          7 1271
                                                       0
                                                             4
                                                                         5
15
      probabilities: 0.000 0.005 0.004 0.005 0.968 0.000 0.003 0.000 0.004
##
0.011
##
## Node number 3873: 12 observations
     predicted class=6 expected loss=0.1666667 P(node) =0.000476096
##
       class counts:
                               0
                                     0
                                                 2
                                                       0
                                                            10
                                                                         0
      probabilities: 0.000 0.000 0.000 0.000 0.167 0.000 0.833 0.000 0.000
##
0.000
##
## Node number 3876: 24 observations
##
     predicted class=5 expected loss=0.2916667 P(node) =0.000952192
##
       class counts:
                         0
                               0
                                     1
                                           2
                                                      17
                                                                         1
1
##
      probabilities: 0.000 0.000 0.042 0.083 0.083 0.708 0.000 0.000 0.042
0.042
##
## Node number 3877: 24 observations,
                                       complexity param=0.0002232741
     predicted class=4 expected loss=0.75 P(node) =0.000952192
##
##
       class counts:
                         0
                               0
                                     4
                                           5
                                                 6
                                                       1
                                                                         5
3
##
      probabilities: 0.000 0.000 0.167 0.208 0.250 0.042 0.000 0.000 0.208
0.125
```

```
left son=7754 (7 obs) right son=7755 (17 obs)
##
##
     Primary splits:
##
         461 < 201.5 to the right, improve=4.677871, (0 missing)
                     to the right, improve=4.333333, (0 missing)
##
         460 < 94
##
         378 < 199.5 to the right, improve=4.123249, (0 missing)
##
         186 < 26.5 to the left, improve=4.083333, (0 missing)
##
                     to the right, improve=3.958333, (0 missing)
         351 < 17
##
     Surrogate splits:
##
         185 < 71
                     to the left, agree=0.917, adj=0.714, (0 split)
##
         186 < 29
                     to the left, agree=0.917, adj=0.714, (0 split)
##
         207 < 5
                     to the left, agree=0.917, adj=0.714, (0 split)
         488 < 14.5 to the right, agree=0.917, adj=0.714, (0 split)
##
##
         153 < 43
                     to the left, agree=0.875, adj=0.571, (0 split)
##
## Node number 3892: 24 observations
##
     predicted class=4 expected loss=0.1666667 P(node) =0.000952192
##
       class counts:
                         0
                               0
                                     1
                                           1
                                                 20
                                                       1
                                                                          0
1
      probabilities: 0.000 0.000 0.042 0.042 0.833 0.042 0.000 0.000 0.000
##
0.042
##
## Node number 3893: 8 observations
     predicted class=9
                        expected loss=0.25 P(node) =0.0003173973
##
       class counts:
                         0
                                     0
                                           0
                                                        1
6
##
      probabilities: 0.000 0.000 0.000 0.000 0.125 0.125 0.000 0.000 0.000
0.750
##
## Node number 3904: 15 observations
     predicted class=3 expected loss=0 P(node) =0.00059512
##
##
       class counts:
                         0
                               0
                                     0
                                          15
                                                  0
                                                       0
                                                              0
                                                                          0
0
##
      probabilities: 0.000 0.000 0.000 1.000 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 3905: 9 observations
##
     predicted class=5
                        expected loss=0.1111111 P(node) =0.000357072
##
       class counts:
                               0
                                     0
                                                        8
                                                                          0
                         0
                                           1
                                                  0
                                                              0
0
      probabilities: 0.000 0.000 0.000 0.111 0.000 0.889 0.000 0.000 0.000
##
0.000
##
## Node number 3906: 9 observations
##
     predicted class=3 expected loss=0.2222222 P(node) =0.000357072
##
       class counts:
                         0
                               0
                                                                          0
                                     0
                                           7
0
##
      probabilities: 0.000 0.000 0.000 0.778 0.000 0.222 0.000 0.000 0.000
0.000
##
## Node number 3907: 461 observations, complexity param=0.0001786193
```

```
expected loss=0.06724512 P(node) =0.01829002
##
     predicted class=5
##
       class counts:
                                                      430
                         0
                               0
                                      1
                                           12
                                                  1
                                                              0
                                                                    1
                                                                           0
16
      probabilities: 0.000 0.000 0.002 0.026 0.002 0.933 0.000 0.002 0.000
##
0.035
     left son=7814 (450 obs) right son=7815 (11 obs)
##
##
     Primary splits:
                                    improve=9.084851, (0 missing)
##
         718 < 37
                     to the left,
                                    improve=7.839553, (0 missing)
##
         326 < 7.5
                     to the left,
##
         717 < 195.5 to the left,
                                    improve=6.760310, (0 missing)
##
         628 < 0.5
                     to the right, improve=6.449194, (0 missing)
         627 < 0.5
                     to the right, improve=6.242185, (0 missing)
##
##
     Surrogate splits:
##
         717 < 195.5 to the left,
                                   agree=0.993, adj=0.727, (0 split)
##
         719 < 15
                     to the left,
                                    agree=0.989, adj=0.545, (0 split)
##
         326 < 163.5 to the left,
                                    agree=0.980, adj=0.182, (0 split)
                                    agree=0.980, adj=0.182, (0 split)
##
         691 < 252.5 to the left,
                                   agree=0.980, adj=0.182, (0 split)
##
         720 < 14
                     to the left,
##
## Node number 3928: 23 observations,
                                          complexity param=0.0002679289
     predicted class=3
                        expected loss=0.5217391 P(node) =0.0009125174
##
##
       class counts:
                         0
                               1
                                      0
                                           11
                                                  1
                                                        0
                                                              1
                                                                    0
                                                                           2
7
##
      probabilities: 0.000 0.043 0.000 0.478 0.043 0.000 0.043 0.000 0.087
0.304
##
     left son=7856 (11 obs) right son=7857 (12 obs)
##
     Primary splits:
         180 < 95
##
                     to the right, improve=5.986166, (0 missing)
##
         179 < 36
                     to the right, improve=4.888963, (0 missing)
##
         347 < 13
                     to the left, improve=4.748792, (0 missing)
                     to the right, improve=4.713439, (0 missing)
##
         350 < 42.5
##
         292 < 5
                     to the left, improve=4.531621, (0 missing)
##
     Surrogate splits:
##
         179 < 36
                     to the right, agree=0.957, adj=0.909, (0 split)
##
         292 < 5
                     to the left, agree=0.957, adj=0.909, (0 split)
##
         181 < 110.5 to the right, agree=0.913, adj=0.818, (0 split)
                     to the left, agree=0.913, adj=0.818, (0 split)
##
         265 < 22
##
         152 < 2
                     to the right, agree=0.870, adj=0.727, (0 split)
##
## Node number 3929: 37 observations
##
     predicted class=7
                        expected loss=0.2972973
                                                 P(node) =0.001467963
##
       class counts:
                                      3
                                            3
                                                                   26
                                                                           2
3
      probabilities: 0.000 0.000 0.081 0.081 0.000 0.000 0.000 0.703 0.054
##
0.081
##
## Node number 3930: 13 observations
     predicted class=4 expected loss=0
                                          P(node) = 0.0005157707
##
       class counts:
                         0
                               0
                                      0
                                            0
                                                 13
                                                        0
                                                              0
                                                                    0
                                                                           0
0
```

```
probabilities: 0.000 0.000 0.000 0.000 1.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 3931: 54 observations
##
     predicted class=9
                        expected loss=0.2777778 P(node) =0.002142432
##
       class counts:
                         0
                               0
                                     0
                                           2
                                                 6
                                                       0
                                                                          5
39
##
      probabilities: 0.000 0.000 0.000 0.037 0.111 0.000 0.000 0.037 0.093
0.722
##
## Node number 3938: 14 observations
     predicted class=5 expected loss=0.5 P(node) =0.0005554453
##
       class counts:
                         1
                               0
                                     1
                                           3
                                                                    0
                                                                          1
                                                 1
                                                             0
0
##
      probabilities: 0.071 0.000 0.071 0.214 0.071 0.500 0.000 0.000 0.071
0.000
##
## Node number 3939: 8 observations
##
     predicted class=9
                        expected loss=0
                                         P(node) =0.0003173973
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                 0
                                                       0
                                                                          0
8
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
##
1.000
##
## Node number 3946: 10 observations
##
     predicted class=4 expected loss=0.2 P(node) =0.0003967467
##
       class counts:
                         0
                               0
                                     1
                                           1
                                                 8
                                                                          0
0
##
      probabilities: 0.000 0.000 0.100 0.100 0.800 0.000 0.000 0.000 0.000
0.000
##
## Node number 3947: 38 observations,
                                         complexity param=0.0002679289
     predicted class=9
                        expected loss=0.4473684 P(node) =0.001507637
##
       class counts:
                         0
                               0
                                     1
                                           6
                                                 3
                                                       2
                                                                          5
21
      probabilities: 0.000 0.000 0.026 0.158 0.079 0.053 0.000 0.000 0.132
##
0.553
##
     left son=7894 (8 obs) right son=7895 (30 obs)
##
     Primary splits:
         372 < 11.5 to the left, improve=6.837719, (0 missing)
##
##
         378 < 85.5 to the right, improve=6.051305, (0 missing)
##
         178 < 250
                     to the right, improve=5.951007, (0 missing)
##
         151 < 9.5
                     to the right, improve=5.861529, (0 missing)
##
         316 < 22
                     to the left, improve=5.740918, (0 missing)
##
     Surrogate splits:
##
         400 < 35.5 to the left,
                                   agree=0.974, adj=0.875, (0 split)
##
         316 < 22
                     to the left, agree=0.921, adj=0.625, (0 split)
         317 < 32
##
                     to the left, agree=0.921, adj=0.625, (0 split)
##
         344 < 10
                     to the left,
                                   agree=0.921, adj=0.625, (0 split)
##
         345 < 18.5 to the left, agree=0.921, adj=0.625, (0 split)
```

```
##
## Node number 3948: 14 observations
##
     predicted class=3 expected loss=0.4285714 P(node) =0.0005554453
       class counts:
                               0
                                                                          2
##
                         0
                                      2
                                            8
                                                  1
                                                        0
                                                              0
                                                                    1
0
      probabilities: 0.000 0.000 0.143 0.571 0.071 0.000 0.000 0.071 0.143
##
0.000
##
## Node number 3949: 36 observations,
                                          complexity param=0.0003125837
##
     predicted class=9
                        expected loss=0.5 P(node) =0.001428288
##
       class counts:
                         0
                               0
                                      1
                                            1
                                                  8
                                                        2
                                                                          6
18
##
      probabilities: 0.000 0.000 0.028 0.028 0.222 0.056 0.000 0.000 0.167
0.500
##
     left son=7898 (9 obs) right son=7899 (27 obs)
##
     Primary splits:
##
         407 < 122
                     to the left,
                                   improve=6.796296, (0 missing)
##
         379 < 5.5
                     to the left,
                                   improve=5.553737, (0 missing)
##
         353 < 227.5 to the left,
                                   improve=5.236508, (0 missing)
##
         242 < 2
                     to the left,
                                   improve=5.081530, (0 missing)
##
         297 < 28
                                   improve=4.893651, (0 missing)
                     to the left,
##
     Surrogate splits:
##
         379 < 5.5
                     to the left,
                                   agree=0.944, adj=0.778, (0 split)
##
         212 < 85.5 to the left,
                                   agree=0.889, adj=0.556, (0 split)
##
         380 < 116
                     to the left,
                                   agree=0.889, adj=0.556, (0 split)
         408 < 188
##
                     to the left,
                                   agree=0.889, adj=0.556, (0 split)
                                   agree=0.861, adj=0.444, (0 split)
##
         184 < 166
                     to the left,
##
## Node number 3952: 66 observations,
                                          complexity param=0.000491203
                        expected loss=0.3484848 P(node) =0.002618528
##
     predicted class=3
##
       class counts:
                         0
                               0
                                    14
                                           43
                                                  1
                                                        0
                                                              0
                                                                    3
                                                                          1
4
      probabilities: 0.000 0.000 0.212 0.652 0.015 0.000 0.000 0.045 0.015
##
0.061
##
     left son=7904 (12 obs) right son=7905 (54 obs)
##
     Primary splits:
##
         512 < 30
                     to the right, improve=13.66162, (0 missing)
##
                     to the right, improve=11.47786, (0 missing)
         658 < 0.5
##
         685 < 8
                     to the right, improve=10.72371, (0 missing)
         513 < 19.5
                     to the right, improve=10.60606, (0 missing)
##
##
         511 < 3
                     to the right, improve=10.55051, (0 missing)
##
     Surrogate splits:
##
         513 < 19.5
                    to the right, agree=0.970, adj=0.833, (0 split)
         511 < 10.5
##
                     to the right, agree=0.955, adj=0.750, (0 split)
##
         485 < 175
                     to the right, agree=0.939, adj=0.667, (0 split)
##
         539 < 25.5
                     to the right, agree=0.924, adj=0.583, (0 split)
##
         540 < 24
                     to the right, agree=0.924, adj=0.583, (0 split)
##
## Node number 3953: 53 observations,
                                          complexity param=0.0002232741
     predicted class=7 expected loss=0.3207547 P(node) =0.002102757
```

```
##
       class counts: 1
                                     2
                                                                   36
1
##
      probabilities: 0.019 0.000 0.038 0.132 0.094 0.000 0.000 0.679 0.019
0.019
##
     left son=7906 (9 obs) right son=7907 (44 obs)
##
     Primary splits:
##
         209 < 29
                     to the left, improve=7.831999, (0 missing)
         348 < 108
                     to the right, improve=7.496646, (0 missing)
##
                     to the right, improve=7.496646, (0 missing)
##
         349 < 38
##
         320 < 66
                     to the right, improve=7.223837, (0 missing)
##
         321 < 125
                     to the right, improve=7.223837, (0 missing)
##
     Surrogate splits:
##
         348 < 108
                     to the right, agree=0.981, adj=0.889, (0 split)
##
         349 < 38
                     to the right, agree=0.981, adj=0.889, (0 split)
         320 < 66
                     to the right, agree=0.962, adj=0.778, (0 split)
##
##
         321 < 125
                     to the right, agree=0.962, adj=0.778, (0 split)
##
         347 < 52.5
                     to the right, agree=0.962, adj=0.778, (0 split)
##
## Node number 3964: 24 observations
     predicted class=8 expected loss=0.3333333 P(node) =0.000952192
##
##
       class counts:
                                            2
                         0
                               0
                                     0
                                                  3
                                                        0
                                                              0
                                                                    1
                                                                         16
2
##
      probabilities: 0.000 0.000 0.000 0.083 0.125 0.000 0.000 0.042 0.667
0.083
##
## Node number 3965: 48 observations
                        expected loss=0.1875 P(node) =0.001904384
     predicted class=9
##
       class counts:
                         0
                               0
                                     0
                                            2
                                                  2
                                                        2
                                                              0
                                                                    2
                                                                          1
39
      probabilities: 0.000 0.000 0.000 0.042 0.042 0.042 0.000 0.042 0.021
##
0.812
##
## Node number 4372: 20 observations,
                                         complexity param=0.0001786193
##
     predicted class=2
                        expected loss=0.65 P(node) =0.0007934934
##
                                     7
                                                                          0
       class counts:
                         3
                               0
                                           3
                                                  4
                                                        2
                                                              1
0
##
      probabilities: 0.150 0.000 0.350 0.150 0.200 0.100 0.050 0.000 0.000
0.000
##
     left son=8744 (8 obs) right son=8745 (12 obs)
##
     Primary splits:
##
         405 < 210
                     to the right, improve=4.683333, (0 missing)
##
         266 < 187
                     to the left,
                                   improve=3.400000, (0 missing)
##
         321 < 228
                     to the left,
                                   improve=3.400000, (0 missing)
##
                                   improve=3.400000, (0 missing)
         349 < 252.5 to the left,
##
         432 < 63
                     to the right, improve=3.400000, (0 missing)
##
     Surrogate splits:
##
         265 < 4
                     to the left,
                                   agree=0.9, adj=0.75, (0 split)
##
         266 < 156.5 to the left,
                                   agree=0.9, adj=0.75, (0 split)
##
         293 < 65
                     to the left,
                                   agree=0.9, adj=0.75, (0 split)
##
         321 < 124.5 to the left, agree=0.9, adj=0.75, (0 split)
```

```
349 < 252.5 to the left, agree=0.9, adj=0.75, (0 split)
##
## Node number 4373: 11 observations
     predicted class=1 expected loss=0.4545455 P(node) =0.0004364213
##
       class counts:
                         1
                               6
                                     0
                                           0
                                                 0
                                                       0
                                                             0
                                                                   0
                                                                         4
0
      probabilities: 0.091 0.545 0.000 0.000 0.000 0.000 0.000 0.000 0.364
0.000
##
## Node number 4380: 15 observations
##
     predicted class=1 expected loss=0.2666667 P(node) =0.00059512
                                                       0
##
      class counts:
                         0
                              11
                                     0
                                           0
                                                 0
                                                             2
                                                                         0
2
##
      probabilities: 0.000 0.733 0.000 0.000 0.000 0.000 0.133 0.000 0.000
0.133
##
## Node number 4381: 22 observations
     predicted class=4 expected loss=0.6363636 P(node) =0.0008728427
##
       class counts:
                         0
                               1
                                     1
                                          1
                                                 8
                                                       2
                                                             1
3
##
      probabilities: 0.000 0.045 0.045 0.045 0.364 0.091 0.045 0.227 0.000
0.136
##
## Node number 5432: 16 observations
     predicted class=3 expected loss=0.0625 P(node) =0.0006347947
##
      class counts:
                         0
                               0
                                     1
                                         15
                                                 0
                                                       0
                                                                         0
0
      probabilities: 0.000 0.000 0.062 0.937 0.000 0.000 0.000 0.000 0.000
##
0.000
##
## Node number 5433: 9 observations
     predicted class=5 expected loss=0.3333333 P(node) =0.000357072
##
       class counts:
                               1
                                     0
                                           1
                                                 0
                                                       6
                                                                         1
      probabilities: 0.000 0.111 0.000 0.111 0.000 0.667 0.000 0.000 0.111
##
0.000
##
## Node number 5434: 8 observations
##
     predicted class=0 expected loss=0.375 P(node) =0.0003173973
                         5
                               0
                                          0
                                                 0
                                                       0
##
       class counts:
                                     0
                                                                         0
1
##
      probabilities: 0.625 0.000 0.000 0.000 0.000 0.000 0.250 0.000 0.000
0.125
##
## Node number 5435: 69 observations,
                                       complexity param=0.0001786193
     predicted class=5 expected loss=0.3188406 P(node) =0.002737552
##
##
      class counts:
                         0
                               0
                                     0
                                           9
                                                 0
                                                      47
                                                                         2
8
      probabilities: 0.000 0.000 0.000 0.130 0.000 0.681 0.000 0.043 0.029
0.116
```

```
##
     left son=10870 (54 obs) right son=10871 (15 obs)
##
     Primary splits:
##
         597 < 38.5 to the right, improve=7.369726, (0 missing)
                     to the right, improve=7.113953, (0 missing)
##
         598 < 61
                     to the right, improve=6.577728, (0 missing)
##
         596 < 2.5
##
         568 < 77
                     to the right, improve=5.824031, (0 missing)
         570 < 7
##
                     to the right, improve=5.577185, (0 missing)
##
     Surrogate splits:
         596 < 2.5
##
                     to the right, agree=0.928, adj=0.667, (0 split)
##
         568 < 2.5
                     to the right, agree=0.913, adj=0.600, (0 split)
         625 < 74
##
                     to the right, agree=0.913, adj=0.600, (0 split)
         598 < 32
                     to the right, agree=0.899, adj=0.533, (0 split)
##
##
         710 < 158.5 to the left, agree=0.884, adj=0.467, (0 split)
##
## Node number 5436: 14 observations
##
     predicted class=9 expected loss=0.5714286 P(node) =0.0005554453
##
       class counts:
                         0
                               0
                                     0
                                            2
                                                  0
                                                        4
                                                                          2
6
##
      probabilities: 0.000 0.000 0.000 0.143 0.000 0.286 0.000 0.000 0.143
0.429
##
## Node number 5437: 16 observations
     predicted class=8
                        expected loss=0.125 P(node) =0.0006347947
##
       class counts:
                         0
                                     0
                                                        2
                                                                         14
0
##
      probabilities: 0.000 0.000 0.000 0.000 0.125 0.000 0.000 0.875
0.000
##
## Node number 7240: 56 observations
     predicted class=4 expected loss=0.05357143 P(node) =0.002221781
##
##
       class counts:
                         0
                               0
                                     1
                                            0
                                                 53
                                                        0
                                                              1
                                                                    0
                                                                          0
1
##
      probabilities: 0.000 0.000 0.018 0.000 0.946 0.000 0.018 0.000 0.000
0.018
##
## Node number 7241: 7 observations
##
     predicted class=6
                        expected loss=0.1428571 P(node) =0.0002777227
##
       class counts:
                               0
                                     0
                                                  1
                                                        0
                                                                          0
                         0
                                            0
                                                              6
0
      probabilities: 0.000 0.000 0.000 0.000 0.143 0.000 0.857 0.000 0.000
##
0.000
##
## Node number 7352: 10 observations
##
     predicted class=2 expected loss=0.6 P(node) =0.0003967467
##
       class counts:
                         1
                                     4
                                                  1
                                                                          0
                               0
                                            0
                                                              1
3
##
      probabilities: 0.100 0.000 0.400 0.000 0.100 0.000 0.100 0.000 0.000
0.300
##
## Node number 7353: 33 observations
```

```
predicted class=7 expected loss=0.03030303 P(node) =0.001309264
##
##
       class counts:
                                                        0
                         0
                               0
                                     0
                                           0
                                                  0
                                                              0
                                                                   32
                                                                          0
1
      probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.970 0.000
##
0.030
##
## Node number 7354: 15 observations
##
     predicted class=8 expected loss=0.4 P(node) =0.00059512
       class counts:
##
                         0
                               0
                                     1
                                            0
                                                  3
                                                                          9
1
##
      probabilities: 0.000 0.000 0.067 0.000 0.200 0.000 0.000 0.067 0.600
0.067
##
## Node number 7355: 13 observations
     predicted class=9 expected loss=0.1538462 P(node) =0.0005157707
##
       class counts:
                         0
                                     1
                                                  1
                                           0
11
##
      probabilities: 0.000 0.000 0.077 0.000 0.077 0.000 0.000 0.000 0.000
0.846
##
## Node number 7356: 15 observations
     predicted class=4 expected loss=0.2 P(node) =0.00059512
##
       class counts:
                               0
                                     1
                                                 12
                         1
                                            0
                                                        0
                                                                          0
1
      probabilities: 0.067 0.000 0.067 0.000 0.800 0.000 0.000 0.000 0.000
##
0.067
##
## Node number 7357: 9 observations
     predicted class=9 expected loss=0.2222222 P(node) =0.000357072
##
##
       class counts:
                         0
                               0
                                     0
                                           0
                                                  1
                                                        0
                                                              0
                                                                          1
7
      probabilities: 0.000 0.000 0.000 0.000 0.111 0.000 0.000 0.000 0.111
##
0.778
##
## Node number 7754: 7 observations
     predicted class=4 expected loss=0.1428571 P(node) =0.0002777227
##
##
       class counts:
                         0
                               0
                                     1
                                           0
                                                        0
                                                                          0
0
      probabilities: 0.000 0.000 0.143 0.000 0.857 0.000 0.000 0.000 0.000
##
0.000
##
## Node number 7755: 17 observations
     predicted class=3
                        expected loss=0.7058824 P(node) =0.0006744694
##
       class counts:
                         0
                                     3
                                           5
                                                                          5
                               0
                                                  0
                                                        1
                                                              0
                                                                    0
3
##
      probabilities: 0.000 0.000 0.176 0.294 0.000 0.059 0.000 0.000 0.294
0.176
##
## Node number 7814: 450 observations
     predicted class=5 expected loss=0.05111111 P(node) =0.0178536
```

```
class counts: 0 0 1 12 1 427 0 0 0
##
9
##
     probabilities: 0.000 0.000 0.002 0.027 0.002 0.949 0.000 0.000 0.000
0.020
##
## Node number 7815: 11 observations
    predicted class=9 expected loss=0.3636364 P(node) =0.0004364213
##
      class counts:
                       0
                             0
                                   0
                                         0
                                                    3
7
##
     probabilities: 0.000 0.000 0.000 0.000 0.273 0.000 0.091 0.000
0.636
##
## Node number 7856: 11 observations
    predicted class=3 expected loss=0.09090909 P(node) =0.0004364213
##
                                                    0
      class counts:
                        0
                             0
                                   0
                                        10
                                               0
                                                          0
                                                                      1
##
     probabilities: 0.000 0.000 0.000 0.909 0.000 0.000 0.000 0.000 0.091
0.000
##
## Node number 7857: 12 observations
    predicted class=9 expected loss=0.4166667 P(node) =0.000476096
##
##
      class counts:
                       0
                             1
                                   0
                                         1
                                               1
                                                    0
                                                          1
                                                                      1
7
##
     probabilities: 0.000 0.083 0.000 0.083 0.083 0.000 0.083 0.000 0.083
0.583
##
## Node number 7894: 8 observations
    predicted class=3 expected loss=0.25 P(node) =0.0003173973
##
##
      class counts:
                        0
                             0
                                   1
                                        6
                                              0
                                                    0
                                                                      1
0
##
     probabilities: 0.000 0.000 0.125 0.750 0.000 0.000 0.000 0.000 0.125
0.000
##
## Node number 7895: 30 observations
    predicted class=9 expected loss=0.3 P(node) =0.00119024
##
      class counts:
                        0
                             0
                                         0
                                                    2
                                                                      4
                                   0
                                               3
21
##
     probabilities: 0.000 0.000 0.000 0.000 0.100 0.067 0.000 0.000 0.133
0.700
##
## Node number 7898: 9 observations
##
    predicted class=4 expected loss=0.2222222 P(node) =0.000357072
##
      class counts:
                       0
                             0
                                   0
                                         0
                                               7
                                                    1
                                                                      1
     probabilities: 0.000 0.000 0.000 0.000 0.778 0.111 0.000 0.000 0.111
##
0.000
##
## Node number 7899: 27 observations, complexity param=0.0001786193
    predicted class=9 expected loss=0.3333333 P(node) =0.001071216
## class counts: 0 0 1 1 1 1 0 0 5
```

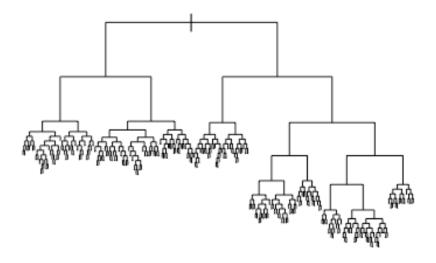
```
18
##
      probabilities: 0.000 0.000 0.037 0.037 0.037 0.037 0.000 0.000 0.185
0.667
##
     left son=15798 (8 obs) right son=15799 (19 obs)
##
     Primary splits:
         551 < 139
##
                     to the right, improve=5.741715, (0 missing)
##
         552 < 7.5
                     to the right, improve=5.741715, (0 missing)
         579 < 150
                     to the right, improve=5.741715, (0 missing)
##
                     to the right, improve=5.741715, (0 missing)
##
         580 < 7.5
         495 < 29.5 to the right, improve=5.383069, (0 missing)
##
##
     Surrogate splits:
         552 < 7.5
##
                     to the right, agree=1.000, adj=1.000, (0 split)
##
         579 < 150
                     to the right, agree=1.000, adj=1.000, (0 split)
##
         580 < 7.5
                     to the right, agree=1.000, adj=1.000, (0 split)
##
         205 < 123.5 to the right, agree=0.963, adj=0.875, (0 split)
##
         495 < 29.5 to the right, agree=0.963, adj=0.875, (0 split)
##
## Node number 7904: 12 observations
     predicted class=2 expected loss=0.08333333 P(node) =0.000476096
##
##
       class counts:
                         0
                               0
                                    11
                                           0
                                                  0
                                                        0
                                                              0
                                                                    0
                                                                          1
0
      probabilities: 0.000 0.000 0.917 0.000 0.000 0.000 0.000 0.0083
##
0.000
##
## Node number 7905: 54 observations
##
     predicted class=3 expected loss=0.2037037
                                                 P(node) =0.002142432
##
       class counts:
                         0
                               0
                                     3
                                          43
                                                  1
                                                                          0
4
##
      probabilities: 0.000 0.000 0.056 0.796 0.019 0.000 0.000 0.056 0.000
0.074
##
## Node number 7906: 9 observations
##
     predicted class=4
                        expected loss=0.4444444 P(node) =0.000357072
       class counts:
                                                  5
##
                         1
                                     1
                                                                          1
1
##
      probabilities: 0.111 0.000 0.111 0.000 0.556 0.000 0.000 0.000 0.111
0.111
##
## Node number 7907: 44 observations,
                                         complexity param=0.0001786193
     predicted class=7 expected loss=0.1818182 P(node) =0.001745685
##
##
       class counts:
                         0
                               0
                                     1
                                           7
                                                       0
                                                              0
                                                                   36
                                                                          0
0
      probabilities: 0.000 0.000 0.023 0.159 0.000 0.000 0.000 0.818 0.000
##
0.000
##
     left son=15814 (9 obs) right son=15815 (35 obs)
##
     Primary splits:
##
         437 < 4
                     to the left,
                                   improve=7.021789, (0 missing)
##
                                   improve=6.482450, (0 missing)
         464 < 12.5 to the left,
##
         436 < 201
                     to the left,
                                   improve=6.067914, (0 missing)
         576 < 152.5 to the right, improve=6.067914, (0 missing)
##
```

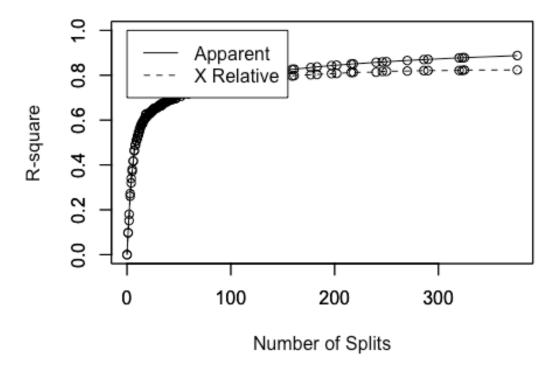
```
463 < 212.5 to the left, improve=5.381313, (0 missing)
##
##
     Surrogate splits:
##
         436 < 201
                     to the left,
                                   agree=0.977, adj=0.889, (0 split)
                                   agree=0.977, adj=0.889, (0 split)
##
         464 < 38.5 to the left,
##
         463 < 235
                     to the left,
                                   agree=0.955, adj=0.778, (0 split)
##
         410 < 3
                     to the left,
                                   agree=0.932, adj=0.667, (0 split)
##
         438 < 12.5 to the left,
                                   agree=0.932, adj=0.667, (0 split)
##
## Node number 8744: 8 observations
##
     predicted class=2 expected loss=0.125 P(node) =0.0003173973
##
       class counts:
                         0
                               0
                                     7
                                           1
                                                 0
                                                       0
                                                                          0
0
##
      probabilities: 0.000 0.000 0.875 0.125 0.000 0.000 0.000 0.000 0.000
0.000
##
## Node number 8745: 12 observations
     predicted class=4 expected loss=0.6666667 P(node) =0.000476096
##
       class counts:
                         3
                               0
                                     0
                                           2
                                                              1
                                                                    0
                                                                          0
                                                 4
                                                       2
0
##
      probabilities: 0.250 0.000 0.000 0.167 0.333 0.167 0.083 0.000 0.000
0.000
##
## Node number 10870: 54 observations
     predicted class=5 expected loss=0.1851852 P(node) =0.002142432
##
##
       class counts:
                         0
                               0
                                     0
                                           8
                                                 0
                                                      44
                                                                          1
1
      probabilities: 0.000 0.000 0.000 0.148 0.000 0.815 0.000 0.000 0.019
##
0.019
##
## Node number 10871: 15 observations
##
     predicted class=9 expected loss=0.5333333 P(node) =0.00059512
##
       class counts:
                         0
                               0
                                     0
7
      probabilities: 0.000 0.000 0.000 0.067 0.000 0.200 0.000 0.200 0.067
##
0.467
##
## Node number 15798: 8 observations
     predicted class=8 expected loss=0.375 P(node) =0.0003173973
       class counts:
                                                                          5
##
                         0
                               0
                                     0
                                           1
                                                 0
                                                       1
1
##
      probabilities: 0.000 0.000 0.000 0.125 0.000 0.125 0.000 0.000 0.625
0.125
##
## Node number 15799: 19 observations
     predicted class=9 expected loss=0.1052632 P(node) =0.0007538187
##
##
       class counts:
                         0
                               0
                                     1
                                           0
                                                 1
                                                       0
                                                              0
                                                                    0
                                                                          0
17
##
      probabilities: 0.000 0.000 0.053 0.000 0.053 0.000 0.000 0.000 0.000
0.895
##
```

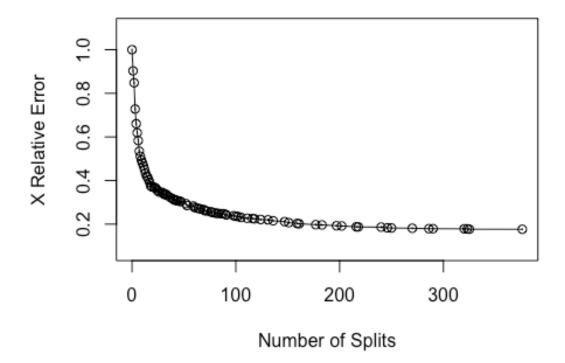
```
## Node number 15814: 9 observations
##
     predicted class=3 expected loss=0.3333333 P(node) =0.000357072
##
       class counts:
                         0
                               0
                                     1
                                                 0
                                                       0
                                                                   2
                                                                         0
                                           6
0
##
      probabilities: 0.000 0.000 0.111 0.667 0.000 0.000 0.000 0.222 0.000
0.000
##
## Node number 15815: 35 observations
     predicted class=7 expected loss=0.02857143 P(node) =0.001388613
##
       class counts:
                         0
                                                       0
                                                                         0
                               0
                                     0
                                           1
                                                 0
                                                                  34
0
##
      probabilities: 0.000 0.000 0.000 0.029 0.000 0.000 0.000 0.971 0.000
0.000
##
## Classification tree:
## rpart(formula = label ~ ., data = trainDF, method = "class",
##
       control = rpart.control(cp = 0))
##
## Variables actually used in tree construction:
     [1] 103 121 123 124 125 126 127 131 150 152 153 154 155 156 158 159 176
##
179
## [19] 180 183 185 186 188 204 205 206 207 208 209 210 211 212 213 214 215
217
##
    [37] 220 231 233 234 235 237 239 240 241 242 244 247 264 265 266 267 268
269
## [55] 270 271 274 276 287 288 289 290 291 292 293 294 295 296 297 299 300
301
## [73] 315 317 318 319 320 321 322 323 324 325 327 329 341 342 343 344 345
346
## [91] 347 348 349 350 351 352 353 354 355 359 370 371 372 373 374 375 376
377
## [109] 379 380 381 382 384 386 398 400 401 402 404 405 406 407 412 413 427
## [127] 429 431 432 434 435 436 437 438 439 442 454 455 456 457 458 459 460
461
## [145] 462 463 465 466 467 468 470 484 486 487 488 489 490 492 493 494 512
513
## [163] 514 515 516 518 520 522 524 527 537 538 539 541 542 543 544 545 546
## [181] 551 552 567 568 570 572 573 574 575 580 584 596 597 599 600 601 602
603
## [199] 608 623 624 626 627 652 653 654 655 656 657 658 662 678 680 681 683
685
## [217] 686 709 711 712 717 718 94 95 98
## Root node error: 22394/25205 = 0.88847
##
## n= 25205
##
```

```
xstd
##
              CP nsplit rel error xerror
## 1
      0.09779405
                           1.00000 1.00000 0.0022316
## 2
                       1
                           0.90221 0.90301 0.0028235
      0.08256676
## 3
                           0.81964 0.84822 0.0030549
      0.08020005
                           0.73944 0.72783 0.0033888
## 4
     0.05956953
                       3
## 5
                           0.67987 0.66040 0.0034910
      0.05193355
                       4
## 6
      0.04572653
                       5
                           0.62794 0.61914 0.0035269
##
   7
      0.04505671
                       6
                           0.58221 0.58337 0.0035423
## 8
      0.02545325
                       7
                           0.53715 0.53456 0.0035403
                           0.51170 0.51112 0.0035298
## 9
      0.02138966
                       8
## 10 0.01866571
                       9
                           0.49031 0.49361 0.0035179
## 11 0.01576315
                           0.47164 0.48102 0.0035071
                      10
                           0.45588 0.46745 0.0034935
## 12 0.01549522
                      11
## 13 0.01330714
                      12
                           0.44039 0.45159 0.0034749
## 14 0.01107439
                      13
                           0.42708 0.43391 0.0034506
## 15 0.00835045
                           0.41600 0.42051 0.0034296
                      14
## 16 0.00696615
                      15
                           0.40765 0.41547 0.0034211
## 17 0.00611771
                      16
                           0.40069 0.40350 0.0033998
## 18 0.00482272
                      17
                           0.39457 0.39149 0.0033766
                           0.38975 0.37470 0.0033409
## 19 0.00477807
                      18
## 20 0.00473341
                      19
                           0.38497 0.37113 0.0033329
## 21 0.00468876
                           0.37550 0.36916 0.0033284
                      21
## 22 0.00464410
                      22
                           0.37081 0.36800 0.0033257
## 23 0.00442083
                           0.36617 0.36461 0.0033177
                      23
## 24 0.00428686
                      24
                           0.36175 0.35679 0.0032988
## 25 0.00392962
                      25
                           0.35746 0.35286 0.0032889
                           0.35353 0.34710 0.0032741
## 26 0.00379566
## 27 0.00375100
                      29
                           0.34215 0.34594 0.0032711
                           0.33839 0.34183 0.0032601
## 28 0.00348308
                      30
## 29 0.00339377
                           0.33491 0.33661 0.0032459
                      31
## 30 0.00334911
                           0.33152 0.33647 0.0032455
                      32
                           0.32817 0.33647 0.0032455
## 31 0.00330446
                      33
## 32 0.00285791
                      34
                           0.32486 0.33174 0.0032323
## 33 0.00283558
                      37
                           0.31629 0.32218 0.0032045
## 34 0.00263463
                      39
                           0.31062 0.31705 0.0031890
## 35 0.00258998
                      40
                           0.30798 0.31312 0.0031769
## 36 0.00254532
                      41
                           0.30539 0.31053 0.0031687
## 37 0.00250067
                      42
                           0.30285 0.30977 0.0031663
## 38 0.00245602
                      43
                           0.30035 0.30848 0.0031622
## 39 0.00238903
                      44
                           0.29789 0.30731 0.0031585
## 40 0.00236671
                           0.29311 0.30450 0.0031494
                      46
## 41 0.00227740
                      47
                           0.29075 0.30383 0.0031472
## 42 0.00205412
                           0.27932 0.29401 0.0031144
## 43 0.00200947
                      53
                           0.27726 0.28539 0.0030843
                           0.26520 0.28320 0.0030764
## 44 0.00183085
                      59
## 45 0.00169688
                           0.26337 0.27713 0.0030542
                      60
## 46 0.00167456
                           0.25998 0.27396 0.0030423
                      62
                      64
## 47 0.00162990
                           0.25663 0.27226 0.0030359
## 48 0.00160757
                      66
                           0.25337 0.26936 0.0030248
## 49 0.00147361
                      69
                           0.24855 0.26704 0.0030158
```

```
## 50 0.00140663
                     70
                           0.24708 0.26230 0.0029972
                           0.24426 0.26007 0.0029883
## 51 0.00138430
                     72
## 52 0.00129499
                     76
                           0.23872 0.25677 0.0029749
## 53 0.00125033
                           0.23743 0.25431 0.0029648
                     77
## 54 0.00116103
                     79
                           0.23493 0.25230 0.0029565
## 55 0.00111637
                     81
                           0.23261 0.24993 0.0029466
## 56 0.00109404
                     83
                           0.23037 0.24931 0.0029439
## 57 0.00107172
                     86
                           0.22689 0.24779 0.0029375
## 58 0.00102706
                     88
                           0.22475 0.24761 0.0029368
                           0.22269 0.24493 0.0029253
## 59 0.00098241
                     90
## 60 0.00093775
                     91
                           0.22171 0.24221 0.0029135
## 61 0.00089310
                     98
                           0.21515 0.23846 0.0028969
## 62 0.00087077
                     100
                           0.21336 0.23636 0.0028876
## 63 0.00084844
                           0.21162 0.23524 0.0028826
                     102
## 64 0.00080379
                    105
                           0.20907 0.23095 0.0028630
## 65 0.00075913
                           0.20425 0.22694 0.0028444
                     111
## 66 0.00073680
                    116
                           0.20046 0.22595 0.0028398
## 67 0.00071448
                    118
                           0.19898 0.22417 0.0028313
## 68 0.00066982
                    124
                           0.19470 0.22109 0.0028166
## 69 0.00062517
                           0.18938 0.21966 0.0028097
                     131
## 70 0.00058051
                     136
                           0.18626 0.21537 0.0027887
## 71 0.00053586
                           0.17987 0.21149 0.0027694
                     147
## 72 0.00049120
                    151
                           0.17773 0.20693 0.0027462
## 73 0.00046888
                           0.17380 0.20340 0.0027279
                    159
## 74 0.00044655
                           0.17286 0.20157 0.0027183
                    161
## 75 0.00042422
                    177
                           0.16562 0.19764 0.0026974
## 76 0.00040189
                     183
                           0.16259 0.19644 0.0026909
## 77 0.00037957
                    197
                           0.15696 0.19273 0.0026707
## 78 0.00035724
                     202
                           0.15504 0.19170 0.0026650
## 79 0.00033491
                     216
                           0.15004 0.18773 0.0026429
## 80 0.00031258
                           0.14937 0.18733 0.0026406
                     218
## 81 0.00029770
                     240
                           0.14245 0.18639 0.0026353
## 82 0.00029026
                     246
                           0.14066 0.18295 0.0026157
## 83 0.00026793
                     250
                           0.13950 0.18241 0.0026126
## 84 0.00024560
                     270
                           0.13414 0.18116 0.0026053
## 85 0.00023444
                           0.13017 0.17933 0.0025946
                     286
## 86 0.00022327
                     290
                           0.12923 0.17916 0.0025936
## 87 0.00020839
                           0.12253 0.17857 0.0025902
                     320
## 88 0.00020095
                           0.12191 0.17857 0.0025902
                     323
## 89 0.00017862
                     325
                           0.12151 0.17670 0.0025791
## 90 0.00015629
                           0.11226 0.17643 0.0025775
                     376
## Warning in rsq.rpart(treeModel): may not be applicable for this method
```

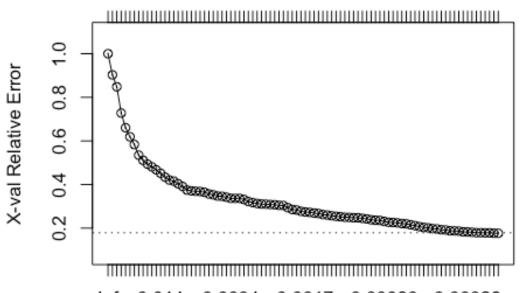






## size of tree

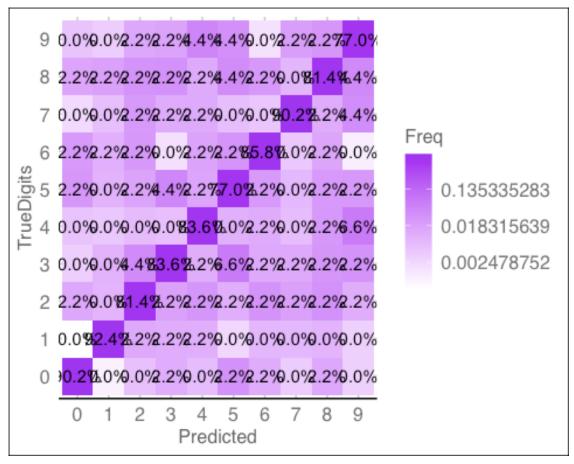




Inf 0.014 0.0034 0.0017 0.00083 0.00028

ср

##	-	ΓrueDi	iai+c									
		_	_	_	_	_	_	_	_	_		
##	Predicted	0	1	2	3	4	5	6	7	8	9	
##	0	1502	1	25	6	9	44	41	4	28	9	
##	1	2	1757	18	19	9	19	21	12	37	7	
##	2	10	24	1378	69	12	29	42	40	52	25	
##	3	20	20	31	1369	10	76	3	21	53	28	
##	4	11	19	45	20	1363	27	28	22	22	83	
##	5	50	4	18	112	17	1188	46	10	61	53	
##	6	21	14	51	23	21	40	1438	8	42	3	
##	7	7	14	33	24	12	14	8	1553	15	35	
##	8	23	14	49	42	38	36	25	20	1237	44	
##	9	6	6	22	56	137	45	2	70	78	1388	
##	Accuracy			Карра			AccuracyLower			ıracyl	Jpper	AccuracyNull
##	8.438821	8.2	8.264860e-01			8.383035e-01			193414	le-01	1.115213e-01	
##	# AccuracyPValue		Mcne	McnemarPValue								
##	0.000000e+00		2.064701e-18									



```
## n= 25205
##
## node), split, n, loss, yval, (yprob)
         * denotes terminal node
##
##
##
       1) root 25205 22394 1 (0.098 0.11 0.099 0.1 0.097 0.09 0.099 0.1 0.097
0.1)
         2) 350>=120.5 9068 6479 1 (0.021 0.29 0.053 0.23 0.026 0.11 0.056
##
0.025 0.13 0.059)
           4) 489>=44.5 4400 1969 1 (0.0064 0.55 0.077 0.036 0.025 0.024
0.063 0.027 0.15 0.036)
             8) 234< 0.5 3250 861 1 (0.0055 0.74 0.048 0.017 0.023 0.028
##
0.049 0.0074 0.066 0.021)
              16) 347< 1.5 2607
                                  328 1 (0.00038 0.87 0.047 0.0077 0.0054
0.0092 0.012 0.0035 0.038 0.0027)
                                   189 1 (0 0.92 0.013 0.0049 0.0041 0.0098
##
                32) 550< 0.5 2456
0.0033 0.0033 0.037 0.0024)
                  64) 300< 21.5 2312 96 1 (0 0.96 0.013 0.003 0.003 0.0043
0.0035 0.0035 0.01 0.00087)
                                       77 1 (0 0.97 0.0052 0.0026 0.0031
##
                   128) 608< 6 2291
0.0044 0.0035 0.0035 0.01 0.00087)
                     256) 484< 8 2260
                                      51 1 (0 0.98 0.0018 0.0027 0.00088
0.0022 0.0022 0.0035 0.0084 0.00088) *
```

```
257) 484>=8 31 23 2 (0 0.16 0.26 0 0.16 0.16 0.097 0
##
0.160)
                     514) 623< 14.5 19
                                         11 2 (0 0 0.42 0 0.26 0.21 0.11 0
##
0 0) *
##
                     515) 623>=14.5 12
                                       7 1 (0 0.42 0 0 0 0.083 0.083 0
0.420) *
                                   3 2 (0 0.095 0.86 0.048 0 0 0 0 0 0) *
##
                  129) 608>=6 21
##
                 65) 300>=21.5 144
                                    78 8 (0 0.35 0.0069 0.035 0.021 0.097
0 0 0.46 0.028)
                  130) 265< 1.5 72 21 1 (0 0.71 0.014 0.028 0.014 0.18 0
0 0.056 0)
                                       4 1 (0 0.93 0.018 0.018 0 0.018 0 0
##
                   260) 487>=145 55
0.0180) *
##
                   261) 487< 145 17
                                       5 5 (0 0 0 0.059 0.059 0.71 0 0
0.180) *
##
                  131) 265>=1.5 72
                                    10 8 (0 0 0 0.042 0.028 0.014 0 0 0.86
0.056) *
                                 59 2 (0.0066 0.079 0.61 0.053 0.026 0
               33) 550>=0.5 151
0.15 0.0066 0.066 0.0066)
                 66) 152>=12 108 25 2 (0 0.1 0.77 0.046 0.0093 0 0 0
##
0.0740)
                                      9 2 (0 0.022 0.9 0.055 0 0 0 0 0.022
##
                 132) 292< 58.5 91
0) *
                  133) 292>=58.5 17
                                      8 1 (0 0.53 0.059 0 0.059 0 0 0 0.35
##
0) *
                 67) 152< 12 43 21 6 (0.023 0.023 0.21 0.07 0.07 0 0.51
0.023 0.047 0.023)
##
                  0.042 0.083 0)
                   268) 349< 206.5 13
                                        5 2 (0.077 0 0.62 0 0.23 0 0
##
0.077 0 0) *
                   269) 349>=206.5 11
                                         6 6 (0 0.091 0 0.27 0 0 0.45 0
##
0.180) *
##
                  135) 212< 22 19
                                   2 6 (0 0 0.053 0 0 0 0.89 0 0 0.053) *
             17) 347>=1.5 643 515 6 (0.026 0.17 0.053 0.056 0.096 0.1 0.2
##
0.023 0.18 0.093)
               34) 103< 1.5 564 451 8 (0.028 0.19 0.059 0.059 0.11 0.12
0.1 0.027 0.2 0.11)
                 68) 657< 1.5 286 232 5 (0.042 0.12 0.11 0.049 0.15 0.19
0.19 0.028 0.028 0.1)
                  136) 276< 44.5 252 198 6 (0.048 0.13 0.12 0.056 0.16
0.095 0.21 0.032 0.024 0.12)
                    272) 574>=233 93 43 6 (0.075 0.14 0.097 0.065 0.032
0.032 0.54 0.011 0 0.011)
                     544) 486< 67.5 25 12 1 (0 0.52 0.12 0.2 0.08 0.04 0
##
0.0400)
                      1088) 603>=181 16 3 1 (0 0.81 0.062 0 0.12 0 0 0
##
0 0) *
##
                      1089) 603< 181 9
                                          4 3 (0 0 0.22 0.56 0 0.11 0 0.11
0 0) *
```

```
545) 486>=67.5 68 18 6 (0.1 0 0.088 0.015 0.015
0.029 0.74 0 0 0.015)
                      1090) 244>=56 12
                                         5 0 (0.58 0 0.083 0.083 0 0.083
0.17 0 0 0) *
##
                      1091) 244< 56 56
                                          8 6 (0 0 0.089 0 0.018 0.018
0.86 0 0 0.018) *
                   273) 574< 233 159 122 4 (0.031 0.13 0.14 0.05 0.23
0.13 0.025 0.044 0.038 0.18)
                     546) 539>=2 67 46 2 (0.075 0.09 0.31 0.09 0.06 0.28
0.015 0 0.075 0)
##
                      1092) 552>=26 13
                                          0 2 (0 0 1 0 0 0 0 0 0 0) *
##
                      1093) 552< 26 54
                                         35 5 (0.093 0.11 0.15 0.11 0.074
0.35 0.019 0 0.093 0)
                        2186) 458>=16.5 31 24 2 (0.13 0.19 0.23 0.097
0.13 0.065 0.032 0 0.13 0)
                          4372) 652< 147 20 13 2 (0.15 0 0.35 0.15 0.2
0.1 0.05 0 0 0)
                           8744) 405>=210 8 1 2 (0 0 0.88 0.12 0 0 0 0
##
0 0) *
                           8745) 405< 210 12 8 4 (0.25 0 0 0.17 0.33
##
0.17 0.083 0 0 0) *
                                              5 1 (0.091 0.55 0 0 0 0 0 0
                          4373) 652>=147 11
##
0.360) *
                        2187) 458< 16.5 23
                                              6 5 (0.043 0 0.043 0.13 0
##
0.74 0 0 0.043 0) *
                     547) 539< 2 92 59 4 (0 0.15 0.011 0.022 0.36 0.022
0.033 0.076 0.011 0.32)
##
                      1094) 456>=13.5 22 2 4 (0 0 0 0.045 0.91 0 0
0.045 0 0) *
                      1095) 456< 13.5 70 41 9 (0 0.2 0.014 0.014 0.19
##
0.029 0.043 0.086 0.014 0.41)
                        2190) 381< 210.5 37 25 1 (0 0.32 0.027 0.027
0.22 0.054 0.081 0.14 0 0.14)
##
                          4380) 405>=205.5 15 4 1 (0 0.73 0 0 0 0 0.13
0 0 0.13) *
                          4381) 405< 205.5 22 14 4 (0 0.045 0.045 0.045
0.36 0.091 0.045 0.23 0 0.14) *
                                              9 9 (0 0.061 0 0 0.15 0 0
                        2191) 381>=210.5 33
0.03 0.03 0.73) *
                                    4 5 (0 0 0 0 0.059 0.88 0 0 0.059 0)
##
                 137) 276>=44.5 34
*
##
                 69) 657>=1.5 278 173 8 (0.014 0.27 0.0072 0.068 0.068
0.043 0.014 0.025 0.38 0.11)
                 138) 294>=216 134 61 1 (0.022 0.54 0.0075 0.03 0.075
0.067 0.03 0.03 0.12 0.075)
                   276) 429< 10.5 95 23 1 (0.011 0.76 0.011 0.011 0
0.032 0.011 0.042 0.084 0.042)
                                       7 1 (0 0.91 0.013 0 0 0.013 0.013
                     552) 299< 31 77
0.026 0.013 0.013) *
```

```
0.11 0.39 0.17) *
##
                   277) 429>=10.5 39
                                      29 4 (0.051 0.026 0 0.077 0.26 0.15
0.077 0 0.21 0.15)
                                       2 4 (0 0 0 0 0.82 0 0.091 0 0
                     554) 627< 5.5 11
##
0.091) *
                     555) 627>=5.5 28
                                       20 8 (0.071 0.036 0 0.11 0.036
##
0.21 0.071 0 0.29 0.18)
                      1110) 379< 17.5 7
                                          1 5 (0 0 0 0.14 0 0.86 0 0 0 0)
*
                      ##
0 0.095 0 0.38 0.24)
##
                       2222) 653>=111.5 10
                                             3 8 (0.1 0.1 0 0 0.1 0 0 0
0.70) *
##
                       2223) 653< 111.5 11
                                             6 9 (0.091 0 0 0.18 0 0
0.18 0 0.091 0.45) *
                 139) 294< 216 144 55 8 (0.0069 0.021 0.0069 0.1 0.062
0.021 0 0.021 0.62 0.14)
                   278) 711< 94.5 124 35 8 (0.0081 0.024 0.0081 0.12
0.073 0.024 0 0.0081 0.72 0.016)
                     556) 265< 15.5 37 24 3 (0.027 0.027 0.027 0.35 0.14
0.054 0 0.027 0.32 0.027)
                      1112) 317< 4.5 19
                                         6 3 (0 0.053 0.053 0.68 0.11
0.053 0 0 0 0.053) *
                      1113) 317>=4.5 18 6 8 (0.056 0 0 0 0.17 0.056 0
##
0.056 0.67 0) *
                     0 0 0.89 0.011) *
##
                   279) 711>=94.5 20
                                       2 9 (0 0 0 0 0 0 0 0.1 0 0.9) *
              35) 103>=1.5 79 9 6 (0.013 0.013 0.013 0.038 0.013 0.013
##
0.89 0 0.013 0) *
           9) 234>=0.5 1150 690 8 (0.0087 0.037 0.16 0.09 0.031 0.012 0.1
0.083 0.4 0.079)
             18) 658< 13.5 434
                               291 2 (0.012 0.044 0.33 0.035 0.03 0.014
0.26 0.065 0.085 0.12)
              36) 345< 18 228 94 2 (0 0.075 0.59 0.066 0.0044 0.0044
0.039 0.092 0.088 0.044)
                                  23 2 (0 0 0.84 0.014 0 0.007 0.042
                72) 541>=1.5 142
0.014 0.077 0.007)
                 144) 301< 3.5 122
                                    6 2 (0 0 0.95 0.0082 0 0.0082 0.0082
0.016 0.0082 0) *
                 145) 301>=3.5 20
                                   10 8 (0 0 0.15 0.05 0 0 0.25 0 0.5
##
0.05)
##
                   290) 291< 86 9
                                   4 6 (0 0 0.33 0.11 0 0 0.56 0 0 0) *
                                    1 8 (0 0 0 0 0 0 0 0 0.91 0.091) *
##
                   291) 291>=86 11
                73) 541< 1.5 86 67 7 (0 0.2 0.17 0.15 0.012 0 0.035 0.22
##
0.1 \ 0.1)
                 146) 683< 18 57
                                 40 1 (0 0.3 0.26 0.18 0 0 0.053 0.035
##
0.14 \ 0.035)
##
                   292) 459< 5.5 21 4 1 (0 0.81 0.095 0 0 0 0 0 0.048
0.048) *
```

```
293) 459>=5.5 36 23 2 (0 0 0.36 0.28 0 0 0.083 0.056
##
0.19 0.028)
##
                   0.250)
##
                    1172) 270< 4.5 16 5 2 (0 0 0.69 0.062 0 0 0.19
0.06200) *
                                      2 8 (0 0 0.25 0 0 0 0 0 0.75 0)
##
                    1173) 270>=4.5 8
##
                   587) 516< 7 12
                                   3 3 (0 0 0 0.75 0 0 0 0.083 0.083
0.083) *
##
                147) 683>=18 29
                                12 7 (0 0 0 0.1 0.034 0 0 0.59 0.034
0.24)
                 294) 349< 102.5 17 1 7 (0 0 0 0.059 0 0 0 0.94 0 0)
##
*
                                     5 9 (0 0 0 0.17 0.083 0 0 0.083
##
                 295) 349>=102.5 12
0.083 0.58) *
             0.51 0.034 0.083 0.21)
               74) 575>=51.5 144
                                 39 6 (0.035 0.014 0.021 0 0.021 0.035
0.73 0.035 0.069 0.042)
                0.88 0.036 0 0.0089) *
                0.031 0.31 0.16)
##
                 298) 442>=27 12
                                  6 6 (0.33 0 0.17 0 0 0 0.5 0 0 0) *
##
                 299) 442< 27 20
                                  10 8 (0 0 0.05 0 0 0.15 0 0.05 0.5
0.25)
##
                   598) 432< 47.5 9 5 9 (0 0 0.11 0 0 0.33 0 0.11 0
0.44) *
##
                   599) 432>=47.5 11
                                     1 8 (0 0 0 0 0 0 0 0 0.91 0.091)
##
               75) 575< 51.5 62
                                24 9 (0 0 0.097 0 0.15 0 0 0.032 0.11
0.61)
##
                150) 210< 21.5 19
                                 10 4 (0 0 0.16 0 0.47 0 0 0.053 0.16
0.16) *
                151) 210>=21.5 43 8 9 (0 0 0.07 0 0 0 0 0.023 0.093
##
0.81) *
            19) 658>=13.5 716 293 8 (0.007 0.032 0.052 0.12 0.032 0.011
##
0.007 0.094 0.59 0.052)
                            154 3 (0.0046 0.041 0.16 0.29 0.023 0.0046
             38) 319< 2 218
0.014 0.2 0.23 0.032)
##
               76) 344< 24 162 100 3 (0 0.056 0.2 0.38 0 0 0 0.27 0.08
0.0062)
##
                152) 404>=228 59
                                 10 3 (0 0 0.12 0.83 0 0 0 0.034 0.017
0)
##
                  304) 527>=25.5 7
                                    1 2 (0 0 0.86 0.14 0 0 0 0 0 0) *
                 305) 527< 25.5 52
                                   4 3 (0 0 0.019 0.92 0 0 0 0.038
##
0.0190) *
##
                153) 404< 228 103 61 7 (0 0.087 0.25 0.13 0 0 0 0.41
0.12 \ 0.0097)
```

```
306) 153>=121 47 23 2 (0 0.085 0.51 0.17 0 0 0 0 0.23
##
0)
##
                     612) 321< 195 34
                                       10 2 (0 0.029 0.71 0.24 0 0 0 0
0.029 0)
##
                     1224) 543>=81 24
                                         1 2 (0 0 0.96 0 0 0 0 0 0.042 0)
                     1225) 543< 81 10
                                         2 3 (0 0.1 0.1 0.8 0 0 0 0 0 0)
##
##
                     613) 321>=195 13
                                        3 8 (0 0.23 0 0 0 0 0 0 0.77 0) *
                   307) 153< 121 56
                                     14 7 (0 0.089 0.036 0.089 0 0 0 0.75
##
0.018 0.018)
##
                     614) 546< 15 7
                                     2 3 (0 0 0 0.71 0 0 0 0.14 0.14 0)
##
                     615) 546>=15 49 8 7 (0 0.1 0.041 0 0 0 0 0.84 0
0.02) *
                77) 344>=24 56
                                19 8 (0.018 0 0.018 0.036 0.089 0.018
0.054 0 0.66 0.11)
                                    8 9 (0 0 0 0.071 0.36 0 0 0 0.14 0.43)
                 154) 516< 53 14
                 155) 516>=53 42
                                    7 8 (0.024 0 0.024 0.024 0 0.024 0.071
##
0 0.83 0) *
              39) 319>=2 498 125 8 (0.008 0.028 0.006 0.048 0.036 0.014
##
0.004 0.046 0.75 0.06)
                78) 543< 9.5 124 79 8 (0.0081 0.1 0.0081 0.13 0.056
0.016 0 0.097 0.36 0.22)
                 156) 401< 173 80 39 8 (0 0.16 0.013 0.075 0.05 0.013 0
0.1 0.51 0.075)
##
                   0.23 0.26 0.029)
                     624) 180>=118.5 26
                                         13 1 (0 0.5 0 0.12 0 0.038 0 0
##
0.350)
                     1248) 269< 25.5 14
                                           1 1 (0 0.93 0 0 0 0 0 0 0.071
##
0) *
##
                     1249) 269>=25.5 12
                                           4 8 (0 0 0 0.25 0 0.083 0 0
0.67\ 0) *
##
                     625) 180< 118.5 9
                                         1 7 (0 0 0 0 0 0 0 0.89 0 0.11)
                   ##
0.71 0.11) *
                 157) 401>=173 44 23 9 (0.023 0 0 0.23 0.068 0.023 0
0.091 0.091 0.48)
                   314) 206>=125 18
                                      8 3 (0 0 0 0.56 0 0.056 0 0.17 0.17
##
0.056) *
                                      6 9 (0.038 0 0 0 0.12 0 0 0.038
                   315) 206< 125 26
0.038 0.77) *
                79) 543>=9.5 374 46 8 (0.008 0.0027 0.0053 0.021 0.029
##
0.013 0.0053 0.029 0.88 0.008)
                                     13 7 (0.11 0 0.053 0.21 0.053 0.16 0
                 158) 470>=156.5 19
0.32 0.11 0) *
##
                 159) 470< 156.5 355 29 8 (0.0028 0.0028 0.0028 0.011
```

```
0.028 0.0056 0.0056 0.014 0.92 0.0085) *
          5) 489< 44.5 4668 2714 3 (0.036 0.034 0.032 0.42 0.027 0.18 0.05
0.024 0.11 0.082)
           10) 486< 76.5 3675 1787 3 (0.027 0.038 0.006 0.51 0.031 0.22
0.0095 0.03 0.031 0.094)
             20) 290< 42.5 2318
                                 665 3 (0.015 0.057 0.0082 0.71 0.016 0.12
0.0082 0.013 0.023 0.028)
               40) 179>=1.5 1626 234 3 (0.0018 0.025 0.008 0.86 0.0031
0.065 0.0012 0.0043 0.019 0.017)
                 80) 315< 84.5 1502 128 3 (0 0.027 0.0087 0.91 0 0.026 0
0.0047 0.015 0.0033)
                                      31 1 (0 0.52 0.047 0.31 0 0.016 0
                  160) 490>=139.5 64
0.078 0.031 0)
                                      6 1 (0 0.85 0.077 0 0 0.026 0
##
                   320) 297< 26.5 39
0.051 0 0) *
##
                   321) 297>=26.5 25
                                       5 3 (0 0 0 0.8 0 0 0 0.12 0.08 0)
*
                  161) 490< 139.5 1438 84 3 (0 0.0056 0.007 0.94 0 0.026
0 0.0014 0.015 0.0035)
                    322) 264< 244.5 1393 56 3 (0 0.0014 0.0072 0.96 0
0.017 0 0 0.011 0.0036)
                     644) 317< 206 1370 38 3 (0 0.0015 0.0073 0.97 0
0.01 0 0 0.0088 0)
                      1288) 487< 148 1360
                                            28 3 (0 0.0015 0.0059 0.98 0
##
0.0096 0 0 0.0037 0)
                        2576) 341< 70 1350
                                            19 3 (0 0.0015 0.0059 0.99 0
0.0044 0 0 0.0022 0) *
##
                        2577) 341>=70 10 3 5 (0 0 0 0.1 0 0.7 0 0 0.2
0) *
##
                      1289) 487>=148 10
                                           3 8 (0 0 0.2 0 0 0.1 0 0 0.7 0)
                     645) 317>=206 23
                                        14 5 (0 0 0 0.22 0 0.39 0 0 0.17
##
0.22)
##
                      1290) 524>=20 16
                                         7 5 (0 0 0 0.25 0 0.56 0 0 0.19
0) *
                      1291) 524< 20 7 2 9 (0 0 0 0.14 0 0 0 0 0.14
##
0.71) *
                                        28 3 (0 0.13 0 0.38 0 0.33 0 0.044
##
                   323) 264>=244.5 45
0.11 \ 0)
                                          3 3 (0 0 0 0.81 0 0 0 0.062
##
                     646) 296>=124.5 16
0.120) *
                     647) 296< 124.5 29
                                          14 5 (0 0.21 0 0.14 0 0.52 0
##
0.034 0.1 0)
##
                      1294) 185< 63.5 12 6 1 (0 0.5 0 0.33 0 0 0 0.083
0.083\ 0) *
                      1295) 185>=63.5 17
                                            2 5 (0 0 0 0 0 0.88 0 0 0.12
##
0) *
                 81) 315>=84.5 124 58 5 (0.024 0 0 0.15 0.04 0.53 0.016 0
##
0.065 0.18)
```

```
0.051 0.064) *
               163) 296>=54 46 29 9 (0.043 0 0 0.33 0.022 0.11 0.043 0
##
0.087 0.37)
                326) 493< 1 25 13 3 (0.08 0 0 0.48 0 0.2 0.04 0 0.16
##
0.04)
##
                  0) *
##
                  653) 401>=112.5 12 7 5 (0.083 0 0 0 0 0.42 0.083 0
0.33 0.083) *
                 327) 493>=1 21 5 9 (0 0 0 0.14 0.048 0 0.048 0 0
##
0.76) *
            41) 179< 1.5 692 431 3 (0.045 0.13 0.0087 0.38 0.045 0.25
##
0.025 0.033 0.032 0.055)
              0.019 0.0096 0.029 0.0096)
               164) 265< 148 261 51 3 (0.027 0.015 0.019 0.8 0 0.088
0.011 0.011 0.019 0.0038)
                 0 0 0.02 0.005) *
                 329) 155< 3 59 37 3 (0.085 0.051 0.017 0.37 0 0.36
##
0.051 0.051 0.017 0)
                  658) 348< 235 29 9 3 (0 0.1 0.034 0.69 0 0.069 0.1
##
0 0 0) *
                  ##
0.033 0)
##
                  1318) 412>=5.5 7 2 0 (0.71 0 0 0.14 0 0 0 0.14 0
0) *
##
                   1319) 412< 5.5 23 4 5 (0 0 0 0.043 0 0.83 0 0.087
0.0430) *
               165) 265>=148 156 60 5 (0.12 0 0 0.16 0 0.62 0.032
##
0.0064 0.045 0.019)
                 330) 456>=235.5 25 6 0 (0.76 0 0 0 0 0.04 0.08 0
##
0.120) *
                 331) 456< 235.5 131 36 5 (0 0 0 0.19 0 0.73 0.023
0.0076 0.031 0.023)
                  ##
0.067 0.1)
                  1324) 324>=153.5 22 5 3 (0 0 0 0.77 0 0 0.091 0
##
0.091 0.045) *
                   1325) 324< 153.5 8
                                     3 5 (0 0 0 0 0 0.62 0 0.12 0
##
0.25) *
##
                  663) 299< 40 101 11 5 (0 0 0 0.079 0 0.89 0.0099 0
0.020)
                   1326) 124>=83 8 2 3 (0 0 0 0.75 0 0.12 0 0 0.12
##
0) *
##
                   1327) 124< 83 93 4 5 (0 0 0 0.022 0 0.96 0.011 0
0.011 0) *
              83) 626< 19.5 275 188 1 (0.018 0.32 0.0036 0.095 0.11
0.19 0.033 0.069 0.036 0.12)
               166) 376< 20 104 24 1 (0 0.77 0 0.038 0.0096 0.048
```

```
0.0096 0.067 0.029 0.029)
##
                    332) 462>=85.5 85 6 1 (0 0.93 0 0 0.012 0 0.012
0.047 0 0) *
                                        14 5 (0 0.053 0 0.21 0 0.26 0 0.16
                    333) 462< 85.5 19
##
0.16 0.16) *
                  167) 376>=20 171 123 5 (0.029 0.041 0.0058 0.13 0.18
##
0.28 0.047 0.07 0.041 0.18)
                    334) 539>=54.5 58
                                        15 5 (0.086 0 0.017 0.1 0 0.74
0.017 0.017 0.017 0)
                                         2 0 (0.71 0 0 0.29 0 0 0 0 0 0) *
##
                      668) 413>=194 7
##
                      669) 413< 194 51
                                        8 5 (0 0 0.02 0.078 0 0.84 0.02
0.02 0.02 0) *
                    335) 539< 54.5 113 82 9 (0 0.062 0 0.14 0.27 0.044
0.062 0.097 0.053 0.27)
                                       17 4 (0 0 0 0.14 0.6 0 0.023 0.23 0
##
                      670) 237< 2 43
0)
##
                      1340) 231>=13 23
                                          1 4 (0 0 0 0 0.96 0 0 0.043 0 0)
*
##
                      1341) 231< 13 20
                                         11 7 (0 0 0 0.3 0.2 0 0.05 0.45 0
0)
                                           5 3 (0 0 0 0.55 0.36 0 0.091 0
##
                        2682) 345< 12 11
0 0) *
                                           07(000000100)*
##
                        2683) 345>=12 9
                      671) 237>=2 70 39 9 (0 0.1 0 0.14 0.057 0.071 0.086
##
0.014 0.086 0.44)
                      1342) 325< 5 27
                                        20 1 (0 0.26 0 0.11 0.074 0.19
0.22 \ 0 \ 0.15 \ 0)
##
                        2684) 154>=20 13
                                            6 1 (0 0.54 0 0 0 0 0.15 0
0.310) *
                        2685) 154< 20 14
                                            9 5 (0 0 0 0.21 0.14 0.36 0.29
##
0 0 0) *
                      ##
0.047 0.72) *
             21) 290>=42.5 1357 824 5 (0.049 0.0044 0.0022 0.17 0.057 0.39
0.012 0.058 0.044 0.21)
               42) 626>=10.5 836 360 5 (0.071 0.0012 0.0012 0.24 0.0012
0.57 0.011 0.006 0.059 0.044)
                 84) 297>=29.5 324 179 3 (0.1 0.0031 0.0031 0.45 0 0.21
##
0.0093 0.015 0.12 0.09)
                                   4 0 (0.88 0 0 0 0 0 0.031 0.062 0.031
##
                  168) 359>=77 32
0) *
                  169) 359< 77 292 147 3 (0.017 0.0034 0.0034 0.5 0 0.24
##
0.0068 0.01 0.13 0.099)
##
                    338) 318< 219.5 112
                                        26 3 (0 0 0 0.77 0 0.036 0 0 0.14
0.054)
                      676) 484< 186 101
                                         15 3 (0 0 0 0.85 0 0.03 0 0 0.059
##
0.059) *
                      677) 484>=186 11
                                         1 8 (0 0 0 0 0 0.091 0 0 0.91 0)
##
##
                    339) 318>=219.5 180 115 5 (0.028 0.0056 0.0056 0.33 0
```

```
0.36 0.011 0.017 0.12 0.13)
                678) 176>=79.5 40 8 3 (0 0 0 0.8 0 0.15 0 0 0.05
##
0)
                                1 3 (0 0 0 0.97 0 0.031 0 0 0
##
                 1356) 288< 216 32
0) *
                                3 5 (0 0 0 0.12 0 0.62 0 0 0.25
##
                 1357) 288>=216 8
0) *
                679) 176< 79.5 140 81 5 (0.036 0.0071 0.0071 0.19 0
##
0.42 0.014 0.021 0.14 0.16)
                 0.52 0.02 0.029 0.029 0.088)
                  2716) 125>=40.5 25 9 3 (0 0.04 0.04 0.64 0 0.24
0 0 0.04 0)
##
                    0 0 0) *
                    5433) 270< 13.5 9
                                   3 5 (0 0.11 0 0.11 0 0.67 0
##
0 0.11 0) *
                  2717) 125< 40.5 77 30 5 (0.065 0 0 0.12 0 0.61
0.026 0.039 0.026 0.12)
                    5434) 455>=193.5 8
                                   3 0 (0.62 0 0 0 0 0 0.25 0
##
0 0.12) *
                                    22 5 (0 0 0 0.13 0 0.68 0
                    5435) 455< 193.5 69
##
0.043 0.029 0.12)
                    ##
0 0.019 0.019) *
                    10871) 597< 38.5 15 8 9 (0 0 0 0.067 0 0.2 0
0.2 0.067 0.47) *
                 ##
0.37)
                                 14 8 (0 0 0 0.067 0 0.2 0 0
                  2718) 545< 45.5 30
##
0.53 \ 0.2)
                    5436) 431< 10.5 14
                                   8 9 (0 0 0 0.14 0 0.29 0 0
##
0.14 0.43) *
##
                    5437) 431>=10.5 16
                                   28 (000000.1200
0.880) *
                                  0 9 (0 0 0 0 0 0 0 0 0 1) *
##
                  2719) 545>=45.5 8
##
             0.021 0.016)
             ##
0.13 0.13)
##
               340) 293>=187 23
                             00(1000000000)*
##
               341) 293< 187 16
                             11 8 (0.062 0 0 0.19 0.062 0.062 0 0
0.31 0.31) *
             171) 301< 74 473 67 5 (0.0042 0 0 0.11 0 0.86 0.013 0
0.013 0.0063)
               ##
0.061 0.03)
                684) 214< 206 23
                              2 3 (0 0 0 0.91 0 0 0 0 0.043
##
0.043) *
##
```

```
0) *
                    343) 295< 219 440 39 5 (0 0 0 0.064 0 0.91 0.011 0
##
0.0091 0.0045)
                      686) 121>=122.5 18
                                            5 3 (0 0 0 0.72 0 0.22 0 0
##
0.056 0) *
                      687) 121< 122.5 422
                                            25 5 (0 0 0 0.036 0 0.94 0.012
##
0 0.0071 0.0047) *
               43) 626< 10.5 521 277 9 (0.015 0.0096 0.0038 0.071 0.15
0.11 0.013 0.14 0.021 0.47)
                 0.024 0.38 0.018 0.061)
                  172) 321< 202 85
                                     27 4 (0 0 0 0.047 0.68 0.082 0.047
0.035 0.012 0.094)
##
                    344) 266< 36 70
                                     13 4 (0 0 0 0.014 0.81 0.043 0.057
0.029 0 0.043)
                      688) 124< 37 63
                                         6 4 (0 0 0 0.016 0.9 0 0 0.032 0
##
0.048) *
##
                      689) 124>=37 7
                                        3 6 (0 0 0 0 0 0.43 0.57 0 0 0) *
                    345) 266>=36 15
                                      10 9 (0 0 0 0.2 0.067 0.27 0 0.067
##
0.067 0.33) *
##
                  173) 321>=202 79
                                     20 7 (0.051 0.038 0 0.063 0 0.051 0
0.75 0.025 0.025)
                                     8 0 (0.33 0 0 0.17 0 0.33 0 0 0.17 0)
##
                    346) 570>=2 12
*
##
                    347) 570< 2 67
                                      8 7 (0 0.045 0 0.045 0 0 0 0.88 0
0.03) *
                 87) 210>=1 357 123 9 (0.011 0.0056 0.0056 0.078 0.05 0.13
##
0.0084 0.034 0.022 0.66)
                                      56 5 (0 0.02 0 0.16 0.1 0.44 0.03
##
                  174) 297< 5.5 100
0.02 0.03 0.2)
                                      20 5 (0 0 0 0.079 0.063 0.68 0.048
                    348) 295< 99 63
0.016 0.016 0.095) *
                    349) 295>=99 37
                                      23 9 (0 0.054 0 0.3 0.16 0.027 0
0.027 0.054 0.38)
##
                      698) 468>=26 9
                                        03 (000100000) *
                      699) 468< 26 28
                                        14 9 (0 0.071 0 0.071 0.21 0.036 0
##
0.036 0.071 0.5) *
                  175) 297>=5.5 257
                                      43 9 (0.016 0 0.0078 0.047 0.031
0.0078 0 0.039 0.019 0.83)
##
                    350) 680>=29 10
                                       2 3 (0.1 0 0 0.8 0 0.1 0 0 0 0) *
                    351) 680< 29 247
                                       33 9 (0.012 0 0.0081 0.016 0.032
##
0.004 0 0.04 0.02 0.87)
##
                      702) 515>=44 9
                                        4 8 (0.22 0 0.22 0 0 0 0 0 0.56 0)
                      703) 515< 44 238 24 9 (0.0042 0 0 0.017 0.034
##
0.0042 0 0.042 0 0.9) *
           11) 486>=76.5 993
                              580 8 (0.065 0.02 0.13 0.066 0.014 0.053 0.2
0.001 0.42 0.035)
             22) 657< 5.5 423 238 6 (0.031 0.047 0.23 0.035 0.033 0.054
0.44 0 0.069 0.061)
```

```
0.081 0 0.13 0.11)
               0.0820)
##
                176) 466< 39.5 60
                                   5 2 (0 0.017 0.92 0.033 0 0 0.033 0
0 0) *
                177) 466>=39.5 13
                                   7 8 (0 0 0.15 0.23 0 0 0.15 0 0.46
##
0) *
##
               89) 126< 10 100
                                81 9 (0.09 0.14 0.12 0.03 0.09 0.07 0.1
0 0.17 0.19)
                178) 717< 5 83
                                67 8 (0.11 0.17 0.14 0.036 0.11 0.084
0.12 0 0.19 0.036)
                  356) 211< 22.5 39
                                    25 1 (0 0.36 0 0 0.21 0.18 0.18 0
0.051 0.026)
                                       1 1 (0 0.93 0 0 0 0 0.071 0 0 0)
##
                    712) 457< 14.5 14
##
                    713) 457>=14.5 25
                                    17 4 (0 0.04 0 0 0.32 0.28 0.24 0
0.08 \ 0.04)
                     1426) 293< 127.5 17
                                         9 4 (0 0.059 0 0 0.47 0 0.35
##
0 0.059 0.059) *
##
                    1427) 293>=127.5 8
                                         1 5 (0 0 0 0 0 0.88 0 0 0.12
0) *
                  357) 211>=22.5 44
                                    30 8 (0.2 0 0.27 0.068 0.023 0
##
0.068 0 0.32 0.045)
                    714) 406< 98 9
                                    1 0 (0.89 0 0 0 0 0 0.11 0 0 0) *
                    715) 406>=98 35
                                    21 8 (0.029 0 0.34 0.086 0.029 0
0.057 0 0.4 0.057)
##
                     0.062 0 0.062 0.062) *
                     1431) 550< 139 19
                                       6 8 (0.053 0 0.053 0.11 0 0
0.053 0 0.68 0.053) *
                179) 717>=5 17
                                1 9 (0 0 0 0 0 0 0 0 0.059 0.94) *
##
              45) 270< 51.5 250
                                79 6 (0.016 0.02 0.12 0.028 0.02 0.064
0.68 0 0.024 0.028)
               90) 601< 36.5 41
                                32 2 (0.049 0.12 0.22 0.073 0.12 0.098
0.098 0 0.049 0.17)
##
                180) 380< 19.5 18
                                    9 2 (0.056 0.28 0.5 0 0 0.11 0.056 0
0 0) *
##
                181) 380>=19.5 23
                                 16 9 (0.043 0 0 0.13 0.22 0.087 0.13
0 0.087 0.3)
                  362) 428< 201 13
                                    9 4 (0 0 0 0.23 0.31 0.077 0.23 0
##
0.150) *
##
                  363) 428>=201 10
                                    3 9 (0.1 0 0 0 0.1 0.1 0 0 0 0.7) *
##
               91) 601>=36.5 209
                                 42 6 (0.0096 0 0.096 0.019 0 0.057 0.8
0 0.019 0)
##
                182) 584>=8 16
                                 3 2 (0 0 0.81 0 0 0 0.19 0 0 0) *
                183) 584< 8 193
                                 29 6 (0.01 0 0.036 0.021 0 0.062 0.85 0
##
0.0210)
                                11 5 (0 0 0 0.14 0 0.48 0.38 0 0 0)
##
                  366) 431< 1 21
##
```

```
0) *
##
                    733) 321< 93.5 7 0 6 (0 0 0 0 0 0 1 0 0 0) *
                  ##
0.91 0 0.023 0) *
##
            23) 657>=5.5 570 186 8 (0.091 0 0.049 0.089 0 0.053 0.026
0.0018 0.67 0.016)
                              53 0 (0.45 0 0.082 0.062 0 0.15 0.031 0
              46) 407< 1.5 97
0.220)
##
                92) 329>=11 41
                                4 0 (0.9 0 0 0.024 0 0.049 0 0 0.024 0)
*
##
               93) 329< 11 56
                             36 8 (0.12 0 0.14 0.089 0 0.23 0.054 0
0.360)
                                  27 5 (0.17 0 0 0.12 0 0.33 0.075 0 0.3
##
                186) 347>=0.5 40
0)
                                     5 0 (0.58 0 0 0.083 0 0.25 0.083 0
##
                  372) 351< 190 12
0 0) *
##
                  373) 351>=190 28
                                   16 8 (0 0 0 0.14 0 0.36 0.071 0 0.43
0)
                    746) 297< 178 16
                                      6 5 (0 0 0 0.12 0 0.62 0.062 0
##
0.190) *
                                      3 8 (0 0 0 0.17 0 0 0.083 0 0.75
##
                    747) 297>=178 12
0) *
                187) 347< 0.5 16 8 2 (0 0 0.5 0 0 0 0 0 0.5 0) *
##
##
              0.0021 0.77 0.019)
                94) 514< 1 43
                              21 3 (0 0 0.023 0.51 0 0.047 0 0 0.3 0.12)
##
                188) 512< 70.5 27
                                    6 3 (0 0 0 0.78 0 0.037 0 0 0 0.19)
##
                  376) 320< 71.5 20
                                    03(0001000000)*
                                    2 9 (0 0 0 0.14 0 0.14 0 0 0 0.71)
##
                  377) 320>=71.5 7
*
##
                189) 512>=70.5 16 3 8 (0 0 0.062 0.062 0 0.062 0 0
0.810) *
                95) 514>=1 430
                               80 8 (0.019 0 0.044 0.053 0 0.03 0.028
##
0.0023 0.81 0.0093)
                190) 432< 1 28
                                20 3 (0.21 0 0.036 0.29 0 0.21 0.036 0
0.18 \ 0.036)
##
                  380) 429>=101.5 13
                                      7 0 (0.46 0 0.077 0 0 0 0.077 0
0.380) *
##
                  381) 429< 101.5 15
                                     7 3 (0 0 0 0.53 0 0.4 0 0 0
0.067) *
                ##
0.0025 0.86 0.0075)
                  382) 436< 7 57 25 8 (0.018 0 0.32 0.053 0 0.018 0.018
0.018 0.56 0)
                    764) 126>=44.5 24
                                    7 2 (0 0 0.71 0.042 0 0 0.042 0
##
0.210)
                     1528) 602>=175 17
                                       1 2 (0 0 0.94 0 0 0 0.059 0 0
##
0) *
##
                     1529) 602< 175 7
                                       2 8 (0 0 0.14 0.14 0 0 0 0 0.71
0) *
```

```
765) 126< 44.5 33 6 8 (0.03 0 0.03 0.061 0 0.03 0
##
0.03 0.82 0) *
##
                  383) 436>=7 345 32 8 (0.0029 0 0 0.035 0 0.017 0.029
0 0.91 0.0087)
##
                    766) 439>=250.5 36
                                      18 8 (0 0 0 0.28 0 0.14 0.056 0
0.5 \ 0.028)
                    1532) 289< 1.5 11
                                      2 3 (0 0 0 0.82 0 0 0.091 0
##
0.091 0) *
##
                    1533) 289>=1.5 25 8 8 (0 0 0 0.04 0 0.2 0.04 0
0.68 \ 0.04)
##
                      3066) 270< 126 8
                                       3 5 (0 0 0 0 0 0.62 0.12 0
0.12 \ 0.12) *
                      ##
0) *
                    767) 439< 250.5 309 14 8 (0.0032 0 0 0.0065 0
##
0.0032 0.026 0 0.95 0.0065) *
       3) 350< 120.5 16137 13725 7 (0.14 0.014 0.13 0.031 0.14 0.081 0.12
0.15 0.077 0.12)
         6) 435< 0.5 4294 2072 0 (0.52 0.004 0.066 0.03 0.039 0.086 0.053
0.15 0.0086 0.042)
          12) 597>=1.5 2737 684 0 (0.75 0.0022 0.084 0.031 0.0018 0.08
0.03 0.0058 0.011 0.0033)
            24) 489< 0.5 2295 319 0 (0.86 0.00044 0.021 0.033 0.00087
0.053 0.02 0.0052 0.0026 0.0026)
             48) 380< 1.5 2072 142 0 (0.93 0 0.015 0.015 0.00048 0.021
0.01 0.0048 0.00048 0.00097)
               96) 324< 172 1973
                                 88 0 (0.96 0 0.015 0.0035 0.00051
0.0096 0.0091 0.0051 0.00051 0.001)
                192) 463< 80 1955 73 0 (0.96 0 0.013 0.0036 0.00051
0.0082 0.0087 0.002 0 0.001)
                  0.0012 0.0074 0 0 0.00062) *
                  385) 400< 3.5 332
                                    56 0 (0.83 0 0.075 0.021 0 0.042
0.015 0.012 0 0.003)
                    770) 545< 198.5 299 35 0 (0.88 0 0.03 0.023 0 0.047
0.01 0.0033 0 0.0033)
                     0.0075 0.011 0.0037 0 0.0037) *
                                       20 0 (0.38 0 0.062 0.19 0 0.38 0
##
                    1541) 296>=135 32
0 0 0)
                      3082) 239>=145 18
                                         7 0 (0.61 0 0.11 0.28 0 0 0 0
##
00) *
##
                      3083) 239< 145 14
                                         2 5 (0.071 0 0 0.071 0 0.86 0
0 0 0) *
                   ##
0.091 0 0)
##
                    1542) 455>=4 11
                                      1 0 (0.91 0 0.091 0 0 0 0 0 0 0)
*
##
                    1543) 455< 4 22
                                      7 2 (0.091 0 0.68 0 0 0 0.091
0.14 0 0) *
```

```
##
0.056 0) *
##
                97) 324>=172 99
                                 54 0 (0.45 0 0.02 0.24 0 0.25 0.03 0 0
0)
##
                 194) 427>=40 42
                                  2 0 (0.95 0 0 0.024 0 0.024 0 0 0 0) *
##
                 195) 427< 40 57
                                  33 5 (0.088 0 0.035 0.4 0 0.42 0.053 0
0 0)
##
                  390) 240>=64.5 30
                                      9 3 (0.13 0 0.033 0.7 0 0.13 0 0 0
0) *
                                   7 5 (0.037 0 0.037 0.074 0 0.74
##
                  391) 240< 64.5 27
0.11 0 0 0) *
              0.12 0.009 0.022 0.018)
                98) 484>=42 84
                              45 0 (0.46 0 0.071 0.024 0.012 0.13 0.26
##
0 0.024 0.012)
                 196) 270>=21.5 45
                                    9 0 (0.8 0 0.067 0 0.022 0.044 0 0
0.044 0.022) *
                                   17 6 (0.077 0 0.077 0.051 0 0.23 0.56
##
                 197) 270< 21.5 39
0 0 0)
                  394) 325>=145 13
                                     7 5 (0.15 0 0.23 0.15 0 0.46 0 0 0
##
0) *
##
                  395) 325< 145 26
                                     4 6 (0.038 0 0 0 0 0.12 0.85 0 0 0)
*
                99) 484< 42 139
                                73 5 (0.05 0.0072 0.079 0.3 0 0.47 0.029
##
0.014 0.022 0.022)
                 198) 375< 95 65
                                 34 3 (0.046 0.015 0.15 0.48 0 0.22
0.046 0.031 0.015 0)
##
                  396) 287< 38.5 55
                                     24 3 (0.055 0.018 0.18 0.56 0 0.13
0.018 0.036 0 0)
                    792) 514>=4 11
                                     5 2 (0.091 0.091 0.55 0 0 0.18
##
0.091 0 0 0) *
                    793) 514< 4 44
                                    13 3 (0.045 0 0.091 0.7 0 0.11 0
##
0.04500) *
##
                  397) 287>=38.5 10
                                    3 5 (0 0 0 0 0 0.7 0.2 0 0.1 0) *
                                 22 5 (0.054 0 0.014 0.15 0 0.7 0.014 0
##
                 199) 375>=95 74
0.027 0.041) *
            25) 489>=0.5 442 261 2 (0.17 0.011 0.41 0.023 0.0068 0.22
0.081 0.009 0.054 0.0068)
              50) 347< 2.5 218
                               48 2 (0.032 0.023 0.78 0.028 0.0092 0.046
0.032 0.014 0.028 0.0092)
               100) 344< 154.5 192 23 2 (0 0.026 0.88 0.031 0.0052 0.01
0.0052 0.016 0.026 0) *
               101) 344>=154.5 26
                                  18 5 (0.27 0 0.038 0 0.038 0.31 0.23 0
0.038 0.077)
                 202) 512>=14.5 17
                                  10 0 (0.41 0 0.059 0 0.059 0 0.29 0
##
0.059 0.12) *
##
                 203) 512< 14.5 9
                                  1 5 (0 0 0 0 0 0.89 0.11 0 0 0) *
              ##
0.0045 0.08 0.0045)
               102) 386>=3.5 73 9 0 (0.88 0 0.014 0 0 0 0.068 0.014
```

```
0.014 0.014) *
                                     62 5 (0.04 0 0.066 0.026 0.0066 0.59
##
                 103) 386< 3.5 151
0.16 0 0.11 0)
                                       41 6 (0.078 0 0.14 0.062 0.016 0.16
                   206) 513>=12.5 64
##
0.36 0 0.19 0)
                    412) 131< 89 44
                                        32 8 (0.091 0 0.18 0.068 0.023 0.23
##
0.14 \ 0 \ 0.27 \ 0)
##
                       824) 407< 63 34
                                          24 5 (0.12 0 0.24 0.088 0.029 0.29
0.15 0 0.088 0)
                        1648) 580>=144 10
                                            3 2 (0 0 0.7 0.1 0 0 0.2 0 0 0)
##
                                            14 5 (0.17 0 0.042 0.083 0.042
##
                       1649) 580< 144 24
0.42 0.12 0 0.12 0)
                         3298) 627>=242 10
                                               6 0 (0.4 0 0.1 0.1 0 0 0.2 0
##
0.20) *
                         3299) 627< 242 14
                                               4 5 (0 0 0 0.071 0.071 0.71
0.071 0 0.071 0) *
##
                       825) 407>=63 10
                                          18 (0 0 0 0 0 0 0.1 0 0.9 0) *
                    413) 131>=89 20
                                         3 6 (0.05 0 0.05 0.05 0 0 0.85 0 0
##
0) *
                                         8 5 (0.011 0 0.011 0 0 0.91 0.011 0
##
                   207) 513< 12.5 87
0.057 0) *
            13) 597< 1.5 1557 909 7 (0.11 0.0071 0.033 0.029 0.1 0.095
0.094 0.42 0.0045 0.11)
              26) 486>=0.5 603 470 6 (0.18 0.0017 0.073 0.018 0.21 0.1 0.22
0.043 0.0083 0.15)
                                  186 6 (0.32 0.0032 0.097 0.019 0.029 0.061
                52) 572>=5.5 309
0.4 0.0097 0.0097 0.052)
                                    61 0 (0.6 0 0.11 0.02 0.02 0.093 0.033
##
                 104) 241>=12 151
0.02 0.013 0.099)
                                      13 0 (0.86 0 0.032 0.011 0 0.022 0.022
                   208) 518< 102 93
0.022 0.011 0.022) *
                   209) 518>=102 58
                                      45 2 (0.17 0 0.22 0.034 0.052 0.21
0.052 0.017 0.017 0.22)
                                          13 5 (0.32 0 0 0.04 0 0.48 0.12 0
                    418) 438< 23.5 25
0.040)
##
                       836) 370>=3 8
                                         00(1000000000)*
                                          5 5 (0 0 0 0.059 0 0.71 0.18 0
##
                       837) 370< 3 17
0.059 0) *
                                         20 2 (0.061 0 0.39 0.03 0.091 0 0
##
                    419) 438>=23.5 33
0.03 0 0.39)
                       838) 343< 29 19
                                         6 2 (0.11 0 0.68 0.053 0.11 0 0 0
##
0 0.053) *
                                         2 9 (0 0 0 0 0.071 0 0 0.071 0
##
                       839) 343>=29 14
0.86) *
                 105) 241< 12 158
                                    40 6 (0.057 0.0063 0.089 0.019 0.038
##
0.032 0.75 0 0.0063 0.0063)
                                      8 0 (0.47 0 0.2 0 0.13 0 0.067 0 0.067
                   210) 215>=15 15
0.067) *
##
                   211) 215< 15 143 26 6 (0.014 0.007 0.077 0.021 0.028
```

```
0.035 0.82 0 0 0) *
##
               53) 572< 5.5 294
                               178 4 (0.031 0 0.048 0.017 0.39 0.14 0.034
0.078 0.0068 0.25)
                               27 4 (0.017 0 0.05 0 0.77 0.025 0.042
               106) 211< 8 119
0.05 0 0.042)
                 212) 294< 30.5 103
                                     11 4 (0.0097 0 0.029 0 0.89 0 0.049
##
0 0 0.019) *
##
                 213) 294>=30.5 16
                                    10 7 (0.062 0 0.19 0 0 0.19 0 0.38 0
0.19) *
               ##
0.097 0.011 0.39)
                                    31 5 (0.087 0 0.072 0.072 0.014 0.55
                 214) 465< 104 69
0.058 0.058 0.014 0.072) *
##
                 215) 465>=104 106
                                    42 9 (0.0094 0 0.028 0 0.22 0 0.0094
0.12 0.0094 0.6)
                   430) 208< 2.5 24
                                     7 4 (0.042 0 0.042 0 0.71 0 0 0.083
##
0 0.12) *
                   431) 208>=2.5 82 21 9 (0 0 0.024 0 0.073 0 0.012 0.13
##
0.012 0.74) *
             27) 486< 0.5 954 332 7 (0.064 0.01 0.0084 0.036 0.038 0.092
##
0.014 0.65 0.0021 0.084)
              54) 404>=1 208 143 9 (0.019 0.034 0.014 0.12 0.11 0.3 0.043
0.043 0.0096 0.31)
                                 47 5 (0.019 0.066 0 0.16 0.019 0.56
               108) 354< 26 106
0.085 0.019 0.019 0.057)
                 216) 290< 0.5 53
                                   36 3 (0.019 0.13 0 0.32 0.019 0.32
0.15 0 0 0.038)
##
                   432) 205>=9.5 16
                                      3 3 (0 0 0 0.81 0.062 0.12 0 0 0 0)
##
                   433) 205< 9.5 37
                                     22 5 (0.027 0.19 0 0.11 0 0.41 0.22
0 0 0.054)
                     866) 541< 12 28
                                      20 6 (0.036 0.25 0 0.14 0 0.21 0.29
##
0 0 0.071)
##
                     1732) 515< 28.5 18
                                          12 1 (0.056 0.33 0 0.22 0 0.28
0 0 0 0.11) *
                     1733) 515>=28.5 10 2 6 (0 0.1 0 0 0 0.1 0.8 0 0
##
0) *
##
                     867) 541>=12 9
                                      05 (0000010000) *
                 217) 290>=0.5 53
                                 11 5 (0.019 0 0 0 0.019 0.79 0.019
0.038 0.038 0.075) *
                                 43 9 (0.02 0 0.029 0.078 0.2 0.029 0
##
               109) 354>=26 102
0.069 0 0.58)
##
                 218) 239< 1.5 31
                                   12 4 (0 0 0.032 0.13 0.61 0.032 0
0.097 0 0.097)
                   436) 155>=78.5 7 3 3 (0 0 0.14 0.57 0 0 0 0 0 0.29)
##
*
                   437) 155< 78.5 24 5 4 (0 0 0 0 0.79 0.042 0 0.12 0
##
0.042) *
                 0 0.056 0 0.79) *
```

```
55) 404< 1 746 133 7 (0.076 0.004 0.0067 0.012 0.019 0.035
0.0054 0.82 0 0.02)
##
              0.044)
##
                220) 323< 203 59
                                 10 0 (0.83 0 0 0 0.034 0.051 0 0.034 0
0.051) *
                                 3 5 (0 0 0 0.11 0 0.67 0 0.22 0 0) *
##
                221) 323>=203 9
##
              111) 538< 1 678 69 7 (0.012 0.0044 0.0074 0.012 0.018
0.025 0.0059 0.9 0 0.018)
                0.033 0.067 0 0.17)
                                   4 5 (0 0.14 0 0.071 0 0.71 0.071 0
##
                 444) 381< 10.5 14
0 0) *
##
                 445) 381>=10.5 16 8 4 (0 0 0.062 0 0.5 0 0 0.12 0
0.31) *
                223) 460< 13 648 41 7 (0.012 0.0015 0.0062 0.011 0.0062
0.011 0.0046 0.94 0 0.011)
                 446) 153>=27 19 14 3 (0.16 0.053 0.16 0.26 0 0.21 0
0.053 0 0.11) *
##
                 447) 153< 27 629 23 7 (0.0079 0 0.0016 0.0032 0.0064
0.0048 0.0048 0.96 0 0.0079) *
         7) 435>=0.5 11843 9804 4 (0.0054 0.017 0.15 0.031 0.17 0.079 0.15
0.15 0.1 0.15)
          14) 542>=1.5 5226 3621 6 (0.0094 0.025 0.28 0.0077 0.052 0.045
0.31 0.054 0.18 0.038)
            28) 271>=0.5 2838 1751 2 (0.014 0.036 0.38 0.0099 0.076 0.046
0.027 0.088 0.26 0.057)
##
             56) 347< 1.5 1644 635 2 (0.003 0.062 0.61 0.014 0.04 0.0073
0.03 0.12 0.057 0.055)
              0.002 0.012 0.065 0.016)
                224) 344< 82 936 54 2 (0 0 0.94 0.016 0 0.0011 0 0.013
##
0.027 0.0011)
                 448) 349< 134.5 922
                                   40 2 (0 0 0.96 0.016 0 0.0011 0
0.013 0.012 0.0011)
                   896) 345< 104.5 912 31 2 (0 0 0.97 0.016 0 0 0
0.013 0.0044 0) *
                   897) 345>=104.5 10 3 8 (0 0 0.1 0 0 0.1 0 0 0.7
##
0.1) *
                                     08(000000010)*
##
                 449) 349>=134.5 14
                225) 344>=82 85 44 8 (0.035 0 0.24 0.012 0.024 0.012
0.024 0 0.48 0.18)
                 ##
0 0 0.31)
                   900) 570>=169.5 22
                                       5 2 (0.14 0 0.77 0 0 0 0.091 0
##
0 0) *
##
                   901) 570< 169.5 13 2 9 (0 0 0 0 0.15 0 0 0 0 0.85)
*
##
                 451) 402>=51.5 50 9 8 (0 0 0.06 0.02 0 0.02 0 0.82
0.08) *
```

```
113) 155< 1 623 442 7 (0.0032 0.16 0.17 0.011 0.1 0.016
0.077 0.29 0.045 0.12)
                  226) 709< 1.5 487
                                      383 2 (0.0041 0.21 0.21 0.012 0.13
0.021 0.099 0.12 0.045 0.15)
##
                    0.2 0.033 0.012 0.0081)
                      904) 344< 1.5 135
                                          35 1 (0 0.74 0.13 0.0074 0.015
0.022 0.044 0.044 0 0)
                       1808) 520< 3 107
                                           8 1 (0 0.93 0.028 0 0.0093
0.0093 0 0.028 0 0) *
                       1809) 520>=3 28
                                         14 2 (0 0.036 0.5 0.036 0.036
0.071 0.21 0.11 0 0)
                                              2 2 (0 0 0.86 0.071 0.071 0 0
                         3618) 431>=8.5 14
##
0 0 0) *
                                              8 6 (0 0.071 0.14 0 0 0.14
##
                         3619) 431< 8.5 14
0.43 0.21 0 0) *
                      905) 344>=1.5 111
                                           53 4 (0 0 0.018 0 0.52 0.018 0.38
0.018 0.027 0.018)
                       1810) 573< 221 72
                                           18 4 (0 0 0.028 0 0.75 0.028
0.097 0.028 0.042 0.028)
                                              9 4 (0 0 0.016 0 0.86 0 0.11
##
                         3620) 292< 124 63
0 0 0.016)
                                              3 4 (0 0 0.018 0 0.95 0
##
                           7240) 94< 7.5 56
0.018 0 0 0.018) *
##
                           7241) 94>=7.5 7
                                              1 6 (0 0 0 0 0.14 0 0.86 0 0
0) *
                         3621) 292>=124 9
                                             6 8 (0 0 0.11 0 0 0.22 0 0.22
##
0.33 0.11) *
##
                                            4 6 (0 0 0 0 0.1 0 0.9 0 0 0) *
                       1811) 573>=221 39
                                    156 2 (0.0083 0.0083 0.35 0.021 0.0083
##
                    453) 211>=1 241
0.021 0 0.2 0.079 0.3)
                      906) 371< 1.5 150
                                          69 2 (0 0.013 0.54 0.033 0.0067 0
##
0 0.31 0.04 0.06)
##
                       1812) 678< 45.5 127
                                             46 2 (0 0.016 0.64 0.039 0 0 0
0.19 0.047 0.071)
                                               29 2 (0 0.018 0.73 0.046 0 0
                         3624) 712< 40.5 109
0 0.092 0.037 0.073) *
                                               4 7 (0 0 0.056 0 0 0 0 0.78
##
                         3625) 712>=40.5 18
0.11 0.056) *
                       1813) 678>=45.5 23
                                             1 7 (0 0 0 0 0.043 0 0 0.96 0
##
0) *
                      907) 371>=1.5 91
                                         28 9 (0.022 0 0.044 0 0.011 0.055
##
0 0.033 0.14 0.69)
                       1814) 599>=6.5 28
                                           15 8 (0.071 0 0.071 0 0.036 0.18
0 0.071 0.46 0.11)
                         3628) 467>=4 14
                                            9 5 (0.14 0 0.071 0 0.071 0.36
##
0 0.14 0.071 0.14) *
                                            2 8 (0 0 0.071 0 0 0 0 0 0.86
##
                         3629) 467< 4 14
0.071) *
##
                       1815) 599< 6.5 63 3 9 (0 0 0.032 0 0 0 0.016 0
```

```
0.95) *
##
                 0.91 0.044 0.0074)
                                     4 7 (0 0 0.023 0.0078 0 0 0 0.97
                  454) 373< 182.5 128
0 0) *
##
                  455) 373>=182.5 8
                                      2 8 (0 0 0 0 0.12 0 0 0 0.75 0.12)
*
##
              57) 347>=1.5 1194
                                546 8 (0.03 0 0.065 0.0042 0.13 0.1 0.023
0.047 0.54 0.06)
                                357 4 (0.039 0 0.15 0 0.26 0.2 0.039
##
               114) 657< 15 485
0.099 0.1 0.11)
##
                 228) 354< 1 121
                                 27 5 (0.041 0 0.058 0 0.025 0.78 0.033
0 0.066 0)
                                  14 8 (0.25 0 0.25 0 0.05 0 0.15 0 0.3
##
                  456) 384>=14 20
0)
##
                    912) 522>=13.5 13
                                      8 0 (0.38 0 0.38 0 0 0 0.23 0 0
0) *
##
                    913) 522< 13.5 7
                                      1 8 (0 0 0 0 0.14 0 0 0 0.86 0) *
                  457) 384< 14 101
                                     7 5 (0 0 0.02 0 0.02 0.93 0.0099 0
##
0.020) *
                 229) 354>=1 364 239 4 (0.038 0 0.18 0 0.34 0.0055 0.041
##
0.13 0.11 0.15)
                  ##
0.084 0.045 0.013)
                    916) 268< 136 132
                                       26 4 (0 0 0.076 0 0.8 0.0076
0.098 0 0.015 0)
                     1832) 127>=2.5 18
                                         9 2 (0 0 0.5 0 0 0 0.44 0 0.056
##
0) *
                     1833) 127< 2.5 114
                                         8 4 (0 0 0.0088 0 0.93 0.0088
##
0.044 0 0.0088 0) *
                    917) 268>=136 23
                                      10 7 (0 0 0.13 0 0 0 0 0.57 0.22
##
0.087)
                     1834) 486>=162.5 8
                                          3 8 (0 0 0.38 0 0 0 0 0 0.62
##
0) *
##
                     1835) 486< 162.5 15
                                          27 (00000000.870
0.13) *
##
                  459) 212>=1.5 209
                                    156 2 (0.067 0 0.25 0 0.091 0.0048
0.0096 0.17 0.16 0.24)
                    918) 567>=25 85
                                    41 2 (0.14 0 0.52 0 0.012 0.012
0.012 0.024 0.27 0.012)
                     1836) 654< 33 56
                                     14 2 (0.11 0 0.75 0 0.018 0.018
0.018 0.018 0.054 0.018) *
##
                     1837) 654>=33 29
                                        9 8 (0.21 0 0.069 0 0 0 0 0.034
0.690)
                       3674) 492>=236 9
                                         3 0 (0.67 0 0.22 0 0 0 0 0.11
##
0 0) *
##
                       74 9 (0.016 0 0.073 0 0.15 0
##
                    919) 567< 25 124
0.0081 0.27 0.089 0.4)
                     1838) 458< 5 71 38 7 (0.014 0 0.085 0 0.07 0 0.014
```

```
0.46 0.13 0.23)
                       3676) 404< 25 43 11 7 (0.023 0 0.093 0 0.023 0
##
0.023 0.74 0 0.093)
                         7352) 680< 83 10
                                            6 2 (0.1 0 0.4 0 0.1 0 0.1 0
##
0 0.3) *
##
                         7353) 680>=83 33
                                            17 (00000000.970
0.03) *
##
                       3677) 404>=25 28 16 9 (0 0 0.071 0 0.14 0 0
0.036 0.32 0.43)
                         7354) 655>=18.5 15 6 8 (0 0 0.067 0 0.2 0 0
0.067 0.6 0.067) *
                                             2 9 (0 0 0.077 0 0.077 0 0
##
                         7355) 655< 18.5 13
0 0 0.85) *
##
                     1839) 458>=5 53
                                      19 9 (0.019 0 0.057 0 0.25 0 0 0
0.038 0.64)
                       3678) 402>=234.5 24
                                            11 4 (0.042 0 0.042 0 0.54 0
0 0 0.042 0.33)
                                          3 4 (0.067 0 0.067 0 0.8 0 0
##
                         7356) 456>=71 15
0 0 0.067) *
                         7357) 456< 71 9
                                           2 9 (0 0 0 0 0.11 0 0 0 0.11
##
0.78) *
                       3679) 402< 234.5 29 3 9 (0 0 0.069 0 0 0 0 0
##
0.034 0.9) *
               0.013 0.011 0.84 0.027)
                 230) 428>=111.5 74 53 4 (0.14 0 0.014 0 0.28 0.12 0.068
0 0.2 0.18)
                  460) 212< 40.5 21
##
                                     2 4 (0 0 0 0 0.9 0 0 0 0.095 0) *
                  461) 212>=40.5 53
                                     40 8 (0.19 0 0.019 0 0.038 0.17
##
0.094 0 0.25 0.25)
                    922) 597>=24.5 36 23 8 (0.28 0 0.028 0 0 0.22 0.11
##
0 0.36 0)
##
                     1844) 266>=251.5 14
                                          4 0 (0.71 0 0 0 0 0.29 0 0 0
0) *
##
                     1845) 266< 251.5 22
                                          9 8 (0 0 0.045 0 0 0.18 0.18
0 0.59 0) *
##
                    923) 597< 24.5 17
                                        4 9 (0 0 0 0 0.12 0.059 0.059 0
0 0.76) *
                                     51 8 (0.011 0 0.0063 0.0079 0.0047
                 231) 428< 111.5 635
0.022 0.0063 0.013 0.92 0.0094)
                   462) 488< 14.5 47 24 8 (0.085 0 0 0.043 0.021 0.26
0.021 0.043 0.49 0.043)
##
                    924) 600>=214 20
                                       9 5 (0.2 0 0 0.1 0.05 0.55 0 0.05
0 0.05)
                                        4 0 (0.5 0 0 0.25 0 0 0 0.12 0
                     1848) 327>=46.5 8
##
0.12) *
##
                     0) *
##
                    925) 600< 214 27 4 8 (0 0 0 0 0 0.037 0.037 0.037
0.85 0.037) *
```

```
463) 488>=14.5 588 27 8 (0.0051 0 0.0068 0.0051
0.0034 0.0034 0.0051 0.01 0.95 0.0068) *
             29) 271< 0.5 2388 861 6 (0.0034 0.012 0.16 0.005 0.023 0.044
0.64 0.015 0.086 0.014)
##
               58) 297>=53.5 447 177 2 (0.011 0.058 0.6 0.0089 0.076
0.0022 0.049 0.069 0.083 0.038)
                                    84 2 (0.0087 0.073 0.76 0.012 0.029 0
                116) 346< 7.5 344
0.0087 0.078 0.017 0.017)
                  232) 686< 2.5 318
                                     58 2 (0.0063 0.079 0.82 0.0063 0.025
0 0.0094 0.028 0.013 0.016)
                    464) 159>=0.5 32
                                     10 1 (0.031 0.69 0.22 0 0.031 0 0 0
##
0.031 0)
                                      2 1 (0 0.92 0 0 0.042 0 0 0 0.042
##
                      928) 127< 5 24
0) *
##
                      929) 127>=5 8
                                      1 2 (0.12 0 0.88 0 0 0 0 0 0 0) *
                    465) 159< 0.5 286
                                       33 2 (0.0035 0.01 0.88 0.007 0.024
0 0.01 0.031 0.01 0.017)
                      930) 398< 100.5 275 22 2 (0.0036 0.011 0.92 0.0073
0.011 0 0.0036 0.033 0.011 0)
                       1860) 681< 13 268 16 2 (0 0.011 0.94 0.0075 0.011
##
0 0.0037 0.015 0.011 0) *
##
                      1861) 681>=13 7 2 7 (0.14 0 0.14 0 0 0 0 0.71 0
0) *
                      931) 398>=100.5 11
                                           6 9 (0 0 0 0 0.36 0 0.18 0 0
##
0.45) *
                  233) 686>=2.5 26
                                    8 7 (0.038 0 0 0.077 0.077 0 0 0.69
0.077 0.038) *
##
                117) 346>=7.5 103 72 8 (0.019 0.0097 0.097 0 0.23 0.0097
0.18 0.039 0.3 0.11)
                  234) 656< 105 73 49 4 (0 0.014 0.12 0 0.33 0.014 0.26
0.055 0.055 0.15)
                    468) 573< 214 48
                                       24 4 (0 0.021 0.1 0 0.5 0.021 0
##
0.042 0.083 0.23) *
##
                    469) 573>=214 25
                                      6 6 (0 0 0.16 0 0 0 0.76 0.08 0 0)
##
                                      3 8 (0.067 0 0.033 0 0 0 0 0 0.9 0) *
                  235) 656>=105 30
##
               59) 297< 53.5 1941
                                   436 6 (0.0015 0.0015 0.057 0.0041 0.01
0.053 0.78 0.0021 0.087 0.0082)
                118) 274>=2.5 241
                                   122 8 (0.012 0.0041 0.32 0.012 0.062
0.0041 0.058 0.0083 0.49 0.021)
                  236) 655< 30.5 127
                                       55 2 (0.024 0.0079 0.57 0.024 0.094
0.0079 0.11 0.0079 0.12 0.039)
                    472) 537>=23.5 83
                                        13 2 (0.036 0 0.84 0.036 0 0 0.024
0 0.06 0) *
                    473) 537< 23.5 44
                                        32 4 (0 0.023 0.045 0 0.27 0.023
##
0.27 0.023 0.23 0.11)
                      ##
0) *
##
                      947) 220< 30 32
                                        20 6 (0 0.031 0.062 0 0.062 0 0.38
0.031 0.28 0.16)
```

```
1894) 494>=33.5 15 4 6 (0 0 0.067 0 0.13 0 0.73 0
##
0 0.067) *
                      1895) 494< 33.5 17
                                            8 8 (0 0.059 0.059 0 0 0 0.059
0.059 0.53 0.24) *
##
                  0.910) *
                119) 274< 2.5 1700 209 6 (0 0.0012 0.019 0.0029 0.0029
##
0.06 0.88 0.0012 0.029 0.0065)
                  238) 658< 1.5 1537
                                       83 6 (0 0.0013 0.02 0.00065 0.0026
0.018 0.95 0.00065 0.0072 0.0046)
                   476) 323>=161.5 34
                                         8 2 (0 0.059 0.76 0 0.059 0 0.029
0.029 0.059 0) *
                   477) 323< 161.5 1503 50 6 (0 0 0.0027 0.00067 0.0013
0.018 0.97 0 0.006 0.0047)
                                          5 5 (0 0 0 0 0 0.72 0.11 0 0.11
##
                     954) 217>=164 18
0.056) *
##
                     955) 217< 164 1485
                                         34 6 (0 0 0.0027 0.00067 0.0013
0.0094 0.98 0 0.0047 0.004)
                       1910) 662< 2 1478 27 6 (0 0 0.0027 0.00068 0.00068
0.0081 0.98 0 0.0047 0.0014) *
                      1911) 662>=2 7
                                        3 9 (0 0 0 0 0.14 0.29 0 0 0 0.57)
##
                  239) 658>=1.5 163 88 5 (0 0 0.012 0.025 0.0061 0.46
0.23 0.0061 0.24 0.025)
                   478) 515< 12.5 67
                                       11 5 (0 0 0 0.03 0.015 0.84 0.09 0
0.030)
##
                     956) 456< 140 58
                                        3 5 (0 0 0 0.034 0 0.95 0 0 0.017
0) *
                     957) 456>=140 9
                                        3 6 (0 0 0 0 0.11 0.11 0.67 0 0.11
##
0) *
                   479) 515>=12.5 96
                                       59 8 (0 0 0.021 0.021 0 0.2 0.32
##
0.01 0.39 0.042)
                     958) 457>=103 34
                                        9 6 (0 0 0 0 0 0.088 0.74 0 0.12
##
0.059) *
##
                     959) 457< 103 62
                                        29 8 (0 0 0.032 0.032 0 0.26 0.097
0.016 0.53 0.032)
                                          16 5 (0 0 0.034 0.069 0 0.45
                      1918) 354< 0.5 29
0.21 0.034 0.21 0)
                        3836) 186< 160 13
                                             7 6 (0 0 0.077 0.15 0 0.077
0.46 0.077 0.15 0) *
                        3837) 186>=160 16
                                             4 5 (0 0 0 0 0 0.75 0 0 0.25
##
0) *
##
                      1919) 354>=0.5 33
                                          6 8 (0 0 0.03 0 0 0.091 0 0
0.82 0.061) *
           15) 542< 1.5 6617 4849 4 (0.0023 0.011 0.041 0.05 0.27 0.11
0.021 0.22 0.038 0.24)
             30) 432>=0.5 4489 2890 4 (0.0016 0.0018 0.045 0.058 0.36 0.13
0.022 0.029 0.048 0.31)
               60) 211< 31.5 1830 519 4 (0 0.0033 0.061 0.024 0.72 0.067
0.037 0.024 0.031 0.037)
```

```
##
0.1 \ 0)
##
                  240) 346< 3 109
                                   25 2 (0 0 0.77 0.16 0 0.018 0 0 0.055
0)
##
                    480) 379< 151.5 87
                                         5 2 (0 0 0.94 0.023 0 0.023 0 0
0.011\ 0)\ *
                    481) 379>=151.5 22
                                         7 3 (0 0 0.091 0.68 0 0 0 0 0.23
##
0)
##
                      962) 484< 42.5 15
                                          03(0001000000)*
##
                      963) 484>=42.5 7
                                         2 8 (0 0 0.29 0 0 0 0 0 0.71 0) *
##
                  241) 346>=3 112
                                    33 5 (0 0 0.036 0.062 0.036 0.71 0.018
0 0.14 0)
                    482) 355< 10 87
                                      9 5 (0 0 0.023 0.057 0 0.9 0.011 0
##
0.011\ 0) *
                                     10 8 (0 0 0.08 0.08 0.16 0.04 0.04 0
##
                    483) 355>=10 25
0.60)
##
                     966) 400>=192 7
                                         3 4 (0 0 0.29 0.14 0.57 0 0 0 0 0)
*
##
                      967) 400< 192 18 3 8 (0 0 0 0.056 0 0.056 0.056 0
0.830) *
                121) 596< 1.5 1609 302 4 (0 0.0037 0.014 0.012 0.81 0.026
##
0.041 0.027 0.021 0.042)
                  242) 267< 139 1469 186 4 (0 0.0041 0.011 0.011 0.87
0.014 0.045 0.0068 0.021 0.014)
                    484) 98< 3 1415
                                     133 4 (0 0.0042 0.0099 0.011 0.91
0.015 0.011 0.0071 0.022 0.014)
                      968) 155< 120.5 1344 70 4 (0 0.0045 0.006 0.0067
0.95 0.0015 0.01 0.0074 0.0037 0.012)
                                          52 4 (0 0.0045 0.0038 0.0053
                       1936) 295< 222 1325
0.96 0 0.011 0 0.0038 0.011)
                                          42 4 (0 0.0046 0.0038 0.0053
                         3872) 95< 32 1313
0.97 0 0.003 0 0.0038 0.011) *
##
                        3873) 95>=32 12
                                           2 6 (0 0 0 0 0.17 0 0.83 0 0 0)
*
                                           9 7 (0 0 0.16 0.11 0.053 0.11 0
##
                      1937) 295>=222 19
0.53 0 0.053) *
                      969) 155>=120.5 71
                                          45 8 (0 0 0.085 0.099 0.11 0.27
0.014 0 0.37 0.056)
                                         30 5 (0 0 0.1 0.15 0.17 0.38 0 0
##
                      1938) 516< 47 48
0.12 \ 0.083)
                        3876) 354< 4 24
                                          7 5 (0 0 0.042 0.083 0.083 0.71
##
0 0 0.042 0.042) *
##
                        3877) 354>=4 24
                                          18 4 (0 0 0.17 0.21 0.25 0.042 0
0 0.21 0.12)
                          7754) 461>=201.5 7
                                              1 4 (0 0 0.14 0 0.86 0 0 0
##
0 0) *
                          7755) 461< 201.5 17
                                                12 3 (0 0 0.18 0.29 0
##
0.059 0 0 0.29 0.18) *
##
                      1939) 516>=47 23
                                          3 8 (0 0 0.043 0 0 0.043 0.043 0
0.87 0) *
```

```
##
##
                  243) 267>=139 140
                                    93 9 (0 0 0.05 0.029 0.17 0.15 0 0.24
0.021 \ 0.34)
                                    54 9 (0 0 0.022 0.022 0.26 0.22 0
                   486) 401>=2.5 93
##
0.054 0.011 0.42)
                                         5 5 (0 0 0 0 0.095 0.76 0 0 0.048
                     972) 247>=1.5 21
##
0.095) *
##
                     973) 247< 1.5 72
                                        35 9 (0 0 0.028 0.028 0.31 0.056 0
0.069 0 0.51)
                      1946) 237< 23.5 32
                                           11 4 (0 0 0.031 0.031 0.66
##
0.062 0 0 0 0.22)
                                           4 4 (0 0 0.042 0.042 0.83 0.042
                        3892) 323>=1 24
##
0 0 0 0.042) *
##
                        3893) 323< 1 8
                                          2 9 (0 0 0 0 0.12 0.12 0 0 0
0.75) *
                      1947) 237>=23.5 40
                                          10 9 (0 0 0.025 0.025 0.025
0.05 0 0.12 0 0.75) *
                   487) 401< 2.5 47 18 7 (0 0 0.11 0.043 0 0.021 0 0.62
0.043 \ 0.17)
                     974) 455< 81.5 36
                                          7 7 (0 0 0.056 0.056 0 0 0 0.81
##
0.056 0.028) *
                     975) 455>=81.5 11
                                          4 9 (0 0 0.27 0 0 0.091 0 0 0
##
0.64) *
               61) 211>=31.5 2659 1347 9 (0.0026 0.00075 0.034 0.081 0.11
##
0.17 0.012 0.033 0.061 0.49)
                122) 354< 2.5 808 363 5 (0.0037 0.0025 0.024 0.068 0.12
0.55 0.035 0.041 0.046 0.11)
##
                  244) 352< 55 581 136 5 (0.0052 0 0.024 0.064 0.01 0.77
0.045 0.0017 0.015 0.069)
                   488) 384< 17.5 521 79 5 (0 0 0.0019 0.067 0.0019 0.85
0.046 0.0019 0 0.033)
                     976) 516< 166.5 494
                                           54 5 (0 0 0.002 0.071 0.002
0.89 0 0.002 0 0.032)
##
                      1952) 322>=187.5 24
                                             8 3 (0 0 0 0.67 0 0.33 0 0 0
0)
##
                        3904) 265< 169.5 15
                                              03(0001000000)*
##
                        3905) 265>=169.5 9
                                              1 5 (0 0 0 0.11 0 0.89 0 0 0
0) *
                      1953) 322< 187.5 470
                                            38 5 (0 0 0.0021 0.04 0.0021
##
0.92 0 0.0021 0 0.034)
                        3906) 123>=180.5 9 2 3 (0 0 0 0.78 0 0.22 0 0 0
##
0) *
##
                        3907) 123< 180.5 461
                                              31 5 (0 0 0.0022 0.026
0.0022 0.93 0 0.0022 0 0.035)
                          7814) 718< 37 450
                                              23 5 (0 0 0.0022 0.027
0.0022 0.95 0 0 0 0.02) *
                          7815) 718>=37 11
                                              4 9 (0 0 0 0 0 0.27 0 0.091
##
0 0.64) *
##
                     977) 516>=166.5 27 3 6 (0 0 0 0 0 0.074 0.89 0 0
0.037) *
```

```
489) 384>=17.5 60
                                       37 9 (0.05 0 0.22 0.033 0.083 0.05
##
0.033 0 0.15 0.38)
                     ##
0.240)
##
                      1956) 685< 1.5 18 5 2 (0.17 0 0.72 0 0 0 0.11 0 0
0) *
                      1957) 685>=1.5 7
                                          1 8 (0 0 0 0.14 0 0 0 0 0.86 0)
##
##
                     979) 596< 14 35
                                       12 9 (0 0 0 0.029 0.14 0.086 0 0
0.086 \ 0.66
                      1958) 242< 14.5 11
                                            6 4 (0 0 0 0 0.45 0.18 0 0
##
0.27 0.091) *
                      1959) 242>=14.5 24
                                            2 9 (0 0 0 0.042 0 0.042 0 0 0
##
0.92) *
                  245) 352>=55 227 139 4 (0 0.0088 0.022 0.079 0.39 0
##
0.0088 0.14 0.12 0.23)
                   490) 209< 16.5 79
                                       11 4 (0 0.013 0.013 0.013 0.86 0 0
0.051 0.013 0.038) *
                   491) 209>=16.5 148 99 9 (0 0.0068 0.027 0.11 0.14 0
0.014 0.19 0.18 0.33)
                                          78 9 (0 0.0079 0.024 0.13 0.16
                     982) 544< 172.5 127
0 0.0079 0.22 0.071 0.39)
                                          34 7 (0 0.017 0.05 0.23 0.017 0
                      1964) 373< 9.5 60
0.017 0.43 0.067 0.17)
                        3928) 377>=4 23
                                          12 3 (0 0.043 0 0.48 0.043 0
0.043 0 0.087 0.3)
                          7856) 180>=95 11
                                              1 3 (0 0 0 0.91 0 0 0 0
##
0.0910) *
                          7857) 180< 95 12
                                              5 9 (0 0.083 0 0.083 0.083 0
##
0.083 0 0.083 0.58) *
                        3929) 377< 4 37
                                          11 7 (0 0 0.081 0.081 0 0 0 0.7
##
0.054 0.081) *
                      1965) 373>=9.5 67
                                          28 9 (0 0 0 0.03 0.28 0 0 0.03
##
0.075 0.58)
##
                        3930) 454>=2 13
                                          04(0000100000)*
                        3931) 454< 2 54
                                          15 9 (0 0 0 0.037 0.11 0 0 0.037
##
0.093 0.72) *
                     983) 544>=172.5 21 3 8 (0 0 0.048 0.048 0 0 0.048
##
0 0.86 0) *
                123) 354>=2.5 1851 631 9 (0.0022 0 0.038 0.086 0.1 0.01
##
0.0022 0.03 0.067 0.66)
                  246) 156>=0.5 406 304 4 (0.0074 0 0.13 0.24 0.25 0.03
0.0099 0.0025 0.19 0.14)
                   492) 624>=1 178 96 3 (0.011 0 0.25 0.46 0.0056 0.045
0.017 0 0.15 0.062)
                     984) 484< 46 99
                                       23 3 (0.01 0 0.02 0.77 0.01 0.071 0
##
0 0.02 0.1)
                      1968) 373< 63 77
                                          4 3 (0 0 0.013 0.95 0 0 0 0
##
0.013 0.026) *
                      1969) 373>=63 22 14 9 (0.045 0 0.045 0.14 0.045
```

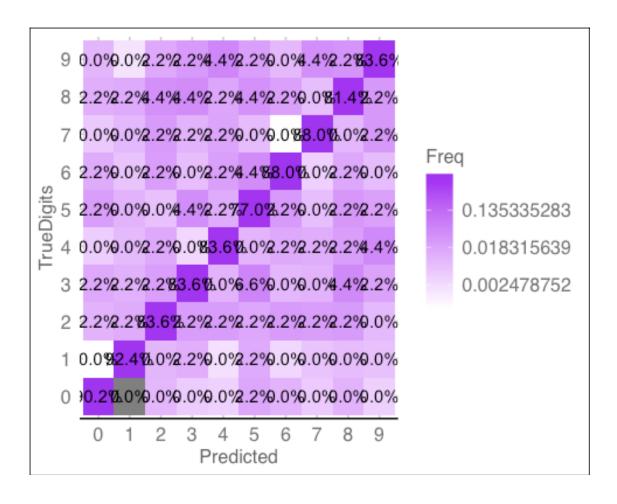
```
0.32 0 0 0.045 0.36)
                        ##
0.5 0 0 0.071 0) *
##
                        3939) 188< 3.5 8
                                           0 9 (0 0 0 0 0 0 0 0 0 1) *
                     985) 484>=46 79 37 2 (0.013 0 0.53 0.076 0 0.013
##
0.038 0 0.32 0.013)
                     1970) 465>=96.5 46
                                           7 2 (0 0 0.85 0.087 0 0.022 0
0 0.022 0.022) *
                      1971) 465< 96.5 33
                                           9 8 (0.03 0 0.091 0.061 0 0
0.091 0 0.73 0) *
                   493) 624< 1 228 127 4 (0.0044 0 0.039 0.07 0.44 0.018
0.0044 0.0044 0.22 0.2)
                     986) 428>=25 138 46 4 (0 0 0.036 0.051 0.67 0.014
0.0072 0 0.036 0.19)
                                         9 4 (0 0 0.033 0 0.9 0 0.011 0 0
##
                      1972) 207< 10 90
0.056) *
##
                      1973) 207>=10 48
                                        27 9 (0 0 0.042 0.15 0.23 0.042 0
0 0.1 0.44)
##
                        3946) 183< 239 10
                                            2 4 (0 0 0.1 0.1 0.8 0 0 0 0
0) *
                       ##
0.053 0 0 0.13 0.55)
                         7894) 372< 11.5 8 2 3 (0 0 0.12 0.75 0 0 0 0
##
0.120) *
                                             9 9 (0 0 0 0 0.1 0.067 0 0
##
                         7895) 372>=11.5 30
0.13 0.7) *
                     987) 428< 25 90
                                    45 8 (0.011 0 0.044 0.1 0.1 0.022 0
##
0.011 0.5 0.21)
                                         32 9 (0 0 0.06 0.18 0.18 0.04 0
##
                      1974) 544< 147 50
0.02 0.16 0.36)
                       3948) 374< 58 14
                                         6 3 (0 0 0.14 0.57 0.071 0 0
##
0.071 0.14 0) *
                       3949) 374>=58 36 18 9 (0 0 0.028 0.028 0.22
0.056 0 0 0.17 0.5)
                                             2 4 (0 0 0 0 0.78 0.11 0 0
                         7898) 407< 122 9
0.11\ 0)\ *
##
                         7899) 407>=122 27 9 9 (0 0 0.037 0.037 0.037
0.037 0 0 0.19 0.67)
                                             3 8 (0 0 0 0.12 0 0.12 0 0
##
                          15798) 551>=139 8
0.62 0.12) *
                          15799) 551< 139 19 2 9 (0 0 0.053 0 0.053 0
##
0 0 0 0.89) *
##
                      1975) 544>=147 40
                                         3 8 (0.025 0 0.025 0 0 0 0 0
0.93 0.025) *
                 247) 156< 0.5 1445 281 9 (0.00069 0 0.012 0.043 0.064
##
0.0048 0 0.037 0.033 0.81)
                   494) 317< 1 293 150 9 (0.0034 0 0.058 0.18 0.078
0.0034 0 0.15 0.044 0.49)
                     988) 319< 108.5 176 122 9 (0.0057 0 0.097 0.29 0.045
0 0 0.22 0.034 0.31)
```

```
1976) 342< 10 119 69 3 (0.0084 0 0.13 0.42 0.05 0
##
0 0.33 0.017 0.042)
                        3952) 518< 96.5 66
                                            23 3 (0 0 0.21 0.65 0.015 0 0
0.045 0.015 0.061)
##
                         7904) 512>=30 12
                                           1 2 (0 0 0.92 0 0 0 0 0
0.083\ 0) *
                         7905) 512< 30 54
                                            11 3 (0 0 0.056 0.8 0.019 0 0
##
0.056 0 0.074) *
                        3953) 518>=96.5 53
                                            17 7 (0.019 0 0.038 0.13
0.094 0 0 0.68 0.019 0.019)
                         7906) 209< 29 9
                                            4 4 (0.11 0 0.11 0 0.56 0 0 0
0.11 0.11) *
                         7907) 209>=29 44
                                            8 7 (0 0 0.023 0.16 0 0 0
##
0.8200)
                                             3 3 (0 0 0.11 0.67 0 0 0
##
                          15814) 437< 4 9
0.2200) *
                          15815) 437>=4 35
                                             1 7 (0 0 0 0.029 0 0 0 0.97
##
0 0) *
##
                      1977) 342>=10 57 8 9 (0 0 0.018 0.018 0.035 0 0 0
0.07 0.86) *
                                         28 9 (0 0 0 0.0085 0.13 0.0085
##
                     989) 319>=108.5 117
0 0.034 0.06 0.76)
                      1978) 428>=71.5 20 7 4 (0 0 0 0.05 0.65 0.05 0 0
##
0 0.25) *
##
                      1979) 428< 71.5 97
                                          13 9 (0 0 0 0 0.021 0 0 0.041
0.072 0.87) *
                   495) 317>=1 1152 131 9 (0 0 0.00087 0.0087 0.06 0.0052
0 0.0095 0.03 0.89)
                                      32 4 (0 0 0 0 0.52 0 0 0.015 0.03
##
                     990) 212< 14 66
0.44)
##
                      0) *
##
                      1981) 319< 195 35
                                       6 9 (0 0 0 0 0.11 0 0 0.029
0.029 0.83) *
                     991) 212>=14 1086 94 9 (0 0 0.00092 0.0092 0.032
0.0055 0 0.0092 0.029 0.91)
##
                      1982) 204>=10.5 72 31 9 (0 0 0 0.056 0.069 0.028 0
0.042 0.24 0.57)
                       3964) 438< 130.5 24
                                              8 8 (0 0 0 0.083 0.12 0 0
0.042 0.67 0.083) *
                       3965) 438>=130.5 48
                                              9 9 (0 0 0 0.042 0.042
##
0.042 0 0.042 0.021 0.81) *
                      1983) 204< 10.5 1014
                                           63 9 (0 0 0.00099 0.0059 0.03
0.0039 0 0.0069 0.015 0.94) *
             31) 432< 0.5 2128 796 7 (0.0038 0.031 0.034 0.032 0.079 0.056
0.017 0.63 0.017 0.1)
              62) 487< 75.5 1766 457 7 (0.004 0.037 0.03 0.039 0.019
0.067 0.012 0.74 0.018 0.034)
               0.37 0.0064 0.026 0.096 0.16)
```

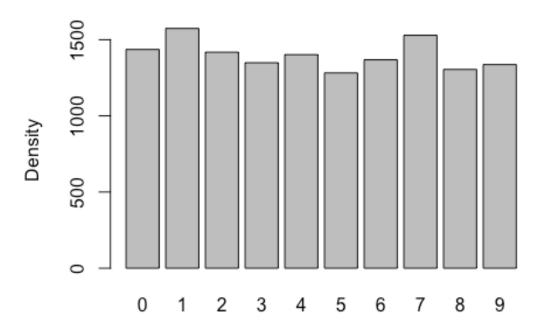
```
248) 353< 1 175 60 5 (0.0057 0.04 0.023 0.23 0.017 0.66
0.011 0 0.0057 0.011)
                    496) 323>=1.5 40
                                       16 3 (0.025 0.15 0 0.6 0.075 0.1
0.025 0 0 0.025)
##
                      992) 490< 1 26
                                        2 3 (0 0 0 0.92 0.038 0.038 0 0 0
0) *
                      993) 490>=1 14
                                        8 1 (0.071 0.43 0 0 0.14 0.21 0.071
##
0 0 0.071) *
                    497) 323< 1.5 135
                                        24 5 (0 0.0074 0.03 0.12 0 0.82
0.0074 0 0.0074 0.0074)
                      994) 150>=65 25
                                        13 3 (0 0.04 0.08 0.48 0 0.36 0 0
##
0.040)
                                         4 3 (0 0.062 0.12 0.75 0 0 0 0
                      1988) 233< 6 16
##
0.0620) *
##
                      1989) 233>=6 9
                                         05 (0000010000) *
                      995) 150< 65 110
                                         8 5 (0 0 0.018 0.036 0 0.93
0.0091 0 0 0.0091) *
                                   91 9 (0 0.036 0.029 0.12 0.2 0.0072 0
                  249) 353>=1 138
0.058 0.21 0.34)
                    498) 434>=208.5 46
                                         20 8 (0 0.11 0.043 0.2 0 0 0 0.065
##
0.57 0.022)
                                           9 3 (0 0.28 0 0.5 0 0 0 0.17 0
                      996) 348< 11.5 18
##
0.056) *
                      997) 348>=11.5 28
                                           2 8 (0 0 0.071 0 0 0 0 0 0.93 0)
##
*
##
                    499) 434< 208.5 92
                                        46 9 (0 0 0.022 0.087 0.29 0.011 0
0.054 0.033 0.5)
##
                      998) 210< 49 32
                                        10 4 (0 0 0.031 0.062 0.69 0.031 0
0.094 0 0.094) *
                      999) 210>=49 60
                                        17 9 (0 0 0.017 0.1 0.083 0 0 0.033
##
0.05 0.72)
                      1998) 623>=10 7
                                          1 3 (0 0 0 0.86 0 0 0 0 0 0.14) *
##
##
                      1999) 623< 10 53
                                          11 9 (0 0 0.019 0 0.094 0 0 0.038
0.057 0.79) *
                125) 377< 6.5 1453 152 7 (0.0041 0.036 0.031 0.0076 0.0028
0.0014 0.013 0.9 0.00069 0.0076)
                  250) 156>=0.5 93
                                  52 1 (0.043 0.44 0.26 0.054 0 0.022
0.13 0.054 0 0)
##
                    500) 179< 7 54
                                     16 1 (0.037 0.7 0 0.019 0 0.037 0.2 0
0 0)
                     1000) 568< 14 39
                                         1 1 (0 0.97 0 0 0 0.026 0 0 0 0) *
##
##
                     1001) 568>=14 15
                                         4 6 (0.13 0 0 0.067 0 0.067 0.73 0
0 0) *
##
                    501) 179>=7 39
                                     15 2 (0.051 0.077 0.62 0.1 0 0 0.026
0.13 0 0) *
                                       64 7 (0.0015 0.0088 0.015 0.0044
                  251) 156< 0.5 1360
##
0.0029 0 0.0051 0.95 0.00074 0.0081)
                                      13 2 (0 0.13 0.43 0.087 0.043 0 0.22
                    502) 153>=57 23
0.043 0.043 0)
##
```

```
##
                      1005) 176< 25.5 11
                                             6 6 (0 0.27 0 0 0.091 0 0.45
0.091 0.091 0) *
                     503) 153< 57 1337
                                          42 7 (0.0015 0.0067 0.0082 0.003
0.0022 0 0.0015 0.97 0 0.0082)
##
                      1006) 158>=54 10
                                           2 1 (0.2 0.8 0 0 0 0 0 0 0 0) *
##
                      1007) 158< 54 1327
                                           32 7 (0 0.00075 0.0083 0.003
0.0023 0 0.0015 0.98 0 0.0083) *
                63) 487>=75.5 362
                                    202 9 (0.0028 0.0028 0.052 0.0028 0.37
0.0028 0.044 0.064 0.014 0.44)
                 126) 211< 5.5 144
                                     38 4 (0.0069 0.0069 0.076 0 0.74 0.0069
0.1 0.0069 0.0069 0.049)
                   252) 95< 6.5 132 26 4 (0.0076 0.0076 0.061 0 0.8 0.0076
0.045 0.0076 0.0076 0.053) *
##
                   253) 95>=6.5 12
                                      3 6 (0 0 0.25 0 0 0 0.75 0 0 0) *
##
                 127) 211>=5.5 218
                                      65 9 (0 0 0.037 0.0046 0.13 0 0.0046
0.1 0.018 0.7)
##
                   254) 518>=241.5 50
                                         34 7 (0 0 0.08 0 0.24 0 0 0.32 0.06
0.3)
                     508) 429< 48.5 24
                                         8 7 (0 0 0.17 0 0.083 0 0 0.67 0
##
0.083) *
##
                     509) 429>=48.5 26
                                          13 9 (0 0 0 0 0.38 0 0 0 0.12 0.5)
##
                      1018) 382< 178.5 12
                                             3 4 (0 0 0 0 0.75 0 0 0 0.17
0.083) *
##
                      1019) 382>=178.5 14
                                              2 9 (0 0 0 0 0.071 0 0 0 0.071
0.86) *
                                          30 9 (0 0 0.024 0.006 0.1 0 0.006
##
                   255) 518< 241.5 168
0.036 0.006 0.82)
                                         11 4 (0 0 0.04 0 0.56 0 0 0.04 0
##
                     510) 235< 0.5 25
0.36)
                      1020) 434< 94 17
                                          3 4 (0 0 0.059 0 0.82 0 0 0.059 0
##
0.059) *
##
                      1021) 434>=94 8
                                          09(0000000001)*
##
                     511) 235>=0.5 143
                                          14 9 (0 0 0.021 0.007 0.021 0 0.007
0.035 0.007 0.9) *
#K-Fold Validation
N <- nrow(DigitTotalDF)</pre>
kfolds <- 3
holdout <- split(sample(1:N), 1:kfolds)</pre>
AllResults<-list()
AllLabels<-list()
for (k in 1:kfolds){
  kFold Test <- DigitTotalDF[holdout[[k]], ]</pre>
  kFold_Train<-DigitTotalDF[-holdout[[k]], ]</pre>
  tree_model<-rpart(label ~., data = kFold_Train, method="class",</pre>
control=rpart.control(cp=0))
  purned tree<- prune(tree model,
```

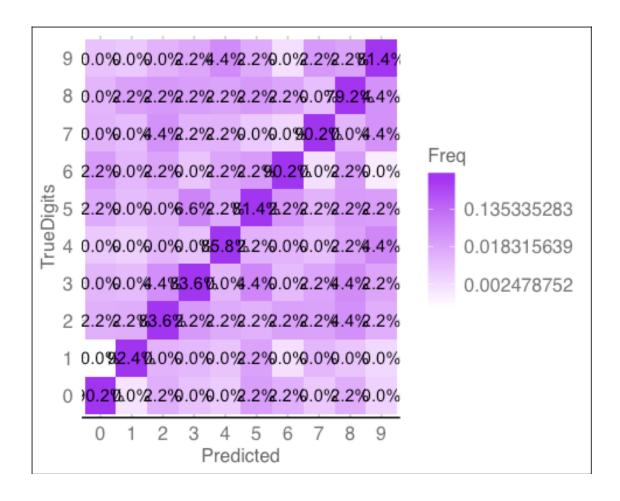
```
cp=tree_model$cptable[which.min(tree_model$cptable[,"xerror"]),"CP"])
  predicted <- predict(purned_tree, kFold_Test,type="class")</pre>
  (plotConfusionMatrix(predicted, kFold_Test$label))
  # Accumulate results from each fold, if you like
  AllResults<- c(AllResults, predicted)
  AllLabels<- c(AllLabels, kFold Test$label)
  ##Visualize
  plot(predicted, ylab = "Density", main = "Decision Tree Plot")
}
##
            TrueDigits
                           2
                                          5
                                                     7
                                                          8
                                                                9
## Predicted
                0
                      1
                                3
                                     4
                                                6
           0 1300
                      1
                               22
                                     6
                                               20
                                                     7
                                                         18
                                                               14
##
                          16
                                          32
##
           1
                0 1455
                          22
                               18
                                    13
                                          17
                                                9
                                                    14
                                                         23
                                                                3
##
           2
                     14 1188
                               31
                                    22
                                          9
                                               32
                                                    35
                                                         52
                                                               22
               13
##
           3
                6
                     17
                          33 1117
                                     4
                                          55
                                               10
                                                    15
                                                         57
                                                               35
##
           4
                5
                     3
                          33
                               15 1176
                                          19
                                               30
                                                    25
                                                         24
                                                               72
           5
##
               22
                    19
                          21
                               72
                                    13
                                         998
                                               54
                                                    10
                                                         45
                                                               28
##
           6
               15
                     4
                          34
                               13
                                    21
                                          36 1203
                                                     1
                                                         29
                                                               12
##
           7
               7
                     9
                          34
                               16
                                    20
                                          11
                                                6 1356
                                                         11
                                                               59
##
           8
                               59
                                    29
                                               21
                                                               42
               14
                     10
                          33
                                          37
                                                    12 1048
           9
                5
##
                      9
                          11
                               26
                                    63
                                          28
                                               10
                                                    36
                                                         36 1113
##
         Accuracy
                                   AccuracyLower AccuracyUpper
                                                                    AccuracyNull
                            Kappa
##
     0.8538571429
                    0.8375605280
                                    0.8478964549
                                                    0.8596703546
                                                                    0.1100714286
## AccuracyPValue McnemarPValue
     0.0000000000
                     0.0005455309
## Warning: Transformation introduced infinite values in discrete y-axis
```



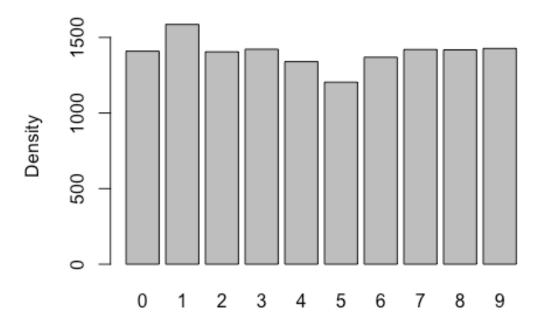
## **Decision Tree Plot**



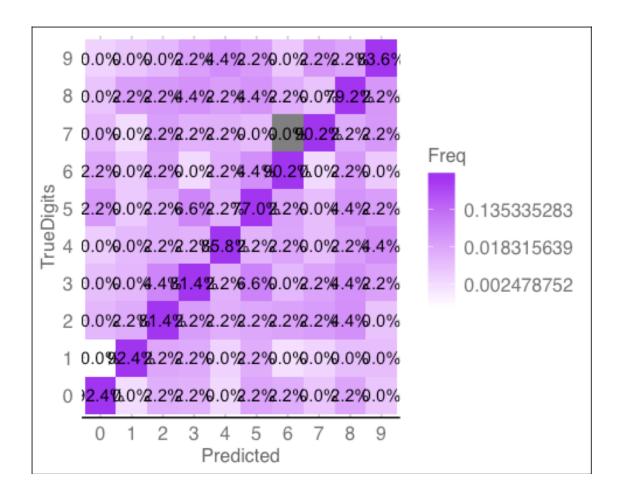
##	7	ΓrueD	igits									
##	Predicted	0	1	2	3	4	5	6	7	8	9	
##	0	1276	1	17	14	7	21	35	15	14	9	
##	1	3	1462	21	13	6	12	15	12	34	8	
##	2	18	15	1160	55	13	15	27	49	38	15	
##	3	9	13	39	1191	9	81	8	16	32	24	
##	4	6	8	20	13	1149	21	24	15	25	59	
##	5	27	24	14	64	14	973	30	6	34	18	
##	6	17	3	28	11	14	43	1221	4	25	3	
##	7	7	13	28	26	10	16	3	1268	10	39	
##	8	19	8	53	61	30	36	35	14	1134	28	
##	9	5	4	18	25	71	32	2	49	50	1171	
##	Accı	ıracy		ŀ	Карра	Accu	racyl	ower	Accι	ıracyl	Jpper	AccuracyNull
##	8.575000	e-01	8.4	<mark>11</mark> 6094	4e-01	8.5	15996	5e-01	8.6	532514	le-01	1.107857e-01
##	AccuracyP\	/alue	Mcne	emarP\	/alue							
##	0.00000	9e+00	5.3	319509	9e-06							



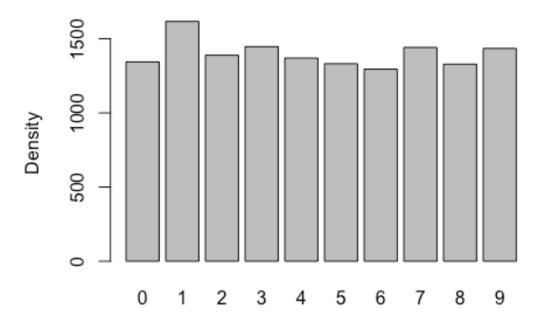
## **Decision Tree Plot**



шш	-	F D.										
##		[rueD	•									
##	Predicted	0	1	2	3	4	5	6	7	8	9	
##	0	1232	1	13	10	6	36	21	12	8	5	
##	1	4	1493	23	16	14	8	8	4	38	9	
##	2	18	24	1123	76	18	18	28	32	39	13	
##	3	17	22	35	1169	17	81	4	17	52	33	
##	4	4	5	18	17	1182	17	20	17	33	57	
##	5	25	18	22	82	15	1028	52	11	45	34	
##	6	18	3	26	12	24	25	1162	0	18	7	
##	7	8	5	35	28	11	11	4	1288	9	43	
##	8	24	10	50	48	32	45	36	20	1039	25	
##	9	8	11	9	31	63	34	7	41	43	1188	
##	Accı	ıracy		ŀ	Карра	Accı	ıracyl	ower	Accı	ıracyl	Jpper	AccuracyNull
##	8.502857	7e-01	8.3	335852	2e-01	8.4	142672	Le-01	8.5	61583	3e-01	1.137143e-01
##	AccuracyP\	/alue	Mcne	emarP\	/alue							
##	0.00000	0e+00	4.9	926062	2e-06							
##	## Warning: Transformation introduced infinite values in discrete y-axis											

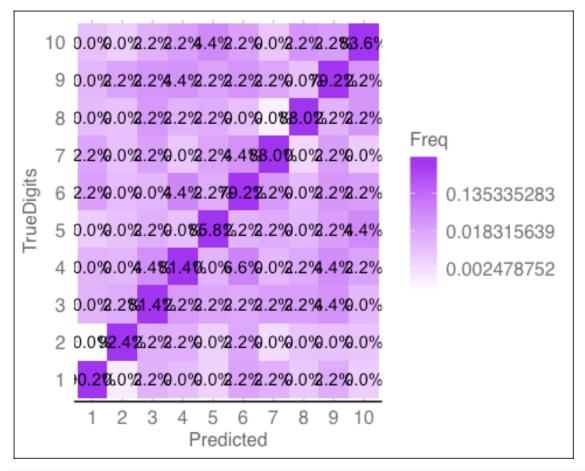


## **Decision Tree Plot**



```
table<-(table(Predicted=unlist(AllResults), TrueDigit=unlist(AllLabels)))</pre>
print(table)
              TrueDigit
##
## Predicted
                  1
                        2
                              3
                                    4
                                         5
                                               6
                                                     7
                                                           8
                                                                 9
                                                                     10
                        3
                                                                      28
##
           1
               3808
                             46
                                  46
                                        19
                                              89
                                                    76
                                                          34
                                                                40
           2
##
                  7 4410
                             66
                                  47
                                        33
                                              37
                                                    32
                                                          30
                                                                95
                                                                     20
                       53 3471
##
           3
                 49
                                 162
                                         53
                                              42
                                                    87
                                                         116
                                                               129
                                                                      50
##
           4
                 32
                       52
                            107 3477
                                         30
                                             217
                                                    22
                                                          48
                                                               141
                                                                     92
           5
##
                 15
                       16
                             71
                                  45 3507
                                              57
                                                    74
                                                          57
                                                                82
                                                                    188
##
           6
                 74
                             57
                                 218
                                        42 2999
                                                   136
                                                          27
                                                               124
                                                                     80
                       61
##
           7
                 50
                       10
                             88
                                   36
                                        59
                                             104 3586
                                                           5
                                                                72
                                                                     22
           8
                 22
                       27
                             97
                                  70
                                        41
                                                    13 3912
                                                                30
                                                                    141
##
                                              38
           9
##
                 57
                       28
                            136
                                 168
                                        91
                                             118
                                                    92
                                                          46 3221
                                                                      95
##
           10
                 18
                       24
                             38
                                  82
                                              94
                                                    19
                                                               129 3472
                                       197
                                                         126
plotConfusionMatrix(unlist(AllResults),unlist(AllLabels))
##
              TrueDigits
## Predicted
                  1
                        2
                              3
                                    4
                                         5
                                               6
                                                     7
                                                           8
                                                                 9
                                                                     10
##
               3808
                        3
                                        19
                                                    76
                                                                40
                                                                      28
           1
                             46
                                  46
                                              89
                                                          34
           2
                  7 4410
##
                             66
                                  47
                                         33
                                              37
                                                    32
                                                          30
                                                                95
                                                                      20
           3
##
                 49
                       53 3471
                                 162
                                         53
                                              42
                                                         116
                                                               129
                                                                      50
                                                    87
##
           4
                 32
                       52
                           107 3477
                                             217
                                                    22
                                                          48
                                                              141
                                                                     92
                                        30
```

```
##
           5
                 15
                      16
                            71
                                 45 3507
                                             57
                                                  74
                                                        57
                                                              82
                                                                  188
##
           6
                 74
                                       42 2999
                                                                   80
                      61
                            57
                                218
                                                 136
                                                        27
                                                             124
           7
##
                 50
                      10
                            88
                                  36
                                       59
                                            104 3586
                                                         5
                                                              72
                                                                   22
                                 70
                                                              30
                                                                  141
##
           8
                 22
                      27
                            97
                                       41
                                             38
                                                  13 3912
##
           9
                 57
                      28
                          136
                                168
                                       91
                                            118
                                                  92
                                                        46 3221
                                                                   95
##
           10
                 18
                      24
                            38
                                  82
                                      197
                                             94
                                                  19
                                                       126
                                                            129 3472
##
                                                                         AccuracyNull
          Accuracy
                              Kappa
                                      AccuracyLower
                                                       AccuracyUpper
##
     8.538810e-01
                      8.375925e-01
                                       8.504665e-01
                                                        8.572464e-01
                                                                         1.115238e-01
                     McnemarPValue
## AccuracyPValue
##
     0.000000e+00
                      2.330412e-12
```



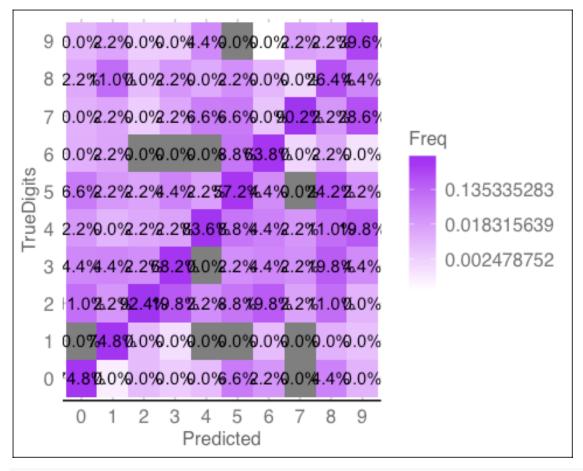
```
## Confusion Matrix and Statistics
##
              TrueDigits
##
                              3
                                          5
                                                6
                                                      7
                                                            8
                                                                  9
                                                                       10
## Predicted
                   1
                                    4
##
            1
               3808
                         3
                             46
                                   46
                                         19
                                               89
                                                     76
                                                           34
                                                                 40
                                                                       28
            2
                   7 4410
                                   47
                                                     32
                                                                 95
                                                                       20
##
                             66
                                         33
                                               37
                                                           30
##
            3
                 49
                        53 3471
                                  162
                                         53
                                               42
                                                     87
                                                          116
                                                                129
                                                                       50
            4
                        52
                            107 3477
                                                                141
##
                 32
                                         30
                                              217
                                                     22
                                                           48
                                                                       92
##
            5
                 15
                             71
                                   45 3507
                                               57
                                                     74
                                                           57
                                                                 82
                                                                      188
                        16
##
            6
                 74
                        61
                             57
                                  218
                                         42 2999
                                                    136
                                                           27
                                                                124
                                                                       80
            7
##
                 50
                        10
                             88
                                   36
                                         59
                                              104 3586
                                                            5
                                                                 72
                                                                       22
##
            8
                 22
                        27
                             97
                                   70
                                         41
                                               38
                                                     13 3912
                                                                 30
                                                                      141
```

```
##
               57
                    28
                        136
                             168
                                    91
                                        118
                                              92
                                                   46 3221
##
          10
               18
                    24
                         38
                              82
                                   197
                                         94
                                              19
                                                  126
                                                      129 3472
##
## Overall Statistics
##
##
                  Accuracy : 0.8539
##
                    95% CI: (0.8505, 0.8572)
##
       No Information Rate: 0.1115
##
       P-Value [Acc > NIR] : < 2.2e-16
##
##
                     Kappa : 0.8376
##
    Mcnemar's Test P-Value : 2.33e-12
##
##
## Statistics by Class:
##
##
                        Class: 1 Class: 2 Class: 3 Class: 4 Class: 5 Class: 6
## Sensitivity
                         0.92159
                                    0.9415 0.83098 0.79913
                                                              0.86125
                                                                        0.79025
## Specificity
                         0.98994
                                    0.9902
                                            0.98041
                                                     0.98032
                                                              0.98405
                                                                        0.97856
                                    0.9232 0.82407
## Pos Pred Value
                         0.90905
                                                     0.82432
                                                              0.85287
                                                                        0.78549
## Neg Pred Value
                         0.99143
                                    0.9926 0.98132 0.97687
                                                              0.98509
                                                                        0.97915
## Prevalence
                                    0.1115 0.09945 0.10360
                         0.09838
                                                              0.09695
                                                                        0.09036
## Detection Rate
                         0.09067
                                    0.1050 0.08264 0.08279
                                                              0.08350
                                                                        0.07140
## Detection Prevalence
                         0.09974
                                    0.1137
                                            0.10029
                                                     0.10043
                                                              0.09790
                                                                        0.09090
## Balanced Accuracy
                         0.95576
                                    0.9658 0.90569 0.88972
                                                              0.92265
                                                                        0.88441
##
                        Class: 7 Class: 8 Class: 9 Class: 10
## Sensitivity
                         0.86681 0.88889 0.79276
                                                      0.82904
## Specificity
                         0.98822
                                   0.98726 0.97810
                                                      0.98077
## Pos Pred Value
                         0.88938
                                  0.89091 0.79492
                                                      0.82686
## Neg Pred Value
                         0.98549
                                   0.98700 0.97781
                                                      0.98106
## Prevalence
                                   0.10479 0.09674
                         0.09850
                                                      0.09971
## Detection Rate
                         0.08538
                                   0.09314 0.07669
                                                      0.08267
## Detection Prevalence 0.09600
                                   0.10455
                                            0.09648
                                                      0.09998
## Balanced Accuracy
                         0.92752 0.93807
                                            0.88543
                                                      0.90490
#NB
getTopPCAFeatures<- function(df,ncp){</pre>
  pca_digits = PCA(t(select(df,-label)),ncp = ncp,graph=FALSE)
  summary(pca digits)
  #plot(pca_digits, select="contrib 1",choix = "var")
  #res <- Factoshiny(pca_digits)</pre>
  #select the pca variables only
  pca_df<-data.frame(df$label,pca_digits$var$coord)</pre>
  names(pca_df)[1]<-"label"</pre>
  return(pca_df)
}
runNB<-function(pca df){</pre>
```

```
trainIndex <- createDataPartition(pca_df$label, p = .6, list = FALSE,
                                   times = 1)
 #head(trainIndex)
 trainDF <- pca df[ trainIndex,]</pre>
 testDF <- pca_df[-trainIndex,]</pre>
 model nb = naivebayes::naive_bayes(label ~., data = trainDF)
 summary(model_nb)
 predicted_nb= predict(model_nb, testDF, type="class")
 plotConfusionMatrix(predicted nb,testDF$label)
  return(model nb)
}
model_nb_full<-runNB(DigitTotalDF)</pre>
##
## ====== Naive Bayes
______
##
## - Call: naive bayes.formula(formula = label ~ ., data = trainDF)
## - Laplace: 0
## - Classes: 10
## - Samples: 25205
## - Features: 784
## - Conditional distributions:
##
       - Gaussian: 784
## - Prior probabilities:
##
       - 0: 0.0984
##
       - 1: 0.1115
##
       - 2: 0.0995
##
       - 3: 0.1036
##
       - 4: 0.097
       - 5: 0.0903
##
##
       - 6: 0.0985
##
       - 7: 0.1048
##
       - 8: 0.0967
##
       - 9: 0.0997
##
## Warning: predict.naive bayes(): more features in the newdata are provided
## there are probability tables in the object. Calculation is performed based
## features to be found in the tables.
##
           TrueDigits
                                                            9
## Predicted
               0
                    1
                         2
                              3
                                   4
                                        5
                                             6
                                                  7
                                                       8
##
           0 1343
                    0
                       185
                             72
                                  38
                                      113
                                            16
                                                 15
                                                      21
                                                           12
##
          1 2 1802
                       58 106
                                  18
                                     51
                                            31
                                                 30 258
                                                           32
```

```
319
##
                                 11
                                      4
                                           5
                          140
                                                                   2
##
            3
                 2
                       1
                                468
                                       10
                                            31
                                                        8
                                                             16
##
            4
                 1
                       0
                                  0
                                     155
                                             3
                                                              2
                                                                   7
                            6
                                                       11
            5
                             5
                                  2
                                                              2
                 4
                                        5
                                            37
                                                        4
##
                       0
                          464
##
            6
                56
                      13
                                101
                                     120
                                            82 1546
                                                       10
                                                             16
                                                                   1
##
            7
                 0
                       0
                                 14
                                       11
                                             0
                                                      436
                                                              1
                                                                   8
                                                   1
                                823
                         456
                                     454 1070
                                                      102 1141
                                                                  51
##
            8
               211
                      36
                                                  50
                                                           166 1561
##
            9
                31
                      19
                            30
                                143
                                     813
                                          126
                                                   5 1143
##
          Accuracy
                              Kappa
                                     AccuracyLower
                                                      AccuracyUpper
                                                                        AccuracyNull
                                                                           0.1115213
##
        0.5244418
                         0.4712908
                                          0.5168555
                                                           0.5320196
## AccuracyPValue McnemarPValue
##
        0.0000000
                         0.0000000
```

## Warning: Transformation introduced infinite values in discrete y-axis



```
pca_10<-getTopPCAFeatures(DigitTotalDF,10)

##

## Call:
## PCA(X = t(select(df, -label)), ncp = ncp, graph = FALSE)

##

##

## Eigenvalues
##

## Dim.1 Dim.2 Dim.3 Dim.4 Dim.5</pre>
```

## Variance	12975.886	2635.187	2146.048	1747.535	1465.951
## % of var.	30.895	6.274	5.110	4.161	3.490
## Cumulative % of var.	30.895	37.169	42.279	46.440	49.930
##	Dim.6	Dim.7	Dim.8	Dim.9	Dim.10
## Variance	1358.547	1135.701	884.896	855.251	734.998
## % of var.	3.235	2.704	2.107	2.036	1.750
## Cumulative % of var.	53.165	55.869	57.976	60.012	61.762
##	Dim.11	Dim.12	Dim.13	Dim.14	Dim.15
## Variance	664.973	634.157	551.036	515.912	483.259
## % of var.	1.583	1.510	1.312	1.228	1.151
## Cumulative % of var.	63.345	64.855	66.167	67.395	68.546
##	Dim.16	Dim.17	Dim.18	Dim.19	Dim.20
## Variance	451.099	420.945	388.013	361.053	349.113
## % of var.	1.074	1.002	0.924	0.860	0.831
## Cumulative % of var.	69.620	70.622	71.546	72.406	73.237
##	Dim.21	Dim.22	Dim.23	Dim.24	Dim.25
## Variance	329.622	310.712	298.708	281.495	275.884
## % of var.	0.785	0.740	0.711	0.670	0.657
## Cumulative % of var.	74.022	74.762	75.473	76.143	76.800
##	Dim.26	Dim.27	Dim.28	Dim.29	Dim.30
## Variance	268.984	252.330	236.925	226.065	219.194
## % of var.	0.640	0.601	0.564	0.538	0.522
## Cumulative % of var.	77.440	78.041	78.605	79.144	79.665
##	Dim.31	Dim.32	Dim.33	Dim.34	Dim.35
## Variance	203.959	202.286	185.225	181.697	173.988
## % of var.	0.486	0.482	0.441	0.433	0.414
## Cumulative % of var.	80.151	80.633	81.074	81.506	81.921
##	Dim.36	Dim.37	Dim.38	Dim.39	Dim.40
## Variance	172.056	160.255	156.645	149.836	146.561
## % of var.	0.410	0.382	0.373	0.357	0.349
## Cumulative % of var.	82.330	82.712	83.085	83.441	83.790
##	Dim.41	Dim.42	Dim.43	Dim.44	Dim.45
## Variance	140.441	137.162	131.753	125.734	123.529
## % of var.	0.334	0.327	0.314	0.299	0.294
## Cumulative % of var.	84.125	84.451	84.765	85.064	85.359
##	Dim.46	Dim.47	Dim.48	Dim.49	Dim.50
## Variance	122.862	115.733	109.800	108.063	100.205
## % of var.	0.293	0.276	0.261	0.257	0.239
## Cumulative % of var.	85.651	85.927	86.188	86.445	86.684
##	Dim.51	Dim.52	Dim.53	Dim.54	Dim.55
## Variance	99.257	98.063	93.201	92.249	89.483
## % of var.	0.236	0.233	0.222	0.220	0.213
## Cumulative % of var.	86.920	87.154	87.376	87.595	87.808
##	Dim.56	Dim.57	Dim.58	Dim.59	Dim.60
## Variance	87.033	85.270	83.513	81.175	78.975
## % of var.	0.207	0.203	0.199	0.193	0.188
## Cumulative % of var.	88.016	88.219	88.417	88.611	88.799
##	Dim.61	Dim.62	Dim.63	Dim.64	Dim.65
## Variance	76.732	76.033	73.240	71.087	69.891
## % of var.	0.183	0.181	0.174	0.169	0.166

## Cumulative % of var.	88.981	89.163	89.337	89.506	89.673	
##	Dim.66	Dim.67	Dim.68	Dim.69	Dim.70	
## Variance	67.076	65.846	63.704	62.539	61.504	
## % of var.	0.160	0.157	0.152	0.149	0.146	
## Cumulative % of var.	89.832	89.989	90.141	90.290	90.436	
##	Dim.71	Dim.72	Dim.73	Dim.74	Dim.75	
## Variance	58.632	58.470	56.065	55.675	53.772	
## % of var.	0.140	0.139	0.133	0.133	0.128	
## Cumulative % of var.	90.576	90.715	90.848	90.981	91.109	
##	Dim.76	Dim.77	Dim.78	Dim.79	Dim.80	
## Variance	52.344	50.752	50.151	47.664	47.097	
## % of var.	0.125	0.121	0.119	0.113	0.112	
## Cumulative % of var.	91.234	91.354	91.474	91.587	91.699	
##	Dim.81	Dim.82	Dim.83	Dim.84	Dim.85	
## Variance	45.959	45.670	45.134	43.399	43.159	
## % of var.	0.109	0.109	0.107	0.103	0.103	
## Cumulative % of var.	91.809	91.918	92.025	92.128	92.231	
##	Dim.86	Dim.87	Dim.88	Dim.89	Dim.90	
## Variance	42.732	41.986	40.222	39.688	38.618	
## % of var.	0.102	0.100	0.096	0.094	0.092	
## Cumulative % of var.	92.333	92.433	92.529	92.623	92.715	
##	Dim.91	Dim.92	Dim.93	Dim.94	Dim.95	
## Variance	37.900	37.111	36.558	35.693	35.451	
## % of var.	0.090	0.088	0.087	0.085	0.084	
## Cumulative % of var.	92.805	92.894	92.981	93.066	93.150	
##	Dim.96	Dim.97	Dim.98	Dim.99	Dim.100	
## Variance	35.000	33.741	33.657	33.108	32.255	
## % of var.	0.083	0.080	0.080	0.079	0.077	
## Cumulative % of var.	93.233	93.314	93.394	93.473	93.550	
##	Dim.101	Dim.102	Dim.103	Dim.104	Dim.105	
## Variance	31.708	30.818	30.512	29.322	28.925	
## % of var.	0.075	0.073	0.073	0.070	0.069	
## Cumulative % of var.	93.625	93.698	93.771	93.841	93.910	
##	Dim.106	Dim.107	Dim.108	Dim.109	Dim.110	
## Variance	28.795	27.708	27.390	27.292	26.586	
## % of var.	0.069	0.066	0.065	0.065	0.063	
## Cumulative % of var.	93.978	94.044	94.109	94.174	94.238	
##	Dim.111	Dim.112	Dim.113	Dim.114	Dim.115	
## Variance	26.039	25.709	25.584	25.304	25.182	
## % of var.	0.062	0.061	0.061	0.060	0.060	
## Cumulative % of var.	94.300	94.361	94.422	94.482	94.542	
##	Dim.116	Dim.117	Dim.118	Dim.119	Dim.120	
## Variance	24.206	23.951	23.818	23.054	22.815	
## % of var.	0.058	0.057	0.057	0.055	0.054	
## Cumulative % of var.	94.600	94.657	94.713	94.768	94.823	
##	Dim.121	Dim.122	Dim.123	Dim.124	Dim.125	
## Variance	22.628	22.352	22.224	21.862	21.222	
## % of var.	0.054	0.053	0.053	0.052	0.051	
## Cumulative % of var.	94.877	94.930	94.983	95.035	95.085	
##	Dim.126	Dim.127	Dim.128	Dim.129	Dim.130	
	D 1111 • 120	D = III + = E /	D T • T Z O	D 1111 + 12J	D 1111 • 130	

## Variance	21.059	20.634	20.467	20.033	19.894
## % of var.	0.050	0.049	0.049	0.048	0.047
## Cumulative % of var.	95.135	95.185	95.233	95.281	95.328
##	Dim.131	Dim.132	Dim.133	Dim.134	Dim.135
## Variance	19.503	19.289	19.223	18.915	18.460
## % of var.	0.046	0.046	0.046	0.045	0.044
## Cumulative % of var.	95.375	95.421	95.466	95.511	95.555
##	Dim.136	Dim.137	Dim.138	Dim.139	Dim.140
## Variance	18.290	18.250	18.088	17.507	17.219
## % of var.	0.044	0.043	0.043	0.042	0.041
## Cumulative % of var.	95.599	95.642	95.686	95.727	95.768
## \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Dim.141	Dim.142	Dim.143	Dim.144	Dim.145
<pre>## Variance ## % of var.</pre>	16.825	16.398	16.186	16.169	15.900
## Cumulative % of var.	0.040	0.039	0.039	0.038	0.038
## Cumulative % of var.	95.808 Dim.146	95.847 Dim.147	95.886 Dim.148	95.924 Dim.149	95.962 Dim.150
## Variance	15.761	15.658	15.577	15.477	15.321
## % of var.	0.038	0.037	0.037	0.037	0.036
## Cumulative % of var.	96.000	96.037	96.074	96.111	96.147
##	Dim.151	Dim.152	Dim.153	Dim.154	Dim.155
## Variance	15.094	14.926	14.829	14.612	14.562
## % of var.	0.036	0.036	0.035	0.035	0.035
## Cumulative % of var.	96.183	96.219	96.254	96.289	96.324
##	Dim.156	Dim.157	Dim.158	Dim.159	Dim.160
## Variance	14.468	14.192	13.834	13.675	13.475
## % of var.	0.034	0.034	0.033	0.033	0.032
## Cumulative % of var.	96.358	96.392	96.425	96.457	96.489
##	Dim.161	Dim.162	Dim.163	Dim.164	Dim.165
## Variance	13.389	13.298	13.073	12.872	12.801
## % of var.	0.032	0.032	0.031	0.031	0.030
## Cumulative % of var.	96.521	96.553	96.584	96.615	96.645
##	Dim.166	Dim.167	Dim.168	Dim.169	Dim.170
## Variance	12.616	12.526	12.381	12.338	12.194
## % of var.	0.030	0.030	0.029	0.029	0.029
## Cumulative % of var.	96.675	96.705	96.735	96.764	96.793
##	Dim.171	Dim.172	Dim.173	Dim.174	Dim.175
## Variance	12.051	11.965	11.780	11.716	11.592
## % of var.	0.029	0.028	0.028	0.028	0.028
## Cumulative % of var.	96.822	96.850	96.878	96.906	96.934
##	Dim.176	Dim.177	Dim.178	Dim.179	Dim.180
## Variance	11.287	11.160	11.056	10.858	10.780
## % of var.	0.027	0.027	0.026	0.026	0.026
## Cumulative % of var.	96.961	96.987	97.014	97.039	97.065
##	Dim.181	Dim.182	Dim.183	Dim.184	Dim.185
## Variance	10.626	10.585	10.574	10.451	10.389
## % of var.	0.025	0.025	0.025	0.025	0.025
## Cumulative % of var.	97.090	97.116	97.141	97.166	97.190
##	Dim.186	Dim.187	Dim.188	Dim.189	Dim.190
## Variance	10.327	10.181	10.151	9.965	9.863
## % of var.	0.025	0.024	0.024	0.024	0.023

## Cumulative % of var.	97.215	97.239	97.263	97.287	97.311	
##	Dim.191	Dim.192	Dim.193	Dim.194	Dim.195	
## Variance	9.825	9.749	9.691	9.637	9.542	
## % of var.	0.023	0.023	0.023	0.023	0.023	
## Cumulative % of var.	97.334	97.357	97.380	97.403	97.426	
##	Dim.196	Dim.197	Dim.198	Dim.199	Dim.200	
## Variance	9.502	9.399	9.342	9.198	9.163	
## % of var.	0.023	0.022	0.022	0.022	0.022	
## Cumulative % of var.	97.448	97.471	97.493	97.515	97.537	
##	Dim.201	Dim.202	Dim.203	Dim.204	Dim.205	
## Variance	9.071	8.888	8.812	8.673	8.653	
## % of var.	0.022	0.021	0.021	0.021	0.021	
## Cumulative % of var.	97.558	97.580	97.601	97.621	97.642	
##	Dim.206	Dim.207	Dim.208	Dim.209	Dim.210	
## Variance	8.584	8.445	8.376	8.341	8.302	
## % of var.	0.020	0.020	0.020	0.020	0.020	
## Cumulative % of var.	97.662	97.682	97.702	97.722	97.742	
##	Dim.211	Dim.212	Dim.213	Dim.214	Dim.215	
## Variance	8.247	8.225	8.151	8.076	8.001	
## % of var.	0.020	0.020	0.019	0.019	0.019	
## Cumulative % of var.	97.762	97.781	97.801	97.820	97.839	
##	Dim.216	Dim.217	Dim.218	Dim.219	Dim.220	
## Variance	7.939	7.859	7.823	7.807	7.708	
## % of var.	0.019	0.019	0.019	0.019	0.018	
## Cumulative % of var.	97.858	97.876	97.895	97.914	97.932	
##	Dim.221	Dim.222	Dim.223	Dim.224	Dim.225	
## Variance	7.679	7.574	7.502	7.472	7.428	
## % of var.	0.018	0.018	0.018	0.018	0.018	
## Cumulative % of var.	97.950	97.968	97.986	98.004	98.022	
##	Dim.226	Dim.227	Dim.228	Dim.229	Dim.230	
## Variance	7.380	7.295	7.171	7.139	7.066	
## % of var.	0.018	0.017	0.017	0.017	0.017	
## Cumulative % of var.	98.039	98.057	98.074	98.091	98.108	
##	Dim.231	Dim.232	Dim.233	Dim.234	Dim.235	
## Variance	6.982	6.966	6.898	6.861	6.811	
## % of var.	0.017	0.017	0.016	0.016	0.016	
## Cumulative % of var.	98.124	98.141	98.157	98.173	98.190	
##	Dim.236	Dim.237	Dim.238	Dim.239	Dim.240	
## Variance	6.726	6.659	6.631	6.563	6.485	
## % of var.	0.016	0.016	0.016	0.016	0.015	
## Cumulative % of var.	98.206	98.222	98.237	98.253	98.268	
##	Dim.241	Dim.242	Dim.243	Dim.244	Dim.245	
## Variance	6.449	6.408	6.366	6.331	6.306	
## % of var.	0.015	0.015	0.015	0.015	0.015	
## Cumulative % of var.	98.284	98.299	98.314	98.329	98.344	
##	Dim.246	Dim.247	Dim.248	Dim.249	Dim.250	
## Variance	6.230	6.177	6.149	6.014	6.005	
## % of var.	0.015	0.015	0.015	0.014	0.014	
## Cumulative % of var.	98.359	98.374	98.388	98.403	98.417	
##	Dim.251	Dim.252	Dim.253	Dim.254	Dim.255	

## Variance	5.957	5.900	5.878	5.854	5.783	
## % of var.	0.014	0.014	0.014	0.014	0.014	
## Cumulative % of var.	98.431	98.445	98.459	98.473	98.487	
##	Dim.256	Dim.257	Dim.258	Dim.259	Dim.260	
## Variance	5.769	5.685	5.658	5.632	5.605	
## % of var.	0.014	0.014	0.013	0.013	0.013	
## Cumulative % of var.	98.501	98.514	98.528	98.541	98.555	
##	Dim.261	Dim.262	Dim.263	Dim.264	Dim.265	
## Variance	5.539	5.491	5.438	5.435	5.400	
## % of var.	0.013	0.013	0.013	0.013	0.013	
## Cumulative % of var.	98.568	98.581	98.594	98.607	98.620	
##	Dim.266	Dim.267	Dim.268	Dim.269	Dim.270	
## Variance	5.343	5.329	5.233	5.218	5.188	
## % of var.	0.013	0.013	0.012	0.012	0.012	
## Cumulative % of var.	98.632	98.645	98.657	98.670	98.682	
##	Dim.271	Dim.272	Dim.273	Dim.274	Dim.275	
## Variance	5.123	5.080	5.060	5.041	4.981	
## % of var.	0.012	0.012	0.012	0.012	0.012	
## Cumulative % of var.	98.694	98.706	98.719	98.731	98.742	
##	Dim.276	Dim.277	Dim.278	Dim.279	Dim.280	
## Variance	4.964	4.911	4.873	4.857	4.850	
## % of var.	0.012	0.012	0.012	0.012	0.012	
## Cumulative % of var.	98.754	98.766	98.777	98.789	98.801	
##	Dim.281	Dim.282	Dim.283	Dim.284	Dim.285	
## Variance	4.817	4.797	4.743	4.690	4.672	
## % of var.	0.011	0.011	0.011	0.011	0.011	
## Cumulative % of var.	98.812	98.823	98.835	98.846	98.857	
##	Dim.286	Dim.287	Dim.288	Dim.289	Dim.290	
## Variance	4.640	4.599	4.585	4.555	4.495	
## % of var.	0.011	0.011	0.011	0.011	0.011	
## Cumulative % of var.	98.868	98.879	98.890	98.901	98.912	
##	Dim.291	Dim.292	Dim.293	Dim.294	Dim.295	
## Variance	4.487	4.459	4.427	4.403	4.373	
## % of var.	0.011	0.011	0.011	0.010	0.010	
## Cumulative % of var.	98.922	98.933	98.943	98.954	98.964	
##	Dim.296	Dim.297	Dim.298	Dim.299	Dim.300	
## Variance	4.344	4.304	4.278	4.250	4.174	
## % of var.	0.010	0.010	0.010	0.010	0.010	
## Cumulative % of var.	98.975	98.985	98.995	99.005	99.015	
##	Dim.301	Dim.302	Dim.303	Dim.304	Dim.305	
## Variance	4.159	4.147	4.104	4.099	4.041	
## % of var.	0.010	0.010	0.010	0.010	0.010	
## Cumulative % of var.	99.025	99.035	99.045	99.054	99.064	
##	Dim.306	Dim.307	Dim.308	Dim.309	Dim.310	
## Variance	4.012	3.996	3.948	3.919	3.906	
## % of var.	0.010	0.010	0.009	0.009	0.009	
## Cumulative % of var.	99.074	99.083	99.092	99.102	99.111	
##	Dim.311	Dim.312	Dim.313	Dim.314	Dim.315	
## Variance	3.889	3.875	3.839	3.785	3.741	
## % of var.	0.009	0.009	0.009	0.009	0.009	

## Cumulative % of var.	99.120	99.130	99.139	99.148	99.157	
##	Dim.316	Dim.317	Dim.318	Dim.319	Dim.320	
## Variance	3.724	3.682	3.668	3.644	3.624	
## % of var.	0.009	0.009	0.009	0.009	0.009	
## Cumulative % of var.	99.166	99.174	99.183	99.192	99.200	
##	Dim.321	Dim.322	Dim.323	Dim.324	Dim.325	
## Variance	3.582	3.576	3.538	3.490	3.472	
## % of var.	0.009	0.009	0.008	0.008	0.008	
## Cumulative % of var.	99.209	99.217	99.226	99.234	99.242	
##	Dim.326	Dim.327	Dim.328	Dim.329	Dim.330	
## Variance	3.443	3.392	3.378	3.353	3.342	
## % of var.	0.008	0.008	0.008	0.008	0.008	
## Cumulative % of var.	99.251	99.259	99.267	99.275	99.283	
##	Dim.331	Dim.332	Dim.333	Dim.334	Dim.335	
## Variance	3.335	3.289	3.266	3.250	3.243	
## % of var.	0.008	0.008	0.008	0.008	0.008	
## Cumulative % of var.	99.291	99.298	99.306	99.314	99.322	
##	Dim.336	Dim.337	Dim.338	Dim.339	Dim.340	
## Variance	3.228	3.202	3.183	3.169	3.157	
## % of var.	0.008	0.008	0.008	0.008	0.008	
## Cumulative % of var.	99.329	99.337	99.345	99.352	99.360	
##	Dim.341	Dim.342	Dim.343	Dim.344	Dim.345	
## Variance	3.103	3.083	3.070	3.052	3.031	
## % of var.	0.007	0.007	0.007	0.007	0.007	
## Cumulative % of var.	99.367	99.374	99.382	99.389	99.396	
##	Dim.346	Dim.347	Dim.348	Dim.349	Dim.350	
## Variance	3.011	3.002	2.950	2.918	2.889	
## % of var.	0.007	0.007	0.007	0.007	0.007	
## Cumulative % of var.	99.403	99.410	99.417	99.424	99.431	
##	Dim.351	Dim.352	Dim.353	Dim.354	Dim.355	
## Variance	2.832	2.819	2.810	2.768	2.757	
## % of var.	0.007	0.007	0.007	0.007	0.007	
## Cumulative % of var.	99.438	99.445	99.451	99.458	99.465	
##	Dim.356	Dim.357	Dim.358	Dim.359	Dim.360	
## Variance	2.733	2.709	2.695	2.678	2.671	
## % of var.	0.007	0.006	0.006	0.006	0.006	
## Cumulative % of var.	99.471	99.478	99.484	99.490	99.497	
##	Dim.361	Dim.362	Dim.363	Dim.364	Dim.365	
## Variance	2.652	2.645	2.610	2.542	2.519	
## % of var.	0.006	0.006	0.006	0.006	0.006	
## Cumulative % of var.	99.503	99.509	99.516	99.522	99.528	
##	Dim.366	Dim.367	Dim.368	Dim.369	Dim.370	
## Variance	2.515	2.492	2.468	2.448	2.434	
## % of var.	0.006	0.006	0.006	0.006	0.006	
## Cumulative % of var.	99.534	99.539	99.545	99.551	99.557	
##	Dim.371	Dim.372	Dim.373	Dim.374	Dim.375	
## Variance	2.412	2.378	2.340	2.326	2.306	
## % of var.	0.006	0.006	0.006	0.006	0.005	
## Cumulative % of var.	99.563	99.568	99.574	99.580	99.585	
##	Dim.376	Dim.377	Dim.378	Dim.379	Dim.380	

## Variance	2.300	2.281	2.263	2.240	2.216	
## % of var.	0.005	0.005	0.005	0.005	0.005	
## Cumulative % of var.	99.590	99.596	99.601	99.607	99.612	
##	Dim.381	Dim.382	Dim.383	Dim.384	Dim.385	
## Variance	2.203	2.175	2.146	2.087	2.077	
## % of var.	0.005	0.005	0.005	0.005	0.005	
## Cumulative % of var.	99.617	99.622	99.627	99.632	99.637	
##	Dim.386	Dim.387	Dim.388	Dim.389	Dim.390	
## Variance	2.044	2.036	2.020	1.995	1.976	
## % of var.	0.005	0.005	0.005	0.005	0.005	
## Cumulative % of var.	99.642	99.647	99.652	99.657	99.661	
##	Dim.391	Dim.392	Dim.393	Dim.394	Dim.395	
## Variance	1.959	1.942	1.918	1.895	1.886	
## % of var.	0.005	0.005	0.005	0.005	0.004	
## Cumulative % of var.	99.666	99.671	99.675	99.680	99.684	
##	Dim.396	Dim.397	Dim.398	Dim.399	Dim.400	
## Variance	1.849	1.820	1.810	1.779	1.761	
## % of var.	0.004	0.004	0.004	0.004	0.004	
## Cumulative % of var.	99.689	99.693	99.697	99.701	99.706	
##	Dim.401	Dim.402	Dim.403	Dim.404	Dim.405	
## Variance	1.746	1.731	1.714	1.701	1.676	
## % of var.	0.004	0.004	0.004	0.004	0.004	
## Cumulative % of var.	99.710	99.714	99.718	99.722	99.726	
##	Dim.406	Dim.407	Dim.408	Dim.409	Dim.410	
## Variance	1.670	1.633	1.619	1.590	1.581	
## % of var.	0.004	0.004	0.004	0.004	0.004	
## Cumulative % of var.	99.730	99.734	99.738	99.742	99.745	
##	Dim.411	Dim.412	Dim.413	Dim.414	Dim.415	
## Variance	1.570	1.554	1.545	1.538	1.516	
## % of var.	0.004	0.004	0.004	0.004	0.004	
## Cumulative % of var.	99.749	99.753	99.756	99.760	99.764	
##	Dim.416	Dim.417	Dim.418	Dim.419	Dim.420	
## Variance	1.512	1.502	1.484	1.462	1.435	
## % of var.	0.004	0.004	0.004	0.003	0.003	
## Cumulative % of var.	99.767	99.771	99.774	99.778	99.781	
##	Dim.421	Dim.422	Dim.423	Dim.424	Dim.425	
## Variance	1.421	1.390	1.380	1.369	1.344	
## % of var.	0.003	0.003	0.003	0.003	0.003	
## Cumulative % of var.	99.785	99.788	99.791	99.795	99.798	
##	Dim.426	Dim.427	Dim.428	Dim.429	Dim.430	
## Variance	1.335	1.292	1.289	1.277	1.236	
## % of var.	0.003	0.003	0.003	0.003	0.003	
## Cumulative % of var.	99.801	99.804	99.807	99.810	99.813	
##	Dim.431	Dim.432	Dim.433	Dim.434	Dim.435	
## Variance	1.213	1.205	1.200	1.189	1.172	
## % of var.	0.003	0.003	0.003	0.003	0.003	
## Cumulative % of var.	99.816	99.819	99.822	99.825	99.827	
##	Dim.436	Dim.437	Dim.438	Dim.439	Dim.440	
## Variance	1.148	1.132	1.114	1.103	1.096	
## % of var.	0.003	0.003	0.003	0.003	0.003	

## Cumulative % of var.	99.830	99.833	99.835	99.838	99.841	
##	Dim.441	Dim.442	Dim.443	Dim.444	Dim.445	
## Variance	1.085	1.057	1.053	1.031	1.027	
## % of var.	0.003	0.003	0.003	0.002	0.002	
## Cumulative % of var.	99.843	99.846	99.848	99.851	99.853	
## ## Vanianaa	Dim.446	Dim.447	Dim.448	Dim.449	Dim.450	
## Variance	1.019	0.999	0.986	0.973	0.960	
## % of var.	0.002	0.002	0.002	0.002	0.002	
<pre>## Cumulative % of var. ##</pre>	99.856 Dim.451	99.858	99.860	99.863	99.865	
	0.958	Dim.452 0.934	Dim.453 0.912	Dim.454	Dim.455	
<pre>## Variance ## % of var.</pre>	0.938			0.896	0.892	
## Cumulative % of var.	99.867	0.002 99.869	0.002 99.872	0.002 99.874	0.002 99.876	
## Cumulative % or var.	Dim.456	99.869 Dim.457	Dim.458	99.874 Dim.459	99.876 Dim.460	
## Variance	0.887	0.868	0.863	0.857	0.831	
## % of var.	0.002	0.002	0.002	0.002	0.002	
## Cumulative % of var.	99.878	99.880	99.882	99.884	99.886	
##	Dim.461	Dim.462	Dim.463	Dim.464	Dim.465	
## Variance	0.819	0.810	0.800	0.771	0.761	
## % of var.	0.002	0.002	0.002	0.002	0.002	
## Cumulative % of var.	99.888	99.890	99.892	99.894	99.895	
##	Dim.466	Dim.467	Dim.468	Dim.469	Dim.470	
## Variance	0.758	0.753	0.745	0.736	0.727	
## % of var.	0.002	0.002	0.002	0.002	0.002	
## Cumulative % of var.	99.897	99.899	99.901	99.903	99.904	
##	Dim.471	Dim.472	Dim.473	Dim.474	Dim.475	
## Variance	0.719	0.707	0.700	0.691	0.683	
## % of var.	0.002	0.002	0.002	0.002	0.002	
## Cumulative % of var.	99.906	99.908	99.909	99.911	99.913	
##	Dim.476	Dim.477	Dim.478	Dim.479	Dim.480	
## Variance	0.679	0.673	0.651	0.642	0.627	
## % of var.	0.002	0.002	0.002	0.002	0.001	
## Cumulative % of var.	99.914	99.916	99.917	99.919	99.920	
##	Dim.481	Dim.482	Dim.483	Dim.484	Dim.485	
## Variance	0.619	0.612	0.604	0.591	0.580	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.922	99.923	99.925	99.926	99.928	
##	Dim.486	Dim.487	Dim.488	Dim.489	Dim.490	
## Variance	0.572	0.568	0.559	0.553	0.546	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.929	99.930	99.932	99.933	99.934	
##	Dim.491	Dim.492	Dim.493	Dim.494	Dim.495	
## Variance	0.535	0.532	0.518	0.510	0.500	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.936	99.937	99.938	99.939	99.940	
##	Dim.496	Dim.497	Dim.498	Dim.499	Dim.500	
## Variance	0.483	0.480	0.472	0.467	0.458	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.942	99.943	99.944	99.945	99.946	
##	Dim.501	Dim.502	Dim.503	Dim.504	Dim.505	

## Variance	0.457	0.452	0.445	0.441	0.431	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.947	99.948	99.949	99.950	99.951	
##	Dim.506	Dim.507	Dim.508	Dim.509	Dim.510	
## Variance	0.412	0.403	0.397	0.392	0.386	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.952	99.953	99.954	99.955	99.956	
##	Dim.511	Dim.512	Dim.513	Dim.514	Dim.515	
## Variance	0.383	0.376	0.373	0.365	0.355	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.957	99.958	99.959	99.960	99.961	
##	Dim.516	Dim.517	Dim.518	Dim.519	Dim.520	
## Variance	0.350	0.348	0.346	0.343	0.337	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.961	99.962	99.963	99.964	99.965	
##	Dim.521	Dim.522	Dim.523	Dim.524	Dim.525	
## Variance	0.327	0.326	0.315	0.311	0.311	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.965	99.966	99.967	99.968	99.968	
##	Dim.526	Dim.527	Dim.528	Dim.529	Dim.530	
## Variance	0.307	0.302	0.299	0.297	0.279	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.969	99.970	99.971	99.971	99.972	
##	Dim.531	Dim.532	Dim.533	Dim.534	Dim.535	
## Variance	0.278	0.268	0.264	0.261	0.256	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.973	99.973	99.974	99.975	99.975	
##	Dim.536	Dim.537	Dim.538	Dim.539	Dim.540	
## Variance	0.253	0.247	0.241	0.234	0.232	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.976	99.976	99.977	99.977	99.978	
##	Dim.541	Dim.542	Dim.543	Dim.544	Dim.545	
## Variance	0.229	0.227	0.220	0.218	0.217	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.979	99.979	99.980	99.980	99.981	
##	Dim.546	Dim.547	Dim.548	Dim.549	Dim.550	
## Variance	0.214	0.205	0.195	0.194	0.186	
## % of var.	0.001	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.981	99.982	99.982	99.983	99.983	
##	Dim.551	Dim.552	Dim.553	Dim.554	Dim.555	
## Variance	0.182	0.180	0.173	0.171	0.165	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.983	99.984	99.984	99.985	99.985	
##	Dim.556	Dim.557	Dim.558	Dim.559	Dim.560	
## Variance	0.163	0.161	0.159	0.152	0.150	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.985	99.986	99.986	99.987	99.987	
##	Dim.561	Dim.562	Dim.563	Dim.564	Dim.565	
## Variance	0.148	0.146	0.144	0.142	0.135	
## % of var.	0.000	0.000	0.000	0.000	0.000	

	Cumulative % of v	/ar.	99.987	99.988	99.988	99.988	99.989	
##			Dim.566	Dim.567	Dim.568	Dim.569	Dim.570	
	Variance		0.133	0.131	0.123	0.121	0.121	
	% of var.		0.000	0.000	0.000	0.000	0.000	
	Cumulative % of v	/ar.	99.989	99.989	99.990	99.990	99.990	
##			Dim.571	Dim.572	Dim.573	Dim.574	Dim.575	
	Variance		0.119	0.118	0.118	0.114	0.113	
	% of var.		0.000	0.000	0.000	0.000	0.000	
	Cumulative % of v	ar.	99.990	99.991	99.991	99.991	99.992	
##	Mana		Dim.576	Dim.577	Dim.578	Dim.579	Dim.580	
	Variance		0.107	0.104	0.103	0.098	0.096	
	% of var.		0.000	0.000	0.000	0.000	0.000	
	Cumulative % of v	ar.	99.992	99.992	99.992	99.993	99.993	
##	Mana		Dim.581	Dim.582	Dim.583	Dim.584	Dim.585	
	Variance		0.090	0.089	0.088	0.085	0.085	
	% of var.		0.000	0.000	0.000	0.000	0.000	
	Cumulative % of v	ar.	99.993	99.993	99.993	99.994	99.994	
##	Vaniana.		Dim.586	Dim.587	Dim.588	Dim.589	Dim.590	
	Variance		0.083	0.082	0.078	0.077	0.074	
	% of var.		0.000	0.000	0.000	0.000	0.000	
	Cumulative % of v	ar.	99.994	99.994	99.994	99.995	99.995	
##	Vaniana.		Dim.591	Dim.592	Dim.593	Dim.594	Dim.595	
	Variance		0.074	0.074	0.070	0.068	0.066	
	% of var.		0.000	0.000	0.000	0.000	0.000	
	Cumulative % of v	ar.	99.995	99.995	99.995	99.995	99.996	
##	Mana		Dim.596	Dim.597	Dim.598	Dim.599	Dim.600	
	Variance		0.064	0.062	0.060	0.060	0.058	
	% of var.		0.000	0.000	0.000	0.000	0.000	
	Cumulative % of v	ar.	99.996	99.996	99.996	99.996	99.996	
##			Dim.601	Dim.602	Dim.603	Dim.604	Dim.605	
	Variance		0.055	0.052	0.051	0.050	0.049	
	% of var.		0.000	0.000	0.000	0.000	0.000	
	Cumulative % of v	ar.	99.996	99.997	99.997	99.997	99.997	
##	Mana		Dim.606	Dim.607	Dim.608	Dim.609	Dim.610	
	Variance		0.049	0.048	0.047	0.046	0.044	
	% of var.		0.000	0.000	0.000	0.000	0.000	
	Cumulative % of v	ar.	99.997	99.997	99.997	99.997	99.997	
##	Mana		Dim.611	Dim.612	Dim.613	Dim.614	Dim.615	
	Variance		0.041	0.040	0.036	0.035	0.034	
	% of var.		0.000	0.000	0.000	0.000	0.000	
	Cumulative % of v	ar.	99.998	99.998	99.998	99.998	99.998	
##			Dim.616	Dim.617	Dim.618	Dim.619	Dim.620	
	Variance		0.034	0.033	0.032	0.032	0.031	
	% of var.		0.000	0.000	0.000	0.000	0.000	
	Cumulative % of v	ar.	99.998	99.998	99.998	99.998	99.998	
##	Managara		Dim.621	Dim.622	Dim.623	Dim.624	Dim.625	
	Variance		0.030	0.030	0.028	0.028	0.027	
	% of var.		0.000	0.000	0.000	0.000	0.000	
	Cumulative % of v	ar.	99.998	99.998	99.998	99.999	99.999	
##			Dim.626	Dim.627	Dim.628	Dim.629	Dim.630	

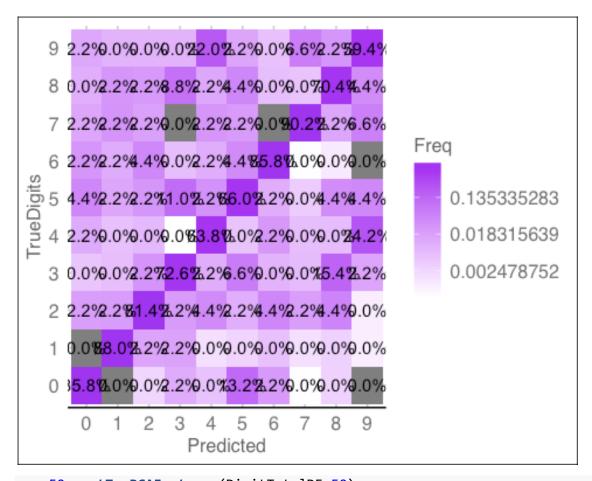
	Variance	0.026	0.025	0.024	0.024	0.023	
	% of var.	0.000	0.000	0.000	0.000	0.000	
	Cumulative % of var		99.999	99.999	99.999	99.999	
##	Maniana	Dim.631	Dim.632	Dim.633	Dim.634	Dim.635	
	Variance	0.022	0.021	0.021	0.020	0.020	
	% of var.	0.000	0.000	0.000	0.000	0.000	
	Cumulative % of var		99.999	99.999	99.999	99.999	
##	Vaniance	Dim.636	Dim.637	Dim.638	Dim.639	Dim.640	
	Variance	0.020	0.019	0.019	0.016	0.016	
	% of var.	0.000	0.000	0.000 99.999	0.000 99.999	0.000	
	Cumulative % of var	. 99.999 Dim.641	99.999			99.999	
##	Variance	0.015	Dim.642	Dim.643 0.014	Dim.644	Dim.645	
	% of var.	0.000	0.015		0.013	0.013 0.000	
	Cumulative % of var		0.000 99.999	0.000 99.999	0.000 100.000	100.000	
##	Cullulative % Of Val	Dim.646	99.999 Dim.647	99.999 Dim.648	Dim.649	Dim.650	
	Variance	0.011	0.011	0.010	0.010	0.009	
	% of var.	0.000	0.000	0.000	0.000	0.009	
	Cumulative % of var		100.000	100.000	100.000	100.000	
##	Cullulative % Of var	Dim.651	Dim.652	Dim.653	Dim.654	Dim.655	
	Variance	0.009	0.009	0.008	0.008	0.007	
	% of var.	0.009	0.000	0.000	0.000	0.007	
	Cumulative % of var		100.000	100.000	100.000	100.000	
##	camaractive % or var	Dim.656	Dim.657	Dim.658	Dim.659	Dim.660	
	Variance	0.007	0.007	0.007	0.006	0.006	
	% of var.	0.007	0.000	0.000	0.000	0.000	
	Cumulative % of var		100.000	100.000	100.000	100.000	
##	camaractive % or var	Dim.661	Dim.662	Dim.663	Dim.664	Dim.665	
	Variance	0.006	0.006	0.006	0.004	0.004	
	% of var.	0.000	0.000	0.000	0.000	0.000	
	Cumulative % of var		100.000	100.000	100.000	100.000	
##	3	Dim.666	Dim.667	Dim.668	Dim.669	Dim.670	
	Variance	0.004	0.003	0.003	0.003	0.003	
	% of var.	0.000	0.000	0.000	0.000	0.000	
	Cumulative % of var		100.000	100.000	100.000	100.000	
##		Dim.671	Dim.672	Dim.673	Dim.674	Dim.675	
##	Variance	0.002	0.002	0.002	0.002	0.002	
##	% of var.	0.000	0.000	0.000	0.000	0.000	
##	Cumulative % of var	. 100.000	100.000	100.000	100.000	100.000	
##		Dim.676	Dim.677	Dim.678	Dim.679	Dim.680	
##	Variance	0.001	0.001	0.001	0.001	0.001	
##	% of var.	0.000	0.000	0.000	0.000	0.000	
##	Cumulative % of var	. 100.000	100.000	100.000	100.000	100.000	
##		Dim.681	Dim.682	Dim.683	Dim.684	Dim.685	
##	Variance	0.001	0.001	0.001	0.001	0.001	
##	% of var.	0.000	0.000	0.000	0.000	0.000	
##	Cumulative % of var	. 100.000	100.000	100.000	100.000	100.000	
##		Dim.686	Dim.687	Dim.688	Dim.689	Dim.690	
##	Variance	0.001	0.001	0.000	0.000	0.000	
##	% of var.	0.000	0.000	0.000	0.000	0.000	

## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.691	Dim.692	Dim.693	Dim.694	Dim.695
## Variance	0.000	0.000	0.000	0.000	0.000
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.696	Dim.697	Dim.698	Dim.699	Dim.700
## Variance	0.000	0.000	0.000	0.000	0.000
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.701	Dim.702	Dim.703	Dim.704	Dim.705
## Variance	0.000	0.000	0.000	0.000	0.000
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.706	Dim.707	Dim.708	Dim.709	Dim.710
## Variance	0.000	0.000	0.000	0.000	0.000
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.711	Dim.712	Dim.713	Dim.714	Dim.715
## Variance	0.000	0.000	0.000	0.000	0.000
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.716	Dim.717	Dim.718	Dim.719	Dim.720
## Variance	0.000	0.000	0.000	0.000	0.000
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.721	Dim.722	Dim.723	Dim.724	Dim.725
## Variance	0.000	0.000	0.000	0.000	0.000
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.726	Dim.727	Dim.728	Dim.729	Dim.730
## Variance	0.000	0.000	0.000	0.000	0.000
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.731	Dim.732	Dim.733	Dim.734	Dim.735
## Variance	0.000	0.000	0.000	0.000	0.000
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.736	Dim.737	Dim.738	Dim.739	Dim.740
## Variance	0.000	0.000	0.000	0.000	0.000
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.741	Dim.742	Dim.743	Dim.744	Dim.745
## Variance	0.000	0.000	0.000	0.000	0.000
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.746	Dim.747	Dim.748	Dim.749	Dim.750
## Variance	0.000	0.000	0.000	0.000	0.000
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.751	Dim.752	Dim.753	Dim.754	Dim.755
				,	

## Variance		0.000	0.000	0.000	0.000	0.000	
## % of var.		0.000	0.000	0.000	0.000	0.000	
## Cumulativ	e % of var.	100.000	100.000	100.000	100.000	100.000	
##		Dim.756	Dim.757	Dim.758	Dim.759	Dim.760	
## Variance		0.000	0.000	0.000	0.000	0.000	
## % of var.		0.000	0.000	0.000	0.000	0.000	
## Cumulativ	e % of var.	100.000	100.000	100.000	100.000	100.000	
##		Dim.761	Dim.762	Dim.763	Dim.764	Dim.765	
## Variance		0.000	0.000	0.000	0.000	0.000	
## % of var.		0.000	0.000	0.000	0.000	0.000	
## Cumulativ	e % of var.	100.000		100.000	100.000	100.000	
##		Dim.766	Dim.767	Dim.768	Dim.769	Dim.770	
## Variance		0.000	0.000	0.000	0.000	0.000	
## % of var.		0.000		0.000	0.000	0.000	
## Cumulativ	e % of var.	100.000		100.000	100.000	100.000	
##		Dim.771		Dim.773	Dim.774	Dim.775	
## Variance		0.000	0.000	0.000	0.000	0.000	
## % of var.		0.000		0.000	0.000	0.000	
## Cumulativ	e % of var.	100.000	100.000	100.000	100.000	100.000	
##		Dim.776	Dim.777	Dim.778	Dim.779	Dim.780	
## Variance		0.000	0.000	0.000	0.000	0.000	
## % of var.		0.000	0.000	0.000	0.000	0.000	
## Cumulativ	e % of var.	100.000		100.000	100.000	100.000	
##		Dim.781		Dim.783			
## Variance		0.000		0.000			
## % of var.		0.000		0.000			
## Cumulativ	e % of var.	100.000	100.000	100.000			
##	1- / 40 (	· · · · · · · · · · · · · · · · · · ·					
## Individua	•	•	-4 2	D: 2	-4	2	
##	Dist	Dim.1	ctr cos2	Dim.2	ctr	cos2	
Dim.3	07 000 1 0	NE 020 0	072 0 052	1 10 067	0.000	0.015	
## 0	87.988   -8	85.829 0	.072 0.952	-10.867	0.006	0.015	-
9.555	07 000 1 0		070 0 050	1 40 057	0.006	0.045	
## 1	87.988   -8	85.829 0	.072 0.952	-10.867	0.006	0.015	-
9.555	07.000   0	ne 020 0	072 0 052	1 40 067	0.006	0.045	
•	87.988   -8	15.829 0	.072 0.952	-10.86/	0.006	0.015	-
9.555	07.000   0	ne 020 0	072 0 052	1 40 067	0.006	0.045	
•	87.988   -8	15.829 0	.072 0.952	-10.86/	0.006	0.015	-
9.555						0.045	
-	87.988   -8	55.829 0	.072 0.952	-10.867	0.006	0.015	_
9.555	07.000   0	ne 020 0	072 0 052	1 40 067	0.006	0.045	
·	87.988   -8	55.829 0	.072 0.952	-10.86/	0.006	0.015	-
9.555	07.000   0	ne 020 - 2	072 0 052	1 10 007	0.000	0.045	
•	87.988   -8	55.829 0	.072 0.952	-10.86/	0.006	0.015	-
9.555	07.000   0	ne 020 - 2	072 0 052	1 10 007	0.000	0.045	
-	87.988   -8	55.829 0	.072 0.952	-10.867	0.006	0.015	_
9.555	07 000 1 0	DE 020 2	072 0 052	1 10 007	0.000	0.015	
•	87.988   -8	55.829 0	.072 0.952	-10.86/	0.006	0.015	-
9.555	07.000   0	ne 020 - 2	072 0 052	1 10 007	0.000	0.045	
## 9	87.988   -8	55.829 0	.072 0.952	-10.86/	0.006	0.015	-

```
9.555
##
            ctr
                   cos2
## 0
           0.005
                  0.012
## 1
           0.005
                  0.012
## 2
           0.005
                  0.012
## 3
           0.005
                  0.012
           0.005
## 4
                  0.012
## 5
           0.005
                  0.012
## 6
           0.005
                  0.012
## 7
           0.005
                  0.012
## 8
           0.005
                  0.012
## 9
           0.005
                  0.012
##
## Variables (the 10 first)
##
                                Dim.2
                                                      Dim.3
           Dim.1
                    ctr
                        cos2
                                         ctr
                                              cos2
                                                              ctr
cos2
## V1
           0.419
                  0.001 0.176 | -0.407 0.006
                                             0.165
                                                     0.198 0.002
0.039
## V2
          0.501 0.002 0.251 | 0.374 0.005
                                             0.140 | 0.434
                                                           0.009
0.189
## V3
           0.534 0.002 0.285 | -0.467 0.008 0.218 | -0.077 0.000
0.006
## V4
           0.269
                  0.001 0.073 | 0.244
                                      0.002
                                             0.060 | -0.020
                                                            0.000
0.000
                  0.002
                        0.205 | 0.373
                                       0.005
                                             0.139 | 0.449
## V5
           0.452
0.202
                        0.332 | 0.350 0.005
## V6
           0.576 0.003
                                             0.122 | 0.116
                                                           0.001
0.013
## V7
           0.502 0.002 0.252 | -0.054 0.000
                                             0.003 | -0.407
                                                            0.008
0.166
## V8
           0.347 0.001 0.120 | 0.069 0.000
                                             0.005 | 0.021 0.000
0.000
## V9
           0.640
                  0.003
                        0.410 | 0.221 0.002
                                             0.049
                                                    0.050
0.002
           0.570 0.003 0.325 | -0.084 0.000 0.007 | 0.337 0.005
## V10
0.114
model nb 10<-runNB(pca 10)
##
## ====== Naive Bayes
______
## - Call: naive_bayes.formula(formula = label ~ ., data = trainDF)
## - Laplace: 0
## - Classes: 10
## - Samples: 25205
## - Features: 10
## - Conditional distributions:
## - Gaussian: 10
```

```
## - Prior probabilities:
##
       - 0: 0.0984
##
       - 1: 0.1115
##
       - 2: 0.0995
##
       - 3: 0.1036
       - 4: 0.097
##
##
       - 5: 0.0903
##
       - 6: 0.0985
##
       - 7: 0.1048
##
       - 8: 0.0967
##
       - 9: 0.0997
##
## -
## Warning: predict.naive_bayes(): more features in the newdata are provided
## there are probability tables in the object. Calculation is performed based
## features to be found in the tables.
##
             TrueDigits
## Predicted
                 0
                      1
                           2
                                 3
                                      4
                                           5
                                                 6
                                                      7
                                                            8
                                                                 9
##
           0 1391
                      0
                           33
                                 8
                                     21
                                           78
                                                46
                                                     24
                                                          18
                                                                23
##
                 0 1792
                          44
                                13
                                           30
                                                25
                                                     58
                                                           57
           1
                                     12
                                                                20
##
                 4
                     25 1277
                                     12
                                                                15
           2
                                44
                                           41
                                                69
                                                     28
                                                          36
##
           3
                22
                     30
                          39 1260
                                      1
                                          202
                                                11
                                                      0
                                                         171
                                                                16
           4
                 9
                      3
                                           51
                                                19
                                                               356
##
                          66
                                19 1063
                                                     46
                                                          23
##
           5
             182
                      4
                          16
                                95
                                      7
                                         948
                                                57
                                                     32
                                                           65
                                                                22
##
                      9
                          78
                                           19 1424
                                                                 9
           6
                38
                                16
                                     42
                                                      0
                                                          10
##
           7
                 1
                      3
                          32
                                11
                                     10
                                            6
                                                 1 1442
                                                            8
                                                               104
##
           8
                 5
                      5
                          83
                               245
                                     11
                                           63
                                                 2
                                                     25 1168
                                                                44
           9
                      2
##
                 0
                            2
                                29
                                    449
                                                    105
                                           80
                                                           69 1066
##
         Accuracy
                             Kappa
                                    AccuracyLower
                                                    AccuracyUpper
                                                                     AccuracyNull
                                                                         0.1115213
##
        0.7639774
                        0.7376314
                                        0.7574801
                                                        0.7703831
                    McnemarPValue
## AccuracyPValue
##
        0.0000000
                               NaN
## Warning: Transformation introduced infinite values in discrete y-axis
```



```
pca_50<-getTopPCAFeatures(DigitTotalDF,50)</pre>
##
## Call:
## PCA(X = t(select(df, -label)), ncp = ncp, graph = FALSE)
##
##
## Eigenvalues
##
                             Dim.1
                                       Dim.2
                                                  Dim.3
                                                            Dim.4
                                                                       Dim.5
## Variance
                         12975.886
                                    2635.187
                                               2146.048 1747.535 1465.951
## % of var.
                            30.895
                                       6.274
                                                  5.110
                                                            4.161
                                                                       3.490
## Cumulative % of var.
                            30.895
                                      37.169
                                                 42.279
                                                           46.440
                                                                      49.930
##
                             Dim.6
                                       Dim.7
                                                  Dim.8
                                                            Dim.9
                                                                      Dim.10
## Variance
                          1358.547
                                    1135.701
                                                884.896
                                                          855.251
                                                                     734.998
## % of var.
                                                                       1.750
                             3.235
                                       2.704
                                                  2.107
                                                            2.036
## Cumulative % of var.
                            53.165
                                      55.869
                                                 57.976
                                                           60.012
                                                                      61.762
##
                            Dim.11
                                      Dim.12
                                                Dim.13
                                                           Dim.14
                                                                      Dim.15
## Variance
                           664.973
                                                          515.912
                                     634.157
                                                551.036
                                                                     483.259
## % of var.
                             1.583
                                       1.510
                                                  1.312
                                                            1.228
                                                                       1.151
## Cumulative % of var.
                                                           67.395
                            63.345
                                      64.855
                                                 66.167
                                                                      68.546
##
                            Dim. 16
                                      Dim.17
                                                Dim.18
                                                           Dim.19
                                                                      Dim.20
## Variance
                           451.099
                                     420.945
                                                388.013
                                                          361.053
                                                                     349.113
## % of var.
                             1.074
                                       1.002
                                                  0.924
                                                            0.860
                                                                       0.831
```

## Cumulative % of var.	69.620	70.622	71.546	72.406	73.237	
##	Dim.21	Dim.22	Dim.23	Dim.24	Dim.25	
## Variance	329.622	310.712	298.708	281.495	275.884	
## % of var.	0.785	0.740	0.711	0.670	0.657	
## Cumulative % of var.	74.022	74.762	75.473	76.143	76.800	
##	Dim.26	Dim.27	Dim.28	Dim.29	Dim.30	
## Variance	268.984	252.330	236.925	226.065	219.194	
## % of var.	0.640	0.601	0.564	0.538	0.522	
## Cumulative % of var.	77.440	78.041	78.605	79.144	79.665	
## ## Vanianaa	Dim.31	Dim.32	Dim.33	Dim.34	Dim.35	
## Variance	203.959	202.286	185.225	181.697	173.988	
## % of var.	0.486	0.482	0.441	0.433	0.414	
## Cumulative % of var.	80.151	80.633	81.074	81.506	81.921	
## \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Dim.36	Dim.37	Dim.38	Dim.39	Dim.40	
<pre>## Variance ## % of var.</pre>	172.056	160.255	156.645	149.836	146.561	
## Cumulative % of var.	0.410	0.382	0.373	0.357	0.349	
## Cumulative % of var.	82.330	82.712	83.085	83.441	83.790	
## ## Variance	Dim.41 140.441	Dim.42 137.162	Dim.43 131.753	Dim.44 125.734	Dim.45 123.529	
## % of var.	0.334	0.327	0.314	0.299	0.294	
## Cumulative % of var.	84.125	84.451	84.765	85.064	85.359	
##	Dim.46	Dim.47	Dim.48	Dim.49	Dim.50	
## Variance	122.862	115.733	109.800	108.063	100.205	
## % of var.	0.293	0.276	0.261	0.257	0.239	
## Cumulative % of var.	85.651	85.927	86.188	86.445	86.684	
##	Dim.51	Dim.52	Dim.53	Dim.54	Dim.55	
## Variance	99.257	98.063	93.201	92.249	89.483	
## % of var.	0.236	0.233	0.222	0.220	0.213	
## Cumulative % of var.	86.920	87.154	87.376	87.595	87.808	
##	Dim.56	Dim.57	Dim.58	Dim.59	Dim.60	
## Variance	87.033	85.270	83.513	81.175	78.975	
## % of var.	0.207	0.203	0.199	0.193	0.188	
## Cumulative % of var.	88.016	88.219	88.417	88.611	88.799	
##	Dim.61	Dim.62	Dim.63	Dim.64	Dim.65	
## Variance	76.732	76.033	73.240	71.087	69.891	
## % of var.	0.183	0.181	0.174	0.169	0.166	
## Cumulative % of var.	88.981	89.163	89.337	89.506	89.673	
##	Dim.66	Dim.67	Dim.68	Dim.69	Dim.70	
## Variance	67.076	65.846	63.704	62.539	61.504	
## % of var.	0.160	0.157	0.152	0.149	0.146	
## Cumulative % of var.	89.832	89.989	90.141	90.290	90.436	
##	Dim.71	Dim.72	Dim.73	Dim.74	Dim.75	
## Variance	58.632	58.470	56.065	55.675	53.772	
## % of var.	0.140	0.139	0.133	0.133	0.128	
## Cumulative % of var.	90.576	90.715	90.848	90.981	91.109	
##	Dim.76	Dim.77	Dim.78	Dim.79	Dim.80	
## Variance	52.344	50.752	50.151	47.664	47.097	
## % of var.	0.125	0.121	0.119	0.113	0.112	
## Cumulative % of var.	91.234	91.354	91.474	91.587	91.699	
##	Dim.81	Dim.82	Dim.83	Dim.84	Dim.85	

## Variance	45.959	45.670	45.134	43.399	43.159	
## % of var.	0.109	0.109	0.107	0.103	0.103	
## Cumulative % of var.	91.809	91.918	92.025	92.128	92.231	
##	Dim.86	Dim.87	Dim.88	Dim.89	Dim.90	
## Variance	42.732	41.986	40.222	39.688	38.618	
## % of var.	0.102	0.100	0.096	0.094	0.092	
## Cumulative % of var.	92.333	92.433	92.529	92.623	92.715	
##	Dim.91	Dim.92	Dim.93	Dim.94	Dim.95	
## Variance	37.900	37.111	36.558	35.693	35.451	
## % of var.	0.090	0.088	0.087	0.085	0.084	
## Cumulative % of var.	92.805	92.894	92.981	93.066	93.150	
## ##	Dim.96	Dim.97	Dim.98	Dim.99	Dim.100	
## Variance	35.000	33.741	33.657	33.108	32.255	
## % of var.	0.083	0.080	0.080	0.079	0.077	
## Cumulative % of var.	93.233	93.314	93.394	93.473	93.550	
## ## Variance	Dim.101 31.708	Dim.102 30.818	Dim.103 30.512	Dim.104 29.322	Dim.105 28.925	
## % of var.	0.075	0.073	0.073	0.070	0.069	
## Cumulative % of var.	93.625	93.698	93.771	93.841	93.910	
##	Dim.106	Dim.107	Dim.108	Dim.109	Dim.110	
## Variance	28.795	27.708	27.390	27.292	26.586	
## % of var.	0.069	0.066	0.065	0.065	0.063	
## Cumulative % of var.	93.978	94.044	94.109	94.174	94.238	
##	Dim.111	Dim.112	Dim.113	Dim.114	Dim.115	
## Variance	26.039	25.709	25.584	25.304	25.182	
## % of var.	0.062	0.061	0.061	0.060	0.060	
## Cumulative % of var.	94.300	94.361	94.422	94.482	94.542	
##	Dim.116	Dim.117	Dim.118	Dim.119	Dim.120	
## Variance	24.206	23.951	23.818	23.054	22.815	
## % of var.	0.058	0.057	0.057	0.055	0.054	
## Cumulative % of var.	94.600	94.657	94.713	94.768	94.823	
##	Dim.121	Dim.122	Dim.123	Dim.124	Dim.125	
## Variance	22.628	22.352	22.224	21.862	21.222	
## % of var.	0.054	0.053	0.053	0.052	0.051	
## Cumulative % of var.	94.877	94.930	94.983	95.035	95.085	
##	Dim.126	Dim.127	Dim.128	Dim.129	Dim.130	
## Variance	21.059	20.634	20.467	20.033	19.894	
## % of var.	0.050	0.049	0.049	0.048	0.047	
## Cumulative % of var.	95.135	95.185	95.233	95.281	95.328	
##	Dim.131	Dim.132	Dim.133	Dim.134	Dim.135	
## Variance	19.503	19.289	19.223	18.915	18.460	
## % of var.	0.046	0.046	0.046	0.045	0.044	
## Cumulative % of var.	95.375	95.421	95.466	95.511	95.555	
##	Dim.136	Dim.137	Dim.138	Dim.139	Dim.140	
## Variance	18.290	18.250	18.088	17.507	17.219	
## % of var.	0.044	0.043	0.043	0.042	0.041	
## Cumulative % of var.	95.599	95.642	95.686	95.727	95.768	
##	Dim.141	Dim.142	Dim.143	Dim.144	Dim.145	
## Variance	16.825	16.398	16.186	16.169	15.900	
## % of var.	0.040	0.039	0.039	0.038	0.038	

	Cumulative % of	var.	95.808	95.847	95.886	95.924	95.962	
##	.,		Dim.146	Dim.147	Dim.148	Dim.149	Dim.150	
	Variance		15.761	15.658	15.577	15.477	15.321	
	% of var.		0.038	0.037	0.037	0.037	0.036	
	Cumulative % of	var.	96.000	96.037	96.074	96.111	96.147	
##	., .		Dim.151	Dim.152	Dim.153	Dim.154	Dim.155	
	Variance		15.094	14.926	14.829	14.612	14.562	
	% of var.		0.036	0.036	0.035	0.035	0.035	
	Cumulative % of	var.	96.183	96.219	96.254	96.289	96.324	
##	Mana		Dim.156	Dim.157	Dim.158	Dim.159	Dim.160	
	Variance		14.468	14.192	13.834	13.675	13.475	
	% of var.		0.034	0.034	0.033	0.033	0.032	
	Cumulative % of	var.	96.358	96.392	96.425	96.457	96.489	
##	Man 4 and a		Dim.161	Dim.162	Dim.163	Dim.164	Dim.165	
	Variance		13.389	13.298	13.073	12.872	12.801	
	% of var.		0.032	0.032	0.031	0.031	0.030	
	Cumulative % of	var.	96.521	96.553	96.584	96.615	96.645	
##	Maniana.		Dim.166	Dim.167	Dim.168	Dim.169	Dim.170	
	Variance		12.616	12.526	12.381	12.338	12.194	
	% of var.		0.030	0.030	0.029	0.029	0.029	
	Cumulative % of	var.	96.675	96.705	96.735	96.764	96.793	
##	Vaniana		Dim.171	Dim.172	Dim.173	Dim.174	Dim.175	
	Variance		12.051	11.965	11.780	11.716	11.592	
	% of var.		0.029	0.028	0.028	0.028	0.028	
	Cumulative % of	var.	96.822	96.850	96.878	96.906	96.934	
##	Maniana.		Dim.176	Dim.177	Dim.178	Dim.179	Dim.180	
	Variance		11.287	11.160	11.056	10.858	10.780	
	% of var.		0.027	0.027	0.026	0.026	0.026	
	Cumulative % of	var.	96.961	96.987	97.014	97.039	97.065	
##	Maniana.		Dim.181	Dim.182	Dim.183	Dim.184	Dim.185	
	Variance % of var.		10.626	10.585	10.574	10.451	10.389	
		wan	0.025	0.025	0.025	0.025	0.025	
	Cumulative % of	var.	97.090	97.116	97.141	97.166	97.190	
##	Variance		Dim.186	Dim.187 10.181	Dim.188 10.151	Dim.189	Dim.190	
	% of var.		10.327	0.024		9.965	9.863	
		wan	0.025		0.024	0.024	0.023	
	Cumulative % of	var.	97.215 Dim.191	97.239	97.263	97.287	97.311	
##	Variance			Dim.192	Dim.193 9.691	Dim.194	Dim.195	
	% of var.		9.825	9.749		9.637	9.542	
		wan	0.023	0.023	0.023	0.023	0.023	
	Cumulative % of	var.	97.334	97.357	97.380	97.403	97.426	
##	Variance		Dim.196	Dim.197	Dim.198 9.342	Dim.199	Dim.200	
			9.502	9.399		9.198	9.163	
	% of var.	Van	0.023	0.022	0.022	0.022	0.022	
	Cumulative % of	val.•	97.448	97.471	97.493	97.515	97.537	
##	Vaniance		Dim.201	Dim.202	Dim.203	Dim.204	Dim.205	
	Variance		9.071	8.888	8.812	8.673	8.653	
	% of var.	V25	0.022	0.021	0.021	0.021	0.021	
	Cumulative % of	vaľ.	97.558	97.580	97.601	97.621	97.642	
##			Dim.206	Dim.207	Dim.208	Dim.209	Dim.210	

## Variance	8.584	8.445	8.376	8.341	8.302	
## % of var.	0.020	0.020	0.020	0.020	0.020	
## Cumulative % of var.	97.662	97.682	97.702	97.722	97.742	
##	Dim.211	Dim.212	Dim.213	Dim.214	Dim.215	
## Variance	8.247	8.225	8.151	8.076	8.001	
## % of var.	0.020	0.020	0.019	0.019	0.019	
## Cumulative % of var.	97.762	97.781	97.801	97.820	97.839	
##	Dim.216	Dim.217	Dim.218	Dim.219	Dim.220	
## Variance	7.939	7.859	7.823	7.807	7.708	
## % of var.	0.019	0.019	0.019	0.019	0.018	
## Cumulative % of var.	97.858	97.876	97.895	97.914	97.932	
##	Dim.221	Dim.222	Dim.223	Dim.224	Dim.225	
## Variance	7.679	7.574	7.502	7.472	7.428	
## % of var.	0.018	0.018	0.018	0.018	0.018	
## Cumulative % of var.	97.950	97.968	97.986	98.004	98.022	
##	Dim.226	Dim.227	Dim.228	Dim.229	Dim.230	
## Variance	7.380	7.295	7.171	7.139	7.066	
## % of var.	0.018	0.017	0.017	0.017	0.017	
## Cumulative % of var.	98.039	98.057	98.074	98.091	98.108	
##	Dim.231	Dim.232	Dim.233	Dim.234	Dim.235	
## Variance	6.982	6.966	6.898	6.861	6.811	
## % of var.	0.017	0.017	0.016	0.016	0.016	
## Cumulative % of var.	98.124	98.141	98.157	98.173	98.190	
##	Dim.236	Dim.237	Dim.238	Dim.239	Dim.240	
## Variance	6.726	6.659	6.631	6.563	6.485	
## % of var.	0.016	0.016	0.016	0.016	0.015	
## Cumulative % of var.	98.206	98.222	98.237	98.253	98.268	
##	Dim.241	Dim.242	Dim.243	Dim.244	Dim.245	
## Variance	6.449	6.408	6.366	6.331	6.306	
## % of var.	0.015	0.015	0.015	0.015	0.015	
## Cumulative % of var.	98.284	98.299	98.314	98.329	98.344	
##	Dim.246	Dim.247	Dim.248	Dim.249	Dim.250	
## Variance	6.230	6.177	6.149	6.014	6.005	
## % of var.	0.015	0.015	0.015	0.014	0.014	
## Cumulative % of var.	98.359	98.374	98.388	98.403	98.417	
##	Dim.251	Dim.252	Dim.253	Dim.254	Dim.255	
## Variance	5.957	5.900	5.878	5.854	5.783	
## % of var.	0.014	0.014	0.014	0.014	0.014	
## Cumulative % of var.	98.431	98.445	98.459	98.473	98.487	
##	Dim.256	Dim.257	Dim.258	Dim.259	Dim.260	
## Variance	5.769	5.685	5.658	5.632	5.605	
## % of var.	0.014	0.014	0.013	0.013	0.013	
## Cumulative % of var.	98.501	98.514	98.528	98.541	98.555	
##	Dim.261	Dim.262	Dim.263	Dim.264	Dim.265	
## Variance	5.539	5.491	5.438	5.435	5.400	
## % of var.	0.013	0.013	0.013	0.013	0.013	
## Cumulative % of var.	98.568	98.581	98.594	98.607	98.620	
##	Dim.266	Dim.267	Dim.268	Dim.269	Dim.270	
## Variance	5.343	5.329	5.233	5.218	5.188	
## % of var.	0.013	0.013	0.012	0.012	0.012	

	Cumulative % of	var.	98.632	98.645	98.657	98.670	98.682	
##			Dim.271	Dim.272	Dim.273	Dim.274	Dim.275	
	Variance		5.123	5.080	5.060	5.041	4.981	
	% of var.		0.012	0.012	0.012	0.012	0.012	
	Cumulative % of	var.	98.694	98.706	98.719	98.731	98.742	
##			Dim.276	Dim.277	Dim.278	Dim.279	Dim.280	
	Variance		4.964	4.911	4.873	4.857	4.850	
	% of var.		0.012	0.012	0.012	0.012	0.012	
	Cumulative % of	var.	98.754	98.766	98.777	98.789	98.801	
##			Dim.281	Dim.282	Dim.283	Dim.284	Dim.285	
	Variance		4.817	4.797	4.743	4.690	4.672	
	% of var.		0.011	0.011	0.011	0.011	0.011	
	Cumulative % of	var.	98.812	98.823	98.835	98.846	98.857	
##			Dim.286	Dim.287	Dim.288	Dim.289	Dim.290	
	Variance		4.640	4.599	4.585	4.555	4.495	
	% of var.		0.011	0.011	0.011	0.011	0.011	
	Cumulative % of	var.	98.868	98.879	98.890	98.901	98.912	
##			Dim.291	Dim.292	Dim.293	Dim.294	Dim.295	
	Variance		4.487	4.459	4.427	4.403	4.373	
	% of var.		0.011	0.011	0.011	0.010	0.010	
##	Cumulative % of	var.	98.922	98.933	98.943	98.954	98.964	
##			Dim.296	Dim.297	Dim.298	Dim.299	Dim.300	
	Variance		4.344	4.304	4.278	4.250	4.174	
	% of var.		0.010	0.010	0.010	0.010	0.010	
	Cumulative % of	var.	98.975	98.985	98.995	99.005	99.015	
##			Dim.301	Dim.302	Dim.303	Dim.304	Dim.305	
	Variance		4.159	4.147	4.104	4.099	4.041	
	% of var.		0.010	0.010	0.010	0.010	0.010	
	Cumulative % of	var.	99.025	99.035	99.045	99.054	99.064	
##			Dim.306	Dim.307	Dim.308	Dim.309	Dim.310	
	Variance		4.012	3.996	3.948	3.919	3.906	
	% of var.		0.010	0.010	0.009	0.009	0.009	
	Cumulative % of	var.	99.074	99.083	99.092	99.102	99.111	
##			Dim.311	Dim.312	Dim.313	Dim.314	Dim.315	
	Variance		3.889	3.875	3.839	3.785	3.741	
	% of var.		0.009	0.009	0.009	0.009	0.009	
	Cumulative % of	var.	99.120	99.130	99.139	99.148	99.157	
##			Dim.316	Dim.317	Dim.318	Dim.319	Dim.320	
	Variance		3.724	3.682	3.668	3.644	3.624	
	% of var.		0.009	0.009	0.009	0.009	0.009	
	Cumulative % of	var.	99.166	99.174	99.183	99.192	99.200	
##			Dim.321	Dim.322	Dim.323	Dim.324	Dim.325	
	Variance		3.582	3.576	3.538	3.490	3.472	
	% of var.		0.009	0.009	0.008	0.008	0.008	
	Cumulative % of	var.	99.209	99.217	99.226	99.234	99.242	
##			Dim.326	Dim.327	Dim.328	Dim.329	Dim.330	
	Variance		3.443	3.392	3.378	3.353	3.342	
	% of var.		0.008	0.008	0.008	0.008	0.008	
	Cumulative % of	var.	99.251	99.259	99.267	99.275	99.283	
##			Dim.331	Dim.332	Dim.333	Dim.334	Dim.335	

## Variance	3.335	3.289	3.266	3.250	3.243	
## % of var.	0.008	0.008	0.008	0.008	0.008	
## Cumulative % of var.	99.291	99.298	99.306	99.314	99.322	
##	Dim.336	Dim.337	Dim.338	Dim.339	Dim.340	
## Variance	3.228	3.202	3.183	3.169	3.157	
## % of var.	0.008	0.008	0.008	0.008	0.008	
## Cumulative % of var.	99.329	99.337	99.345	99.352	99.360	
##	Dim.341	Dim.342	Dim.343	Dim.344	Dim.345	
## Variance	3.103	3.083	3.070	3.052	3.031	
## % of var.	0.007	0.007	0.007	0.007	0.007	
## Cumulative % of var.	99.367	99.374	99.382	99.389	99.396	
##	Dim.346	Dim.347	Dim.348	Dim.349	Dim.350	
## Variance	3.011	3.002	2.950	2.918	2.889	
## % of var.	0.007	0.007	0.007	0.007	0.007	
## Cumulative % of var.	99.403	99.410	99.417	99.424	99.431	
##	Dim.351	Dim.352	Dim.353	Dim.354	Dim.355	
## Variance	2.832	2.819	2.810	2.768	2.757	
## % of var.	0.007	0.007	0.007	0.007	0.007	
## Cumulative % of var.	99.438	99.445	99.451	99.458	99.465	
##	Dim.356	Dim.357	Dim.358	Dim.359	Dim.360	
## Variance	2.733	2.709	2.695	2.678	2.671	
## % of var.	0.007	0.006	0.006	0.006	0.006	
## Cumulative % of var.	99.471	99.478	99.484	99.490	99.497	
##	Dim.361	Dim.362	Dim.363	Dim.364	Dim.365	
## Variance	2.652	2.645	2.610	2.542	2.519	
## % of var.	0.006	0.006	0.006	0.006	0.006	
## Cumulative % of var.	99.503	99.509	99.516	99.522	99.528	
##	Dim.366	Dim.367	Dim.368	Dim.369	Dim.370	
## Variance	2.515	2.492	2.468	2.448	2.434	
## % of var.	0.006	0.006	0.006	0.006	0.006	
## Cumulative % of var.	99.534	99.539	99.545	99.551	99.557	
##	Dim.371	Dim.372	Dim.373	Dim.374	Dim.375	
## Variance	2.412	2.378	2.340	2.326	2.306	
## % of var.	0.006	0.006	0.006	0.006	0.005	
## Cumulative % of var.	99.563	99.568	99.574	99.580	99.585	
##	Dim.376	Dim.377	Dim.378	Dim.379	Dim.380	
## Variance	2.300	2.281	2.263	2.240	2.216	
## % of var.	0.005	0.005	0.005	0.005	0.005	
## Cumulative % of var.	99.590	99.596	99.601	99.607	99.612	
##	Dim.381	Dim.382	Dim.383	Dim.384	Dim.385	
## Variance	2.203	2.175	2.146	2.087	2.077	
## % of var.	0.005	0.005	0.005	0.005	0.005	
## Cumulative % of var.	99.617	99.622	99.627	99.632	99.637	
##	Dim.386	Dim.387	Dim.388	Dim.389	Dim.390	
## Variance	2.044	2.036	2.020	1.995	1.976	
## % of var.	0.005	0.005	0.005	0.005	0.005	
## Cumulative % of var.	99.642	99.647	99.652	99.657	99.661	
##	Dim.391	Dim.392	Dim.393	Dim.394	Dim.395	
## Variance	1.959	1.942	1.918	1.895	1.886	
## % of var.	0.005	0.005	0.005	0.005	0.004	

## Cumulative % of var.	99.666	99.671	99.675	99.680	99.684	
##	Dim.396	Dim.397	Dim.398	Dim.399	Dim.400	
## Variance	1.849	1.820	1.810	1.779	1.761	
## % of var.	0.004	0.004	0.004	0.004	0.004	
## Cumulative % of var.	99.689	99.693	99.697	99.701	99.706	
## \/anianaa	Dim.401	Dim.402	Dim.403	Dim.404	Dim.405	
## Variance ## % of var.	1.746	1.731	1.714	1.701	1.676	
	0.004	0.004	0.004	0.004	0.004	
<pre>## Cumulative % of var. ##</pre>	99.710 Dim.406	99.714 Dim.407	99.718 Dim.408	99.722 Dim.409	99.726 Dim.410	
## Variance	1.670	1.633	1.619	1.590	1.581	
## % of var.	0.004	0.004	0.004	0.004	0.004	
## Cumulative % of var.	99.730	99.734	99.738	99.742	99.745	
##	Dim.411	Dim.412	Dim.413	Dim.414	Dim.415	
## Variance	1.570	1.554	1.545	1.538	1.516	
## % of var.	0.004	0.004	0.004	0.004	0.004	
## Cumulative % of var.	99.749	99.753	99.756	99.760	99.764	
##	Dim.416	Dim.417	Dim.418	Dim.419	Dim.420	
## Variance	1.512	1.502	1.484	1.462	1.435	
## % of var.	0.004	0.004	0.004	0.003	0.003	
## Cumulative % of var.	99.767	99.771	99.774	99.778	99.781	
##	Dim.421	Dim.422	Dim.423	Dim.424	Dim.425	
## Variance	1.421	1.390	1.380	1.369	1.344	
## % of var.	0.003	0.003	0.003	0.003	0.003	
## Cumulative % of var.	99.785	99.788	99.791	99.795	99.798	
##	Dim.426	Dim.427	Dim.428	Dim.429	Dim.430	
## Variance	1.335	1.292	1.289	1.277	1.236	
## % of var.	0.003	0.003	0.003	0.003	0.003	
## Cumulative % of var.	99.801	99.804	99.807	99.810	99.813	
##	Dim.431	Dim.432	Dim.433	Dim.434	Dim.435	
## Variance	1.213	1.205	1.200	1.189	1.172	
## % of var.	0.003	0.003	0.003	0.003	0.003	
## Cumulative % of var.	99.816	99.819	99.822	99.825	99.827	
##	Dim.436	Dim.437	Dim.438	Dim.439	Dim.440	
## Variance	1.148	1.132	1.114	1.103	1.096	
## % of var.	0.003	0.003	0.003	0.003	0.003	
## Cumulative % of var.	99.830	99.833	99.835	99.838	99.841	
##	Dim.441	Dim.442	Dim.443	Dim.444	Dim.445	
## Variance	1.085	1.057	1.053	1.031	1.027	
## % of var.	0.003	0.003	0.003	0.002	0.002	
## Cumulative % of var.	99.843	99.846	99.848	99.851	99.853	
##	Dim.446	Dim.447	Dim.448	Dim.449	Dim.450	
## Variance	1.019	0.999	0.986	0.973	0.960	
## % of var.	0.002	0.002	0.002	0.002	0.002	
## Cumulative % of var.	99.856	99.858	99.860	99.863	99.865	
##	Dim.451	Dim.452	Dim.453	Dim.454	Dim.455	
## Variance	0.958	0.934	0.912	0.896	0.892	
## % of var.	0.002	0.002	0.002	0.002	0.002	
## Cumulative % of var.	99.867	99.869	99.872	99.874	99.876	
##	Dim.456	Dim.457	Dim.458	Dim.459	Dim.460	

	Variance	0.887	0.868	0.863	0.857	0.831	
	% of var.	0.002	0.002	0.002	0.002	0.002	
	Cumulative % of var		99.880	99.882	99.884	99.886	
##	.,	Dim.461	Dim.462	Dim.463	Dim.464	Dim.465	
	Variance	0.819	0.810	0.800	0.771	0.761	
	% of var.	0.002	0.002	0.002	0.002	0.002	
	Cumulative % of var		99.890	99.892	99.894	99.895	
##	Mandana	Dim.466	Dim.467	Dim.468	Dim.469	Dim.470	
	Variance	0.758	0.753	0.745	0.736	0.727	
	% of var.	0.002	0.002	0.002	0.002	0.002	
	Cumulative % of var		99.899	99.901	99.903	99.904	
##	Mandana	Dim.471	Dim.472	Dim.473	Dim.474	Dim.475	
	Variance	0.719	0.707	0.700	0.691	0.683	
	% of var.	0.002	0.002	0.002	0.002	0.002	
	Cumulative % of var		99.908	99.909	99.911	99.913	
##	Mandana	Dim.476	Dim.477	Dim.478	Dim.479	Dim.480	
	Variance	0.679	0.673	0.651	0.642	0.627	
	% of var.	0.002	0.002	0.002	0.002	0.001	
	Cumulative % of var		99.916	99.917	99.919	99.920	
##	Mandana	Dim.481	Dim.482	Dim.483	Dim.484	Dim.485	
	Variance	0.619	0.612	0.604	0.591	0.580	
	% of var.	0.001	0.001	0.001	0.001	0.001	
	Cumulative % of var		99.923	99.925	99.926	99.928	
##	Vaniance	Dim.486	Dim.487	Dim.488	Dim.489	Dim.490	
	Variance	0.572	0.568	0.559	0.553	0.546	
	% of var.	0.001	0.001	0.001	0.001	0.001	
	Cumulative % of var		99.930	99.932	99.933	99.934	
##	Vaniance	Dim.491	Dim.492	Dim.493	Dim.494	Dim.495	
	Variance	0.535	0.532	0.518	0.510	0.500	
	% of var.	0.001	0.001	0.001	0.001	0.001	
##	Cumulative % of var		99.937	99.938	99.939	99.940	
	Vaniance	Dim.496	Dim.497 0.480	Dim.498	Dim.499 0.467	Dim.500	
	Variance	0.483 0.001		0.472		0.458	
	% of var. Cumulative % of var		0.001 99.943	0.001 99.944	0.001 99.945	0.001 99.946	
##	Cullulative % Of Var				99.945 Dim.504		
	Variance	Dim.501 0.457	Dim.502	Dim.503 0.445		Dim.505	
	% of var.	0.437	0.452		0.441	0.431	
	Cumulative % of var		0.001 99.948	0.001 99.949	0.001	0.001	
##	Cumulative % of var				99.950	99.951	
	Variance	Dim.506	Dim.507	Dim.508	Dim.509	Dim.510	
	% of var.	0.412	0.403	0.397	0.392 0.001	0.386 0.001	
		0.001	0.001	0.001	99.955		
	Cumulative % of var		99.953	99.954		99.956	
##	Vaniance	Dim.511	Dim.512	Dim.513	Dim.514	Dim.515	
	Variance	0.383	0.376	0.373	0.365	0.355	
	% of var.	0.001	0.001	0.001	0.001	0.001	
	Cumulative % of var		99.958	99.959	99.960	99.961	
##	Vaniance	Dim.516	Dim.517	Dim.518	Dim.519	Dim.520	
	Variance % of var.	0.350 0.001	0.348	0.346 0.001	0.343	0.337	
##	∕o UI Val¹.	0.001	0.001	9.001	0.001	0.001	

	Cumulative % of var.	99.961	99.962	99.963	99.964	99.965	
##		Dim.521	Dim.522	Dim.523	Dim.524	Dim.525	
	Variance	0.327	0.326	0.315	0.311	0.311	
	% of var.	0.001	0.001	0.001	0.001	0.001	
	Cumulative % of var.	99.965	99.966	99.967	99.968	99.968	
##		Dim.526	Dim.527	Dim.528	Dim.529	Dim.530	
	Variance	0.307	0.302	0.299	0.297	0.279	
	% of var.	0.001	0.001	0.001	0.001	0.001	
	Cumulative % of var.	99.969	99.970	99.971	99.971	99.972	
##	Manakanan	Dim.531	Dim.532	Dim.533	Dim.534	Dim.535	
	Variance	0.278	0.268	0.264	0.261	0.256	
	% of var.	0.001	0.001	0.001	0.001	0.001	
	Cumulative % of var.	99.973	99.973	99.974	99.975	99.975	
##	Manakanan	Dim.536	Dim.537	Dim.538	Dim.539	Dim.540	
	Variance	0.253	0.247	0.241	0.234	0.232	
	% of var.	0.001	0.001	0.001	0.001	0.001	
	Cumulative % of var.	99.976	99.976	99.977	99.977	99.978	
##	Maniana	Dim.541	Dim.542	Dim.543	Dim.544	Dim.545	
	Variance	0.229	0.227	0.220	0.218	0.217	
	% of var.	0.001	0.001	0.001	0.001	0.001	
	Cumulative % of var.	99.979	99.979	99.980	99.980	99.981	
##	Maniana	Dim.546	Dim.547	Dim.548	Dim.549	Dim.550	
	Variance	0.214	0.205	0.195	0.194	0.186	
	% of var.	0.001	0.000	0.000	0.000	0.000	
	Cumulative % of var.	99.981	99.982	99.982	99.983	99.983	
##	Manakanan	Dim.551	Dim.552	Dim.553	Dim.554	Dim.555	
	Variance	0.182	0.180	0.173	0.171	0.165	
	% of var.	0.000	0.000	0.000	0.000	0.000	
	Cumulative % of var.	99.983	99.984	99.984	99.985	99.985	
##		Dim.556	Dim.557	Dim.558	Dim.559	Dim.560	
	Variance	0.163	0.161	0.159	0.152	0.150	
	% of var.	0.000	0.000	0.000	0.000	0.000	
	Cumulative % of var.	99.985	99.986	99.986	99.987	99.987	
##	Manakanan	Dim.561	Dim.562	Dim.563	Dim.564	Dim.565	
	Variance	0.148	0.146	0.144	0.142	0.135	
	% of var.	0.000	0.000	0.000	0.000	0.000	
	Cumulative % of var.	99.987	99.988	99.988	99.988	99.989	
##	Manakanan	Dim.566	Dim.567	Dim.568	Dim.569	Dim.570	
	Variance	0.133	0.131	0.123	0.121	0.121	
	% of var.	0.000	0.000	0.000	0.000	0.000	
	Cumulative % of var.	99.989	99.989	99.990	99.990	99.990	
##		Dim.571	Dim.572	Dim.573	Dim.574	Dim.575	
	Variance	0.119	0.118	0.118	0.114	0.113	
	% of var.	0.000	0.000	0.000	0.000	0.000	
	Cumulative % of var.	99.990	99.991	99.991	99.991	99.992	
##	Vaniana	Dim.576	Dim.577	Dim.578	Dim.579	Dim.580	
	Variance	0.107	0.104	0.103	0.098	0.096	
	% of var.	0.000	0.000	0.000	0.000	0.000	
	Cumulative % of var.	99.992	99.992	99.992	99.993	99.993	
##		Dim.581	Dim.582	Dim.583	Dim.584	Dim.585	

## Variance	0.090	0.089	0.088	0.085	0.085
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	99.993	99.993	99.993	99.994	99.994
##	Dim.586	Dim.587	Dim.588	Dim.589	Dim.590
## Variance	0.083	0.082	0.078	0.077	0.074
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	99.994	99.994	99.994	99.995	99.995
##	Dim.591	Dim.592	Dim.593	Dim.594	Dim.595
## Variance	0.074	0.074	0.070	0.068	0.066
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	99.995	99.995	99.995	99.995	99.996
## ## \/anianaa	Dim.596	Dim.597	Dim.598	Dim.599	Dim.600
## Variance	0.064	0.062	0.060	0.060	0.058
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	99.996	99.996	99.996	99.996	99.996
## ## \/anianaa	Dim.601	Dim.602	Dim.603	Dim.604	Dim.605
## Variance	0.055	0.052	0.051	0.050	0.049
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	99.996	99.997	99.997	99.997	99.997
## ## \/anianaa	Dim.606	Dim.607	Dim.608	Dim.609	Dim.610
## Variance	0.049	0.048	0.047	0.046	0.044
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	99.997	99.997	99.997	99.997	99.997
## ## \/anianaa	Dim.611	Dim.612	Dim.613	Dim.614	Dim.615
## Variance	0.041	0.040	0.036	0.035	0.034
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	99.998	99.998	99.998	99.998	99.998
## ## \/anianaa	Dim.616	Dim.617	Dim.618	Dim.619	Dim.620
## Variance	0.034	0.033	0.032	0.032	0.031
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	99.998 Dim.621	99.998	99.998	99.998	99.998
## ## Vaniance	0.030	Dim.622 0.030	Dim.623	Dim.624	Dim.625
## Variance			0.028	0.028	0.027
<pre>## % of var. ## Cumulative % of var.</pre>	0.000 99.998	0.000 99.998	0.000 99.998	0.000 99.999	0.000 99.999
## Cumulative % Or var.	99.996 Dim.626	99.998 Dim.627	99.998 Dim.628	99.999 Dim.629	99.999 Dim.630
## Variance	0.026	0.025	0.024	0.024	0.023
## % of var.	0.000	0.000	0.024	0.000	0.023
## Cumulative % of var.	99.999	99.999	99.999	99.999	99.999
##	Dim.631	Dim.632	Dim.633	Dim.634	Dim.635
## ## Variance	0.022	0.021	0.021	0.020	0.020
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	99.999		99.999	99.999	
## Cumulative % of var.	99.999 Dim.636	99.999 Dim.637	99.999 Dim.638	99.999 Dim.639	99.999 Dim.640
## Variance	0.020	0.019	0.019	0.016	0.016
## % of var.	0.000	0.000	0.000	0.016	0.010
## Cumulative % of var.	99.999	99.999	99.999	99.999	99.999
## Cumulacive % or var.	99.999 Dim.641	99.999 Dim.642	99.999 Dim.643	99.999 Dim.644	99.999 Dim.645
## Variance	0.015	0.015	0.014	0.013	0.013
## % of var.	0.000	0.000	0.000	0.000	0.000
ππ /0 UI VαI •	0.000	0.000	0.000	0.000	0.000

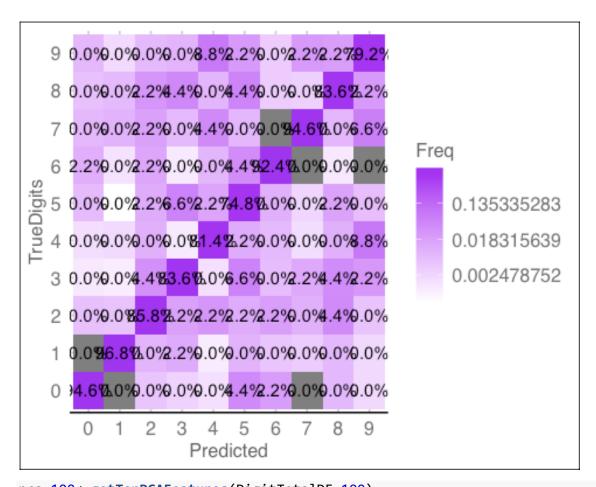
## Cumulative % of var.	99.999	99.999	99.999	100.000	100.000
##	Dim.646	Dim.647	Dim.648	Dim.649	Dim.650
## Variance	0.011	0.011	0.010	0.010	0.009
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.651	Dim.652	Dim.653	Dim.654	Dim.655
## Variance	0.009	0.009	0.008	0.008	0.007
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.656	Dim.657	Dim.658	Dim.659	Dim.660
## Variance	0.007	0.007	0.007	0.006	0.006
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
## ## \/anianaa	Dim.661	Dim.662	Dim.663	Dim.664	Dim.665
## Variance	0.006	0.006	0.006	0.004	0.004
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
## ## \/anianaa	Dim.666	Dim.667	Dim.668	Dim.669	Dim.670
## Variance ## % of var.	0.004	0.003	0.003	0.003	0.003
## Cumulative % of var.	0.000	0.000	0.000	0.000	0.000
	100.000	100.000	100.000	100.000	100.000
## ## Variance	Dim.671 0.002	Dim.672 0.002	Dim.673 0.002	Dim.674 0.002	Dim.675 0.002
## % of var.					
## Cumulative % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % or var.	100.000 Dim.676	100.000 Dim.677	100.000 Dim.678	100.000 Dim.679	100.000 Dim.680
## Variance	0.001	0.001	0.001	0.001	
## % of var.	0.001	0.001	0.001	0.001	0.001 0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.681	Dim.682	Dim.683	Dim.684	Dim.685
## Variance	0.001	0.001	0.001	0.001	0.001
## % of var.	0.001	0.001	0.001	0.001	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.686	Dim.687	Dim.688	Dim.689	Dim.690
## Variance	0.001	0.001	0.000	0.000	0.000
## % of var.	0.001	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.691	Dim.692	Dim.693	Dim.694	Dim.695
## Variance	0.000	0.000	0.000	0.000	0.000
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.696	Dim.697	Dim.698	Dim.699	Dim.700
## Variance	0.000	0.000	0.000	0.000	0.000
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.701	Dim.702	Dim.703	Dim.704	Dim.705
## Variance	0.000	0.000	0.000	0.000	0.000
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.706	Dim.707	Dim.708	Dim.709	Dim.710
					,

## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.711	Dim.712	Dim.713	Dim.714	Dim.715	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.716	Dim.717	Dim.718	Dim.719	Dim.720	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.721	Dim.722	Dim.723	Dim.724	Dim.725	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.726	Dim.727	Dim.728	Dim.729	Dim.730	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.731	Dim.732	Dim.733	Dim.734	Dim.735	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.736	Dim.737	Dim.738	Dim.739	Dim.740	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.741	Dim.742	Dim.743	Dim.744	Dim.745	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.746	Dim.747	Dim.748	Dim.749	Dim.750	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.751	Dim.752	Dim.753	Dim.754	Dim.755	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.756	Dim.757	Dim.758	Dim.759	Dim.760	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.761	Dim.762	Dim.763	Dim.764	Dim.765	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.766	Dim.767	Dim.768	Dim.769	Dim.770	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	

```
## Cumulative % of var.
                           100.000
                                      100.000
                                                100.000
                                                           100.000
                                                                     100.000
##
                           Dim.771
                                      Dim. 772
                                                Dim.773
                                                           Dim.774
                                                                     Dim.775
## Variance
                                        0.000
                                                  0.000
                                                             0.000
                                                                        0.000
                             0.000
## % of var.
                             0.000
                                        0.000
                                                  0.000
                                                             0.000
                                                                        0.000
## Cumulative % of var.
                           100.000
                                      100.000
                                                100.000
                                                           100.000
                                                                     100.000
                                                           Dim.779
##
                           Dim.776
                                      Dim.777
                                                Dim.778
                                                                     Dim.780
## Variance
                             0.000
                                        0.000
                                                  0.000
                                                             0.000
                                                                        0.000
## % of var.
                             0.000
                                        0.000
                                                  0.000
                                                             0.000
                                                                        0.000
## Cumulative % of var.
                           100.000
                                      100.000
                                                100.000
                                                           100.000
                                                                      100.000
##
                           Dim. 781
                                      Dim. 782
                                                Dim.783
## Variance
                                        0.000
                             0.000
                                                  0.000
## % of var.
                             0.000
                                        0.000
                                                  0.000
## Cumulative % of var.
                           100.000
                                      100.000
                                                100.000
##
## Individuals (the 10 first)
##
                                                    Dim.2
                Dist
                         Dim.1
                                    ctr
                                           cos2
                                                               ctr
                                                                      cos2
Dim.3
             87.988 | -85.829
                                          0.952 | -10.867
## 0
                                 0.072
                                                             0.006
                                                                     0.015
9.555
## 1
             87.988 | -85.829
                                 0.072
                                          0.952 | -10.867
                                                             0.006
                                                                     0.015
9.555
## 2
             87.988 | -85.829
                                 0.072
                                          0.952 | -10.867
                                                             0.006
                                                                     0.015
9.555
             87.988 | -85.829
                                 0.072
                                          0.952 | -10.867
                                                             0.006
                                                                     0.015
## 3
9.555
## 4
             87.988 | -85.829
                                 0.072
                                          0.952 | -10.867
                                                             0.006
                                                                     0.015
9.555
## 5
             87.988 | -85.829
                                 0.072
                                          0.952 | -10.867
                                                             0.006
                                                                     0.015
9.555
                                          0.952 | -10.867
             87.988 | -85.829
                                                             0.006
                                                                     0.015
## 6
                                 0.072
9.555
## 7
             87.988 | -85.829
                                 0.072
                                          0.952 | -10.867
                                                             0.006
                                                                     0.015
9.555
                                          0.952 | -10.867
## 8
             87.988 | -85.829
                                 0.072
                                                             0.006
                                                                     0.015
9.555
             87.988 | -85.829
                                          0.952 | -10.867
## 9
                                 0.072
                                                             0.006
                                                                     0.015
9.555
##
              ctr
                      cos2
## 0
            0.005
                     0.012
## 1
            0.005
                     0.012
## 2
            0.005
                     0.012
## 3
            0.005
                     0.012
## 4
            0.005
                     0.012
## 5
            0.005
                     0.012
## 6
            0.005
                     0.012
## 7
            0.005
                     0.012
## 8
            0.005
                     0.012
## 9
            0.005
                     0.012 |
##
## Variables (the 10 first)
```

```
Dim.1 ctr cos2 Dim.2 ctr cos2 Dim.3 ctr
##
cos2
## V1
          0.419 0.001 0.176 | -0.407 0.006 0.165 | 0.198 0.002
0.039
## V2
         0.501 0.002 0.251 | 0.374 0.005 0.140 | 0.434 0.009
0.189
## V3
         0.534 0.002 0.285 | -0.467 0.008 0.218 | -0.077 0.000
0.006
          0.269 0.001 0.073 | 0.244 0.002 0.060 | -0.020 0.000
## V4
0.000
## V5
          0.452 0.002 0.205 | 0.373 0.005 0.139 | 0.449 0.009
0.202
## V6
          0.576 0.003 0.332 | 0.350 0.005 0.122 | 0.116 0.001
0.013
## V7
          0.502 0.002 0.252 | -0.054 0.000 0.003 | -0.407 0.008
0.166
## V8
          0.347 0.001 0.120 | 0.069 0.000 0.005 | 0.021 0.000
0.000
## V9
          0.640 0.003 0.410 | 0.221 0.002 0.049 | 0.050 0.000
0.002
## V10
          0.570 0.003 0.325 | -0.084 0.000 0.007 | 0.337 0.005
0.114
model_nb_50<-runNB(pca_50)</pre>
##
## ====== Naive Bayes
_____
## - Call: naive bayes.formula(formula = label ~ ., data = trainDF)
## - Laplace: 0
## - Classes: 10
## - Samples: 25205
## - Features: 50
## - Conditional distributions:
##
      - Gaussian: 50
## - Prior probabilities:
##
      - 0: 0.0984
      - 1: 0.1115
##
##
      - 2: 0.0995
##
      - 3: 0.1036
##
      - 4: 0.097
##
      - 5: 0.0903
##
      - 6: 0.0985
##
      - 7: 0.1048
##
      - 8: 0.0967
      - 9: 0.0997
##
## -----
```

```
## Warning: predict.naive_bayes(): more features in the newdata are provided
## there are probability tables in the object. Calculation is performed based
on
## features to be found in the tables.
##
             TrueDigits
                                                                  9
## Predicted
                            2
                                            5
                                                             8
                                       4
                                                  6
                            9
                                 2
                                                             9
##
            0 1507
                       0
                                       3
                                           11
                                                 18
                                                      12
                                                                 12
                 0 1787
                            9
                                 2
##
            1
                                       4
                                            1
                                                  3
                                                      17
                                                            13
                                                                  4
##
                 8
                      15 1427
                                56
                                      17
                                           20
                                                 25
                                                      30
                                                                 12
            2
                                                           46
            3
                 5
                      22
                           32 1441
                                       2
                                           94
                                                 2
                                                      12
                                                           77
                                                                 15
##
            4
##
                 3
                      2
                           49
                                 3 1409
                                           28
                                                 15
                                                      74
                                                            15
                                                                134
##
            5
                77
                     17
                           21
                                97
                                      21 1305
                                                 68
                                                      14
                                                            90
                                                                 41
##
            6
                36
                      8
                           34
                                      12
                                           17 1521
                                                       0
                                                             6
                                                                  6
                                11
            7
                                      3
                                                             5
                                                                 37
##
                 0
                      6
                           16
                                21
                                            4
                                                  0 1477
                12
##
            8
                     12
                           64
                                62
                                                  2
                                                      13 1323
                                                                 32
                                      16
                                           27
            9
##
                 4
                      4
                                45
                                     141
                                           11
                                                     111
                                                           41 1382
##
                                     AccuracyLower
                                                                       AccuracyNull
         Accuracy
                             Kappa
                                                     AccuracyUpper
                                         0.8628441
                                                         0.8731400
                                                                          0.1115213
##
        0.8680560
                         0.8533846
## AccuracyPValue
                    McnemarPValue
        0.0000000
##
                               NaN
## Warning: Transformation introduced infinite values in discrete y-axis
```



```
pca_100<-getTopPCAFeatures(DigitTotalDF, 100)</pre>
##
## Call:
## PCA(X = t(select(df, -label)), ncp = ncp, graph = FALSE)
##
##
## Eigenvalues
##
                             Dim.1
                                        Dim.2
                                                  Dim.3
                                                             Dim.4
                                                                       Dim.5
## Variance
                         12975.886
                                    2635.187
                                               2146.048 1747.535 1465.951
## % of var.
                            30.895
                                        6.274
                                                  5.110
                                                             4.161
                                                                       3.490
## Cumulative % of var.
                            30.895
                                       37.169
                                                 42.279
                                                            46.440
                                                                      49.930
##
                             Dim.6
                                        Dim.7
                                                  Dim.8
                                                             Dim.9
                                                                      Dim.10
## Variance
                          1358.547
                                    1135.701
                                                884.896
                                                           855.251
                                                                     734.998
## % of var.
                                                             2.036
                                                                       1.750
                             3.235
                                        2.704
                                                  2.107
## Cumulative % of var.
                            53.165
                                       55.869
                                                 57.976
                                                            60.012
                                                                      61.762
##
                            Dim.11
                                       Dim.12
                                                 Dim.13
                                                            Dim.14
                                                                      Dim.15
## Variance
                           664.973
                                                           515.912
                                      634.157
                                                551.036
                                                                     483.259
## % of var.
                             1.583
                                        1.510
                                                  1.312
                                                             1.228
                                                                       1.151
## Cumulative % of var.
                                                            67.395
                                                                      68.546
                            63.345
                                       64.855
                                                 66.167
##
                            Dim. 16
                                       Dim.17
                                                 Dim.18
                                                            Dim.19
                                                                      Dim.20
## Variance
                           451.099
                                      420.945
                                                388.013
                                                           361.053
                                                                     349.113
## % of var.
                             1.074
                                        1.002
                                                  0.924
                                                             0.860
                                                                       0.831
```

	Cumulative % of	var.	69.620	70.622	71.546	72.406	73.237	
##			Dim.21	Dim.22	Dim.23	Dim.24	Dim.25	
	Variance		329.622	310.712	298.708	281.495	275.884	
	% of var.		0.785	0.740	0.711	0.670	0.657	
	Cumulative % of	var.	74.022	74.762	75.473	76.143	76.800	
##			Dim.26	Dim.27	Dim.28	Dim.29	Dim.30	
	Variance		268.984	252.330	236.925	226.065	219.194	
	% of var.		0.640	0.601	0.564	0.538	0.522	
	Cumulative % of	var.	77.440	78.041	78.605	79.144	79.665	
##			Dim.31	Dim.32	Dim.33	Dim.34	Dim.35	
	Variance		203.959	202.286	185.225	181.697	173.988	
	% of var.		0.486	0.482	0.441	0.433	0.414	
	Cumulative % of	var.	80.151	80.633	81.074	81.506	81.921	
##			Dim.36	Dim.37	Dim.38	Dim.39	Dim.40	
	Variance		172.056	160.255	156.645	149.836	146.561	
	% of var.		0.410	0.382	0.373	0.357	0.349	
	Cumulative % of	var.	82.330	82.712	83.085	83.441	83.790	
##			Dim.41	Dim.42	Dim.43	Dim.44	Dim.45	
	Variance		140.441	137.162	131.753	125.734	123.529	
	% of var.		0.334	0.327	0.314	0.299	0.294	
	Cumulative % of	var.	84.125	84.451	84.765	85.064	85.359	
##			Dim.46	Dim.47	Dim.48	Dim.49	Dim.50	
	Variance		122.862	115.733	109.800	108.063	100.205	
	% of var.		0.293	0.276	0.261	0.257	0.239	
	Cumulative % of	var.	85.651	85.927	86.188	86.445	86.684	
##			Dim.51	Dim.52	Dim.53	Dim.54	Dim.55	
	Variance		99.257	98.063	93.201	92.249	89.483	
	% of var.		0.236	0.233	0.222	0.220	0.213	
	Cumulative % of	var.	86.920	87.154	87.376	87.595	87.808	
##			Dim.56	Dim.57	Dim.58	Dim.59	Dim.60	
	Variance		87.033	85.270	83.513	81.175	78.975	
	% of var.		0.207	0.203	0.199	0.193	0.188	
	Cumulative % of	var.	88.016	88.219	88.417	88.611	88.799	
##			Dim.61	Dim.62	Dim.63	Dim.64	Dim.65	
	Variance		76.732	76.033	73.240	71.087	69.891	
	% of var.		0.183	0.181	0.174	0.169	0.166	
	Cumulative % of	var.	88.981	89.163	89.337	89.506	89.673	
##			Dim.66	Dim.67	Dim.68	Dim.69	Dim.70	
	Variance		67.076	65.846	63.704	62.539	61.504	
	% of var.		0.160	0.157	0.152	0.149	0.146	
	Cumulative % of	var.	89.832	89.989	90.141	90.290	90.436	
##			Dim.71	Dim.72	Dim.73	Dim.74	Dim.75	
	Variance		58.632	58.470	56.065	55.675	53.772	
	% of var.		0.140	0.139	0.133	0.133	0.128	
	Cumulative % of	var.	90.576	90.715	90.848	90.981	91.109	
##			Dim.76	Dim.77	Dim.78	Dim.79	Dim.80	
	Variance		52.344	50.752	50.151	47.664	47.097	
	% of var.		0.125	0.121	0.119	0.113	0.112	
##	Cumulative % of	var.	91.234	91.354	91.474	91.587	91.699	
##			Dim.81	Dim.82	Dim.83	Dim.84	Dim.85	

## Variance	45.959	45.670	45.134	43.399	43.159	
## % of var.	0.109	0.109	0.107	0.103	0.103	
## Cumulative % of var.	91.809	91.918	92.025	92.128	92.231	
##	Dim.86	Dim.87	Dim.88	Dim.89	Dim.90	
## Variance	42.732	41.986	40.222	39.688	38.618	
## % of var.	0.102	0.100	0.096	0.094	0.092	
## Cumulative % of var.	92.333	92.433	92.529	92.623	92.715	
##	Dim.91	Dim.92	Dim.93	Dim.94	Dim.95	
## Variance	37.900	37.111	36.558	35.693	35.451	
## % of var.	0.090	0.088	0.087	0.085	0.084	
## Cumulative % of var.	92.805	92.894	92.981	93.066	93.150	
## ## Vanianaa	Dim.96	Dim.97	Dim.98	Dim.99	Dim.100	
## Variance	35.000	33.741	33.657	33.108	32.255	
## % of var.	0.083	0.080	0.080	0.079	0.077	
## Cumulative % of var.	93.233	93.314	93.394	93.473	93.550	
## Vaniance	Dim.101 31.708	Dim.102	Dim.103 30.512	Dim.104	Dim.105	
<pre>## Variance ## % of var.</pre>	0.075	30.818 0.073	0.073	29.322 0.070	28.925 0.069	
## Cumulative % of var.	93.625	93.698	93.771	93.841	93.910	
## Cumulative % or var.	Dim.106	93.098 Dim.107	Dim.108	93.841 Dim.109	Dim.110	
## Variance	28.795	27.708	27.390	27.292	26.586	
## % of var.	0.069	0.066	0.065	0.065	0.063	
## Cumulative % of var.	93.978	94.044	94.109	94.174	94.238	
##	Dim.111	Dim.112	Dim.113	Dim.114	Dim.115	
## Variance	26.039	25.709	25.584	25.304	25.182	
## % of var.	0.062	0.061	0.061	0.060	0.060	
## Cumulative % of var.	94.300	94.361	94.422	94.482	94.542	
##	Dim.116	Dim.117	Dim.118	Dim.119	Dim.120	
## Variance	24.206	23.951	23.818	23.054	22.815	
## % of var.	0.058	0.057	0.057	0.055	0.054	
## Cumulative % of var.	94.600	94.657	94.713	94.768	94.823	
##	Dim.121	Dim.122	Dim.123	Dim.124	Dim.125	
## Variance	22.628	22.352	22.224	21.862	21.222	
## % of var.	0.054	0.053	0.053	0.052	0.051	
## Cumulative % of var.	94.877	94.930	94.983	95.035	95.085	
##	Dim.126	Dim.127	Dim.128	Dim.129	Dim.130	
## Variance	21.059	20.634	20.467	20.033	19.894	
## % of var.	0.050	0.049	0.049	0.048	0.047	
## Cumulative % of var.	95.135	95.185	95.233	95.281	95.328	
##	Dim.131	Dim.132	Dim.133	Dim.134	Dim.135	
## Variance	19.503	19.289	19.223	18.915	18.460	
## % of var.	0.046	0.046	0.046	0.045	0.044	
## Cumulative % of var.	95.375	95.421	95.466	95.511	95.555	
##	Dim.136	Dim.137	Dim.138	Dim.139	Dim.140	
## Variance	18.290	18.250	18.088	17.507	17.219	
## % of var.	0.044	0.043	0.043	0.042	0.041	
## Cumulative % of var.	95.599	95.642	95.686	95.727	95.768	
##	Dim.141	Dim.142	Dim.143	Dim.144	Dim.145	
## Variance	16.825	16.398	16.186	16.169	15.900	
## % of var.	0.040	0.039	0.039	0.038	0.038	

## Cumulative % of var.	95.808	95.847	95.886	95.924	95.962	
##	Dim.146	Dim.147	Dim.148	Dim.149	Dim.150	
## Variance	15.761	15.658	15.577	15.477	15.321	
## % of var.	0.038	0.037	0.037	0.037	0.036	
## Cumulative % of var.	96.000	96.037	96.074	96.111	96.147	
##	Dim.151	Dim.152	Dim.153	Dim.154	Dim.155	
## Variance	15.094	14.926	14.829	14.612	14.562	
## % of var.	0.036	0.036	0.035	0.035	0.035	
## Cumulative % of var.	96.183	96.219	96.254	96.289	96.324	
##	Dim.156	Dim.157	Dim.158	Dim.159	Dim.160	
## Variance	14.468	14.192	13.834	13.675	13.475	
## % of var.	0.034	0.034	0.033	0.033	0.032	
## Cumulative % of var.	96.358	96.392	96.425	96.457	96.489	
## ## \/anianaa	Dim.161	Dim.162	Dim.163	Dim.164	Dim.165	
## Variance	13.389	13.298	13.073	12.872	12.801	
## % of var.	0.032	0.032	0.031	0.031	0.030	
## Cumulative % of var.	96.521	96.553	96.584	96.615	96.645	
## ##	Dim.166	Dim.167	Dim.168	Dim.169	Dim.170	
## Variance	12.616	12.526	12.381	12.338	12.194	
## % of var.	0.030	0.030	0.029	0.029	0.029	
## Cumulative % of var.	96.675	96.705	96.735	96.764	96.793	
## ## \/anianaa	Dim.171	Dim.172	Dim.173	Dim.174	Dim.175	
## Variance	12.051	11.965	11.780	11.716	11.592	
## % of var.	0.029	0.028	0.028	0.028	0.028	
## Cumulative % of var.	96.822	96.850	96.878	96.906	96.934	
## ## \/anianaa	Dim.176	Dim.177	Dim.178	Dim.179	Dim.180	
## Variance	11.287	11.160	11.056	10.858	10.780	
## % of var.	0.027	0.027	0.026	0.026	0.026	
## Cumulative % of var.	96.961	96.987	97.014	97.039	97.065	
## ## \/anianaa	Dim.181	Dim.182	Dim.183	Dim.184	Dim.185	
## Variance	10.626	10.585	10.574	10.451	10.389	
## % of var.	0.025	0.025	0.025	0.025	0.025	
<pre>## Cumulative % of var. ##</pre>	97.090	97.116	97.141	97.166	97.190	
## ## Variance	Dim.186 10.327	Dim.187 10.181	Dim.188 10.151	Dim.189 9.965	Dim.190 9.863	
## % of var.	0.025	0.024	0.024			
## Cumulative % of var.	97.215	97.239		0.024 97.287	0.023 97.311	
## Cumulative % Or var.	Dim.191	97.239 Dim.192	97.263 Dim.193	Dim.194	Dim.195	
## Variance	9.825	9.749	9.691	9.637	9.542	
## % of var.	0.023	0.023	0.023	0.023		
## Cumulative % of var.	97.334	97.357	97.380	97.403	0.023 97.426	
##	Dim.196	Dim.197	Dim.198	Dim.199	Dim.200	
## Variance	9.502	9.399	9.342	9.198		
## % of var.	9.302 0.023	9.399 0.022	9.342 0.022	9.198 0.022	9.163 0.022	
## Cumulative % of var.	97.448	97.471	97.493	97.515	97.537	
## Cumulative % or var.	97.448 Dim.201	97.471 Dim.202	97.493 Dim.203	97.313 Dim.204	97.337 Dim.205	
## Variance	9.071	8.888	8.812	8.673	8.653	
## % of var.	0.022	0.021	0.021	0.021	0.021	
## Cumulative % of var.	97.558	97.580	97.601	97.621	97.642	
##	Dim.206	Dim.207	Dim.208	Dim.209	Dim.210	
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## Variance	8.584	8.445	8.376	8.341	8.302	
## % of var.	0.020	0.020	0.020	0.020	0.020	
## Cumulative % of var.	97.662	97.682	97.702	97.722	97.742	
##	Dim.211	Dim.212	Dim.213	Dim.214	Dim.215	
## Variance	8.247	8.225	8.151	8.076	8.001	
## % of var.	0.020	0.020	0.019	0.019	0.019	
## Cumulative % of var.	97.762	97.781	97.801	97.820	97.839	
##	Dim.216	Dim.217	Dim.218	Dim.219	Dim.220	
## Variance	7.939	7.859	7.823	7.807	7.708	
## % of var.	0.019	0.019	0.019	0.019	0.018	
## Cumulative % of var.	97.858	97.876	97.895	97.914	97.932	
##	Dim.221	Dim.222	Dim.223	Dim.224	Dim.225	
## Variance	7.679	7.574	7.502	7.472	7.428	
## % of var.	0.018	0.018	0.018	0.018	0.018	
## Cumulative % of var.	97.950	97.968	97.986	98.004	98.022	
## ## Variance	Dim.226 7.380	Dim.227 7.295	Dim.228 7.171	Dim.229 7.139	Dim.230 7.066	
## % of var.	0.018	0.017	0.017	0.017	0.017	
## Cumulative % of var.	98.039	98.057	98.074	98.091	98.108	
##	Dim.231	Dim.232	Dim.233	Dim.234	Dim.235	
## Variance	6.982	6.966	6.898	6.861	6.811	
## % of var.	0.982	0.900	0.016	0.801	0.016	
## Cumulative % of var.	98.124	98.141	98.157	98.173	98.190	
##	Dim.236	Dim.237	Dim.238	Dim.239	Dim.240	
## Variance	6.726	6.659	6.631	6.563	6.485	
## % of var.	0.016	0.016	0.016	0.016	0.015	
## Cumulative % of var.	98.206	98.222	98.237	98.253	98.268	
##	Dim.241	Dim.242	Dim.243	Dim.244	Dim.245	
## Variance	6.449	6.408	6.366	6.331	6.306	
## % of var.	0.015	0.015	0.015	0.015	0.015	
## Cumulative % of var.	98.284	98.299	98.314	98.329	98.344	
##	Dim.246	Dim.247	Dim.248	Dim.249	Dim.250	
## Variance	6.230	6.177	6.149	6.014	6.005	
## % of var.	0.015	0.015	0.015	0.014	0.014	
## Cumulative % of var.	98.359	98.374	98.388	98.403	98.417	
##	Dim.251	Dim.252	Dim.253	Dim.254	Dim.255	
## Variance	5.957	5.900	5.878	5.854	5.783	
## % of var.	0.014	0.014	0.014	0.014	0.014	
## Cumulative % of var.	98.431	98.445	98.459	98.473	98.487	
##	Dim.256	Dim.257	Dim.258	Dim.259	Dim.260	
## Variance	5.769	5.685	5.658	5.632	5.605	
## % of var.	0.014	0.014	0.013	0.013	0.013	
## Cumulative % of var.	98.501	98.514	98.528	98.541	98.555	
##	Dim.261	Dim.262	Dim.263	Dim.264	Dim.265	
## Variance	5.539	5.491	5.438	5.435	5.400	
## % of var.	0.013	0.013	0.013	0.013	0.013	
## Cumulative % of var.	98.568	98.581	98.594	98.607	98.620	
##	Dim.266	Dim.267	Dim.268	Dim.269	Dim.270	
## Variance	5.343	5.329	5.233	5.218	5.188	
## % of var.	0.013	0.013	0.012	0.012	0.012	

	Cumulative % of	var.	98.632	98.645	98.657	98.670	98.682	
##			Dim.271	Dim.272	Dim.273	Dim.274	Dim.275	
	Variance		5.123	5.080	5.060	5.041	4.981	
	% of var.		0.012	0.012	0.012	0.012	0.012	
	Cumulative % of	var.	98.694	98.706	98.719	98.731	98.742	
##	Vaniance		Dim.276	Dim.277	Dim.278	Dim.279	Dim.280	
	Variance % of var.		4.964	4.911	4.873 0.012	4.857	4.850	
	Cumulative % of	van.	0.012	0.012		0.012	0.012	
##	Cumulative % or	vai.	98.754 Dim.281	98.766 Dim.282	98.777 Dim.283	98.789 Dim.284	98.801 Dim.285	
	Variance		4.817	4.797	4.743	4.690	4.672	
	% of var.		0.011	0.011	0.011	0.011	0.011	
	Cumulative % of	van	98.812	98.823	98.835	98.846	98.857	
##	Cumulactive % Of	vai .	Dim.286	Dim.287	Dim.288	Dim.289	Dim.290	
	Variance		4.640	4.599	4.585	4.555	4.495	
	% of var.		0.011	0.011	0.011	0.011	0.011	
	Cumulative % of	var	98.868	98.879	98.890	98.901	98.912	
##	Cumulacive % of	vai .	Dim.291	Dim.292	Dim.293	Dim.294	Dim.295	
	Variance		4.487	4.459	4.427	4.403	4.373	
	% of var.		0.011	0.011	0.011	0.010	0.010	
##		var	98.922	98.933	98.943	98.954	98.964	
##	Cumulacive 70 Of	vai .	Dim.296	Dim.297	Dim.298	Dim.299	Dim.300	
	Variance		4.344	4.304	4.278	4.250	4.174	
	% of var.		0.010	0.010	0.010	0.010	0.010	
	Cumulative % of	var.	98.975	98.985	98.995	99.005	99.015	
##		• • • •	Dim.301	Dim.302	Dim.303	Dim.304	Dim.305	
	Variance		4.159	4.147	4.104	4.099	4.041	
	% of var.		0.010	0.010	0.010	0.010	0.010	
	Cumulative % of	var.	99.025	99.035	99.045	99.054	99.064	
##			Dim.306	Dim.307	Dim.308	Dim.309	Dim.310	
	Variance		4.012	3.996	3.948	3.919	3.906	
	% of var.		0.010	0.010	0.009	0.009	0.009	
##	Cumulative % of	var.	99.074	99.083	99.092	99.102	99.111	
##			Dim.311	Dim.312	Dim.313	Dim.314	Dim.315	
##	Variance		3.889	3.875	3.839	3.785	3.741	
##	% of var.		0.009	0.009	0.009	0.009	0.009	
##	Cumulative % of	var.	99.120	99.130	99.139	99.148	99.157	
##			Dim.316	Dim.317	Dim.318	Dim.319	Dim.320	
##	Variance		3.724	3.682	3.668	3.644	3.624	
##	% of var.		0.009	0.009	0.009	0.009	0.009	
##	Cumulative % of	var.	99.166	99.174	99.183	99.192	99.200	
##			Dim.321	Dim.322	Dim.323	Dim.324	Dim.325	
##	Variance		3.582	3.576	3.538	3.490	3.472	
##	% of var.		0.009	0.009	0.008	0.008	0.008	
	Cumulative % of	var.	99.209	99.217	99.226	99.234	99.242	
##			Dim.326	Dim.327	Dim.328	Dim.329	Dim.330	
	Variance		3.443	3.392	3.378	3.353	3.342	
	% of var.		0.008	0.008	0.008	0.008	0.008	
	Cumulative % of	var.	99.251	99.259	99.267	99.275	99.283	
##			Dim.331	Dim.332	Dim.333	Dim.334	Dim.335	

## Variance	3.335	3.289	3.266	3.250	3.243	
## % of var.	0.008	0.008	0.008	0.008	0.008	
## Cumulative % of var.	99.291	99.298	99.306	99.314	99.322	
##	Dim.336	Dim.337	Dim.338	Dim.339	Dim.340	
## Variance	3.228	3.202	3.183	3.169	3.157	
## % of var.	0.008	0.008	0.008	0.008	0.008	
## Cumulative % of var.	99.329	99.337	99.345	99.352	99.360	
##	Dim.341	Dim.342	Dim.343	Dim.344	Dim.345	
## Variance	3.103	3.083	3.070	3.052	3.031	
## % of var.	0.007	0.007	0.007	0.007	0.007	
## Cumulative % of var.	99.367	99.374	99.382	99.389	99.396	
##	Dim.346	Dim.347	Dim.348	Dim.349	Dim.350	
## Variance	3.011	3.002	2.950	2.918	2.889	
## % of var.	0.007	0.007	0.007	0.007	0.007	
## Cumulative % of var.	99.403	99.410	99.417	99.424	99.431	
##	Dim.351	Dim.352	Dim.353	Dim.354	Dim.355	
## Variance	2.832	2.819	2.810	2.768	2.757	
## % of var.	0.007	0.007	0.007	0.007	0.007	
## Cumulative % of var.	99.438	99.445	99.451	99.458	99.465	
##	Dim.356	Dim.357	Dim.358	Dim.359	Dim.360	
## Variance	2.733	2.709	2.695	2.678	2.671	
## % of var.	0.007	0.006	0.006	0.006	0.006	
## Cumulative % of var.	99.471	99.478	99.484	99.490	99.497	
##	Dim.361	Dim.362	Dim.363	Dim.364	Dim.365	
## Variance	2.652	2.645	2.610	2.542	2.519	
## % of var.	0.006	0.006	0.006	0.006	0.006	
## Cumulative % of var.	99.503	99.509	99.516	99.522	99.528	
##	Dim.366	Dim.367	Dim.368	Dim.369	Dim.370	
## Variance	2.515	2.492	2.468	2.448	2.434	
## % of var.	0.006	0.006	0.006	0.006	0.006	
## Cumulative % of var.	99.534	99.539	99.545	99.551	99.557	
##	Dim.371	Dim.372	Dim.373	Dim.374	Dim.375	
## Variance	2.412	2.378	2.340	2.326	2.306	
## % of var.	0.006	0.006	0.006	0.006	0.005	
## Cumulative % of var.	99.563	99.568	99.574	99.580	99.585	
##	Dim.376	Dim.377	Dim.378	Dim.379	Dim.380	
## Variance	2.300	2.281	2.263	2.240	2.216	
## % of var.	0.005	0.005	0.005	0.005	0.005	
## Cumulative % of var.	99.590	99.596	99.601	99.607	99.612	
##	Dim.381	Dim.382	Dim.383	Dim.384	Dim.385	
## Variance	2.203	2.175	2.146	2.087	2.077	
## % of var.	0.005	0.005	0.005	0.005	0.005	
## Cumulative % of var.	99.617	99.622	99.627	99.632	99.637	
##	Dim.386	Dim.387	Dim.388	Dim.389	Dim.390	
## Variance	2.044	2.036	2.020	1.995	1.976	
## % of var.	0.005	0.005	0.005	0.005	0.005	
## Cumulative % of var.	99.642	99.647	99.652	99.657	99.661	
##	Dim.391	Dim.392	Dim.393	Dim.394	Dim.395	
## Variance	1.959	1.942	1.918	1.895	1.886	
## % of var.	0.005	0.005	0.005	0.005	0.004	
	2.005	2.005	2.003	2.003	2.001	

## Cumulative % of var.	99.666	99.671	99.675	99.680	99.684
##	Dim.396	Dim.397	Dim.398	Dim.399	Dim.400
## Variance	1.849	1.820	1.810	1.779	1.761
## % of var.	0.004	0.004	0.004	0.004	0.004
## Cumulative % of var.	99.689	99.693	99.697	99.701	99.706
## \/anianaa	Dim.401	Dim.402	Dim.403	Dim.404	Dim.405
## Variance ## % of var.	1.746 0.004	1.731	1.714	1.701	1.676
		0.004	0.004	0.004	0.004
<pre>## Cumulative % of var. ##</pre>	99.710 Dim.406	99.714 Dim.407	99.718	99.722	99.726 Dim.410
## Variance	1.670	1.633	Dim.408 1.619	Dim.409 1.590	1.581
## % of var.	0.004	0.004	0.004	0.004	0.004
## Cumulative % of var.	99.730	99.734	99.738	99.742	99.745
##	Dim.411	Dim.412	Dim.413	Dim.414	Dim.415
## Variance	1.570	1.554	1.545	1.538	1.516
## % of var.	0.004	0.004	0.004	0.004	0.004
## Cumulative % of var.	99.749	99.753	99.756	99.760	99.764
##	Dim.416	Dim.417	Dim.418	Dim.419	Dim.420
## Variance	1.512	1.502	1.484	1.462	1.435
## % of var.	0.004	0.004	0.004	0.003	0.003
## Cumulative % of var.	99.767	99.771	99.774	99.778	99.781
##	Dim.421	Dim.422	Dim.423	Dim.424	Dim.425
## Variance	1.421	1.390	1.380	1.369	1.344
## % of var.	0.003	0.003	0.003	0.003	0.003
## Cumulative % of var.	99.785	99.788	99.791	99.795	99.798
##	Dim.426	Dim.427	Dim.428	Dim.429	Dim.430
## Variance	1.335	1.292	1.289	1.277	1.236
## % of var.	0.003	0.003	0.003	0.003	0.003
## Cumulative % of var.	99.801	99.804	99.807	99.810	99.813
##	Dim.431	Dim.432	Dim.433	Dim.434	Dim.435
## Variance	1.213	1.205	1.200	1.189	1.172
## % of var.	0.003	0.003	0.003	0.003	0.003
## Cumulative % of var.	99.816	99.819	99.822	99.825	99.827
##	Dim.436	Dim.437	Dim.438	Dim.439	Dim.440
## Variance	1.148	1.132	1.114	1.103	1.096
## % of var.	0.003	0.003	0.003	0.003	0.003
## Cumulative % of var.	99.830	99.833	99.835	99.838	99.841
##	Dim.441	Dim.442	Dim.443	Dim.444	Dim.445
## Variance	1.085	1.057	1.053	1.031	1.027
## % of var.	0.003	0.003	0.003	0.002	0.002
## Cumulative % of var.	99.843	99.846	99.848	99.851	99.853
##	Dim.446	Dim.447	Dim.448	Dim.449	Dim.450
## Variance	1.019	0.999	0.986	0.973	0.960
## % of var.	0.002	0.002	0.002	0.002	0.002
## Cumulative % of var.	99.856	99.858	99.860	99.863	99.865
##	Dim.451	Dim.452	Dim.453	Dim.454	Dim.455
## Variance	0.958	0.934	0.912	0.896	0.892
## % of var.	0.002	0.002	0.002	0.002	0.002
## Cumulative % of var.	99.867	99.869	99.872	99.874	99.876
##	Dim.456	Dim.457	Dim.458	Dim.459	Dim.460

## Variance	0.887	0.868	0.863	0.857	0.831	
## % of var.	0.002	0.002	0.002	0.002	0.002	
## Cumulative % of var.	99.878	99.880	99.882	99.884	99.886	
##	Dim.461	Dim.462	Dim.463	Dim.464	Dim.465	
## Variance	0.819	0.810	0.800	0.771	0.761	
## % of var.	0.002	0.002	0.002	0.002	0.002	
## Cumulative % of var.	99.888	99.890	99.892	99.894	99.895	
##	Dim.466	Dim.467	Dim.468	Dim.469	Dim.470	
## Variance	0.758	0.753	0.745	0.736	0.727	
## % of var.	0.002	0.002	0.002	0.002	0.002	
## Cumulative % of var.	99.897	99.899	99.901	99.903	99.904	
## ## \/anianaa	Dim.471	Dim.472	Dim.473	Dim.474	Dim.475	
## Variance	0.719	0.707	0.700	0.691	0.683	
## % of var.	0.002	0.002	0.002	0.002	0.002	
## Cumulative % of var.	99.906	99.908	99.909	99.911	99.913	
## ## \/anianaa	Dim.476	Dim.477	Dim.478	Dim.479	Dim.480	
## Variance	0.679	0.673	0.651	0.642	0.627	
## % of var.	0.002	0.002	0.002	0.002	0.001	
## Cumulative % of var.	99.914	99.916	99.917	99.919	99.920	
## ## \/anianaa	Dim.481	Dim.482	Dim.483	Dim.484	Dim.485	
## Variance	0.619	0.612	0.604	0.591	0.580	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.922	99.923	99.925	99.926	99.928	
## ## \/anianaa	Dim.486	Dim.487	Dim.488	Dim.489	Dim.490	
## Variance	0.572	0.568	0.559	0.553	0.546	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.929	99.930	99.932	99.933	99.934	
## ## \/anianaa	Dim.491	Dim.492	Dim.493	Dim.494	Dim.495	
## Variance	0.535	0.532	0.518	0.510	0.500	
## % of var.	0.001	0.001	0.001	0.001	0.001	
<pre>## Cumulative % of var. ##</pre>	99.936	99.937 Dim.497	99.938	99.939	99.940	
## Variance	Dim.496		Dim.498	Dim.499	Dim.500	
## % of var.	0.483 0.001	0.480 0.001	0.472 0.001	0.467	0.458 0.001	
## Cumulative % of var.	99.942	99.943	99.944	0.001 99.945	99.946	
## Cumulative % Or var.			Dim.503			
## Variance	Dim.501 0.457	Dim.502 0.452		Dim.504 0.441	Dim.505	
## % of var.	0.457		0.445 0.001		0.431	
## Cumulative % of var.	99.947	0.001 99.948	99.949	0.001	0.001	
## Cumulative % of var.				99.950	99.951	
## ## Variance	Dim.506	Dim.507	Dim.508	Dim.509	Dim.510	
## % of var.	0.412	0.403	0.397	0.392	0.386	
	0.001	0.001	0.001	0.001	0.001	
<pre>## Cumulative % of var. ##</pre>	99.952	99.953 Dim.512	99.954	99.955	99.956	
	Dim.511		Dim.513	Dim.514	Dim.515	
## Variance	0.383	0.376	0.373	0.365	0.355	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.957	99.958	99.959	99.960	99.961	
##	Dim.516	Dim.517	Dim.518	Dim.519	Dim.520	
## Variance	0.350	0.348	0.346	0.343	0.337	
## % of var.	0.001	0.001	0.001	0.001	0.001	

	Cumulative % of var.	99.961	99.962	99.963	99.964	99.965	
##		Dim.521	Dim.522	Dim.523	Dim.524	Dim.525	
	Variance	0.327	0.326	0.315	0.311	0.311	
	% of var.	0.001	0.001	0.001	0.001	0.001	
	Cumulative % of var.	99.965	99.966	99.967	99.968	99.968	
##		Dim.526	Dim.527	Dim.528	Dim.529	Dim.530	
	Variance	0.307	0.302	0.299	0.297	0.279	
	% of var.	0.001	0.001	0.001	0.001	0.001	
	Cumulative % of var.	99.969	99.970	99.971	99.971	99.972	
##	Manakanan	Dim.531	Dim.532	Dim.533	Dim.534	Dim.535	
	Variance	0.278	0.268	0.264	0.261	0.256	
	% of var.	0.001	0.001	0.001	0.001	0.001	
	Cumulative % of var.	99.973	99.973	99.974	99.975	99.975	
##	Manakanan	Dim.536	Dim.537	Dim.538	Dim.539	Dim.540	
	Variance	0.253	0.247	0.241	0.234	0.232	
	% of var.	0.001	0.001	0.001	0.001	0.001	
	Cumulative % of var.	99.976	99.976	99.977	99.977	99.978	
##	Maniana	Dim.541	Dim.542	Dim.543	Dim.544	Dim.545	
	Variance	0.229	0.227	0.220	0.218	0.217	
	% of var.	0.001	0.001	0.001	0.001	0.001	
	Cumulative % of var.	99.979	99.979	99.980	99.980	99.981	
##	Maniana	Dim.546	Dim.547	Dim.548	Dim.549	Dim.550	
	Variance	0.214	0.205	0.195	0.194	0.186	
	% of var.	0.001	0.000	0.000	0.000	0.000	
	Cumulative % of var.	99.981	99.982	99.982	99.983	99.983	
##		Dim.551	Dim.552	Dim.553	Dim.554	Dim.555	
	Variance	0.182	0.180	0.173	0.171	0.165	
	% of var.	0.000	0.000	0.000	0.000	0.000	
	Cumulative % of var.	99.983	99.984	99.984	99.985	99.985	
##		Dim.556	Dim.557	Dim.558	Dim.559	Dim.560	
	Variance	0.163	0.161	0.159	0.152	0.150	
	% of var.	0.000	0.000	0.000	0.000	0.000	
	Cumulative % of var.	99.985	99.986	99.986	99.987	99.987	
##	Manakanan	Dim.561	Dim.562	Dim.563	Dim.564	Dim.565	
	Variance	0.148	0.146	0.144	0.142	0.135	
	% of var.	0.000	0.000	0.000	0.000	0.000	
	Cumulative % of var.	99.987	99.988	99.988	99.988	99.989	
##	Manakanan	Dim.566	Dim.567	Dim.568	Dim.569	Dim.570	
	Variance	0.133	0.131	0.123	0.121	0.121	
	% of var.	0.000	0.000	0.000	0.000	0.000	
	Cumulative % of var.	99.989	99.989	99.990	99.990	99.990	
##	.,	Dim.571	Dim.572	Dim.573	Dim.574	Dim.575	
	Variance	0.119	0.118	0.118	0.114	0.113	
	% of var.	0.000	0.000	0.000	0.000	0.000	
	Cumulative % of var.	99.990	99.991	99.991	99.991	99.992	
##	V	Dim.576	Dim.577	Dim.578	Dim.579	Dim.580	
	Variance	0.107	0.104	0.103	0.098	0.096	
	% of var.	0.000	0.000	0.000	0.000	0.000	
	Cumulative % of var.	99.992	99.992	99.992	99.993	99.993	
##		Dim.581	Dim.582	Dim.583	Dim.584	Dim.585	

	Variance	0.0		0.085	
	% of var.	0.0			
	Cumulative % of va				
##		Dim.5			
	Variance	0.0		0.074	
	% of var.	0.0			
	Cumulative % of va			99.995	
##		Dim.5			
	Variance	0.0		0.066	
	% of var.	0.0			
	Cumulative % of va				
##	., .	Dim.5			
	Variance % - Cours	0.0			
	% of var.	0.0			
	Cumulative % of va				
##	V	Dim.6			
	Variance %	0.0			
	% of var.	0.0			
	Cumulative % of va				
##	Vaniana	Dim.6			
	Variance % of war	0.0		0.044	
	% of var. Cumulative % of va	0.0 ar. 99.9			
	Cumulative % or va				
##	Variance	Dim.6 0.0		Dim.615 0.034	
	% of var.	0.0			
	% or var. Cumulative % of va				
##	Cumulative % of va	ar. 99.9 Dim.6			
	Variance	0.0		0.031	
	% of var.	0.0			
	% or var. Cumulative % of va				
##	Cumulative % Of va	Dim.6			
	Variance	0.0		0.027	
	% of var.	0.0		0.027	
	% or var. Cumulative % of va				
##	Camaracive % Of ve	Dim.6			
	Variance	0.0			
	% of var.	0.0			
	Cumulative % of va			99.999	
##	camaracive % or ve	Dim.6			
	Variance	0.0		0.020	
	% of var.	0.0		0.000	
	Cumulative % of va				
##	camaractive % of the	Dim.6			
	Variance	0.0		0.016	
	% of var.	0.0		0.000	
	Cumulative % of va				
##		Dim.6			
	Variance	0.0		0.013	
	% of var.	0.0		0.000	

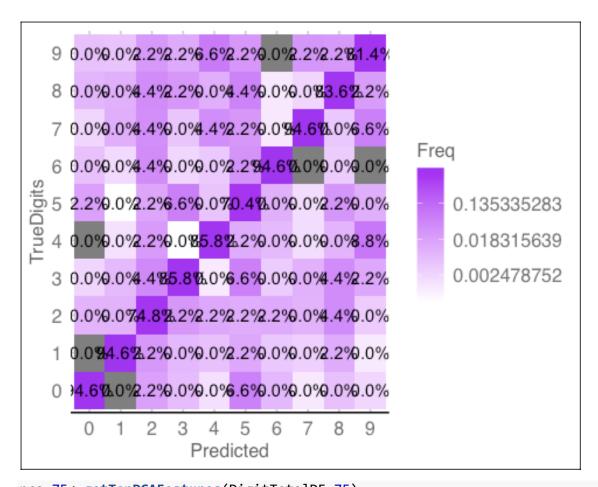
## Cumulative % of var.	99.999	99.999	99.999	100.000	100.000
##	Dim.646	Dim.647	Dim.648	Dim.649	Dim.650
## Variance	0.011	0.011	0.010	0.010	0.009
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.651	Dim.652	Dim.653	Dim.654	Dim.655
## Variance	0.009	0.009	0.008	0.008	0.007
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.656	Dim.657	Dim.658	Dim.659	Dim.660
## Variance	0.007	0.007	0.007	0.006	0.006
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
## ##	Dim.661	Dim.662	Dim.663	Dim.664	Dim.665
## Variance	0.006	0.006	0.006	0.004	0.004
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
## \/anianca	Dim.666	Dim.667	Dim.668	Dim.669	Dim.670
## Variance ## % of var.	0.004	0.003	0.003	0.003	0.003
## Cumulative % of var.	0.000	0.000	0.000	0.000	0.000
	100.000	100.000	100.000	100.000	100.000
## ## Variance	Dim.671 0.002	Dim.672 0.002	Dim.673 0.002	Dim.674 0.002	Dim.675 0.002
## % of var.					
## Cumulative % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % or var.	100.000 Dim.676	100.000 Dim.677	100.000 Dim.678	100.000 Dim.679	100.000 Dim.680
## Variance	0.001	0.001	0.001	0.001	
## % of var.	0.001	0.001	0.001	0.001	0.001 0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.681	Dim.682	Dim.683	Dim.684	Dim.685
## Variance	0.001	0.001	0.001	0.001	0.001
## % of var.	0.001	0.001	0.001	0.001	0.001
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.686	Dim.687	Dim.688	Dim.689	Dim.690
## Variance	0.001	0.001	0.000	0.000	0.000
## % of var.	0.001	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.691	Dim.692	Dim.693	Dim.694	Dim.695
## Variance	0.000	0.000	0.000	0.000	0.000
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.696	Dim.697	Dim.698	Dim.699	Dim.700
## Variance	0.000	0.000	0.000	0.000	0.000
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.701	Dim.702	Dim.703	Dim.704	Dim.705
## Variance	0.000	0.000	0.000	0.000	0.000
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.706	Dim.707	Dim.708	Dim.709	Dim.710
		,			

## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.711	Dim.712	Dim.713	Dim.714	Dim.715	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.716	Dim.717	Dim.718	Dim.719	Dim.720	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.721	Dim.722	Dim.723	Dim.724	Dim.725	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.726	Dim.727	Dim.728	Dim.729	Dim.730	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.731	Dim.732	Dim.733	Dim.734	Dim.735	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.736	Dim.737	Dim.738	Dim.739	Dim.740	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.741	Dim.742	Dim.743	Dim.744	Dim.745	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.746	Dim.747	Dim.748	Dim.749	Dim.750	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
## ## Vanianaa	Dim.751	Dim.752	Dim.753	Dim.754	Dim.755	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.756	Dim.757	Dim.758	Dim.759	Dim.760	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.761	Dim.762	Dim.763	Dim.764	Dim.765	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
## ## Vanianaa	Dim.766	Dim.767	Dim.768	Dim.769	Dim.770	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	

```
## Cumulative % of var.
                           100.000
                                      100.000
                                                100.000
                                                           100.000
                                                                     100.000
##
                           Dim.771
                                      Dim. 772
                                                Dim.773
                                                           Dim.774
                                                                     Dim.775
## Variance
                                        0.000
                                                  0.000
                                                             0.000
                                                                        0.000
                             0.000
## % of var.
                             0.000
                                        0.000
                                                  0.000
                                                             0.000
                                                                        0.000
## Cumulative % of var.
                           100.000
                                      100.000
                                                100.000
                                                           100.000
                                                                     100.000
                                                           Dim.779
##
                           Dim.776
                                      Dim.777
                                                Dim.778
                                                                     Dim.780
## Variance
                             0.000
                                        0.000
                                                  0.000
                                                             0.000
                                                                        0.000
## % of var.
                             0.000
                                        0.000
                                                  0.000
                                                             0.000
                                                                        0.000
## Cumulative % of var.
                           100.000
                                      100.000
                                                100.000
                                                           100.000
                                                                      100.000
##
                           Dim. 781
                                      Dim. 782
                                                Dim.783
## Variance
                                        0.000
                             0.000
                                                  0.000
## % of var.
                             0.000
                                        0.000
                                                  0.000
## Cumulative % of var.
                           100.000
                                      100.000
                                                100.000
##
## Individuals (the 10 first)
##
                                                    Dim.2
                Dist
                         Dim.1
                                    ctr
                                           cos2
                                                               ctr
                                                                      cos2
Dim.3
             87.988 | -85.829
                                          0.952 | -10.867
## 0
                                 0.072
                                                             0.006
                                                                     0.015
9.555
## 1
             87.988 | -85.829
                                 0.072
                                          0.952 | -10.867
                                                             0.006
                                                                     0.015
9.555
## 2
             87.988 | -85.829
                                 0.072
                                          0.952 | -10.867
                                                             0.006
                                                                     0.015
9.555
             87.988 | -85.829
                                 0.072
                                          0.952 | -10.867
                                                             0.006
                                                                     0.015
## 3
9.555
## 4
             87.988 | -85.829
                                 0.072
                                          0.952 | -10.867
                                                             0.006
                                                                     0.015
9.555
## 5
             87.988 | -85.829
                                 0.072
                                          0.952 | -10.867
                                                             0.006
                                                                     0.015
9.555
                                          0.952 | -10.867
             87.988 | -85.829
                                                             0.006
                                                                     0.015
## 6
                                 0.072
9.555
## 7
             87.988 | -85.829
                                 0.072
                                          0.952 | -10.867
                                                             0.006
                                                                     0.015
9.555
                                          0.952 | -10.867
## 8
             87.988 | -85.829
                                 0.072
                                                             0.006
                                                                     0.015
9.555
             87.988 | -85.829
                                          0.952 | -10.867
## 9
                                 0.072
                                                             0.006
                                                                     0.015
9.555
##
              ctr
                      cos2
## 0
            0.005
                     0.012
## 1
            0.005
                     0.012
## 2
            0.005
                     0.012
## 3
            0.005
                     0.012
## 4
            0.005
                     0.012
## 5
            0.005
                     0.012
## 6
            0.005
                     0.012
## 7
            0.005
                     0.012
## 8
            0.005
                     0.012
## 9
            0.005
                     0.012 |
##
## Variables (the 10 first)
```

```
Dim.1 ctr cos2 Dim.2 ctr cos2 Dim.3 ctr
##
cos2
## V1
          0.419 0.001 0.176 | -0.407 0.006 0.165 | 0.198 0.002
0.039
## V2
         0.501 0.002 0.251 | 0.374 0.005 0.140 | 0.434 0.009
0.189
## V3
          0.534 0.002 0.285 | -0.467 0.008 0.218 | -0.077 0.000
0.006
          0.269 0.001 0.073 | 0.244 0.002 0.060 | -0.020 0.000
## V4
0.000
## V5
          0.452 0.002 0.205 | 0.373 0.005 0.139 | 0.449 0.009
0.202
## V6
          0.576 0.003 0.332 | 0.350 0.005 0.122 | 0.116 0.001
0.013
## V7
          0.502 0.002 0.252 | -0.054 0.000 0.003 | -0.407 0.008
0.166
## V8
          0.347 0.001 0.120 | 0.069 0.000 0.005 | 0.021 0.000
0.000
## V9
          0.640 0.003 0.410 | 0.221 0.002 0.049 | 0.050 0.000
0.002
## V10
          0.570 0.003 0.325 | -0.084 0.000 0.007 | 0.337 0.005
0.114
model_nb_100<-runNB(pca_100)</pre>
##
## ====== Naive Bayes
_____
## - Call: naive bayes.formula(formula = label ~ ., data = trainDF)
## - Laplace: 0
## - Classes: 10
## - Samples: 25205
## - Features: 100
## - Conditional distributions:
##
      - Gaussian: 100
## - Prior probabilities:
##
      - 0: 0.0984
      - 1: 0.1115
##
##
      - 2: 0.0995
##
      - 3: 0.1036
##
      - 4: 0.097
##
      - 5: 0.0903
##
      - 6: 0.0985
##
      - 7: 0.1048
##
      - 8: 0.0967
      - 9: 0.0997
##
## -----
```

```
## Warning: predict.naive_bayes(): more features in the newdata are provided
## there are probability tables in the object. Calculation is performed based
on
## features to be found in the tables.
##
             TrueDigits
                            2
                                                                  9
## Predicted
                                 3
                                            5
                                                             8
                                       4
                                                  6
                                                                  9
##
            0 1470
                       0
                           14
                                 4
                                       0
                                           29
                                                  9
                                                       4
                                                            13
                                       3
                                                            19
                                                                  9
##
            1
                 0 1743
                           17
                                13
                                            1
                                                  4
                                                      20
##
            2
                37
                     49 1450
                                      44
                                           29
                                                 77
                                                      71
                                                            76
                                                                 49
                                84
            3
                11
                      13
                           43 1425
                                       1
                                          105
                                                       8
                                                            44
                                                                 22
##
##
            4
                 3
                      9
                           23
                                  2 1393
                                            8
                                                  7
                                                      61
                                                            18
                                                                116
##
            5
               104
                     26
                           21
                               107
                                      22 1267
                                                 53
                                                      47
                                                            97
                                                                 47
##
            6
                12
                      7
                           20
                                 6
                                      11
                                           16 1494
                                                       2
                                                             2
                                                                  0
            7
                      5
                                       3
                                                  0 1442
                                                             4
                                                                 41
##
                 2
                           14
                                15
                                            3
            8
                 9
##
                     19
                           62
                                60
                                                  6
                                                        7 1317
                                                                 38
                                      14
                                           42
            9
##
                 4
                      2
                                24
                                                      98
                                     137
                                           18
                                                  0
                                                            35 1344
##
                                                                       AccuracyNull
         Accuracy
                             Kappa
                                     AccuracyLower
                                                     AccuracyUpper
                                         0.8486938
                                                          0.8594298
                                                                          0.1115213
##
        0.8541233
                         0.8379083
## AccuracyPValue
                    McnemarPValue
        0.0000000
##
                               NaN
## Warning: Transformation introduced infinite values in discrete y-axis
```



```
pca_75<-getTopPCAFeatures(DigitTotalDF,75)</pre>
##
## Call:
## PCA(X = t(select(df, -label)), ncp = ncp, graph = FALSE)
##
##
## Eigenvalues
##
                             Dim.1
                                        Dim.2
                                                  Dim.3
                                                             Dim.4
                                                                       Dim.5
## Variance
                         12975.886
                                    2635.187
                                               2146.048 1747.535 1465.951
## % of var.
                            30.895
                                        6.274
                                                  5.110
                                                            4.161
                                                                       3.490
## Cumulative % of var.
                            30.895
                                      37.169
                                                 42.279
                                                           46.440
                                                                      49.930
##
                             Dim.6
                                        Dim.7
                                                  Dim.8
                                                             Dim.9
                                                                      Dim.10
## Variance
                          1358.547
                                    1135.701
                                                884.896
                                                          855.251
                                                                     734.998
## % of var.
                                                                       1.750
                             3.235
                                        2.704
                                                  2.107
                                                             2.036
## Cumulative % of var.
                            53.165
                                      55.869
                                                 57.976
                                                           60.012
                                                                      61.762
##
                            Dim.11
                                      Dim.12
                                                Dim.13
                                                           Dim.14
                                                                      Dim.15
## Variance
                           664.973
                                                          515.912
                                     634.157
                                                551.036
                                                                     483.259
## % of var.
                             1.583
                                       1.510
                                                  1.312
                                                            1.228
                                                                       1.151
## Cumulative % of var.
                                                           67.395
                            63.345
                                      64.855
                                                 66.167
                                                                      68.546
##
                            Dim. 16
                                      Dim.17
                                                 Dim.18
                                                           Dim.19
                                                                      Dim.20
## Variance
                           451.099
                                     420.945
                                                388.013
                                                           361.053
                                                                     349.113
## % of var.
                             1.074
                                        1.002
                                                  0.924
                                                             0.860
                                                                       0.831
```

	Cumulative % of v	ar.	69.620	70.622	71.546	72.406	73.237
##			Dim.21	Dim.22	Dim.23	Dim.24	Dim.25
	Variance		329.622	310.712	298.708	281.495	275.884
	% of var.		0.785	0.740	0.711	0.670	0.657
	Cumulative % of v	ar.	74.022	74.762	75.473	76.143	76.800
##			Dim.26	Dim.27	Dim.28	Dim.29	Dim.30
	Variance		268.984	252.330	236.925	226.065	219.194
	% of var.		0.640	0.601	0.564	0.538	0.522
	Cumulative % of v	ar.	77.440	78.041	78.605	79.144	79.665
##			Dim.31	Dim.32	Dim.33	Dim.34	Dim.35
	Variance		203.959	202.286	185.225	181.697	173.988
	% of var.		0.486	0.482	0.441	0.433	0.414
	Cumulative % of v	ar.	80.151	80.633	81.074	81.506	81.921
##			Dim.36	Dim.37	Dim.38	Dim.39	Dim.40
	Variance		172.056	160.255	156.645	149.836	146.561
	% of var.		0.410	0.382	0.373	0.357	0.349
	Cumulative % of v	ar.	82.330	82.712	83.085	83.441	83.790
##			Dim.41	Dim.42	Dim.43	Dim.44	Dim.45
	Variance		140.441	137.162	131.753	125.734	123.529
	% of var.		0.334	0.327	0.314	0.299	0.294
	Cumulative % of v	ar.	84.125	84.451	84.765	85.064	85.359
##			Dim.46	Dim.47	Dim.48	Dim.49	Dim.50
	Variance		122.862	115.733	109.800	108.063	100.205
	% of var.		0.293	0.276	0.261	0.257	0.239
	Cumulative % of v	ar.	85.651	85.927	86.188	86.445	86.684
##			Dim.51	Dim.52	Dim.53	Dim.54	Dim.55
	Variance		99.257	98.063	93.201	92.249	89.483
	% of var.		0.236	0.233	0.222	0.220	0.213
	Cumulative % of v	ar.	86.920	87.154	87.376	87.595	87.808
##			Dim.56	Dim.57	Dim.58	Dim.59	Dim.60
	Variance		87.033	85.270	83.513	81.175	78.975
	% of var.		0.207	0.203	0.199	0.193	0.188
	Cumulative % of v	ar.	88.016	88.219	88.417	88.611	88.799
##			Dim.61	Dim.62	Dim.63	Dim.64	Dim.65
	Variance		76.732	76.033	73.240	71.087	69.891
	% of var.		0.183	0.181	0.174	0.169	0.166
	Cumulative % of v	ar.	88.981	89.163	89.337	89.506	89.673
##			Dim.66	Dim.67	Dim.68	Dim.69	Dim.70
	Variance		67.076	65.846	63.704	62.539	61.504
	% of var.		0.160	0.157	0.152	0.149	0.146
	Cumulative % of v	ar.	89.832	89.989	90.141	90.290	90.436
##			Dim.71	Dim.72	Dim.73	Dim.74	Dim.75
	Variance		58.632	58.470	56.065	55.675	53.772
	% of var.		0.140	0.139	0.133	0.133	0.128
	Cumulative % of v	ar.	90.576	90.715	90.848	90.981	91.109
##			Dim.76	Dim.77	Dim.78	Dim.79	Dim.80
	Variance		52.344	50.752	50.151	47.664	47.097
	% of var.		0.125	0.121	0.119	0.113	0.112
	Cumulative % of v	ar.	91.234	91.354	91.474	91.587	91.699
##			Dim.81	Dim.82	Dim.83	Dim.84	Dim.85

## Variance	45.959	45.670	45.134	43.399	43.159	
## % of var.	0.109	0.109	0.107	0.103	0.103	
## Cumulative % of var.	91.809	91.918	92.025	92.128	92.231	
##	Dim.86	Dim.87	Dim.88	Dim.89	Dim.90	
## Variance	42.732	41.986	40.222	39.688	38.618	
## % of var.	0.102	0.100	0.096	0.094	0.092	
## Cumulative % of var.	92.333	92.433	92.529	92.623	92.715	
##	Dim.91	Dim.92	Dim.93	Dim.94	Dim.95	
## Variance	37.900	37.111	36.558	35.693	35.451	
## % of var.	0.090	0.088	0.087	0.085	0.084	
## Cumulative % of var.	92.805	92.894	92.981	93.066	93.150	
##	Dim.96	Dim.97	Dim.98	Dim.99	Dim.100	
## Variance	35.000	33.741	33.657	33.108	32.255	
## % of var.	0.083	0.080	0.080	0.079	0.077	
## Cumulative % of var.	93.233	93.314	93.394	93.473	93.550	
##	Dim.101	Dim.102	Dim.103	Dim.104	Dim.105	
## Variance	31.708	30.818	30.512	29.322	28.925	
## % of var.	0.075	0.073	0.073	0.070	0.069	
## Cumulative % of var.	93.625	93.698	93.771	93.841	93.910	
##	Dim.106	Dim.107	Dim.108	Dim.109	Dim.110	
## Variance	28.795	27.708	27.390	27.292	26.586	
## % of var.	0.069	0.066	0.065	0.065	0.063	
## Cumulative % of var.	93.978	94.044	94.109	94.174	94.238	
##	Dim.111	Dim.112	Dim.113	Dim.114	Dim.115	
## Variance	26.039	25.709	25.584	25.304	25.182	
## % of var.	0.062	0.061	0.061	0.060	0.060	
## Cumulative % of var.	94.300	94.361	94.422	94.482	94.542	
##	Dim.116	Dim.117	Dim.118	Dim.119	Dim.120	
## Variance	24.206	23.951	23.818	23.054	22.815	
## % of var.	0.058	0.057	0.057	0.055	0.054	
## Cumulative % of var.	94.600	94.657	94.713	94.768	94.823	
##	Dim.121	Dim.122	Dim.123	Dim.124	Dim.125	
## Variance	22.628	22.352	22.224	21.862	21.222	
## % of var.	0.054	0.053	0.053	0.052	0.051	
## Cumulative % of var.	94.877	94.930	94.983	95.035	95.085	
##	Dim.126	Dim.127	Dim.128	Dim.129	Dim.130	
## Variance	21.059	20.634	20.467	20.033	19.894	
## % of var.	0.050	0.049	0.049	0.048	0.047	
## Cumulative % of var.	95.135	95.185	95.233	95.281	95.328	
##	Dim.131	Dim.132	Dim.133	Dim.134	Dim.135	
## Variance	19.503	19.289	19.223	18.915	18.460	
## % of var.	0.046	0.046	0.046	0.045	0.044	
## Cumulative % of var.	95.375	95.421	95.466	95.511	95.555	
##	Dim.136	Dim.137	Dim.138	Dim.139	Dim.140	
## Variance	18.290	18.250	18.088	17.507	17.219	
## % of var.	0.044	0.043	0.043	0.042	0.041	
## Cumulative % of var.	95.599	95.642	95.686	95.727	95.768	
##	Dim.141	Dim.142	Dim.143	Dim.144	Dim.145	
## Variance	16.825	16.398	16.186	16.169	15.900	
## % of var.	0.040	0.039	0.039	0.038	0.038	

## Cumulative % of var.	95.808	95.847	95.886	95.924	95.962
##	Dim.146	Dim.147	Dim.148	Dim.149	Dim.150
## Variance	15.761	15.658	15.577	15.477	15.321
## % of var.	0.038	0.037	0.037	0.037	0.036
## Cumulative % of var.	96.000	96.037	96.074	96.111	96.147
## ## Vanianaa	Dim.151	Dim.152	Dim.153	Dim.154	Dim.155
## Variance	15.094	14.926	14.829	14.612	14.562
## % of var.	0.036	0.036	0.035	0.035	0.035
<pre>## Cumulative % of var. ##</pre>	96.183	96.219 Dim.157	96.254	96.289 Dim.159	96.324
## ## Variance	Dim.156		Dim.158		Dim.160
## % of var.	14.468 0.034	14.192	13.834	13.675	13.475
## Cumulative % of var.	96.358	0.034 96.392	0.033 96.425	0.033 96.457	0.032 96.489
## Cumulative % or var.	Dim.161	Dim.162	Dim.163	96.457 Dim.164	96.469 Dim.165
## Variance	13.389	13.298	13.073	12.872	12.801
## % of var.	0.032	0.032	0.031	0.031	0.030
## Cumulative % of var.	96.521	96.553	96.584	96.615	96.645
##	Dim.166	Dim.167	Dim.168	Dim.169	Dim.170
## Variance	12.616	12.526	12.381	12.338	12.194
## % of var.	0.030	0.030	0.029	0.029	0.029
## Cumulative % of var.	96.675	96.705	96.735	96.764	96.793
##	Dim.171	Dim.172	Dim.173	Dim.174	Dim.175
## Variance	12.051	11.965	11.780	11.716	11.592
## % of var.	0.029	0.028	0.028	0.028	0.028
## Cumulative % of var.	96.822	96.850	96.878	96.906	96.934
##	Dim.176	Dim.177	Dim.178	Dim.179	Dim.180
## Variance	11.287	11.160	11.056	10.858	10.780
## % of var.	0.027	0.027	0.026	0.026	0.026
## Cumulative % of var.	96.961	96.987	97.014	97.039	97.065
##	Dim.181	Dim.182	Dim.183	Dim.184	Dim.185
## Variance	10.626	10.585	10.574	10.451	10.389
## % of var.	0.025	0.025	0.025	0.025	0.025
## Cumulative % of var.	97.090	97.116	97.141	97.166	97.190
##	Dim.186	Dim.187	Dim.188	Dim.189	Dim.190
## Variance	10.327	10.181	10.151	9.965	9.863
## % of var.	0.025	0.024	0.024	0.024	0.023
## Cumulative % of var.	97.215	97.239	97.263	97.287	97.311
##	Dim.191	Dim.192	Dim.193	Dim.194	Dim.195
## Variance	9.825	9.749	9.691	9.637	9.542
## % of var.	0.023	0.023	0.023	0.023	0.023
## Cumulative % of var.	97.334	97.357	97.380	97.403	97.426
##	Dim.196	Dim.197	Dim.198	Dim.199	Dim.200
## Variance	9.502	9.399	9.342	9.198	9.163
## % of var.	0.023	0.022	0.022	0.022	0.022
## Cumulative % of var.	97.448	97.471	97.493	97.515	97.537
##	Dim.201	Dim.202	Dim.203	Dim.204	Dim.205
## Variance	9.071	8.888	8.812	8.673	8.653
## % of var.	0.022	0.021	0.021	0.021	0.021
## Cumulative % of var.	97.558	97.580	97.601	97.621	97.642
##	Dim.206	Dim.207	Dim.208	Dim.209	Dim.210

## Variance	8.584	8.445	8.376	8.341	8.302	
## % of var.	0.020	0.020	0.020	0.020	0.020	
## Cumulative % of var.	97.662	97.682	97.702	97.722	97.742	
##	Dim.211	Dim.212	Dim.213	Dim.214	Dim.215	
## Variance	8.247	8.225	8.151	8.076	8.001	
## % of var.	0.020	0.020	0.019	0.019	0.019	
## Cumulative % of var.	97.762	97.781	97.801	97.820	97.839	
##	Dim.216	Dim.217	Dim.218	Dim.219	Dim.220	
## Variance	7.939	7.859	7.823	7.807	7.708	
## % of var.	0.019	0.019	0.019	0.019	0.018	
## Cumulative % of var.	97.858	97.876	97.895	97.914	97.932	
##	Dim.221	Dim.222	Dim.223	Dim.224	Dim.225	
## Variance	7.679	7.574	7.502	7.472	7.428	
## % of var.	0.018	0.018	0.018	0.018	0.018	
## Cumulative % of var.	97.950	97.968	97.986	98.004	98.022	
##	Dim.226	Dim.227	Dim.228	Dim.229	Dim.230	
## Variance	7.380	7.295	7.171	7.139	7.066	
## % of var.	0.018	0.017	0.017	0.017	0.017	
## Cumulative % of var.	98.039	98.057	98.074	98.091	98.108	
##	Dim.231	Dim.232	Dim.233	Dim.234	Dim.235	
## Variance	6.982	6.966	6.898	6.861	6.811	
## % of var.	0.017	0.017	0.016	0.016	0.016	
## Cumulative % of var.	98.124	98.141	98.157	98.173	98.190	
##	Dim.236	Dim.237	Dim.238	Dim.239	Dim.240	
## Variance	6.726	6.659	6.631	6.563	6.485	
## % of var.	0.016	0.016	0.016	0.016	0.015	
## Cumulative % of var.	98.206	98.222	98.237	98.253	98.268	
##	Dim.241	Dim.242	Dim.243	Dim.244	Dim.245	
## Variance	6.449	6.408	6.366	6.331	6.306	
## % of var.	0.015	0.015	0.015	0.015	0.015	
## Cumulative % of var.	98.284	98.299	98.314	98.329	98.344	
##	Dim.246	Dim.247	Dim.248	Dim.249	Dim.250	
## Variance	6.230	6.177	6.149	6.014	6.005	
## % of var.	0.015	0.015	0.015	0.014	0.014	
## Cumulative % of var.	98.359	98.374	98.388	98.403	98.417	
##	Dim.251	Dim.252	Dim.253	Dim.254	Dim.255	
## Variance	5.957	5.900	5.878	5.854	5.783	
## % of var.	0.014	0.014	0.014	0.014	0.014	
## Cumulative % of var.	98.431	98.445	98.459	98.473	98.487	
##	Dim.256	Dim.257	Dim.258	Dim.259	Dim.260	
## Variance	5.769	5.685	5.658	5.632	5.605	
## % of var.	0.014	0.014	0.013	0.013	0.013	
## Cumulative % of var.	98.501	98.514	98.528	98.541	98.555	
##	Dim.261	Dim.262	Dim.263	Dim.264	Dim.265	
## Variance	5.539	5.491	5.438	5.435	5.400	
## % of var.	0.013	0.013	0.013	0.013	0.013	
## Cumulative % of var.	98.568	98.581	98.594	98.607	98.620	
##	Dim.266	Dim.267	Dim.268	Dim.269	Dim.270	
## Variance	5.343	5.329	5.233	5.218	5.188	
## % of var.	0.013	0.013	0.012	0.012	0.012	

	Cumulative % of	var.	98.632	98.645	98.657	98.670	98.682	
##			Dim.271	Dim.272	Dim.273	Dim.274	Dim.275	
	Variance		5.123	5.080	5.060	5.041	4.981	
	% of var.		0.012	0.012	0.012	0.012	0.012	
	Cumulative % of	var.	98.694	98.706	98.719	98.731	98.742	
##	Vaniance		Dim.276	Dim.277	Dim.278	Dim.279	Dim.280	
	Variance % of var.		4.964	4.911	4.873 0.012	4.857	4.850	
	Cumulative % of	Van	0.012	0.012		0.012	0.012	
##	Cumulative % Of	vai.	98.754 Dim.281	98.766 Dim.282	98.777 Dim.283	98.789 Dim.284	98.801 Dim.285	
	Variance		4.817	4.797	4.743	4.690	4.672	
	% of var.		0.011	0.011	0.011	0.011	0.011	
	Cumulative % of	van	98.812	98.823	98.835	98.846	98.857	
##	Cumulative % Of	vai .	Dim.286	Dim.287	Dim.288	Dim.289	Dim.290	
	Variance		4.640	4.599	4.585	4.555	4.495	
	% of var.		0.011	0.011	0.011	0.011	0.011	
	Cumulative % of	var	98.868	98.879	98.890	98.901	98.912	
##	Cumaracive % or	vai .	Dim.291	Dim.292	Dim.293	Dim.294	Dim.295	
	Variance		4.487	4.459	4.427	4.403	4.373	
	% of var.		0.011	0.011	0.011	0.010	0.010	
		var	98.922	98.933	98.943	98.954	98.964	
##	Cumaracive % Of	vai •	Dim.296	Dim.297	Dim.298	Dim.299	Dim.300	
	Variance		4.344	4.304	4.278	4.250	4.174	
	% of var.		0.010	0.010	0.010	0.010	0.010	
	Cumulative % of	var.	98.975	98.985	98.995	99.005	99.015	
##			Dim.301	Dim.302	Dim.303	Dim.304	Dim.305	
	Variance		4.159	4.147	4.104	4.099	4.041	
	% of var.		0.010	0.010	0.010	0.010	0.010	
	Cumulative % of	var.	99.025	99.035	99.045	99.054	99.064	
##			Dim.306	Dim.307	Dim.308	Dim.309	Dim.310	
##	Variance		4.012	3.996	3.948	3.919	3.906	
##	% of var.		0.010	0.010	0.009	0.009	0.009	
##	Cumulative % of	var.	99.074	99.083	99.092	99.102	99.111	
##			Dim.311	Dim.312	Dim.313	Dim.314	Dim.315	
##	Variance		3.889	3.875	3.839	3.785	3.741	
##	% of var.		0.009	0.009	0.009	0.009	0.009	
##	Cumulative % of	var.	99.120	99.130	99.139	99.148	99.157	
##			Dim.316	Dim.317	Dim.318	Dim.319	Dim.320	
##	Variance		3.724	3.682	3.668	3.644	3.624	
##	% of var.		0.009	0.009	0.009	0.009	0.009	
##	Cumulative % of	var.	99.166	99.174	99.183	99.192	99.200	
##			Dim.321	Dim.322	Dim.323	Dim.324	Dim.325	
##	Variance		3.582	3.576	3.538	3.490	3.472	
	% of var.		0.009	0.009	0.008	0.008	0.008	
	Cumulative % of	var.	99.209	99.217	99.226	99.234	99.242	
##			Dim.326	Dim.327	Dim.328	Dim.329	Dim.330	
	Variance		3.443	3.392	3.378	3.353	3.342	
	% of var.		0.008	0.008	0.008	0.008	0.008	
	Cumulative % of	var.	99.251	99.259	99.267	99.275	99.283	
##			Dim.331	Dim.332	Dim.333	Dim.334	Dim.335	

	Variance		3.335	3.289	3.266	3.250	3.243
	% of var.		0.008	0.008	0.008	0.008	0.008
	Cumulative % of v	/ar.	99.291	99.298	99.306	99.314	99.322
##			Dim.336	Dim.337	Dim.338	Dim.339	Dim.340
	Variance		3.228	3.202	3.183	3.169	3.157
	% of var.		0.008	0.008	0.008	0.008	0.008
	Cumulative % of v	/ar.	99.329	99.337	99.345	99.352	99.360
##			Dim.341	Dim.342	Dim.343	Dim.344	Dim.345
	Variance		3.103	3.083	3.070	3.052	3.031
	% of var.		0.007	0.007	0.007	0.007	0.007
	Cumulative % of v		99.367	99.374	99.382	99.389	99.396
##			Dim.346	Dim.347	Dim.348	Dim.349	Dim.350
	Variance		3.011	3.002	2.950	2.918	2.889
	% of var.		0.007	0.007	0.007	0.007	0.007
	Cumulative % of v	/ar.	99.403	99.410	99.417	99.424	99.431
##			Dim.351	Dim.352	Dim.353	Dim.354	Dim.355
	Variance		2.832	2.819	2.810	2.768	2.757
	% of var.		0.007	0.007	0.007	0.007	0.007
	Cumulative % of v		99.438	99.445	99.451	99.458	99.465
##			Dim.356	Dim.357	Dim.358	Dim.359	Dim.360
	Variance		2.733	2.709	2.695	2.678	2.671
	% of var.		0.007	0.006	0.006	0.006	0.006
##	Cumulative % of v	/ar.	99.471	99.478	99.484	99.490	99.497
##			Dim.361	Dim.362	Dim.363	Dim.364	Dim.365
##	Variance		2.652	2.645	2.610	2.542	2.519
##	% of var.		0.006	0.006	0.006	0.006	0.006
##	Cumulative % of v	/ar.	99.503	99.509	99.516	99.522	99.528
##			Dim.366	Dim.367	Dim.368	Dim.369	Dim.370
##	Variance		2.515	2.492	2.468	2.448	2.434
##	% of var.		0.006	0.006	0.006	0.006	0.006
##	Cumulative % of v	/ar.	99.534	99.539	99.545	99.551	99.557
##			Dim.371	Dim.372	Dim.373	Dim.374	Dim.375
##	Variance		2.412	2.378	2.340	2.326	2.306
	% of var.		0.006	0.006	0.006	0.006	0.005
##	Cumulative % of v	/ar.	99.563	99.568	99.574	99.580	99.585
##			Dim.376	Dim.377	Dim.378	Dim.379	Dim.380
##	Variance		2.300	2.281	2.263	2.240	2.216
##	% of var.		0.005	0.005	0.005	0.005	0.005
##	Cumulative % of v	/ar.	99.590	99.596	99.601	99.607	99.612
##			Dim.381	Dim.382	Dim.383	Dim.384	Dim.385
##	Variance		2.203	2.175	2.146	2.087	2.077
##	% of var.		0.005	0.005	0.005	0.005	0.005
##	Cumulative % of v	/ar.	99.617	99.622	99.627	99.632	99.637
##			Dim.386	Dim.387	Dim.388	Dim.389	Dim.390
##	Variance		2.044	2.036	2.020	1.995	1.976
##	% of var.		0.005	0.005	0.005	0.005	0.005
	Cumulative % of v	/ar.	99.642	99.647	99.652	99.657	99.661
##			Dim.391	Dim.392	Dim.393	Dim.394	Dim.395
##	Variance		1.959	1.942	1.918	1.895	1.886
##	% of var.		0.005	0.005	0.005	0.005	0.004

## Cumulative % of var.	99.666	99.671	99.675	99.680	99.684	
##	Dim.396	Dim.397	Dim.398	Dim.399	Dim.400	
## Variance	1.849	1.820	1.810	1.779	1.761	
## % of var.	0.004	0.004	0.004	0.004	0.004	
## Cumulative % of var.	99.689	99.693	99.697	99.701	99.706	
## ## Vaniance	Dim.401	Dim.402	Dim.403	Dim.404	Dim.405	
<pre>## Variance ## % of var.</pre>	1.746 0.004	1.731	1.714	1.701	1.676	
## Cumulative % of var.		0.004	0.004	0.004	0.004	
##	99.710 Dim.406	99.714 Dim.407	99.718 Dim.408	99.722 Dim.409	99.726 Dim.410	
## Variance	1.670	1.633	1.619	1.590	1.581	
## % of var.	0.004	0.004	0.004	0.004	0.004	
## Cumulative % of var.	99.730	99.734	99.738	99.742	99.745	
##	Dim.411	Dim.412	Dim.413	Dim.414	Dim.415	
## Variance	1.570	1.554	1.545	1.538	1.516	
## % of var.	0.004	0.004	0.004	0.004	0.004	
## Cumulative % of var.	99.749	99.753	99.756	99.760	99.764	
##	Dim.416	Dim.417	Dim.418	Dim.419	Dim.420	
## Variance	1.512	1.502	1.484	1.462	1.435	
## % of var.	0.004	0.004	0.004	0.003	0.003	
## Cumulative % of var.	99.767	99.771	99.774	99.778	99.781	
##	Dim.421	Dim.422	Dim.423	Dim.424	Dim.425	
## Variance	1.421	1.390	1.380	1.369	1.344	
## % of var.	0.003	0.003	0.003	0.003	0.003	
## Cumulative % of var.	99.785	99.788	99.791	99.795	99.798	
##	Dim.426	Dim.427	Dim.428	Dim.429	Dim.430	
## Variance	1.335	1.292	1.289	1.277	1.236	
## % of var.	0.003	0.003	0.003	0.003	0.003	
## Cumulative % of var.	99.801	99.804	99.807	99.810	99.813	
##	Dim.431	Dim.432	Dim.433	Dim.434	Dim.435	
## Variance	1.213	1.205	1.200	1.189	1.172	
## % of var.	0.003	0.003	0.003	0.003	0.003	
## Cumulative % of var.	99.816	99.819	99.822	99.825	99.827	
##	Dim.436	Dim.437	Dim.438	Dim.439	Dim.440	
## Variance	1.148	1.132	1.114	1.103	1.096	
## % of var.	0.003	0.003	0.003	0.003	0.003	
## Cumulative % of var.	99.830	99.833	99.835	99.838	99.841	
##	Dim.441	Dim.442	Dim.443	Dim.444	Dim.445	
## Variance	1.085	1.057	1.053	1.031	1.027	
## % of var.	0.003	0.003	0.003	0.002	0.002	
## Cumulative % of var.	99.843	99.846	99.848	99.851	99.853	
##	Dim.446	Dim.447	Dim.448	Dim.449	Dim.450	
## Variance	1.019	0.999	0.986	0.973	0.960	
## % of var.	0.002	0.002	0.002	0.002	0.002	
## Cumulative % of var.	99.856	99.858	99.860	99.863	99.865	
##	Dim.451	Dim.452	Dim.453	Dim.454	Dim.455	
## Variance	0.958	0.934	0.912	0.896	0.892	
## % of var.	0.002	0.002	0.002	0.002	0.002	
## Cumulative % of var.	99.867	99.869	99.872	99.874	99.876	
##	Dim.456	Dim.457	Dim.458	Dim.459	Dim.460	

## Variance	0.887	0.868	0.863	0.857	0.831	
## % of var.	0.002	0.002	0.002	0.002	0.002	
## Cumulative % of var.	99.878	99.880	99.882	99.884	99.886	
##	Dim.461	Dim.462	Dim.463	Dim.464	Dim.465	
## Variance	0.819	0.810	0.800	0.771	0.761	
## % of var.	0.002	0.002	0.002	0.002	0.002	
## Cumulative % of var.	99.888	99.890	99.892	99.894	99.895	
##	Dim.466	Dim.467	Dim.468	Dim.469	Dim.470	
## Variance	0.758	0.753	0.745	0.736	0.727	
## % of var.	0.002	0.002	0.002	0.002	0.002	
## Cumulative % of var.	99.897	99.899	99.901	99.903	99.904	
##	Dim.471	Dim.472	Dim.473	Dim.474	Dim.475	
## Variance	0.719	0.707	0.700	0.691	0.683	
## % of var.	0.002	0.002	0.002	0.002	0.002	
## Cumulative % of var.	99.906	99.908	99.909	99.911	99.913	
## ## Vanianaa	Dim.476	Dim.477	Dim.478	Dim.479	Dim.480	
## Variance	0.679	0.673	0.651	0.642	0.627	
## % of var.	0.002	0.002	0.002	0.002	0.001	
<pre>## Cumulative % of var. ##</pre>	99.914	99.916	99.917	99.919	99.920	
## ## Variance	Dim.481	Dim.482	Dim.483	Dim.484	Dim.485	
## % of var.	0.619 0.001	0.612 0.001	0.604	0.591	0.580	
## Cumulative % of var.	99.922	99.923	0.001 99.925	0.001 99.926	0.001 99.928	
##	Dim.486	Dim.487	Dim.488	Dim.489	Dim.490	
## Variance	0.572	0.568	0.559	0.553	0.546	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.929	99.930	99.932	99.933	99.934	
##	Dim.491	Dim.492	Dim.493	Dim.494	Dim.495	
## Variance	0.535	0.532	0.518	0.510	0.500	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.936	99.937	99.938	99.939	99.940	
##	Dim.496	Dim.497	Dim.498	Dim.499	Dim.500	
## Variance	0.483	0.480	0.472	0.467	0.458	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.942	99.943	99.944	99.945	99.946	
##	Dim.501	Dim.502	Dim.503	Dim.504	Dim.505	
## Variance	0.457	0.452	0.445	0.441	0.431	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.947	99.948	99.949	99.950	99.951	
##	Dim.506	Dim.507	Dim.508	Dim.509	Dim.510	
## Variance	0.412	0.403	0.397	0.392	0.386	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.952	99.953	99.954	99.955	99.956	
##	Dim.511	Dim.512	Dim.513	Dim.514	Dim.515	
## Variance	0.383	0.376	0.373	0.365	0.355	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.957	99.958	99.959	99.960	99.961	
##	Dim.516	Dim.517	Dim.518	Dim.519	Dim.520	
## Variance	0.350	0.348	0.346	0.343	0.337	
## % of var.	0.001	0.001	0.001	0.001	0.001	

## Cumulative % of var.	99.961	99.962	99.963	99.964	99.965	
##	Dim.521	Dim.522	Dim.523	Dim.524	Dim.525	
## Variance	0.327	0.326	0.315	0.311	0.311	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.965	99.966	99.967	99.968	99.968	
##	Dim.526	Dim.527	Dim.528	Dim.529	Dim.530	
## Variance	0.307	0.302	0.299	0.297	0.279	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.969	99.970	99.971	99.971	99.972	
##	Dim.531	Dim.532	Dim.533	Dim.534	Dim.535	
## Variance	0.278	0.268	0.264	0.261	0.256	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.973	99.973	99.974	99.975	99.975	
##	Dim.536	Dim.537	Dim.538	Dim.539	Dim.540	
## Variance	0.253	0.247	0.241	0.234	0.232	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.976	99.976	99.977	99.977	99.978	
## ## \/anianaa	Dim.541	Dim.542	Dim.543	Dim.544	Dim.545	
## Variance	0.229	0.227	0.220	0.218	0.217	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.979	99.979	99.980	99.980	99.981	
## ## \/anianaa	Dim.546	Dim.547	Dim.548	Dim.549	Dim.550	
## Variance	0.214	0.205	0.195	0.194	0.186	
## % of var.	0.001	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.981	99.982	99.982	99.983	99.983	
##	Dim.551	Dim.552	Dim.553	Dim.554	Dim.555	
## Variance	0.182	0.180	0.173	0.171	0.165	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.983	99.984	99.984	99.985	99.985	
##	Dim.556	Dim.557	Dim.558	Dim.559	Dim.560	
## Variance	0.163	0.161	0.159	0.152	0.150	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.985	99.986	99.986	99.987	99.987	
## ## \/anianaa	Dim.561	Dim.562	Dim.563	Dim.564	Dim.565	
## Variance	0.148	0.146	0.144	0.142	0.135	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.987	99.988	99.988	99.988	99.989	
##	Dim.566	Dim.567	Dim.568	Dim.569	Dim.570	
## Variance	0.133	0.131	0.123	0.121	0.121	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.989	99.989	99.990	99.990	99.990	
##	Dim.571	Dim.572	Dim.573	Dim.574	Dim.575	
## Variance	0.119	0.118	0.118	0.114	0.113	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.990	99.991	99.991	99.991	99.992	
##	Dim.576	Dim.577	Dim.578	Dim.579	Dim.580	
## Variance	0.107	0.104	0.103	0.098	0.096	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.992	99.992	99.992	99.993	99.993	
##	Dim.581	Dim.582	Dim.583	Dim.584	Dim.585	

## Variance	0.090	0.089	0.088	0.085	0.085	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.993	99.993	99.993	99.994	99.994	
##	Dim.586	Dim.587	Dim.588	Dim.589	Dim.590	
## Variance	0.083	0.082	0.078	0.077	0.074	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.994	99.994	99.994	99.995	99.995	
##	Dim.591	Dim.592	Dim.593	Dim.594	Dim.595	
## Variance	0.074	0.074	0.070	0.068	0.066	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.995	99.995	99.995	99.995	99.996	
##	Dim.596	Dim.597	Dim.598	Dim.599	Dim.600	
## Variance	0.064	0.062	0.060	0.060	0.058	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.996	99.996	99.996	99.996	99.996	
##	Dim.601	Dim.602	Dim.603	Dim.604	Dim.605	
## Variance	0.055	0.052	0.051	0.050	0.049	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.996	99.997	99.997	99.997	99.997	
##	Dim.606	Dim.607	Dim.608	Dim.609	Dim.610	
## Variance	0.049	0.048	0.047	0.046	0.044	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.997	99.997	99.997	99.997	99.997	
##	Dim.611	Dim.612	Dim.613	Dim.614	Dim.615	
## Variance	0.041	0.040	0.036	0.035	0.034	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.998	99.998	99.998	99.998	99.998	
##	Dim.616	Dim.617	Dim.618	Dim.619	Dim.620	
## Variance	0.034	0.033	0.032	0.032	0.031	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.998	99.998	99.998	99.998	99.998	
##	Dim.621	Dim.622	Dim.623	Dim.624	Dim.625	
## Variance	0.030	0.030	0.028	0.028	0.027	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.998	99.998	99.998	99.999	99.999	
##	Dim.626	Dim.627	Dim.628	Dim.629	Dim.630	
## Variance	0.026	0.025	0.024	0.024	0.023	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.999	99.999	99.999	99.999	99.999	
##	Dim.631	Dim.632	Dim.633	Dim.634	Dim.635	
## Variance	0.022	0.021	0.021	0.020	0.020	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.999	99.999	99.999	99.999	99.999	
##	Dim.636	Dim.637	Dim.638	Dim.639	Dim.640	
## Variance	0.020	0.019	0.019	0.016	0.016	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.999	99.999	99.999	99.999	99.999	
##	Dim.641	Dim.642	Dim.643	Dim.644	Dim.645	
## Variance	0.015	0.015	0.014	0.013	0.013	
## % of var.	0.000	0.000	0.000	0.000	0.000	

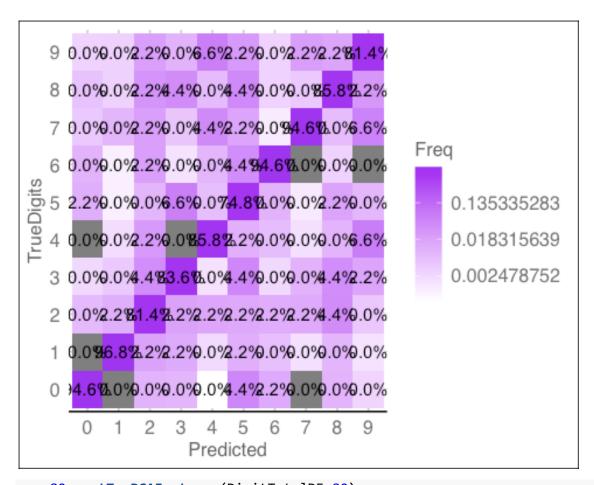
## Cumulative % of var.	99.999	99.999	99.999	100.000	100.000
##	Dim.646	Dim.647	Dim.648	Dim.649	Dim.650
## Variance	0.011	0.011	0.010	0.010	0.009
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
## ##	Dim.651	Dim.652	Dim.653	Dim.654	Dim.655
## Variance	0.009	0.009	0.008	0.008	0.007
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
## ## Variance	Dim.656	Dim.657	Dim.658	Dim.659	Dim.660
## % of var.	0.007	0.007	0.007	0.006	0.006
## Cumulative % of var.	0.000 100.000	0.000 100.000	0.000 100.000	0.000 100.000	0.000 100.000
## Cumulative % or var.	Dim.661	Dim.662	Dim.663	Dim.664	Dim.665
## Variance	0.006	0.006	0.006	0.004	0.004
## % of var.	0.000	0.000	0.000	0.004	0.004
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.666	Dim.667	Dim.668	Dim.669	Dim.670
## Variance	0.004	0.003	0.003	0.003	0.003
## % of var.	0.004	0.000	0.000	0.000	0.003
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.671	Dim.672	Dim.673	Dim.674	Dim.675
## Variance	0.002	0.002	0.002	0.002	0.002
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.676	Dim.677	Dim.678	Dim.679	Dim.680
## Variance	0.001	0.001	0.001	0.001	0.001
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.681	Dim.682	Dim.683	Dim.684	Dim.685
## Variance	0.001	0.001	0.001	0.001	0.001
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.686	Dim.687	Dim.688	Dim.689	Dim.690
## Variance	0.001	0.001	0.000	0.000	0.000
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.691	Dim.692	Dim.693	Dim.694	Dim.695
## Variance	0.000	0.000	0.000	0.000	0.000
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.696	Dim.697	Dim.698	Dim.699	Dim.700
## Variance	0.000	0.000	0.000	0.000	0.000
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.701	Dim.702	Dim.703	Dim.704	Dim.705
## Variance	0.000	0.000	0.000	0.000	0.000
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.706	Dim.707	Dim.708	Dim.709	Dim.710

	ariance		0.000	0.000	0.000	0.000	0.000
	of var.		0.000	0.000	0.000	0.000	0.000
	umulative % of		100.000	100.000	100.000	100.000	100.000
##	•		Dim.711	Dim.712	Dim.713	Dim.714	Dim.715
	ariance		0.000	0.000	0.000	0.000	0.000
	of var.		0.000	0.000	0.000	0.000	0.000
	umulative % of		100.000	100.000	100.000	100.000	100.000
##			Dim.716	Dim.717	Dim.718	Dim.719	Dim.720
	ariance		0.000	0.000	0.000	0.000	0.000
	of var.		0.000	0.000	0.000	0.000	0.000
## Cı	umulative % of		100.000	100.000	100.000	100.000	100.000
##			Dim.721	Dim.722	Dim.723	Dim.724	Dim.725
	ariance		0.000	0.000	0.000	0.000	0.000
## %	of var.		0.000	0.000	0.000	0.000	0.000
## Cı	umulative % of	var.	100.000	100.000	100.000	100.000	100.000
##			Dim.726	Dim.727	Dim.728	Dim.729	Dim.730
## Va	ariance		0.000	0.000	0.000	0.000	0.000
## %	of var.		0.000	0.000	0.000	0.000	0.000
## Cı	umulative % of	var.	100.000	100.000	100.000	100.000	100.000
##			Dim.731	Dim.732	Dim.733	Dim.734	Dim.735
## Va	ariance		0.000	0.000	0.000	0.000	0.000
## %	of var.		0.000	0.000	0.000	0.000	0.000
## Cı	umulative % of	var.	100.000	100.000	100.000	100.000	100.000
##			Dim.736	Dim.737	Dim.738	Dim.739	Dim.740
## Va	ariance		0.000	0.000	0.000	0.000	0.000
## %	of var.		0.000	0.000	0.000	0.000	0.000
## Cı	umulative % of	var.	100.000	100.000	100.000	100.000	100.000
##			Dim.741	Dim.742	Dim.743	Dim.744	Dim.745
## Va	ariance		0.000	0.000	0.000	0.000	0.000
## %	of var.		0.000	0.000	0.000	0.000	0.000
	umulative % of	var.	100.000	100.000	100.000	100.000	100.000
##			Dim.746	Dim.747	Dim.748	Dim.749	Dim.750
## Va	ariance		0.000	0.000	0.000	0.000	0.000
## %	of var.		0.000	0.000	0.000	0.000	0.000
	umulative % of	var.	100.000	100.000	100.000	100.000	100.000
##			Dim.751	Dim.752	Dim.753	Dim.754	Dim.755
## Va	ariance		0.000	0.000	0.000	0.000	0.000
	of var.		0.000	0.000	0.000	0.000	0.000
	umulative % of	var.	100.000	100.000	100.000	100.000	100.000
##			Dim.756	Dim.757	Dim.758	Dim.759	Dim.760
	ariance		0.000	0.000	0.000	0.000	0.000
	of var.		0.000	0.000	0.000	0.000	0.000
	umulative % of	var.	100.000	100.000	100.000	100.000	100.000
##			Dim.761	Dim.762	Dim.763	Dim.764	Dim.765
	ariance		0.000	0.000	0.000	0.000	0.000
	of var.		0.000	0.000	0.000	0.000	0.000
	umulative % of	var.	100.000	100.000	100.000	100.000	100.000
##			Dim.766	Dim.767	Dim.768	Dim.769	Dim.770
	ariance		0.000	0.000	0.000	0.000	0.000
	of var.		0.000	0.000	0.000	0.000	0.000
70	- · · · · · ·		2.000	2.000	2.000	2.000	2.000

```
## Cumulative % of var.
                           100.000
                                      100.000
                                                100.000
                                                           100.000
                                                                     100.000
##
                           Dim.771
                                      Dim. 772
                                                Dim.773
                                                           Dim.774
                                                                     Dim.775
## Variance
                                        0.000
                                                  0.000
                                                             0.000
                                                                        0.000
                             0.000
## % of var.
                             0.000
                                        0.000
                                                  0.000
                                                             0.000
                                                                        0.000
## Cumulative % of var.
                           100.000
                                      100.000
                                                100.000
                                                           100.000
                                                                     100.000
                                                           Dim.779
##
                           Dim.776
                                      Dim.777
                                                Dim.778
                                                                     Dim.780
## Variance
                             0.000
                                        0.000
                                                  0.000
                                                             0.000
                                                                        0.000
## % of var.
                             0.000
                                        0.000
                                                  0.000
                                                             0.000
                                                                        0.000
## Cumulative % of var.
                           100.000
                                      100.000
                                                100.000
                                                           100.000
                                                                      100.000
##
                           Dim. 781
                                      Dim. 782
                                                Dim.783
## Variance
                                        0.000
                             0.000
                                                  0.000
## % of var.
                             0.000
                                        0.000
                                                  0.000
## Cumulative % of var.
                           100.000
                                      100.000
                                                100.000
##
## Individuals (the 10 first)
##
                                                    Dim.2
                Dist
                         Dim.1
                                    ctr
                                           cos2
                                                               ctr
                                                                      cos2
Dim.3
             87.988 | -85.829
                                          0.952 | -10.867
## 0
                                 0.072
                                                             0.006
                                                                     0.015
9.555
## 1
             87.988 | -85.829
                                 0.072
                                          0.952 | -10.867
                                                             0.006
                                                                     0.015
9.555
## 2
             87.988 | -85.829
                                 0.072
                                          0.952 | -10.867
                                                             0.006
                                                                     0.015
9.555
             87.988 | -85.829
                                 0.072
                                          0.952 | -10.867
                                                             0.006
                                                                     0.015
## 3
9.555
## 4
             87.988 | -85.829
                                 0.072
                                          0.952 | -10.867
                                                             0.006
                                                                     0.015
9.555
## 5
             87.988 | -85.829
                                 0.072
                                          0.952 | -10.867
                                                             0.006
                                                                     0.015
9.555
                                          0.952 | -10.867
             87.988 | -85.829
                                                             0.006
                                                                     0.015
## 6
                                 0.072
9.555
## 7
             87.988 | -85.829
                                 0.072
                                          0.952 | -10.867
                                                             0.006
                                                                     0.015
9.555
                                          0.952 | -10.867
## 8
             87.988 | -85.829
                                 0.072
                                                             0.006
                                                                     0.015
9.555
             87.988 | -85.829
                                          0.952 | -10.867
## 9
                                 0.072
                                                             0.006
                                                                     0.015
9.555
##
              ctr
                      cos2
## 0
            0.005
                     0.012
## 1
            0.005
                     0.012
## 2
            0.005
                     0.012
## 3
            0.005
                     0.012
## 4
            0.005
                     0.012
## 5
            0.005
                     0.012
## 6
            0.005
                     0.012
## 7
            0.005
                     0.012
## 8
            0.005
                     0.012
## 9
            0.005
                     0.012 |
##
## Variables (the 10 first)
```

```
Dim.1 ctr cos2 Dim.2 ctr cos2 Dim.3 ctr
##
cos2
## V1
          0.419 0.001 0.176 | -0.407 0.006 0.165 | 0.198 0.002
0.039
## V2
         0.501 0.002 0.251 | 0.374 0.005 0.140 | 0.434 0.009
0.189
## V3
          0.534 0.002 0.285 | -0.467 0.008 0.218 | -0.077 0.000
0.006
          0.269 0.001 0.073 | 0.244 0.002 0.060 | -0.020
## V4
0.000
## V5
          0.452 0.002 0.205 | 0.373 0.005 0.139 | 0.449 0.009
0.202
## V6
          0.576 0.003 0.332 | 0.350 0.005 0.122 | 0.116 0.001
0.013
## V7
          0.502 0.002 0.252 | -0.054 0.000 0.003 | -0.407 0.008
0.166
## V8
          0.347 0.001 0.120 | 0.069 0.000 0.005 | 0.021 0.000
0.000
## V9
          0.640 0.003 0.410 | 0.221 0.002 0.049 | 0.050 0.000
0.002
## V10
          0.570 0.003 0.325 | -0.084 0.000 0.007 | 0.337 0.005
0.114
model_nb_75<-runNB(pca_75)</pre>
##
## ====== Naive Bayes
_____
## - Call: naive bayes.formula(formula = label ~ ., data = trainDF)
## - Laplace: 0
## - Classes: 10
## - Samples: 25205
## - Features: 75
## - Conditional distributions:
##
      - Gaussian: 75
## - Prior probabilities:
##
      - 0: 0.0984
      - 1: 0.1115
##
##
      - 2: 0.0995
##
      - 3: 0.1036
##
      - 4: 0.097
##
      - 5: 0.0903
##
      - 6: 0.0985
##
      - 7: 0.1048
##
      - 8: 0.0967
      - 9: 0.0997
##
## -----
```

```
## Warning: predict.naive_bayes(): more features in the newdata are provided
## there are probability tables in the object. Calculation is performed based
## features to be found in the tables.
##
             TrueDigits
                            2
                                                                  9
## Predicted
                                            5
                                                             8
                                       4
                                                  6
                                                       7
                                                             9
                                                                  5
##
            0 1491
                      0
                           12
                                 4
                                       0
                                           18
                                                 16
                           21
                                 8
                                                             6
##
            1
                 0 1761
                                       4
                                            2
                                                  2
                                                      17
                                                                  6
                      33 1442
                                70
                                      44
                                           16
                                                 37
                                                      37
                                                            55
##
            2
                18
                                                                 36
            3
                16
                      24
                           32 1456
                                       0
                                          114
                                                  3
                                                       9
                                                            71
                                                                 18
##
##
            4
                      4
                           26
                                                 15
                                                      73
                                                            12
                                                                108
                 1
                                  3 1411
                                           11
##
            5
                84
                     21
                           25
                                89
                                      20 1296
                                                 68
                                                      30
                                                            79
                                                                 43
##
            6
                22
                     10
                           20
                                 4
                                      11
                                           16 1508
                                                       2
                                                             5
                                                                  5
                                                             7
            7
                                       3
                                            2
                                                  0 1475
##
                 0
                      3
                           21
                                16
                                                                 33
            8
                                                  5
##
                15
                           63
                                61
                                      15
                                                      11 1334
                                                                 27
                     14
                                           28
            9
##
                 5
                      3
                                29
                            8
                                     120
                                           15
                                                  0
                                                      99
                                                            47 1394
##
                                                                       AccuracyNull
         Accuracy
                             Kappa
                                     AccuracyLower
                                                     AccuracyUpper
        0.8674010
                         0.8526555
                                         0.8621785
                                                          0.8724959
                                                                          0.1115213
##
## AccuracyPValue
                    McnemarPValue
        0.0000000
##
                               NaN
## Warning: Transformation introduced infinite values in discrete y-axis
```



```
pca_80<-getTopPCAFeatures(DigitTotalDF,80)</pre>
##
## Call:
## PCA(X = t(select(df, -label)), ncp = ncp, graph = FALSE)
##
##
## Eigenvalues
##
                             Dim.1
                                        Dim.2
                                                  Dim.3
                                                             Dim.4
                                                                       Dim.5
## Variance
                         12975.886
                                    2635.187
                                               2146.048 1747.535 1465.951
## % of var.
                            30.895
                                        6.274
                                                  5.110
                                                            4.161
                                                                       3.490
## Cumulative % of var.
                            30.895
                                       37.169
                                                 42.279
                                                            46.440
                                                                      49.930
##
                             Dim.6
                                        Dim.7
                                                  Dim.8
                                                             Dim.9
                                                                      Dim.10
## Variance
                          1358.547
                                    1135.701
                                                884.896
                                                           855.251
                                                                     734.998
## % of var.
                                                                       1.750
                             3.235
                                        2.704
                                                  2.107
                                                             2.036
## Cumulative % of var.
                            53.165
                                       55.869
                                                 57.976
                                                            60.012
                                                                      61.762
##
                            Dim.11
                                       Dim.12
                                                 Dim.13
                                                           Dim.14
                                                                      Dim.15
## Variance
                           664.973
                                                           515.912
                                     634.157
                                                551.036
                                                                     483.259
## % of var.
                             1.583
                                        1.510
                                                  1.312
                                                            1.228
                                                                       1.151
## Cumulative % of var.
                                                            67.395
                            63.345
                                       64.855
                                                 66.167
                                                                      68.546
##
                            Dim. 16
                                       Dim.17
                                                 Dim.18
                                                           Dim.19
                                                                      Dim.20
## Variance
                           451.099
                                     420.945
                                                388.013
                                                           361.053
                                                                     349.113
## % of var.
                             1.074
                                        1.002
                                                  0.924
                                                             0.860
                                                                       0.831
```

## Cumulative % of var.	69.620	70.622	71.546	72.406	73.237	
##	Dim.21	Dim.22	Dim.23	Dim.24	Dim.25	
## Variance	329.622	310.712	298.708	281.495	275.884	
## % of var.	0.785	0.740	0.711	0.670	0.657	
## Cumulative % of var.	74.022	74.762	75.473	76.143	76.800	
##	Dim.26	Dim.27	Dim.28	Dim.29	Dim.30	
## Variance	268.984	252.330	236.925	226.065	219.194	
## % of var.	0.640	0.601	0.564	0.538	0.522	
## Cumulative % of var.	77.440	78.041	78.605	79.144	79.665	
##	Dim.31	Dim.32	Dim.33	Dim.34	Dim.35	
## Variance	203.959	202.286	185.225	181.697	173.988	
## % of var.	0.486	0.482	0.441	0.433	0.414	
## Cumulative % of var.	80.151	80.633	81.074	81.506	81.921	
## ## Vaniance	Dim.36	Dim.37	Dim.38	Dim.39	Dim.40	
## Variance ## % of var.	172.056	160.255	156.645	149.836	146.561	
	0.410	0.382	0.373	0.357	0.349	
## Cumulative % of var.	82.330	82.712	83.085	83.441	83.790	
## ## Vaniance	Dim.41 140.441	Dim.42 137.162	Dim.43	Dim.44	Dim.45	
## Variance ## % of var.	0.334	0.327	131.753 0.314	125.734 0.299	123.529 0.294	
## Cumulative % of var.	84.125	84.451	84.765		85.359	
## Cumulative % Of Var.	04.125 Dim.46	04.431 Dim.47	04.763 Dim.48	85.064 Dim.49	05.339 Dim.50	
## Variance	122.862	115.733	109.800	108.063	100.205	
## % of var.	0.293	0.276	0.261	0.257	0.239	
## Cumulative % of var.	85.651	85.927	86.188	86.445	86.684	
##	Dim.51	Dim.52	Dim.53	Dim.54	Dim.55	
## Variance	99.257	98.063	93.201	92.249	89.483	
## % of var.	0.236	0.233	0.222	0.220	0.213	
## Cumulative % of var.	86.920	87.154	87.376	87.595	87.808	
##	Dim.56	Dim.57	Dim.58	Dim.59	Dim.60	
## Variance	87.033	85.270	83.513	81.175	78.975	
## % of var.	0.207	0.203	0.199	0.193	0.188	
## Cumulative % of var.	88.016	88.219	88.417	88.611	88.799	
##	Dim.61	Dim.62	Dim.63	Dim.64	Dim.65	
## Variance	76.732	76.033	73.240	71.087	69.891	
## % of var.	0.183	0.181	0.174	0.169	0.166	
## Cumulative % of var.	88.981	89.163	89.337	89.506	89.673	
##	Dim.66	Dim.67	Dim.68	Dim.69	Dim.70	
## Variance	67.076	65.846	63.704	62.539	61.504	
## % of var.	0.160	0.157	0.152	0.149	0.146	
## Cumulative % of var.	89.832	89.989	90.141	90.290	90.436	
##	Dim.71	Dim.72	Dim.73	Dim.74	Dim.75	
## Variance	58.632	58.470	56.065	55.675	53.772	
## % of var.	0.140	0.139	0.133	0.133	0.128	
## Cumulative % of var.	90.576	90.715	90.848	90.981	91.109	
##	Dim.76	Dim.77	Dim.78	Dim.79	Dim.80	
## Variance	52.344	50.752	50.151	47.664	47.097	
## % of var.	0.125	0.121	0.119	0.113	0.112	
## Cumulative % of var.	91.234	91.354	91.474	91.587	91.699	
##	Dim.81	Dim.82	Dim.83	Dim.84	Dim.85	

## Variance	45.959	45.670	45.134	43.399	43.159	
## % of var.	0.109	0.109	0.107	0.103	0.103	
## Cumulative % of var.	91.809	91.918	92.025	92.128	92.231	
##	Dim.86	Dim.87	Dim.88	Dim.89	Dim.90	
## Variance	42.732	41.986	40.222	39.688	38.618	
## % of var.	0.102	0.100	0.096	0.094	0.092	
## Cumulative % of var.	92.333	92.433	92.529	92.623	92.715	
##	Dim.91	Dim.92	Dim.93	Dim.94	Dim.95	
## Variance	37.900	37.111	36.558	35.693	35.451	
## % of var.	0.090	0.088	0.087	0.085	0.084	
## Cumulative % of var.	92.805	92.894	92.981	93.066	93.150	
##	Dim.96	Dim.97	Dim.98	Dim.99	Dim.100	
## Variance	35.000	33.741	33.657	33.108	32.255	
## % of var.	0.083	0.080	0.080	0.079	0.077	
## Cumulative % of var.	93.233	93.314	93.394	93.473	93.550	
##	Dim.101	Dim.102	Dim.103	Dim.104	Dim.105	
## Variance	31.708	30.818	30.512	29.322	28.925	
## % of var.	0.075	0.073	0.073	0.070	0.069	
## Cumulative % of var.	93.625	93.698	93.771	93.841	93.910	
##	Dim.106	Dim.107	Dim.108	Dim.109	Dim.110	
## Variance	28.795	27.708	27.390	27.292	26.586	
## % of var.	0.069	0.066	0.065	0.065	0.063	
## Cumulative % of var.	93.978	94.044	94.109	94.174	94.238	
##	Dim.111	Dim.112	Dim.113	Dim.114	Dim.115	
## Variance	26.039	25.709	25.584	25.304	25.182	
## % of var.	0.062	0.061	0.061	0.060	0.060	
## Cumulative % of var.	94.300	94.361	94.422	94.482	94.542	
##	Dim.116	Dim.117	Dim.118	Dim.119	Dim.120	
## Variance	24.206	23.951	23.818	23.054	22.815	
## % of var.	0.058	0.057	0.057	0.055	0.054	
## Cumulative % of var.	94.600	94.657	94.713	94.768	94.823	
##	Dim.121	Dim.122	Dim.123	Dim.124	Dim.125	
## Variance	22.628	22.352	22.224	21.862	21.222	
## % of var.	0.054	0.053	0.053	0.052	0.051	
## Cumulative % of var.	94.877	94.930	94.983	95.035	95.085	
##	Dim.126	Dim.127	Dim.128	Dim.129	Dim.130	
## Variance	21.059	20.634	20.467	20.033	19.894	
## % of var.	0.050	0.049	0.049	0.048	0.047	
## Cumulative % of var.	95.135	95.185	95.233	95.281	95.328	
##	Dim.131	Dim.132	Dim.133	Dim.134	Dim.135	
## Variance	19.503	19.289	19.223	18.915	18.460	
## % of var.	0.046	0.046	0.046	0.045	0.044	
## Cumulative % of var.	95.375	95.421	95.466	95.511	95.555	
##	Dim.136	Dim.137	Dim.138	Dim.139	Dim.140	
## Variance	18.290	18.250	18.088	17.507	17.219	
## % of var.	0.044	0.043	0.043	0.042	0.041	
## Cumulative % of var.	95.599	95.642	95.686	95.727	95.768	
##	Dim.141	Dim.142	Dim.143	Dim.144	Dim.145	
## Variance	16.825	16.398	16.186	16.169	15.900	
## % of var.	0.040	0.039	0.039	0.038	0.038	

## Cumulative % of var.	95.808	95.847	95.886	95.924	95.962
##	Dim.146	Dim.147	Dim.148	Dim.149	Dim.150
## Variance	15.761	15.658	15.577	15.477	15.321
## % of var.	0.038	0.037	0.037	0.037	0.036
## Cumulative % of var.	96.000	96.037	96.074	96.111	96.147
## ## Vanianaa	Dim.151	Dim.152	Dim.153	Dim.154	Dim.155
## Variance	15.094	14.926	14.829	14.612	14.562
## % of var.	0.036	0.036	0.035	0.035	0.035
<pre>## Cumulative % of var. ##</pre>	96.183	96.219	96.254	96.289	96.324
## ## Variance	Dim.156	Dim.157	Dim.158	Dim.159	Dim.160
## % of var.	14.468 0.034	14.192	13.834	13.675	13.475
## Cumulative % of var.	96.358	0.034 96.392	0.033 96.425	0.033 96.457	0.032 96.489
## Cumulative % or var.	90.338 Dim.161	Dim.162	Dim.163	96.457 Dim.164	96.469 Dim.165
## Variance	13.389	13.298	13.073	12.872	12.801
## % of var.	0.032	0.032	0.031	0.031	0.030
## Cumulative % of var.	96.521	96.553	96.584	96.615	96.645
##	Dim.166	Dim.167	Dim.168	Dim.169	Dim.170
## Variance	12.616	12.526	12.381	12.338	12.194
## % of var.	0.030	0.030	0.029	0.029	0.029
## Cumulative % of var.	96.675	96.705	96.735	96.764	96.793
##	Dim.171	Dim.172	Dim.173	Dim.174	Dim.175
## Variance	12.051	11.965	11.780	11.716	11.592
## % of var.	0.029	0.028	0.028	0.028	0.028
## Cumulative % of var.	96.822	96.850	96.878	96.906	96.934
##	Dim.176	Dim.177	Dim.178	Dim.179	Dim.180
## Variance	11.287	11.160	11.056	10.858	10.780
## % of var.	0.027	0.027	0.026	0.026	0.026
## Cumulative % of var.	96.961	96.987	97.014	97.039	97.065
##	Dim.181	Dim.182	Dim.183	Dim.184	Dim.185
## Variance	10.626	10.585	10.574	10.451	10.389
## % of var.	0.025	0.025	0.025	0.025	0.025
## Cumulative % of var.	97.090	97.116	97.141	97.166	97.190
##	Dim.186	Dim.187	Dim.188	Dim.189	Dim.190
## Variance	10.327	10.181	10.151	9.965	9.863
## % of var.	0.025	0.024	0.024	0.024	0.023
## Cumulative % of var.	97.215	97.239	97.263	97.287	97.311
##	Dim.191	Dim.192	Dim.193	Dim.194	Dim.195
## Variance	9.825	9.749	9.691	9.637	9.542
## % of var.	0.023	0.023	0.023	0.023	0.023
## Cumulative % of var.	97.334	97.357	97.380	97.403	97.426
##	Dim.196	Dim.197	Dim.198	Dim.199	Dim.200
## Variance	9.502	9.399	9.342	9.198	9.163
## % of var.	0.023	0.022	0.022	0.022	0.022
## Cumulative % of var.	97.448	97.471	97.493	97.515	97.537
##	Dim.201	Dim.202	Dim.203	Dim.204	Dim.205
## Variance	9.071	8.888	8.812	8.673	8.653
## % of var.	0.022	0.021	0.021	0.021	0.021
## Cumulative % of var.	97.558	97.580	97.601	97.621	97.642
##	Dim.206	Dim.207	Dim.208	Dim.209	Dim.210

## Variance	8.584	8.445	8.376	8.341	8.302	
## % of var.	0.020	0.020	0.020	0.020	0.020	
## Cumulative % of var.	97.662	97.682	97.702	97.722	97.742	
##	Dim.211	Dim.212	Dim.213	Dim.214	Dim.215	
## Variance	8.247	8.225	8.151	8.076	8.001	
## % of var.	0.020	0.020	0.019	0.019	0.019	
## Cumulative % of var.	97.762	97.781	97.801	97.820	97.839	
##	Dim.216	Dim.217	Dim.218	Dim.219	Dim.220	
## Variance	7.939	7.859	7.823	7.807	7.708	
## % of var.	0.019	0.019	0.019	0.019	0.018	
## Cumulative % of var.	97.858	97.876	97.895	97.914	97.932	
##	Dim.221	Dim.222	Dim.223	Dim.224	Dim.225	
## Variance	7.679	7.574	7.502	7.472	7.428	
## % of var.	0.018	0.018	0.018	0.018	0.018	
## Cumulative % of var.	97.950	97.968	97.986	98.004	98.022	
##	Dim.226	Dim.227	Dim.228	Dim.229	Dim.230	
## Variance	7.380	7.295	7.171	7.139	7.066	
## % of var.	0.018	0.017	0.017	0.017	0.017	
## Cumulative % of var.	98.039	98.057	98.074	98.091	98.108	
##	Dim.231	Dim.232	Dim.233	Dim.234	Dim.235	
## Variance	6.982	6.966	6.898	6.861	6.811	
## % of var.	0.017	0.017	0.016	0.016	0.016	
## Cumulative % of var.	98.124	98.141	98.157	98.173	98.190	
##	Dim.236	Dim.237	Dim.238	Dim.239	Dim.240	
## Variance	6.726	6.659	6.631	6.563	6.485	
## % of var.	0.016	0.016	0.016	0.016	0.015	
## Cumulative % of var.	98.206	98.222	98.237	98.253	98.268	
##	Dim.241	Dim.242	Dim.243	Dim.244	Dim.245	
## Variance	6.449	6.408	6.366	6.331	6.306	
## % of var.	0.015	0.015	0.015	0.015	0.015	
## Cumulative % of var.	98.284	98.299	98.314	98.329	98.344	
##	Dim.246	Dim.247	Dim.248	Dim.249	Dim.250	
## Variance	6.230	6.177	6.149	6.014	6.005	
## % of var.	0.015	0.015	0.015	0.014	0.014	
## Cumulative % of var.	98.359	98.374	98.388	98.403	98.417	
##	Dim.251	Dim.252	Dim.253	Dim.254	Dim.255	
## Variance	5.957	5.900	5.878	5.854	5.783	
## % of var.	0.014	0.014	0.014	0.014	0.014	
## Cumulative % of var.	98.431	98.445	98.459	98.473	98.487	
##	Dim.256	Dim.257	Dim.258	Dim.259	Dim.260	
## Variance	5.769	5.685	5.658	5.632	5.605	
## % of var.	0.014	0.014	0.013	0.013	0.013	
## Cumulative % of var.	98.501	98.514	98.528	98.541	98.555	
##	Dim.261	Dim.262	Dim.263	Dim.264	Dim.265	
## Variance	5.539	5.491	5.438	5.435	5.400	
## % of var.	0.013	0.013	0.013	0.013	0.013	
## Cumulative % of var.	98.568	98.581	98.594	98.607	98.620	
##	Dim.266	Dim.267	Dim.268	Dim.269	Dim.270	
## Variance	5.343	5.329	5.233	5.218	5.188	
## % of var.	0.013	0.013	0.012	0.012	0.012	

	Cumulative % of	var.	98.632	98.645	98.657	98.670	98.682	
##			Dim.271	Dim.272	Dim.273	Dim.274	Dim.275	
	Variance		5.123	5.080	5.060	5.041	4.981	
	% of var.		0.012	0.012	0.012	0.012	0.012	
	Cumulative % of	var.	98.694	98.706	98.719	98.731	98.742	
##	Vaniana		Dim.276	Dim.277	Dim.278	Dim.279	Dim.280	
	Variance % of var.		4.964	4.911	4.873 0.012	4.857	4.850	
	Cumulative % of	van.	0.012	0.012		0.012	0.012	
##	Cumulative % or	vai.	98.754 Dim.281	98.766 Dim.282	98.777 Dim.283	98.789 Dim.284	98.801 Dim.285	
	Variance		4.817	4.797	4.743	4.690	4.672	
	% of var.		0.011	0.011	0.011	0.011	0.011	
	Cumulative % of	van	98.812	98.823	98.835	98.846	98.857	
##	Cumulacive % Of	vai .	Dim.286	Dim.287	Dim.288	Dim.289	Dim.290	
	Variance		4.640	4.599	4.585	4.555	4.495	
	% of var.		0.011	0.011	0.011	0.011	0.011	
	Cumulative % of	var	98.868	98.879	98.890	98.901	98.912	
##	Cumulacive % of	vai .	Dim.291	Dim.292	Dim.293	Dim.294	Dim.295	
	Variance		4.487	4.459	4.427	4.403	4.373	
	% of var.		0.011	0.011	0.011	0.010	0.010	
##		var	98.922	98.933	98.943	98.954	98.964	
##	Cumulacive 70 Of	vai .	Dim.296	Dim.297	Dim.298	Dim.299	Dim.300	
	Variance		4.344	4.304	4.278	4.250	4.174	
	% of var.		0.010	0.010	0.010	0.010	0.010	
	Cumulative % of	var.	98.975	98.985	98.995	99.005	99.015	
##		• • • •	Dim.301	Dim.302	Dim.303	Dim.304	Dim.305	
	Variance		4.159	4.147	4.104	4.099	4.041	
	% of var.		0.010	0.010	0.010	0.010	0.010	
	Cumulative % of	var.	99.025	99.035	99.045	99.054	99.064	
##			Dim.306	Dim.307	Dim.308	Dim.309	Dim.310	
	Variance		4.012	3.996	3.948	3.919	3.906	
	% of var.		0.010	0.010	0.009	0.009	0.009	
##	Cumulative % of	var.	99.074	99.083	99.092	99.102	99.111	
##			Dim.311	Dim.312	Dim.313	Dim.314	Dim.315	
##	Variance		3.889	3.875	3.839	3.785	3.741	
##	% of var.		0.009	0.009	0.009	0.009	0.009	
##	Cumulative % of	var.	99.120	99.130	99.139	99.148	99.157	
##			Dim.316	Dim.317	Dim.318	Dim.319	Dim.320	
##	Variance		3.724	3.682	3.668	3.644	3.624	
##	% of var.		0.009	0.009	0.009	0.009	0.009	
##	Cumulative % of	var.	99.166	99.174	99.183	99.192	99.200	
##			Dim.321	Dim.322	Dim.323	Dim.324	Dim.325	
##	Variance		3.582	3.576	3.538	3.490	3.472	
	% of var.		0.009	0.009	0.008	0.008	0.008	
##	Cumulative % of	var.	99.209	99.217	99.226	99.234	99.242	
##			Dim.326	Dim.327	Dim.328	Dim.329	Dim.330	
	Variance		3.443	3.392	3.378	3.353	3.342	
	% of var.		0.008	0.008	0.008	0.008	0.008	
	Cumulative % of	var.	99.251	99.259	99.267	99.275	99.283	
##			Dim.331	Dim.332	Dim.333	Dim.334	Dim.335	

## Variance	3.335	3.289	3.266	3.250	3.243	
## % of var.	0.008	0.008	0.008	0.008	0.008	
## Cumulative % of var.	99.291	99.298	99.306	99.314	99.322	
##	Dim.336	Dim.337	Dim.338	Dim.339	Dim.340	
## Variance	3.228	3.202	3.183	3.169	3.157	
## % of var.	0.008	0.008	0.008	0.008	0.008	
## Cumulative % of var.	99.329	99.337	99.345	99.352	99.360	
##	Dim.341	Dim.342	Dim.343	Dim.344	Dim.345	
## Variance	3.103	3.083	3.070	3.052	3.031	
## % of var.	0.007	0.007	0.007	0.007	0.007	
## Cumulative % of var.	99.367	99.374	99.382	99.389	99.396	
##	Dim.346	Dim.347	Dim.348	Dim.349	Dim.350	
## Variance	3.011	3.002	2.950	2.918	2.889	
## % of var.	0.007	0.007	0.007	0.007	0.007	
## Cumulative % of var.	99.403	99.410	99.417	99.424	99.431	
##	Dim.351	Dim.352	Dim.353	Dim.354	Dim.355	
## Variance	2.832	2.819	2.810	2.768	2.757	
## % of var.	0.007	0.007	0.007	0.007	0.007	
## Cumulative % of var.	99.438	99.445	99.451	99.458	99.465	
##	Dim.356	Dim.357	Dim.358	Dim.359	Dim.360	
## Variance	2.733	2.709	2.695	2.678	2.671	
## % of var.	0.007	0.006	0.006	0.006	0.006	
## Cumulative % of var.	99.471	99.478	99.484	99.490	99.497	
##	Dim.361	Dim.362	Dim.363	Dim.364	Dim.365	
## Variance	2.652	2.645	2.610	2.542	2.519	
## % of var.	0.006	0.006	0.006	0.006	0.006	
## Cumulative % of var.	99.503	99.509	99.516	99.522	99.528	
##	Dim.366	Dim.367	Dim.368	Dim.369	Dim.370	
## Variance	2.515	2.492	2.468	2.448	2.434	
## % of var.	0.006	0.006	0.006	0.006	0.006	
## Cumulative % of var.	99.534	99.539	99.545	99.551	99.557	
##	Dim.371	Dim.372	Dim.373	Dim.374	Dim.375	
## Variance	2.412	2.378	2.340	2.326	2.306	
## % of var.	0.006	0.006	0.006	0.006	0.005	
## Cumulative % of var.	99.563	99.568	99.574	99.580	99.585	
##	Dim.376	Dim.377	Dim.378	Dim.379	Dim.380	
## Variance	2.300	2.281	2.263	2.240	2.216	
## % of var.	0.005	0.005	0.005	0.005	0.005	
## Cumulative % of var.	99.590	99.596	99.601	99.607	99.612	
##	Dim.381	Dim.382	Dim.383	Dim.384	Dim.385	
## Variance	2.203	2.175	2.146	2.087	2.077	
## % of var.	0.005	0.005	0.005	0.005	0.005	
## Cumulative % of var.	99.617	99.622	99.627	99.632	99.637	
##	Dim.386	Dim.387	Dim.388	Dim.389	Dim.390	
## Variance	2.044	2.036	2.020	1.995	1.976	
## % of var.	0.005	0.005	0.005	0.005	0.005	
## Cumulative % of var.	99.642	99.647	99.652	99.657	99.661	
##	Dim.391	Dim.392	Dim.393	Dim.394	Dim.395	
## Variance	1.959	1.942	1.918	1.895	1.886	
## % of var.	0.005	0.005	0.005	0.005	0.004	
70 01 401 1	0.003	0.003	0.005	0.003	0.004	

	Cumulative % of var.	99.666	99.671	99.675	99.680	99.684	
##		Dim.396	Dim.397	Dim.398	Dim.399	Dim.400	
	Variance	1.849	1.820	1.810	1.779	1.761	
	% of var.	0.004	0.004	0.004	0.004	0.004	
	Cumulative % of var.	99.689	99.693	99.697	99.701	99.706	
##		Dim.401	Dim.402	Dim.403	Dim.404	Dim.405	
	Variance	1.746	1.731	1.714	1.701	1.676	
	% of var.	0.004	0.004	0.004	0.004	0.004	
	Cumulative % of var.	99.710	99.714	99.718	99.722	99.726	
##	Mandanas	Dim.406	Dim.407	Dim.408	Dim.409	Dim.410	
	Variance	1.670	1.633	1.619	1.590	1.581	
	% of var.	0.004	0.004	0.004	0.004	0.004	
	Cumulative % of var.	99.730	99.734	99.738	99.742	99.745	
##		Dim.411	Dim.412	Dim.413	Dim.414	Dim.415	
	Variance	1.570	1.554	1.545	1.538	1.516	
	% of var.	0.004	0.004	0.004	0.004	0.004	
	Cumulative % of var.	99.749	99.753	99.756	99.760	99.764	
##		Dim.416	Dim.417	Dim.418	Dim.419	Dim.420	
	Variance	1.512	1.502	1.484	1.462	1.435	
	% of var.	0.004	0.004	0.004	0.003	0.003	
	Cumulative % of var.	99.767	99.771	99.774	99.778	99.781	
##		Dim.421	Dim.422	Dim.423	Dim.424	Dim.425	
	Variance	1.421	1.390	1.380	1.369	1.344	
	% of var.	0.003	0.003	0.003	0.003	0.003	
	Cumulative % of var.	99.785	99.788	99.791	99.795	99.798	
##		Dim.426	Dim.427	Dim.428	Dim.429	Dim.430	
	Variance	1.335	1.292	1.289	1.277	1.236	
	% of var.	0.003	0.003	0.003	0.003	0.003	
	Cumulative % of var.	99.801	99.804	99.807	99.810	99.813	
##		Dim.431	Dim.432	Dim.433	Dim.434	Dim.435	
	Variance	1.213	1.205	1.200	1.189	1.172	
	% of var.	0.003	0.003	0.003	0.003	0.003	
	Cumulative % of var.	99.816	99.819	99.822	99.825	99.827	
##		Dim.436	Dim.437	Dim.438	Dim.439	Dim.440	
	Variance	1.148	1.132	1.114	1.103	1.096	
	% of var.	0.003	0.003	0.003	0.003	0.003	
	Cumulative % of var.	99.830	99.833	99.835	99.838	99.841	
##		Dim.441	Dim.442	Dim.443	Dim.444	Dim.445	
	Variance	1.085	1.057	1.053	1.031	1.027	
	% of var.	0.003	0.003	0.003	0.002	0.002	
	Cumulative % of var.	99.843	99.846	99.848	99.851	99.853	
##		Dim.446	Dim.447	Dim.448	Dim.449	Dim.450	
	Variance	1.019	0.999	0.986	0.973	0.960	
	% of var.	0.002	0.002	0.002	0.002	0.002	
	Cumulative % of var.	99.856	99.858	99.860	99.863	99.865	
##		Dim.451	Dim.452	Dim.453	Dim.454	Dim.455	
	Variance	0.958	0.934	0.912	0.896	0.892	
	% of var.	0.002	0.002	0.002	0.002	0.002	
	Cumulative % of var.	99.867	99.869	99.872	99.874	99.876	
##		Dim.456	Dim.457	Dim.458	Dim.459	Dim.460	

## Variance	0.887	0.868	0.863	0.857	0.831	
## % of var.	0.002	0.002	0.002	0.002	0.002	
## Cumulative % of var.	99.878	99.880	99.882	99.884	99.886	
##	Dim.461	Dim.462	Dim.463	Dim.464	Dim.465	
## Variance	0.819	0.810	0.800	0.771	0.761	
## % of var.	0.002	0.002	0.002	0.002	0.002	
## Cumulative % of var.	99.888	99.890	99.892	99.894	99.895	
##	Dim.466	Dim.467	Dim.468	Dim.469	Dim.470	
## Variance	0.758	0.753	0.745	0.736	0.727	
## % of var.	0.002	0.002	0.002	0.002	0.002	
## Cumulative % of var.	99.897	99.899	99.901	99.903	99.904	
## ## \/anianaa	Dim.471	Dim.472	Dim.473	Dim.474	Dim.475	
## Variance	0.719	0.707	0.700	0.691	0.683	
## % of var.	0.002	0.002	0.002	0.002	0.002	
## Cumulative % of var.	99.906	99.908	99.909	99.911	99.913	
## ## \/anianaa	Dim.476	Dim.477	Dim.478	Dim.479	Dim.480	
## Variance	0.679	0.673	0.651	0.642	0.627	
## % of var.	0.002 99.914	0.002	0.002	0.002	0.001	
<pre>## Cumulative % of var. ##</pre>		99.916	99.917	99.919	99.920	
## ## Variance	Dim.481	Dim.482	Dim.483	Dim.484	Dim.485	
## % of var.	0.619	0.612	0.604	0.591	0.580 0.001	
## Cumulative % of var.	0.001 99.922	0.001 99.923	0.001 99.925	0.001 99.926	99.928	
## Cumulacive % or var.	99.922 Dim.486	99.923 Dim.487				
		0.568	Dim.488	Dim.489	Dim.490	
## Variance ## % of var.	0.572		0.559	0.553	0.546	
	0.001 99.929	0.001	0.001	0.001	0.001	
## Cumulative % of var.		99.930	99.932	99.933	99.934	
## ## Variance	Dim.491	Dim.492	Dim.493	Dim.494	Dim.495	
## % of var.	0.535 0.001	0.532 0.001	0.518 0.001	0.510 0.001	0.500 0.001	
## Cumulative % of var.	99.936	99.937	99.938	99.939	99.940	
## Cumulative % Or var.	99.936 Dim.496	99.937 Dim.497	99.938 Dim.498	Dim.499	99.940 Dim.500	
## Variance	0.483	0.480	0.472	0.467	0.458	
## % of var.	0.483	0.480	0.472	0.407	0.438	
## Cumulative % of var.	99.942	99.943	99.944	99.945	99.946	
##	Dim.501	Dim.502	Dim.503	Dim.504	Dim.505	
## Variance	0.457	0.452	0.445	0.441	0.431	
## % of var.	0.437	0.432	0.443	0.441	0.001	
## Cumulative % of var.	99.947	99.948	99.949	99.950	99.951	
##	Dim.506	Dim.507	Dim.508	Dim.509	Dim.510	
## Variance	0.412	0.403	0.397	0.392	0.386	
## % of var.	0.001	0.403	0.001	0.001	0.001	
## Cumulative % of var.	99.952	99.953	99.954	99.955	99.956	
##	Dim.511	Dim.512	Dim.513	Dim.514	Dim.515	
## Variance	0.383	0.376	0.373	0.365	0.355	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.957	99.958	99.959	99.960	99.961	
##	Dim.516	Dim.517	Dim.518	Dim.519	Dim.520	
## Variance	0.350	0.348	0.346	0.343	0.337	
## % of var.	0.001	0.001	0.001	0.001	0.001	
			2.302			

## Cumulative % of var.	99.961	99.962	99.963	99.964	99.965	
##	Dim.521	Dim.522	Dim.523	Dim.524	Dim.525	
## Variance	0.327	0.326	0.315	0.311	0.311	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.965	99.966	99.967	99.968	99.968	
##	Dim.526	Dim.527	Dim.528	Dim.529	Dim.530	
## Variance	0.307	0.302	0.299	0.297	0.279	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.969	99.970	99.971	99.971	99.972	
##	Dim.531	Dim.532	Dim.533	Dim.534	Dim.535	
## Variance	0.278	0.268	0.264	0.261	0.256	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.973	99.973	99.974	99.975	99.975	
##	Dim.536	Dim.537	Dim.538	Dim.539	Dim.540	
## Variance	0.253	0.247	0.241	0.234	0.232	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.976	99.976	99.977	99.977	99.978	
##	Dim.541	Dim.542	Dim.543	Dim.544	Dim.545	
## Variance ## % of var.	0.229	0.227	0.220	0.218	0.217	
	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.979	99.979	99.980	99.980	99.981	
## ## Vaniance	Dim.546	Dim.547	Dim.548	Dim.549	Dim.550	
## Variance	0.214	0.205	0.195	0.194	0.186	
## % of var.	0.001	0.000 99.982	0.000	0.000	0.000	
## Cumulative % of var.	99.981		99.982	99.983	99.983	
## ## Vaniance	Dim.551	Dim.552	Dim.553	Dim.554	Dim.555	
## Variance	0.182	0.180	0.173	0.171	0.165	
<pre>## % of var. ## Cumulative % of var.</pre>	0.000	0.000	0.000	0.000	0.000	
## Cumulacive % or var.	99.983 Dim.556	99.984	99.984	99.985	99.985	
## Variance		Dim.557 0.161	Dim.558 0.159	Dim.559 0.152	Dim.560	
## % of var.	0.163 0.000	0.000	0.000	0.132	0.150 0.000	
## Cumulative % of var.	99.985	99.986	99.986	99.987	99.987	
##	Dim.561	Dim.562	Dim.563	Dim.564	Dim.565	
## Variance	0.148	0.146	0.144	0.142	0.135	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.987	99.988	99.988	99.988	99.989	
##	Dim.566	Dim.567	Dim.568	Dim.569	Dim.570	
## Variance	0.133	0.131	0.123	0.121	0.121	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.989	99.989	99.990	99.990	99.990	
##	Dim.571	Dim.572	Dim.573	Dim.574	Dim.575	
## Variance	0.119	0.118	0.118	0.114	0.113	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.990	99.991	99.991	99.991	99.992	
## Cumulacive % or var.	99.990 Dim.576	99.991 Dim.577	99.991 Dim.578	99.991 Dim.579	99.992 Dim.580	
## Variance	0.107	0.104	0.103	0.098	0.096	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.992	99.992	99.992	99.993	99.993	
##	Dim.581	Dim.582	Dim.583	Dim.584	Dim.585	
ππ	דטר יווודט	DTIII • 70Z	כסכ יווודם	DTIII • 204	כטכ • ווובט	

## Variance	0.090	0.089	0.088	0.085	0.085
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	99.993	99.993	99.993	99.994	99.994
##	Dim.586	Dim.587	Dim.588	Dim.589	Dim.590
## Variance	0.083	0.082	0.078	0.077	0.074
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	99.994	99.994	99.994	99.995	99.995
##	Dim.591	Dim.592	Dim.593	Dim.594	Dim.595
## Variance	0.074	0.074	0.070	0.068	0.066
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	99.995	99.995	99.995	99.995	99.996
## \/anianaa	Dim.596	Dim.597	Dim.598	Dim.599	Dim.600
<pre>## Variance ## % of var.</pre>	0.064	0.062	0.060	0.060	0.058
## Cumulative % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	99.996 Dim.601	99.996 Dim.602	99.996 Dim.603	99.996 Dim.604	99.996 Dim.605
## Variance	0.055	0.052	0.051	0.050	0.049
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	99.996	99.997	99.997	99.997	99.997
##	Dim.606	Dim.607	Dim.608	Dim.609	Dim.610
## Variance	0.049	0.048	0.047	0.046	0.044
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	99.997	99.997	99.997	99.997	99.997
##	Dim.611	Dim.612	Dim.613	Dim.614	Dim.615
## Variance	0.041	0.040	0.036	0.035	0.034
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	99.998	99.998	99.998	99.998	99.998
##	Dim.616	Dim.617	Dim.618	Dim.619	Dim.620
## Variance	0.034	0.033	0.032	0.032	0.031
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	99.998	99.998	99.998	99.998	99.998
##	Dim.621	Dim.622	Dim.623	Dim.624	Dim.625
## Variance	0.030	0.030	0.028	0.028	0.027
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	99.998	99.998	99.998	99.999	99.999
##	Dim.626	Dim.627	Dim.628	Dim.629	Dim.630
## Variance	0.026	0.025	0.024	0.024	0.023
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	99.999	99.999	99.999	99.999	99.999
##	Dim.631	Dim.632	Dim.633	Dim.634	Dim.635
## Variance	0.022	0.021	0.021	0.020	0.020
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	99.999	99.999	99.999	99.999	99.999
##	Dim.636	Dim.637	Dim.638	Dim.639	Dim.640
## Variance	0.020	0.019	0.019	0.016	0.016
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	99.999	99.999	99.999	99.999	99.999
##	Dim.641	Dim.642	Dim.643	Dim.644	Dim.645
## Variance	0.015	0.015	0.014	0.013	0.013
## % of var.	0.000	0.000	0.000	0.000	0.000

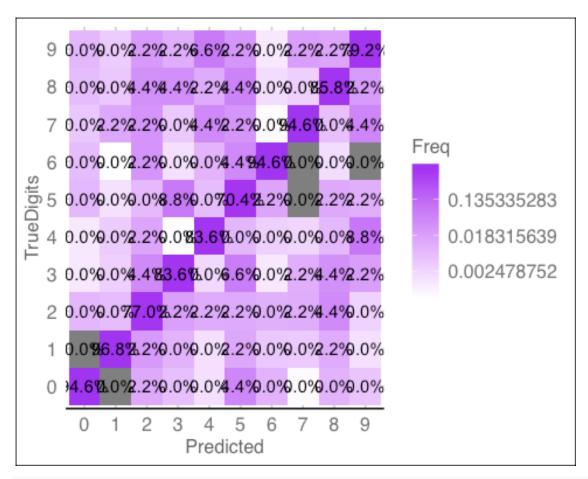
	Cumulative % of	var.	99.999	99.999	99.999	100.000	100.000
##	.,		Dim.646	Dim.647	Dim.648	Dim.649	Dim.650
	Variance		0.011	0.011	0.010	0.010	0.009
	% of var.		0.000	0.000	0.000	0.000	0.000
	Cumulative % of	var.	100.000	100.000	100.000	100.000	100.000
##	.,		Dim.651	Dim.652	Dim.653	Dim.654	Dim.655
	Variance		0.009	0.009	0.008	0.008	0.007
	% of var.		0.000	0.000	0.000	0.000	0.000
	Cumulative % of	var.	100.000	100.000	100.000	100.000	100.000
##	M		Dim.656	Dim.657	Dim.658	Dim.659	Dim.660
	Variance		0.007	0.007	0.007	0.006	0.006
	% of var.		0.000	0.000	0.000	0.000	0.000
	Cumulative % of	var.	100.000	100.000	100.000	100.000	100.000
##			Dim.661	Dim.662	Dim.663	Dim.664	Dim.665
	Variance		0.006	0.006	0.006	0.004	0.004
	% of var.		0.000	0.000	0.000	0.000	0.000
	Cumulative % of	var.	100.000	100.000	100.000	100.000	100.000
##			Dim.666	Dim.667	Dim.668	Dim.669	Dim.670
	Variance		0.004	0.003	0.003	0.003	0.003
	% of var.		0.000	0.000	0.000	0.000	0.000
	Cumulative % of	var.	100.000	100.000	100.000	100.000	100.000
##	.,		Dim.671	Dim.672	Dim.673	Dim.674	Dim.675
	Variance		0.002	0.002	0.002	0.002	0.002
	% of var.		0.000	0.000	0.000	0.000	0.000
	Cumulative % of	var.	100.000	100.000	100.000	100.000	100.000
##			Dim.676	Dim.677	Dim.678	Dim.679	Dim.680
	Variance		0.001	0.001	0.001	0.001	0.001
	% of var.		0.000	0.000	0.000	0.000	0.000
	Cumulative % of	var.	100.000	100.000	100.000	100.000	100.000
##			Dim.681	Dim.682	Dim.683	Dim.684	Dim.685
	Variance		0.001	0.001	0.001	0.001	0.001
	% of var.		0.000	0.000	0.000	0.000	0.000
	Cumulative % of	var.	100.000	100.000	100.000	100.000	100.000
##	.,		Dim.686	Dim.687	Dim.688	Dim.689	Dim.690
	Variance		0.001	0.001	0.000	0.000	0.000
	% of var.		0.000	0.000	0.000	0.000	0.000
	Cumulative % of	var.	100.000	100.000	100.000	100.000	100.000
##			Dim.691	Dim.692	Dim.693	Dim.694	Dim.695
	Variance		0.000	0.000	0.000	0.000	0.000
	% of var.		0.000	0.000	0.000	0.000	0.000
	Cumulative % of	var.	100.000	100.000	100.000	100.000	100.000
##			Dim.696	Dim.697	Dim.698	Dim.699	Dim.700
	Variance		0.000	0.000	0.000	0.000	0.000
	% of var.		0.000	0.000	0.000	0.000	0.000
	Cumulative % of	var.	100.000	100.000	100.000	100.000	100.000
##	M		Dim.701	Dim.702	Dim.703	Dim.704	Dim.705
	Variance		0.000	0.000	0.000	0.000	0.000
	% of var.		0.000	0.000	0.000	0.000	0.000
	Cumulative % of	var.	100.000	100.000	100.000	100.000	100.000
##			Dim.706	Dim.707	Dim.708	Dim.709	Dim.710

	Variance	0.000	0.000	0.000	0.000	0.000	
	% of var.	0.000	0.000	0.000	0.000	0.000	
	Cumulative % of var		100.000	100.000	100.000	100.000	
##	Maniana	Dim.711	Dim.712	Dim.713	Dim.714	Dim.715	
	Variance	0.000	0.000	0.000	0.000	0.000	
	% of var.	0.000	0.000	0.000	0.000	0.000	
##	Cumulative % of var		100.000 Dim.717	100.000 Dim.718	100.000 Dim.719	100.000	
	Variance	Dim.716 0.000	0.000	0.000	0.000	Dim.720 0.000	
	% of var.	0.000	0.000	0.000	0.000	0.000	
	Cumulative % of var		100.000	100.000	100.000	100.000	
##	Cumulacive % Of var	Dim.721	Dim.722	Dim.723	Dim.724	Dim.725	
	Variance	0.000	0.000	0.000	0.000	0.000	
	% of var.	0.000	0.000	0.000	0.000	0.000	
	Cumulative % of var		100.000	100.000	100.000	100.000	
##	Cumulacive % of var	Dim.726	Dim.727	Dim.728	Dim.729	Dim.730	
	Variance	0.000	0.000	0.000	0.000	0.000	
	% of var.	0.000	0.000	0.000	0.000	0.000	
	Cumulative % of var		100.000	100.000	100.000	100.000	
##	Camaractive 70 or var	Dim.731	Dim.732	Dim.733	Dim.734	Dim.735	
	Variance	0.000	0.000	0.000	0.000	0.000	
	% of var.	0.000	0.000	0.000	0.000	0.000	
	Cumulative % of var		100.000	100.000	100.000	100.000	
##		Dim.736	Dim.737	Dim.738	Dim.739	Dim.740	
	Variance	0.000	0.000	0.000	0.000	0.000	
	% of var.	0.000	0.000	0.000	0.000	0.000	
	Cumulative % of var		100.000	100.000	100.000	100.000	
##		Dim.741	Dim.742	Dim.743	Dim.744	Dim.745	
##	Variance	0.000	0.000	0.000	0.000	0.000	
##	% of var.	0.000	0.000	0.000	0.000	0.000	
##	Cumulative % of var	. 100.000	100.000	100.000	100.000	100.000	
##		Dim.746	Dim.747	Dim.748	Dim.749	Dim.750	
##	Variance	0.000	0.000	0.000	0.000	0.000	
	% of var.	0.000	0.000	0.000	0.000	0.000	
##	Cumulative % of var	. 100.000	100.000	100.000	100.000	100.000	
##		Dim.751	Dim.752	Dim.753	Dim.754	Dim.755	
##	Variance	0.000	0.000	0.000	0.000	0.000	
##	% of var.	0.000	0.000	0.000	0.000	0.000	
##	Cumulative % of var	. 100.000	100.000	100.000	100.000	100.000	
##		Dim.756	Dim.757	Dim.758	Dim.759	Dim.760	
	Variance	0.000	0.000	0.000	0.000	0.000	
##	% of var.	0.000	0.000	0.000	0.000	0.000	
##	Cumulative % of var		100.000	100.000	100.000	100.000	
##		Dim.761	Dim.762	Dim.763	Dim.764	Dim.765	
	Variance	0.000	0.000	0.000	0.000	0.000	
	% of var.	0.000	0.000	0.000	0.000	0.000	
	Cumulative % of var		100.000	100.000	100.000	100.000	
##		Dim.766	Dim.767	Dim.768	Dim.769	Dim.770	
	Variance	0.000	0.000	0.000	0.000	0.000	
##	% of var.	0.000	0.000	0.000	0.000	0.000	

```
## Cumulative % of var.
                           100.000
                                      100.000
                                                100.000
                                                           100.000
                                                                     100.000
##
                           Dim.771
                                      Dim. 772
                                                Dim.773
                                                           Dim.774
                                                                     Dim.775
## Variance
                                        0.000
                                                  0.000
                                                             0.000
                                                                        0.000
                             0.000
## % of var.
                             0.000
                                        0.000
                                                  0.000
                                                             0.000
                                                                        0.000
## Cumulative % of var.
                           100.000
                                      100.000
                                                100.000
                                                           100.000
                                                                     100.000
                                                           Dim.779
##
                           Dim.776
                                      Dim.777
                                                Dim.778
                                                                     Dim.780
## Variance
                             0.000
                                        0.000
                                                  0.000
                                                             0.000
                                                                        0.000
## % of var.
                             0.000
                                        0.000
                                                  0.000
                                                             0.000
                                                                        0.000
## Cumulative % of var.
                           100.000
                                      100.000
                                                100.000
                                                           100.000
                                                                      100.000
##
                           Dim. 781
                                      Dim. 782
                                                Dim.783
## Variance
                                        0.000
                             0.000
                                                  0.000
## % of var.
                             0.000
                                        0.000
                                                  0.000
## Cumulative % of var.
                           100.000
                                      100.000
                                                100.000
##
## Individuals (the 10 first)
##
                                                    Dim.2
                Dist
                         Dim.1
                                    ctr
                                           cos2
                                                               ctr
                                                                      cos2
Dim.3
             87.988 | -85.829
                                          0.952 | -10.867
## 0
                                 0.072
                                                             0.006
                                                                     0.015
9.555
## 1
             87.988 | -85.829
                                 0.072
                                          0.952 | -10.867
                                                             0.006
                                                                     0.015
9.555
## 2
             87.988 | -85.829
                                 0.072
                                          0.952 | -10.867
                                                             0.006
                                                                     0.015
9.555
             87.988 | -85.829
                                 0.072
                                          0.952 | -10.867
                                                             0.006
                                                                     0.015
## 3
9.555
## 4
             87.988 | -85.829
                                 0.072
                                          0.952 | -10.867
                                                             0.006
                                                                     0.015
9.555
## 5
             87.988 | -85.829
                                 0.072
                                          0.952 | -10.867
                                                             0.006
                                                                     0.015
9.555
                                          0.952 | -10.867
             87.988 | -85.829
                                                             0.006
                                                                     0.015
## 6
                                 0.072
9.555
## 7
             87.988 | -85.829
                                 0.072
                                          0.952 | -10.867
                                                             0.006
                                                                     0.015
9.555
                                          0.952 | -10.867
## 8
             87.988 | -85.829
                                 0.072
                                                             0.006
                                                                     0.015
9.555
             87.988 | -85.829
                                          0.952 | -10.867
## 9
                                 0.072
                                                             0.006
                                                                     0.015
9.555
##
              ctr
                      cos2
## 0
            0.005
                     0.012
## 1
            0.005
                     0.012
## 2
            0.005
                     0.012
## 3
            0.005
                     0.012
## 4
            0.005
                     0.012
## 5
            0.005
                     0.012
## 6
            0.005
                     0.012
## 7
            0.005
                     0.012
## 8
            0.005
                     0.012
## 9
            0.005
                     0.012 |
##
## Variables (the 10 first)
```

```
Dim.1 ctr cos2 Dim.2 ctr cos2 Dim.3 ctr
##
cos2
## V1
          0.419 0.001 0.176 | -0.407 0.006 0.165 | 0.198 0.002
0.039
## V2
         0.501 0.002 0.251 | 0.374 0.005 0.140 | 0.434 0.009
0.189
## V3
          0.534 0.002 0.285 | -0.467 0.008 0.218 | -0.077 0.000
0.006
          0.269 0.001 0.073 | 0.244 0.002 0.060 | -0.020 0.000
## V4
0.000
## V5
          0.452 0.002 0.205 | 0.373 0.005 0.139 | 0.449 0.009
0.202
## V6
          0.576 0.003 0.332 | 0.350 0.005 0.122 | 0.116 0.001
0.013
## V7
          0.502 0.002 0.252 | -0.054 0.000 0.003 | -0.407 0.008
0.166
## V8
          0.347 0.001 0.120 | 0.069 0.000 0.005 | 0.021 0.000
0.000
## V9
          0.640 0.003 0.410 | 0.221 0.002 0.049 | 0.050 0.000
0.002
## V10
          0.570 0.003 0.325 | -0.084 0.000 0.007 | 0.337 0.005
0.114
model_nb_80<-runNB(pca_80)
##
## ====== Naive Bayes
_____
## - Call: naive bayes.formula(formula = label ~ ., data = trainDF)
## - Laplace: 0
## - Classes: 10
## - Samples: 25205
## - Features: 80
## - Conditional distributions:
##
      - Gaussian: 80
## - Prior probabilities:
##
      - 0: 0.0984
      - 1: 0.1115
##
##
      - 2: 0.0995
##
      - 3: 0.1036
##
      - 4: 0.097
##
      - 5: 0.0903
##
      - 6: 0.0985
##
      - 7: 0.1048
##
      - 8: 0.0967
      - 9: 0.0997
##
## -----
```

```
## Warning: predict.naive_bayes(): more features in the newdata are provided
## there are probability tables in the object. Calculation is performed based
on
## features to be found in the tables.
##
             TrueDigits
                            2
                                                                  9
## Predicted
                                            5
                                                             8
                                       4
                                                  6
                                  2
                                       2
                                                       7
##
            0 1489
                       0
                           13
                                           12
                                                 10
                                                            10
                                                                 13
                                       7
##
            1
                 0 1747
                           12
                                 6
                                            3
                                                  1
                                                       26
                                                             8
                                                                  7
                26
                      45 1466
                                      31
                                           14
                                                 55
                                                       55
                                                            64
                                                                 44
##
            2
                                80
            3
                10
                      16
                           33 1418
                                       1
                                          131
                                                  3
                                                       7
                                                            61
                                                                 20
##
##
            4
                 3
                      3
                           21
                                 4 1407
                                                 15
                                                      74
                                                            20
                                                                127
                                           11
##
            5
                85
                      27
                           24
                               124
                                      15 1283
                                                 81
                                                       50
                                                           101
                                                                 50
##
            6
                15
                      7
                           16
                                 2
                                       5
                                            24 1486
                                                       1
                                                             3
                                                                  2
            7
                                       4
                                                  0 1445
                                                             5
                                                                 31
##
                 1
                      6
                           18
                                17
                                            0
            8
                                                  3
##
                15
                      19
                           62
                                 52
                                                       9 1314
                                                                 25
                                      12
                                            21
            9
##
                 8
                      3
                                35
                                                      86
                            5
                                     144
                                           19
                                                  0
                                                            39 1356
##
                                                                       AccuracyNull
         Accuracy
                             Kappa
                                     AccuracyLower
                                                     AccuracyUpper
                                         0.8526831
                                                                          0.1115213
##
        0.8580530
                         0.8422800
                                                          0.8632985
## AccuracyPValue
                    McnemarPValue
        0.0000000
##
                               NaN
## Warning: Transformation introduced infinite values in discrete y-axis
```



```
pca 150<-getTopPCAFeatures(DigitTotalDF,150)</pre>
##
## Call:
## PCA(X = t(select(df, -label)), ncp = ncp, graph = FALSE)
##
##
## Eigenvalues
##
                             Dim.1
                                       Dim.2
                                                  Dim.3
                                                            Dim.4
                                                                       Dim.5
## Variance
                         12975.886
                                    2635.187
                                               2146.048 1747.535 1465.951
## % of var.
                            30.895
                                       6.274
                                                  5.110
                                                            4.161
                                                                       3.490
## Cumulative % of var.
                            30.895
                                      37.169
                                                 42.279
                                                           46.440
                                                                      49.930
##
                             Dim.6
                                       Dim.7
                                                  Dim.8
                                                            Dim.9
                                                                      Dim.10
## Variance
                          1358.547
                                    1135.701
                                                884.896
                                                          855.251
                                                                     734.998
## % of var.
                                                            2.036
                                                                       1.750
                             3.235
                                       2.704
                                                  2.107
## Cumulative % of var.
                            53.165
                                      55.869
                                                 57.976
                                                           60.012
                                                                      61.762
##
                            Dim.11
                                      Dim.12
                                                Dim.13
                                                           Dim.14
                                                                      Dim.15
## Variance
                           664.973
                                                          515.912
                                     634.157
                                                551.036
                                                                     483.259
## % of var.
                             1.583
                                       1.510
                                                  1.312
                                                            1.228
                                                                       1.151
## Cumulative % of var.
                                                           67.395
                            63.345
                                      64.855
                                                 66.167
                                                                      68.546
##
                            Dim. 16
                                      Dim.17
                                                 Dim.18
                                                           Dim.19
                                                                      Dim.20
## Variance
                           451.099
                                     420.945
                                                388.013
                                                           361.053
                                                                     349.113
## % of var.
                             1.074
                                       1.002
                                                  0.924
                                                            0.860
                                                                       0.831
```

## Cumulative % of var.	69.620	70.622	71.546	72.406	73.237	
##	Dim.21	Dim.22	Dim.23	Dim.24	Dim.25	
## Variance	329.622	310.712	298.708	281.495	275.884	
## % of var.	0.785	0.740	0.711	0.670	0.657	
## Cumulative % of var.	74.022	74.762	75.473	76.143	76.800	
##	Dim.26	Dim.27	Dim.28	Dim.29	Dim.30	
## Variance	268.984	252.330	236.925	226.065	219.194	
## % of var.	0.640	0.601	0.564	0.538	0.522	
## Cumulative % of var.	77.440	78.041	78.605	79.144	79.665	
## ## Vanianaa	Dim.31	Dim.32	Dim.33	Dim.34	Dim.35	
## Variance	203.959	202.286	185.225	181.697	173.988	
## % of var.	0.486	0.482	0.441	0.433	0.414	
## Cumulative % of var.	80.151	80.633	81.074	81.506	81.921	
## \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Dim.36	Dim.37	Dim.38	Dim.39	Dim.40	
<pre>## Variance ## % of var.</pre>	172.056	160.255	156.645	149.836	146.561	
## Cumulative % of var.	0.410	0.382	0.373	0.357	0.349	
## Cumulative % of var.	82.330	82.712	83.085	83.441	83.790	
## ## Variance	Dim.41 140.441	Dim.42 137.162	Dim.43 131.753	Dim.44 125.734	Dim.45 123.529	
## % of var.	0.334	0.327	0.314	0.299	0.294	
## Cumulative % of var.	84.125	84.451	84.765	85.064	85.359	
##	Dim.46	Dim.47	Dim.48	Dim.49	Dim.50	
## Variance	122.862	115.733	109.800	108.063	100.205	
## % of var.	0.293	0.276	0.261	0.257	0.239	
## Cumulative % of var.	85.651	85.927	86.188	86.445	86.684	
##	Dim.51	Dim.52	Dim.53	Dim.54	Dim.55	
## Variance	99.257	98.063	93.201	92.249	89.483	
## % of var.	0.236	0.233	0.222	0.220	0.213	
## Cumulative % of var.	86.920	87.154	87.376	87.595	87.808	
##	Dim.56	Dim.57	Dim.58	Dim.59	Dim.60	
## Variance	87.033	85.270	83.513	81.175	78.975	
## % of var.	0.207	0.203	0.199	0.193	0.188	
## Cumulative % of var.	88.016	88.219	88.417	88.611	88.799	
##	Dim.61	Dim.62	Dim.63	Dim.64	Dim.65	
## Variance	76.732	76.033	73.240	71.087	69.891	
## % of var.	0.183	0.181	0.174	0.169	0.166	
## Cumulative % of var.	88.981	89.163	89.337	89.506	89.673	
##	Dim.66	Dim.67	Dim.68	Dim.69	Dim.70	
## Variance	67.076	65.846	63.704	62.539	61.504	
## % of var.	0.160	0.157	0.152	0.149	0.146	
## Cumulative % of var.	89.832	89.989	90.141	90.290	90.436	
##	Dim.71	Dim.72	Dim.73	Dim.74	Dim.75	
## Variance	58.632	58.470	56.065	55.675	53.772	
## % of var.	0.140	0.139	0.133	0.133	0.128	
## Cumulative % of var.	90.576	90.715	90.848	90.981	91.109	
##	Dim.76	Dim.77	Dim.78	Dim.79	Dim.80	
## Variance	52.344	50.752	50.151	47.664	47.097	
## % of var.	0.125	0.121	0.119	0.113	0.112	
## Cumulative % of var.	91.234	91.354	91.474	91.587	91.699	
##	Dim.81	Dim.82	Dim.83	Dim.84	Dim.85	

## Variance	45.959	45.670	45.134	43.399	43.159
## % of var.	0.109	0.109	0.107	0.103	0.103
## Cumulative % of var.	91.809	91.918	92.025	92.128	92.231
##	Dim.86	Dim.87	Dim.88	Dim.89	Dim.90
## Variance	42.732	41.986	40.222	39.688	38.618
## % of var.	0.102	0.100	0.096	0.094	0.092
## Cumulative % of var.	92.333	92.433	92.529	92.623	92.715
##	Dim.91	Dim.92	Dim.93	Dim.94	Dim.95
## Variance	37.900	37.111	36.558	35.693	35.451
## % of var.	0.090	0.088	0.087	0.085	0.084
## Cumulative % of var.	92.805	92.894	92.981	93.066	93.150
##	Dim.96	Dim.97	Dim.98	Dim.99	Dim.100
## Variance	35.000	33.741	33.657	33.108	32.255
## % of var.	0.083	0.080	0.080	0.079	0.077
## Cumulative % of var.	93.233	93.314	93.394	93.473	93.550
##	Dim.101	Dim.102	Dim.103	Dim.104	Dim.105
## Variance	31.708	30.818	30.512	29.322	28.925
## % of var.	0.075	0.073	0.073	0.070	0.069
## Cumulative % of var.	93.625	93.698	93.771	93.841	93.910
##	Dim.106	Dim.107	Dim.108	Dim.109	Dim.110
## Variance	28.795	27.708	27.390	27.292	26.586
## % of var.	0.069	0.066	0.065	0.065	0.063
## Cumulative % of var.	93.978	94.044	94.109	94.174	94.238
##	Dim.111	Dim.112	Dim.113	Dim.114	Dim.115
## Variance	26.039	25.709	25.584	25.304	25.182
## % of var.	0.062	0.061	0.061	0.060	0.060
## Cumulative % of var.	94.300	94.361	94.422	94.482	94.542
##	Dim.116	Dim.117	Dim.118	Dim.119	Dim.120
## Variance	24.206	23.951	23.818	23.054	22.815
## % of var.	0.058	0.057	0.057	0.055	0.054
## Cumulative % of var.	94.600	94.657	94.713	94.768	94.823
##	Dim.121	Dim.122	Dim.123	Dim.124	Dim.125
## Variance	22.628	22.352	22.224	21.862	21.222
## % of var.	0.054	0.053	0.053	0.052	0.051
## Cumulative % of var.	94.877	94.930	94.983	95.035	95.085
##	Dim.126	Dim.127	Dim.128	Dim.129	Dim.130
## Variance	21.059	20.634	20.467	20.033	19.894
## % of var.	0.050	0.049	0.049	0.048	0.047
## Cumulative % of var.	95.135	95.185	95.233	95.281	95.328
##	Dim.131	Dim.132	Dim.133	Dim.134	Dim.135
## Variance	19.503	19.289	19.223	18.915	18.460
## % of var.	0.046	0.046	0.046	0.045	0.044
## Cumulative % of var.	95.375	95.421	95.466	95.511	95.555
##	Dim.136	Dim.137	Dim.138	Dim.139	Dim.140
## Variance	18.290	18.250	18.088	17.507	17.219
## % of var.	0.044	0.043	0.043	0.042	0.041
## Cumulative % of var.	95.599	95.642	95.686	95.727	95.768
##	Dim.141	Dim.142	Dim.143	Dim.144	Dim.145
## Variance	16.825	16.398	16.186	16.169	15.900
## % of var.	0.040	0.039	0.039	0.038	0.038

## Cumulative % of var.	95.808	95.847	95.886	95.924	95.962	
##	Dim.146	Dim.147	Dim.148	Dim.149	Dim.150	
## Variance	15.761	15.658	15.577	15.477	15.321	
## % of var.	0.038	0.037	0.037	0.037	0.036	
## Cumulative % of var.	96.000	96.037	96.074	96.111	96.147	
##	Dim.151	Dim.152	Dim.153	Dim.154	Dim.155	
## Variance	15.094	14.926	14.829	14.612	14.562	
## % of var.	0.036	0.036	0.035	0.035	0.035	
## Cumulative % of var.	96.183	96.219	96.254	96.289	96.324	
##	Dim.156	Dim.157	Dim.158	Dim.159	Dim.160	
## Variance	14.468	14.192	13.834	13.675	13.475	
## % of var.	0.034	0.034	0.033	0.033	0.032	
## Cumulative % of var.	96.358	96.392	96.425	96.457	96.489	
## \/anianca	Dim.161	Dim.162	Dim.163	Dim.164	Dim.165	
## Variance ## % of var.	13.389	13.298	13.073	12.872	12.801	
	0.032	0.032	0.031	0.031	0.030	
<pre>## Cumulative % of var. ##</pre>	96.521 Dim.166	96.553 Dim.167	96.584 Dim.168	96.615 Dim.169	96.645 Dim.170	
## Variance	12.616	12.526	12.381	12.338	12.194	
## % of var.	0.030	0.030	0.029	0.029	0.029	
## Cumulative % of var.	96.675	96.705	96.735	96.764	96.793	
##	Dim.171	Dim.172	Dim.173	Dim.174	Dim.175	
## Variance	12.051	11.965	11.780	11.716	11.592	
## % of var.	0.029	0.028	0.028	0.028	0.028	
## Cumulative % of var.	96.822	96.850	96.878	96.906	96.934	
##	Dim.176	Dim.177	Dim.178	Dim.179	Dim.180	
## Variance	11.287	11.160	11.056	10.858	10.780	
## % of var.	0.027	0.027	0.026	0.026	0.026	
## Cumulative % of var.	96.961	96.987	97.014	97.039	97.065	
##	Dim.181	Dim.182	Dim.183	Dim.184	Dim.185	
## Variance	10.626	10.585	10.574	10.451	10.389	
## % of var.	0.025	0.025	0.025	0.025	0.025	
## Cumulative % of var.	97.090	97.116	97.141	97.166	97.190	
##	Dim.186	Dim.187	Dim.188	Dim.189	Dim.190	
## Variance	10.327	10.181	10.151	9.965	9.863	
## % of var.	0.025	0.024	0.024	0.024	0.023	
## Cumulative % of var.	97.215	97.239	97.263	97.287	97.311	
##	Dim.191	Dim.192	Dim.193	Dim.194	Dim.195	
## Variance	9.825	9.749	9.691	9.637	9.542	
## % of var.	0.023	0.023	0.023	0.023	0.023	
## Cumulative % of var.	97.334	97.357	97.380	97.403	97.426	
##	Dim.196	Dim.197	Dim.198	Dim.199	Dim.200	
## Variance	9.502	9.399	9.342	9.198	9.163	
## % of var.	0.023	0.022	0.022	0.022	0.022	
## Cumulative % of var.	97.448	97.471	97.493	97.515	97.537	
##	Dim.201	Dim.202	Dim.203	Dim.204	Dim.205	
## Variance	9.071	8.888	8.812	8.673	8.653	
## % of var.	0.022	0.021	0.021	0.021	0.021	
## Cumulative % of var.	97.558	97.580	97.601	97.621	97.642	
##	Dim.206	Dim.207	Dim.208	Dim.209	Dim.210	

	/ariance		8.584	8.445	8.376	8.341	8.302
	% of var.		0.020	0.020	0.020	0.020	0.020
	Cumulative % of	var.	97.662	97.682	97.702	97.722	97.742
##			Dim.211	Dim.212	Dim.213	Dim.214	Dim.215
	/ariance		8.247	8.225	8.151	8.076	8.001
	6 of var.		0.020	0.020	0.019	0.019	0.019
	Cumulative % of	var.	97.762	97.781	97.801	97.820	97.839
##			Dim.216	Dim.217	Dim.218	Dim.219	Dim.220
	/ariance		7.939	7.859	7.823	7.807	7.708
	% of var.		0.019	0.019	0.019	0.019	0.018
	Cumulative % of	var.	97.858	97.876	97.895	97.914	97.932
##			Dim.221	Dim.222	Dim.223	Dim.224	Dim.225
	/ariance		7.679	7.574	7.502	7.472	7.428
	% of var.		0.018	0.018	0.018	0.018	0.018
	Cumulative % of	var.	97.950	97.968	97.986	98.004	98.022
##			Dim.226	Dim.227	Dim.228	Dim.229	Dim.230
	/ariance		7.380	7.295	7.171	7.139	7.066
	% of var.		0.018	0.017	0.017	0.017	0.017
	Cumulative % of	var.	98.039	98.057	98.074	98.091	98.108
##			Dim.231	Dim.232	Dim.233	Dim.234	Dim.235
	/ariance		6.982	6.966	6.898	6.861	6.811
	% of var.		0.017	0.017	0.016	0.016	0.016
	Cumulative % of	var.	98.124	98.141	98.157	98.173	98.190
##			Dim.236	Dim.237	Dim.238	Dim.239	Dim.240
	/ariance		6.726	6.659	6.631	6.563	6.485
	% of var.		0.016	0.016	0.016	0.016	0.015
	Cumulative % of	var.	98.206	98.222	98.237	98.253	98.268
##			Dim.241	Dim.242	Dim.243	Dim.244	Dim.245
	/ariance		6.449	6.408	6.366	6.331	6.306
	% of var.		0.015	0.015	0.015	0.015	0.015
	Cumulative % of	var.	98.284	98.299	98.314	98.329	98.344
##			Dim.246	Dim.247	Dim.248	Dim.249	Dim.250
	/ariance		6.230	6.177	6.149	6.014	6.005
	% of var.		0.015	0.015	0.015	0.014	0.014
	Cumulative % of	var.	98.359	98.374	98.388	98.403	98.417
##			Dim.251	Dim.252	Dim.253	Dim.254	Dim.255
	/ariance		5.957	5.900	5.878	5.854	5.783
	% of var.		0.014	0.014	0.014	0.014	0.014
	Cumulative % of	var.	98.431	98.445	98.459	98.473	98.487
##			Dim.256	Dim.257	Dim.258	Dim.259	Dim.260
	/ariance		5.769	5.685	5.658	5.632	5.605
	% of var.		0.014	0.014	0.013	0.013	0.013
	Cumulative % of	var.	98.501	98.514	98.528	98.541	98.555
##			Dim.261	Dim.262	Dim.263	Dim.264	Dim.265
	/ariance		5.539	5.491	5.438	5.435	5.400
	% of var.		0.013	0.013	0.013	0.013	0.013
	Cumulative % of	var.	98.568	98.581	98.594	98.607	98.620
##			Dim.266	Dim.267	Dim.268	Dim.269	Dim.270
	/ariance		5.343	5.329	5.233	5.218	5.188
## %	% of var.		0.013	0.013	0.012	0.012	0.012

## Cumulative % of var.	98.632	98.645	98.657	98.670	98.682	
##	Dim.271	Dim.272	Dim.273	Dim.274	Dim.275	
## Variance	5.123	5.080	5.060	5.041	4.981	
## % of var.	0.012	0.012	0.012	0.012	0.012	
## Cumulative % of var.	98.694	98.706	98.719	98.731	98.742	
## ## \/anianaa	Dim.276	Dim.277	Dim.278	Dim.279	Dim.280	
## Variance	4.964	4.911	4.873	4.857	4.850	
## % of var.	0.012	0.012	0.012	0.012	0.012	
## Cumulative % of var.	98.754	98.766	98.777	98.789	98.801	
## ## Variance	Dim.281	Dim.282	Dim.283	Dim.284	Dim.285	
	4.817	4.797	4.743	4.690	4.672	
## % of var.	0.011	0.011	0.011	0.011	0.011	
## Cumulative % of var.	98.812	98.823	98.835	98.846	98.857	
## ## Vaniance	Dim.286	Dim.287	Dim.288	Dim.289	Dim.290	
## Variance	4.640	4.599	4.585	4.555	4.495	
## % of var.	0.011	0.011	0.011	0.011	0.011	
## Cumulative % of var.	98.868	98.879	98.890	98.901	98.912	
##	Dim.291	Dim.292	Dim.293	Dim.294	Dim.295	
## Variance ## % of var.	4.487	4.459	4.427	4.403	4.373	
	0.011	0.011	0.011	0.010	0.010	
## Cumulative % of var.	98.922	98.933	98.943	98.954	98.964	
##	Dim.296	Dim.297	Dim.298	Dim.299	Dim.300	
## Variance	4.344	4.304	4.278	4.250	4.174	
## % of var.	0.010	0.010	0.010	0.010	0.010	
## Cumulative % of var.	98.975	98.985	98.995	99.005	99.015	
## ## \/anianaa	Dim.301	Dim.302	Dim.303	Dim.304	Dim.305	
## Variance	4.159	4.147	4.104	4.099	4.041	
## % of var.	0.010	0.010	0.010	0.010	0.010	
## Cumulative % of var.	99.025	99.035	99.045	99.054	99.064	
## ## \/anianaa	Dim.306	Dim.307	Dim.308	Dim.309	Dim.310	
## Variance	4.012	3.996	3.948	3.919	3.906	
## % of var.	0.010	0.010	0.009	0.009	0.009	
## Cumulative % of var.	99.074	99.083	99.092	99.102	99.111	
## ## Variance	Dim.311	Dim.312	Dim.313	Dim.314	Dim.315	
## % of var.	3.889	3.875	3.839	3.785	3.741	
	0.009	0.009	0.009	0.009 99.148	0.009 99.157	
## Cumulative % of var.	99.120	99.130	99.139	99.148 Dim.319		
## ## Variance	Dim.316	Dim.317	Dim.318		Dim.320 3.624	
## % of var.	3.724	3.682	3.668	3.644		
	0.009	0.009	0.009	0.009	0.009	
## Cumulative % of var.	99.166	99.174	99.183	99.192	99.200	
## ## Variance	Dim.321	Dim.322	Dim.323	Dim.324	Dim.325 3.472	
	3.582	3.576	3.538	3.490		
## % of var.	0.009	0.009	0.008	0.008	0.008	
## Cumulative % of var.	99.209	99.217	99.226	99.234	99.242	
##	Dim.326	Dim.327	Dim.328	Dim.329	Dim.330	
## Variance	3.443	3.392	3.378	3.353	3.342	
## % of var.	0.008	0.008	0.008	0.008	0.008	
## Cumulative % of var.	99.251	99.259	99.267	99.275	99.283	
##	Dim.331	Dim.332	Dim.333	Dim.334	Dim.335	

## Variance	3.335	3.289	3.266	3.250	3.243	
## % of var.	0.008	0.008	0.008	0.008	0.008	
## Cumulative % of var.	99.291	99.298	99.306	99.314	99.322	
##	Dim.336	Dim.337	Dim.338	Dim.339	Dim.340	
## Variance	3.228	3.202	3.183	3.169	3.157	
## % of var.	0.008	0.008	0.008	0.008	0.008	
## Cumulative % of var.	99.329	99.337	99.345	99.352	99.360	
##	Dim.341	Dim.342	Dim.343	Dim.344	Dim.345	
## Variance	3.103	3.083	3.070	3.052	3.031	
## % of var.	0.007	0.007	0.007	0.007	0.007	
## Cumulative % of var.	99.367	99.374	99.382	99.389	99.396	
##	Dim.346	Dim.347	Dim.348	Dim.349	Dim.350	
## Variance	3.011	3.002	2.950	2.918	2.889	
## % of var.	0.007	0.007	0.007	0.007	0.007	
## Cumulative % of var.	99.403	99.410	99.417	99.424	99.431	
##	Dim.351	Dim.352	Dim.353	Dim.354	Dim.355	
## Variance	2.832	2.819	2.810	2.768	2.757	
## % of var.	0.007	0.007	0.007	0.007	0.007	
## Cumulative % of var.	99.438	99.445	99.451	99.458	99.465	
##	Dim.356	Dim.357	Dim.358	Dim.359	Dim.360	
## Variance	2.733	2.709	2.695	2.678	2.671	
## % of var.	0.007	0.006	0.006	0.006	0.006	
## Cumulative % of var.	99.471	99.478	99.484	99.490	99.497	
##	Dim.361	Dim.362	Dim.363	Dim.364	Dim.365	
## Variance	2.652	2.645	2.610	2.542	2.519	
## % of var.	0.006	0.006	0.006	0.006	0.006	
## Cumulative % of var.	99.503	99.509	99.516	99.522	99.528	
##	Dim.366	Dim.367	Dim.368	Dim.369	Dim.370	
## Variance	2.515	2.492	2.468	2.448	2.434	
## % of var.	0.006	0.006	0.006	0.006	0.006	
## Cumulative % of var.	99.534	99.539	99.545	99.551	99.557	
##	Dim.371	Dim.372	Dim.373	Dim.374	Dim.375	
## Variance	2.412	2.378	2.340	2.326	2.306	
## % of var.	0.006	0.006	0.006	0.006	0.005	
## Cumulative % of var.	99.563	99.568	99.574	99.580	99.585	
##	Dim.376	Dim.377	Dim.378	Dim.379	Dim.380	
## Variance	2.300	2.281	2.263	2.240	2.216	
## % of var.	0.005	0.005	0.005	0.005	0.005	
## Cumulative % of var.	99.590	99.596	99.601	99.607	99.612	
##	Dim.381	Dim.382	Dim.383	Dim.384	Dim.385	
## Variance	2.203	2.175	2.146	2.087	2.077	
## % of var.	0.005	0.005	0.005	0.005	0.005	
## Cumulative % of var.	99.617	99.622	99.627	99.632	99.637	
##	Dim.386	Dim.387	Dim.388	Dim.389	Dim.390	
## Variance	2.044	2.036	2.020	1.995	1.976	
## % of var.	0.005	0.005	0.005	0.005	0.005	
## Cumulative % of var.	99.642	99.647	99.652	99.657	99.661	
##	Dim.391	Dim.392	Dim.393	Dim.394	Dim.395	
## Variance	1.959	1.942	1.918	1.895	1.886	
## % of var.	0.005	0.005	0.005	0.005	0.004	
70 01 401 1	0.003	0.003	0.005	0.003	0.004	

## Cumulative % of var.	99.666	99.671	99.675	99.680	99.684	
##	Dim.396	Dim.397	Dim.398	Dim.399	Dim.400	
## Variance	1.849	1.820	1.810	1.779	1.761	
## % of var.	0.004	0.004	0.004	0.004	0.004	
## Cumulative % of var.	99.689	99.693	99.697	99.701	99.706	
##	Dim.401	Dim.402	Dim.403	Dim.404	Dim.405	
<pre>## Variance ## % of var.</pre>	1.746	1.731	1.714	1.701	1.676	
## Cumulative % of var.	0.004 99.710	0.004 99.714	0.004 99.718	0.004 99.722	0.004 99.726	
##	Dim.406	99.714 Dim.407	Dim.408	Dim.409	99.726 Dim.410	
## Variance	1.670	1.633	1.619	1.590	1.581	
## % of var.	0.004	0.004	0.004	0.004	0.004	
## Cumulative % of var.	99.730	99.734	99.738	99.742	99.745	
##	Dim.411	Dim.412	Dim.413	Dim.414	Dim.415	
## Variance	1.570	1.554	1.545	1.538	1.516	
## % of var.	0.004	0.004	0.004	0.004	0.004	
## Cumulative % of var.	99.749	99.753	99.756	99.760	99.764	
##	Dim.416	Dim.417	Dim.418	Dim.419	Dim.420	
## Variance	1.512	1.502	1.484	1.462	1.435	
## % of var.	0.004	0.004	0.004	0.003	0.003	
## Cumulative % of var.	99.767	99.771	99.774	99.778	99.781	
##	Dim.421	Dim.422	Dim.423	Dim.424	Dim.425	
## Variance	1.421	1.390	1.380	1.369	1.344	
## % of var.	0.003	0.003	0.003	0.003	0.003	
## Cumulative % of var.	99.785	99.788	99.791	99.795	99.798	
##	Dim.426	Dim.427	Dim.428	Dim.429	Dim.430	
## Variance	1.335	1.292	1.289	1.277	1.236	
## % of var.	0.003	0.003	0.003	0.003	0.003	
## Cumulative % of var.	99.801	99.804	99.807	99.810	99.813	
##	Dim.431	Dim.432	Dim.433	Dim.434	Dim.435	
## Variance	1.213	1.205	1.200	1.189	1.172	
## % of var.	0.003	0.003	0.003	0.003	0.003	
## Cumulative % of var.	99.816	99.819	99.822	99.825	99.827	
##	Dim.436	Dim.437	Dim.438	Dim.439	Dim.440	
## Variance	1.148	1.132	1.114	1.103	1.096	
## % of var.	0.003	0.003	0.003	0.003	0.003	
## Cumulative % of var.	99.830	99.833	99.835	99.838	99.841	
##	Dim.441	Dim.442	Dim.443	Dim.444	Dim.445	
## Variance	1.085	1.057	1.053	1.031	1.027	
## % of var.	0.003	0.003	0.003	0.002	0.002	
## Cumulative % of var.	99.843	99.846	99.848	99.851	99.853	
##	Dim.446	Dim.447	Dim.448	Dim.449	Dim.450	
## Variance	1.019	0.999	0.986	0.973	0.960	
## % of var.	0.002	0.002	0.002	0.002	0.002	
## Cumulative % of var.	99.856	99.858	99.860	99.863	99.865	
##	Dim.451	Dim.452	Dim.453	Dim.454	Dim.455	
## Variance	0.958	0.934	0.912	0.896	0.892	
## % of var.	0.002	0.002	0.002	0.002	0.002	
## Cumulative % of var.	99.867	99.869	99.872	99.874	99.876	
##	Dim.456	Dim.457	Dim.458	Dim.459	Dim.460	

## Variance	0.887	0.868	0.863	0.857	0.831	
## % of var.	0.002	0.002	0.002	0.002	0.002	
## Cumulative % of var.	99.878	99.880	99.882	99.884	99.886	
##	Dim.461	Dim.462	Dim.463	Dim.464	Dim.465	
## Variance	0.819	0.810	0.800	0.771	0.761	
## % of var.	0.002	0.002	0.002	0.002	0.002	
## Cumulative % of var.	99.888	99.890	99.892	99.894	99.895	
##	Dim.466	Dim.467	Dim.468	Dim.469	Dim.470	
## Variance	0.758	0.753	0.745	0.736	0.727	
## % of var.	0.002	0.002	0.002	0.002	0.002	
## Cumulative % of var.	99.897	99.899	99.901	99.903	99.904	
##	Dim.471	Dim.472	Dim.473	Dim.474	Dim.475	
## Variance	0.719	0.707	0.700	0.691	0.683	
## % of var.	0.002	0.002	0.002	0.002	0.002	
## Cumulative % of var.	99.906	99.908	99.909	99.911	99.913	
##	Dim.476	Dim.477	Dim.478	Dim.479	Dim.480	
## Variance	0.679	0.673	0.651	0.642	0.627	
## % of var.	0.002	0.002	0.002	0.002	0.001	
## Cumulative % of var.	99.914	99.916	99.917	99.919	99.920	
##	Dim.481	Dim.482	Dim.483	Dim.484	Dim.485	
## Variance	0.619	0.612	0.604	0.591	0.580	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.922	99.923	99.925	99.926	99.928	
##	Dim.486	Dim.487	Dim.488	Dim.489	Dim.490	
## Variance	0.572	0.568	0.559	0.553	0.546	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.929	99.930	99.932	99.933	99.934	
##	Dim.491	Dim.492	Dim.493	Dim.494	Dim.495	
## Variance	0.535	0.532	0.518	0.510	0.500	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.936	99.937	99.938	99.939	99.940	
##	Dim.496	Dim.497	Dim.498	Dim.499	Dim.500	
## Variance	0.483	0.480	0.472	0.467	0.458	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.942	99.943	99.944	99.945	99.946	
##	Dim.501	Dim.502	Dim.503	Dim.504	Dim.505	
## Variance	0.457	0.452	0.445	0.441	0.431	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.947	99.948	99.949	99.950	99.951	
##	Dim.506	Dim.507	Dim.508	Dim.509	Dim.510	
## Variance	0.412	0.403	0.397	0.392	0.386	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.952	99.953	99.954	99.955	99.956	
##	Dim.511	Dim.512	Dim.513	Dim.514	Dim.515	
## Variance	0.383	0.376	0.373	0.365	0.355	
## % of var.	0.001	0.001	0.001	0.001	0.001	
## Cumulative % of var.	99.957	99.958	99.959	99.960	99.961	
##	Dim.516	Dim.517	Dim.518	Dim.519	Dim.520	
## Variance	0.350	0.348	0.346	0.343	0.337	
## % of var.	0.001	0.001	0.001	0.001	0.001	

	Cumulative % of var		99.962	99.963	99.964	99.965	
##		Dim.521	Dim.522	Dim.523	Dim.524	Dim.525	
	Variance	0.327	0.326	0.315	0.311	0.311	
	% of var.	0.001	0.001	0.001	0.001	0.001	
	Cumulative % of var		99.966	99.967	99.968	99.968	
##		Dim.526	Dim.527	Dim.528	Dim.529	Dim.530	
	Variance	0.307	0.302	0.299	0.297	0.279	
	% of var.	0.001	0.001	0.001	0.001	0.001	
	Cumulative % of var		99.970	99.971	99.971	99.972	
##	V	Dim.531	Dim.532	Dim.533	Dim.534	Dim.535	
	Variance	0.278	0.268	0.264	0.261	0.256	
	% of var.	0.001	0.001	0.001	0.001	0.001	
	Cumulative % of var		99.973	99.974	99.975	99.975	
##	Mandana	Dim.536	Dim.537	Dim.538	Dim.539	Dim.540	
	Variance	0.253	0.247	0.241	0.234	0.232	
	% of var.	0.001	0.001	0.001	0.001	0.001	
	Cumulative % of var		99.976	99.977	99.977	99.978	
##	Vaniana	Dim.541	Dim.542	Dim.543	Dim.544	Dim.545	
	Variance	0.229	0.227	0.220	0.218	0.217	
	% of var.	0.001	0.001	0.001	0.001	0.001	
	Cumulative % of var		99.979	99.980	99.980	99.981	
##	Vanianas	Dim.546	Dim.547	Dim.548	Dim.549	Dim.550	
	Variance	0.214	0.205	0.195	0.194	0.186	
	% of var.	0.001	0.000	0.000	0.000	0.000	
	Cumulative % of var		99.982	99.982	99.983	99.983	
##	Marailanaa	Dim.551	Dim.552	Dim.553	Dim.554	Dim.555	
	Variance	0.182	0.180	0.173	0.171	0.165	
	% of var.	0.000	0.000	0.000	0.000	0.000	
	Cumulative % of var		99.984	99.984	99.985	99.985	
##	Vaniana	Dim.556	Dim.557	Dim.558	Dim.559	Dim.560	
	Variance	0.163	0.161	0.159	0.152	0.150	
	% of var.	0.000	0.000	0.000	0.000	0.000	
	Cumulative % of var		99.986	99.986	99.987	99.987	
##	Variance	Dim.561	Dim.562	Dim.563	Dim.564	Dim.565	
	% of var.	0.148	0.146	0.144	0.142	0.135	
		0.000	0.000	0.000	0.000	0.000	
	Cumulative % of var		99.988	99.988	99.988	99.989	
##	Variance	Dim.566 0.133	Dim.567 0.131	Dim.568 0.123	Dim.569 0.121	Dim.570 0.121	
	% of var.						
		0.000	0.000	0.000	0.000	0.000	
	Cumulative % of var		99.989	99.990	99.990	99.990	
##	Variance	Dim.571	Dim.572	Dim.573	Dim.574	Dim.575	
		0.119	0.118	0.118	0.114	0.113	
	% of var.	0.000	0.000	0.000	0.000	0.000	
	Cumulative % of var		99.991	99.991	99.991	99.992	
##	Vanianco	Dim.576	Dim.577	Dim.578	Dim.579	Dim.580	
	Variance	0.107	0.104	0.103	0.098	0.096	
	% of var.	0.000	0.000	0.000	0.000	0.000	
##	Cumulative % of var	99.992 Dim.581	99.992	99.992	99.993 Dim.584	99.993	
##		דפכיווודת	Dim.582	Dim.583	1111.504	Dim.585	

## Variance	0.090	0.089	0.088	0.085	0.085	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.993	99.993	99.993	99.994	99.994	
##	Dim.586	Dim.587	Dim.588	Dim.589	Dim.590	
## Variance	0.083	0.082	0.078	0.077	0.074	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.994	99.994	99.994	99.995	99.995	
##	Dim.591	Dim.592	Dim.593	Dim.594	Dim.595	
## Variance	0.074	0.074	0.070	0.068	0.066	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.995	99.995	99.995	99.995	99.996	
##	Dim.596	Dim.597	Dim.598	Dim.599	Dim.600	
## Variance	0.064	0.062	0.060	0.060	0.058	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.996	99.996	99.996	99.996	99.996	
##	Dim.601	Dim.602	Dim.603	Dim.604	Dim.605	
## Variance	0.055	0.052	0.051	0.050	0.049	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.996	99.997	99.997	99.997	99.997	
##	Dim.606	Dim.607	Dim.608	Dim.609	Dim.610	
## Variance	0.049	0.048	0.047	0.046	0.044	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.997	99.997	99.997	99.997	99.997	
##	Dim.611	Dim.612	Dim.613	Dim.614	Dim.615	
## Variance	0.041	0.040	0.036	0.035	0.034	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.998	99.998	99.998	99.998	99.998	
##	Dim.616	Dim.617	Dim.618	Dim.619	Dim.620	
## Variance	0.034	0.033	0.032	0.032	0.031	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.998	99.998	99.998	99.998	99.998	
##	Dim.621	Dim.622	Dim.623	Dim.624	Dim.625	
## Variance	0.030	0.030	0.028	0.028	0.027	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.998	99.998	99.998	99.999	99.999	
##	Dim.626	Dim.627	Dim.628	Dim.629	Dim.630	
## Variance	0.026	0.025	0.024	0.024	0.023	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.999	99.999	99.999	99.999	99.999	
##	Dim.631	Dim.632	Dim.633	Dim.634	Dim.635	
## Variance	0.022	0.021	0.021	0.020	0.020	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.999	99.999	99.999	99.999	99.999	
##	Dim.636	Dim.637	Dim.638	Dim.639	Dim.640	
## Variance	0.020	0.019	0.019	0.016	0.016	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	99.999	99.999	99.999	99.999	99.999	
##	Dim.641	Dim.642	Dim.643	Dim.644	Dim.645	
## Variance	0.015	0.015	0.014	0.013	0.013	
## % of var.	0.000	0.000	0.000	0.000	0.000	

## Cumulative % of var.	99.999	99.999	99.999	100.000	100.000
##	Dim.646	Dim.647	Dim.648	Dim.649	Dim.650
## Variance	0.011	0.011	0.010	0.010	0.009
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.651	Dim.652	Dim.653	Dim.654	Dim.655
## Variance	0.009	0.009	0.008	0.008	0.007
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.656	Dim.657	Dim.658	Dim.659	Dim.660
## Variance	0.007	0.007	0.007	0.006	0.006
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
## ## \/anianaa	Dim.661	Dim.662	Dim.663	Dim.664	Dim.665
## Variance	0.006	0.006	0.006	0.004	0.004
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
## \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Dim.666	Dim.667	Dim.668	Dim.669	Dim.670
## Variance ## % of var.	0.004	0.003	0.003	0.003	0.003
## Cumulative % of var.	0.000	0.000	0.000	0.000	0.000
	100.000	100.000	100.000	100.000	100.000
## ## Variance	Dim.671 0.002	Dim.672 0.002	Dim.673 0.002	Dim.674 0.002	Dim.675 0.002
## % of var.					
## Cumulative % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % or var.	100.000 Dim.676	100.000 Dim.677	100.000 Dim.678	100.000 Dim.679	100.000 Dim.680
## Variance					
## % of var.	0.001 0.000	0.001 0.000	0.001 0.000	0.001 0.000	0.001 0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.681	Dim.682	Dim.683	Dim.684	Dim.685
## Variance	0.001	0.001	0.001	0.001	0.001
## % of var.	0.001	0.001	0.001	0.001	0.001
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.686	Dim.687	Dim.688	Dim.689	Dim.690
## Variance	0.001	0.001	0.000	0.000	0.000
## % of var.	0.001	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.691	Dim.692	Dim.693	Dim.694	Dim.695
## Variance	0.000	0.000	0.000	0.000	0.000
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.696	Dim.697	Dim.698	Dim.699	Dim.700
## Variance	0.000	0.000	0.000	0.000	0.000
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.701	Dim.702	Dim.703	Dim.704	Dim.705
## Variance	0.000	0.000	0.000	0.000	0.000
## % of var.	0.000	0.000	0.000	0.000	0.000
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000
##	Dim.706	Dim.707	Dim.708	Dim.709	Dim.710

## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.711	Dim.712	Dim.713	Dim.714	Dim.715	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.716	Dim.717	Dim.718	Dim.719	Dim.720	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.721	Dim.722	Dim.723	Dim.724	Dim.725	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.726	Dim.727	Dim.728	Dim.729	Dim.730	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.731	Dim.732	Dim.733	Dim.734	Dim.735	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.736	Dim.737	Dim.738	Dim.739	Dim.740	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.741	Dim.742	Dim.743	Dim.744	Dim.745	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.746	Dim.747	Dim.748	Dim.749	Dim.750	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.751	Dim.752	Dim.753	Dim.754	Dim.755	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.756	Dim.757	Dim.758	Dim.759	Dim.760	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.761	Dim.762	Dim.763	Dim.764	Dim.765	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	
## Cumulative % of var.	100.000	100.000	100.000	100.000	100.000	
##	Dim.766	Dim.767	Dim.768	Dim.769	Dim.770	
## Variance	0.000	0.000	0.000	0.000	0.000	
## % of var.	0.000	0.000	0.000	0.000	0.000	

```
## Cumulative % of var.
                           100.000
                                      100.000
                                                100.000
                                                           100.000
                                                                     100.000
##
                           Dim.771
                                      Dim. 772
                                                Dim.773
                                                           Dim.774
                                                                     Dim.775
## Variance
                                        0.000
                                                  0.000
                                                             0.000
                                                                        0.000
                             0.000
## % of var.
                             0.000
                                        0.000
                                                  0.000
                                                             0.000
                                                                        0.000
## Cumulative % of var.
                           100.000
                                      100.000
                                                100.000
                                                           100.000
                                                                     100.000
                                                           Dim.779
##
                           Dim.776
                                      Dim.777
                                                Dim.778
                                                                     Dim.780
## Variance
                             0.000
                                        0.000
                                                  0.000
                                                             0.000
                                                                        0.000
## % of var.
                             0.000
                                        0.000
                                                  0.000
                                                             0.000
                                                                        0.000
## Cumulative % of var.
                           100.000
                                      100.000
                                                100.000
                                                           100.000
                                                                      100.000
##
                           Dim. 781
                                      Dim. 782
                                                Dim.783
## Variance
                                        0.000
                             0.000
                                                  0.000
## % of var.
                             0.000
                                        0.000
                                                  0.000
## Cumulative % of var.
                           100.000
                                      100.000
                                                100.000
##
## Individuals (the 10 first)
##
                                                    Dim.2
                Dist
                         Dim.1
                                    ctr
                                           cos2
                                                               ctr
                                                                      cos2
Dim.3
             87.988 | -85.829
                                          0.952 | -10.867
## 0
                                 0.072
                                                             0.006
                                                                     0.015
9.555
## 1
             87.988 | -85.829
                                 0.072
                                          0.952 | -10.867
                                                             0.006
                                                                     0.015
9.555
## 2
             87.988 | -85.829
                                 0.072
                                          0.952 | -10.867
                                                             0.006
                                                                     0.015
9.555
             87.988 | -85.829
                                 0.072
                                          0.952 | -10.867
                                                             0.006
                                                                     0.015
## 3
9.555
## 4
             87.988 | -85.829
                                 0.072
                                          0.952 | -10.867
                                                             0.006
                                                                     0.015
9.555
## 5
             87.988 | -85.829
                                 0.072
                                          0.952 | -10.867
                                                             0.006
                                                                     0.015
9.555
                                          0.952 | -10.867
             87.988 | -85.829
                                                             0.006
                                                                     0.015
## 6
                                 0.072
9.555
## 7
             87.988 | -85.829
                                 0.072
                                          0.952 | -10.867
                                                             0.006
                                                                     0.015
9.555
                                          0.952 | -10.867
## 8
             87.988 | -85.829
                                 0.072
                                                             0.006
                                                                     0.015
9.555
             87.988 | -85.829
                                          0.952 | -10.867
## 9
                                 0.072
                                                             0.006
                                                                     0.015
9.555
##
              ctr
                      cos2
## 0
            0.005
                     0.012
## 1
            0.005
                     0.012
## 2
            0.005
                     0.012
## 3
            0.005
                     0.012
## 4
            0.005
                     0.012
## 5
            0.005
                     0.012
## 6
            0.005
                     0.012
## 7
            0.005
                     0.012
## 8
            0.005
                     0.012
## 9
            0.005
                     0.012 |
##
## Variables (the 10 first)
```

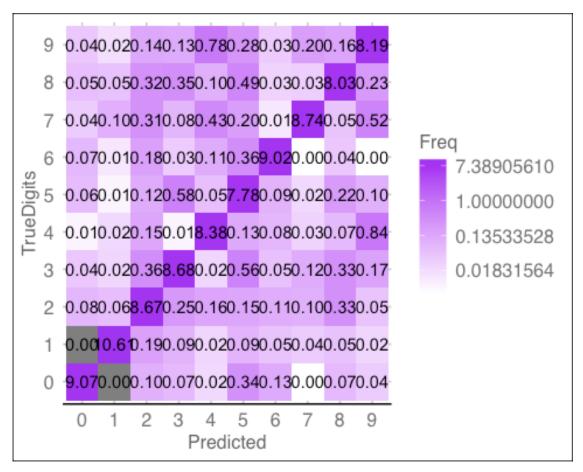
```
Dim.1 ctr cos2 Dim.2 ctr cos2 Dim.3 ctr
##
cos2
## V1
          0.419 0.001 0.176 | -0.407 0.006 0.165 | 0.198 0.002
0.039
## V2
         0.501 0.002 0.251 | 0.374 0.005 0.140 | 0.434 0.009
0.189
## V3
          0.534 0.002 0.285 | -0.467 0.008 0.218 | -0.077 0.000
0.006
          0.269 0.001 0.073 | 0.244 0.002 0.060 | -0.020 0.000
## V4
0.000
## V5
          0.452 0.002 0.205 | 0.373 0.005 0.139 | 0.449 0.009
0.202
## V6
          0.576 0.003 0.332 | 0.350 0.005 0.122 | 0.116 0.001
0.013
## V7
          0.502 0.002 0.252 | -0.054 0.000 0.003 | -0.407 0.008
0.166
## V8
          0.347 0.001 0.120 | 0.069 0.000 0.005 | 0.021 0.000
0.000
## V9
          0.640 0.003 0.410 | 0.221 0.002 0.049 | 0.050 0.000
0.002
## V10
          0.570 0.003 0.325 | -0.084 0.000 0.007 | 0.337 0.005
0.114
model_nb_150<-runNB(pca_150)</pre>
##
## ====== Naive Bayes
_____
## - Call: naive bayes.formula(formula = label ~ ., data = trainDF)
## - Laplace: 0
## - Classes: 10
## - Samples: 25205
## - Features: 150
## - Conditional distributions:
##
      - Gaussian: 150
## - Prior probabilities:
##
      - 0: 0.0984
      - 1: 0.1115
##
##
      - 2: 0.0995
##
      - 3: 0.1036
##
      - 4: 0.097
##
      - 5: 0.0903
##
      - 6: 0.0985
##
      - 7: 0.1048
##
      - 8: 0.0967
      - 9: 0.0997
##
## -----
```

```
## Warning: predict.naive_bayes(): more features in the newdata are provided
## there are probability tables in the object. Calculation is performed based
on
## features to be found in the tables.
##
             TrueDigits
                            2
                                                                  9
## Predicted
                                  3
                                             5
                                                       7
                                                             8
                                       4
                                                  6
                                                       2
                                                                  9
##
            0 1441
                       0
                           18
                                 14
                                       0
                                           64
                                                 22
                                                            28
                 0 1690
                           33
                                       3
                                                      25
                                                            43
##
            1
                                 17
                                             2
                                                 12
                                                                  7
                      81 1421
                                      78
                                            32
                                                 95
                                                      94
                                                           102
##
            2
                63
                                82
                                                                 69
            3
                 6
                      12
                           55 1386
                                       2
                                          136
                                                  4
                                                       9
                                                            54
                                                                 14
##
                                  0 1366
##
            4
                 3
                      24
                           26
                                             7
                                                 12
                                                      45
                                                            15
                                                                 99
##
            5
               107
                      34
                           18
                               143
                                      27 1205
                                                 59
                                                      60
                                                           103
                                                                 78
##
            6
                19
                      11
                           16
                                  6
                                       8
                                           17 1443
                                                        2
                                                             3
                                                                  1
            7
                                       3
                                                  0 1383
                                                             5
                                                                 34
##
                 1
                      4
                           10
                                16
                                             1
##
            8
                10
                           64
                                 38
                                      11
                                                  5
                                                      10 1220
                                                                 25
                      13
                                            30
            9
##
                 2
                                38
                                                  2
                      4
                                     130
                                            24
                                                     130
                                                            52 1339
##
                                                                       AccuracyNull
         Accuracy
                             Kappa
                                     AccuracyLower
                                                     AccuracyUpper
                                         0.8214668
                                                          0.8329597
                                                                          0.1115213
##
        0.8272700
                         0.8080730
## AccuracyPValue
                    McnemarPValue
        0.0000000
##
                               NaN
## Warning: Transformation introduced infinite values in discrete y-axis
```

```
9 0.0%.0%.2%.0%.6%.4%.0%.2%.2%.2%.7.0%
   8 2.2%.2%.4%.2%.0%.6%.0%.0%.0%<mark>5.8%</mark>.2%
   7 0.0%.2%4.4%0.0%.2%2.2%0.0%4.6%0.0%6.6%
                                                 Freq
   6 2.2%.0%.4%.0%.0%.2.2%4.6%.0%.0%.0%.0%
5 4.4%.0%.2%.8%.0%6.0%.2%.0%.0%.2%.2%
4 0.0%.0%4.4%.0%5.8%.2%.0%.0%.0%.0%.6%
                                                      0.135335283
                                                      0.018315639
   3 0.0%.0%.4%3.6%.0%.8%.0%.0%.0%.2%.2%
                                                      0.002478752
   2 2.2%.2%8.2%.2%.2%.0%.0%.0%.04.4%.0%
   1 0.0%2.4%4%0.0%.2%.2%.0%.0%.0%.0%.0%
   0 3<mark>0.2%.0%.2%</mark>.0%.0%.0%.6%.2.2%.0%.0%.0%
                  3 4
                          5 6 7 8
              2
                    Predicted
```

```
# k -fold
train.control <- trainControl(method = "cv", number=3)</pre>
# Train the model
nb model <- train(label ~., data = pca 75, method = "naive bayes",trControl =</pre>
train.control)
# Summarize the results
print(nb model)
## Naive Bayes
##
## 42000 samples
      75 predictor
##
      10 classes: '0', '1', '2', '3', '4', '5', '6', '7', '8', '9'
##
##
## No pre-processing
## Resampling: Cross-Validated (3 fold)
## Summary of sample sizes: 28002, 27998, 28000
## Resampling results across tuning parameters:
##
##
     usekernel Accuracy
                            Kappa
##
     FALSE
                0.8645713 0.8495182
##
      TRUE
                0.8716188 0.8573425
##
```

```
## Tuning parameter 'laplace' was held constant at a value of 0
## Tuning
## parameter 'adjust' was held constant at a value of 1
## Accuracy was used to select the optimal model using the largest value.
## The final values used for the model were laplace = 0, usekernel = TRUE
## and adjust = 1.
summary(nb model)
##
## ====== Naive Bayes
______
## - Call: naive_bayes.default(x = x, y = y, laplace = param$laplace,
usekernel = TRUE,
                      adjust = param$adjust)
## - Laplace: 0
## - Classes: 10
## - Samples: 42000
## - Features: 75
## - Conditional distributions:
      - KDE: 75
## - Prior probabilities:
     - 0: 0.0984
##
      - 1: 0.1115
##
      - 2: 0.0995
      - 3: 0.1036
##
##
      - 4: 0.097
##
      - 5: 0.0904
##
      - 6: 0.0985
      - 7: 0.1048
##
##
      - 8: 0.0967
##
      - 9: 0.0997
## -----
cf nb<-confusionMatrix(nb model)</pre>
str(cf_nb$table)
    'table' num [1:10, 1:10] 9.069 0 0.1 0.0714 0.0214 ...
## - attr(*, "dimnames")=List of 2
    ..$ Prediction: chr [1:10] "0" "1" "2" "3" ...
##
     ..$ Reference : chr [1:10] "0" "1" "2" "3" ...
##
confusion matrix nb <- as.data.frame(cf nb$table)</pre>
names(confusion_matrix_nb)<-c("Predicted","TrueDigits","Freq")</pre>
ggplot(data = confusion_matrix_nb,
            aes(x = Predicted,y = TrueDigits)) +
 geom_tile(aes(fill = Freq)) +
 #geom_text(aes(label = sprintf("%.2f", (Freq/sum(Freq)*100))), vjust = 1) +
```



```
#kaggle submission
kaggleTest <- read.csv("test.csv", header = TRUE, stringsAsFactors = TRUE)
colnames<- names(kaggleTest)
names(kaggleTest)<- sub("pixel","",colnames)

kaggle_dtree<- predict(ptree,kaggleTest,type="class")
kaggle_dtree<-data.frame(kaggle_dtree)
names(kaggle_dtree)<-c("Label")
kaggle_dtree$ImageId<- row.names(kaggle_dtree)
write.csv(kaggle_dtree,"kaggle_dtree.csv",row.names=FALSE)

kaggle_nb<- predict(model_nb_75,kaggleTest,type="class")

## Warning: predict.naive_bayes(): only 0 feature(s) out of 75 defined in the naive_bayes object "model_nb_75" are used for prediction.</pre>
```

```
## Warning: predict.naive_bayes(): more features in the newdata are provided
as
## there are probability tables in the object. Calculation is performed based
on
## features to be found in the tables.
## Warning: predict.naive_bayes(): no feature in the newdata corresponds to
## probability tables in the object. Classification is done based on the
prior
## probabilities

kaggle_nb<-data.frame(kaggle_nb)
names(kaggle_nb)<-c("Label")
kaggle_nb$ImageId<- row.names(kaggle_nb)
write.csv(kaggle_nb,"kaggle_nb.csv",row.names=FALSE)

stopCluster(cl)</pre>
```