810 Team Project

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```
library(data.table)
library(ggplot2)
library(ggthemes)
library(glmnet)
```

```
## Loading required package: Matrix
```

```
## Loaded glmnet 4.1
```

```
theme_set(theme_bw())
library(MASS)
library(rpart)
library(rpart.plot)
library(randomForest)
```

```
## randomForest 4.6-14
```

```
## Type rfNews() to see new features/changes/bug fixes.
```

```
##
## Attaching package: 'randomForest'
```

```
## The following object is masked from 'package:ggplot2':
##
##     margin
```

```
library(caret)
```

```
## Loading required package: lattice
```

```
library(e1071)
library(tree)
library(ISLR)
library(party)
```

```
## Loading required package: grid
```

```
## Loading required package: mvtnorm
```

```
## Loading required package: modeltools

## Loading required package: stats4

## Loading required package: strucchange

## Loading required package: zoo

##
## Attaching package: 'zoo'

## The following objects are masked from 'package:base':
##
##     as.Date, as.Date.numeric

## Loading required package: sandwich
```

```
library(tidymodels)
```

```
## Registered S3 method overwritten by 'cli':
##   method     from
##   print.tree tree

## -- Attaching packages --------------------------------------- tidymodels 0.1.2 --

## v broom     0.7.5      v recipes   0.1.15
## v dials     0.0.9      v rsample   0.0.9
## v dplyr     1.0.4      v tibble    3.0.6
## v infer     0.5.4      v tidyr     1.1.2
## v modeldata 0.1.0      v tune      0.1.2
## v parsnip   0.1.5      v workflows 0.2.1
## v purrr     0.3.4      v yardstick 0.0.7

## -- Conflicts ------------------------------------------ tidymodels_conflicts() --
## x dplyr::between()         masks data.table::between()
## x dplyr::combine()         masks randomForest::combine()
## x purrr::discard()         masks scales::discard()
## x tidyr::expand()          masks Matrix::expand()
## x dplyr::filter()          masks stats::filter()
## x dplyr::first()           masks data.table::first()
## x parsnip::fit()           masks party::fit(), modeltools::fit()
## x dplyr::lag()             masks stats::lag()
## x dplyr::last()            masks data.table::last()
## x purrr::lift()            masks caret::lift()
## x randomForest::margin()   masks ggplot2::margin()
## x tidyr::pack()            masks Matrix::pack()
## x tune::parameters()       masks dials::parameters(), modeltools::parameters()
## x rsample::permutations()  masks e1071::permutations()
## x yardstick::precision()   masks caret::precision()
## x dials::prune()           masks rpart::prune()
## x yardstick::recall()      masks caret::recall()
```

```
## x dplyr::select()          masks MASS::select()
## x yardstick::sensitivity() masks caret::sensitivity()
## x yardstick::specificity() masks caret::specificity()
## x recipes::step()          masks stats::step()
## x purrr::transpose()       masks data.table::transpose()
## x tune::tune()             masks e1071::tune()
## x tidyr::unpack()          masks Matrix::unpack()
## x recipes::update()        masks stats4::update(), Matrix::update(), stats::update()
```

```
library(caTools)
```

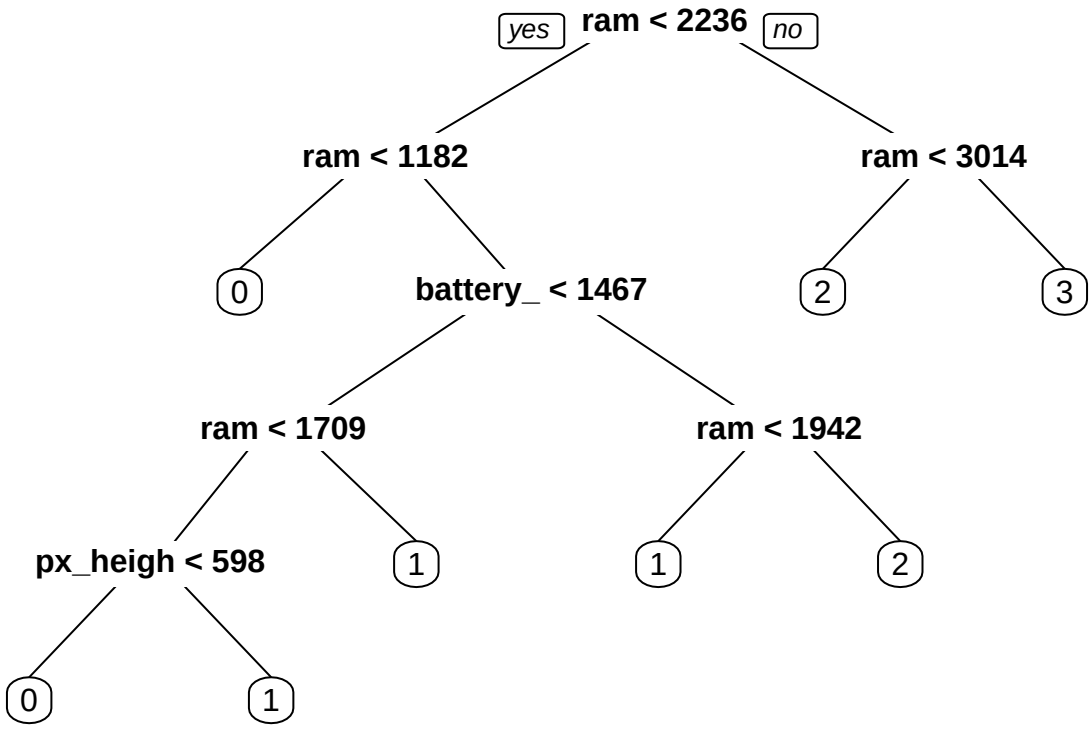
```
data <- fread("C:/Users/boli0/Downloads/train.csv")
str(data)
```

```
## Classes 'data.table' and 'data.frame':   2000 obs. of  21 variables:
##  $ battery_power: int  842 1021 563 615 1821 1859 1821 1954 1445 509 ...
##  $ blue         : int  0 1 1 1 1 0 0 0 1 1 ...
##  $ clock_speed  : num  2.2 0.5 0.5 2.5 1.2 0.5 1.7 0.5 0.5 0.6 ...
##  $ dual_sim     : int  0 1 1 0 0 1 0 1 0 1 ...
##  $ fc           : int  1 0 2 0 13 3 4 0 0 2 ...
##  $ four_g       : int  0 1 1 0 1 0 1 0 0 1 ...
##  $ int_memory   : int  7 53 41 10 44 22 10 24 53 9 ...
##  $ m_dep        : num  0.6 0.7 0.9 0.8 0.6 0.7 0.8 0.8 0.7 0.1 ...
##  $ mobile_wt    : int  188 136 145 131 141 164 139 187 174 93 ...
##  $ n_cores      : int  2 3 5 6 2 1 8 4 7 5 ...
##  $ pc           : int  2 6 6 9 14 7 10 0 14 15 ...
##  $ px_height    : int  20 905 1263 1216 1208 1004 381 512 386 1137 ...
##  $ px_width     : int  756 1988 1716 1786 1212 1654 1018 1149 836 1224 ...
##  $ ram          : int  2549 2631 2603 2769 1411 1067 3220 700 1099 513 ...
##  $ sc_h         : int  9 17 11 16 8 17 13 16 17 19 ...
##  $ sc_w         : int  7 3 2 8 2 1 8 3 1 10 ...
##  $ talk_time    : int  19 7 9 11 15 10 18 5 20 12 ...
##  $ three_g      : int  0 1 1 1 1 1 1 1 1 1 ...
##  $ touch_screen : int  0 1 1 0 1 0 0 1 0 0 ...
##  $ wifi         : int  1 0 0 0 0 0 1 1 0 0 ...
##  $ price_range  : int  1 2 2 2 1 1 3 0 0 0 ...
##  - attr(*, ".internal.selfref")=<externalptr>
```

```
data$price_range <- as.factor(data$price_range)
```

```
set.seed(810)
split = sample.split(data$price_range, SplitRatio = 0.7)
data_train = subset(data, split == TRUE)
data_test = subset(data, split == FALSE)
y_test <- data_test[,price_range]
```

```
# 1-1. Build single classification decision tree

fit = rpart(price_range ~ .,method = "class", data = data_train,control = rpart.control(minsplit = 1) ,

prp(fit)
```




```
print(fit)
```

```
## n= 1400
##
## node), split, n, loss, yval, (yprob)
##       * denotes terminal node
##
##  1) root 1400 1050 0 (0.250000000 0.250000000 0.250000000 0.250000000)
##    2) ram< 2235.5 727  377 0 (0.481430536 0.416781293 0.101788171 0.000000000)
##      4) ram< 1182 337   41 0 (0.878338279 0.121661721 0.000000000 0.000000000) *
##      5) ram>=1182 390  128 1 (0.138461538 0.671794872 0.189743590 0.000000000)
##       10) battery_power< 1466.5 249   68 1 (0.216867470 0.726907631 0.056224900 0.000000000)
##         20) ram< 1708.5 123   53 1 (0.430894309 0.569105691 0.000000000 0.000000000)
##           40) px_height< 598 61   17 0 (0.721311475 0.278688525 0.000000000 0.000000000) *
##           41) px_height>=598 62    9 1 (0.145161290 0.854838710 0.000000000 0.000000000) *
##         21) ram>=1708.5 126   15 1 (0.007936508 0.880952381 0.111111111 0.000000000) *
##       11) battery_power>=1466.5 141   60 1 (0.000000000 0.574468085 0.425531915 0.000000000)
##         22) ram< 1941.5 110   30 1 (0.000000000 0.727272727 0.272727273 0.000000000) *
##         23) ram>=1941.5 31    1 2 (0.000000000 0.032258065 0.967741935 0.000000000) *
##    3) ram>=2235.5 673  323 3 (0.000000000 0.069836553 0.410104012 0.520059435)
##      6) ram< 3013.5 318   98 2 (0.000000000 0.147798742 0.691823899 0.160377358) *
##      7) ram>=3013.5 355   56 3 (0.000000000 0.000000000 0.157746479 0.842253521) *
```

```
summary(fit)
```

```
## Call:
## rpart(formula = price_range ~ ., data = data_train, method = "class",
##     parms = list(split = "information"), control = rpart.control(minsplit = 1))
##   n= 1400
##
##           CP nsplit rel error    xerror       xstd
## 1 0.33333333      0 1.0000000 1.0495238 0.01458632
## 2 0.19809524      1 0.6666667 0.6676190 0.01781740
## 3 0.16095238      2 0.4685714 0.4771429 0.01708226
## 4 0.01380952      3 0.3076190 0.3257143 0.01531097
## 5 0.01285714      5 0.2800000 0.3038095 0.01494703
## 6 0.01000000      7 0.2542857 0.2752381 0.01442290
##
## Variable importance
##           ram battery_power     px_height      px_width          sc_w
##            78             7             5             2             2
##    int_memory     mobile_wt            fc            pc      dual_sim
##             2             1             1             1             1
##
## Node number 1: 1400 observations,    complexity param=0.3333333
##   predicted class=0  expected loss=0.75  P(node) =1
##     class counts:   350   350   350   350
##    probabilities: 0.250 0.250 0.250 0.250
##   left son=2 (727 obs) right son=3 (673 obs)
##   Primary splits:
##       ram           < 2235.5 to the left,  improve=650.760600, (0 missing)
##       battery_power < 1332.5 to the left,  improve= 37.065280, (0 missing)
##       px_width      < 1630.5 to the left,  improve= 25.439830, (0 missing)
##       px_height     < 1212   to the left,  improve= 18.147350, (0 missing)
##       mobile_wt     < 104.5  to the left,  improve=  9.566532, (0 missing)
##   Surrogate splits:
##       px_height     < 280.5  to the right, agree=0.549, adj=0.062, (0 split)
##       battery_power < 1721.5 to the left,  agree=0.534, adj=0.031, (0 split)
##       sc_w          < 10.5   to the left,  agree=0.534, adj=0.031, (0 split)
##       fc            < 13.5   to the left,  agree=0.528, adj=0.018, (0 split)
##       int_memory    < 42.5   to the left,  agree=0.528, adj=0.018, (0 split)
##
## Node number 2: 727 observations,    complexity param=0.1980952
##   predicted class=0  expected loss=0.5185695  P(node) =0.5192857
##     class counts:   350   303    74     0
##    probabilities: 0.481 0.417 0.102 0.000
##   left son=4 (337 obs) right son=5 (390 obs)
##   Primary splits:
##       ram           < 1182   to the left,  improve=231.36100, (0 missing)
##       battery_power < 1455   to the left,  improve= 47.93258, (0 missing)
##       px_height     < 639.5  to the left,  improve= 33.61836, (0 missing)
##       px_width      < 1144.5 to the left,  improve= 29.33494, (0 missing)
##       mobile_wt     < 186.5  to the left,  improve=  4.38501, (0 missing)
##   Surrogate splits:
##       px_width   < 684.5  to the left,  agree=0.567, adj=0.065, (0 split)
##       pc         < 1.5    to the left,  agree=0.557, adj=0.045, (0 split)
##       mobile_wt  < 100.5  to the left,  agree=0.556, adj=0.042, (0 split)
##       px_height  < 286.5  to the left,  agree=0.554, adj=0.039, (0 split)
##       int_memory < 6.5    to the left,  agree=0.550, adj=0.030, (0 split)
```

```
##
## Node number 3: 673 observations,    complexity param=0.1609524
##   predicted class=3  expected loss=0.4799406  P(node) =0.4807143
##     class counts:     0    47   276   350
##    probabilities: 0.000 0.070 0.410 0.520
##   left son=6 (318 obs) right son=7 (355 obs)
##   Primary splits:
##       ram           < 3013.5 to the left,  improve=180.93670, (0 missing)
##       battery_power < 1352.5 to the left,  improve= 46.75949, (0 missing)
##       px_width      < 1283   to the left,  improve= 31.47901, (0 missing)
##       px_height     < 955    to the left,  improve= 24.86811, (0 missing)
##       int_memory    < 10.5   to the left,  improve=  7.02468, (0 missing)
##   Surrogate splits:
##       battery_power < 589    to the left,  agree=0.548, adj=0.044, (0 split)
##       sc_h          < 18.5   to the right, agree=0.544, adj=0.035, (0 split)
##       int_memory    < 4.5    to the left,  agree=0.541, adj=0.028, (0 split)
##       px_width      < 1074   to the left,  agree=0.541, adj=0.028, (0 split)
##       dual_sim      < 0.5    to the left,  agree=0.536, adj=0.019, (0 split)
##
## Node number 4: 337 observations
##   predicted class=0  expected loss=0.1216617  P(node) =0.2407143
##     class counts:   296    41     0     0
##    probabilities: 0.878 0.122 0.000 0.000
##
## Node number 5: 390 observations,    complexity param=0.01380952
##   predicted class=1  expected loss=0.3282051  P(node) =0.2785714
##     class counts:    54   262    74     0
##    probabilities: 0.138 0.672 0.190 0.000
##   left son=10 (249 obs) right son=11 (141 obs)
##   Primary splits:
##       battery_power < 1466.5 to the left,  improve=57.255060, (0 missing)
##       ram           < 1508.5 to the left,  improve=47.743900, (0 missing)
##       px_height     < 674.5  to the left,  improve=31.980610, (0 missing)
##       px_width      < 1113.5 to the left,  improve=29.405230, (0 missing)
##       n_cores       < 4.5    to the left,  improve= 3.540274, (0 missing)
##   Surrogate splits:
##       px_height < 1639.5 to the left,  agree=0.649, adj=0.028, (0 split)
##       talk_time < 3.5    to the right, agree=0.646, adj=0.021, (0 split)
##       px_width  < 530.5  to the right, agree=0.644, adj=0.014, (0 split)
##       ram       < 1203.5 to the right, agree=0.641, adj=0.007, (0 split)
##
## Node number 6: 318 observations
##   predicted class=2  expected loss=0.3081761  P(node) =0.2271429
##     class counts:     0    47   220    51
##    probabilities: 0.000 0.148 0.692 0.160
##
## Node number 7: 355 observations
##   predicted class=3  expected loss=0.1577465  P(node) =0.2535714
##     class counts:     0     0    56   299
##    probabilities: 0.000 0.000 0.158 0.842
##
## Node number 10: 249 observations,    complexity param=0.01285714
##   predicted class=1  expected loss=0.2730924  P(node) =0.1778571
##     class counts:    54   181    14     0
```

```
##    probabilities: 0.217 0.727 0.056 0.000
##   left son=20 (123 obs) right son=21 (126 obs)
##   Primary splits:
##       ram           < 1708.5 to the left,  improve=46.820460, (0 missing)
##       px_width      < 1479.5 to the left,  improve=24.350920, (0 missing)
##       px_height     < 736    to the left,  improve=20.883800, (0 missing)
##       battery_power < 1027.5 to the left,  improve=15.672300, (0 missing)
##       sc_h          < 11.5   to the right, improve= 6.621616, (0 missing)
##   Surrogate splits:
##       sc_w          < 4.5    to the left,  agree=0.574, adj=0.138, (0 split)
##       px_width      < 1779   to the right, agree=0.570, adj=0.130, (0 split)
##       battery_power < 558    to the left,  agree=0.558, adj=0.106, (0 split)
##       blue          < 0.5    to the left,  agree=0.554, adj=0.098, (0 split)
##       mobile_wt     < 161.5  to the right, agree=0.554, adj=0.098, (0 split)
##
## Node number 11: 141 observations,    complexity param=0.01380952
##   predicted class=1  expected loss=0.4255319  P(node) =0.1007143
##     class counts:     0    81    60     0
##    probabilities: 0.000 0.574 0.426 0.000
##   left son=22 (110 obs) right son=23 (31 obs)
##   Primary splits:
##       ram           < 1941.5 to the left,  improve=27.291620, (0 missing)
##       px_height     < 696    to the left,  improve=13.931310, (0 missing)
##       px_width      < 1240   to the left,  improve=12.786660, (0 missing)
##       battery_power < 1990   to the left,  improve= 2.607385, (0 missing)
##       int_memory    < 47.5   to the left,  improve= 2.351360, (0 missing)
##
## Node number 20: 123 observations,    complexity param=0.01285714
##   predicted class=1  expected loss=0.4308943  P(node) =0.08785714
##     class counts:    53    70     0     0
##    probabilities: 0.431 0.569 0.000 0.000
##   left son=40 (61 obs) right son=41 (62 obs)
##   Primary splits:
##       px_height     < 598    to the left,  improve=22.302360, (0 missing)
##       px_width      < 994.5  to the left,  improve=19.697840, (0 missing)
##       battery_power < 1027.5 to the left,  improve=19.114670, (0 missing)
##       ram           < 1515.5 to the left,  improve= 5.609121, (0 missing)
##       pc            < 3.5    to the left,  improve= 4.698548, (0 missing)
##   Surrogate splits:
##       px_width      < 1085   to the left,  agree=0.667, adj=0.328, (0 split)
##       battery_power < 919    to the left,  agree=0.626, adj=0.246, (0 split)
##       clock_speed   < 1.65   to the right, agree=0.610, adj=0.213, (0 split)
##       dual_sim      < 0.5    to the right, agree=0.593, adj=0.180, (0 split)
##       four_g        < 0.5    to the right, agree=0.585, adj=0.164, (0 split)
##
## Node number 21: 126 observations
##   predicted class=1  expected loss=0.1190476  P(node) =0.09
##     class counts:     1   111    14     0
##    probabilities: 0.008 0.881 0.111 0.000
##
## Node number 22: 110 observations
##   predicted class=1  expected loss=0.2727273  P(node) =0.07857143
##     class counts:     0    80    30     0
##    probabilities: 0.000 0.727 0.273 0.000
```

```
##
## Node number 23: 31 observations
##   predicted class=2  expected loss=0.03225806  P(node) =0.02214286
##     class counts:     0     1    30     0
##    probabilities: 0.000 0.032 0.968 0.000
##
## Node number 40: 61 observations
##   predicted class=0  expected loss=0.2786885  P(node) =0.04357143
##     class counts:    44    17     0     0
##    probabilities: 0.721 0.279 0.000 0.000
##
## Node number 41: 62 observations
##   predicted class=1  expected loss=0.1451613  P(node) =0.04428571
##     class counts:     9    53     0     0
##    probabilities: 0.145 0.855 0.000 0.000
```

```
# 1-2. Single classification tree's confusion matrix and accuracy score
# Accuracy score is 0.775.
fit.pred = predict(fit, newdata = data_test, type = "class")

cm <- table(observed = y_test, predicted = fit.pred)

cm
```

```
##          predicted
## observed   0   1   2   3
##        0 139  11   0   0
##        1  33  99  18   0
##        2   0  24  94  32
##        3   0   0  17 133
```

```
test_accuary <- mean(fit.pred == y_test)

test_accuary
```

```
## [1] 0.775
```

```
# 2-1. Build decision tree while cp = 0.01000000
# Accuracy score is 0.775.
fit_cp = rpart(price_range ~ .,method = "class", data = data_train,control = rpart.control(minsplit = 1

fit_cp.pred = predict(fit_cp, newdata = data_test, type = "class")

test_accuary_cp <- mean(fit_cp.pred == y_test)

test_accuary_cp
```

```
## [1] 0.775
```

```
# 3-1. Bagging and random forest
set.seed(810)
```

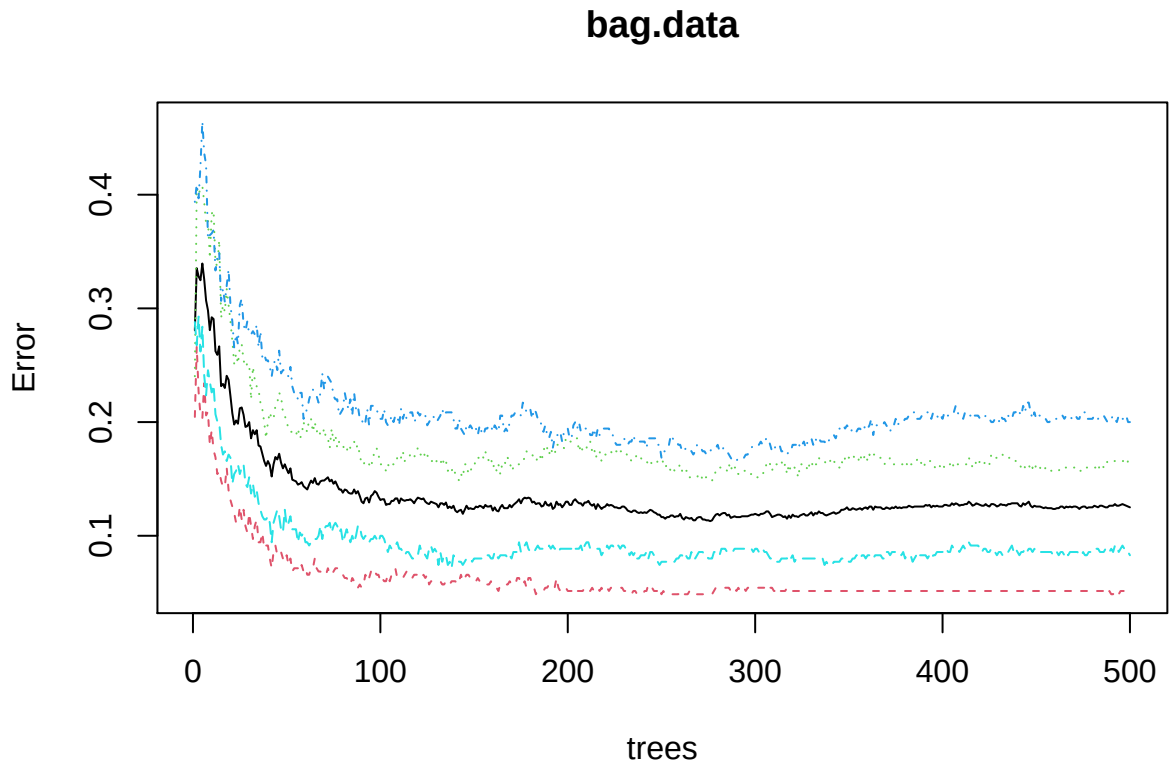
```
bag.data <- randomForest(price_range ~., data = data_train, mytry = 20, importance = TRUE, proximity = T

print(bag.data)
```

```
##
## Call:
##  randomForest(formula = price_range ~ ., data = data_train, mytry = 20,      importance = TRUE, proxi
##                Type of random forest: classification
##                      Number of trees: 500
## No. of variables tried at each split: 4
##
##         OOB estimate of  error rate: 12.5%
## Confusion matrix:
##     0   1   2   3 class.error
## 0 332  18   0   0  0.05142857
## 1  31 292  27   0  0.16571429
## 2   0  38 280  32  0.20000000
## 3   0   0  29 321  0.08285714
```

```
summary(bag.data)
```

```
##                 Length  Class  Mode
## call                 6 -none- call
## type                 1 -none- character
## predicted         1400 factor numeric
## err.rate          2500 -none- numeric
## confusion           20 -none- numeric
## votes             5600 matrix numeric
## oob.times         1400 -none- numeric
## classes              4 -none- character
## importance         120 -none- numeric
## importanceSD       100 -none- numeric
## localImportance      0 -none- NULL
## proximity       1960000 -none- numeric
## ntree                1 -none- numeric
## mtry                 1 -none- numeric
## forest              14 -none- list
## y                 1400 factor numeric
## test                 0 -none- NULL
## inbag                0 -none- NULL
## terms                3 terms  call
```

```
plot(bag.data)
```




```
bag.pred = predict(bag.data, newdata = data_test, type = "class")

test_accuary_bag <- mean(bag.pred == y_test)

test_accuary_bag
```

```
## [1] 0.8766667
```

```
# 3-2. Random Forest using sqrt(p)
set.seed(810)

rFM.data <- randomForest(price_range ~., data = data_train, mytry = sqrt(20), importance = TRUE, proxim

print(rFM.data)
```

```
##
## Call:
##  randomForest(formula = price_range ~ ., data = data_train, mytry = sqrt(20),      importance = TRUE
##                Type of random forest: classification
##                      Number of trees: 500
## No. of variables tried at each split: 4
##
##         OOB estimate of  error rate: 12.5%
## Confusion matrix:
```

```
##     0   1   2   3 class.error
## 0 332  18   0   0  0.05142857
## 1  31 292  27   0  0.16571429
## 2   0  38 280  32  0.20000000
## 3   0   0  29 321  0.08285714
```

```
rFM.pred = predict(rFM.data, newdata = data_test, type = "class")

test_accuary_rFM <- mean(rFM.pred == y_test)

test_accuary_rFM
```

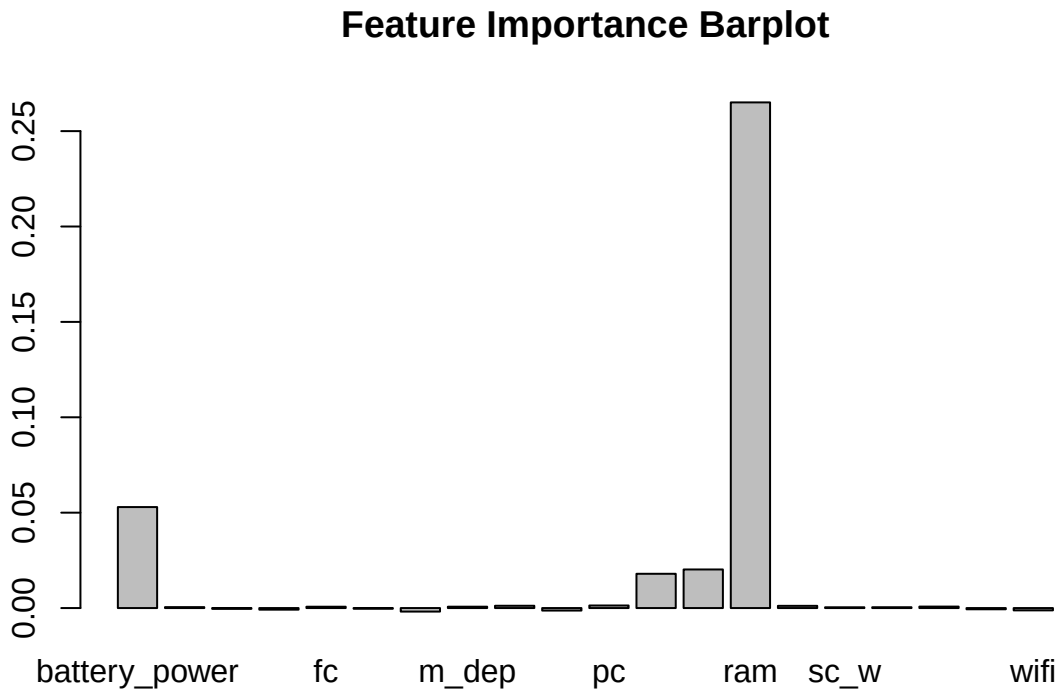
```
## [1] 0.8766667
```

```
# 3-3. Random Forest Feature Importance Chart
importance(rFM.data)
```

```
##                            0          1          2          3
## battery_power  20.315411783 27.2379966 26.4401697 21.5151653
## blue           -0.773113710  0.8468215 -0.7073670  1.4176344
## clock_speed     0.533121152 -0.3671219 -0.7728101  0.4665967
## dual_sim        0.595019450 -1.5371078 -0.7097531  0.1566308
## fc              2.071522629  0.7702305  0.2715627  1.3583059
## four_g          0.003579781 -0.7306292 -0.8808096  0.4838791
## int_memory      0.973175286 -1.7237171 -0.2883716  2.0023658
## m_dep          -0.336016603  0.7072096  2.5705845  0.9633760
## mobile_wt       2.920799362  1.0412852  2.8427143  3.3301351
## n_cores         0.472187817 -1.4146974  0.8289692 -0.8697330
## pc              0.502259046  1.3638927  1.0315031  2.0575466
## px_height      13.119968698 11.7476663 11.5917891  4.8043727
## px_width       13.093223962 12.5467641 12.1803913 14.2371085
## ram           102.087642597 66.7879289 66.1242760 88.9441201
## sc_h           -0.927416275  1.1550124  1.0891801  4.7737409
## sc_w            1.803773936  0.4275465  1.0901982  0.2938217
## talk_time       1.171421641  0.3951997 -1.7808425 -0.9969937
## three_g         0.596874983  1.9031053 -0.7952348 -0.7090051
## touch_screen    1.512810378 -1.2257074 -0.6652268  0.4574472
## wifi           -0.399894416 -2.3434997 -0.9525469  0.1612621
##                MeanDecreaseAccuracy MeanDecreaseGini
## battery_power             39.7358388        80.225757
## blue                       0.4227329         7.758244
## clock_speed               -0.2034133        30.559829
## dual_sim                  -0.8404799         7.088138
## fc                         2.0314417        25.895901
## four_g                    -0.6001848         6.831351
## int_memory                 0.3850182        37.835172
## m_dep                      2.0599851        26.501218
## mobile_wt                  5.0122442        42.575186
## n_cores                   -0.4607087        23.864487
## pc                         2.5056751        30.772854
## px_height                 21.1807316        58.704324
## px_width                  24.4945606        61.587355
## ram                       97.3703194       497.722544
```

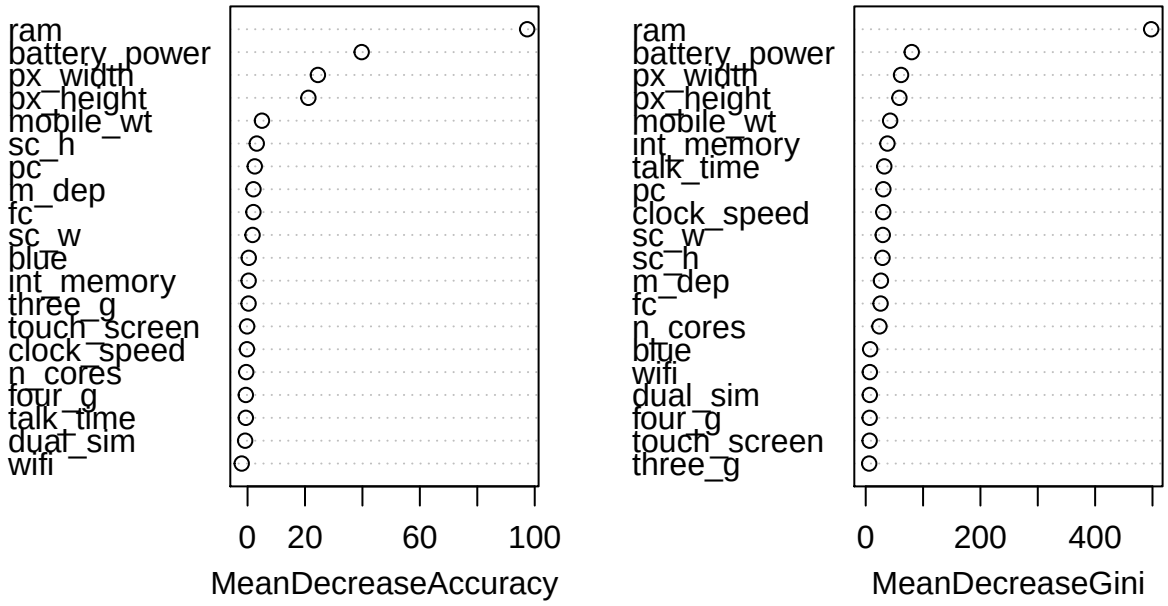
```
## sc_h                    3.1999096        29.263808
## sc_w                    1.7398295        29.691844
## talk_time              -0.6067494        32.351650
## three_g                 0.3531520         6.014255
## touch_screen           -0.1479079         6.822819
## wifi                   -2.0292120         7.140585
```

```r
# 3-4. Random Forest Feature Importance Barplot
barplot(rFM.data$importance[,2], main = "Feature Importance Barplot")
```




```r
# 3-5. Random Forest Feature Importance ScatterPlot
varImpPlot(rFM.data, sort = TRUE, n.var = nrow(rFM.data$importance), main = "Feature Importance Scatterl
```

Feature Importance ScatterPlot

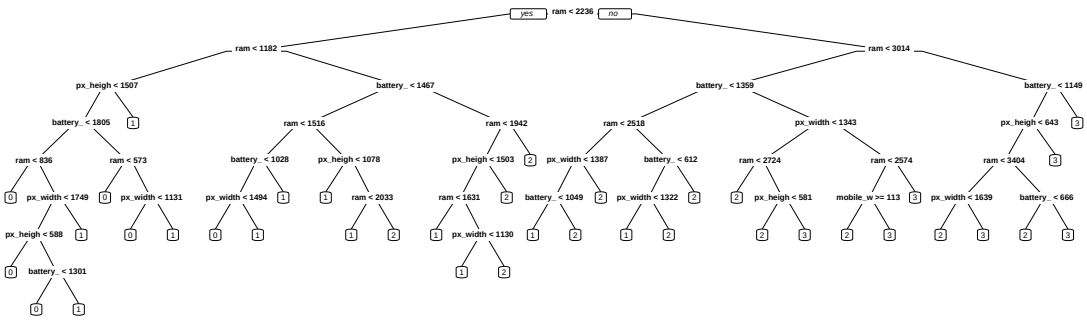



```
# 4-1. Classification trees cross-validation
fit = rpart(price_range ~ .,method = "class", data = data_train,control = rpart.control(minsplit = 1) ,

tr.control = trainControl(method = "cv", number = 3)
cp.grid = expand.grid(.cp = (0:10)*0.01)
tr = train(price_range ~., data = data_train, method = "rpart", trControl = tr.control, tuneGrid = cp.g
tr
```

```
## CART
##
## 1400 samples
##   20 predictor
##    4 classes: '0', '1', '2', '3'
##
## No pre-processing
## Resampling: Cross-Validated (3 fold)
## Summary of sample sizes: 935, 932, 933
## Resampling results across tuning parameters:
##
##   cp    Accuracy   Kappa
##   0.00  0.8193017  0.7590748
##   0.01  0.7957578  0.7276725
##   0.02  0.7521253  0.6695256
##   0.03  0.7457150  0.6609786
##   0.04  0.7457150  0.6609786
##   0.05  0.7457150  0.6609786
```

```
##   0.06  0.7457150  0.6609786
##   0.07  0.7457150  0.6609786
##   0.08  0.7457150  0.6609786
##   0.09  0.7457150  0.6609786
##   0.10  0.7457150  0.6609786
##
## Accuracy was used to select the optimal model using the largest value.
## The final value used for the model was cp = 0.
```

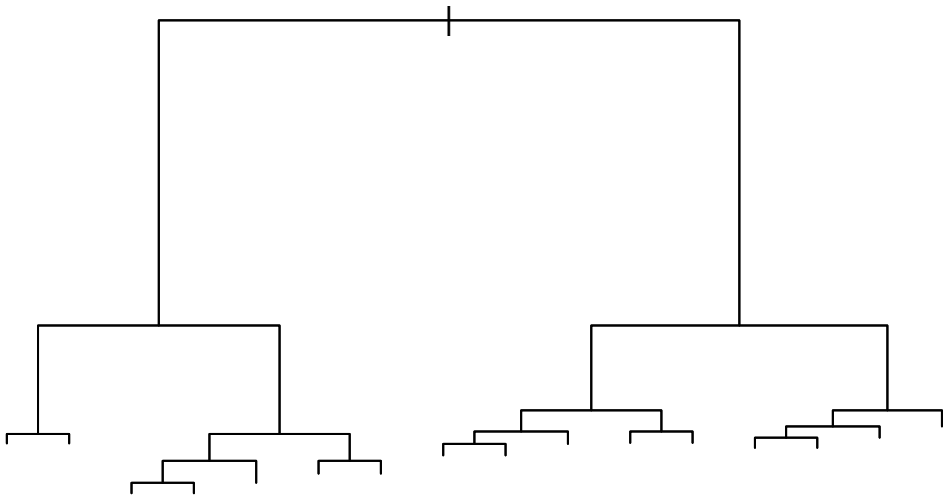
```
# 4-2. Plot best tree
best.tree = tr$finalModel
prp(best.tree)
```




```
# 4-3. Best tree accuracy score is
best.tree.pred = predict(best.tree, newdata = data_test)
test_accuary_cv <- mean(best.tree.pred == y_test)

test_accuary_cv
```

```
## [1] 0.1408333
```

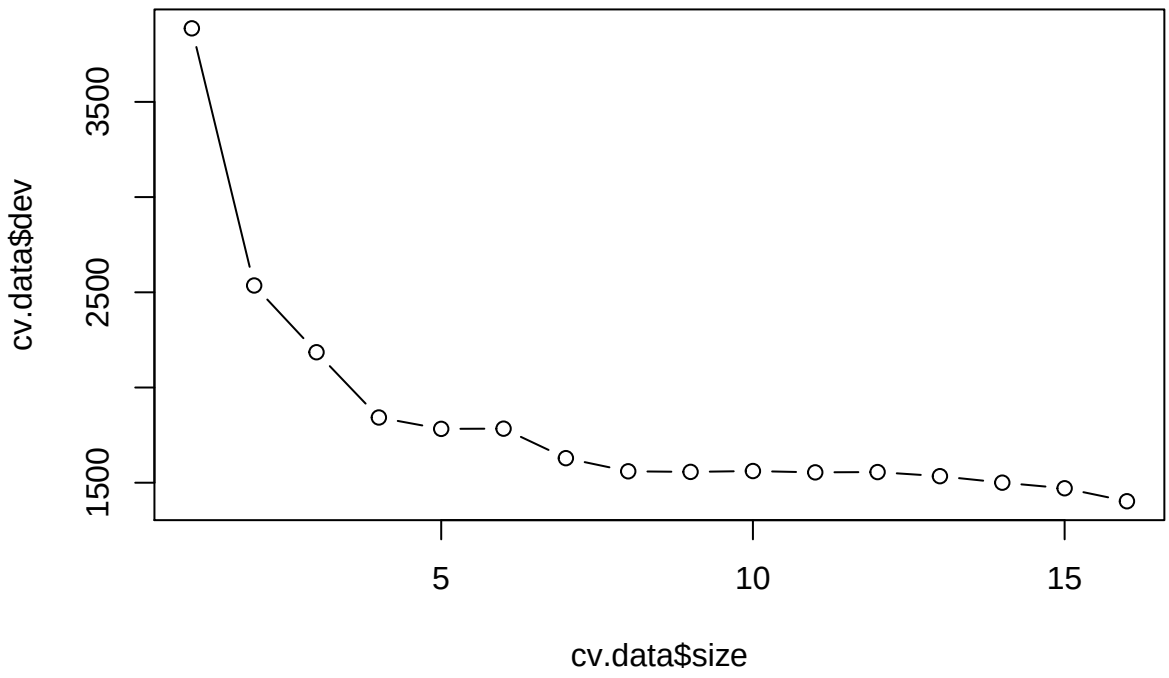
```
# 5. Classification tree, textbook method
tree.data = tree(price_range ~., data = data_train)

plot(tree.data)
```



```
tree.pred = predict(tree.data, data_test, type = "class")

table(tree.pred, data_test$price_range)
```

```
##
## tree.pred   0   1   2   3
##         0 139  33   0   0
##         1  11 111  41   0
##         2   0   6  76  11
##         3   0   0  33 139
```

```
set.seed(810)

cv.data = cv.tree(tree.data)

plot(cv.data$size, cv.data$dev, type = "b")
```




```
cv.data
```

```
## $size
##  [1] 16 15 14 13 12 11 10  9  8  7  6  5  4  3  2  1
##
## $dev
##  [1] 1402.683 1470.788 1500.265 1534.336 1555.897 1554.345 1561.259 1556.844
##  [9] 1559.950 1628.919 1783.879 1782.755 1842.543 2185.217 2535.742 3886.251
##
## $k
##  [1]       -Inf   40.06300   43.23335   44.60473   48.00002   48.44745
##  [7]   49.03944   52.90116   54.58324   68.65486   90.19778   93.64093
## [13]  114.51011  361.87340  462.72196 1301.52118
##
## $method
## [1] "deviance"
##
## attr(,"class")
## [1] "prune"         "tree.sequence"
```

```
prune.data = prune.misclass(tree.data, best = 16)

tree.pred = predict(prune.data, data_test, type = "class")

test_accuary_prune <- mean(tree.pred == y_test)
```

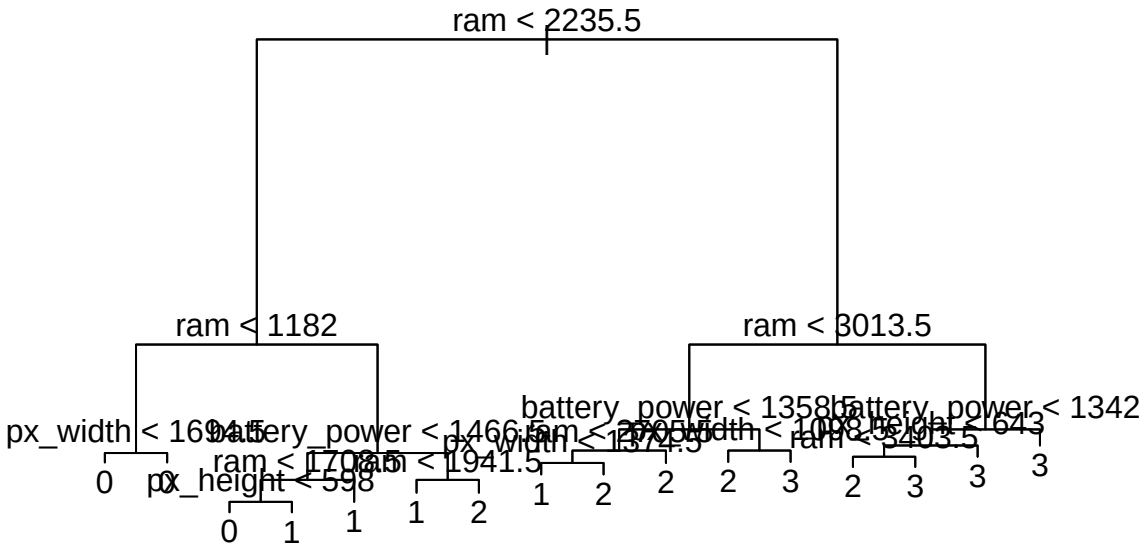
```
test_accuary_prune
```

```
## [1] 0.775
```

```
table(tree.pred, data_test$price_range)
```

```
##
## tree.pred   0   1   2   3
##         0 139  33   0   0
##         1  11 111  41   0
##         2   0   6  76  11
##         3   0   0  33 139
```

```
plot(prune.data);text(prune.data, pretty = 0)
```




```
# 6. Boosting and bagging
library(adabag)
```

```
## Loading required package: foreach
```

```
##
## Attaching package: 'foreach'
```

```
## The following objects are masked from 'package:purrr':
##
##     accumulate, when

## Loading required package: doParallel

## Loading required package: iterators

## Loading required package: parallel
```

```
data.adaboost <- boosting(price_range ~., data = data_train, mfinal = 10, control = rpart.control(maxde
data.adaboost
```

```
## $formula
## price_range ~ .
##
## $trees
## $trees[[1]]
## n= 1400
##
## node), split, n, loss, yval, (yprob)
##       * denotes terminal node
##
## 1) root 1400 1028 3 (0.24714286 0.24857143 0.23857143 0.26571429)
##   2) ram< 2069 663  317 0 (0.52187029 0.41478130 0.06334842 0.00000000) *
##   3) ram>=2069 737  365 3 (0.00000000 0.09905020 0.39620081 0.50474898) *
##
## $trees[[2]]
## n= 1400
##
## node), split, n, loss, yval, (yprob)
##       * denotes terminal node
##
## 1) root 1400 1016 2 (0.24071429 0.23571429 0.27428571 0.24928571)
##   2) ram< 2046 646  309 0 (0.52167183 0.39938080 0.07894737 0.00000000) *
##   3) ram>=2046 754  405 3 (0.00000000 0.09549072 0.44164456 0.46286472) *
##
## $trees[[3]]
## n= 1400
##
## node), split, n, loss, yval, (yprob)
##       * denotes terminal node
##
## 1) root 1400 1012 0 (0.277142857 0.233571429 0.262857143 0.226428571)
##   2) ram< 1346 438   80 0 (0.817351598 0.175799087 0.006849315 0.000000000) *
##   3) ram>=1346 962  597 2 (0.031185031 0.259875260 0.379417879 0.329521830) *
##
## $trees[[4]]
## n= 1400
##
## node), split, n, loss, yval, (yprob)
##       * denotes terminal node
##
```

```
## 1) root 1400 1028 2 (0.250000000 0.245000000 0.265714286 0.239285714)
##   2) ram< 1302.5 384   62 0 (0.838541667 0.158854167 0.002604167 0.000000000) *
##   3) ram>=1302.5 1016  645 2 (0.027559055 0.277559055 0.365157480 0.329724409) *
##
## $trees[[5]]
## n= 1400
##
## node), split, n, loss, yval, (yprob)
##       * denotes terminal node
##
## 1) root 1400 1030 1 (0.243571429 0.264285714 0.229285714 0.262857143)
##   2) ram< 2366 806  452 1 (0.423076923 0.439205955 0.136476427 0.001240695) *
##   3) ram>=2366 594  227 3 (0.000000000 0.026936027 0.355218855 0.617845118) *
##
## $trees[[6]]
## n= 1400
##
## node), split, n, loss, yval, (yprob)
##       * denotes terminal node
##
## 1) root 1400 1017 3 (0.24214286 0.23357143 0.25071429 0.27357143)
##   2) ram< 2049 643  304 0 (0.52721617 0.40435459 0.06842924 0.00000000) *
##   3) ram>=2049 757  374 3 (0.00000000 0.08850727 0.40554822 0.50594452) *
##
## $trees[[7]]
## n= 1400
##
## node), split, n, loss, yval, (yprob)
##       * denotes terminal node
##
## 1) root 1400 1023 3 (0.24500000 0.25285714 0.23285714 0.26928571)
##   2) ram< 2171.5 694  351 0 (0.49423631 0.43083573 0.07492795 0.00000000) *
##   3) ram>=2171.5 706  329 3 (0.00000000 0.07790368 0.38810198 0.53399433) *
##
## $trees[[8]]
## n= 1400
##
## node), split, n, loss, yval, (yprob)
##       * denotes terminal node
##
## 1) root 1400 1028 0 (0.265714286 0.241428571 0.239285714 0.253571429)
##   2) ram< 1276 389   51 0 (0.868894602 0.125964010 0.005141388 0.000000000) *
##   3) ram>=1276 1011  656 3 (0.033630069 0.285855589 0.329376855 0.351137488) *
##
## $trees[[9]]
## n= 1400
##
## node), split, n, loss, yval, (yprob)
##       * denotes terminal node
##
## 1) root 1400 1028 0 (0.265714286 0.247142857 0.239285714 0.247857143)
##   2) ram< 1264.5 389   50 0 (0.871465296 0.125964010 0.002570694 0.000000000) *
##   3) ram>=1264.5 1011  664 3 (0.032640950 0.293768546 0.330365974 0.343224530) *
##
```

```
## $trees[[10]]
## n= 1400
##
## node), split, n, loss, yval, (yprob)
##       * denotes terminal node
##
## 1) root 1400 1026 1 (0.25214286 0.26714286 0.24642857 0.23428571)
##   2) ram< 2178.5 732  379 0 (0.48224044 0.44262295 0.07513661 0.00000000) *
##   3) ram>=2178.5 668  340 3 (0.00000000 0.07485030 0.43413174 0.49101796) *
##
##
## $weights
##  [1] 0.002000003 0.002000003 0.002000003 0.002000003 0.002000003 0.002000003
##  [7] 0.002000003 0.002000003 0.002000003 0.002000003
##
## $votes
##                [,1]        [,2]        [,3]        [,4]
##    [1,] 0.000000000 0.000000000 0.004000005 0.016000021
##    [2,] 0.000000000 0.000000000 0.004000005 0.016000021
##    [3,] 0.000000000 0.000000000 0.004000005 0.016000021
##    [4,] 0.010000013 0.002000003 0.004000005 0.004000005
##    [5,] 0.018000024 0.002000003 0.000000000 0.000000000
##    [6,] 0.018000024 0.002000003 0.000000000 0.000000000
##    [7,] 0.000000000 0.000000000 0.004000005 0.016000021
##    [8,] 0.000000000 0.000000000 0.004000005 0.016000021
##    [9,] 0.010000013 0.002000003 0.004000005 0.004000005
##   [10,] 0.000000000 0.000000000 0.004000005 0.016000021
##   [11,] 0.018000024 0.002000003 0.000000000 0.000000000
##   [12,] 0.018000024 0.002000003 0.000000000 0.000000000
##   [13,] 0.000000000 0.000000000 0.004000005 0.016000021
##   [14,] 0.000000000 0.002000003 0.004000005 0.014000019
##   [15,] 0.010000013 0.002000003 0.004000005 0.004000005
##   [16,] 0.018000024 0.002000003 0.000000000 0.000000000
##   [17,] 0.000000000 0.000000000 0.004000005 0.016000021
##   [18,] 0.000000000 0.000000000 0.004000005 0.016000021
##   [19,] 0.000000000 0.000000000 0.004000005 0.016000021
##   [20,] 0.000000000 0.000000000 0.004000005 0.016000021
##   [21,] 0.000000000 0.002000003 0.004000005 0.014000019
##   [22,] 0.000000000 0.000000000 0.004000005 0.016000021
##   [23,] 0.018000024 0.002000003 0.000000000 0.000000000
##   [24,] 0.012000016 0.002000003 0.002000003 0.004000005
##   [25,] 0.000000000 0.000000000 0.004000005 0.016000021
##   [26,] 0.000000000 0.000000000 0.004000005 0.016000021
##   [27,] 0.004000005 0.002000003 0.004000005 0.010000013
##   [28,] 0.000000000 0.000000000 0.004000005 0.016000021
##   [29,] 0.010000013 0.002000003 0.004000005 0.004000005
##   [30,] 0.010000013 0.002000003 0.004000005 0.004000005
##   [31,] 0.018000024 0.002000003 0.000000000 0.000000000
##   [32,] 0.018000024 0.002000003 0.000000000 0.000000000
##   [33,] 0.000000000 0.000000000 0.004000005 0.016000021
##   [34,] 0.016000021 0.002000003 0.000000000 0.002000003
##   [35,] 0.000000000 0.000000000 0.004000005 0.016000021
##   [36,] 0.006000008 0.002000003 0.004000005 0.008000011
##   [37,] 0.006000008 0.002000003 0.004000005 0.008000011
```

```
##    [38,] 0.010000013 0.002000003 0.004000005 0.004000005
##    [39,] 0.000000000 0.000000000 0.004000005 0.016000021
##    [40,] 0.000000000 0.000000000 0.004000005 0.016000021
##    [41,] 0.000000000 0.000000000 0.004000005 0.016000021
##    [42,] 0.010000013 0.002000003 0.004000005 0.004000005
##    [43,] 0.018000024 0.002000003 0.000000000 0.000000000
##    [44,] 0.018000024 0.002000003 0.000000000 0.000000000
##    [45,] 0.004000005 0.002000003 0.004000005 0.010000013
##    [46,] 0.000000000 0.000000000 0.004000005 0.016000021
##    [47,] 0.000000000 0.000000000 0.004000005 0.016000021
##    [48,] 0.000000000 0.000000000 0.004000005 0.016000021
##    [49,] 0.000000000 0.000000000 0.004000005 0.016000021
##    [50,] 0.018000024 0.002000003 0.000000000 0.000000000
##    [51,] 0.000000000 0.000000000 0.004000005 0.016000021
##    [52,] 0.000000000 0.000000000 0.004000005 0.016000021
##    [53,] 0.018000024 0.002000003 0.000000000 0.000000000
##    [54,] 0.000000000 0.000000000 0.004000005 0.016000021
##    [55,] 0.018000024 0.002000003 0.000000000 0.000000000
##    [56,] 0.010000013 0.002000003 0.004000005 0.004000005
##    [57,] 0.000000000 0.000000000 0.004000005 0.016000021
##    [58,] 0.010000013 0.002000003 0.004000005 0.004000005
##    [59,] 0.000000000 0.000000000 0.004000005 0.016000021
##    [60,] 0.000000000 0.000000000 0.004000005 0.016000021
##    [61,] 0.010000013 0.002000003 0.004000005 0.004000005
##    [62,] 0.008000011 0.002000003 0.004000005 0.006000008
##    [63,] 0.018000024 0.002000003 0.000000000 0.000000000
##    [64,] 0.018000024 0.002000003 0.000000000 0.000000000
##    [65,] 0.000000000 0.000000000 0.004000005 0.016000021
##    [66,] 0.000000000 0.002000003 0.004000005 0.014000019
##    [67,] 0.000000000 0.000000000 0.004000005 0.016000021
##    [68,] 0.010000013 0.002000003 0.004000005 0.004000005
##    [69,] 0.010000013 0.002000003 0.004000005 0.004000005
##    [70,] 0.018000024 0.002000003 0.000000000 0.000000000
##    [71,] 0.010000013 0.002000003 0.004000005 0.004000005
##    [72,] 0.010000013 0.002000003 0.004000005 0.004000005
##    [73,] 0.010000013 0.002000003 0.004000005 0.004000005
##    [74,] 0.000000000 0.000000000 0.004000005 0.016000021
##    [75,] 0.012000016 0.002000003 0.002000003 0.004000005
##    [76,] 0.000000000 0.000000000 0.004000005 0.016000021
##    [77,] 0.018000024 0.002000003 0.000000000 0.000000000
##    [78,] 0.018000024 0.002000003 0.000000000 0.000000000
##    [79,] 0.010000013 0.002000003 0.004000005 0.004000005
##    [80,] 0.000000000 0.000000000 0.004000005 0.016000021
##    [81,] 0.000000000 0.000000000 0.004000005 0.016000021
##    [82,] 0.010000013 0.002000003 0.004000005 0.004000005
##    [83,] 0.000000000 0.002000003 0.004000005 0.014000019
##    [84,] 0.018000024 0.002000003 0.000000000 0.000000000
##    [85,] 0.000000000 0.000000000 0.004000005 0.016000021
##    [86,] 0.000000000 0.000000000 0.004000005 0.016000021
##    [87,] 0.000000000 0.000000000 0.004000005 0.016000021
##    [88,] 0.010000013 0.002000003 0.004000005 0.004000005
##    [89,] 0.000000000 0.000000000 0.004000005 0.016000021
##    [90,] 0.000000000 0.000000000 0.004000005 0.016000021
##    [91,] 0.000000000 0.000000000 0.004000005 0.016000021
```

```
##   [92,] 0.000000000 0.000000000 0.004000005 0.016000021
##   [93,] 0.000000000 0.000000000 0.004000005 0.016000021
##   [94,] 0.000000000 0.000000000 0.004000005 0.016000021
##   [95,] 0.010000013 0.002000003 0.004000005 0.004000005
##   [96,] 0.000000000 0.000000000 0.004000005 0.016000021
##   [97,] 0.018000024 0.002000003 0.000000000 0.000000000
##   [98,] 0.000000000 0.002000003 0.004000005 0.014000019
##   [99,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [100,] 0.018000024 0.002000003 0.000000000 0.000000000
##  [101,] 0.010000013 0.002000003 0.004000005 0.004000005
##  [102,] 0.012000016 0.002000003 0.002000003 0.004000005
##  [103,] 0.018000024 0.002000003 0.000000000 0.000000000
##  [104,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [105,] 0.018000024 0.002000003 0.000000000 0.000000000
##  [106,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [107,] 0.000000000 0.002000003 0.004000005 0.014000019
##  [108,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [109,] 0.000000000 0.002000003 0.004000005 0.014000019
##  [110,] 0.010000013 0.002000003 0.004000005 0.004000005
##  [111,] 0.010000013 0.002000003 0.004000005 0.004000005
##  [112,] 0.018000024 0.002000003 0.000000000 0.000000000
##  [113,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [114,] 0.018000024 0.002000003 0.000000000 0.000000000
##  [115,] 0.000000000 0.000000000 0.004000005 0.016000021
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## [1333,] 0.018000024 0.002000003 0.000000000 0.000000000
```

```
## [1334,] 0.018000024 0.002000003 0.000000000 0.000000000
## [1335,] 0.000000000 0.000000000 0.004000005 0.016000021
## [1336,] 0.000000000 0.000000000 0.004000005 0.016000021
## [1337,] 0.010000013 0.002000003 0.004000005 0.004000005
## [1338,] 0.000000000 0.000000000 0.004000005 0.016000021
## [1339,] 0.018000024 0.002000003 0.000000000 0.000000000
## [1340,] 0.000000000 0.002000003 0.004000005 0.014000019
## [1341,] 0.018000024 0.002000003 0.000000000 0.000000000
## [1342,] 0.018000024 0.002000003 0.000000000 0.000000000
## [1343,] 0.000000000 0.000000000 0.004000005 0.016000021
## [1344,] 0.018000024 0.002000003 0.000000000 0.000000000
## [1345,] 0.000000000 0.000000000 0.004000005 0.016000021
## [1346,] 0.000000000 0.000000000 0.004000005 0.016000021
## [1347,] 0.000000000 0.000000000 0.004000005 0.016000021
## [1348,] 0.010000013 0.002000003 0.004000005 0.004000005
## [1349,] 0.010000013 0.002000003 0.004000005 0.004000005
## [1350,] 0.010000013 0.002000003 0.004000005 0.004000005
## [1351,] 0.018000024 0.002000003 0.000000000 0.000000000
## [1352,] 0.010000013 0.002000003 0.004000005 0.004000005
## [1353,] 0.010000013 0.002000003 0.004000005 0.004000005
## [1354,] 0.010000013 0.002000003 0.004000005 0.004000005
## [1355,] 0.000000000 0.000000000 0.004000005 0.016000021
## [1356,] 0.010000013 0.002000003 0.004000005 0.004000005
## [1357,] 0.000000000 0.002000003 0.004000005 0.014000019
## [1358,] 0.000000000 0.000000000 0.004000005 0.016000021
## [1359,] 0.004000005 0.002000003 0.004000005 0.010000013
## [1360,] 0.018000024 0.002000003 0.000000000 0.000000000
## [1361,] 0.010000013 0.002000003 0.004000005 0.004000005
## [1362,] 0.000000000 0.002000003 0.004000005 0.014000019
## [1363,] 0.010000013 0.002000003 0.004000005 0.004000005
## [1364,] 0.000000000 0.000000000 0.004000005 0.016000021
## [1365,] 0.018000024 0.002000003 0.000000000 0.000000000
## [1366,] 0.006000008 0.002000003 0.004000005 0.008000011
## [1367,] 0.010000013 0.002000003 0.004000005 0.004000005
## [1368,] 0.000000000 0.000000000 0.004000005 0.016000021
## [1369,] 0.018000024 0.002000003 0.000000000 0.000000000
## [1370,] 0.000000000 0.000000000 0.004000005 0.016000021
## [1371,] 0.010000013 0.002000003 0.004000005 0.004000005
## [1372,] 0.010000013 0.002000003 0.004000005 0.004000005
## [1373,] 0.000000000 0.000000000 0.004000005 0.016000021
## [1374,] 0.018000024 0.002000003 0.000000000 0.000000000
## [1375,] 0.000000000 0.000000000 0.004000005 0.016000021
## [1376,] 0.010000013 0.002000003 0.004000005 0.004000005
## [1377,] 0.000000000 0.002000003 0.004000005 0.014000019
## [1378,] 0.018000024 0.002000003 0.000000000 0.000000000
## [1379,] 0.000000000 0.000000000 0.004000005 0.016000021
## [1380,] 0.004000005 0.002000003 0.004000005 0.010000013
## [1381,] 0.000000000 0.000000000 0.004000005 0.016000021
## [1382,] 0.018000024 0.002000003 0.000000000 0.000000000
## [1383,] 0.000000000 0.002000003 0.004000005 0.014000019
## [1384,] 0.010000013 0.002000003 0.004000005 0.004000005
## [1385,] 0.010000013 0.002000003 0.004000005 0.004000005
## [1386,] 0.010000013 0.002000003 0.004000005 0.004000005
## [1387,] 0.014000019 0.002000003 0.000000000 0.004000005
```

```
## [1388,] 0.000000000 0.002000003 0.004000005 0.014000019
## [1389,] 0.000000000 0.000000000 0.004000005 0.016000021
## [1390,] 0.000000000 0.002000003 0.004000005 0.014000019
## [1391,] 0.010000013 0.002000003 0.004000005 0.004000005
## [1392,] 0.010000013 0.002000003 0.004000005 0.004000005
## [1393,] 0.000000000 0.000000000 0.004000005 0.016000021
## [1394,] 0.000000000 0.000000000 0.004000005 0.016000021
## [1395,] 0.000000000 0.000000000 0.004000005 0.016000021
## [1396,] 0.018000024 0.002000003 0.000000000 0.000000000
## [1397,] 0.010000013 0.002000003 0.004000005 0.004000005
## [1398,] 0.000000000 0.000000000 0.004000005 0.016000021
## [1399,] 0.018000024 0.002000003 0.000000000 0.000000000
## [1400,] 0.000000000 0.000000000 0.004000005 0.016000021
##
## $prob
##         [,1] [,2] [,3] [,4]
##    [1,]  0.0  0.0  0.2  0.8
##    [2,]  0.0  0.0  0.2  0.8
##    [3,]  0.0  0.0  0.2  0.8
##    [4,]  0.5  0.1  0.2  0.2
##    [5,]  0.9  0.1  0.0  0.0
##    [6,]  0.9  0.1  0.0  0.0
##    [7,]  0.0  0.0  0.2  0.8
##    [8,]  0.0  0.0  0.2  0.8
##    [9,]  0.5  0.1  0.2  0.2
##   [10,]  0.0  0.0  0.2  0.8
##   [11,]  0.9  0.1  0.0  0.0
##   [12,]  0.9  0.1  0.0  0.0
##   [13,]  0.0  0.0  0.2  0.8
##   [14,]  0.0  0.1  0.2  0.7
##   [15,]  0.5  0.1  0.2  0.2
##   [16,]  0.9  0.1  0.0  0.0
##   [17,]  0.0  0.0  0.2  0.8
##   [18,]  0.0  0.0  0.2  0.8
##   [19,]  0.0  0.0  0.2  0.8
##   [20,]  0.0  0.0  0.2  0.8
##   [21,]  0.0  0.1  0.2  0.7
##   [22,]  0.0  0.0  0.2  0.8
##   [23,]  0.9  0.1  0.0  0.0
##   [24,]  0.6  0.1  0.1  0.2
##   [25,]  0.0  0.0  0.2  0.8
##   [26,]  0.0  0.0  0.2  0.8
##   [27,]  0.2  0.1  0.2  0.5
##   [28,]  0.0  0.0  0.2  0.8
##   [29,]  0.5  0.1  0.2  0.2
##   [30,]  0.5  0.1  0.2  0.2
##   [31,]  0.9  0.1  0.0  0.0
##   [32,]  0.9  0.1  0.0  0.0
##   [33,]  0.0  0.0  0.2  0.8
##   [34,]  0.8  0.1  0.0  0.1
##   [35,]  0.0  0.0  0.2  0.8
##   [36,]  0.3  0.1  0.2  0.4
##   [37,]  0.3  0.1  0.2  0.4
##   [38,]  0.5  0.1  0.2  0.2
```

```
##   [39,]  0.0  0.0  0.2  0.8
##   [40,]  0.0  0.0  0.2  0.8
##   [41,]  0.0  0.0  0.2  0.8
##   [42,]  0.5  0.1  0.2  0.2
##   [43,]  0.9  0.1  0.0  0.0
##   [44,]  0.9  0.1  0.0  0.0
##   [45,]  0.2  0.1  0.2  0.5
##   [46,]  0.0  0.0  0.2  0.8
##   [47,]  0.0  0.0  0.2  0.8
##   [48,]  0.0  0.0  0.2  0.8
##   [49,]  0.0  0.0  0.2  0.8
##   [50,]  0.9  0.1  0.0  0.0
##   [51,]  0.0  0.0  0.2  0.8
##   [52,]  0.0  0.0  0.2  0.8
##   [53,]  0.9  0.1  0.0  0.0
##   [54,]  0.0  0.0  0.2  0.8
##   [55,]  0.9  0.1  0.0  0.0
##   [56,]  0.5  0.1  0.2  0.2
##   [57,]  0.0  0.0  0.2  0.8
##   [58,]  0.5  0.1  0.2  0.2
##   [59,]  0.0  0.0  0.2  0.8
##   [60,]  0.0  0.0  0.2  0.8
##   [61,]  0.5  0.1  0.2  0.2
##   [62,]  0.4  0.1  0.2  0.3
##   [63,]  0.9  0.1  0.0  0.0
##   [64,]  0.9  0.1  0.0  0.0
##   [65,]  0.0  0.0  0.2  0.8
##   [66,]  0.0  0.1  0.2  0.7
##   [67,]  0.0  0.0  0.2  0.8
##   [68,]  0.5  0.1  0.2  0.2
##   [69,]  0.5  0.1  0.2  0.2
##   [70,]  0.9  0.1  0.0  0.0
##   [71,]  0.5  0.1  0.2  0.2
##   [72,]  0.5  0.1  0.2  0.2
##   [73,]  0.5  0.1  0.2  0.2
##   [74,]  0.0  0.0  0.2  0.8
##   [75,]  0.6  0.1  0.1  0.2
##   [76,]  0.0  0.0  0.2  0.8
##   [77,]  0.9  0.1  0.0  0.0
##   [78,]  0.9  0.1  0.0  0.0
##   [79,]  0.5  0.1  0.2  0.2
##   [80,]  0.0  0.0  0.2  0.8
##   [81,]  0.0  0.0  0.2  0.8
##   [82,]  0.5  0.1  0.2  0.2
##   [83,]  0.0  0.1  0.2  0.7
##   [84,]  0.9  0.1  0.0  0.0
##   [85,]  0.0  0.0  0.2  0.8
##   [86,]  0.0  0.0  0.2  0.8
##   [87,]  0.0  0.0  0.2  0.8
##   [88,]  0.5  0.1  0.2  0.2
##   [89,]  0.0  0.0  0.2  0.8
##   [90,]  0.0  0.0  0.2  0.8
##   [91,]  0.0  0.0  0.2  0.8
##   [92,]  0.0  0.0  0.2  0.8
```

```
##   [93,]  0.0  0.0  0.2  0.8
##   [94,]  0.0  0.0  0.2  0.8
##   [95,]  0.5  0.1  0.2  0.2
##   [96,]  0.0  0.0  0.2  0.8
##   [97,]  0.9  0.1  0.0  0.0
##   [98,]  0.0  0.1  0.2  0.7
##   [99,]  0.0  0.0  0.2  0.8
##  [100,]  0.9  0.1  0.0  0.0
##  [101,]  0.5  0.1  0.2  0.2
##  [102,]  0.6  0.1  0.1  0.2
##  [103,]  0.9  0.1  0.0  0.0
##  [104,]  0.0  0.0  0.2  0.8
##  [105,]  0.9  0.1  0.0  0.0
##  [106,]  0.0  0.0  0.2  0.8
##  [107,]  0.0  0.1  0.2  0.7
##  [108,]  0.0  0.0  0.2  0.8
##  [109,]  0.0  0.1  0.2  0.7
##  [110,]  0.5  0.1  0.2  0.2
##  [111,]  0.5  0.1  0.2  0.2
##  [112,]  0.9  0.1  0.0  0.0
##  [113,]  0.0  0.0  0.2  0.8
##  [114,]  0.9  0.1  0.0  0.0
##  [115,]  0.0  0.0  0.2  0.8
##  [116,]  0.0  0.0  0.2  0.8
##  [117,]  0.9  0.1  0.0  0.0
##  [118,]  0.0  0.1  0.2  0.7
##  [119,]  0.0  0.0  0.2  0.8
##  [120,]  0.2  0.1  0.2  0.5
##  [121,]  0.3  0.1  0.2  0.4
##  [122,]  0.0  0.0  0.2  0.8
##  [123,]  0.5  0.1  0.2  0.2
##  [124,]  0.0  0.0  0.2  0.8
##  [125,]  0.0  0.0  0.2  0.8
##  [126,]  0.1  0.1  0.2  0.6
##  [127,]  0.9  0.1  0.0  0.0
##  [128,]  0.0  0.0  0.2  0.8
##  [129,]  0.0  0.0  0.2  0.8
##  [130,]  0.5  0.1  0.2  0.2
##  [131,]  0.5  0.1  0.2  0.2
##  [132,]  0.9  0.1  0.0  0.0
##  [133,]  0.0  0.1  0.2  0.7
##  [134,]  0.0  0.0  0.2  0.8
##  [135,]  0.0  0.0  0.2  0.8
##  [136,]  0.9  0.1  0.0  0.0
##  [137,]  0.0  0.0  0.2  0.8
##  [138,]  0.0  0.0  0.2  0.8
##  [139,]  0.0  0.0  0.2  0.8
##  [140,]  0.0  0.1  0.2  0.7
##  [141,]  0.0  0.0  0.2  0.8
##  [142,]  0.0  0.0  0.2  0.8
##  [143,]  0.5  0.1  0.2  0.2
##  [144,]  0.7  0.1  0.0  0.2
##  [145,]  0.9  0.1  0.0  0.0
##  [146,]  0.9  0.1  0.0  0.0
```

```
##  [147,]  0.0  0.0  0.2  0.8
##  [148,]  0.0  0.0  0.2  0.8
##  [149,]  0.0  0.1  0.2  0.7
##  [150,]  0.0  0.0  0.2  0.8
##  [151,]  0.0  0.0  0.2  0.8
##  [152,]  0.9  0.1  0.0  0.0
##  [153,]  0.9  0.1  0.0  0.0
##  [154,]  0.0  0.0  0.2  0.8
##  [155,]  0.0  0.0  0.2  0.8
##  [156,]  0.0  0.0  0.2  0.8
##  [157,]  0.0  0.0  0.2  0.8
##  [158,]  0.0  0.0  0.2  0.8
##  [159,]  0.0  0.0  0.2  0.8
##  [160,]  0.0  0.0  0.2  0.8
##  [161,]  0.0  0.0  0.2  0.8
##  [162,]  0.9  0.1  0.0  0.0
##  [163,]  0.0  0.1  0.2  0.7
##  [164,]  0.0  0.0  0.2  0.8
##  [165,]  0.9  0.1  0.0  0.0
##  [166,]  0.5  0.1  0.2  0.2
##  [167,]  0.0  0.0  0.2  0.8
##  [168,]  0.9  0.1  0.0  0.0
##  [169,]  0.0  0.0  0.2  0.8
##  [170,]  0.0  0.0  0.2  0.8
##  [171,]  0.5  0.1  0.2  0.2
##  [172,]  0.0  0.0  0.2  0.8
##  [173,]  0.0  0.0  0.2  0.8
##  [174,]  0.5  0.1  0.2  0.2
##  [175,]  0.5  0.1  0.2  0.2
##  [176,]  0.9  0.1  0.0  0.0
##  [177,]  0.0  0.0  0.2  0.8
##  [178,]  0.0  0.0  0.2  0.8
##  [179,]  0.9  0.1  0.0  0.0
##  [180,]  0.9  0.1  0.0  0.0
##  [181,]  0.5  0.1  0.2  0.2
##  [182,]  0.0  0.0  0.2  0.8
##  [183,]  0.9  0.1  0.0  0.0
##  [184,]  0.5  0.1  0.2  0.2
##  [185,]  0.9  0.1  0.0  0.0
##  [186,]  0.0  0.0  0.2  0.8
##  [187,]  0.9  0.1  0.0  0.0
##  [188,]  0.0  0.0  0.2  0.8
##  [189,]  0.0  0.0  0.2  0.8
##  [190,]  0.9  0.1  0.0  0.0
##  [191,]  0.0  0.0  0.2  0.8
##  [192,]  0.5  0.1  0.2  0.2
##  [193,]  0.0  0.0  0.2  0.8
##  [194,]  0.0  0.0  0.2  0.8
##  [195,]  0.5  0.1  0.2  0.2
##  [196,]  0.9  0.1  0.0  0.0
##  [197,]  0.0  0.0  0.2  0.8
##  [198,]  0.9  0.1  0.0  0.0
##  [199,]  0.5  0.1  0.2  0.2
##  [200,]  0.0  0.1  0.2  0.7
```

```
##  [201,]  0.5  0.1  0.2  0.2
##  [202,]  0.0  0.0  0.2  0.8
##  [203,]  0.0  0.0  0.2  0.8
##  [204,]  0.0  0.0  0.2  0.8
##  [205,]  0.9  0.1  0.0  0.0
##  [206,]  0.9  0.1  0.0  0.0
##  [207,]  0.5  0.1  0.2  0.2
##  [208,]  0.0  0.0  0.2  0.8
##  [209,]  0.9  0.1  0.0  0.0
##  [210,]  0.5  0.1  0.2  0.2
##  [211,]  0.0  0.0  0.2  0.8
##  [212,]  0.9  0.1  0.0  0.0
##  [213,]  0.9  0.1  0.0  0.0
##  [214,]  0.0  0.0  0.2  0.8
##  [215,]  0.9  0.1  0.0  0.0
##  [216,]  0.5  0.1  0.2  0.2
##  [217,]  0.0  0.0  0.2  0.8
##  [218,]  0.5  0.1  0.2  0.2
##  [219,]  0.0  0.0  0.2  0.8
##  [220,]  0.9  0.1  0.0  0.0
##  [221,]  0.0  0.0  0.2  0.8
##  [222,]  0.0  0.0  0.2  0.8
##  [223,]  0.9  0.1  0.0  0.0
##  [224,]  0.9  0.1  0.0  0.0
##  [225,]  0.5  0.1  0.2  0.2
##  [226,]  0.9  0.1  0.0  0.0
##  [227,]  0.0  0.0  0.2  0.8
##  [228,]  0.9  0.1  0.0  0.0
##  [229,]  0.9  0.1  0.0  0.0
##  [230,]  0.9  0.1  0.0  0.0
##  [231,]  0.0  0.0  0.2  0.8
##  [232,]  0.0  0.0  0.2  0.8
##  [233,]  0.5  0.1  0.2  0.2
##  [234,]  0.2  0.1  0.2  0.5
##  [235,]  0.9  0.1  0.0  0.0
##  [236,]  0.5  0.1  0.2  0.2
##  [237,]  0.9  0.1  0.0  0.0
##  [238,]  0.0  0.0  0.2  0.8
##  [239,]  0.0  0.0  0.2  0.8
##  [240,]  0.9  0.1  0.0  0.0
##  [241,]  0.2  0.1  0.2  0.5
##  [242,]  0.0  0.0  0.2  0.8
##  [243,]  0.9  0.1  0.0  0.0
##  [244,]  0.9  0.1  0.0  0.0
##  [245,]  0.0  0.0  0.2  0.8
##  [246,]  0.0  0.0  0.2  0.8
##  [247,]  0.0  0.0  0.2  0.8
##  [248,]  0.0  0.0  0.2  0.8
##  [249,]  0.0  0.0  0.2  0.8
##  [250,]  0.0  0.0  0.2  0.8
##  [251,]  0.0  0.0  0.2  0.8
##  [252,]  0.0  0.0  0.2  0.8
##  [253,]  0.0  0.1  0.2  0.7
##  [254,]  0.9  0.1  0.0  0.0
```

```
##  [255,]  0.0  0.0  0.2  0.8
##  [256,]  0.8  0.1  0.0  0.1
##  [257,]  0.9  0.1  0.0  0.0
##  [258,]  0.0  0.0  0.2  0.8
##  [259,]  0.0  0.0  0.2  0.8
##  [260,]  0.5  0.1  0.2  0.2
##  [261,]  0.9  0.1  0.0  0.0
##  [262,]  0.0  0.0  0.2  0.8
##  [263,]  0.0  0.0  0.2  0.8
##  [264,]  0.0  0.0  0.2  0.8
##  [265,]  0.0  0.1  0.2  0.7
##  [266,]  0.0  0.0  0.2  0.8
##  [267,]  0.0  0.0  0.2  0.8
##  [268,]  0.9  0.1  0.0  0.0
##  [269,]  0.0  0.0  0.2  0.8
##  [270,]  0.9  0.1  0.0  0.0
##  [271,]  0.9  0.1  0.0  0.0
##  [272,]  0.0  0.0  0.2  0.8
##  [273,]  0.0  0.1  0.2  0.7
##  [274,]  0.0  0.0  0.2  0.8
##  [275,]  0.0  0.1  0.2  0.7
##  [276,]  0.0  0.0  0.2  0.8
##  [277,]  0.0  0.0  0.2  0.8
##  [278,]  0.0  0.0  0.2  0.8
##  [279,]  0.2  0.1  0.2  0.5
##  [280,]  0.0  0.0  0.2  0.8
##  [281,]  0.0  0.0  0.2  0.8
##  [282,]  0.5  0.1  0.2  0.2
##  [283,]  0.5  0.1  0.2  0.2
##  [284,]  0.0  0.0  0.2  0.8
##  [285,]  0.0  0.0  0.2  0.8
##  [286,]  0.0  0.0  0.2  0.8
##  [287,]  0.5  0.1  0.2  0.2
##  [288,]  0.0  0.0  0.2  0.8
##  [289,]  0.0  0.0  0.2  0.8
##  [290,]  0.5  0.1  0.2  0.2
##  [291,]  0.0  0.0  0.2  0.8
##  [292,]  0.0  0.1  0.2  0.7
##  [293,]  0.9  0.1  0.0  0.0
##  [294,]  0.0  0.0  0.2  0.8
##  [295,]  0.9  0.1  0.0  0.0
##  [296,]  0.0  0.0  0.2  0.8
##  [297,]  0.0  0.1  0.2  0.7
##  [298,]  0.5  0.1  0.2  0.2
##  [299,]  0.9  0.1  0.0  0.0
##  [300,]  0.5  0.1  0.2  0.2
##  [301,]  0.0  0.0  0.2  0.8
##  [302,]  0.2  0.1  0.2  0.5
##  [303,]  0.9  0.1  0.0  0.0
##  [304,]  0.0  0.0  0.2  0.8
##  [305,]  0.0  0.0  0.2  0.8
##  [306,]  0.9  0.1  0.0  0.0
##  [307,]  0.5  0.1  0.2  0.2
##  [308,]  0.5  0.1  0.2  0.2
```

```
##  [309,]  0.0  0.0  0.2  0.8
##  [310,]  0.7  0.1  0.0  0.2
##  [311,]  0.9  0.1  0.0  0.0
##  [312,]  0.0  0.0  0.2  0.8
##  [313,]  0.9  0.1  0.0  0.0
##  [314,]  0.9  0.1  0.0  0.0
##  [315,]  0.0  0.0  0.2  0.8
##  [316,]  0.9  0.1  0.0  0.0
##  [317,]  0.9  0.1  0.0  0.0
##  [318,]  0.0  0.0  0.2  0.8
##  [319,]  0.5  0.1  0.2  0.2
##  [320,]  0.0  0.0  0.2  0.8
##  [321,]  0.5  0.1  0.2  0.2
##  [322,]  0.6  0.1  0.1  0.2
##  [323,]  0.0  0.0  0.2  0.8
##  [324,]  0.0  0.1  0.2  0.7
##  [325,]  0.5  0.1  0.2  0.2
##  [326,]  0.9  0.1  0.0  0.0
##  [327,]  0.9  0.1  0.0  0.0
##  [328,]  0.0  0.0  0.2  0.8
##  [329,]  0.9  0.1  0.0  0.0
##  [330,]  0.9  0.1  0.0  0.0
##  [331,]  0.5  0.1  0.2  0.2
##  [332,]  0.0  0.0  0.2  0.8
##  [333,]  0.0  0.0  0.2  0.8
##  [334,]  0.5  0.1  0.2  0.2
##  [335,]  0.0  0.1  0.2  0.7
##  [336,]  0.0  0.0  0.2  0.8
##  [337,]  0.0  0.0  0.2  0.8
##  [338,]  0.0  0.0  0.2  0.8
##  [339,]  0.9  0.1  0.0  0.0
##  [340,]  0.0  0.0  0.2  0.8
##  [341,]  0.9  0.1  0.0  0.0
##  [342,]  0.0  0.0  0.2  0.8
##  [343,]  0.5  0.1  0.2  0.2
##  [344,]  0.9  0.1  0.0  0.0
##  [345,]  0.0  0.0  0.2  0.8
##  [346,]  0.2  0.1  0.2  0.5
##  [347,]  0.9  0.1  0.0  0.0
##  [348,]  0.4  0.1  0.2  0.3
##  [349,]  0.9  0.1  0.0  0.0
##  [350,]  0.0  0.0  0.2  0.8
##  [351,]  0.5  0.1  0.2  0.2
##  [352,]  0.0  0.0  0.2  0.8
##  [353,]  0.0  0.0  0.2  0.8
##  [354,]  0.9  0.1  0.0  0.0
##  [355,]  0.0  0.0  0.2  0.8
##  [356,]  0.9  0.1  0.0  0.0
##  [357,]  0.9  0.1  0.0  0.0
##  [358,]  0.6  0.1  0.1  0.2
##  [359,]  0.0  0.0  0.2  0.8
##  [360,]  0.5  0.1  0.2  0.2
##  [361,]  0.0  0.0  0.2  0.8
##  [362,]  0.0  0.0  0.2  0.8
```

```
##  [363,]  0.2  0.1  0.2  0.5
##  [364,]  0.0  0.0  0.2  0.8
##  [365,]  0.5  0.1  0.2  0.2
##  [366,]  0.0  0.0  0.2  0.8
##  [367,]  0.0  0.0  0.2  0.8
##  [368,]  0.0  0.0  0.2  0.8
##  [369,]  0.0  0.0  0.2  0.8
##  [370,]  0.5  0.1  0.2  0.2
##  [371,]  0.0  0.0  0.2  0.8
##  [372,]  0.0  0.0  0.2  0.8
##  [373,]  0.0  0.0  0.2  0.8
##  [374,]  0.0  0.0  0.2  0.8
##  [375,]  0.0  0.0  0.2  0.8
##  [376,]  0.0  0.1  0.2  0.7
##  [377,]  0.0  0.0  0.2  0.8
##  [378,]  0.0  0.0  0.2  0.8
##  [379,]  0.0  0.0  0.2  0.8
##  [380,]  0.9  0.1  0.0  0.0
##  [381,]  0.0  0.0  0.2  0.8
##  [382,]  0.5  0.1  0.2  0.2
##  [383,]  0.9  0.1  0.0  0.0
##  [384,]  0.0  0.0  0.2  0.8
##  [385,]  0.5  0.1  0.2  0.2
##  [386,]  0.5  0.1  0.2  0.2
##  [387,]  0.0  0.0  0.2  0.8
##  [388,]  0.9  0.1  0.0  0.0
##  [389,]  0.5  0.1  0.2  0.2
##  [390,]  0.9  0.1  0.0  0.0
##  [391,]  0.9  0.1  0.0  0.0
##  [392,]  0.0  0.0  0.2  0.8
##  [393,]  0.0  0.0  0.2  0.8
##  [394,]  0.9  0.1  0.0  0.0
##  [395,]  0.5  0.1  0.2  0.2
##  [396,]  0.5  0.1  0.2  0.2
##  [397,]  0.0  0.0  0.2  0.8
##  [398,]  0.9  0.1  0.0  0.0
##  [399,]  0.9  0.1  0.0  0.0
##  [400,]  0.0  0.0  0.2  0.8
##  [401,]  0.0  0.0  0.2  0.8
##  [402,]  0.0  0.0  0.2  0.8
##  [403,]  0.0  0.0  0.2  0.8
##  [404,]  0.9  0.1  0.0  0.0
##  [405,]  0.0  0.0  0.2  0.8
##  [406,]  0.0  0.0  0.2  0.8
##  [407,]  0.9  0.1  0.0  0.0
##  [408,]  0.9  0.1  0.0  0.0
##  [409,]  0.0  0.0  0.2  0.8
##  [410,]  0.0  0.0  0.2  0.8
##  [411,]  0.0  0.0  0.2  0.8
##  [412,]  0.9  0.1  0.0  0.0
##  [413,]  0.0  0.0  0.2  0.8
##  [414,]  0.6  0.1  0.1  0.2
##  [415,]  0.9  0.1  0.0  0.0
##  [416,]  0.0  0.0  0.2  0.8
```

```
##  [417,]  0.0  0.0  0.2  0.8
##  [418,]  0.9  0.1  0.0  0.0
##  [419,]  0.0  0.0  0.2  0.8
##  [420,]  0.9  0.1  0.0  0.0
##  [421,]  0.9  0.1  0.0  0.0
##  [422,]  0.9  0.1  0.0  0.0
##  [423,]  0.0  0.0  0.2  0.8
##  [424,]  0.9  0.1  0.0  0.0
##  [425,]  0.5  0.1  0.2  0.2
##  [426,]  0.9  0.1  0.0  0.0
##  [427,]  0.0  0.0  0.2  0.8
##  [428,]  0.9  0.1  0.0  0.0
##  [429,]  0.0  0.0  0.2  0.8
##  [430,]  0.0  0.1  0.2  0.7
##  [431,]  0.0  0.0  0.2  0.8
##  [432,]  0.6  0.1  0.1  0.2
##  [433,]  0.0  0.0  0.2  0.8
##  [434,]  0.0  0.0  0.2  0.8
##  [435,]  0.5  0.1  0.2  0.2
##  [436,]  0.0  0.0  0.2  0.8
##  [437,]  0.9  0.1  0.0  0.0
##  [438,]  0.5  0.1  0.2  0.2
##  [439,]  0.0  0.1  0.2  0.7
##  [440,]  0.9  0.1  0.0  0.0
##  [441,]  0.9  0.1  0.0  0.0
##  [442,]  0.9  0.1  0.0  0.0
##  [443,]  0.5  0.1  0.2  0.2
##  [444,]  0.0  0.0  0.2  0.8
##  [445,]  0.0  0.0  0.2  0.8
##  [446,]  0.5  0.1  0.2  0.2
##  [447,]  0.0  0.0  0.2  0.8
##  [448,]  0.0  0.1  0.2  0.7
##  [449,]  0.9  0.1  0.0  0.0
##  [450,]  0.5  0.1  0.2  0.2
##  [451,]  0.0  0.0  0.2  0.8
##  [452,]  0.5  0.1  0.2  0.2
##  [453,]  0.0  0.0  0.2  0.8
##  [454,]  0.0  0.1  0.2  0.7
##  [455,]  0.0  0.0  0.2  0.8
##  [456,]  0.9  0.1  0.0  0.0
##  [457,]  0.0  0.0  0.2  0.8
##  [458,]  0.5  0.1  0.2  0.2
##  [459,]  0.5  0.1  0.2  0.2
##  [460,]  0.9  0.1  0.0  0.0
##  [461,]  0.9  0.1  0.0  0.0
##  [462,]  0.5  0.1  0.2  0.2
##  [463,]  0.9  0.1  0.0  0.0
##  [464,]  0.9  0.1  0.0  0.0
##  [465,]  0.9  0.1  0.0  0.0
##  [466,]  0.0  0.0  0.2  0.8
##  [467,]  0.0  0.0  0.2  0.8
##  [468,]  0.5  0.1  0.2  0.2
##  [469,]  0.9  0.1  0.0  0.0
##  [470,]  0.5  0.1  0.2  0.2
```

```
##  [471,]  0.9  0.1  0.0  0.0
##  [472,]  0.0  0.0  0.2  0.8
##  [473,]  0.0  0.0  0.2  0.8
##  [474,]  0.0  0.0  0.2  0.8
##  [475,]  0.0  0.0  0.2  0.8
##  [476,]  0.0  0.0  0.2  0.8
##  [477,]  0.2  0.1  0.2  0.5
##  [478,]  0.9  0.1  0.0  0.0
##  [479,]  0.9  0.1  0.0  0.0
##  [480,]  0.0  0.0  0.2  0.8
##  [481,]  0.0  0.0  0.2  0.8
##  [482,]  0.7  0.1  0.0  0.2
##  [483,]  0.0  0.0  0.2  0.8
##  [484,]  0.0  0.1  0.2  0.7
##  [485,]  0.9  0.1  0.0  0.0
##  [486,]  0.0  0.0  0.2  0.8
##  [487,]  0.9  0.1  0.0  0.0
##  [488,]  0.0  0.0  0.2  0.8
##  [489,]  0.0  0.0  0.2  0.8
##  [490,]  0.0  0.0  0.2  0.8
##  [491,]  0.9  0.1  0.0  0.0
##  [492,]  0.0  0.0  0.2  0.8
##  [493,]  0.9  0.1  0.0  0.0
##  [494,]  0.5  0.1  0.2  0.2
##  [495,]  0.0  0.0  0.2  0.8
##  [496,]  0.9  0.1  0.0  0.0
##  [497,]  0.0  0.0  0.2  0.8
##  [498,]  0.0  0.0  0.2  0.8
##  [499,]  0.9  0.1  0.0  0.0
##  [500,]  0.0  0.0  0.2  0.8
##  [501,]  0.0  0.0  0.2  0.8
##  [502,]  0.9  0.1  0.0  0.0
##  [503,]  0.5  0.1  0.2  0.2
##  [504,]  0.9  0.1  0.0  0.0
##  [505,]  0.5  0.1  0.2  0.2
##  [506,]  0.9  0.1  0.0  0.0
##  [507,]  0.9  0.1  0.0  0.0
##  [508,]  0.0  0.0  0.2  0.8
##  [509,]  0.0  0.0  0.2  0.8
##  [510,]  0.0  0.0  0.2  0.8
##  [511,]  0.0  0.0  0.2  0.8
##  [512,]  0.0  0.0  0.2  0.8
##  [513,]  0.0  0.1  0.2  0.7
##  [514,]  0.0  0.0  0.2  0.8
##  [515,]  0.0  0.0  0.2  0.8
##  [516,]  0.9  0.1  0.0  0.0
##  [517,]  0.0  0.0  0.2  0.8
##  [518,]  0.0  0.0  0.2  0.8
##  [519,]  0.9  0.1  0.0  0.0
##  [520,]  0.0  0.1  0.2  0.7
##  [521,]  0.6  0.1  0.1  0.2
##  [522,]  0.9  0.1  0.0  0.0
##  [523,]  0.0  0.0  0.2  0.8
##  [524,]  0.9  0.1  0.0  0.0
```

```
##  [525,]  0.0  0.0  0.2  0.8
##  [526,]  0.9  0.1  0.0  0.0
##  [527,]  0.9  0.1  0.0  0.0
##  [528,]  0.9  0.1  0.0  0.0
##  [529,]  0.0  0.0  0.2  0.8
##  [530,]  0.5  0.1  0.2  0.2
##  [531,]  0.5  0.1  0.2  0.2
##  [532,]  0.0  0.0  0.2  0.8
##  [533,]  0.2  0.1  0.2  0.5
##  [534,]  0.0  0.0  0.2  0.8
##  [535,]  0.0  0.0  0.2  0.8
##  [536,]  0.9  0.1  0.0  0.0
##  [537,]  0.9  0.1  0.0  0.0
##  [538,]  0.5  0.1  0.2  0.2
##  [539,]  0.0  0.0  0.2  0.8
##  [540,]  0.0  0.0  0.2  0.8
##  [541,]  0.9  0.1  0.0  0.0
##  [542,]  0.0  0.0  0.2  0.8
##  [543,]  0.0  0.0  0.2  0.8
##  [544,]  0.9  0.1  0.0  0.0
##  [545,]  0.1  0.1  0.2  0.6
##  [546,]  0.9  0.1  0.0  0.0
##  [547,]  0.0  0.0  0.2  0.8
##  [548,]  0.0  0.0  0.2  0.8
##  [549,]  0.0  0.0  0.2  0.8
##  [550,]  0.0  0.0  0.2  0.8
##  [551,]  0.0  0.0  0.2  0.8
##  [552,]  0.5  0.1  0.2  0.2
##  [553,]  0.9  0.1  0.0  0.0
##  [554,]  0.0  0.0  0.2  0.8
##  [555,]  0.5  0.1  0.2  0.2
##  [556,]  0.9  0.1  0.0  0.0
##  [557,]  0.0  0.0  0.2  0.8
##  [558,]  0.5  0.1  0.2  0.2
##  [559,]  0.6  0.1  0.1  0.2
##  [560,]  0.0  0.0  0.2  0.8
##  [561,]  0.0  0.0  0.2  0.8
##  [562,]  0.0  0.0  0.2  0.8
##  [563,]  0.0  0.0  0.2  0.8
##  [564,]  0.7  0.1  0.0  0.2
##  [565,]  0.9  0.1  0.0  0.0
##  [566,]  0.5  0.1  0.2  0.2
##  [567,]  0.9  0.1  0.0  0.0
##  [568,]  0.0  0.0  0.2  0.8
##  [569,]  0.0  0.0  0.2  0.8
##  [570,]  0.5  0.1  0.2  0.2
##  [571,]  0.9  0.1  0.0  0.0
##  [572,]  0.0  0.0  0.2  0.8
##  [573,]  0.0  0.0  0.2  0.8
##  [574,]  0.5  0.1  0.2  0.2
##  [575,]  0.0  0.0  0.2  0.8
##  [576,]  0.0  0.0  0.2  0.8
##  [577,]  0.0  0.0  0.2  0.8
##  [578,]  0.0  0.0  0.2  0.8
```

```
##  [579,]  0.0  0.0  0.2  0.8
##  [580,]  0.0  0.0  0.2  0.8
##  [581,]  0.0  0.0  0.2  0.8
##  [582,]  0.0  0.0  0.2  0.8
##  [583,]  0.0  0.0  0.2  0.8
##  [584,]  0.0  0.0  0.2  0.8
##  [585,]  0.0  0.0  0.2  0.8
##  [586,]  0.0  0.0  0.2  0.8
##  [587,]  0.0  0.0  0.2  0.8
##  [588,]  0.0  0.0  0.2  0.8
##  [589,]  0.0  0.1  0.2  0.7
##  [590,]  0.0  0.0  0.2  0.8
##  [591,]  0.9  0.1  0.0  0.0
##  [592,]  0.9  0.1  0.0  0.0
##  [593,]  0.0  0.0  0.2  0.8
##  [594,]  0.9  0.1  0.0  0.0
##  [595,]  0.9  0.1  0.0  0.0
##  [596,]  0.0  0.0  0.2  0.8
##  [597,]  0.5  0.1  0.2  0.2
##  [598,]  0.9  0.1  0.0  0.0
##  [599,]  0.0  0.1  0.2  0.7
##  [600,]  0.5  0.1  0.2  0.2
##  [601,]  0.0  0.0  0.2  0.8
##  [602,]  0.0  0.1  0.2  0.7
##  [603,]  0.6  0.1  0.1  0.2
##  [604,]  0.0  0.0  0.2  0.8
##  [605,]  0.2  0.1  0.2  0.5
##  [606,]  0.5  0.1  0.2  0.2
##  [607,]  0.0  0.0  0.2  0.8
##  [608,]  0.9  0.1  0.0  0.0
##  [609,]  0.0  0.0  0.2  0.8
##  [610,]  0.0  0.0  0.2  0.8
##  [611,]  0.5  0.1  0.2  0.2
##  [612,]  0.0  0.0  0.2  0.8
##  [613,]  0.0  0.0  0.2  0.8
##  [614,]  0.0  0.0  0.2  0.8
##  [615,]  0.0  0.1  0.2  0.7
##  [616,]  0.9  0.1  0.0  0.0
##  [617,]  0.7  0.1  0.0  0.2
##  [618,]  0.9  0.1  0.0  0.0
##  [619,]  0.9  0.1  0.0  0.0
##  [620,]  0.0  0.0  0.2  0.8
##  [621,]  0.0  0.0  0.2  0.8
##  [622,]  0.0  0.0  0.2  0.8
##  [623,]  0.0  0.0  0.2  0.8
##  [624,]  0.5  0.1  0.2  0.2
##  [625,]  0.0  0.0  0.2  0.8
##  [626,]  0.0  0.0  0.2  0.8
##  [627,]  0.9  0.1  0.0  0.0
##  [628,]  0.5  0.1  0.2  0.2
##  [629,]  0.5  0.1  0.2  0.2
##  [630,]  0.0  0.0  0.2  0.8
##  [631,]  0.0  0.0  0.2  0.8
##  [632,]  0.6  0.1  0.1  0.2
```

```
##  [633,]  0.0  0.0  0.2  0.8
##  [634,]  0.5  0.1  0.2  0.2
##  [635,]  0.9  0.1  0.0  0.0
##  [636,]  0.0  0.0  0.2  0.8
##  [637,]  0.5  0.1  0.2  0.2
##  [638,]  0.0  0.0  0.2  0.8
##  [639,]  0.9  0.1  0.0  0.0
##  [640,]  0.0  0.0  0.2  0.8
##  [641,]  0.9  0.1  0.0  0.0
##  [642,]  0.9  0.1  0.0  0.0
##  [643,]  0.5  0.1  0.2  0.2
##  [644,]  0.9  0.1  0.0  0.0
##  [645,]  0.0  0.0  0.2  0.8
##  [646,]  0.0  0.0  0.2  0.8
##  [647,]  0.9  0.1  0.0  0.0
##  [648,]  0.5  0.1  0.2  0.2
##  [649,]  0.0  0.0  0.2  0.8
##  [650,]  0.0  0.0  0.2  0.8
##  [651,]  0.2  0.1  0.2  0.5
##  [652,]  0.5  0.1  0.2  0.2
##  [653,]  0.0  0.0  0.2  0.8
##  [654,]  0.9  0.1  0.0  0.0
##  [655,]  0.0  0.0  0.2  0.8
##  [656,]  0.0  0.0  0.2  0.8
##  [657,]  0.0  0.0  0.2  0.8
##  [658,]  0.0  0.0  0.2  0.8
##  [659,]  0.0  0.0  0.2  0.8
##  [660,]  0.0  0.0  0.2  0.8
##  [661,]  0.0  0.0  0.2  0.8
##  [662,]  0.0  0.0  0.2  0.8
##  [663,]  0.9  0.1  0.0  0.0
##  [664,]  0.5  0.1  0.2  0.2
##  [665,]  0.9  0.1  0.0  0.0
##  [666,]  0.0  0.0  0.2  0.8
##  [667,]  0.9  0.1  0.0  0.0
##  [668,]  0.1  0.1  0.2  0.6
##  [669,]  0.5  0.1  0.2  0.2
##  [670,]  0.5  0.1  0.2  0.2
##  [671,]  0.8  0.1  0.0  0.1
##  [672,]  0.5  0.1  0.2  0.2
##  [673,]  0.0  0.0  0.2  0.8
##  [674,]  0.0  0.0  0.2  0.8
##  [675,]  0.9  0.1  0.0  0.0
##  [676,]  0.0  0.0  0.2  0.8
##  [677,]  0.0  0.0  0.2  0.8
##  [678,]  0.0  0.0  0.2  0.8
##  [679,]  0.5  0.1  0.2  0.2
##  [680,]  0.9  0.1  0.0  0.0
##  [681,]  0.5  0.1  0.2  0.2
##  [682,]  0.6  0.1  0.1  0.2
##  [683,]  0.9  0.1  0.0  0.0
##  [684,]  0.0  0.0  0.2  0.8
##  [685,]  0.9  0.1  0.0  0.0
##  [686,]  0.9  0.1  0.0  0.0
```

```
##  [687,]  0.0  0.0  0.2  0.8
##  [688,]  0.5  0.1  0.2  0.2
##  [689,]  0.9  0.1  0.0  0.0
##  [690,]  0.0  0.0  0.2  0.8
##  [691,]  0.0  0.0  0.2  0.8
##  [692,]  0.9  0.1  0.0  0.0
##  [693,]  0.9  0.1  0.0  0.0
##  [694,]  0.9  0.1  0.0  0.0
##  [695,]  0.0  0.0  0.2  0.8
##  [696,]  0.0  0.0  0.2  0.8
##  [697,]  0.5  0.1  0.2  0.2
##  [698,]  0.5  0.1  0.2  0.2
##  [699,]  0.5  0.1  0.2  0.2
##  [700,]  0.5  0.1  0.2  0.2
##  [701,]  0.9  0.1  0.0  0.0
##  [702,]  0.9  0.1  0.0  0.0
##  [703,]  0.0  0.0  0.2  0.8
##  [704,]  0.0  0.0  0.2  0.8
##  [705,]  0.0  0.0  0.2  0.8
##  [706,]  0.0  0.0  0.2  0.8
##  [707,]  0.5  0.1  0.2  0.2
##  [708,]  0.9  0.1  0.0  0.0
##  [709,]  0.9  0.1  0.0  0.0
##  [710,]  0.0  0.0  0.2  0.8
##  [711,]  0.0  0.0  0.2  0.8
##  [712,]  0.9  0.1  0.0  0.0
##  [713,]  0.9  0.1  0.0  0.0
##  [714,]  0.5  0.1  0.2  0.2
##  [715,]  0.9  0.1  0.0  0.0
##  [716,]  0.5  0.1  0.2  0.2
##  [717,]  0.0  0.0  0.2  0.8
##  [718,]  0.5  0.1  0.2  0.2
##  [719,]  0.9  0.1  0.0  0.0
##  [720,]  0.9  0.1  0.0  0.0
##  [721,]  0.9  0.1  0.0  0.0
##  [722,]  0.5  0.1  0.2  0.2
##  [723,]  0.0  0.0  0.2  0.8
##  [724,]  0.0  0.1  0.2  0.7
##  [725,]  0.0  0.0  0.2  0.8
##  [726,]  0.9  0.1  0.0  0.0
##  [727,]  0.9  0.1  0.0  0.0
##  [728,]  0.0  0.0  0.2  0.8
##  [729,]  0.5  0.1  0.2  0.2
##  [730,]  0.9  0.1  0.0  0.0
##  [731,]  0.0  0.0  0.2  0.8
##  [732,]  0.5  0.1  0.2  0.2
##  [733,]  0.9  0.1  0.0  0.0
##  [734,]  0.0  0.0  0.2  0.8
##  [735,]  0.0  0.0  0.2  0.8
##  [736,]  0.0  0.0  0.2  0.8
##  [737,]  0.5  0.1  0.2  0.2
##  [738,]  0.0  0.0  0.2  0.8
##  [739,]  0.5  0.1  0.2  0.2
##  [740,]  0.9  0.1  0.0  0.0
```

```
##  [741,]  0.0  0.1  0.2  0.7
##  [742,]  0.0  0.0  0.2  0.8
##  [743,]  0.5  0.1  0.2  0.2
##  [744,]  0.0  0.0  0.2  0.8
##  [745,]  0.9  0.1  0.0  0.0
##  [746,]  0.0  0.0  0.2  0.8
##  [747,]  0.9  0.1  0.0  0.0
##  [748,]  0.9  0.1  0.0  0.0
##  [749,]  0.9  0.1  0.0  0.0
##  [750,]  0.9  0.1  0.0  0.0
##  [751,]  0.0  0.0  0.2  0.8
##  [752,]  0.9  0.1  0.0  0.0
##  [753,]  0.0  0.0  0.2  0.8
##  [754,]  0.9  0.1  0.0  0.0
##  [755,]  0.9  0.1  0.0  0.0
##  [756,]  0.0  0.0  0.2  0.8
##  [757,]  0.5  0.1  0.2  0.2
##  [758,]  0.5  0.1  0.2  0.2
##  [759,]  0.2  0.1  0.2  0.5
##  [760,]  0.0  0.0  0.2  0.8
##  [761,]  0.0  0.0  0.2  0.8
##  [762,]  0.5  0.1  0.2  0.2
##  [763,]  0.9  0.1  0.0  0.0
##  [764,]  0.0  0.1  0.2  0.7
##  [765,]  0.0  0.1  0.2  0.7
##  [766,]  0.9  0.1  0.0  0.0
##  [767,]  0.9  0.1  0.0  0.0
##  [768,]  0.5  0.1  0.2  0.2
##  [769,]  0.0  0.0  0.2  0.8
##  [770,]  0.8  0.1  0.0  0.1
##  [771,]  0.9  0.1  0.0  0.0
##  [772,]  0.0  0.0  0.2  0.8
##  [773,]  0.5  0.1  0.2  0.2
##  [774,]  0.9  0.1  0.0  0.0
##  [775,]  0.0  0.0  0.2  0.8
##  [776,]  0.0  0.0  0.2  0.8
##  [777,]  0.0  0.0  0.2  0.8
##  [778,]  0.0  0.0  0.2  0.8
##  [779,]  0.0  0.0  0.2  0.8
##  [780,]  0.0  0.0  0.2  0.8
##  [781,]  0.9  0.1  0.0  0.0
##  [782,]  0.0  0.0  0.2  0.8
##  [783,]  0.0  0.0  0.2  0.8
##  [784,]  0.0  0.0  0.2  0.8
##  [785,]  0.0  0.0  0.2  0.8
##  [786,]  0.0  0.0  0.2  0.8
##  [787,]  0.2  0.1  0.2  0.5
##  [788,]  0.0  0.1  0.2  0.7
##  [789,]  0.9  0.1  0.0  0.0
##  [790,]  0.0  0.0  0.2  0.8
##  [791,]  0.7  0.1  0.0  0.2
##  [792,]  0.2  0.1  0.2  0.5
##  [793,]  0.0  0.1  0.2  0.7
##  [794,]  0.9  0.1  0.0  0.0
```

```
##  [795,]  0.0  0.0  0.2  0.8
##  [796,]  0.9  0.1  0.0  0.0
##  [797,]  0.0  0.0  0.2  0.8
##  [798,]  0.0  0.0  0.2  0.8
##  [799,]  0.0  0.0  0.2  0.8
##  [800,]  0.2  0.1  0.2  0.5
##  [801,]  0.0  0.1  0.2  0.7
##  [802,]  0.0  0.0  0.2  0.8
##  [803,]  0.5  0.1  0.2  0.2
##  [804,]  0.5  0.1  0.2  0.2
##  [805,]  0.5  0.1  0.2  0.2
##  [806,]  0.5  0.1  0.2  0.2
##  [807,]  0.0  0.0  0.2  0.8
##  [808,]  0.5  0.1  0.2  0.2
##  [809,]  0.0  0.0  0.2  0.8
##  [810,]  0.9  0.1  0.0  0.0
##  [811,]  0.0  0.1  0.2  0.7
##  [812,]  0.9  0.1  0.0  0.0
##  [813,]  0.0  0.0  0.2  0.8
##  [814,]  0.0  0.0  0.2  0.8
##  [815,]  0.0  0.1  0.2  0.7
##  [816,]  0.5  0.1  0.2  0.2
##  [817,]  0.0  0.0  0.2  0.8
##  [818,]  0.9  0.1  0.0  0.0
##  [819,]  0.6  0.1  0.1  0.2
##  [820,]  0.0  0.0  0.2  0.8
##  [821,]  0.9  0.1  0.0  0.0
##  [822,]  0.0  0.0  0.2  0.8
##  [823,]  0.0  0.0  0.2  0.8
##  [824,]  0.0  0.0  0.2  0.8
##  [825,]  0.0  0.0  0.2  0.8
##  [826,]  0.0  0.0  0.2  0.8
##  [827,]  0.0  0.0  0.2  0.8
##  [828,]  0.9  0.1  0.0  0.0
##  [829,]  0.0  0.0  0.2  0.8
##  [830,]  0.9  0.1  0.0  0.0
##  [831,]  0.9  0.1  0.0  0.0
##  [832,]  0.9  0.1  0.0  0.0
##  [833,]  0.2  0.1  0.2  0.5
##  [834,]  0.0  0.0  0.2  0.8
##  [835,]  0.9  0.1  0.0  0.0
##  [836,]  0.0  0.0  0.2  0.8
##  [837,]  0.9  0.1  0.0  0.0
##  [838,]  0.0  0.0  0.2  0.8
##  [839,]  0.9  0.1  0.0  0.0
##  [840,]  0.5  0.1  0.2  0.2
##  [841,]  0.0  0.1  0.2  0.7
##  [842,]  0.0  0.0  0.2  0.8
##  [843,]  0.5  0.1  0.2  0.2
##  [844,]  0.0  0.0  0.2  0.8
##  [845,]  0.9  0.1  0.0  0.0
##  [846,]  0.0  0.0  0.2  0.8
##  [847,]  0.5  0.1  0.2  0.2
##  [848,]  0.0  0.0  0.2  0.8
```

```
##  [849,]  0.5  0.1  0.2  0.2
##  [850,]  0.5  0.1  0.2  0.2
##  [851,]  0.0  0.0  0.2  0.8
##  [852,]  0.9  0.1  0.0  0.0
##  [853,]  0.0  0.1  0.2  0.7
##  [854,]  0.9  0.1  0.0  0.0
##  [855,]  0.0  0.0  0.2  0.8
##  [856,]  0.9  0.1  0.0  0.0
##  [857,]  0.0  0.0  0.2  0.8
##  [858,]  0.5  0.1  0.2  0.2
##  [859,]  0.0  0.0  0.2  0.8
##  [860,]  0.2  0.1  0.2  0.5
##  [861,]  0.5  0.1  0.2  0.2
##  [862,]  0.0  0.0  0.2  0.8
##  [863,]  0.0  0.0  0.2  0.8
##  [864,]  0.9  0.1  0.0  0.0
##  [865,]  0.5  0.1  0.2  0.2
##  [866,]  0.0  0.0  0.2  0.8
##  [867,]  0.0  0.0  0.2  0.8
##  [868,]  0.9  0.1  0.0  0.0
##  [869,]  0.9  0.1  0.0  0.0
##  [870,]  0.9  0.1  0.0  0.0
##  [871,]  0.0  0.0  0.2  0.8
##  [872,]  0.0  0.0  0.2  0.8
##  [873,]  0.9  0.1  0.0  0.0
##  [874,]  0.9  0.1  0.0  0.0
##  [875,]  0.9  0.1  0.0  0.0
##  [876,]  0.2  0.1  0.2  0.5
##  [877,]  0.0  0.0  0.2  0.8
##  [878,]  0.9  0.1  0.0  0.0
##  [879,]  0.0  0.0  0.2  0.8
##  [880,]  0.5  0.1  0.2  0.2
##  [881,]  0.9  0.1  0.0  0.0
##  [882,]  0.0  0.0  0.2  0.8
##  [883,]  0.9  0.1  0.0  0.0
##  [884,]  0.0  0.0  0.2  0.8
##  [885,]  0.0  0.1  0.2  0.7
##  [886,]  0.0  0.0  0.2  0.8
##  [887,]  0.9  0.1  0.0  0.0
##  [888,]  0.9  0.1  0.0  0.0
##  [889,]  0.0  0.0  0.2  0.8
##  [890,]  0.0  0.0  0.2  0.8
##  [891,]  0.5  0.1  0.2  0.2
##  [892,]  0.0  0.0  0.2  0.8
##  [893,]  0.5  0.1  0.2  0.2
##  [894,]  0.9  0.1  0.0  0.0
##  [895,]  0.0  0.0  0.2  0.8
##  [896,]  0.9  0.1  0.0  0.0
##  [897,]  0.0  0.0  0.2  0.8
##  [898,]  0.9  0.1  0.0  0.0
##  [899,]  0.0  0.0  0.2  0.8
##  [900,]  0.0  0.0  0.2  0.8
##  [901,]  0.6  0.1  0.1  0.2
##  [902,]  0.9  0.1  0.0  0.0
```

```
##  [903,]  0.0  0.0  0.2  0.8
##  [904,]  0.9  0.1  0.0  0.0
##  [905,]  0.7  0.1  0.0  0.2
##  [906,]  0.0  0.0  0.2  0.8
##  [907,]  0.5  0.1  0.2  0.2
##  [908,]  0.0  0.0  0.2  0.8
##  [909,]  0.5  0.1  0.2  0.2
##  [910,]  0.9  0.1  0.0  0.0
##  [911,]  0.0  0.0  0.2  0.8
##  [912,]  0.5  0.1  0.2  0.2
##  [913,]  0.9  0.1  0.0  0.0
##  [914,]  0.0  0.0  0.2  0.8
##  [915,]  0.7  0.1  0.0  0.2
##  [916,]  0.0  0.0  0.2  0.8
##  [917,]  0.0  0.1  0.2  0.7
##  [918,]  0.0  0.0  0.2  0.8
##  [919,]  0.0  0.0  0.2  0.8
##  [920,]  0.9  0.1  0.0  0.0
##  [921,]  0.0  0.0  0.2  0.8
##  [922,]  0.9  0.1  0.0  0.0
##  [923,]  0.0  0.0  0.2  0.8
##  [924,]  0.2  0.1  0.2  0.5
##  [925,]  0.5  0.1  0.2  0.2
##  [926,]  0.5  0.1  0.2  0.2
##  [927,]  0.0  0.0  0.2  0.8
##  [928,]  0.2  0.1  0.2  0.5
##  [929,]  0.0  0.0  0.2  0.8
##  [930,]  0.2  0.1  0.2  0.5
##  [931,]  0.0  0.0  0.2  0.8
##  [932,]  0.9  0.1  0.0  0.0
##  [933,]  0.9  0.1  0.0  0.0
##  [934,]  0.0  0.0  0.2  0.8
##  [935,]  0.0  0.0  0.2  0.8
##  [936,]  0.5  0.1  0.2  0.2
##  [937,]  0.5  0.1  0.2  0.2
##  [938,]  0.5  0.1  0.2  0.2
##  [939,]  0.5  0.1  0.2  0.2
##  [940,]  0.0  0.0  0.2  0.8
##  [941,]  0.2  0.1  0.2  0.5
##  [942,]  0.9  0.1  0.0  0.0
##  [943,]  0.9  0.1  0.0  0.0
##  [944,]  0.5  0.1  0.2  0.2
##  [945,]  0.6  0.1  0.1  0.2
##  [946,]  0.5  0.1  0.2  0.2
##  [947,]  0.0  0.0  0.2  0.8
##  [948,]  0.0  0.0  0.2  0.8
##  [949,]  0.0  0.0  0.2  0.8
##  [950,]  0.0  0.0  0.2  0.8
##  [951,]  0.5  0.1  0.2  0.2
##  [952,]  0.0  0.1  0.2  0.7
##  [953,]  0.5  0.1  0.2  0.2
##  [954,]  0.0  0.0  0.2  0.8
##  [955,]  0.5  0.1  0.2  0.2
##  [956,]  0.0  0.0  0.2  0.8
```

```
##  [957,]  0.0  0.0  0.2  0.8
##  [958,]  0.0  0.0  0.2  0.8
##  [959,]  0.9  0.1  0.0  0.0
##  [960,]  0.0  0.0  0.2  0.8
##  [961,]  0.0  0.0  0.2  0.8
##  [962,]  0.7  0.1  0.0  0.2
##  [963,]  0.0  0.0  0.2  0.8
##  [964,]  0.0  0.0  0.2  0.8
##  [965,]  0.0  0.1  0.2  0.7
##  [966,]  0.5  0.1  0.2  0.2
##  [967,]  0.5  0.1  0.2  0.2
##  [968,]  0.0  0.0  0.2  0.8
##  [969,]  0.5  0.1  0.2  0.2
##  [970,]  0.9  0.1  0.0  0.0
##  [971,]  0.9  0.1  0.0  0.0
##  [972,]  0.9  0.1  0.0  0.0
##  [973,]  0.0  0.0  0.2  0.8
##  [974,]  0.5  0.1  0.2  0.2
##  [975,]  0.9  0.1  0.0  0.0
##  [976,]  0.9  0.1  0.0  0.0
##  [977,]  0.0  0.0  0.2  0.8
##  [978,]  0.9  0.1  0.0  0.0
##  [979,]  0.0  0.0  0.2  0.8
##  [980,]  0.0  0.0  0.2  0.8
##  [981,]  0.5  0.1  0.2  0.2
##  [982,]  0.6  0.1  0.1  0.2
##  [983,]  0.9  0.1  0.0  0.0
##  [984,]  0.5  0.1  0.2  0.2
##  [985,]  0.0  0.0  0.2  0.8
##  [986,]  0.9  0.1  0.0  0.0
##  [987,]  0.7  0.1  0.0  0.2
##  [988,]  0.0  0.0  0.2  0.8
##  [989,]  0.0  0.0  0.2  0.8
##  [990,]  0.0  0.0  0.2  0.8
##  [991,]  0.5  0.1  0.2  0.2
##  [992,]  0.2  0.1  0.2  0.5
##  [993,]  0.9  0.1  0.0  0.0
##  [994,]  0.9  0.1  0.0  0.0
##  [995,]  0.9  0.1  0.0  0.0
##  [996,]  0.0  0.0  0.2  0.8
##  [997,]  0.9  0.1  0.0  0.0
##  [998,]  0.9  0.1  0.0  0.0
##  [999,]  0.5  0.1  0.2  0.2
## [1000,]  0.9  0.1  0.0  0.0
## [1001,]  0.5  0.1  0.2  0.2
## [1002,]  0.0  0.0  0.2  0.8
## [1003,]  0.9  0.1  0.0  0.0
## [1004,]  0.9  0.1  0.0  0.0
## [1005,]  0.0  0.1  0.2  0.7
## [1006,]  0.9  0.1  0.0  0.0
## [1007,]  0.5  0.1  0.2  0.2
## [1008,]  0.2  0.1  0.2  0.5
## [1009,]  0.9  0.1  0.0  0.0
## [1010,]  0.9  0.1  0.0  0.0
```

```
## [1011,]  0.0  0.0  0.2  0.8
## [1012,]  0.5  0.1  0.2  0.2
## [1013,]  0.5  0.1  0.2  0.2
## [1014,]  0.5  0.1  0.2  0.2
## [1015,]  0.0  0.0  0.2  0.8
## [1016,]  0.0  0.0  0.2  0.8
## [1017,]  0.9  0.1  0.0  0.0
## [1018,]  0.5  0.1  0.2  0.2
## [1019,]  0.9  0.1  0.0  0.0
## [1020,]  0.0  0.0  0.2  0.8
## [1021,]  0.5  0.1  0.2  0.2
## [1022,]  0.9  0.1  0.0  0.0
## [1023,]  0.0  0.0  0.2  0.8
## [1024,]  0.9  0.1  0.0  0.0
## [1025,]  0.0  0.1  0.2  0.7
## [1026,]  0.9  0.1  0.0  0.0
## [1027,]  0.0  0.1  0.2  0.7
## [1028,]  0.0  0.0  0.2  0.8
## [1029,]  0.5  0.1  0.2  0.2
## [1030,]  0.2  0.1  0.2  0.5
## [1031,]  0.2  0.1  0.2  0.5
## [1032,]  0.5  0.1  0.2  0.2
## [1033,]  0.0  0.0  0.2  0.8
## [1034,]  0.0  0.0  0.2  0.8
## [1035,]  0.0  0.0  0.2  0.8
## [1036,]  0.9  0.1  0.0  0.0
## [1037,]  0.5  0.1  0.2  0.2
## [1038,]  0.2  0.1  0.2  0.5
## [1039,]  0.0  0.0  0.2  0.8
## [1040,]  0.6  0.1  0.1  0.2
## [1041,]  0.5  0.1  0.2  0.2
## [1042,]  0.9  0.1  0.0  0.0
## [1043,]  0.0  0.1  0.2  0.7
## [1044,]  0.0  0.0  0.2  0.8
## [1045,]  0.0  0.0  0.2  0.8
## [1046,]  0.5  0.1  0.2  0.2
## [1047,]  0.0  0.0  0.2  0.8
## [1048,]  0.0  0.0  0.2  0.8
## [1049,]  0.2  0.1  0.2  0.5
## [1050,]  0.0  0.0  0.2  0.8
## [1051,]  0.9  0.1  0.0  0.0
## [1052,]  0.9  0.1  0.0  0.0
## [1053,]  0.0  0.1  0.2  0.7
## [1054,]  0.0  0.0  0.2  0.8
## [1055,]  0.9  0.1  0.0  0.0
## [1056,]  0.0  0.1  0.2  0.7
## [1057,]  0.9  0.1  0.0  0.0
## [1058,]  0.6  0.1  0.1  0.2
## [1059,]  0.9  0.1  0.0  0.0
## [1060,]  0.9  0.1  0.0  0.0
## [1061,]  0.0  0.0  0.2  0.8
## [1062,]  0.2  0.1  0.2  0.5
## [1063,]  0.5  0.1  0.2  0.2
## [1064,]  0.0  0.0  0.2  0.8
```

```
## [1065,]  0.5  0.1  0.2  0.2
## [1066,]  0.5  0.1  0.2  0.2
## [1067,]  0.0  0.0  0.2  0.8
## [1068,]  0.0  0.1  0.2  0.7
## [1069,]  0.0  0.1  0.2  0.7
## [1070,]  0.0  0.1  0.2  0.7
## [1071,]  0.0  0.0  0.2  0.8
## [1072,]  0.0  0.0  0.2  0.8
## [1073,]  0.5  0.1  0.2  0.2
## [1074,]  0.9  0.1  0.0  0.0
## [1075,]  0.0  0.0  0.2  0.8
## [1076,]  0.0  0.0  0.2  0.8
## [1077,]  0.5  0.1  0.2  0.2
## [1078,]  0.5  0.1  0.2  0.2
## [1079,]  0.9  0.1  0.0  0.0
## [1080,]  0.5  0.1  0.2  0.2
## [1081,]  0.0  0.0  0.2  0.8
## [1082,]  0.5  0.1  0.2  0.2
## [1083,]  0.9  0.1  0.0  0.0
## [1084,]  0.0  0.0  0.2  0.8
## [1085,]  0.0  0.0  0.2  0.8
## [1086,]  0.9  0.1  0.0  0.0
## [1087,]  0.0  0.0  0.2  0.8
## [1088,]  0.5  0.1  0.2  0.2
## [1089,]  0.0  0.0  0.2  0.8
## [1090,]  0.0  0.0  0.2  0.8
## [1091,]  0.9  0.1  0.0  0.0
## [1092,]  0.5  0.1  0.2  0.2
## [1093,]  0.0  0.0  0.2  0.8
## [1094,]  0.0  0.0  0.2  0.8
## [1095,]  0.0  0.0  0.2  0.8
## [1096,]  0.0  0.1  0.2  0.7
## [1097,]  0.0  0.1  0.2  0.7
## [1098,]  0.5  0.1  0.2  0.2
## [1099,]  0.2  0.1  0.2  0.5
## [1100,]  0.9  0.1  0.0  0.0
## [1101,]  0.0  0.0  0.2  0.8
## [1102,]  0.0  0.0  0.2  0.8
## [1103,]  0.0  0.1  0.2  0.7
## [1104,]  0.0  0.1  0.2  0.7
## [1105,]  0.0  0.1  0.2  0.7
## [1106,]  0.0  0.0  0.2  0.8
## [1107,]  0.9  0.1  0.0  0.0
## [1108,]  0.9  0.1  0.0  0.0
## [1109,]  0.0  0.0  0.2  0.8
## [1110,]  0.9  0.1  0.0  0.0
## [1111,]  0.0  0.0  0.2  0.8
## [1112,]  0.0  0.0  0.2  0.8
## [1113,]  0.9  0.1  0.0  0.0
## [1114,]  0.0  0.0  0.2  0.8
## [1115,]  0.9  0.1  0.0  0.0
## [1116,]  0.3  0.1  0.2  0.4
## [1117,]  0.9  0.1  0.0  0.0
## [1118,]  0.9  0.1  0.0  0.0
```

```
## [1119,]  0.9  0.1  0.0  0.0
## [1120,]  0.9  0.1  0.0  0.0
## [1121,]  0.9  0.1  0.0  0.0
## [1122,]  0.0  0.0  0.2  0.8
## [1123,]  0.5  0.1  0.2  0.2
## [1124,]  0.5  0.1  0.2  0.2
## [1125,]  0.0  0.0  0.2  0.8
## [1126,]  0.0  0.0  0.2  0.8
## [1127,]  0.0  0.1  0.2  0.7
## [1128,]  0.5  0.1  0.2  0.2
## [1129,]  0.0  0.0  0.2  0.8
## [1130,]  0.9  0.1  0.0  0.0
## [1131,]  0.0  0.0  0.2  0.8
## [1132,]  0.0  0.0  0.2  0.8
## [1133,]  0.9  0.1  0.0  0.0
## [1134,]  0.0  0.0  0.2  0.8
## [1135,]  0.0  0.0  0.2  0.8
## [1136,]  0.5  0.1  0.2  0.2
## [1137,]  0.0  0.0  0.2  0.8
## [1138,]  0.0  0.0  0.2  0.8
## [1139,]  0.0  0.0  0.2  0.8
## [1140,]  0.0  0.0  0.2  0.8
## [1141,]  0.0  0.0  0.2  0.8
## [1142,]  0.0  0.0  0.2  0.8
## [1143,]  0.0  0.0  0.2  0.8
## [1144,]  0.0  0.0  0.2  0.8
## [1145,]  0.0  0.0  0.2  0.8
## [1146,]  0.5  0.1  0.2  0.2
## [1147,]  0.0  0.0  0.2  0.8
## [1148,]  0.5  0.1  0.2  0.2
## [1149,]  0.9  0.1  0.0  0.0
## [1150,]  0.5  0.1  0.2  0.2
## [1151,]  0.9  0.1  0.0  0.0
## [1152,]  0.0  0.0  0.2  0.8
## [1153,]  0.0  0.0  0.2  0.8
## [1154,]  0.5  0.1  0.2  0.2
## [1155,]  0.9  0.1  0.0  0.0
## [1156,]  0.5  0.1  0.2  0.2
## [1157,]  0.9  0.1  0.0  0.0
## [1158,]  0.5  0.1  0.2  0.2
## [1159,]  0.5  0.1  0.2  0.2
## [1160,]  0.0  0.0  0.2  0.8
## [1161,]  0.0  0.0  0.2  0.8
## [1162,]  0.0  0.0  0.2  0.8
## [1163,]  0.0  0.0  0.2  0.8
## [1164,]  0.5  0.1  0.2  0.2
## [1165,]  0.0  0.1  0.2  0.7
## [1166,]  0.9  0.1  0.0  0.0
## [1167,]  0.5  0.1  0.2  0.2
## [1168,]  0.0  0.0  0.2  0.8
## [1169,]  0.5  0.1  0.2  0.2
## [1170,]  0.9  0.1  0.0  0.0
## [1171,]  0.5  0.1  0.2  0.2
## [1172,]  0.9  0.1  0.0  0.0
```

```
## [1173,]  0.0  0.0  0.2  0.8
## [1174,]  0.9  0.1  0.0  0.0
## [1175,]  0.0  0.1  0.2  0.7
## [1176,]  0.0  0.0  0.2  0.8
## [1177,]  0.0  0.1  0.2  0.7
## [1178,]  0.9  0.1  0.0  0.0
## [1179,]  0.5  0.1  0.2  0.2
## [1180,]  0.0  0.0  0.2  0.8
## [1181,]  0.5  0.1  0.2  0.2
## [1182,]  0.5  0.1  0.2  0.2
## [1183,]  0.5  0.1  0.2  0.2
## [1184,]  0.0  0.0  0.2  0.8
## [1185,]  0.5  0.1  0.2  0.2
## [1186,]  0.0  0.0  0.2  0.8
## [1187,]  0.5  0.1  0.2  0.2
## [1188,]  0.5  0.1  0.2  0.2
## [1189,]  0.0  0.0  0.2  0.8
## [1190,]  0.0  0.0  0.2  0.8
## [1191,]  0.5  0.1  0.2  0.2
## [1192,]  0.0  0.1  0.2  0.7
## [1193,]  0.0  0.0  0.2  0.8
## [1194,]  0.0  0.0  0.2  0.8
## [1195,]  0.0  0.0  0.2  0.8
## [1196,]  0.9  0.1  0.0  0.0
## [1197,]  0.0  0.0  0.2  0.8
## [1198,]  0.0  0.0  0.2  0.8
## [1199,]  0.5  0.1  0.2  0.2
## [1200,]  0.0  0.0  0.2  0.8
## [1201,]  0.0  0.0  0.2  0.8
## [1202,]  0.5  0.1  0.2  0.2
## [1203,]  0.0  0.0  0.2  0.8
## [1204,]  0.0  0.0  0.2  0.8
## [1205,]  0.9  0.1  0.0  0.0
## [1206,]  0.0  0.0  0.2  0.8
## [1207,]  0.9  0.1  0.0  0.0
## [1208,]  0.0  0.0  0.2  0.8
## [1209,]  0.0  0.0  0.2  0.8
## [1210,]  0.0  0.0  0.2  0.8
## [1211,]  0.0  0.0  0.2  0.8
## [1212,]  0.0  0.0  0.2  0.8
## [1213,]  0.7  0.1  0.0  0.2
## [1214,]  0.0  0.0  0.2  0.8
## [1215,]  0.5  0.1  0.2  0.2
## [1216,]  0.0  0.0  0.2  0.8
## [1217,]  0.0  0.0  0.2  0.8
## [1218,]  0.0  0.0  0.2  0.8
## [1219,]  0.9  0.1  0.0  0.0
## [1220,]  0.0  0.0  0.2  0.8
## [1221,]  0.0  0.0  0.2  0.8
## [1222,]  0.0  0.0  0.2  0.8
## [1223,]  0.9  0.1  0.0  0.0
## [1224,]  0.0  0.0  0.2  0.8
## [1225,]  0.0  0.0  0.2  0.8
## [1226,]  0.0  0.0  0.2  0.8
```

```
## [1227,]  0.5  0.1  0.2  0.2
## [1228,]  0.5  0.1  0.2  0.2
## [1229,]  0.0  0.1  0.2  0.7
## [1230,]  0.3  0.1  0.2  0.4
## [1231,]  0.0  0.0  0.2  0.8
## [1232,]  0.9  0.1  0.0  0.0
## [1233,]  0.1  0.1  0.2  0.6
## [1234,]  0.0  0.0  0.2  0.8
## [1235,]  0.9  0.1  0.0  0.0
## [1236,]  0.0  0.0  0.2  0.8
## [1237,]  0.9  0.1  0.0  0.0
## [1238,]  0.0  0.0  0.2  0.8
## [1239,]  0.5  0.1  0.2  0.2
## [1240,]  0.0  0.1  0.2  0.7
## [1241,]  0.0  0.0  0.2  0.8
## [1242,]  0.9  0.1  0.0  0.0
## [1243,]  0.0  0.0  0.2  0.8
## [1244,]  0.0  0.0  0.2  0.8
## [1245,]  0.9  0.1  0.0  0.0
## [1246,]  0.0  0.0  0.2  0.8
## [1247,]  0.9  0.1  0.0  0.0
## [1248,]  0.9  0.1  0.0  0.0
## [1249,]  0.0  0.0  0.2  0.8
## [1250,]  0.5  0.1  0.2  0.2
## [1251,]  0.0  0.1  0.2  0.7
## [1252,]  0.0  0.0  0.2  0.8
## [1253,]  0.0  0.0  0.2  0.8
## [1254,]  0.0  0.0  0.2  0.8
## [1255,]  0.9  0.1  0.0  0.0
## [1256,]  0.2  0.1  0.2  0.5
## [1257,]  0.5  0.1  0.2  0.2
## [1258,]  0.5  0.1  0.2  0.2
## [1259,]  0.5  0.1  0.2  0.2
## [1260,]  0.0  0.0  0.2  0.8
## [1261,]  0.7  0.1  0.0  0.2
## [1262,]  0.0  0.1  0.2  0.7
## [1263,]  0.9  0.1  0.0  0.0
## [1264,]  0.0  0.1  0.2  0.7
## [1265,]  0.5  0.1  0.2  0.2
## [1266,]  0.6  0.1  0.1  0.2
## [1267,]  0.5  0.1  0.2  0.2
## [1268,]  0.9  0.1  0.0  0.0
## [1269,]  0.3  0.1  0.2  0.4
## [1270,]  0.9  0.1  0.0  0.0
## [1271,]  0.2  0.1  0.2  0.5
## [1272,]  0.0  0.0  0.2  0.8
## [1273,]  0.5  0.1  0.2  0.2
## [1274,]  0.9  0.1  0.0  0.0
## [1275,]  0.9  0.1  0.0  0.0
## [1276,]  0.0  0.0  0.2  0.8
## [1277,]  0.5  0.1  0.2  0.2
## [1278,]  0.2  0.1  0.2  0.5
## [1279,]  0.0  0.0  0.2  0.8
## [1280,]  0.5  0.1  0.2  0.2
```

```
## [1281,]  0.0  0.0  0.2  0.8
## [1282,]  0.0  0.0  0.2  0.8
## [1283,]  0.0  0.0  0.2  0.8
## [1284,]  0.9  0.1  0.0  0.0
## [1285,]  0.5  0.1  0.2  0.2
## [1286,]  0.5  0.1  0.2  0.2
## [1287,]  0.0  0.0  0.2  0.8
## [1288,]  0.0  0.0  0.2  0.8
## [1289,]  0.5  0.1  0.2  0.2
## [1290,]  0.5  0.1  0.2  0.2
## [1291,]  0.3  0.1  0.2  0.4
## [1292,]  0.9  0.1  0.0  0.0
## [1293,]  0.0  0.0  0.2  0.8
## [1294,]  0.0  0.0  0.2  0.8
## [1295,]  0.5  0.1  0.2  0.2
## [1296,]  0.0  0.0  0.2  0.8
## [1297,]  0.5  0.1  0.2  0.2
## [1298,]  0.0  0.0  0.2  0.8
## [1299,]  0.9  0.1  0.0  0.0
## [1300,]  0.0  0.0  0.2  0.8
## [1301,]  0.9  0.1  0.0  0.0
## [1302,]  0.0  0.0  0.2  0.8
## [1303,]  0.9  0.1  0.0  0.0
## [1304,]  0.9  0.1  0.0  0.0
## [1305,]  0.9  0.1  0.0  0.0
## [1306,]  0.0  0.0  0.2  0.8
## [1307,]  0.0  0.0  0.2  0.8
## [1308,]  0.9  0.1  0.0  0.0
## [1309,]  0.9  0.1  0.0  0.0
## [1310,]  0.9  0.1  0.0  0.0
## [1311,]  0.0  0.0  0.2  0.8
## [1312,]  0.0  0.0  0.2  0.8
## [1313,]  0.6  0.1  0.1  0.2
## [1314,]  0.9  0.1  0.0  0.0
## [1315,]  0.9  0.1  0.0  0.0
## [1316,]  0.0  0.0  0.2  0.8
## [1317,]  0.5  0.1  0.2  0.2
## [1318,]  0.0  0.0  0.2  0.8
## [1319,]  0.9  0.1  0.0  0.0
## [1320,]  0.0  0.0  0.2  0.8
## [1321,]  0.9  0.1  0.0  0.0
## [1322,]  0.1  0.1  0.2  0.6
## [1323,]  0.9  0.1  0.0  0.0
## [1324,]  0.0  0.0  0.2  0.8
## [1325,]  0.9  0.1  0.0  0.0
## [1326,]  0.9  0.1  0.0  0.0
## [1327,]  0.0  0.0  0.2  0.8
## [1328,]  0.9  0.1  0.0  0.0
## [1329,]  0.0  0.0  0.2  0.8
## [1330,]  0.9  0.1  0.0  0.0
## [1331,]  0.0  0.0  0.2  0.8
## [1332,]  0.0  0.0  0.2  0.8
## [1333,]  0.9  0.1  0.0  0.0
## [1334,]  0.9  0.1  0.0  0.0
```

```
## [1335,]  0.0  0.0  0.2  0.8
## [1336,]  0.0  0.0  0.2  0.8
## [1337,]  0.5  0.1  0.2  0.2
## [1338,]  0.0  0.0  0.2  0.8
## [1339,]  0.9  0.1  0.0  0.0
## [1340,]  0.0  0.1  0.2  0.7
## [1341,]  0.9  0.1  0.0  0.0
## [1342,]  0.9  0.1  0.0  0.0
## [1343,]  0.0  0.0  0.2  0.8
## [1344,]  0.9  0.1  0.0  0.0
## [1345,]  0.0  0.0  0.2  0.8
## [1346,]  0.0  0.0  0.2  0.8
## [1347,]  0.0  0.0  0.2  0.8
## [1348,]  0.5  0.1  0.2  0.2
## [1349,]  0.5  0.1  0.2  0.2
## [1350,]  0.5  0.1  0.2  0.2
## [1351,]  0.9  0.1  0.0  0.0
## [1352,]  0.5  0.1  0.2  0.2
## [1353,]  0.5  0.1  0.2  0.2
## [1354,]  0.5  0.1  0.2  0.2
## [1355,]  0.0  0.0  0.2  0.8
## [1356,]  0.5  0.1  0.2  0.2
## [1357,]  0.0  0.1  0.2  0.7
## [1358,]  0.0  0.0  0.2  0.8
## [1359,]  0.2  0.1  0.2  0.5
## [1360,]  0.9  0.1  0.0  0.0
## [1361,]  0.5  0.1  0.2  0.2
## [1362,]  0.0  0.1  0.2  0.7
## [1363,]  0.5  0.1  0.2  0.2
## [1364,]  0.0  0.0  0.2  0.8
## [1365,]  0.9  0.1  0.0  0.0
## [1366,]  0.3  0.1  0.2  0.4
## [1367,]  0.5  0.1  0.2  0.2
## [1368,]  0.0  0.0  0.2  0.8
## [1369,]  0.9  0.1  0.0  0.0
## [1370,]  0.0  0.0  0.2  0.8
## [1371,]  0.5  0.1  0.2  0.2
## [1372,]  0.5  0.1  0.2  0.2
## [1373,]  0.0  0.0  0.2  0.8
## [1374,]  0.9  0.1  0.0  0.0
## [1375,]  0.0  0.0  0.2  0.8
## [1376,]  0.5  0.1  0.2  0.2
## [1377,]  0.0  0.1  0.2  0.7
## [1378,]  0.9  0.1  0.0  0.0
## [1379,]  0.0  0.0  0.2  0.8
## [1380,]  0.2  0.1  0.2  0.5
## [1381,]  0.0  0.0  0.2  0.8
## [1382,]  0.9  0.1  0.0  0.0
## [1383,]  0.0  0.1  0.2  0.7
## [1384,]  0.5  0.1  0.2  0.2
## [1385,]  0.5  0.1  0.2  0.2
## [1386,]  0.5  0.1  0.2  0.2
## [1387,]  0.7  0.1  0.0  0.2
## [1388,]  0.0  0.1  0.2  0.7
```

```
## [1389,]  0.0  0.0  0.2  0.8
## [1390,]  0.0  0.1  0.2  0.7
## [1391,]  0.5  0.1  0.2  0.2
## [1392,]  0.5  0.1  0.2  0.2
## [1393,]  0.0  0.0  0.2  0.8
## [1394,]  0.0  0.0  0.2  0.8
## [1395,]  0.0  0.0  0.2  0.8
## [1396,]  0.9  0.1  0.0  0.0
## [1397,]  0.5  0.1  0.2  0.2
## [1398,]  0.0  0.0  0.2  0.8
## [1399,]  0.9  0.1  0.0  0.0
## [1400,]  0.0  0.0  0.2  0.8
##
## $class
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##  [703] "3" "3" "3" "3" "0" "0" "0" "3" "3" "0" "0" "0" "0" "0" "3" "0" "0" "0"
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## [1297] "0" "3" "0" "3" "0" "3" "0" "0" "0" "3" "3" "0" "0" "0" "3" "3" "0" "0"
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## [1387] "0" "3" "3" "3" "0" "0" "3" "3" "3" "0" "0" "3" "0" "3"
##
## $importance
## battery_power          blue   clock_speed      dual_sim            fc
##             0             0             0             0             0
##        four_g    int_memory         m_dep     mobile_wt       n_cores
##             0             0             0             0             0
##            pc     px_height      px_width           ram          sc_h
##             0             0             0           100             0
##          sc_w     talk_time       three_g  touch_screen          wifi
##             0             0             0             0             0
##
## $terms
## price_range ~ battery_power + blue + clock_speed + dual_sim +
##     fc + four_g + int_memory + m_dep + mobile_wt + n_cores +
##     pc + px_height + px_width + ram + sc_h + sc_w + talk_time +
##     three_g + touch_screen + wifi
```

```
## attr(,"variables")
## list(price_range, battery_power, blue, clock_speed, dual_sim,
##     fc, four_g, int_memory, m_dep, mobile_wt, n_cores, pc, px_height,
##     px_width, ram, sc_h, sc_w, talk_time, three_g, touch_screen,
##     wifi)
## attr(,"factors")
##               battery_power blue clock_speed dual_sim fc four_g int_memory
## price_range               0    0           0        0  0      0          0
## battery_power             1    0           0        0  0      0          0
## blue                      0    1           0        0  0      0          0
## clock_speed               0    0           1        0  0      0          0
## dual_sim                  0    0           0        1  0      0          0
## fc                        0    0           0        0  1      0          0
## four_g                    0    0           0        0  0      1          0
## int_memory                0    0           0        0  0      0          1
## m_dep                     0    0           0        0  0      0          0
## mobile_wt                 0    0           0        0  0      0          0
## n_cores                   0    0           0        0  0      0          0
## pc                        0    0           0        0  0      0          0
## px_height                 0    0           0        0  0      0          0
## px_width                  0    0           0        0  0      0          0
## ram                       0    0           0        0  0      0          0
## sc_h                      0    0           0        0  0      0          0
## sc_w                      0    0           0        0  0      0          0
## talk_time                 0    0           0        0  0      0          0
## three_g                   0    0           0        0  0      0          0
## touch_screen              0    0           0        0  0      0          0
## wifi                      0    0           0        0  0      0          0
##               m_dep mobile_wt n_cores pc px_height px_width ram sc_h sc_w
## price_range       0         0       0  0         0        0   0    0    0
## battery_power     0         0       0  0         0        0   0    0    0
## blue              0         0       0  0         0        0   0    0    0
## clock_speed       0         0       0  0         0        0   0    0    0
## dual_sim          0         0       0  0         0        0   0    0    0
## fc                0         0       0  0         0        0   0    0    0
## four_g            0         0       0  0         0        0   0    0    0
## int_memory        0         0       0  0         0        0   0    0    0
## m_dep             1         0       0  0         0        0   0    0    0
## mobile_wt         0         1       0  0         0        0   0    0    0
## n_cores           0         0       1  0         0        0   0    0    0
## pc                0         0       0  1         0        0   0    0    0
## px_height         0         0       0  0         1        0   0    0    0
## px_width          0         0       0  0         0        1   0    0    0
## ram               0         0       0  0         0        0   1    0    0
## sc_h              0         0       0  0         0        0   0    1    0
## sc_w              0         0       0  0         0        0   0    0    1
## talk_time         0         0       0  0         0        0   0    0    0
## three_g           0         0       0  0         0        0   0    0    0
## touch_screen      0         0       0  0         0        0   0    0    0
## wifi              0         0       0  0         0        0   0    0    0
##               talk_time three_g touch_screen wifi
## price_range           0       0            0    0
## battery_power         0       0            0    0
## blue                  0       0            0    0
```

```
## clock_speed           0       0            0    0
## dual_sim              0       0            0    0
## fc                    0       0            0    0
## four_g                0       0            0    0
## int_memory            0       0            0    0
## m_dep                 0       0            0    0
## mobile_wt             0       0            0    0
## n_cores               0       0            0    0
## pc                    0       0            0    0
## px_height             0       0            0    0
## px_width              0       0            0    0
## ram                   0       0            0    0
## sc_h                  0       0            0    0
## sc_w                  0       0            0    0
## talk_time             1       0            0    0
## three_g               0       1            0    0
## touch_screen          0       0            1    0
## wifi                  0       0            0    1
## attr(,"term.labels")
##  [1] "battery_power" "blue"          "clock_speed"   "dual_sim"
##  [5] "fc"            "four_g"        "int_memory"    "m_dep"
##  [9] "mobile_wt"     "n_cores"       "pc"            "px_height"
## [13] "px_width"      "ram"           "sc_h"          "sc_w"
## [17] "talk_time"     "three_g"       "touch_screen"  "wifi"
## attr(,"order")
##  [1] 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
## attr(,"intercept")
## [1] 1
## attr(,"response")
## [1] 1
## attr(,".Environment")
## <environment: R_GlobalEnv>
## attr(,"predvars")
## list(price_range, battery_power, blue, clock_speed, dual_sim,
##     fc, four_g, int_memory, m_dep, mobile_wt, n_cores, pc, px_height,
##     px_width, ram, sc_h, sc_w, talk_time, three_g, touch_screen,
##     wifi)
## attr(,"dataClasses")
##   price_range battery_power          blue   clock_speed      dual_sim
##      "factor"     "numeric"     "numeric"     "numeric"     "numeric"
##            fc        four_g    int_memory         m_dep     mobile_wt
##     "numeric"     "numeric"     "numeric"     "numeric"     "numeric"
##       n_cores            pc     px_height      px_width           ram
##     "numeric"     "numeric"     "numeric"     "numeric"     "numeric"
##          sc_h          sc_w     talk_time       three_g  touch_screen
##     "numeric"     "numeric"     "numeric"     "numeric"     "numeric"
##          wifi
##     "numeric"
##
## $call
## boosting(formula = price_range ~ ., data = data_train, mfinal = 10,
##     control = rpart.control(maxdepth = 1))
##
## attr(,"vardep.summary")
```

```
##   0   1   2   3
## 350 350 350 350
## attr(,"class")
## [1] "boosting"
```

```
data.predboosting <- predict.boosting(data.adaboost, newdata = data_test)
data.predboosting
```

```
## $formula
## price_range ~ .
##
## $votes
##               [,1]        [,2]        [,3]        [,4]
##   [1,] 0.000000000 0.000000000 0.004000005 0.016000021
##   [2,] 0.000000000 0.000000000 0.004000005 0.016000021
##   [3,] 0.018000024 0.002000003 0.000000000 0.000000000
##   [4,] 0.018000024 0.002000003 0.000000000 0.000000000
##   [5,] 0.000000000 0.000000000 0.004000005 0.016000021
##   [6,] 0.010000013 0.002000003 0.004000005 0.004000005
##   [7,] 0.000000000 0.000000000 0.004000005 0.016000021
##   [8,] 0.000000000 0.000000000 0.004000005 0.016000021
##   [9,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [10,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [11,] 0.018000024 0.002000003 0.000000000 0.000000000
##  [12,] 0.018000024 0.002000003 0.000000000 0.000000000
##  [13,] 0.004000005 0.002000003 0.004000005 0.010000013
##  [14,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [15,] 0.000000000 0.002000003 0.004000005 0.014000019
##  [16,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [17,] 0.018000024 0.002000003 0.000000000 0.000000000
##  [18,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [19,] 0.006000008 0.002000003 0.004000005 0.008000011
##  [20,] 0.000000000 0.002000003 0.004000005 0.014000019
##  [21,] 0.018000024 0.002000003 0.000000000 0.000000000
##  [22,] 0.010000013 0.002000003 0.004000005 0.004000005
##  [23,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [24,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [25,] 0.010000013 0.002000003 0.004000005 0.004000005
##  [26,] 0.018000024 0.002000003 0.000000000 0.000000000
##  [27,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [28,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [29,] 0.000000000 0.002000003 0.004000005 0.014000019
##  [30,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [31,] 0.018000024 0.002000003 0.000000000 0.000000000
##  [32,] 0.018000024 0.002000003 0.000000000 0.000000000
##  [33,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [34,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [35,] 0.010000013 0.002000003 0.004000005 0.004000005
##  [36,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [37,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [38,] 0.000000000 0.002000003 0.004000005 0.014000019
##  [39,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [40,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [41,] 0.000000000 0.000000000 0.004000005 0.016000021
```

```
##  [42,] 0.000000000 0.002000003 0.004000005 0.014000019
##  [43,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [44,] 0.004000005 0.002000003 0.004000005 0.010000013
##  [45,] 0.018000024 0.002000003 0.000000000 0.000000000
##  [46,] 0.018000024 0.002000003 0.000000000 0.000000000
##  [47,] 0.018000024 0.002000003 0.000000000 0.000000000
##  [48,] 0.018000024 0.002000003 0.000000000 0.000000000
##  [49,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [50,] 0.006000008 0.002000003 0.004000005 0.008000011
##  [51,] 0.010000013 0.002000003 0.004000005 0.004000005
##  [52,] 0.010000013 0.002000003 0.004000005 0.004000005
##  [53,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [54,] 0.000000000 0.002000003 0.004000005 0.014000019
##  [55,] 0.010000013 0.002000003 0.004000005 0.004000005
##  [56,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [57,] 0.010000013 0.002000003 0.004000005 0.004000005
##  [58,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [59,] 0.010000013 0.002000003 0.004000005 0.004000005
##  [60,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [61,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [62,] 0.004000005 0.002000003 0.004000005 0.010000013
##  [63,] 0.018000024 0.002000003 0.000000000 0.000000000
##  [64,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [65,] 0.018000024 0.002000003 0.000000000 0.000000000
##  [66,] 0.010000013 0.002000003 0.004000005 0.004000005
##  [67,] 0.018000024 0.002000003 0.000000000 0.000000000
##  [68,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [69,] 0.018000024 0.002000003 0.000000000 0.000000000
##  [70,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [71,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [72,] 0.010000013 0.002000003 0.004000005 0.004000005
##  [73,] 0.000000000 0.002000003 0.004000005 0.014000019
##  [74,] 0.018000024 0.002000003 0.000000000 0.000000000
##  [75,] 0.004000005 0.002000003 0.004000005 0.010000013
##  [76,] 0.018000024 0.002000003 0.000000000 0.000000000
##  [77,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [78,] 0.018000024 0.002000003 0.000000000 0.000000000
##  [79,] 0.018000024 0.002000003 0.000000000 0.000000000
##  [80,] 0.010000013 0.002000003 0.004000005 0.004000005
##  [81,] 0.018000024 0.002000003 0.000000000 0.000000000
##  [82,] 0.018000024 0.002000003 0.000000000 0.000000000
##  [83,] 0.000000000 0.002000003 0.004000005 0.014000019
##  [84,] 0.018000024 0.002000003 0.000000000 0.000000000
##  [85,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [86,] 0.010000013 0.002000003 0.004000005 0.004000005
##  [87,] 0.000000000 0.002000003 0.004000005 0.014000019
##  [88,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [89,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [90,] 0.018000024 0.002000003 0.000000000 0.000000000
##  [91,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [92,] 0.018000024 0.002000003 0.000000000 0.000000000
##  [93,] 0.018000024 0.002000003 0.000000000 0.000000000
##  [94,] 0.018000024 0.002000003 0.000000000 0.000000000
##  [95,] 0.018000024 0.002000003 0.000000000 0.000000000
```

```
##  [96,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [97,] 0.012000016 0.002000003 0.002000003 0.004000005
##  [98,] 0.000000000 0.000000000 0.004000005 0.016000021
##  [99,] 0.000000000 0.000000000 0.004000005 0.016000021
## [100,] 0.010000013 0.002000003 0.004000005 0.004000005
## [101,] 0.000000000 0.000000000 0.004000005 0.016000021
## [102,] 0.000000000 0.000000000 0.004000005 0.016000021
## [103,] 0.018000024 0.002000003 0.000000000 0.000000000
## [104,] 0.018000024 0.002000003 0.000000000 0.000000000
## [105,] 0.018000024 0.002000003 0.000000000 0.000000000
## [106,] 0.000000000 0.000000000 0.004000005 0.016000021
## [107,] 0.018000024 0.002000003 0.000000000 0.000000000
## [108,] 0.018000024 0.002000003 0.000000000 0.000000000
## [109,] 0.000000000 0.000000000 0.004000005 0.016000021
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## [111,] 0.000000000 0.000000000 0.004000005 0.016000021
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## [113,] 0.000000000 0.000000000 0.004000005 0.016000021
## [114,] 0.000000000 0.000000000 0.004000005 0.016000021
## [115,] 0.018000024 0.002000003 0.000000000 0.000000000
## [116,] 0.000000000 0.000000000 0.004000005 0.016000021
## [117,] 0.000000000 0.000000000 0.004000005 0.016000021
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## [120,] 0.000000000 0.000000000 0.004000005 0.016000021
## [121,] 0.000000000 0.002000003 0.004000005 0.014000019
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## [123,] 0.010000013 0.002000003 0.004000005 0.004000005
## [124,] 0.000000000 0.000000000 0.004000005 0.016000021
## [125,] 0.018000024 0.002000003 0.000000000 0.000000000
## [126,] 0.000000000 0.000000000 0.004000005 0.016000021
## [127,] 0.018000024 0.002000003 0.000000000 0.000000000
## [128,] 0.018000024 0.002000003 0.000000000 0.000000000
## [129,] 0.018000024 0.002000003 0.000000000 0.000000000
## [130,] 0.010000013 0.002000003 0.004000005 0.004000005
## [131,] 0.000000000 0.000000000 0.004000005 0.016000021
## [132,] 0.010000013 0.002000003 0.004000005 0.004000005
## [133,] 0.000000000 0.002000003 0.004000005 0.014000019
## [134,] 0.000000000 0.000000000 0.004000005 0.016000021
## [135,] 0.018000024 0.002000003 0.000000000 0.000000000
## [136,] 0.000000000 0.000000000 0.004000005 0.016000021
## [137,] 0.000000000 0.002000003 0.004000005 0.014000019
## [138,] 0.018000024 0.002000003 0.000000000 0.000000000
## [139,] 0.000000000 0.000000000 0.004000005 0.016000021
## [140,] 0.010000013 0.002000003 0.004000005 0.004000005
## [141,] 0.018000024 0.002000003 0.000000000 0.000000000
## [142,] 0.000000000 0.000000000 0.004000005 0.016000021
## [143,] 0.000000000 0.000000000 0.004000005 0.016000021
## [144,] 0.018000024 0.002000003 0.000000000 0.000000000
## [145,] 0.000000000 0.000000000 0.004000005 0.016000021
## [146,] 0.000000000 0.000000000 0.004000005 0.016000021
## [147,] 0.000000000 0.002000003 0.004000005 0.014000019
## [148,] 0.018000024 0.002000003 0.000000000 0.000000000
## [149,] 0.000000000 0.002000003 0.004000005 0.014000019
```

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## [150,] 0.000000000 0.000000000 0.004000005 0.016000021
## [151,] 0.018000024 0.002000003 0.000000000 0.000000000
## [152,] 0.010000013 0.002000003 0.004000005 0.004000005
## [153,] 0.000000000 0.000000000 0.004000005 0.016000021
## [154,] 0.018000024 0.002000003 0.000000000 0.000000000
## [155,] 0.018000024 0.002000003 0.000000000 0.000000000
## [156,] 0.010000013 0.002000003 0.004000005 0.004000005
## [157,] 0.000000000 0.000000000 0.004000005 0.016000021
## [158,] 0.000000000 0.000000000 0.004000005 0.016000021
## [159,] 0.000000000 0.000000000 0.004000005 0.016000021
## [160,] 0.000000000 0.000000000 0.004000005 0.016000021
## [161,] 0.000000000 0.002000003 0.004000005 0.014000019
## [162,] 0.010000013 0.002000003 0.004000005 0.004000005
## [163,] 0.000000000 0.000000000 0.004000005 0.016000021
## [164,] 0.010000013 0.002000003 0.004000005 0.004000005
## [165,] 0.014000019 0.002000003 0.000000000 0.004000005
## [166,] 0.000000000 0.002000003 0.004000005 0.014000019
## [167,] 0.000000000 0.000000000 0.004000005 0.016000021
## [168,] 0.018000024 0.002000003 0.000000000 0.000000000
## [169,] 0.018000024 0.002000003 0.000000000 0.000000000
## [170,] 0.000000000 0.000000000 0.004000005 0.016000021
## [171,] 0.000000000 0.000000000 0.004000005 0.016000021
## [172,] 0.018000024 0.002000003 0.000000000 0.000000000
## [173,] 0.018000024 0.002000003 0.000000000 0.000000000
## [174,] 0.018000024 0.002000003 0.000000000 0.000000000
## [175,] 0.018000024 0.002000003 0.000000000 0.000000000
## [176,] 0.000000000 0.000000000 0.004000005 0.016000021
## [177,] 0.000000000 0.000000000 0.004000005 0.016000021
## [178,] 0.000000000 0.000000000 0.004000005 0.016000021
## [179,] 0.000000000 0.000000000 0.004000005 0.016000021
## [180,] 0.004000005 0.002000003 0.004000005 0.010000013
## [181,] 0.018000024 0.002000003 0.000000000 0.000000000
## [182,] 0.010000013 0.002000003 0.004000005 0.004000005
## [183,] 0.000000000 0.000000000 0.004000005 0.016000021
## [184,] 0.000000000 0.000000000 0.004000005 0.016000021
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## [186,] 0.000000000 0.000000000 0.004000005 0.016000021
## [187,] 0.000000000 0.000000000 0.004000005 0.016000021
## [188,] 0.012000016 0.002000003 0.002000003 0.004000005
## [189,] 0.018000024 0.002000003 0.000000000 0.000000000
## [190,] 0.000000000 0.000000000 0.004000005 0.016000021
## [191,] 0.004000005 0.002000003 0.004000005 0.010000013
## [192,] 0.010000013 0.002000003 0.004000005 0.004000005
## [193,] 0.000000000 0.000000000 0.004000005 0.016000021
## [194,] 0.010000013 0.002000003 0.004000005 0.004000005
## [195,] 0.010000013 0.002000003 0.004000005 0.004000005
## [196,] 0.018000024 0.002000003 0.000000000 0.000000000
## [197,] 0.000000000 0.000000000 0.004000005 0.016000021
## [198,] 0.018000024 0.002000003 0.000000000 0.000000000
## [199,] 0.018000024 0.002000003 0.000000000 0.000000000
## [200,] 0.000000000 0.000000000 0.004000005 0.016000021
## [201,] 0.000000000 0.000000000 0.004000005 0.016000021
## [202,] 0.018000024 0.002000003 0.000000000 0.000000000
## [203,] 0.000000000 0.000000000 0.004000005 0.016000021
```

```
## [204,] 0.000000000 0.002000003 0.004000005 0.014000019
## [205,] 0.000000000 0.000000000 0.004000005 0.016000021
## [206,] 0.010000013 0.002000003 0.004000005 0.004000005
## [207,] 0.000000000 0.002000003 0.004000005 0.014000019
## [208,] 0.010000013 0.002000003 0.004000005 0.004000005
## [209,] 0.000000000 0.000000000 0.004000005 0.016000021
## [210,] 0.018000024 0.002000003 0.000000000 0.000000000
## [211,] 0.010000013 0.002000003 0.004000005 0.004000005
## [212,] 0.018000024 0.002000003 0.000000000 0.000000000
## [213,] 0.000000000 0.000000000 0.004000005 0.016000021
## [214,] 0.004000005 0.002000003 0.004000005 0.010000013
## [215,] 0.000000000 0.002000003 0.004000005 0.014000019
## [216,] 0.018000024 0.002000003 0.000000000 0.000000000
## [217,] 0.000000000 0.000000000 0.004000005 0.016000021
## [218,] 0.000000000 0.000000000 0.004000005 0.016000021
## [219,] 0.000000000 0.000000000 0.004000005 0.016000021
## [220,] 0.018000024 0.002000003 0.000000000 0.000000000
## [221,] 0.000000000 0.000000000 0.004000005 0.016000021
## [222,] 0.000000000 0.000000000 0.004000005 0.016000021
## [223,] 0.010000013 0.002000003 0.004000005 0.004000005
## [224,] 0.018000024 0.002000003 0.000000000 0.000000000
## [225,] 0.000000000 0.000000000 0.004000005 0.016000021
## [226,] 0.010000013 0.002000003 0.004000005 0.004000005
## [227,] 0.000000000 0.000000000 0.004000005 0.016000021
## [228,] 0.010000013 0.002000003 0.004000005 0.004000005
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## [548,] 0.018000024 0.002000003 0.000000000 0.000000000
## [549,] 0.018000024 0.002000003 0.000000000 0.000000000
## [550,] 0.000000000 0.000000000 0.004000005 0.016000021
## [551,] 0.018000024 0.002000003 0.000000000 0.000000000
## [552,] 0.000000000 0.000000000 0.004000005 0.016000021
## [553,] 0.018000024 0.002000003 0.000000000 0.000000000
## [554,] 0.000000000 0.000000000 0.004000005 0.016000021
## [555,] 0.018000024 0.002000003 0.000000000 0.000000000
## [556,] 0.000000000 0.000000000 0.004000005 0.016000021
## [557,] 0.010000013 0.002000003 0.004000005 0.004000005
## [558,] 0.000000000 0.000000000 0.004000005 0.016000021
## [559,] 0.000000000 0.000000000 0.004000005 0.016000021
## [560,] 0.000000000 0.002000003 0.004000005 0.014000019
## [561,] 0.000000000 0.000000000 0.004000005 0.016000021
## [562,] 0.010000013 0.002000003 0.004000005 0.004000005
## [563,] 0.010000013 0.002000003 0.004000005 0.004000005
## [564,] 0.010000013 0.002000003 0.004000005 0.004000005
## [565,] 0.018000024 0.002000003 0.000000000 0.000000000
## [566,] 0.000000000 0.000000000 0.004000005 0.016000021
## [567,] 0.010000013 0.002000003 0.004000005 0.004000005
## [568,] 0.018000024 0.002000003 0.000000000 0.000000000
## [569,] 0.000000000 0.000000000 0.004000005 0.016000021
## [570,] 0.000000000 0.000000000 0.004000005 0.016000021
## [571,] 0.010000013 0.002000003 0.004000005 0.004000005
## [572,] 0.000000000 0.002000003 0.004000005 0.014000019
## [573,] 0.000000000 0.000000000 0.004000005 0.016000021
## [574,] 0.018000024 0.002000003 0.000000000 0.000000000
## [575,] 0.000000000 0.000000000 0.004000005 0.016000021
## [576,] 0.010000013 0.002000003 0.004000005 0.004000005
## [577,] 0.012000016 0.002000003 0.002000003 0.004000005
## [578,] 0.000000000 0.000000000 0.004000005 0.016000021
## [579,] 0.010000013 0.002000003 0.004000005 0.004000005
## [580,] 0.000000000 0.000000000 0.004000005 0.016000021
## [581,] 0.000000000 0.000000000 0.004000005 0.016000021
```

```
## [582,] 0.000000000 0.000000000 0.004000005 0.016000021
## [583,] 0.000000000 0.000000000 0.004000005 0.016000021
## [584,] 0.018000024 0.002000003 0.000000000 0.000000000
## [585,] 0.014000019 0.002000003 0.000000000 0.004000005
## [586,] 0.010000013 0.002000003 0.004000005 0.004000005
## [587,] 0.018000024 0.002000003 0.000000000 0.000000000
## [588,] 0.000000000 0.000000000 0.004000005 0.016000021
## [589,] 0.000000000 0.000000000 0.004000005 0.016000021
## [590,] 0.000000000 0.000000000 0.004000005 0.016000021
## [591,] 0.010000013 0.002000003 0.004000005 0.004000005
## [592,] 0.000000000 0.000000000 0.004000005 0.016000021
## [593,] 0.018000024 0.002000003 0.000000000 0.000000000
## [594,] 0.018000024 0.002000003 0.000000000 0.000000000
## [595,] 0.018000024 0.002000003 0.000000000 0.000000000
## [596,] 0.000000000 0.000000000 0.004000005 0.016000021
## [597,] 0.010000013 0.002000003 0.004000005 0.004000005
## [598,] 0.018000024 0.002000003 0.000000000 0.000000000
## [599,] 0.018000024 0.002000003 0.000000000 0.000000000
## [600,] 0.000000000 0.000000000 0.004000005 0.016000021
##
## $prob
##        [,1] [,2] [,3] [,4]
##   [1,]  0.0  0.0  0.2  0.8
##   [2,]  0.0  0.0  0.2  0.8
##   [3,]  0.9  0.1  0.0  0.0
##   [4,]  0.9  0.1  0.0  0.0
##   [5,]  0.0  0.0  0.2  0.8
##   [6,]  0.5  0.1  0.2  0.2
##   [7,]  0.0  0.0  0.2  0.8
##   [8,]  0.0  0.0  0.2  0.8
##   [9,]  0.0  0.0  0.2  0.8
##  [10,]  0.0  0.0  0.2  0.8
##  [11,]  0.9  0.1  0.0  0.0
##  [12,]  0.9  0.1  0.0  0.0
##  [13,]  0.2  0.1  0.2  0.5
##  [14,]  0.0  0.0  0.2  0.8
##  [15,]  0.0  0.1  0.2  0.7
##  [16,]  0.0  0.0  0.2  0.8
##  [17,]  0.9  0.1  0.0  0.0
##  [18,]  0.0  0.0  0.2  0.8
##  [19,]  0.3  0.1  0.2  0.4
##  [20,]  0.0  0.1  0.2  0.7
##  [21,]  0.9  0.1  0.0  0.0
##  [22,]  0.5  0.1  0.2  0.2
##  [23,]  0.0  0.0  0.2  0.8
##  [24,]  0.0  0.0  0.2  0.8
##  [25,]  0.5  0.1  0.2  0.2
##  [26,]  0.9  0.1  0.0  0.0
##  [27,]  0.0  0.0  0.2  0.8
##  [28,]  0.0  0.0  0.2  0.8
##  [29,]  0.0  0.1  0.2  0.7
##  [30,]  0.0  0.0  0.2  0.8
##  [31,]  0.9  0.1  0.0  0.0
##  [32,]  0.9  0.1  0.0  0.0
```

```
##  [33,]  0.0  0.0  0.2  0.8
##  [34,]  0.0  0.0  0.2  0.8
##  [35,]  0.5  0.1  0.2  0.2
##  [36,]  0.0  0.0  0.2  0.8
##  [37,]  0.0  0.0  0.2  0.8
##  [38,]  0.0  0.1  0.2  0.7
##  [39,]  0.0  0.0  0.2  0.8
##  [40,]  0.0  0.0  0.2  0.8
##  [41,]  0.0  0.0  0.2  0.8
##  [42,]  0.0  0.1  0.2  0.7
##  [43,]  0.0  0.0  0.2  0.8
##  [44,]  0.2  0.1  0.2  0.5
##  [45,]  0.9  0.1  0.0  0.0
##  [46,]  0.9  0.1  0.0  0.0
##  [47,]  0.9  0.1  0.0  0.0
##  [48,]  0.9  0.1  0.0  0.0
##  [49,]  0.0  0.0  0.2  0.8
##  [50,]  0.3  0.1  0.2  0.4
##  [51,]  0.5  0.1  0.2  0.2
##  [52,]  0.5  0.1  0.2  0.2
##  [53,]  0.0  0.0  0.2  0.8
##  [54,]  0.0  0.1  0.2  0.7
##  [55,]  0.5  0.1  0.2  0.2
##  [56,]  0.0  0.0  0.2  0.8
##  [57,]  0.5  0.1  0.2  0.2
##  [58,]  0.0  0.0  0.2  0.8
##  [59,]  0.5  0.1  0.2  0.2
##  [60,]  0.0  0.0  0.2  0.8
##  [61,]  0.0  0.0  0.2  0.8
##  [62,]  0.2  0.1  0.2  0.5
##  [63,]  0.9  0.1  0.0  0.0
##  [64,]  0.0  0.0  0.2  0.8
##  [65,]  0.9  0.1  0.0  0.0
##  [66,]  0.5  0.1  0.2  0.2
##  [67,]  0.9  0.1  0.0  0.0
##  [68,]  0.0  0.0  0.2  0.8
##  [69,]  0.9  0.1  0.0  0.0
##  [70,]  0.0  0.0  0.2  0.8
##  [71,]  0.0  0.0  0.2  0.8
##  [72,]  0.5  0.1  0.2  0.2
##  [73,]  0.0  0.1  0.2  0.7
##  [74,]  0.9  0.1  0.0  0.0
##  [75,]  0.2  0.1  0.2  0.5
##  [76,]  0.9  0.1  0.0  0.0
##  [77,]  0.0  0.0  0.2  0.8
##  [78,]  0.9  0.1  0.0  0.0
##  [79,]  0.9  0.1  0.0  0.0
##  [80,]  0.5  0.1  0.2  0.2
##  [81,]  0.9  0.1  0.0  0.0
##  [82,]  0.9  0.1  0.0  0.0
##  [83,]  0.0  0.1  0.2  0.7
##  [84,]  0.9  0.1  0.0  0.0
##  [85,]  0.0  0.0  0.2  0.8
##  [86,]  0.5  0.1  0.2  0.2
```

```
##  [87,]  0.0  0.1  0.2  0.7
##  [88,]  0.0  0.0  0.2  0.8
##  [89,]  0.0  0.0  0.2  0.8
##  [90,]  0.9  0.1  0.0  0.0
##  [91,]  0.0  0.0  0.2  0.8
##  [92,]  0.9  0.1  0.0  0.0
##  [93,]  0.9  0.1  0.0  0.0
##  [94,]  0.9  0.1  0.0  0.0
##  [95,]  0.9  0.1  0.0  0.0
##  [96,]  0.0  0.0  0.2  0.8
##  [97,]  0.6  0.1  0.1  0.2
##  [98,]  0.0  0.0  0.2  0.8
##  [99,]  0.0  0.0  0.2  0.8
## [100,]  0.5  0.1  0.2  0.2
## [101,]  0.0  0.0  0.2  0.8
## [102,]  0.0  0.0  0.2  0.8
## [103,]  0.9  0.1  0.0  0.0
## [104,]  0.9  0.1  0.0  0.0
## [105,]  0.9  0.1  0.0  0.0
## [106,]  0.0  0.0  0.2  0.8
## [107,]  0.9  0.1  0.0  0.0
## [108,]  0.9  0.1  0.0  0.0
## [109,]  0.0  0.0  0.2  0.8
## [110,]  0.0  0.0  0.2  0.8
## [111,]  0.0  0.0  0.2  0.8
## [112,]  0.0  0.0  0.2  0.8
## [113,]  0.0  0.0  0.2  0.8
## [114,]  0.0  0.0  0.2  0.8
## [115,]  0.9  0.1  0.0  0.0
## [116,]  0.0  0.0  0.2  0.8
## [117,]  0.0  0.0  0.2  0.8
## [118,]  0.0  0.0  0.2  0.8
## [119,]  0.0  0.0  0.2  0.8
## [120,]  0.0  0.0  0.2  0.8
## [121,]  0.0  0.1  0.2  0.7
## [122,]  0.0  0.0  0.2  0.8
## [123,]  0.5  0.1  0.2  0.2
## [124,]  0.0  0.0  0.2  0.8
## [125,]  0.9  0.1  0.0  0.0
## [126,]  0.0  0.0  0.2  0.8
## [127,]  0.9  0.1  0.0  0.0
## [128,]  0.9  0.1  0.0  0.0
## [129,]  0.9  0.1  0.0  0.0
## [130,]  0.5  0.1  0.2  0.2
## [131,]  0.0  0.0  0.2  0.8
## [132,]  0.5  0.1  0.2  0.2
## [133,]  0.0  0.1  0.2  0.7
## [134,]  0.0  0.0  0.2  0.8
## [135,]  0.9  0.1  0.0  0.0
## [136,]  0.0  0.0  0.2  0.8
## [137,]  0.0  0.1  0.2  0.7
## [138,]  0.9  0.1  0.0  0.0
## [139,]  0.0  0.0  0.2  0.8
## [140,]  0.5  0.1  0.2  0.2
```

```
## [141,]  0.9  0.1  0.0  0.0
## [142,]  0.0  0.0  0.2  0.8
## [143,]  0.0  0.0  0.2  0.8
## [144,]  0.9  0.1  0.0  0.0
## [145,]  0.0  0.0  0.2  0.8
## [146,]  0.0  0.0  0.2  0.8
## [147,]  0.0  0.1  0.2  0.7
## [148,]  0.9  0.1  0.0  0.0
## [149,]  0.0  0.1  0.2  0.7
## [150,]  0.0  0.0  0.2  0.8
## [151,]  0.9  0.1  0.0  0.0
## [152,]  0.5  0.1  0.2  0.2
## [153,]  0.0  0.0  0.2  0.8
## [154,]  0.9  0.1  0.0  0.0
## [155,]  0.9  0.1  0.0  0.0
## [156,]  0.5  0.1  0.2  0.2
## [157,]  0.0  0.0  0.2  0.8
## [158,]  0.0  0.0  0.2  0.8
## [159,]  0.0  0.0  0.2  0.8
## [160,]  0.0  0.0  0.2  0.8
## [161,]  0.0  0.1  0.2  0.7
## [162,]  0.5  0.1  0.2  0.2
## [163,]  0.0  0.0  0.2  0.8
## [164,]  0.5  0.1  0.2  0.2
## [165,]  0.7  0.1  0.0  0.2
## [166,]  0.0  0.1  0.2  0.7
## [167,]  0.0  0.0  0.2  0.8
## [168,]  0.9  0.1  0.0  0.0
## [169,]  0.9  0.1  0.0  0.0
## [170,]  0.0  0.0  0.2  0.8
## [171,]  0.0  0.0  0.2  0.8
## [172,]  0.9  0.1  0.0  0.0
## [173,]  0.9  0.1  0.0  0.0
## [174,]  0.9  0.1  0.0  0.0
## [175,]  0.9  0.1  0.0  0.0
## [176,]  0.0  0.0  0.2  0.8
## [177,]  0.0  0.0  0.2  0.8
## [178,]  0.0  0.0  0.2  0.8
## [179,]  0.0  0.0  0.2  0.8
## [180,]  0.2  0.1  0.2  0.5
## [181,]  0.9  0.1  0.0  0.0
## [182,]  0.5  0.1  0.2  0.2
## [183,]  0.0  0.0  0.2  0.8
## [184,]  0.0  0.0  0.2  0.8
## [185,]  0.0  0.0  0.2  0.8
## [186,]  0.0  0.0  0.2  0.8
## [187,]  0.0  0.0  0.2  0.8
## [188,]  0.6  0.1  0.1  0.2
## [189,]  0.9  0.1  0.0  0.0
## [190,]  0.0  0.0  0.2  0.8
## [191,]  0.2  0.1  0.2  0.5
## [192,]  0.5  0.1  0.2  0.2
## [193,]  0.0  0.0  0.2  0.8
## [194,]  0.5  0.1  0.2  0.2
```

```
## [195,]  0.5  0.1  0.2  0.2
## [196,]  0.9  0.1  0.0  0.0
## [197,]  0.0  0.0  0.2  0.8
## [198,]  0.9  0.1  0.0  0.0
## [199,]  0.9  0.1  0.0  0.0
## [200,]  0.0  0.0  0.2  0.8
## [201,]  0.0  0.0  0.2  0.8
## [202,]  0.9  0.1  0.0  0.0
## [203,]  0.0  0.0  0.2  0.8
## [204,]  0.0  0.1  0.2  0.7
## [205,]  0.0  0.0  0.2  0.8
## [206,]  0.5  0.1  0.2  0.2
## [207,]  0.0  0.1  0.2  0.7
## [208,]  0.5  0.1  0.2  0.2
## [209,]  0.0  0.0  0.2  0.8
## [210,]  0.9  0.1  0.0  0.0
## [211,]  0.5  0.1  0.2  0.2
## [212,]  0.9  0.1  0.0  0.0
## [213,]  0.0  0.0  0.2  0.8
## [214,]  0.2  0.1  0.2  0.5
## [215,]  0.0  0.1  0.2  0.7
## [216,]  0.9  0.1  0.0  0.0
## [217,]  0.0  0.0  0.2  0.8
## [218,]  0.0  0.0  0.2  0.8
## [219,]  0.0  0.0  0.2  0.8
## [220,]  0.9  0.1  0.0  0.0
## [221,]  0.0  0.0  0.2  0.8
## [222,]  0.0  0.0  0.2  0.8
## [223,]  0.5  0.1  0.2  0.2
## [224,]  0.9  0.1  0.0  0.0
## [225,]  0.0  0.0  0.2  0.8
## [226,]  0.5  0.1  0.2  0.2
## [227,]  0.0  0.0  0.2  0.8
## [228,]  0.5  0.1  0.2  0.2
## [229,]  0.5  0.1  0.2  0.2
## [230,]  0.0  0.0  0.2  0.8
## [231,]  0.5  0.1  0.2  0.2
## [232,]  0.0  0.0  0.2  0.8
## [233,]  0.0  0.0  0.2  0.8
## [234,]  0.9  0.1  0.0  0.0
## [235,]  0.0  0.0  0.2  0.8
## [236,]  0.0  0.0  0.2  0.8
## [237,]  0.0  0.1  0.2  0.7
## [238,]  0.9  0.1  0.0  0.0
## [239,]  0.5  0.1  0.2  0.2
## [240,]  0.2  0.1  0.2  0.5
## [241,]  0.0  0.0  0.2  0.8
## [242,]  0.0  0.0  0.2  0.8
## [243,]  0.0  0.0  0.2  0.8
## [244,]  0.9  0.1  0.0  0.0
## [245,]  0.5  0.1  0.2  0.2
## [246,]  0.0  0.0  0.2  0.8
## [247,]  0.9  0.1  0.0  0.0
## [248,]  0.9  0.1  0.0  0.0
```

```
## [249,]  0.9  0.1  0.0  0.0
## [250,]  0.5  0.1  0.2  0.2
## [251,]  0.2  0.1  0.2  0.5
## [252,]  0.9  0.1  0.0  0.0
## [253,]  0.0  0.0  0.2  0.8
## [254,]  0.0  0.0  0.2  0.8
## [255,]  0.5  0.1  0.2  0.2
## [256,]  0.0  0.0  0.2  0.8
## [257,]  0.5  0.1  0.2  0.2
## [258,]  0.9  0.1  0.0  0.0
## [259,]  0.0  0.0  0.2  0.8
## [260,]  0.9  0.1  0.0  0.0
## [261,]  0.0  0.0  0.2  0.8
## [262,]  0.0  0.0  0.2  0.8
## [263,]  0.5  0.1  0.2  0.2
## [264,]  0.5  0.1  0.2  0.2
## [265,]  0.0  0.0  0.2  0.8
## [266,]  0.9  0.1  0.0  0.0
## [267,]  0.0  0.0  0.2  0.8
## [268,]  0.0  0.1  0.2  0.7
## [269,]  0.3  0.1  0.2  0.4
## [270,]  0.5  0.1  0.2  0.2
## [271,]  0.9  0.1  0.0  0.0
## [272,]  0.9  0.1  0.0  0.0
## [273,]  0.9  0.1  0.0  0.0
## [274,]  0.5  0.1  0.2  0.2
## [275,]  0.9  0.1  0.0  0.0
## [276,]  0.0  0.0  0.2  0.8
## [277,]  0.0  0.0  0.2  0.8
## [278,]  0.5  0.1  0.2  0.2
## [279,]  0.0  0.0  0.2  0.8
## [280,]  0.9  0.1  0.0  0.0
## [281,]  0.9  0.1  0.0  0.0
## [282,]  0.2  0.1  0.2  0.5
## [283,]  0.0  0.0  0.2  0.8
## [284,]  0.0  0.0  0.2  0.8
## [285,]  0.9  0.1  0.0  0.0
## [286,]  0.0  0.0  0.2  0.8
## [287,]  0.0  0.0  0.2  0.8
## [288,]  0.9  0.1  0.0  0.0
## [289,]  0.5  0.1  0.2  0.2
## [290,]  0.0  0.0  0.2  0.8
## [291,]  0.9  0.1  0.0  0.0
## [292,]  0.0  0.0  0.2  0.8
## [293,]  0.5  0.1  0.2  0.2
## [294,]  0.0  0.0  0.2  0.8
## [295,]  0.9  0.1  0.0  0.0
## [296,]  0.9  0.1  0.0  0.0
## [297,]  0.0  0.0  0.2  0.8
## [298,]  0.0  0.0  0.2  0.8
## [299,]  0.9  0.1  0.0  0.0
## [300,]  0.9  0.1  0.0  0.0
## [301,]  0.0  0.0  0.2  0.8
## [302,]  0.0  0.0  0.2  0.8
```

```
## [303,]  0.0  0.0  0.2  0.8
## [304,]  0.5  0.1  0.2  0.2
## [305,]  0.0  0.0  0.2  0.8
## [306,]  0.9  0.1  0.0  0.0
## [307,]  0.5  0.1  0.2  0.2
## [308,]  0.5  0.1  0.2  0.2
## [309,]  0.0  0.0  0.2  0.8
## [310,]  0.9  0.1  0.0  0.0
## [311,]  0.2  0.1  0.2  0.5
## [312,]  0.5  0.1  0.2  0.2
## [313,]  0.0  0.0  0.2  0.8
## [314,]  0.3  0.1  0.2  0.4
## [315,]  0.5  0.1  0.2  0.2
## [316,]  0.0  0.0  0.2  0.8
## [317,]  0.0  0.0  0.2  0.8
## [318,]  0.1  0.1  0.2  0.6
## [319,]  0.0  0.0  0.2  0.8
## [320,]  0.9  0.1  0.0  0.0
## [321,]  0.9  0.1  0.0  0.0
## [322,]  0.5  0.1  0.2  0.2
## [323,]  0.0  0.0  0.2  0.8
## [324,]  0.5  0.1  0.2  0.2
## [325,]  0.9  0.1  0.0  0.0
## [326,]  0.5  0.1  0.2  0.2
## [327,]  0.0  0.0  0.2  0.8
## [328,]  0.5  0.1  0.2  0.2
## [329,]  0.0  0.0  0.2  0.8
## [330,]  0.5  0.1  0.2  0.2
## [331,]  0.9  0.1  0.0  0.0
## [332,]  0.5  0.1  0.2  0.2
## [333,]  0.9  0.1  0.0  0.0
## [334,]  0.0  0.0  0.2  0.8
## [335,]  0.0  0.0  0.2  0.8
## [336,]  0.0  0.1  0.2  0.7
## [337,]  0.0  0.0  0.2  0.8
## [338,]  0.0  0.0  0.2  0.8
## [339,]  0.5  0.1  0.2  0.2
## [340,]  0.0  0.0  0.2  0.8
## [341,]  0.0  0.0  0.2  0.8
## [342,]  0.0  0.0  0.2  0.8
## [343,]  0.0  0.0  0.2  0.8
## [344,]  0.9  0.1  0.0  0.0
## [345,]  0.0  0.0  0.2  0.8
## [346,]  0.9  0.1  0.0  0.0
## [347,]  0.0  0.0  0.2  0.8
## [348,]  0.0  0.1  0.2  0.7
## [349,]  0.5  0.1  0.2  0.2
## [350,]  0.0  0.0  0.2  0.8
## [351,]  0.0  0.0  0.2  0.8
## [352,]  0.0  0.0  0.2  0.8
## [353,]  0.0  0.0  0.2  0.8
## [354,]  0.0  0.0  0.2  0.8
## [355,]  0.0  0.0  0.2  0.8
## [356,]  0.5  0.1  0.2  0.2
```

```
## [357,]  0.0  0.0  0.2  0.8
## [358,]  0.9  0.1  0.0  0.0
## [359,]  0.0  0.0  0.2  0.8
## [360,]  0.0  0.0  0.2  0.8
## [361,]  0.0  0.0  0.2  0.8
## [362,]  0.9  0.1  0.0  0.0
## [363,]  0.0  0.0  0.2  0.8
## [364,]  0.0  0.0  0.2  0.8
## [365,]  0.5  0.1  0.2  0.2
## [366,]  0.9  0.1  0.0  0.0
## [367,]  0.0  0.0  0.2  0.8
## [368,]  0.0  0.0  0.2  0.8
## [369,]  0.3  0.1  0.2  0.4
## [370,]  0.9  0.1  0.0  0.0
## [371,]  0.0  0.0  0.2  0.8
## [372,]  0.5  0.1  0.2  0.2
## [373,]  0.0  0.0  0.2  0.8
## [374,]  0.0  0.0  0.2  0.8
## [375,]  0.9  0.1  0.0  0.0
## [376,]  0.0  0.0  0.2  0.8
## [377,]  0.0  0.0  0.2  0.8
## [378,]  0.9  0.1  0.0  0.0
## [379,]  0.5  0.1  0.2  0.2
## [380,]  0.9  0.1  0.0  0.0
## [381,]  0.9  0.1  0.0  0.0
## [382,]  0.0  0.0  0.2  0.8
## [383,]  0.8  0.1  0.0  0.1
## [384,]  0.0  0.0  0.2  0.8
## [385,]  0.0  0.0  0.2  0.8
## [386,]  0.0  0.0  0.2  0.8
## [387,]  0.5  0.1  0.2  0.2
## [388,]  0.6  0.1  0.1  0.2
## [389,]  0.0  0.1  0.2  0.7
## [390,]  0.2  0.1  0.2  0.5
## [391,]  0.9  0.1  0.0  0.0
## [392,]  0.9  0.1  0.0  0.0
## [393,]  0.0  0.0  0.2  0.8
## [394,]  0.0  0.0  0.2  0.8
## [395,]  0.9  0.1  0.0  0.0
## [396,]  0.0  0.0  0.2  0.8
## [397,]  0.0  0.0  0.2  0.8
## [398,]  0.9  0.1  0.0  0.0
## [399,]  0.5  0.1  0.2  0.2
## [400,]  0.9  0.1  0.0  0.0
## [401,]  0.9  0.1  0.0  0.0
## [402,]  0.0  0.0  0.2  0.8
## [403,]  0.6  0.1  0.1  0.2
## [404,]  0.0  0.0  0.2  0.8
## [405,]  0.0  0.0  0.2  0.8
## [406,]  0.9  0.1  0.0  0.0
## [407,]  0.0  0.0  0.2  0.8
## [408,]  0.0  0.1  0.2  0.7
## [409,]  0.9  0.1  0.0  0.0
## [410,]  0.0  0.0  0.2  0.8
```

```
## [411,]  0.7  0.1  0.0  0.2
## [412,]  0.0  0.0  0.2  0.8
## [413,]  0.0  0.0  0.2  0.8
## [414,]  0.6  0.1  0.1  0.2
## [415,]  0.9  0.1  0.0  0.0
## [416,]  0.5  0.1  0.2  0.2
## [417,]  0.5  0.1  0.2  0.2
## [418,]  0.9  0.1  0.0  0.0
## [419,]  0.9  0.1  0.0  0.0
## [420,]  0.9  0.1  0.0  0.0
## [421,]  0.9  0.1  0.0  0.0
## [422,]  0.0  0.0  0.2  0.8
## [423,]  0.0  0.1  0.2  0.7
## [424,]  0.9  0.1  0.0  0.0
## [425,]  0.7  0.1  0.0  0.2
## [426,]  0.9  0.1  0.0  0.0
## [427,]  0.9  0.1  0.0  0.0
## [428,]  0.9  0.1  0.0  0.0
## [429,]  0.0  0.0  0.2  0.8
## [430,]  0.0  0.0  0.2  0.8
## [431,]  0.9  0.1  0.0  0.0
## [432,]  0.9  0.1  0.0  0.0
## [433,]  0.0  0.0  0.2  0.8
## [434,]  0.5  0.1  0.2  0.2
## [435,]  0.9  0.1  0.0  0.0
## [436,]  0.0  0.0  0.2  0.8
## [437,]  0.9  0.1  0.0  0.0
## [438,]  0.0  0.1  0.2  0.7
## [439,]  0.9  0.1  0.0  0.0
## [440,]  0.0  0.0  0.2  0.8
## [441,]  0.5  0.1  0.2  0.2
## [442,]  0.5  0.1  0.2  0.2
## [443,]  0.0  0.0  0.2  0.8
## [444,]  0.0  0.0  0.2  0.8
## [445,]  0.0  0.0  0.2  0.8
## [446,]  0.0  0.0  0.2  0.8
## [447,]  0.0  0.1  0.2  0.7
## [448,]  0.9  0.1  0.0  0.0
## [449,]  0.0  0.0  0.2  0.8
## [450,]  0.0  0.0  0.2  0.8
## [451,]  0.0  0.0  0.2  0.8
## [452,]  0.0  0.0  0.2  0.8
## [453,]  0.0  0.0  0.2  0.8
## [454,]  0.9  0.1  0.0  0.0
## [455,]  0.6  0.1  0.1  0.2
## [456,]  0.9  0.1  0.0  0.0
## [457,]  0.9  0.1  0.0  0.0
## [458,]  0.0  0.1  0.2  0.7
## [459,]  0.6  0.1  0.1  0.2
## [460,]  0.0  0.1  0.2  0.7
## [461,]  0.9  0.1  0.0  0.0
## [462,]  0.0  0.0  0.2  0.8
## [463,]  0.5  0.1  0.2  0.2
## [464,]  0.0  0.0  0.2  0.8
```

```
## [465,]  0.5  0.1  0.2  0.2
## [466,]  0.5  0.1  0.2  0.2
## [467,]  0.0  0.1  0.2  0.7
## [468,]  0.5  0.1  0.2  0.2
## [469,]  0.0  0.0  0.2  0.8
## [470,]  0.5  0.1  0.2  0.2
## [471,]  0.9  0.1  0.0  0.0
## [472,]  0.5  0.1  0.2  0.2
## [473,]  0.0  0.0  0.2  0.8
## [474,]  0.0  0.0  0.2  0.8
## [475,]  0.0  0.0  0.2  0.8
## [476,]  0.9  0.1  0.0  0.0
## [477,]  0.0  0.0  0.2  0.8
## [478,]  0.0  0.0  0.2  0.8
## [479,]  0.0  0.0  0.2  0.8
## [480,]  0.0  0.1  0.2  0.7
## [481,]  0.9  0.1  0.0  0.0
## [482,]  0.0  0.0  0.2  0.8
## [483,]  0.5  0.1  0.2  0.2
## [484,]  0.0  0.0  0.2  0.8
## [485,]  0.9  0.1  0.0  0.0
## [486,]  0.0  0.0  0.2  0.8
## [487,]  0.5  0.1  0.2  0.2
## [488,]  0.9  0.1  0.0  0.0
## [489,]  0.5  0.1  0.2  0.2
## [490,]  0.0  0.0  0.2  0.8
## [491,]  0.9  0.1  0.0  0.0
## [492,]  0.5  0.1  0.2  0.2
## [493,]  0.5  0.1  0.2  0.2
## [494,]  0.5  0.1  0.2  0.2
## [495,]  0.0  0.0  0.2  0.8
## [496,]  0.0  0.0  0.2  0.8
## [497,]  0.5  0.1  0.2  0.2
## [498,]  0.0  0.0  0.2  0.8
## [499,]  0.9  0.1  0.0  0.0
## [500,]  0.9  0.1  0.0  0.0
## [501,]  0.9  0.1  0.0  0.0
## [502,]  0.0  0.0  0.2  0.8
## [503,]  0.9  0.1  0.0  0.0
## [504,]  0.0  0.1  0.2  0.7
## [505,]  0.9  0.1  0.0  0.0
## [506,]  0.9  0.1  0.0  0.0
## [507,]  0.5  0.1  0.2  0.2
## [508,]  0.5  0.1  0.2  0.2
## [509,]  0.6  0.1  0.1  0.2
## [510,]  0.9  0.1  0.0  0.0
## [511,]  0.9  0.1  0.0  0.0
## [512,]  0.9  0.1  0.0  0.0
## [513,]  0.9  0.1  0.0  0.0
## [514,]  0.0  0.0  0.2  0.8
## [515,]  0.5  0.1  0.2  0.2
## [516,]  0.5  0.1  0.2  0.2
## [517,]  0.9  0.1  0.0  0.0
## [518,]  0.0  0.0  0.2  0.8
```

```
## [519,]  0.9  0.1  0.0  0.0
## [520,]  0.0  0.0  0.2  0.8
## [521,]  0.0  0.0  0.2  0.8
## [522,]  0.0  0.1  0.2  0.7
## [523,]  0.9  0.1  0.0  0.0
## [524,]  0.0  0.0  0.2  0.8
## [525,]  0.0  0.1  0.2  0.7
## [526,]  0.0  0.0  0.2  0.8
## [527,]  0.5  0.1  0.2  0.2
## [528,]  0.0  0.0  0.2  0.8
## [529,]  0.9  0.1  0.0  0.0
## [530,]  0.0  0.0  0.2  0.8
## [531,]  0.2  0.1  0.2  0.5
## [532,]  0.0  0.0  0.2  0.8
## [533,]  0.9  0.1  0.0  0.0
## [534,]  0.0  0.0  0.2  0.8
## [535,]  0.5  0.1  0.2  0.2
## [536,]  0.0  0.0  0.2  0.8
## [537,]  0.9  0.1  0.0  0.0
## [538,]  0.0  0.0  0.2  0.8
## [539,]  0.0  0.0  0.2  0.8
## [540,]  0.9  0.1  0.0  0.0
## [541,]  0.0  0.0  0.2  0.8
## [542,]  0.5  0.1  0.2  0.2
## [543,]  0.9  0.1  0.0  0.0
## [544,]  0.9  0.1  0.0  0.0
## [545,]  0.0  0.0  0.2  0.8
## [546,]  0.0  0.0  0.2  0.8
## [547,]  0.0  0.0  0.2  0.8
## [548,]  0.9  0.1  0.0  0.0
## [549,]  0.9  0.1  0.0  0.0
## [550,]  0.0  0.0  0.2  0.8
## [551,]  0.9  0.1  0.0  0.0
## [552,]  0.0  0.0  0.2  0.8
## [553,]  0.9  0.1  0.0  0.0
## [554,]  0.0  0.0  0.2  0.8
## [555,]  0.9  0.1  0.0  0.0
## [556,]  0.0  0.0  0.2  0.8
## [557,]  0.5  0.1  0.2  0.2
## [558,]  0.0  0.0  0.2  0.8
## [559,]  0.0  0.0  0.2  0.8
## [560,]  0.0  0.1  0.2  0.7
## [561,]  0.0  0.0  0.2  0.8
## [562,]  0.5  0.1  0.2  0.2
## [563,]  0.5  0.1  0.2  0.2
## [564,]  0.5  0.1  0.2  0.2
## [565,]  0.9  0.1  0.0  0.0
## [566,]  0.0  0.0  0.2  0.8
## [567,]  0.5  0.1  0.2  0.2
## [568,]  0.9  0.1  0.0  0.0
## [569,]  0.0  0.0  0.2  0.8
## [570,]  0.0  0.0  0.2  0.8
## [571,]  0.5  0.1  0.2  0.2
## [572,]  0.0  0.1  0.2  0.7
```

```
## [573,]  0.0  0.0  0.2  0.8
## [574,]  0.9  0.1  0.0  0.0
## [575,]  0.0  0.0  0.2  0.8
## [576,]  0.5  0.1  0.2  0.2
## [577,]  0.6  0.1  0.1  0.2
## [578,]  0.0  0.0  0.2  0.8
## [579,]  0.5  0.1  0.2  0.2
## [580,]  0.0  0.0  0.2  0.8
## [581,]  0.0  0.0  0.2  0.8
## [582,]  0.0  0.0  0.2  0.8
## [583,]  0.0  0.0  0.2  0.8
## [584,]  0.9  0.1  0.0  0.0
## [585,]  0.7  0.1  0.0  0.2
## [586,]  0.5  0.1  0.2  0.2
## [587,]  0.9  0.1  0.0  0.0
## [588,]  0.0  0.0  0.2  0.8
## [589,]  0.0  0.0  0.2  0.8
## [590,]  0.0  0.0  0.2  0.8
## [591,]  0.5  0.1  0.2  0.2
## [592,]  0.0  0.0  0.2  0.8
## [593,]  0.9  0.1  0.0  0.0
## [594,]  0.9  0.1  0.0  0.0
## [595,]  0.9  0.1  0.0  0.0
## [596,]  0.0  0.0  0.2  0.8
## [597,]  0.5  0.1  0.2  0.2
## [598,]  0.9  0.1  0.0  0.0
## [599,]  0.9  0.1  0.0  0.0
## [600,]  0.0  0.0  0.2  0.8
##
## $class
##   [1] "3" "3" "0" "0" "3" "0" "3" "3" "3" "3" "0" "0" "3" "3" "3" "3" "0" "3"
##  [19] "3" "3" "0" "0" "3" "3" "0" "0" "3" "3" "3" "3" "0" "0" "3" "3" "0" "3"
##  [37] "3" "3" "3" "3" "3" "3" "3" "3" "0" "0" "0" "0" "3" "3" "0" "0" "3" "3"
##  [55] "0" "3" "0" "3" "0" "3" "3" "3" "0" "3" "0" "0" "0" "3" "0" "3" "3" "0"
##  [73] "3" "0" "3" "0" "3" "0" "0" "0" "0" "0" "3" "0" "3" "0" "3" "3" "3" "0"
##  [91] "3" "0" "0" "0" "0" "3" "0" "3" "3" "0" "3" "3" "0" "0" "0" "3" "0" "0"
## [109] "3" "3" "3" "3" "3" "3" "0" "3" "3" "3" "3" "3" "3" "3" "3" "0" "3" "0" "3"
## [127] "0" "0" "0" "0" "3" "0" "3" "3" "0" "3" "3" "0" "3" "0" "0" "3" "3" "0"
## [145] "3" "3" "3" "0" "3" "3" "0" "0" "3" "0" "0" "0" "3" "3" "3" "3" "3" "0"
## [163] "3" "0" "0" "3" "3" "0" "0" "3" "3" "0" "0" "0" "0" "3" "3" "3" "3" "3"
## [181] "0" "0" "3" "3" "3" "3" "3" "0" "0" "3" "3" "0" "3" "0" "0" "0" "3" "0"
## [199] "0" "3" "3" "0" "3" "3" "3" "0" "3" "0" "3" "0" "0" "0" "3" "3" "3" "0"
## [217] "3" "3" "3" "0" "3" "3" "0" "0" "3" "0" "3" "0" "0" "3" "0" "3" "3" "0"
## [235] "3" "3" "3" "0" "0" "3" "3" "3" "3" "0" "0" "3" "0" "0" "0" "0" "3" "0"
## [253] "3" "3" "0" "3" "0" "0" "3" "0" "3" "3" "0" "0" "3" "0" "3" "3" "3" "0"
## [271] "0" "0" "0" "0" "0" "3" "3" "0" "3" "0" "0" "3" "3" "3" "0" "3" "3" "0"
## [289] "0" "3" "0" "3" "0" "3" "0" "0" "3" "3" "0" "0" "3" "3" "3" "0" "3" "0"
## [307] "0" "0" "3" "0" "3" "0" "3" "3" "0" "3" "3" "3" "3" "0" "0" "0" "3" "0"
## [325] "0" "0" "3" "0" "3" "0" "0" "0" "0" "3" "3" "3" "3" "3" "0" "3" "3" "3"
## [343] "3" "0" "3" "0" "3" "3" "0" "3" "3" "3" "3" "3" "3" "0" "3" "0" "3" "3"
## [361] "3" "0" "3" "3" "0" "0" "3" "3" "3" "0" "3" "0" "3" "3" "0" "3" "3" "0"
## [379] "0" "0" "0" "3" "0" "3" "3" "3" "0" "0" "3" "3" "0" "0" "3" "3" "0" "3"
## [397] "3" "0" "0" "0" "0" "3" "0" "3" "3" "0" "3" "3" "0" "3" "0" "3" "3" "0"
## [415] "0" "0" "0" "0" "0" "0" "0" "3" "3" "0" "0" "0" "0" "0" "3" "3" "0" "0"
```

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## [433] "3" "0" "0" "3" "0" "3" "0" "3" "0" "0" "3" "3" "3" "3" "3" "0" "3" "3"
## [451] "3" "3" "3" "0" "0" "0" "0" "3" "0" "3" "0" "3" "0" "3" "0" "0" "3" "0"
## [469] "3" "0" "0" "0" "3" "3" "3" "0" "3" "3" "3" "3" "0" "3" "0" "3" "0" "3"
## [487] "0" "0" "0" "3" "0" "0" "0" "0" "3" "3" "0" "3" "0" "0" "0" "3" "0" "3"
## [505] "0" "0" "0" "0" "0" "0" "0" "0" "0" "3" "0" "0" "0" "3" "0" "3" "3" "3"
## [523] "0" "3" "3" "3" "0" "3" "0" "3" "3" "3" "0" "3" "0" "3" "0" "3" "3" "0"
## [541] "3" "0" "0" "0" "3" "3" "3" "0" "0" "3" "0" "3" "0" "3" "0" "3" "0" "3"
## [559] "3" "3" "3" "0" "0" "0" "0" "3" "0" "0" "3" "3" "0" "3" "3" "0" "3" "0"
## [577] "0" "3" "0" "3" "3" "3" "3" "0" "0" "0" "0" "3" "3" "3" "0" "3" "0" "0"
## [595] "0" "3" "0" "0" "0" "3"
##
## $confusion
##                Observed Class
## Predicted Class   0   1   2   3
##               0 150 115  21   0
##               3   0  35 129 150
##
## $error
## [1] 0.5
```

```
data.boostcv <- boosting.cv(price_range ~., v = 10, data = data_train, mfinal = 10, control = rpart.con
```

```
## i:  1 Sun Feb 28 22:38:18 2021
## i:  2 Sun Feb 28 22:38:20 2021
## i:  3 Sun Feb 28 22:38:23 2021
## i:  4 Sun Feb 28 22:38:25 2021
## i:  5 Sun Feb 28 22:38:28 2021
## i:  6 Sun Feb 28 22:38:30 2021
## i:  7 Sun Feb 28 22:38:33 2021
## i:  8 Sun Feb 28 22:38:35 2021
## i:  9 Sun Feb 28 22:38:38 2021
## i:  10 Sun Feb 28 22:38:41 2021
```

```
data.boostcv
```

```
## $class
##    [1] "3" "3" "3" "0" "0" "0" "3" "3" "0" "3" "0" "0" "3" "3" "0" "0" "3" "3"
##   [19] "3" "3" "1" "3" "0" "0" "3" "3" "0" "3" "0" "0" "0" "0" "3" "0" "3" "0"
##   [37] "0" "0" "3" "3" "3" "1" "0" "0" "0" "3" "3" "3" "3" "0" "3" "3" "0" "3"
##   [55] "0" "0" "3" "0" "3" "3" "1" "1" "0" "0" "3" "3" "3" "0" "0" "0" "0" "1"
##   [73] "0" "3" "0" "3" "0" "0" "0" "3" "3" "1" "3" "0" "3" "3" "3" "0" "3" "3"
##   [91] "3" "3" "3" "3" "0" "3" "0" "3" "3" "0" "0" "1" "0" "3" "0" "3" "3" "3"
##  [109] "3" "0" "0" "0" "3" "0" "3" "3" "0" "3" "3" "2" "1" "3" "0" "3" "3" "0"
##  [127] "0" "3" "3" "0" "0" "0" "3" "3" "3" "0" "3" "3" "3" "2" "3" "3" "0" "0"
##  [145] "0" "0" "3" "3" "3" "3" "3" "0" "0" "3" "3" "3" "3" "3" "3" "3" "3" "0"
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##  [181] "0" "3" "0" "0" "0" "3" "0" "3" "3" "0" "3" "1" "3" "3" "0" "0" "3" "0"
##  [199] "0" "2" "0" "3" "3" "3" "0" "0" "0" "3" "0" "0" "3" "0" "0" "3" "0" "0"
##  [217] "3" "0" "3" "0" "3" "3" "0" "0" "0" "0" "3" "0" "0" "0" "3" "3" "0" "0"
##  [235] "0" "0" "0" "3" "3" "0" "1" "3" "0" "0" "3" "3" "3" "3" "3" "3" "3" "3"
##  [253] "3" "0" "3" "0" "0" "3" "3" "0" "0" "3" "3" "3" "3" "3" "3" "0" "3" "0"
##  [271] "0" "3" "3" "3" "3" "3" "3" "3" "0" "3" "3" "1" "0" "3" "3" "3" "0" "3"
##  [289] "3" "0" "3" "1" "0" "3" "0" "3" "3" "0" "0" "0" "3" "1" "0" "3" "3" "0"
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##  [307] "0" "0" "3" "0" "0" "3" "0" "0" "3" "0" "0" "3" "0" "3" "1" "1" "3" "3"
##  [325] "0" "0" "0" "3" "0" "0" "0" "3" "3" "0" "3" "3" "3" "3" "0" "3" "0" "3"
##  [343] "0" "0" "3" "0" "0" "0" "0" "3" "0" "3" "3" "0" "3" "0" "0" "0" "3" "0"
##  [361] "3" "3" "0" "3" "0" "3" "3" "3" "3" "0" "3" "3" "3" "3" "3" "3" "3" "3"
##  [379] "3" "0" "3" "1" "0" "3" "0" "0" "3" "0" "0" "0" "0" "3" "3" "0" "0" "0"
##  [397] "3" "0" "0" "3" "3" "3" "3" "0" "3" "3" "0" "0" "3" "3" "3" "0" "3" "0"
##  [415] "0" "3" "3" "0" "3" "0" "0" "0" "3" "0" "0" "0" "3" "0" "3" "2" "3" "0"
##  [433] "3" "3" "0" "3" "0" "0" "3" "0" "0" "0" "0" "3" "3" "0" "3" "3" "0" "0"
##  [451] "3" "1" "3" "2" "3" "0" "3" "0" "0" "0" "0" "1" "0" "0" "0" "3" "3" "0"
##  [469] "0" "0" "0" "3" "3" "3" "3" "3" "0" "0" "0" "3" "3" "0" "3" "3" "0" "3"
##  [487] "0" "3" "3" "3" "0" "3" "0" "0" "3" "0" "3" "3" "0" "3" "3" "0" "0" "0"
##  [505] "0" "0" "0" "3" "3" "3" "3" "3" "3" "3" "3" "0" "3" "3" "0" "2" "0" "0"
##  [523] "3" "0" "3" "0" "0" "0" "3" "0" "0" "3" "0" "3" "3" "0" "0" "0" "3" "3"
##  [541] "0" "3" "3" "0" "0" "0" "3" "3" "3" "3" "3" "1" "0" "3" "0" "0" "3" "0"
##  [559] "0" "3" "3" "3" "3" "0" "0" "0" "0" "3" "3" "0" "0" "3" "3" "0" "3" "3"
##  [577] "3" "3" "3" "3" "3" "3" "3" "3" "3" "3" "3" "3" "3" "3" "0" "0" "3" "0"
##  [595] "0" "3" "0" "0" "3" "0" "3" "1" "0" "3" "0" "0" "3" "0" "3" "3" "0" "3"
##  [613] "3" "3" "3" "0" "0" "0" "0" "3" "3" "3" "3" "0" "3" "3" "0" "0" "0" "3"
##  [631] "3" "1" "3" "0" "0" "3" "0" "3" "0" "3" "0" "0" "0" "0" "3" "3" "0" "0"
##  [649] "3" "3" "1" "1" "3" "0" "3" "3" "3" "3" "3" "3" "3" "3" "0" "0" "0" "3"
##  [667] "0" "0" "0" "0" "0" "1" "3" "3" "0" "3" "3" "3" "0" "0" "0" "1" "0" "3"
##  [685] "0" "0" "3" "0" "0" "3" "3" "0" "0" "0" "3" "3" "0" "0" "0" "0" "0" "0"
##  [703] "3" "3" "3" "3" "0" "0" "0" "3" "3" "0" "0" "0" "0" "0" "3" "0" "0" "0"
##  [721] "0" "1" "3" "3" "3" "0" "0" "3" "0" "0" "3" "1" "0" "3" "3" "3" "0" "3"
##  [739] "0" "0" "1" "3" "0" "3" "0" "3" "0" "0" "0" "0" "3" "0" "3" "0" "0" "3"
##  [757] "0" "0" "3" "3" "3" "1" "0" "3" "3" "0" "0" "0" "3" "0" "0" "3" "0" "0"
##  [775] "3" "3" "3" "3" "3" "3" "0" "3" "3" "3" "3" "3" "0" "3" "0" "3" "0" "1"
##  [793] "3" "0" "3" "0" "3" "3" "3" "2" "3" "3" "0" "0" "0" "0" "3" "0" "3" "0"
##  [811] "1" "0" "3" "3" "3" "0" "3" "0" "0" "3" "0" "3" "3" "3" "3" "3" "3" "0"
##  [829] "3" "0" "0" "0" "0" "3" "0" "3" "0" "3" "0" "0" "1" "3" "0" "3" "0" "3"
##  [847] "0" "3" "0" "0" "3" "0" "3" "0" "3" "0" "3" "0" "3" "2" "0" "3" "3" "0"
##  [865] "0" "3" "3" "0" "0" "0" "3" "3" "0" "0" "0" "0" "3" "0" "3" "0" "0" "3"
##  [883] "0" "3" "3" "3" "0" "0" "3" "3" "1" "3" "0" "0" "3" "0" "3" "0" "3" "3"
##  [901] "0" "0" "3" "0" "0" "3" "0" "3" "0" "0" "3" "1" "0" "3" "0" "3" "3" "3"
##  [919] "3" "0" "3" "0" "3" "0" "0" "0" "3" "0" "3" "2" "3" "0" "0" "3" "3" "0"
##  [937] "0" "0" "0" "3" "1" "0" "0" "0" "0" "0" "3" "3" "3" "3" "0" "1" "0" "3"
##  [955] "0" "3" "3" "3" "0" "3" "3" "0" "3" "3" "3" "0" "0" "3" "0" "0" "0" "0"
##  [973] "3" "0" "0" "0" "3" "0" "3" "3" "0" "1" "0" "0" "3" "0" "0" "3" "3" "3"
##  [991] "0" "1" "0" "0" "0" "3" "0" "0" "0" "0" "0" "3" "0" "0" "3" "0" "0" "0"
## [1009] "0" "0" "3" "1" "0" "0" "3" "3" "0" "0" "0" "3" "0" "0" "3" "0" "0" "0"
## [1027] "3" "3" "0" "2" "1" "1" "3" "3" "3" "0" "0" "0" "3" "0" "0" "0" "3" "3"
## [1045] "3" "0" "3" "3" "0" "3" "0" "0" "3" "3" "0" "3" "0" "0" "0" "0" "3" "1"
## [1063] "0" "3" "0" "0" "3" "3" "3" "2" "3" "3" "0" "0" "3" "3" "0" "0" "0" "0"
## [1081] "3" "1" "0" "3" "3" "0" "3" "0" "3" "3" "0" "1" "3" "3" "3" "3" "3" "0"
## [1099] "0" "0" "3" "3" "3" "3" "3" "3" "0" "0" "3" "0" "3" "3" "0" "3" "0" "0"
## [1117] "0" "0" "0" "0" "0" "3" "0" "0" "3" "3" "3" "0" "3" "0" "3" "3" "0" "3"
## [1135] "3" "0" "3" "3" "3" "3" "3" "3" "3" "3" "3" "0" "3" "0" "0" "0" "0" "3"
## [1153] "3" "0" "0" "0" "0" "0" "0" "3" "3" "3" "3" "0" "3" "0" "0" "3" "0" "0"
## [1171] "0" "0" "3" "0" "0" "3" "0" "0" "0" "3" "0" "1" "0" "3" "0" "3" "0" "0"
## [1189] "3" "3" "0" "1" "3" "3" "3" "0" "3" "3" "0" "3" "3" "1" "3" "3" "0" "3"
## [1207] "0" "3" "3" "3" "3" "3" "0" "3" "0" "3" "3" "3" "0" "3" "3" "3" "0" "3"
## [1225] "3" "3" "0" "0" "3" "2" "3" "0" "3" "3" "0" "3" "0" "3" "0" "2" "3" "0"
## [1243] "3" "3" "0" "3" "0" "0" "3" "0" "1" "3" "3" "3" "0" "0" "0" "0" "0" "3"
## [1261] "0" "1" "0" "3" "0" "0" "0" "0" "0" "0" "1" "3" "0" "0" "0" "3" "0" "0"
```
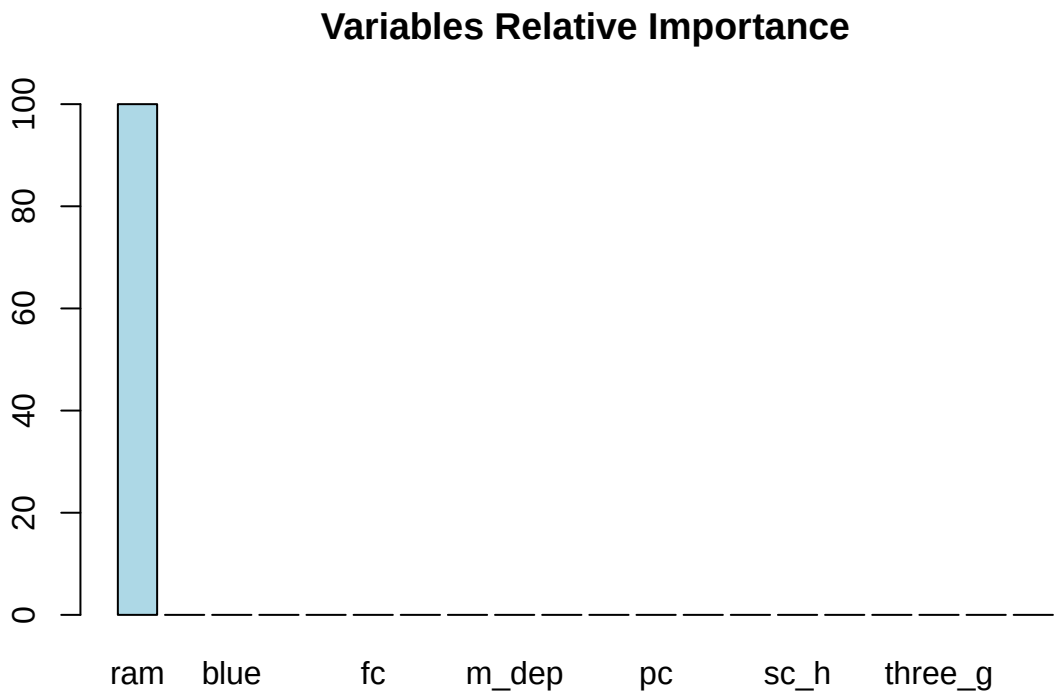

```
## [1279] "3" "0" "3" "3" "3" "0" "0" "0" "3" "3" "0" "0" "1" "0" "3" "3" "0" "3"
## [1297] "0" "3" "0" "3" "0" "3" "0" "0" "0" "3" "3" "0" "0" "0" "3" "3" "0" "0"
## [1315] "0" "3" "0" "3" "0" "3" "0" "1" "0" "3" "0" "0" "3" "0" "3" "0" "3" "3"
## [1333] "0" "0" "3" "3" "0" "3" "0" "2" "0" "0" "3" "0" "3" "3" "3" "0" "0" "0"
## [1351] "0" "1" "0" "0" "3" "0" "0" "3" "0" "0" "0" "1" "0" "3" "0" "0" "0" "3"
## [1369] "0" "3" "0" "1" "3" "0" "3" "0" "0" "0" "3" "2" "3" "0" "3" "0" "0" "0"
## [1387] "0" "3" "3" "2" "0" "1" "3" "3" "3" "0" "0" "3" "0" "3"
##
## $confusion
##                Observed Class
## Predicted Class   0   1   2   3
##               0 345 259  59   0
##               1   5  35  15   1
##               2   0   9   7   0
##               3   0  47 269 349
##
## $error
## [1] 0.4742857
```

```
barplot(data.adaboost$imp[order(data.adaboost$imp, decreasing = TRUE)], ylim = c(0, 100), main = "Varial
```




```
data.bagging <- bagging(price_range ~., data = data_train, mfinal = 10, control = rpart.control(maxdept
data.bagging
```

```
## $formula
```

```
## price_range ~ .
##
## $trees
## $trees[[1]]
## n= 1400
##
## node), split, n, loss, yval, (yprob)
##       * denotes terminal node
##
## 1) root 1400 1043 0 (0.25500000 0.24785714 0.25285714 0.24428571)
##   2) ram< 2370 797  440 0 (0.44792974 0.42283563 0.12923463 0.00000000) *
##   3) ram>=2370 603  261 3 (0.00000000 0.01658375 0.41625207 0.56716418) *
##
## $trees[[2]]
## n= 1400
##
## node), split, n, loss, yval, (yprob)
##       * denotes terminal node
##
## 1) root 1400 1028 3 (0.239285714 0.240000000 0.255000000 0.265714286)
##   2) ram< 2711.5 905  570 0 (0.370165746 0.370165746 0.248618785 0.011049724) *
##   3) ram>=2711.5 495  133 3 (0.000000000 0.002020202 0.266666667 0.731313131) *
##
## $trees[[3]]
## n= 1400
##
## node), split, n, loss, yval, (yprob)
##       * denotes terminal node
##
## 1) root 1400 1039 0 (0.257857143 0.238571429 0.255714286 0.247857143)
##   2) ram< 1455 452  103 0 (0.772123894 0.219026549 0.008849558 0.000000000) *
##   3) ram>=1455 948  594 2 (0.012658228 0.247890295 0.373417722 0.366033755) *
##
## $trees[[4]]
## n= 1400
##
## node), split, n, loss, yval, (yprob)
##       * denotes terminal node
##
## 1) root 1400 1024 1 (0.2485714 0.2685714 0.2500000 0.2328571)
##   2) ram< 2052.5 698  350 0 (0.4985673 0.4283668 0.0730659 0.0000000) *
##   3) ram>=2052.5 702  376 3 (0.0000000 0.1096866 0.4259259 0.4643875) *
##
## $trees[[5]]
## n= 1400
##
## node), split, n, loss, yval, (yprob)
##       * denotes terminal node
##
## 1) root 1400 1005 2 (0.23857143 0.24071429 0.28214286 0.23857143)
##   2) ram< 2050.5 625  291 0 (0.53440000 0.41920000 0.04640000 0.00000000) *
##   3) ram>=2050.5 775  409 2 (0.00000000 0.09677419 0.47225806 0.43096774) *
##
## $trees[[6]]
```

```
## n= 1400
##
## node), split, n, loss, yval, (yprob)
##       * denotes terminal node
##
## 1) root 1400 1034 2 (0.24785714 0.25428571 0.26142857 0.23642857)
##   2) ram< 2164.5 712  365 0 (0.48735955 0.42837079 0.08426966 0.00000000) *
##   3) ram>=2164.5 688  357 3 (0.00000000 0.07412791 0.44476744 0.48110465) *
##
## $trees[[7]]
## n= 1400
##
## node), split, n, loss, yval, (yprob)
##       * denotes terminal node
##
## 1) root 1400 1030 2 (0.2585714 0.2421429 0.2642857 0.2350000)
##   2) ram< 1894.5 626  264 0 (0.5782748 0.3817891 0.0399361 0.0000000) *
##   3) ram>=1894.5 774  429 2 (0.0000000 0.1291990 0.4457364 0.4250646) *
##
## $trees[[8]]
## n= 1400
##
## node), split, n, loss, yval, (yprob)
##       * denotes terminal node
##
## 1) root 1400 1031 2 (0.24571429 0.25000000 0.26357143 0.24071429)
##   2) ram< 1305.5 377   60 0 (0.84084881 0.15384615 0.00530504 0.00000000) *
##   3) ram>=1305.5 1023  656 2 (0.02639296 0.28543500 0.35874878 0.32942326) *
##
## $trees[[9]]
## n= 1400
##
## node), split, n, loss, yval, (yprob)
##       * denotes terminal node
##
## 1) root 1400 1035 3 (0.252142857 0.244285714 0.242857143 0.260714286)
##   2) ram< 2310.5 752  399 0 (0.469414894 0.416223404 0.113031915 0.001329787) *
##   3) ram>=2310.5 648  284 3 (0.000000000 0.044753086 0.393518519 0.561728395) *
##
## $trees[[10]]
## n= 1400
##
## node), split, n, loss, yval, (yprob)
##       * denotes terminal node
##
## 1) root 1400 1033 1 (0.25071429 0.26214286 0.23428571 0.25285714)
##   2) ram< 2360 790  439 0 (0.44430380 0.43291139 0.12278481 0.00000000) *
##   3) ram>=2360 610  256 3 (0.00000000 0.04098361 0.37868852 0.58032787) *
##
##
## $votes
##         [,1] [,2] [,3] [,4]
##    [1,]    1    0    4    5
##    [2,]    1    0    4    5
```

```
##    [3,]    0    0    4    6
##    [4,]    9    0    1    0
##    [5,]   10    0    0    0
##    [6,]   10    0    0    0
##    [7,]    0    0    4    6
##    [8,]    0    0    4    6
##    [9,]    8    0    2    0
##   [10,]    1    0    4    5
##   [11,]   10    0    0    0
##   [12,]   10    0    0    0
##   [13,]    0    0    4    6
##   [14,]    3    0    4    3
##   [15,]    9    0    1    0
##   [16,]   10    0    0    0
##   [17,]    1    0    4    5
##   [18,]    0    0    4    6
##   [19,]    0    0    4    6
##   [20,]    0    0    4    6
##   [21,]    4    0    4    2
##   [22,]    0    0    4    6
##   [23,]   10    0    0    0
##   [24,]    9    0    1    0
##   [25,]    0    0    4    6
##   [26,]    0    0    4    6
##   [27,]    5    0    4    1
##   [28,]    1    0    4    5
##   [29,]    8    0    2    0
##   [30,]    8    0    2    0
##   [31,]   10    0    0    0
##   [32,]   10    0    0    0
##   [33,]    0    0    4    6
##   [34,]   10    0    0    0
##   [35,]    0    0    4    6
##   [36,]    5    0    4    1
##   [37,]    5    0    4    1
##   [38,]    9    0    1    0
##   [39,]    0    0    4    6
##   [40,]    1    0    4    5
##   [41,]    0    0    4    6
##   [42,]    8    0    2    0
##   [43,]   10    0    0    0
##   [44,]   10    0    0    0
##   [45,]    5    0    4    1
##   [46,]    0    0    4    6
##   [47,]    0    0    4    6
##   [48,]    0    0    4    6
##   [49,]    0    0    4    6
##   [50,]   10    0    0    0
##   [51,]    0    0    4    6
##   [52,]    0    0    4    6
##   [53,]   10    0    0    0
##   [54,]    0    0    4    6
##   [55,]   10    0    0    0
##   [56,]    8    0    2    0
```

```
##   [57,]    0    0    4    6
##   [58,]    8    0    2    0
##   [59,]    0    0    4    6
##   [60,]    1    0    4    5
##   [61,]    7    0    3    0
##   [62,]    7    0    3    0
##   [63,]   10    0    0    0
##   [64,]   10    0    0    0
##   [65,]    0    0    4    6
##   [66,]    3    0    4    3
##   [67,]    0    0    4    6
##   [68,]    7    0    3    0
##   [69,]    9    0    1    0
##   [70,]   10    0    0    0
##   [71,]    8    0    2    0
##   [72,]    9    0    1    0
##   [73,]    8    0    2    0
##   [74,]    1    0    4    5
##   [75,]    9    0    1    0
##   [76,]    1    0    4    5
##   [77,]   10    0    0    0
##   [78,]   10    0    0    0
##   [79,]    8    0    2    0
##   [80,]    1    0    4    5
##   [81,]    0    0    4    6
##   [82,]    7    0    3    0
##   [83,]    4    0    4    2
##   [84,]   10    0    0    0
##   [85,]    0    0    4    6
##   [86,]    0    0    4    6
##   [87,]    0    0    4    6
##   [88,]    7    0    3    0
##   [89,]    1    0    4    5
##   [90,]    0    0    4    6
##   [91,]    0    0    4    6
##   [92,]    0    0    4    6
##   [93,]    0    0    4    6
##   [94,]    0    0    4    6
##   [95,]    8    0    2    0
##   [96,]    0    0    4    6
##   [97,]   10    0    0    0
##   [98,]    4    0    4    2
##   [99,]    0    0    4    6
##  [100,]   10    0    0    0
##  [101,]    9    0    1    0
##  [102,]    9    0    1    0
##  [103,]   10    0    0    0
##  [104,]    0    0    4    6
##  [105,]   10    0    0    0
##  [106,]    0    0    4    6
##  [107,]    4    0    4    2
##  [108,]    0    0    4    6
##  [109,]    3    0    4    3
##  [110,]    9    0    1    0
```

```
##  [111,]    9    0    1    0
##  [112,]   10    0    0    0
##  [113,]    0    0    4    6
##  [114,]   10    0    0    0
##  [115,]    0    0    4    6
##  [116,]    0    0    4    6
##  [117,]   10    0    0    0
##  [118,]    3    0    4    3
##  [119,]    0    0    4    6
##  [120,]    5    0    4    1
##  [121,]    7    0    3    0
##  [122,]    1    0    4    5
##  [123,]    8    0    2    0
##  [124,]    0    0    4    6
##  [125,]    0    0    4    6
##  [126,]    4    0    4    2
##  [127,]   10    0    0    0
##  [128,]    1    0    4    5
##  [129,]    0    0    4    6
##  [130,]    8    0    2    0
##  [131,]    8    0    2    0
##  [132,]   10    0    0    0
##  [133,]    3    0    4    3
##  [134,]    0    0    4    6
##  [135,]    0    0    4    6
##  [136,]   10    0    0    0
##  [137,]    0    0    4    6
##  [138,]    0    0    4    6
##  [139,]    1    0    4    5
##  [140,]    4    0    4    2
##  [141,]    0    0    4    6
##  [142,]    0    0    4    6
##  [143,]    8    0    2    0
##  [144,]   10    0    0    0
##  [145,]   10    0    0    0
##  [146,]   10    0    0    0
##  [147,]    1    0    4    5
##  [148,]    1    0    4    5
##  [149,]    4    0    4    2
##  [150,]    0    0    4    6
##  [151,]    0    0    4    6
##  [152,]   10    0    0    0
##  [153,]   10    0    0    0
##  [154,]    0    0    4    6
##  [155,]    0    0    4    6
##  [156,]    0    0    4    6
##  [157,]    1    0    4    5
##  [158,]    1    0    4    5
##  [159,]    0    0    4    6
##  [160,]    0    0    4    6
##  [161,]    0    0    4    6
##  [162,]   10    0    0    0
##  [163,]    4    0    4    2
##  [164,]    0    0    4    6
```

```
##  [165,]   10    0    0    0
##  [166,]    8    0    2    0
##  [167,]    0    0    4    6
##  [168,]   10    0    0    0
##  [169,]    0    0    4    6
##  [170,]    0    0    4    6
##  [171,]    8    0    2    0
##  [172,]    0    0    4    6
##  [173,]    0    0    4    6
##  [174,]    8    0    2    0
##  [175,]    8    0    2    0
##  [176,]   10    0    0    0
##  [177,]    0    0    4    6
##  [178,]    1    0    4    5
##  [179,]   10    0    0    0
##  [180,]   10    0    0    0
##  [181,]    8    0    2    0
##  [182,]    0    0    4    6
##  [183,]   10    0    0    0
##  [184,]    7    0    3    0
##  [185,]   10    0    0    0
##  [186,]    0    0    4    6
##  [187,]   10    0    0    0
##  [188,]    1    0    4    5
##  [189,]    1    0    4    5
##  [190,]   10    0    0    0
##  [191,]    0    0    4    6
##  [192,]    8    0    2    0
##  [193,]    1    0    4    5
##  [194,]    0    0    4    6
##  [195,]    8    0    2    0
##  [196,]   10    0    0    0
##  [197,]    0    0    4    6
##  [198,]   10    0    0    0
##  [199,]    7    0    3    0
##  [200,]    3    0    4    3
##  [201,]    8    0    2    0
##  [202,]    0    0    4    6
##  [203,]    0    0    4    6
##  [204,]    0    0    4    6
##  [205,]   10    0    0    0
##  [206,]   10    0    0    0
##  [207,]    8    0    2    0
##  [208,]    0    0    4    6
##  [209,]   10    0    0    0
##  [210,]    8    0    2    0
##  [211,]    0    0    4    6
##  [212,]   10    0    0    0
##  [213,]   10    0    0    0
##  [214,]    0    0    4    6
##  [215,]   10    0    0    0
##  [216,]    8    0    2    0
##  [217,]    0    0    4    6
##  [218,]    8    0    2    0
```

```
##  [219,]    0    0    4    6
##  [220,]   10    0    0    0
##  [221,]    0    0    4    6
##  [222,]    0    0    4    6
##  [223,]   10    0    0    0
##  [224,]   10    0    0    0
##  [225,]    8    0    2    0
##  [226,]   10    0    0    0
##  [227,]    0    0    4    6
##  [228,]   10    0    0    0
##  [229,]   10    0    0    0
##  [230,]   10    0    0    0
##  [231,]    0    0    4    6
##  [232,]    0    0    4    6
##  [233,]    8    0    2    0
##  [234,]    5    0    4    1
##  [235,]   10    0    0    0
##  [236,]    8    0    2    0
##  [237,]   10    0    0    0
##  [238,]    0    0    4    6
##  [239,]    0    0    4    6
##  [240,]   10    0    0    0
##  [241,]    5    0    4    1
##  [242,]    0    0    4    6
##  [243,]   10    0    0    0
##  [244,]   10    0    0    0
##  [245,]    0    0    4    6
##  [246,]    0    0    4    6
##  [247,]    0    0    4    6
##  [248,]    0    0    4    6
##  [249,]    1    0    4    5
##  [250,]    1    0    4    5
##  [251,]    1    0    4    5
##  [252,]    0    0    4    6
##  [253,]    4    0    4    2
##  [254,]   10    0    0    0
##  [255,]    0    0    4    6
##  [256,]   10    0    0    0
##  [257,]   10    0    0    0
##  [258,]    0    0    4    6
##  [259,]    0    0    4    6
##  [260,]    8    0    2    0
##  [261,]   10    0    0    0
##  [262,]    0    0    4    6
##  [263,]    1    0    4    5
##  [264,]    0    0    4    6
##  [265,]    4    0    4    2
##  [266,]    0    0    4    6
##  [267,]    1    0    4    5
##  [268,]   10    0    0    0
##  [269,]    1    0    4    5
##  [270,]   10    0    0    0
##  [271,]   10    0    0    0
##  [272,]    0    0    4    6
```

```
##  [273,]    3    0    4    3
##  [274,]    0    0    4    6
##  [275,]    2    0    4    4
##  [276,]    0    0    4    6
##  [277,]    0    0    4    6
##  [278,]    0    0    4    6
##  [279,]    5    0    4    1
##  [280,]    0    0    4    6
##  [281,]    0    0    4    6
##  [282,]    9    0    1    0
##  [283,]    8    0    2    0
##  [284,]    1    0    4    5
##  [285,]    0    0    4    6
##  [286,]    0    0    4    6
##  [287,]    8    0    2    0
##  [288,]    1    0    4    5
##  [289,]    0    0    4    6
##  [290,]    7    0    3    0
##  [291,]    0    0    4    6
##  [292,]    4    0    4    2
##  [293,]   10    0    0    0
##  [294,]    0    0    4    6
##  [295,]   10    0    0    0
##  [296,]    1    0    4    5
##  [297,]    3    0    4    3
##  [298,]    8    0    2    0
##  [299,]   10    0    0    0
##  [300,]    8    0    2    0
##  [301,]    1    0    4    5
##  [302,]    5    0    4    1
##  [303,]   10    0    0    0
##  [304,]    0    0    4    6
##  [305,]    0    0    4    6
##  [306,]   10    0    0    0
##  [307,]    8    0    2    0
##  [308,]    8    0    2    0
##  [309,]    0    0    4    6
##  [310,]   10    0    0    0
##  [311,]   10    0    0    0
##  [312,]    0    0    4    6
##  [313,]   10    0    0    0
##  [314,]   10    0    0    0
##  [315,]    0    0    4    6
##  [316,]   10    0    0    0
##  [317,]   10    0    0    0
##  [318,]    1    0    4    5
##  [319,]    7    0    3    0
##  [320,]    0    0    4    6
##  [321,]    7    0    3    0
##  [322,]    9    0    1    0
##  [323,]    1    0    4    5
##  [324,]    3    0    4    3
##  [325,]    8    0    2    0
##  [326,]   10    0    0    0
```

```
##  [327,]   10    0    0    0
##  [328,]    0    0    4    6
##  [329,]   10    0    0    0
##  [330,]   10    0    0    0
##  [331,]    8    0    2    0
##  [332,]    0    0    4    6
##  [333,]    0    0    4    6
##  [334,]    8    0    2    0
##  [335,]    3    0    4    3
##  [336,]    0    0    4    6
##  [337,]    0    0    4    6
##  [338,]    0    0    4    6
##  [339,]   10    0    0    0
##  [340,]    0    0    4    6
##  [341,]   10    0    0    0
##  [342,]    0    0    4    6
##  [343,]    8    0    2    0
##  [344,]   10    0    0    0
##  [345,]    0    0    4    6
##  [346,]    5    0    4    1
##  [347,]   10    0    0    0
##  [348,]    7    0    3    0
##  [349,]   10    0    0    0
##  [350,]    0    0    4    6
##  [351,]    7    0    3    0
##  [352,]    1    0    4    5
##  [353,]    0    0    4    6
##  [354,]   10    0    0    0
##  [355,]    0    0    4    6
##  [356,]   10    0    0    0
##  [357,]   10    0    0    0
##  [358,]    9    0    1    0
##  [359,]    1    0    4    5
##  [360,]    7    0    3    0
##  [361,]    0    0    4    6
##  [362,]    0    0    4    6
##  [363,]    5    0    4    1
##  [364,]    0    0    4    6
##  [365,]    8    0    2    0
##  [366,]    0    0    4    6
##  [367,]    0    0    4    6
##  [368,]    0    0    4    6
##  [369,]    0    0    4    6
##  [370,]    9    0    1    0
##  [371,]    0    0    4    6
##  [372,]    0    0    4    6
##  [373,]    0    0    4    6
##  [374,]    1    0    4    5
##  [375,]    0    0    4    6
##  [376,]    3    0    4    3
##  [377,]    1    0    4    5
##  [378,]    0    0    4    6
##  [379,]    0    0    4    6
##  [380,]   10    0    0    0
```

```
##  [381,]    0    0    4    6
##  [382,]    8    0    2    0
##  [383,]   10    0    0    0
##  [384,]    0    0    4    6
##  [385,]    8    0    2    0
##  [386,]    8    0    2    0
##  [387,]    0    0    4    6
##  [388,]   10    0    0    0
##  [389,]    9    0    1    0
##  [390,]   10    0    0    0
##  [391,]   10    0    0    0
##  [392,]    1    0    4    5
##  [393,]    0    0    4    6
##  [394,]   10    0    0    0
##  [395,]    8    0    2    0
##  [396,]    7    0    3    0
##  [397,]    0    0    4    6
##  [398,]   10    0    0    0
##  [399,]   10    0    0    0
##  [400,]    0    0    4    6
##  [401,]    0    0    4    6
##  [402,]    0    0    4    6
##  [403,]    0    0    4    6
##  [404,]   10    0    0    0
##  [405,]    0    0    4    6
##  [406,]    0    0    4    6
##  [407,]   10    0    0    0
##  [408,]   10    0    0    0
##  [409,]    0    0    4    6
##  [410,]    0    0    4    6
##  [411,]    0    0    4    6
##  [412,]   10    0    0    0
##  [413,]    0    0    4    6
##  [414,]    9    0    1    0
##  [415,]   10    0    0    0
##  [416,]    0    0    4    6
##  [417,]    0    0    4    6
##  [418,]   10    0    0    0
##  [419,]    0    0    4    6
##  [420,]   10    0    0    0
##  [421,]   10    0    0    0
##  [422,]   10    0    0    0
##  [423,]    0    0    4    6
##  [424,]   10    0    0    0
##  [425,]    8    0    2    0
##  [426,]   10    0    0    0
##  [427,]    1    0    4    5
##  [428,]   10    0    0    0
##  [429,]    0    0    4    6
##  [430,]    4    0    4    2
##  [431,]    0    0    4    6
##  [432,]   10    0    0    0
##  [433,]    0    0    4    6
##  [434,]    0    0    4    6
```

```
##  [435,]    8    0    2    0
##  [436,]    0    0    4    6
##  [437,]   10    0    0    0
##  [438,]    9    0    1    0
##  [439,]    3    0    4    3
##  [440,]   10    0    0    0
##  [441,]   10    0    0    0
##  [442,]   10    0    0    0
##  [443,]    8    0    2    0
##  [444,]    0    0    4    6
##  [445,]    0    0    4    6
##  [446,]    9    0    1    0
##  [447,]    0    0    4    6
##  [448,]    4    0    4    2
##  [449,]   10    0    0    0
##  [450,]    7    0    3    0
##  [451,]    0    0    4    6
##  [452,]    7    0    3    0
##  [453,]    0    0    4    6
##  [454,]    4    0    4    2
##  [455,]    1    0    4    5
##  [456,]   10    0    0    0
##  [457,]    0    0    4    6
##  [458,]    8    0    2    0
##  [459,]    8    0    2    0
##  [460,]   10    0    0    0
##  [461,]   10    0    0    0
##  [462,]    8    0    2    0
##  [463,]   10    0    0    0
##  [464,]   10    0    0    0
##  [465,]   10    0    0    0
##  [466,]    0    0    4    6
##  [467,]    0    0    4    6
##  [468,]    8    0    2    0
##  [469,]   10    0    0    0
##  [470,]    9    0    1    0
##  [471,]   10    0    0    0
##  [472,]    0    0    4    6
##  [473,]    0    0    4    6
##  [474,]    1    0    4    5
##  [475,]    0    0    4    6
##  [476,]    1    0    4    5
##  [477,]    5    0    4    1
##  [478,]   10    0    0    0
##  [479,]   10    0    0    0
##  [480,]    0    0    4    6
##  [481,]    1    0    4    5
##  [482,]   10    0    0    0
##  [483,]    0    0    4    6
##  [484,]    4    0    4    2
##  [485,]   10    0    0    0
##  [486,]    0    0    4    6
##  [487,]   10    0    0    0
##  [488,]    0    0    4    6
```

```
##  [489,]    0    0    4    6
##  [490,]    0    0    4    6
##  [491,]   10    0    0    0
##  [492,]    0    0    4    6
##  [493,]   10    0    0    0
##  [494,]    9    0    1    0
##  [495,]    0    0    4    6
##  [496,]   10    0    0    0
##  [497,]    1    0    4    5
##  [498,]    0    0    4    6
##  [499,]   10    0    0    0
##  [500,]    0    0    4    6
##  [501,]    0    0    4    6
##  [502,]   10    0    0    0
##  [503,]    7    0    3    0
##  [504,]   10    0    0    0
##  [505,]    7    0    3    0
##  [506,]   10    0    0    0
##  [507,]   10    0    0    0
##  [508,]    0    0    4    6
##  [509,]    1    0    4    5
##  [510,]    0    0    4    6
##  [511,]    0    0    4    6
##  [512,]    1    0    4    5
##  [513,]    4    0    4    2
##  [514,]    0    0    4    6
##  [515,]    0    0    4    6
##  [516,]   10    0    0    0
##  [517,]    0    0    4    6
##  [518,]    0    0    4    6
##  [519,]   10    0    0    0
##  [520,]    4    0    4    2
##  [521,]   10    0    0    0
##  [522,]   10    0    0    0
##  [523,]    0    0    4    6
##  [524,]   10    0    0    0
##  [525,]    0    0    4    6
##  [526,]   10    0    0    0
##  [527,]   10    0    0    0
##  [528,]   10    0    0    0
##  [529,]    0    0    4    6
##  [530,]    9    0    1    0
##  [531,]    7    0    3    0
##  [532,]    0    0    4    6
##  [533,]    5    0    4    1
##  [534,]    0    0    4    6
##  [535,]    1    0    4    5
##  [536,]   10    0    0    0
##  [537,]   10    0    0    0
##  [538,]    8    0    2    0
##  [539,]    0    0    4    6
##  [540,]    1    0    4    5
##  [541,]   10    0    0    0
##  [542,]    0    0    4    6
```

```
##  [543,]    1    0    4    5
##  [544,]   10    0    0    0
##  [545,]    4    0    4    2
##  [546,]   10    0    0    0
##  [547,]    0    0    4    6
##  [548,]    0    0    4    6
##  [549,]    1    0    4    5
##  [550,]    0    0    4    6
##  [551,]    0    0    4    6
##  [552,]    8    0    2    0
##  [553,]   10    0    0    0
##  [554,]    0    0    4    6
##  [555,]    8    0    2    0
##  [556,]   10    0    0    0
##  [557,]    0    0    4    6
##  [558,]    7    0    3    0
##  [559,]    9    0    1    0
##  [560,]    0    0    4    6
##  [561,]    0    0    4    6
##  [562,]    0    0    4    6
##  [563,]    0    0    4    6
##  [564,]   10    0    0    0
##  [565,]   10    0    0    0
##  [566,]    8    0    2    0
##  [567,]   10    0    0    0
##  [568,]    0    0    4    6
##  [569,]    0    0    4    6
##  [570,]    9    0    1    0
##  [571,]   10    0    0    0
##  [572,]    0    0    4    6
##  [573,]    0    0    4    6
##  [574,]    9    0    1    0
##  [575,]    1    0    4    5
##  [576,]    0    0    4    6
##  [577,]    1    0    4    5
##  [578,]    0    0    4    6
##  [579,]    0    0    4    6
##  [580,]    1    0    4    5
##  [581,]    0    0    4    6
##  [582,]    0    0    4    6
##  [583,]    0    0    4    6
##  [584,]    0    0    4    6
##  [585,]    0    0    4    6
##  [586,]    0    0    4    6
##  [587,]    1    0    4    5
##  [588,]    0    0    4    6
##  [589,]    4    0    4    2
##  [590,]    0    0    4    6
##  [591,]   10    0    0    0
##  [592,]   10    0    0    0
##  [593,]    0    0    4    6
##  [594,]   10    0    0    0
##  [595,]   10    0    0    0
##  [596,]    0    0    4    6
```

```
##  [597,]    7    0    3    0
##  [598,]   10    0    0    0
##  [599,]    3    0    4    3
##  [600,]    9    0    1    0
##  [601,]    0    0    4    6
##  [602,]    3    0    4    3
##  [603,]    9    0    1    0
##  [604,]    0    0    4    6
##  [605,]    5    0    4    1
##  [606,]    8    0    2    0
##  [607,]    0    0    4    6
##  [608,]   10    0    0    0
##  [609,]    1    0    4    5
##  [610,]    0    0    4    6
##  [611,]    7    0    3    0
##  [612,]    0    0    4    6
##  [613,]    0    0    4    6
##  [614,]    0    0    4    6
##  [615,]    3    0    4    3
##  [616,]   10    0    0    0
##  [617,]   10    0    0    0
##  [618,]   10    0    0    0
##  [619,]   10    0    0    0
##  [620,]    1    0    4    5
##  [621,]    0    0    4    6
##  [622,]    1    0    4    5
##  [623,]    0    0    4    6
##  [624,]    9    0    1    0
##  [625,]    0    0    4    6
##  [626,]    0    0    4    6
##  [627,]   10    0    0    0
##  [628,]    8    0    2    0
##  [629,]    7    0    3    0
##  [630,]    0    0    4    6
##  [631,]    0    0    4    6
##  [632,]    9    0    1    0
##  [633,]    0    0    4    6
##  [634,]    7    0    3    0
##  [635,]   10    0    0    0
##  [636,]    0    0    4    6
##  [637,]    8    0    2    0
##  [638,]    0    0    4    6
##  [639,]   10    0    0    0
##  [640,]    0    0    4    6
##  [641,]   10    0    0    0
##  [642,]   10    0    0    0
##  [643,]    8    0    2    0
##  [644,]   10    0    0    0
##  [645,]    0    0    4    6
##  [646,]    0    0    4    6
##  [647,]   10    0    0    0
##  [648,]    9    0    1    0
##  [649,]    0    0    4    6
##  [650,]    1    0    4    5
```

```
##  [651,]    5    0    4    1
##  [652,]    7    0    3    0
##  [653,]    0    0    4    6
##  [654,]   10    0    0    0
##  [655,]    0    0    4    6
##  [656,]    1    0    4    5
##  [657,]    0    0    4    6
##  [658,]    0    0    4    6
##  [659,]    0    0    4    6
##  [660,]    0    0    4    6
##  [661,]    1    0    4    5
##  [662,]    0    0    4    6
##  [663,]   10    0    0    0
##  [664,]    8    0    2    0
##  [665,]   10    0    0    0
##  [666,]    0    0    4    6
##  [667,]   10    0    0    0
##  [668,]    4    0    4    2
##  [669,]    8    0    2    0
##  [670,]    9    0    1    0
##  [671,]   10    0    0    0
##  [672,]    8    0    2    0
##  [673,]    0    0    4    6
##  [674,]    0    0    4    6
##  [675,]   10    0    0    0
##  [676,]    0    0    4    6
##  [677,]    1    0    4    5
##  [678,]    0    0    4    6
##  [679,]    8    0    2    0
##  [680,]   10    0    0    0
##  [681,]    8    0    2    0
##  [682,]    9    0    1    0
##  [683,]   10    0    0    0
##  [684,]    0    0    4    6
##  [685,]   10    0    0    0
##  [686,]   10    0    0    0
##  [687,]    0    0    4    6
##  [688,]    9    0    1    0
##  [689,]   10    0    0    0
##  [690,]    0    0    4    6
##  [691,]    0    0    4    6
##  [692,]   10    0    0    0
##  [693,]   10    0    0    0
##  [694,]   10    0    0    0
##  [695,]    0    0    4    6
##  [696,]    0    0    4    6
##  [697,]    7    0    3    0
##  [698,]    8    0    2    0
##  [699,]    8    0    2    0
##  [700,]    9    0    1    0
##  [701,]   10    0    0    0
##  [702,]   10    0    0    0
##  [703,]    0    0    4    6
##  [704,]    0    0    4    6
```

```
##  [705,]    0    0    4    6
##  [706,]    0    0    4    6
##  [707,]    8    0    2    0
##  [708,]   10    0    0    0
##  [709,]   10    0    0    0
##  [710,]    1    0    4    5
##  [711,]    1    0    4    5
##  [712,]   10    0    0    0
##  [713,]   10    0    0    0
##  [714,]    8    0    2    0
##  [715,]   10    0    0    0
##  [716,]    9    0    1    0
##  [717,]    0    0    4    6
##  [718,]    8    0    2    0
##  [719,]   10    0    0    0
##  [720,]   10    0    0    0
##  [721,]   10    0    0    0
##  [722,]    8    0    2    0
##  [723,]    1    0    4    5
##  [724,]    4    0    4    2
##  [725,]    0    0    4    6
##  [726,]   10    0    0    0
##  [727,]   10    0    0    0
##  [728,]    0    0    4    6
##  [729,]    9    0    1    0
##  [730,]   10    0    0    0
##  [731,]    1    0    4    5
##  [732,]    7    0    3    0
##  [733,]   10    0    0    0
##  [734,]    0    0    4    6
##  [735,]    0    0    4    6
##  [736,]    0    0    4    6
##  [737,]    8    0    2    0
##  [738,]    1    0    4    5
##  [739,]    9    0    1    0
##  [740,]   10    0    0    0
##  [741,]    4    0    4    2
##  [742,]    1    0    4    5
##  [743,]    9    0    1    0
##  [744,]    0    0    4    6
##  [745,]   10    0    0    0
##  [746,]    0    0    4    6
##  [747,]   10    0    0    0
##  [748,]   10    0    0    0
##  [749,]   10    0    0    0
##  [750,]   10    0    0    0
##  [751,]    0    0    4    6
##  [752,]   10    0    0    0
##  [753,]    1    0    4    5
##  [754,]   10    0    0    0
##  [755,]   10    0    0    0
##  [756,]    0    0    4    6
##  [757,]    8    0    2    0
##  [758,]    8    0    2    0
```

```
##  [759,]    4    0    4    2
##  [760,]    1    0    4    5
##  [761,]    1    0    4    5
##  [762,]    8    0    2    0
##  [763,]   10    0    0    0
##  [764,]    4    0    4    2
##  [765,]    4    0    4    2
##  [766,]   10    0    0    0
##  [767,]   10    0    0    0
##  [768,]    8    0    2    0
##  [769,]    1    0    4    5
##  [770,]   10    0    0    0
##  [771,]   10    0    0    0
##  [772,]    0    0    4    6
##  [773,]    8    0    2    0
##  [774,]   10    0    0    0
##  [775,]    0    0    4    6
##  [776,]    0    0    4    6
##  [777,]    0    0    4    6
##  [778,]    0    0    4    6
##  [779,]    0    0    4    6
##  [780,]    0    0    4    6
##  [781,]   10    0    0    0
##  [782,]    1    0    4    5
##  [783,]    1    0    4    5
##  [784,]    0    0    4    6
##  [785,]    0    0    4    6
##  [786,]    1    0    4    5
##  [787,]    5    0    4    1
##  [788,]    4    0    4    2
##  [789,]   10    0    0    0
##  [790,]    1    0    4    5
##  [791,]   10    0    0    0
##  [792,]    5    0    4    1
##  [793,]    4    0    4    2
##  [794,]   10    0    0    0
##  [795,]    0    0    4    6
##  [796,]   10    0    0    0
##  [797,]    0    0    4    6
##  [798,]    1    0    4    5
##  [799,]    0    0    4    6
##  [800,]    5    0    4    1
##  [801,]    3    0    4    3
##  [802,]    1    0    4    5
##  [803,]    8    0    2    0
##  [804,]    9    0    1    0
##  [805,]    7    0    3    0
##  [806,]    8    0    2    0
##  [807,]    0    0    4    6
##  [808,]    9    0    1    0
##  [809,]    0    0    4    6
##  [810,]   10    0    0    0
##  [811,]    4    0    4    2
##  [812,]   10    0    0    0
```

```
##  [813,]    1    0    4    5
##  [814,]    0    0    4    6
##  [815,]    2    0    4    4
##  [816,]    8    0    2    0
##  [817,]    0    0    4    6
##  [818,]   10    0    0    0
##  [819,]    9    0    1    0
##  [820,]    0    0    4    6
##  [821,]   10    0    0    0
##  [822,]    0    0    4    6
##  [823,]    1    0    4    5
##  [824,]    0    0    4    6
##  [825,]    0    0    4    6
##  [826,]    0    0    4    6
##  [827,]    0    0    4    6
##  [828,]   10    0    0    0
##  [829,]    0    0    4    6
##  [830,]   10    0    0    0
##  [831,]   10    0    0    0
##  [832,]   10    0    0    0
##  [833,]    5    0    4    1
##  [834,]    0    0    4    6
##  [835,]   10    0    0    0
##  [836,]    0    0    4    6
##  [837,]   10    0    0    0
##  [838,]    0    0    4    6
##  [839,]   10    0    0    0
##  [840,]    9    0    1    0
##  [841,]    4    0    4    2
##  [842,]    1    0    4    5
##  [843,]    8    0    2    0
##  [844,]    0    0    4    6
##  [845,]   10    0    0    0
##  [846,]    1    0    4    5
##  [847,]    8    0    2    0
##  [848,]    1    0    4    5
##  [849,]    7    0    3    0
##  [850,]    8    0    2    0
##  [851,]    0    0    4    6
##  [852,]   10    0    0    0
##  [853,]    3    0    4    3
##  [854,]   10    0    0    0
##  [855,]    0    0    4    6
##  [856,]   10    0    0    0
##  [857,]    0    0    4    6
##  [858,]    8    0    2    0
##  [859,]    0    0    4    6
##  [860,]    5    0    4    1
##  [861,]    8    0    2    0
##  [862,]    0    0    4    6
##  [863,]    1    0    4    5
##  [864,]   10    0    0    0
##  [865,]    7    0    3    0
##  [866,]    1    0    4    5
```

```
##  [867,]    0    0    4    6
##  [868,]   10    0    0    0
##  [869,]   10    0    0    0
##  [870,]   10    0    0    0
##  [871,]    1    0    4    5
##  [872,]    0    0    4    6
##  [873,]   10    0    0    0
##  [874,]   10    0    0    0
##  [875,]   10    0    0    0
##  [876,]    5    0    4    1
##  [877,]    0    0    4    6
##  [878,]   10    0    0    0
##  [879,]    1    0    4    5
##  [880,]    8    0    2    0
##  [881,]   10    0    0    0
##  [882,]    1    0    4    5
##  [883,]   10    0    0    0
##  [884,]    1    0    4    5
##  [885,]    4    0    4    2
##  [886,]    0    0    4    6
##  [887,]   10    0    0    0
##  [888,]   10    0    0    0
##  [889,]    0    0    4    6
##  [890,]    0    0    4    6
##  [891,]    7    0    3    0
##  [892,]    0    0    4    6
##  [893,]    8    0    2    0
##  [894,]   10    0    0    0
##  [895,]    0    0    4    6
##  [896,]   10    0    0    0
##  [897,]    0    0    4    6
##  [898,]   10    0    0    0
##  [899,]    1    0    4    5
##  [900,]    0    0    4    6
##  [901,]    9    0    1    0
##  [902,]   10    0    0    0
##  [903,]    1    0    4    5
##  [904,]   10    0    0    0
##  [905,]   10    0    0    0
##  [906,]    0    0    4    6
##  [907,]    7    0    3    0
##  [908,]    1    0    4    5
##  [909,]    7    0    3    0
##  [910,]   10    0    0    0
##  [911,]    0    0    4    6
##  [912,]    7    0    3    0
##  [913,]   10    0    0    0
##  [914,]    0    0    4    6
##  [915,]   10    0    0    0
##  [916,]    1    0    4    5
##  [917,]    2    0    4    4
##  [918,]    0    0    4    6
##  [919,]    1    0    4    5
##  [920,]   10    0    0    0
```

```
##  [921,]    0    0    4    6
##  [922,]   10    0    0    0
##  [923,]    0    0    4    6
##  [924,]    5    0    4    1
##  [925,]    9    0    1    0
##  [926,]    8    0    2    0
##  [927,]    0    0    4    6
##  [928,]    5    0    4    1
##  [929,]    0    0    4    6
##  [930,]    5    0    4    1
##  [931,]    0    0    4    6
##  [932,]   10    0    0    0
##  [933,]   10    0    0    0
##  [934,]    0    0    4    6
##  [935,]    0    0    4    6
##  [936,]    8    0    2    0
##  [937,]    8    0    2    0
##  [938,]    8    0    2    0
##  [939,]    8    0    2    0
##  [940,]    0    0    4    6
##  [941,]    5    0    4    1
##  [942,]   10    0    0    0
##  [943,]   10    0    0    0
##  [944,]    7    0    3    0
##  [945,]    9    0    1    0
##  [946,]    8    0    2    0
##  [947,]    0    0    4    6
##  [948,]    1    0    4    5
##  [949,]    0    0    4    6
##  [950,]    0    0    4    6
##  [951,]    8    0    2    0
##  [952,]    4    0    4    2
##  [953,]    9    0    1    0
##  [954,]    1    0    4    5
##  [955,]    8    0    2    0
##  [956,]    0    0    4    6
##  [957,]    0    0    4    6
##  [958,]    0    0    4    6
##  [959,]   10    0    0    0
##  [960,]    0    0    4    6
##  [961,]    0    0    4    6
##  [962,]   10    0    0    0
##  [963,]    0    0    4    6
##  [964,]    0    0    4    6
##  [965,]    3    0    4    3
##  [966,]    8    0    2    0
##  [967,]    9    0    1    0
##  [968,]    1    0    4    5
##  [969,]    8    0    2    0
##  [970,]   10    0    0    0
##  [971,]   10    0    0    0
##  [972,]   10    0    0    0
##  [973,]    0    0    4    6
##  [974,]    8    0    2    0
```

```
##  [975,]   10    0    0    0
##  [976,]   10    0    0    0
##  [977,]    1    0    4    5
##  [978,]   10    0    0    0
##  [979,]    1    0    4    5
##  [980,]    0    0    4    6
##  [981,]    8    0    2    0
##  [982,]    9    0    1    0
##  [983,]   10    0    0    0
##  [984,]    8    0    2    0
##  [985,]    1    0    4    5
##  [986,]   10    0    0    0
##  [987,]   10    0    0    0
##  [988,]    0    0    4    6
##  [989,]    1    0    4    5
##  [990,]    0    0    4    6
##  [991,]    8    0    2    0
##  [992,]    4    0    4    2
##  [993,]   10    0    0    0
##  [994,]   10    0    0    0
##  [995,]   10    0    0    0
##  [996,]    0    0    4    6
##  [997,]   10    0    0    0
##  [998,]   10    0    0    0
##  [999,]    9    0    1    0
## [1000,]   10    0    0    0
## [1001,]    8    0    2    0
## [1002,]    0    0    4    6
## [1003,]   10    0    0    0
## [1004,]   10    0    0    0
## [1005,]    4    0    4    2
## [1006,]   10    0    0    0
## [1007,]    8    0    2    0
## [1008,]    5    0    4    1
## [1009,]   10    0    0    0
## [1010,]   10    0    0    0
## [1011,]    0    0    4    6
## [1012,]    8    0    2    0
## [1013,]    9    0    1    0
## [1014,]    9    0    1    0
## [1015,]    0    0    4    6
## [1016,]    0    0    4    6
## [1017,]   10    0    0    0
## [1018,]    9    0    1    0
## [1019,]   10    0    0    0
## [1020,]    0    0    4    6
## [1021,]    8    0    2    0
## [1022,]   10    0    0    0
## [1023,]    1    0    4    5
## [1024,]   10    0    0    0
## [1025,]    4    0    4    2
## [1026,]   10    0    0    0
## [1027,]    3    0    4    3
## [1028,]    1    0    4    5
```

```
## [1029,]    8    0    2    0
## [1030,]    5    0    4    1
## [1031,]    5    0    4    1
## [1032,]    8    0    2    0
## [1033,]    0    0    4    6
## [1034,]    0    0    4    6
## [1035,]    0    0    4    6
## [1036,]   10    0    0    0
## [1037,]    8    0    2    0
## [1038,]    5    0    4    1
## [1039,]    0    0    4    6
## [1040,]    9    0    1    0
## [1041,]    9    0    1    0
## [1042,]   10    0    0    0
## [1043,]    4    0    4    2
## [1044,]    0    0    4    6
## [1045,]    0    0    4    6
## [1046,]    8    0    2    0
## [1047,]    0    0    4    6
## [1048,]    0    0    4    6
## [1049,]    5    0    4    1
## [1050,]    1    0    4    5
## [1051,]   10    0    0    0
## [1052,]   10    0    0    0
## [1053,]    4    0    4    2
## [1054,]    0    0    4    6
## [1055,]   10    0    0    0
## [1056,]    4    0    4    2
## [1057,]   10    0    0    0
## [1058,]   10    0    0    0
## [1059,]   10    0    0    0
## [1060,]   10    0    0    0
## [1061,]    0    0    4    6
## [1062,]    5    0    4    1
## [1063,]    7    0    3    0
## [1064,]    1    0    4    5
## [1065,]    8    0    2    0
## [1066,]    9    0    1    0
## [1067,]    0    0    4    6
## [1068,]    4    0    4    2
## [1069,]    4    0    4    2
## [1070,]    4    0    4    2
## [1071,]    0    0    4    6
## [1072,]    2    0    4    4
## [1073,]    7    0    3    0
## [1074,]   10    0    0    0
## [1075,]    0    0    4    6
## [1076,]    0    0    4    6
## [1077,]    9    0    1    0
## [1078,]    7    0    3    0
## [1079,]   10    0    0    0
## [1080,]    9    0    1    0
## [1081,]    0    0    4    6
## [1082,]    9    0    1    0
```

```
## [1083,]   10    0    0    0
## [1084,]    0    0    4    6
## [1085,]    0    0    4    6
## [1086,]   10    0    0    0
## [1087,]    0    0    4    6
## [1088,]    8    0    2    0
## [1089,]    1    0    4    5
## [1090,]    1    0    4    5
## [1091,]   10    0    0    0
## [1092,]    8    0    2    0
## [1093,]    0    0    4    6
## [1094,]    1    0    4    5
## [1095,]    1    0    4    5
## [1096,]    4    0    4    2
## [1097,]    3    0    4    3
## [1098,]    9    0    1    0
## [1099,]    5    0    4    1
## [1100,]   10    0    0    0
## [1101,]    0    0    4    6
## [1102,]    0    0    4    6
## [1103,]    4    0    4    2
## [1104,]    4    0    4    2
## [1105,]    3    0    4    3
## [1106,]    1    0    4    5
## [1107,]   10    0    0    0
## [1108,]   10    0    0    0
## [1109,]    0    0    4    6
## [1110,]   10    0    0    0
## [1111,]    0    0    4    6
## [1112,]    0    0    4    6
## [1113,]   10    0    0    0
## [1114,]    0    0    4    6
## [1115,]   10    0    0    0
## [1116,]    6    0    4    0
## [1117,]   10    0    0    0
## [1118,]   10    0    0    0
## [1119,]   10    0    0    0
## [1120,]   10    0    0    0
## [1121,]   10    0    0    0
## [1122,]    0    0    4    6
## [1123,]    8    0    2    0
## [1124,]    8    0    2    0
## [1125,]    0    0    4    6
## [1126,]    0    0    4    6
## [1127,]    3    0    4    3
## [1128,]    8    0    2    0
## [1129,]    0    0    4    6
## [1130,]   10    0    0    0
## [1131,]    0    0    4    6
## [1132,]    0    0    4    6
## [1133,]   10    0    0    0
## [1134,]    0    0    4    6
## [1135,]    1    0    4    5
## [1136,]    9    0    1    0
```

```
## [1137,]    0    0    4    6
## [1138,]    0    0    4    6
## [1139,]    1    0    4    5
## [1140,]    0    0    4    6
## [1141,]    1    0    4    5
## [1142,]    0    0    4    6
## [1143,]    0    0    4    6
## [1144,]    0    0    4    6
## [1145,]    1    0    4    5
## [1146,]    8    0    2    0
## [1147,]    0    0    4    6
## [1148,]    7    0    3    0
## [1149,]   10    0    0    0
## [1150,]    8    0    2    0
## [1151,]   10    0    0    0
## [1152,]    0    0    4    6
## [1153,]    0    0    4    6
## [1154,]    8    0    2    0
## [1155,]   10    0    0    0
## [1156,]    8    0    2    0
## [1157,]   10    0    0    0
## [1158,]    8    0    2    0
## [1159,]    8    0    2    0
## [1160,]    1    0    4    5
## [1161,]    0    0    4    6
## [1162,]    0    0    4    6
## [1163,]    0    0    4    6
## [1164,]    8    0    2    0
## [1165,]    4    0    4    2
## [1166,]   10    0    0    0
## [1167,]    8    0    2    0
## [1168,]    0    0    4    6
## [1169,]    9    0    1    0
## [1170,]   10    0    0    0
## [1171,]    8    0    2    0
## [1172,]   10    0    0    0
## [1173,]    0    0    4    6
## [1174,]   10    0    0    0
## [1175,]    4    0    4    2
## [1176,]    0    0    4    6
## [1177,]    4    0    4    2
## [1178,]   10    0    0    0
## [1179,]    8    0    2    0
## [1180,]    1    0    4    5
## [1181,]    8    0    2    0
## [1182,]    8    0    2    0
## [1183,]    7    0    3    0
## [1184,]    0    0    4    6
## [1185,]    8    0    2    0
## [1186,]    0    0    4    6
## [1187,]    8    0    2    0
## [1188,]    8    0    2    0
## [1189,]    0    0    4    6
## [1190,]    0    0    4    6
```

```
## [1191,]    8    0    2    0
## [1192,]    3    0    4    3
## [1193,]    0    0    4    6
## [1194,]    0    0    4    6
## [1195,]    0    0    4    6
## [1196,]   10    0    0    0
## [1197,]    0    0    4    6
## [1198,]    0    0    4    6
## [1199,]    8    0    2    0
## [1200,]    0    0    4    6
## [1201,]    1    0    4    5
## [1202,]    8    0    2    0
## [1203,]    0    0    4    6
## [1204,]    0    0    4    6
## [1205,]   10    0    0    0
## [1206,]    0    0    4    6
## [1207,]   10    0    0    0
## [1208,]    0    0    4    6
## [1209,]    0    0    4    6
## [1210,]    0    0    4    6
## [1211,]    1    0    4    5
## [1212,]    1    0    4    5
## [1213,]   10    0    0    0
## [1214,]    1    0    4    5
## [1215,]    7    0    3    0
## [1216,]    1    0    4    5
## [1217,]    0    0    4    6
## [1218,]    0    0    4    6
## [1219,]   10    0    0    0
## [1220,]    0    0    4    6
## [1221,]    0    0    4    6
## [1222,]    0    0    4    6
## [1223,]   10    0    0    0
## [1224,]    0    0    4    6
## [1225,]    1    0    4    5
## [1226,]    0    0    4    6
## [1227,]    8    0    2    0
## [1228,]    9    0    1    0
## [1229,]    3    0    4    3
## [1230,]    7    0    3    0
## [1231,]    0    0    4    6
## [1232,]   10    0    0    0
## [1233,]    4    0    4    2
## [1234,]    0    0    4    6
## [1235,]   10    0    0    0
## [1236,]    0    0    4    6
## [1237,]   10    0    0    0
## [1238,]    0    0    4    6
## [1239,]    9    0    1    0
## [1240,]    4    0    4    2
## [1241,]    0    0    4    6
## [1242,]   10    0    0    0
## [1243,]    0    0    4    6
## [1244,]    0    0    4    6
```

```
## [1245,]   10    0    0    0
## [1246,]    0    0    4    6
## [1247,]   10    0    0    0
## [1248,]   10    0    0    0
## [1249,]    0    0    4    6
## [1250,]    8    0    2    0
## [1251,]    4    0    4    2
## [1252,]    0    0    4    6
## [1253,]    0    0    4    6
## [1254,]    1    0    4    5
## [1255,]   10    0    0    0
## [1256,]    5    0    4    1
## [1257,]    8    0    2    0
## [1258,]    8    0    2    0
## [1259,]    7    0    3    0
## [1260,]    0    0    4    6
## [1261,]   10    0    0    0
## [1262,]    4    0    4    2
## [1263,]   10    0    0    0
## [1264,]    3    0    4    3
## [1265,]    7    0    3    0
## [1266,]    9    0    1    0
## [1267,]    8    0    2    0
## [1268,]   10    0    0    0
## [1269,]    5    0    4    1
## [1270,]   10    0    0    0
## [1271,]    5    0    4    1
## [1272,]    0    0    4    6
## [1273,]    8    0    2    0
## [1274,]   10    0    0    0
## [1275,]   10    0    0    0
## [1276,]    0    0    4    6
## [1277,]    7    0    3    0
## [1278,]    5    0    4    1
## [1279,]    1    0    4    5
## [1280,]    7    0    3    0
## [1281,]    1    0    4    5
## [1282,]    0    0    4    6
## [1283,]    0    0    4    6
## [1284,]   10    0    0    0
## [1285,]    9    0    1    0
## [1286,]    8    0    2    0
## [1287,]    0    0    4    6
## [1288,]    1    0    4    5
## [1289,]    8    0    2    0
## [1290,]    8    0    2    0
## [1291,]    6    0    4    0
## [1292,]   10    0    0    0
## [1293,]    1    0    4    5
## [1294,]    0    0    4    6
## [1295,]    8    0    2    0
## [1296,]    0    0    4    6
## [1297,]    8    0    2    0
## [1298,]    0    0    4    6
```

```
## [1299,]   10    0    0    0
## [1300,]    0    0    4    6
## [1301,]   10    0    0    0
## [1302,]    0    0    4    6
## [1303,]   10    0    0    0
## [1304,]   10    0    0    0
## [1305,]   10    0    0    0
## [1306,]    0    0    4    6
## [1307,]    0    0    4    6
## [1308,]   10    0    0    0
## [1309,]   10    0    0    0
## [1310,]   10    0    0    0
## [1311,]    0    0    4    6
## [1312,]    0    0    4    6
## [1313,]    9    0    1    0
## [1314,]   10    0    0    0
## [1315,]   10    0    0    0
## [1316,]    1    0    4    5
## [1317,]    9    0    1    0
## [1318,]    1    0    4    5
## [1319,]   10    0    0    0
## [1320,]    0    0    4    6
## [1321,]   10    0    0    0
## [1322,]    4    0    4    2
## [1323,]   10    0    0    0
## [1324,]    0    0    4    6
## [1325,]   10    0    0    0
## [1326,]   10    0    0    0
## [1327,]    2    0    4    4
## [1328,]   10    0    0    0
## [1329,]    0    0    4    6
## [1330,]   10    0    0    0
## [1331,]    0    0    4    6
## [1332,]    0    0    4    6
## [1333,]   10    0    0    0
## [1334,]   10    0    0    0
## [1335,]    0    0    4    6
## [1336,]    0    0    4    6
## [1337,]    7    0    3    0
## [1338,]    1    0    4    5
## [1339,]   10    0    0    0
## [1340,]    4    0    4    2
## [1341,]   10    0    0    0
## [1342,]   10    0    0    0
## [1343,]    0    0    4    6
## [1344,]   10    0    0    0
## [1345,]    0    0    4    6
## [1346,]    1    0    4    5
## [1347,]    1    0    4    5
## [1348,]    8    0    2    0
## [1349,]    7    0    3    0
## [1350,]    8    0    2    0
## [1351,]   10    0    0    0
## [1352,]    8    0    2    0
```

```
## [1353,]    8    0    2    0
## [1354,]    7    0    3    0
## [1355,]    1    0    4    5
## [1356,]    8    0    2    0
## [1357,]    4    0    4    2
## [1358,]    1    0    4    5
## [1359,]    5    0    4    1
## [1360,]   10    0    0    0
## [1361,]    8    0    2    0
## [1362,]    3    0    4    3
## [1363,]    7    0    3    0
## [1364,]    0    0    4    6
## [1365,]   10    0    0    0
## [1366,]    6    0    4    0
## [1367,]    8    0    2    0
## [1368,]    0    0    4    6
## [1369,]   10    0    0    0
## [1370,]    1    0    4    5
## [1371,]    9    0    1    0
## [1372,]    8    0    2    0
## [1373,]    1    0    4    5
## [1374,]   10    0    0    0
## [1375,]    1    0    4    5
## [1376,]    7    0    3    0
## [1377,]    4    0    4    2
## [1378,]   10    0    0    0
## [1379,]    0    0    4    6
## [1380,]    5    0    4    1
## [1381,]    0    0    4    6
## [1382,]   10    0    0    0
## [1383,]    3    0    4    3
## [1384,]    8    0    2    0
## [1385,]    8    0    2    0
## [1386,]    7    0    3    0
## [1387,]   10    0    0    0
## [1388,]    3    0    4    3
## [1389,]    0    0    4    6
## [1390,]    4    0    4    2
## [1391,]    8    0    2    0
## [1392,]    9    0    1    0
## [1393,]    1    0    4    5
## [1394,]    0    0    4    6
## [1395,]    0    0    4    6
## [1396,]   10    0    0    0
## [1397,]    7    0    3    0
## [1398,]    0    0    4    6
## [1399,]   10    0    0    0
## [1400,]    0    0    4    6
##
## $prob
##         [,1] [,2] [,3] [,4]
##    [1,]  0.1    0  0.4  0.5
##    [2,]  0.1    0  0.4  0.5
##    [3,]  0.0    0  0.4  0.6
```

```
##    [4,]  0.9    0  0.1  0.0
##    [5,]  1.0    0  0.0  0.0
##    [6,]  1.0    0  0.0  0.0
##    [7,]  0.0    0  0.4  0.6
##    [8,]  0.0    0  0.4  0.6
##    [9,]  0.8    0  0.2  0.0
##   [10,]  0.1    0  0.4  0.5
##   [11,]  1.0    0  0.0  0.0
##   [12,]  1.0    0  0.0  0.0
##   [13,]  0.0    0  0.4  0.6
##   [14,]  0.3    0  0.4  0.3
##   [15,]  0.9    0  0.1  0.0
##   [16,]  1.0    0  0.0  0.0
##   [17,]  0.1    0  0.4  0.5
##   [18,]  0.0    0  0.4  0.6
##   [19,]  0.0    0  0.4  0.6
##   [20,]  0.0    0  0.4  0.6
##   [21,]  0.4    0  0.4  0.2
##   [22,]  0.0    0  0.4  0.6
##   [23,]  1.0    0  0.0  0.0
##   [24,]  0.9    0  0.1  0.0
##   [25,]  0.0    0  0.4  0.6
##   [26,]  0.0    0  0.4  0.6
##   [27,]  0.5    0  0.4  0.1
##   [28,]  0.1    0  0.4  0.5
##   [29,]  0.8    0  0.2  0.0
##   [30,]  0.8    0  0.2  0.0
##   [31,]  1.0    0  0.0  0.0
##   [32,]  1.0    0  0.0  0.0
##   [33,]  0.0    0  0.4  0.6
##   [34,]  1.0    0  0.0  0.0
##   [35,]  0.0    0  0.4  0.6
##   [36,]  0.5    0  0.4  0.1
##   [37,]  0.5    0  0.4  0.1
##   [38,]  0.9    0  0.1  0.0
##   [39,]  0.0    0  0.4  0.6
##   [40,]  0.1    0  0.4  0.5
##   [41,]  0.0    0  0.4  0.6
##   [42,]  0.8    0  0.2  0.0
##   [43,]  1.0    0  0.0  0.0
##   [44,]  1.0    0  0.0  0.0
##   [45,]  0.5    0  0.4  0.1
##   [46,]  0.0    0  0.4  0.6
##   [47,]  0.0    0  0.4  0.6
##   [48,]  0.0    0  0.4  0.6
##   [49,]  0.0    0  0.4  0.6
##   [50,]  1.0    0  0.0  0.0
##   [51,]  0.0    0  0.4  0.6
##   [52,]  0.0    0  0.4  0.6
##   [53,]  1.0    0  0.0  0.0
##   [54,]  0.0    0  0.4  0.6
##   [55,]  1.0    0  0.0  0.0
##   [56,]  0.8    0  0.2  0.0
##   [57,]  0.0    0  0.4  0.6
```

```
##   [58,]  0.8    0  0.2  0.0
##   [59,]  0.0    0  0.4  0.6
##   [60,]  0.1    0  0.4  0.5
##   [61,]  0.7    0  0.3  0.0
##   [62,]  0.7    0  0.3  0.0
##   [63,]  1.0    0  0.0  0.0
##   [64,]  1.0    0  0.0  0.0
##   [65,]  0.0    0  0.4  0.6
##   [66,]  0.3    0  0.4  0.3
##   [67,]  0.0    0  0.4  0.6
##   [68,]  0.7    0  0.3  0.0
##   [69,]  0.9    0  0.1  0.0
##   [70,]  1.0    0  0.0  0.0
##   [71,]  0.8    0  0.2  0.0
##   [72,]  0.9    0  0.1  0.0
##   [73,]  0.8    0  0.2  0.0
##   [74,]  0.1    0  0.4  0.5
##   [75,]  0.9    0  0.1  0.0
##   [76,]  0.1    0  0.4  0.5
##   [77,]  1.0    0  0.0  0.0
##   [78,]  1.0    0  0.0  0.0
##   [79,]  0.8    0  0.2  0.0
##   [80,]  0.1    0  0.4  0.5
##   [81,]  0.0    0  0.4  0.6
##   [82,]  0.7    0  0.3  0.0
##   [83,]  0.4    0  0.4  0.2
##   [84,]  1.0    0  0.0  0.0
##   [85,]  0.0    0  0.4  0.6
##   [86,]  0.0    0  0.4  0.6
##   [87,]  0.0    0  0.4  0.6
##   [88,]  0.7    0  0.3  0.0
##   [89,]  0.1    0  0.4  0.5
##   [90,]  0.0    0  0.4  0.6
##   [91,]  0.0    0  0.4  0.6
##   [92,]  0.0    0  0.4  0.6
##   [93,]  0.0    0  0.4  0.6
##   [94,]  0.0    0  0.4  0.6
##   [95,]  0.8    0  0.2  0.0
##   [96,]  0.0    0  0.4  0.6
##   [97,]  1.0    0  0.0  0.0
##   [98,]  0.4    0  0.4  0.2
##   [99,]  0.0    0  0.4  0.6
##  [100,]  1.0    0  0.0  0.0
##  [101,]  0.9    0  0.1  0.0
##  [102,]  0.9    0  0.1  0.0
##  [103,]  1.0    0  0.0  0.0
##  [104,]  0.0    0  0.4  0.6
##  [105,]  1.0    0  0.0  0.0
##  [106,]  0.0    0  0.4  0.6
##  [107,]  0.4    0  0.4  0.2
##  [108,]  0.0    0  0.4  0.6
##  [109,]  0.3    0  0.4  0.3
##  [110,]  0.9    0  0.1  0.0
##  [111,]  0.9    0  0.1  0.0
```

```
##  [112,]  1.0    0  0.0  0.0
##  [113,]  0.0    0  0.4  0.6
##  [114,]  1.0    0  0.0  0.0
##  [115,]  0.0    0  0.4  0.6
##  [116,]  0.0    0  0.4  0.6
##  [117,]  1.0    0  0.0  0.0
##  [118,]  0.3    0  0.4  0.3
##  [119,]  0.0    0  0.4  0.6
##  [120,]  0.5    0  0.4  0.1
##  [121,]  0.7    0  0.3  0.0
##  [122,]  0.1    0  0.4  0.5
##  [123,]  0.8    0  0.2  0.0
##  [124,]  0.0    0  0.4  0.6
##  [125,]  0.0    0  0.4  0.6
##  [126,]  0.4    0  0.4  0.2
##  [127,]  1.0    0  0.0  0.0
##  [128,]  0.1    0  0.4  0.5
##  [129,]  0.0    0  0.4  0.6
##  [130,]  0.8    0  0.2  0.0
##  [131,]  0.8    0  0.2  0.0
##  [132,]  1.0    0  0.0  0.0
##  [133,]  0.3    0  0.4  0.3
##  [134,]  0.0    0  0.4  0.6
##  [135,]  0.0    0  0.4  0.6
##  [136,]  1.0    0  0.0  0.0
##  [137,]  0.0    0  0.4  0.6
##  [138,]  0.0    0  0.4  0.6
##  [139,]  0.1    0  0.4  0.5
##  [140,]  0.4    0  0.4  0.2
##  [141,]  0.0    0  0.4  0.6
##  [142,]  0.0    0  0.4  0.6
##  [143,]  0.8    0  0.2  0.0
##  [144,]  1.0    0  0.0  0.0
##  [145,]  1.0    0  0.0  0.0
##  [146,]  1.0    0  0.0  0.0
##  [147,]  0.1    0  0.4  0.5
##  [148,]  0.1    0  0.4  0.5
##  [149,]  0.4    0  0.4  0.2
##  [150,]  0.0    0  0.4  0.6
##  [151,]  0.0    0  0.4  0.6
##  [152,]  1.0    0  0.0  0.0
##  [153,]  1.0    0  0.0  0.0
##  [154,]  0.0    0  0.4  0.6
##  [155,]  0.0    0  0.4  0.6
##  [156,]  0.0    0  0.4  0.6
##  [157,]  0.1    0  0.4  0.5
##  [158,]  0.1    0  0.4  0.5
##  [159,]  0.0    0  0.4  0.6
##  [160,]  0.0    0  0.4  0.6
##  [161,]  0.0    0  0.4  0.6
##  [162,]  1.0    0  0.0  0.0
##  [163,]  0.4    0  0.4  0.2
##  [164,]  0.0    0  0.4  0.6
##  [165,]  1.0    0  0.0  0.0
```

```
##  [166,]  0.8    0  0.2  0.0
##  [167,]  0.0    0  0.4  0.6
##  [168,]  1.0    0  0.0  0.0
##  [169,]  0.0    0  0.4  0.6
##  [170,]  0.0    0  0.4  0.6
##  [171,]  0.8    0  0.2  0.0
##  [172,]  0.0    0  0.4  0.6
##  [173,]  0.0    0  0.4  0.6
##  [174,]  0.8    0  0.2  0.0
##  [175,]  0.8    0  0.2  0.0
##  [176,]  1.0    0  0.0  0.0
##  [177,]  0.0    0  0.4  0.6
##  [178,]  0.1    0  0.4  0.5
##  [179,]  1.0    0  0.0  0.0
##  [180,]  1.0    0  0.0  0.0
##  [181,]  0.8    0  0.2  0.0
##  [182,]  0.0    0  0.4  0.6
##  [183,]  1.0    0  0.0  0.0
##  [184,]  0.7    0  0.3  0.0
##  [185,]  1.0    0  0.0  0.0
##  [186,]  0.0    0  0.4  0.6
##  [187,]  1.0    0  0.0  0.0
##  [188,]  0.1    0  0.4  0.5
##  [189,]  0.1    0  0.4  0.5
##  [190,]  1.0    0  0.0  0.0
##  [191,]  0.0    0  0.4  0.6
##  [192,]  0.8    0  0.2  0.0
##  [193,]  0.1    0  0.4  0.5
##  [194,]  0.0    0  0.4  0.6
##  [195,]  0.8    0  0.2  0.0
##  [196,]  1.0    0  0.0  0.0
##  [197,]  0.0    0  0.4  0.6
##  [198,]  1.0    0  0.0  0.0
##  [199,]  0.7    0  0.3  0.0
##  [200,]  0.3    0  0.4  0.3
##  [201,]  0.8    0  0.2  0.0
##  [202,]  0.0    0  0.4  0.6
##  [203,]  0.0    0  0.4  0.6
##  [204,]  0.0    0  0.4  0.6
##  [205,]  1.0    0  0.0  0.0
##  [206,]  1.0    0  0.0  0.0
##  [207,]  0.8    0  0.2  0.0
##  [208,]  0.0    0  0.4  0.6
##  [209,]  1.0    0  0.0  0.0
##  [210,]  0.8    0  0.2  0.0
##  [211,]  0.0    0  0.4  0.6
##  [212,]  1.0    0  0.0  0.0
##  [213,]  1.0    0  0.0  0.0
##  [214,]  0.0    0  0.4  0.6
##  [215,]  1.0    0  0.0  0.0
##  [216,]  0.8    0  0.2  0.0
##  [217,]  0.0    0  0.4  0.6
##  [218,]  0.8    0  0.2  0.0
##  [219,]  0.0    0  0.4  0.6
```

```
##  [220,]  1.0    0  0.0  0.0
##  [221,]  0.0    0  0.4  0.6
##  [222,]  0.0    0  0.4  0.6
##  [223,]  1.0    0  0.0  0.0
##  [224,]  1.0    0  0.0  0.0
##  [225,]  0.8    0  0.2  0.0
##  [226,]  1.0    0  0.0  0.0
##  [227,]  0.0    0  0.4  0.6
##  [228,]  1.0    0  0.0  0.0
##  [229,]  1.0    0  0.0  0.0
##  [230,]  1.0    0  0.0  0.0
##  [231,]  0.0    0  0.4  0.6
##  [232,]  0.0    0  0.4  0.6
##  [233,]  0.8    0  0.2  0.0
##  [234,]  0.5    0  0.4  0.1
##  [235,]  1.0    0  0.0  0.0
##  [236,]  0.8    0  0.2  0.0
##  [237,]  1.0    0  0.0  0.0
##  [238,]  0.0    0  0.4  0.6
##  [239,]  0.0    0  0.4  0.6
##  [240,]  1.0    0  0.0  0.0
##  [241,]  0.5    0  0.4  0.1
##  [242,]  0.0    0  0.4  0.6
##  [243,]  1.0    0  0.0  0.0
##  [244,]  1.0    0  0.0  0.0
##  [245,]  0.0    0  0.4  0.6
##  [246,]  0.0    0  0.4  0.6
##  [247,]  0.0    0  0.4  0.6
##  [248,]  0.0    0  0.4  0.6
##  [249,]  0.1    0  0.4  0.5
##  [250,]  0.1    0  0.4  0.5
##  [251,]  0.1    0  0.4  0.5
##  [252,]  0.0    0  0.4  0.6
##  [253,]  0.4    0  0.4  0.2
##  [254,]  1.0    0  0.0  0.0
##  [255,]  0.0    0  0.4  0.6
##  [256,]  1.0    0  0.0  0.0
##  [257,]  1.0    0  0.0  0.0
##  [258,]  0.0    0  0.4  0.6
##  [259,]  0.0    0  0.4  0.6
##  [260,]  0.8    0  0.2  0.0
##  [261,]  1.0    0  0.0  0.0
##  [262,]  0.0    0  0.4  0.6
##  [263,]  0.1    0  0.4  0.5
##  [264,]  0.0    0  0.4  0.6
##  [265,]  0.4    0  0.4  0.2
##  [266,]  0.0    0  0.4  0.6
##  [267,]  0.1    0  0.4  0.5
##  [268,]  1.0    0  0.0  0.0
##  [269,]  0.1    0  0.4  0.5
##  [270,]  1.0    0  0.0  0.0
##  [271,]  1.0    0  0.0  0.0
##  [272,]  0.0    0  0.4  0.6
##  [273,]  0.3    0  0.4  0.3
```

```
##  [274,]  0.0    0  0.4  0.6
##  [275,]  0.2    0  0.4  0.4
##  [276,]  0.0    0  0.4  0.6
##  [277,]  0.0    0  0.4  0.6
##  [278,]  0.0    0  0.4  0.6
##  [279,]  0.5    0  0.4  0.1
##  [280,]  0.0    0  0.4  0.6
##  [281,]  0.0    0  0.4  0.6
##  [282,]  0.9    0  0.1  0.0
##  [283,]  0.8    0  0.2  0.0
##  [284,]  0.1    0  0.4  0.5
##  [285,]  0.0    0  0.4  0.6
##  [286,]  0.0    0  0.4  0.6
##  [287,]  0.8    0  0.2  0.0
##  [288,]  0.1    0  0.4  0.5
##  [289,]  0.0    0  0.4  0.6
##  [290,]  0.7    0  0.3  0.0
##  [291,]  0.0    0  0.4  0.6
##  [292,]  0.4    0  0.4  0.2
##  [293,]  1.0    0  0.0  0.0
##  [294,]  0.0    0  0.4  0.6
##  [295,]  1.0    0  0.0  0.0
##  [296,]  0.1    0  0.4  0.5
##  [297,]  0.3    0  0.4  0.3
##  [298,]  0.8    0  0.2  0.0
##  [299,]  1.0    0  0.0  0.0
##  [300,]  0.8    0  0.2  0.0
##  [301,]  0.1    0  0.4  0.5
##  [302,]  0.5    0  0.4  0.1
##  [303,]  1.0    0  0.0  0.0
##  [304,]  0.0    0  0.4  0.6
##  [305,]  0.0    0  0.4  0.6
##  [306,]  1.0    0  0.0  0.0
##  [307,]  0.8    0  0.2  0.0
##  [308,]  0.8    0  0.2  0.0
##  [309,]  0.0    0  0.4  0.6
##  [310,]  1.0    0  0.0  0.0
##  [311,]  1.0    0  0.0  0.0
##  [312,]  0.0    0  0.4  0.6
##  [313,]  1.0    0  0.0  0.0
##  [314,]  1.0    0  0.0  0.0
##  [315,]  0.0    0  0.4  0.6
##  [316,]  1.0    0  0.0  0.0
##  [317,]  1.0    0  0.0  0.0
##  [318,]  0.1    0  0.4  0.5
##  [319,]  0.7    0  0.3  0.0
##  [320,]  0.0    0  0.4  0.6
##  [321,]  0.7    0  0.3  0.0
##  [322,]  0.9    0  0.1  0.0
##  [323,]  0.1    0  0.4  0.5
##  [324,]  0.3    0  0.4  0.3
##  [325,]  0.8    0  0.2  0.0
##  [326,]  1.0    0  0.0  0.0
##  [327,]  1.0    0  0.0  0.0
```

```
##  [328,]  0.0    0  0.4  0.6
##  [329,]  1.0    0  0.0  0.0
##  [330,]  1.0    0  0.0  0.0
##  [331,]  0.8    0  0.2  0.0
##  [332,]  0.0    0  0.4  0.6
##  [333,]  0.0    0  0.4  0.6
##  [334,]  0.8    0  0.2  0.0
##  [335,]  0.3    0  0.4  0.3
##  [336,]  0.0    0  0.4  0.6
##  [337,]  0.0    0  0.4  0.6
##  [338,]  0.0    0  0.4  0.6
##  [339,]  1.0    0  0.0  0.0
##  [340,]  0.0    0  0.4  0.6
##  [341,]  1.0    0  0.0  0.0
##  [342,]  0.0    0  0.4  0.6
##  [343,]  0.8    0  0.2  0.0
##  [344,]  1.0    0  0.0  0.0
##  [345,]  0.0    0  0.4  0.6
##  [346,]  0.5    0  0.4  0.1
##  [347,]  1.0    0  0.0  0.0
##  [348,]  0.7    0  0.3  0.0
##  [349,]  1.0    0  0.0  0.0
##  [350,]  0.0    0  0.4  0.6
##  [351,]  0.7    0  0.3  0.0
##  [352,]  0.1    0  0.4  0.5
##  [353,]  0.0    0  0.4  0.6
##  [354,]  1.0    0  0.0  0.0
##  [355,]  0.0    0  0.4  0.6
##  [356,]  1.0    0  0.0  0.0
##  [357,]  1.0    0  0.0  0.0
##  [358,]  0.9    0  0.1  0.0
##  [359,]  0.1    0  0.4  0.5
##  [360,]  0.7    0  0.3  0.0
##  [361,]  0.0    0  0.4  0.6
##  [362,]  0.0    0  0.4  0.6
##  [363,]  0.5    0  0.4  0.1
##  [364,]  0.0    0  0.4  0.6
##  [365,]  0.8    0  0.2  0.0
##  [366,]  0.0    0  0.4  0.6
##  [367,]  0.0    0  0.4  0.6
##  [368,]  0.0    0  0.4  0.6
##  [369,]  0.0    0  0.4  0.6
##  [370,]  0.9    0  0.1  0.0
##  [371,]  0.0    0  0.4  0.6
##  [372,]  0.0    0  0.4  0.6
##  [373,]  0.0    0  0.4  0.6
##  [374,]  0.1    0  0.4  0.5
##  [375,]  0.0    0  0.4  0.6
##  [376,]  0.3    0  0.4  0.3
##  [377,]  0.1    0  0.4  0.5
##  [378,]  0.0    0  0.4  0.6
##  [379,]  0.0    0  0.4  0.6
##  [380,]  1.0    0  0.0  0.0
##  [381,]  0.0    0  0.4  0.6
```

```
##  [382,]  0.8    0  0.2  0.0
##  [383,]  1.0    0  0.0  0.0
##  [384,]  0.0    0  0.4  0.6
##  [385,]  0.8    0  0.2  0.0
##  [386,]  0.8    0  0.2  0.0
##  [387,]  0.0    0  0.4  0.6
##  [388,]  1.0    0  0.0  0.0
##  [389,]  0.9    0  0.1  0.0
##  [390,]  1.0    0  0.0  0.0
##  [391,]  1.0    0  0.0  0.0
##  [392,]  0.1    0  0.4  0.5
##  [393,]  0.0    0  0.4  0.6
##  [394,]  1.0    0  0.0  0.0
##  [395,]  0.8    0  0.2  0.0
##  [396,]  0.7    0  0.3  0.0
##  [397,]  0.0    0  0.4  0.6
##  [398,]  1.0    0  0.0  0.0
##  [399,]  1.0    0  0.0  0.0
##  [400,]  0.0    0  0.4  0.6
##  [401,]  0.0    0  0.4  0.6
##  [402,]  0.0    0  0.4  0.6
##  [403,]  0.0    0  0.4  0.6
##  [404,]  1.0    0  0.0  0.0
##  [405,]  0.0    0  0.4  0.6
##  [406,]  0.0    0  0.4  0.6
##  [407,]  1.0    0  0.0  0.0
##  [408,]  1.0    0  0.0  0.0
##  [409,]  0.0    0  0.4  0.6
##  [410,]  0.0    0  0.4  0.6
##  [411,]  0.0    0  0.4  0.6
##  [412,]  1.0    0  0.0  0.0
##  [413,]  0.0    0  0.4  0.6
##  [414,]  0.9    0  0.1  0.0
##  [415,]  1.0    0  0.0  0.0
##  [416,]  0.0    0  0.4  0.6
##  [417,]  0.0    0  0.4  0.6
##  [418,]  1.0    0  0.0  0.0
##  [419,]  0.0    0  0.4  0.6
##  [420,]  1.0    0  0.0  0.0
##  [421,]  1.0    0  0.0  0.0
##  [422,]  1.0    0  0.0  0.0
##  [423,]  0.0    0  0.4  0.6
##  [424,]  1.0    0  0.0  0.0
##  [425,]  0.8    0  0.2  0.0
##  [426,]  1.0    0  0.0  0.0
##  [427,]  0.1    0  0.4  0.5
##  [428,]  1.0    0  0.0  0.0
##  [429,]  0.0    0  0.4  0.6
##  [430,]  0.4    0  0.4  0.2
##  [431,]  0.0    0  0.4  0.6
##  [432,]  1.0    0  0.0  0.0
##  [433,]  0.0    0  0.4  0.6
##  [434,]  0.0    0  0.4  0.6
##  [435,]  0.8    0  0.2  0.0
```

```
##  [436,]  0.0    0  0.4  0.6
##  [437,]  1.0    0  0.0  0.0
##  [438,]  0.9    0  0.1  0.0
##  [439,]  0.3    0  0.4  0.3
##  [440,]  1.0    0  0.0  0.0
##  [441,]  1.0    0  0.0  0.0
##  [442,]  1.0    0  0.0  0.0
##  [443,]  0.8    0  0.2  0.0
##  [444,]  0.0    0  0.4  0.6
##  [445,]  0.0    0  0.4  0.6
##  [446,]  0.9    0  0.1  0.0
##  [447,]  0.0    0  0.4  0.6
##  [448,]  0.4    0  0.4  0.2
##  [449,]  1.0    0  0.0  0.0
##  [450,]  0.7    0  0.3  0.0
##  [451,]  0.0    0  0.4  0.6
##  [452,]  0.7    0  0.3  0.0
##  [453,]  0.0    0  0.4  0.6
##  [454,]  0.4    0  0.4  0.2
##  [455,]  0.1    0  0.4  0.5
##  [456,]  1.0    0  0.0  0.0
##  [457,]  0.0    0  0.4  0.6
##  [458,]  0.8    0  0.2  0.0
##  [459,]  0.8    0  0.2  0.0
##  [460,]  1.0    0  0.0  0.0
##  [461,]  1.0    0  0.0  0.0
##  [462,]  0.8    0  0.2  0.0
##  [463,]  1.0    0  0.0  0.0
##  [464,]  1.0    0  0.0  0.0
##  [465,]  1.0    0  0.0  0.0
##  [466,]  0.0    0  0.4  0.6
##  [467,]  0.0    0  0.4  0.6
##  [468,]  0.8    0  0.2  0.0
##  [469,]  1.0    0  0.0  0.0
##  [470,]  0.9    0  0.1  0.0
##  [471,]  1.0    0  0.0  0.0
##  [472,]  0.0    0  0.4  0.6
##  [473,]  0.0    0  0.4  0.6
##  [474,]  0.1    0  0.4  0.5
##  [475,]  0.0    0  0.4  0.6
##  [476,]  0.1    0  0.4  0.5
##  [477,]  0.5    0  0.4  0.1
##  [478,]  1.0    0  0.0  0.0
##  [479,]  1.0    0  0.0  0.0
##  [480,]  0.0    0  0.4  0.6
##  [481,]  0.1    0  0.4  0.5
##  [482,]  1.0    0  0.0  0.0
##  [483,]  0.0    0  0.4  0.6
##  [484,]  0.4    0  0.4  0.2
##  [485,]  1.0    0  0.0  0.0
##  [486,]  0.0    0  0.4  0.6
##  [487,]  1.0    0  0.0  0.0
##  [488,]  0.0    0  0.4  0.6
##  [489,]  0.0    0  0.4  0.6
```

```
##  [490,]  0.0    0  0.4  0.6
##  [491,]  1.0    0  0.0  0.0
##  [492,]  0.0    0  0.4  0.6
##  [493,]  1.0    0  0.0  0.0
##  [494,]  0.9    0  0.1  0.0
##  [495,]  0.0    0  0.4  0.6
##  [496,]  1.0    0  0.0  0.0
##  [497,]  0.1    0  0.4  0.5
##  [498,]  0.0    0  0.4  0.6
##  [499,]  1.0    0  0.0  0.0
##  [500,]  0.0    0  0.4  0.6
##  [501,]  0.0    0  0.4  0.6
##  [502,]  1.0    0  0.0  0.0
##  [503,]  0.7    0  0.3  0.0
##  [504,]  1.0    0  0.0  0.0
##  [505,]  0.7    0  0.3  0.0
##  [506,]  1.0    0  0.0  0.0
##  [507,]  1.0    0  0.0  0.0
##  [508,]  0.0    0  0.4  0.6
##  [509,]  0.1    0  0.4  0.5
##  [510,]  0.0    0  0.4  0.6
##  [511,]  0.0    0  0.4  0.6
##  [512,]  0.1    0  0.4  0.5
##  [513,]  0.4    0  0.4  0.2
##  [514,]  0.0    0  0.4  0.6
##  [515,]  0.0    0  0.4  0.6
##  [516,]  1.0    0  0.0  0.0
##  [517,]  0.0    0  0.4  0.6
##  [518,]  0.0    0  0.4  0.6
##  [519,]  1.0    0  0.0  0.0
##  [520,]  0.4    0  0.4  0.2
##  [521,]  1.0    0  0.0  0.0
##  [522,]  1.0    0  0.0  0.0
##  [523,]  0.0    0  0.4  0.6
##  [524,]  1.0    0  0.0  0.0
##  [525,]  0.0    0  0.4  0.6
##  [526,]  1.0    0  0.0  0.0
##  [527,]  1.0    0  0.0  0.0
##  [528,]  1.0    0  0.0  0.0
##  [529,]  0.0    0  0.4  0.6
##  [530,]  0.9    0  0.1  0.0
##  [531,]  0.7    0  0.3  0.0
##  [532,]  0.0    0  0.4  0.6
##  [533,]  0.5    0  0.4  0.1
##  [534,]  0.0    0  0.4  0.6
##  [535,]  0.1    0  0.4  0.5
##  [536,]  1.0    0  0.0  0.0
##  [537,]  1.0    0  0.0  0.0
##  [538,]  0.8    0  0.2  0.0
##  [539,]  0.0    0  0.4  0.6
##  [540,]  0.1    0  0.4  0.5
##  [541,]  1.0    0  0.0  0.0
##  [542,]  0.0    0  0.4  0.6
##  [543,]  0.1    0  0.4  0.5
```

```
##  [544,]  1.0    0  0.0  0.0
##  [545,]  0.4    0  0.4  0.2
##  [546,]  1.0    0  0.0  0.0
##  [547,]  0.0    0  0.4  0.6
##  [548,]  0.0    0  0.4  0.6
##  [549,]  0.1    0  0.4  0.5
##  [550,]  0.0    0  0.4  0.6
##  [551,]  0.0    0  0.4  0.6
##  [552,]  0.8    0  0.2  0.0
##  [553,]  1.0    0  0.0  0.0
##  [554,]  0.0    0  0.4  0.6
##  [555,]  0.8    0  0.2  0.0
##  [556,]  1.0    0  0.0  0.0
##  [557,]  0.0    0  0.4  0.6
##  [558,]  0.7    0  0.3  0.0
##  [559,]  0.9    0  0.1  0.0
##  [560,]  0.0    0  0.4  0.6
##  [561,]  0.0    0  0.4  0.6
##  [562,]  0.0    0  0.4  0.6
##  [563,]  0.0    0  0.4  0.6
##  [564,]  1.0    0  0.0  0.0
##  [565,]  1.0    0  0.0  0.0
##  [566,]  0.8    0  0.2  0.0
##  [567,]  1.0    0  0.0  0.0
##  [568,]  0.0    0  0.4  0.6
##  [569,]  0.0    0  0.4  0.6
##  [570,]  0.9    0  0.1  0.0
##  [571,]  1.0    0  0.0  0.0
##  [572,]  0.0    0  0.4  0.6
##  [573,]  0.0    0  0.4  0.6
##  [574,]  0.9    0  0.1  0.0
##  [575,]  0.1    0  0.4  0.5
##  [576,]  0.0    0  0.4  0.6
##  [577,]  0.1    0  0.4  0.5
##  [578,]  0.0    0  0.4  0.6
##  [579,]  0.0    0  0.4  0.6
##  [580,]  0.1    0  0.4  0.5
##  [581,]  0.0    0  0.4  0.6
##  [582,]  0.0    0  0.4  0.6
##  [583,]  0.0    0  0.4  0.6
##  [584,]  0.0    0  0.4  0.6
##  [585,]  0.0    0  0.4  0.6
##  [586,]  0.0    0  0.4  0.6
##  [587,]  0.1    0  0.4  0.5
##  [588,]  0.0    0  0.4  0.6
##  [589,]  0.4    0  0.4  0.2
##  [590,]  0.0    0  0.4  0.6
##  [591,]  1.0    0  0.0  0.0
##  [592,]  1.0    0  0.0  0.0
##  [593,]  0.0    0  0.4  0.6
##  [594,]  1.0    0  0.0  0.0
##  [595,]  1.0    0  0.0  0.0
##  [596,]  0.0    0  0.4  0.6
##  [597,]  0.7    0  0.3  0.0
```

```
##  [598,]  1.0    0  0.0  0.0
##  [599,]  0.3    0  0.4  0.3
##  [600,]  0.9    0  0.1  0.0
##  [601,]  0.0    0  0.4  0.6
##  [602,]  0.3    0  0.4  0.3
##  [603,]  0.9    0  0.1  0.0
##  [604,]  0.0    0  0.4  0.6
##  [605,]  0.5    0  0.4  0.1
##  [606,]  0.8    0  0.2  0.0
##  [607,]  0.0    0  0.4  0.6
##  [608,]  1.0    0  0.0  0.0
##  [609,]  0.1    0  0.4  0.5
##  [610,]  0.0    0  0.4  0.6
##  [611,]  0.7    0  0.3  0.0
##  [612,]  0.0    0  0.4  0.6
##  [613,]  0.0    0  0.4  0.6
##  [614,]  0.0    0  0.4  0.6
##  [615,]  0.3    0  0.4  0.3
##  [616,]  1.0    0  0.0  0.0
##  [617,]  1.0    0  0.0  0.0
##  [618,]  1.0    0  0.0  0.0
##  [619,]  1.0    0  0.0  0.0
##  [620,]  0.1    0  0.4  0.5
##  [621,]  0.0    0  0.4  0.6
##  [622,]  0.1    0  0.4  0.5
##  [623,]  0.0    0  0.4  0.6
##  [624,]  0.9    0  0.1  0.0
##  [625,]  0.0    0  0.4  0.6
##  [626,]  0.0    0  0.4  0.6
##  [627,]  1.0    0  0.0  0.0
##  [628,]  0.8    0  0.2  0.0
##  [629,]  0.7    0  0.3  0.0
##  [630,]  0.0    0  0.4  0.6
##  [631,]  0.0    0  0.4  0.6
##  [632,]  0.9    0  0.1  0.0
##  [633,]  0.0    0  0.4  0.6
##  [634,]  0.7    0  0.3  0.0
##  [635,]  1.0    0  0.0  0.0
##  [636,]  0.0    0  0.4  0.6
##  [637,]  0.8    0  0.2  0.0
##  [638,]  0.0    0  0.4  0.6
##  [639,]  1.0    0  0.0  0.0
##  [640,]  0.0    0  0.4  0.6
##  [641,]  1.0    0  0.0  0.0
##  [642,]  1.0    0  0.0  0.0
##  [643,]  0.8    0  0.2  0.0
##  [644,]  1.0    0  0.0  0.0
##  [645,]  0.0    0  0.4  0.6
##  [646,]  0.0    0  0.4  0.6
##  [647,]  1.0    0  0.0  0.0
##  [648,]  0.9    0  0.1  0.0
##  [649,]  0.0    0  0.4  0.6
##  [650,]  0.1    0  0.4  0.5
##  [651,]  0.5    0  0.4  0.1
```

```
##  [652,]  0.7    0  0.3  0.0
##  [653,]  0.0    0  0.4  0.6
##  [654,]  1.0    0  0.0  0.0
##  [655,]  0.0    0  0.4  0.6
##  [656,]  0.1    0  0.4  0.5
##  [657,]  0.0    0  0.4  0.6
##  [658,]  0.0    0  0.4  0.6
##  [659,]  0.0    0  0.4  0.6
##  [660,]  0.0    0  0.4  0.6
##  [661,]  0.1    0  0.4  0.5
##  [662,]  0.0    0  0.4  0.6
##  [663,]  1.0    0  0.0  0.0
##  [664,]  0.8    0  0.2  0.0
##  [665,]  1.0    0  0.0  0.0
##  [666,]  0.0    0  0.4  0.6
##  [667,]  1.0    0  0.0  0.0
##  [668,]  0.4    0  0.4  0.2
##  [669,]  0.8    0  0.2  0.0
##  [670,]  0.9    0  0.1  0.0
##  [671,]  1.0    0  0.0  0.0
##  [672,]  0.8    0  0.2  0.0
##  [673,]  0.0    0  0.4  0.6
##  [674,]  0.0    0  0.4  0.6
##  [675,]  1.0    0  0.0  0.0
##  [676,]  0.0    0  0.4  0.6
##  [677,]  0.1    0  0.4  0.5
##  [678,]  0.0    0  0.4  0.6
##  [679,]  0.8    0  0.2  0.0
##  [680,]  1.0    0  0.0  0.0
##  [681,]  0.8    0  0.2  0.0
##  [682,]  0.9    0  0.1  0.0
##  [683,]  1.0    0  0.0  0.0
##  [684,]  0.0    0  0.4  0.6
##  [685,]  1.0    0  0.0  0.0
##  [686,]  1.0    0  0.0  0.0
##  [687,]  0.0    0  0.4  0.6
##  [688,]  0.9    0  0.1  0.0
##  [689,]  1.0    0  0.0  0.0
##  [690,]  0.0    0  0.4  0.6
##  [691,]  0.0    0  0.4  0.6
##  [692,]  1.0    0  0.0  0.0
##  [693,]  1.0    0  0.0  0.0
##  [694,]  1.0    0  0.0  0.0
##  [695,]  0.0    0  0.4  0.6
##  [696,]  0.0    0  0.4  0.6
##  [697,]  0.7    0  0.3  0.0
##  [698,]  0.8    0  0.2  0.0
##  [699,]  0.8    0  0.2  0.0
##  [700,]  0.9    0  0.1  0.0
##  [701,]  1.0    0  0.0  0.0
##  [702,]  1.0    0  0.0  0.0
##  [703,]  0.0    0  0.4  0.6
##  [704,]  0.0    0  0.4  0.6
##  [705,]  0.0    0  0.4  0.6
```

```
##  [706,]  0.0    0  0.4  0.6
##  [707,]  0.8    0  0.2  0.0
##  [708,]  1.0    0  0.0  0.0
##  [709,]  1.0    0  0.0  0.0
##  [710,]  0.1    0  0.4  0.5
##  [711,]  0.1    0  0.4  0.5
##  [712,]  1.0    0  0.0  0.0
##  [713,]  1.0    0  0.0  0.0
##  [714,]  0.8    0  0.2  0.0
##  [715,]  1.0    0  0.0  0.0
##  [716,]  0.9    0  0.1  0.0
##  [717,]  0.0    0  0.4  0.6
##  [718,]  0.8    0  0.2  0.0
##  [719,]  1.0    0  0.0  0.0
##  [720,]  1.0    0  0.0  0.0
##  [721,]  1.0    0  0.0  0.0
##  [722,]  0.8    0  0.2  0.0
##  [723,]  0.1    0  0.4  0.5
##  [724,]  0.4    0  0.4  0.2
##  [725,]  0.0    0  0.4  0.6
##  [726,]  1.0    0  0.0  0.0
##  [727,]  1.0    0  0.0  0.0
##  [728,]  0.0    0  0.4  0.6
##  [729,]  0.9    0  0.1  0.0
##  [730,]  1.0    0  0.0  0.0
##  [731,]  0.1    0  0.4  0.5
##  [732,]  0.7    0  0.3  0.0
##  [733,]  1.0    0  0.0  0.0
##  [734,]  0.0    0  0.4  0.6
##  [735,]  0.0    0  0.4  0.6
##  [736,]  0.0    0  0.4  0.6
##  [737,]  0.8    0  0.2  0.0
##  [738,]  0.1    0  0.4  0.5
##  [739,]  0.9    0  0.1  0.0
##  [740,]  1.0    0  0.0  0.0
##  [741,]  0.4    0  0.4  0.2
##  [742,]  0.1    0  0.4  0.5
##  [743,]  0.9    0  0.1  0.0
##  [744,]  0.0    0  0.4  0.6
##  [745,]  1.0    0  0.0  0.0
##  [746,]  0.0    0  0.4  0.6
##  [747,]  1.0    0  0.0  0.0
##  [748,]  1.0    0  0.0  0.0
##  [749,]  1.0    0  0.0  0.0
##  [750,]  1.0    0  0.0  0.0
##  [751,]  0.0    0  0.4  0.6
##  [752,]  1.0    0  0.0  0.0
##  [753,]  0.1    0  0.4  0.5
##  [754,]  1.0    0  0.0  0.0
##  [755,]  1.0    0  0.0  0.0
##  [756,]  0.0    0  0.4  0.6
##  [757,]  0.8    0  0.2  0.0
##  [758,]  0.8    0  0.2  0.0
##  [759,]  0.4    0  0.4  0.2
```

```
##  [760,]  0.1    0  0.4  0.5
##  [761,]  0.1    0  0.4  0.5
##  [762,]  0.8    0  0.2  0.0
##  [763,]  1.0    0  0.0  0.0
##  [764,]  0.4    0  0.4  0.2
##  [765,]  0.4    0  0.4  0.2
##  [766,]  1.0    0  0.0  0.0
##  [767,]  1.0    0  0.0  0.0
##  [768,]  0.8    0  0.2  0.0
##  [769,]  0.1    0  0.4  0.5
##  [770,]  1.0    0  0.0  0.0
##  [771,]  1.0    0  0.0  0.0
##  [772,]  0.0    0  0.4  0.6
##  [773,]  0.8    0  0.2  0.0
##  [774,]  1.0    0  0.0  0.0
##  [775,]  0.0    0  0.4  0.6
##  [776,]  0.0    0  0.4  0.6
##  [777,]  0.0    0  0.4  0.6
##  [778,]  0.0    0  0.4  0.6
##  [779,]  0.0    0  0.4  0.6
##  [780,]  0.0    0  0.4  0.6
##  [781,]  1.0    0  0.0  0.0
##  [782,]  0.1    0  0.4  0.5
##  [783,]  0.1    0  0.4  0.5
##  [784,]  0.0    0  0.4  0.6
##  [785,]  0.0    0  0.4  0.6
##  [786,]  0.1    0  0.4  0.5
##  [787,]  0.5    0  0.4  0.1
##  [788,]  0.4    0  0.4  0.2
##  [789,]  1.0    0  0.0  0.0
##  [790,]  0.1    0  0.4  0.5
##  [791,]  1.0    0  0.0  0.0
##  [792,]  0.5    0  0.4  0.1
##  [793,]  0.4    0  0.4  0.2
##  [794,]  1.0    0  0.0  0.0
##  [795,]  0.0    0  0.4  0.6
##  [796,]  1.0    0  0.0  0.0
##  [797,]  0.0    0  0.4  0.6
##  [798,]  0.1    0  0.4  0.5
##  [799,]  0.0    0  0.4  0.6
##  [800,]  0.5    0  0.4  0.1
##  [801,]  0.3    0  0.4  0.3
##  [802,]  0.1    0  0.4  0.5
##  [803,]  0.8    0  0.2  0.0
##  [804,]  0.9    0  0.1  0.0
##  [805,]  0.7    0  0.3  0.0
##  [806,]  0.8    0  0.2  0.0
##  [807,]  0.0    0  0.4  0.6
##  [808,]  0.9    0  0.1  0.0
##  [809,]  0.0    0  0.4  0.6
##  [810,]  1.0    0  0.0  0.0
##  [811,]  0.4    0  0.4  0.2
##  [812,]  1.0    0  0.0  0.0
##  [813,]  0.1    0  0.4  0.5
```

```
##  [814,]  0.0    0  0.4  0.6
##  [815,]  0.2    0  0.4  0.4
##  [816,]  0.8    0  0.2  0.0
##  [817,]  0.0    0  0.4  0.6
##  [818,]  1.0    0  0.0  0.0
##  [819,]  0.9    0  0.1  0.0
##  [820,]  0.0    0  0.4  0.6
##  [821,]  1.0    0  0.0  0.0
##  [822,]  0.0    0  0.4  0.6
##  [823,]  0.1    0  0.4  0.5
##  [824,]  0.0    0  0.4  0.6
##  [825,]  0.0    0  0.4  0.6
##  [826,]  0.0    0  0.4  0.6
##  [827,]  0.0    0  0.4  0.6
##  [828,]  1.0    0  0.0  0.0
##  [829,]  0.0    0  0.4  0.6
##  [830,]  1.0    0  0.0  0.0
##  [831,]  1.0    0  0.0  0.0
##  [832,]  1.0    0  0.0  0.0
##  [833,]  0.5    0  0.4  0.1
##  [834,]  0.0    0  0.4  0.6
##  [835,]  1.0    0  0.0  0.0
##  [836,]  0.0    0  0.4  0.6
##  [837,]  1.0    0  0.0  0.0
##  [838,]  0.0    0  0.4  0.6
##  [839,]  1.0    0  0.0  0.0
##  [840,]  0.9    0  0.1  0.0
##  [841,]  0.4    0  0.4  0.2
##  [842,]  0.1    0  0.4  0.5
##  [843,]  0.8    0  0.2  0.0
##  [844,]  0.0    0  0.4  0.6
##  [845,]  1.0    0  0.0  0.0
##  [846,]  0.1    0  0.4  0.5
##  [847,]  0.8    0  0.2  0.0
##  [848,]  0.1    0  0.4  0.5
##  [849,]  0.7    0  0.3  0.0
##  [850,]  0.8    0  0.2  0.0
##  [851,]  0.0    0  0.4  0.6
##  [852,]  1.0    0  0.0  0.0
##  [853,]  0.3    0  0.4  0.3
##  [854,]  1.0    0  0.0  0.0
##  [855,]  0.0    0  0.4  0.6
##  [856,]  1.0    0  0.0  0.0
##  [857,]  0.0    0  0.4  0.6
##  [858,]  0.8    0  0.2  0.0
##  [859,]  0.0    0  0.4  0.6
##  [860,]  0.5    0  0.4  0.1
##  [861,]  0.8    0  0.2  0.0
##  [862,]  0.0    0  0.4  0.6
##  [863,]  0.1    0  0.4  0.5
##  [864,]  1.0    0  0.0  0.0
##  [865,]  0.7    0  0.3  0.0
##  [866,]  0.1    0  0.4  0.5
##  [867,]  0.0    0  0.4  0.6
```

```
##  [868,]  1.0    0  0.0  0.0
##  [869,]  1.0    0  0.0  0.0
##  [870,]  1.0    0  0.0  0.0
##  [871,]  0.1    0  0.4  0.5
##  [872,]  0.0    0  0.4  0.6
##  [873,]  1.0    0  0.0  0.0
##  [874,]  1.0    0  0.0  0.0
##  [875,]  1.0    0  0.0  0.0
##  [876,]  0.5    0  0.4  0.1
##  [877,]  0.0    0  0.4  0.6
##  [878,]  1.0    0  0.0  0.0
##  [879,]  0.1    0  0.4  0.5
##  [880,]  0.8    0  0.2  0.0
##  [881,]  1.0    0  0.0  0.0
##  [882,]  0.1    0  0.4  0.5
##  [883,]  1.0    0  0.0  0.0
##  [884,]  0.1    0  0.4  0.5
##  [885,]  0.4    0  0.4  0.2
##  [886,]  0.0    0  0.4  0.6
##  [887,]  1.0    0  0.0  0.0
##  [888,]  1.0    0  0.0  0.0
##  [889,]  0.0    0  0.4  0.6
##  [890,]  0.0    0  0.4  0.6
##  [891,]  0.7    0  0.3  0.0
##  [892,]  0.0    0  0.4  0.6
##  [893,]  0.8    0  0.2  0.0
##  [894,]  1.0    0  0.0  0.0
##  [895,]  0.0    0  0.4  0.6
##  [896,]  1.0    0  0.0  0.0
##  [897,]  0.0    0  0.4  0.6
##  [898,]  1.0    0  0.0  0.0
##  [899,]  0.1    0  0.4  0.5
##  [900,]  0.0    0  0.4  0.6
##  [901,]  0.9    0  0.1  0.0
##  [902,]  1.0    0  0.0  0.0
##  [903,]  0.1    0  0.4  0.5
##  [904,]  1.0    0  0.0  0.0
##  [905,]  1.0    0  0.0  0.0
##  [906,]  0.0    0  0.4  0.6
##  [907,]  0.7    0  0.3  0.0
##  [908,]  0.1    0  0.4  0.5
##  [909,]  0.7    0  0.3  0.0
##  [910,]  1.0    0  0.0  0.0
##  [911,]  0.0    0  0.4  0.6
##  [912,]  0.7    0  0.3  0.0
##  [913,]  1.0    0  0.0  0.0
##  [914,]  0.0    0  0.4  0.6
##  [915,]  1.0    0  0.0  0.0
##  [916,]  0.1    0  0.4  0.5
##  [917,]  0.2    0  0.4  0.4
##  [918,]  0.0    0  0.4  0.6
##  [919,]  0.1    0  0.4  0.5
##  [920,]  1.0    0  0.0  0.0
##  [921,]  0.0    0  0.4  0.6
```

```
##  [922,]  1.0    0  0.0  0.0
##  [923,]  0.0    0  0.4  0.6
##  [924,]  0.5    0  0.4  0.1
##  [925,]  0.9    0  0.1  0.0
##  [926,]  0.8    0  0.2  0.0
##  [927,]  0.0    0  0.4  0.6
##  [928,]  0.5    0  0.4  0.1
##  [929,]  0.0    0  0.4  0.6
##  [930,]  0.5    0  0.4  0.1
##  [931,]  0.0    0  0.4  0.6
##  [932,]  1.0    0  0.0  0.0
##  [933,]  1.0    0  0.0  0.0
##  [934,]  0.0    0  0.4  0.6
##  [935,]  0.0    0  0.4  0.6
##  [936,]  0.8    0  0.2  0.0
##  [937,]  0.8    0  0.2  0.0
##  [938,]  0.8    0  0.2  0.0
##  [939,]  0.8    0  0.2  0.0
##  [940,]  0.0    0  0.4  0.6
##  [941,]  0.5    0  0.4  0.1
##  [942,]  1.0    0  0.0  0.0
##  [943,]  1.0    0  0.0  0.0
##  [944,]  0.7    0  0.3  0.0
##  [945,]  0.9    0  0.1  0.0
##  [946,]  0.8    0  0.2  0.0
##  [947,]  0.0    0  0.4  0.6
##  [948,]  0.1    0  0.4  0.5
##  [949,]  0.0    0  0.4  0.6
##  [950,]  0.0    0  0.4  0.6
##  [951,]  0.8    0  0.2  0.0
##  [952,]  0.4    0  0.4  0.2
##  [953,]  0.9    0  0.1  0.0
##  [954,]  0.1    0  0.4  0.5
##  [955,]  0.8    0  0.2  0.0
##  [956,]  0.0    0  0.4  0.6
##  [957,]  0.0    0  0.4  0.6
##  [958,]  0.0    0  0.4  0.6
##  [959,]  1.0    0  0.0  0.0
##  [960,]  0.0    0  0.4  0.6
##  [961,]  0.0    0  0.4  0.6
##  [962,]  1.0    0  0.0  0.0
##  [963,]  0.0    0  0.4  0.6
##  [964,]  0.0    0  0.4  0.6
##  [965,]  0.3    0  0.4  0.3
##  [966,]  0.8    0  0.2  0.0
##  [967,]  0.9    0  0.1  0.0
##  [968,]  0.1    0  0.4  0.5
##  [969,]  0.8    0  0.2  0.0
##  [970,]  1.0    0  0.0  0.0
##  [971,]  1.0    0  0.0  0.0
##  [972,]  1.0    0  0.0  0.0
##  [973,]  0.0    0  0.4  0.6
##  [974,]  0.8    0  0.2  0.0
##  [975,]  1.0    0  0.0  0.0
```

```
##  [976,]  1.0    0  0.0  0.0
##  [977,]  0.1    0  0.4  0.5
##  [978,]  1.0    0  0.0  0.0
##  [979,]  0.1    0  0.4  0.5
##  [980,]  0.0    0  0.4  0.6
##  [981,]  0.8    0  0.2  0.0
##  [982,]  0.9    0  0.1  0.0
##  [983,]  1.0    0  0.0  0.0
##  [984,]  0.8    0  0.2  0.0
##  [985,]  0.1    0  0.4  0.5
##  [986,]  1.0    0  0.0  0.0
##  [987,]  1.0    0  0.0  0.0
##  [988,]  0.0    0  0.4  0.6
##  [989,]  0.1    0  0.4  0.5
##  [990,]  0.0    0  0.4  0.6
##  [991,]  0.8    0  0.2  0.0
##  [992,]  0.4    0  0.4  0.2
##  [993,]  1.0    0  0.0  0.0
##  [994,]  1.0    0  0.0  0.0
##  [995,]  1.0    0  0.0  0.0
##  [996,]  0.0    0  0.4  0.6
##  [997,]  1.0    0  0.0  0.0
##  [998,]  1.0    0  0.0  0.0
##  [999,]  0.9    0  0.1  0.0
## [1000,]  1.0    0  0.0  0.0
## [1001,]  0.8    0  0.2  0.0
## [1002,]  0.0    0  0.4  0.6
## [1003,]  1.0    0  0.0  0.0
## [1004,]  1.0    0  0.0  0.0
## [1005,]  0.4    0  0.4  0.2
## [1006,]  1.0    0  0.0  0.0
## [1007,]  0.8    0  0.2  0.0
## [1008,]  0.5    0  0.4  0.1
## [1009,]  1.0    0  0.0  0.0
## [1010,]  1.0    0  0.0  0.0
## [1011,]  0.0    0  0.4  0.6
## [1012,]  0.8    0  0.2  0.0
## [1013,]  0.9    0  0.1  0.0
## [1014,]  0.9    0  0.1  0.0
## [1015,]  0.0    0  0.4  0.6
## [1016,]  0.0    0  0.4  0.6
## [1017,]  1.0    0  0.0  0.0
## [1018,]  0.9    0  0.1  0.0
## [1019,]  1.0    0  0.0  0.0
## [1020,]  0.0    0  0.4  0.6
## [1021,]  0.8    0  0.2  0.0
## [1022,]  1.0    0  0.0  0.0
## [1023,]  0.1    0  0.4  0.5
## [1024,]  1.0    0  0.0  0.0
## [1025,]  0.4    0  0.4  0.2
## [1026,]  1.0    0  0.0  0.0
## [1027,]  0.3    0  0.4  0.3
## [1028,]  0.1    0  0.4  0.5
## [1029,]  0.8    0  0.2  0.0
```

```
## [1030,]  0.5    0  0.4  0.1
## [1031,]  0.5    0  0.4  0.1
## [1032,]  0.8    0  0.2  0.0
## [1033,]  0.0    0  0.4  0.6
## [1034,]  0.0    0  0.4  0.6
## [1035,]  0.0    0  0.4  0.6
## [1036,]  1.0    0  0.0  0.0
## [1037,]  0.8    0  0.2  0.0
## [1038,]  0.5    0  0.4  0.1
## [1039,]  0.0    0  0.4  0.6
## [1040,]  0.9    0  0.1  0.0
## [1041,]  0.9    0  0.1  0.0
## [1042,]  1.0    0  0.0  0.0
## [1043,]  0.4    0  0.4  0.2
## [1044,]  0.0    0  0.4  0.6
## [1045,]  0.0    0  0.4  0.6
## [1046,]  0.8    0  0.2  0.0
## [1047,]  0.0    0  0.4  0.6
## [1048,]  0.0    0  0.4  0.6
## [1049,]  0.5    0  0.4  0.1
## [1050,]  0.1    0  0.4  0.5
## [1051,]  1.0    0  0.0  0.0
## [1052,]  1.0    0  0.0  0.0
## [1053,]  0.4    0  0.4  0.2
## [1054,]  0.0    0  0.4  0.6
## [1055,]  1.0    0  0.0  0.0
## [1056,]  0.4    0  0.4  0.2
## [1057,]  1.0    0  0.0  0.0
## [1058,]  1.0    0  0.0  0.0
## [1059,]  1.0    0  0.0  0.0
## [1060,]  1.0    0  0.0  0.0
## [1061,]  0.0    0  0.4  0.6
## [1062,]  0.5    0  0.4  0.1
## [1063,]  0.7    0  0.3  0.0
## [1064,]  0.1    0  0.4  0.5
## [1065,]  0.8    0  0.2  0.0
## [1066,]  0.9    0  0.1  0.0
## [1067,]  0.0    0  0.4  0.6
## [1068,]  0.4    0  0.4  0.2
## [1069,]  0.4    0  0.4  0.2
## [1070,]  0.4    0  0.4  0.2
## [1071,]  0.0    0  0.4  0.6
## [1072,]  0.2    0  0.4  0.4
## [1073,]  0.7    0  0.3  0.0
## [1074,]  1.0    0  0.0  0.0
## [1075,]  0.0    0  0.4  0.6
## [1076,]  0.0    0  0.4  0.6
## [1077,]  0.9    0  0.1  0.0
## [1078,]  0.7    0  0.3  0.0
## [1079,]  1.0    0  0.0  0.0
## [1080,]  0.9    0  0.1  0.0
## [1081,]  0.0    0  0.4  0.6
## [1082,]  0.9    0  0.1  0.0
## [1083,]  1.0    0  0.0  0.0
```

```
## [1084,]  0.0    0  0.4  0.6
## [1085,]  0.0    0  0.4  0.6
## [1086,]  1.0    0  0.0  0.0
## [1087,]  0.0    0  0.4  0.6
## [1088,]  0.8    0  0.2  0.0
## [1089,]  0.1    0  0.4  0.5
## [1090,]  0.1    0  0.4  0.5
## [1091,]  1.0    0  0.0  0.0
## [1092,]  0.8    0  0.2  0.0
## [1093,]  0.0    0  0.4  0.6
## [1094,]  0.1    0  0.4  0.5
## [1095,]  0.1    0  0.4  0.5
## [1096,]  0.4    0  0.4  0.2
## [1097,]  0.3    0  0.4  0.3
## [1098,]  0.9    0  0.1  0.0
## [1099,]  0.5    0  0.4  0.1
## [1100,]  1.0    0  0.0  0.0
## [1101,]  0.0    0  0.4  0.6
## [1102,]  0.0    0  0.4  0.6
## [1103,]  0.4    0  0.4  0.2
## [1104,]  0.4    0  0.4  0.2
## [1105,]  0.3    0  0.4  0.3
## [1106,]  0.1    0  0.4  0.5
## [1107,]  1.0    0  0.0  0.0
## [1108,]  1.0    0  0.0  0.0
## [1109,]  0.0    0  0.4  0.6
## [1110,]  1.0    0  0.0  0.0
## [1111,]  0.0    0  0.4  0.6
## [1112,]  0.0    0  0.4  0.6
## [1113,]  1.0    0  0.0  0.0
## [1114,]  0.0    0  0.4  0.6
## [1115,]  1.0    0  0.0  0.0
## [1116,]  0.6    0  0.4  0.0
## [1117,]  1.0    0  0.0  0.0
## [1118,]  1.0    0  0.0  0.0
## [1119,]  1.0    0  0.0  0.0
## [1120,]  1.0    0  0.0  0.0
## [1121,]  1.0    0  0.0  0.0
## [1122,]  0.0    0  0.4  0.6
## [1123,]  0.8    0  0.2  0.0
## [1124,]  0.8    0  0.2  0.0
## [1125,]  0.0    0  0.4  0.6
## [1126,]  0.0    0  0.4  0.6
## [1127,]  0.3    0  0.4  0.3
## [1128,]  0.8    0  0.2  0.0
## [1129,]  0.0    0  0.4  0.6
## [1130,]  1.0    0  0.0  0.0
## [1131,]  0.0    0  0.4  0.6
## [1132,]  0.0    0  0.4  0.6
## [1133,]  1.0    0  0.0  0.0
## [1134,]  0.0    0  0.4  0.6
## [1135,]  0.1    0  0.4  0.5
## [1136,]  0.9    0  0.1  0.0
## [1137,]  0.0    0  0.4  0.6
```

```
## [1138,]  0.0    0  0.4  0.6
## [1139,]  0.1    0  0.4  0.5
## [1140,]  0.0    0  0.4  0.6
## [1141,]  0.1    0  0.4  0.5
## [1142,]  0.0    0  0.4  0.6
## [1143,]  0.0    0  0.4  0.6
## [1144,]  0.0    0  0.4  0.6
## [1145,]  0.1    0  0.4  0.5
## [1146,]  0.8    0  0.2  0.0
## [1147,]  0.0    0  0.4  0.6
## [1148,]  0.7    0  0.3  0.0
## [1149,]  1.0    0  0.0  0.0
## [1150,]  0.8    0  0.2  0.0
## [1151,]  1.0    0  0.0  0.0
## [1152,]  0.0    0  0.4  0.6
## [1153,]  0.0    0  0.4  0.6
## [1154,]  0.8    0  0.2  0.0
## [1155,]  1.0    0  0.0  0.0
## [1156,]  0.8    0  0.2  0.0
## [1157,]  1.0    0  0.0  0.0
## [1158,]  0.8    0  0.2  0.0
## [1159,]  0.8    0  0.2  0.0
## [1160,]  0.1    0  0.4  0.5
## [1161,]  0.0    0  0.4  0.6
## [1162,]  0.0    0  0.4  0.6
## [1163,]  0.0    0  0.4  0.6
## [1164,]  0.8    0  0.2  0.0
## [1165,]  0.4    0  0.4  0.2
## [1166,]  1.0    0  0.0  0.0
## [1167,]  0.8    0  0.2  0.0
## [1168,]  0.0    0  0.4  0.6
## [1169,]  0.9    0  0.1  0.0
## [1170,]  1.0    0  0.0  0.0
## [1171,]  0.8    0  0.2  0.0
## [1172,]  1.0    0  0.0  0.0
## [1173,]  0.0    0  0.4  0.6
## [1174,]  1.0    0  0.0  0.0
## [1175,]  0.4    0  0.4  0.2
## [1176,]  0.0    0  0.4  0.6
## [1177,]  0.4    0  0.4  0.2
## [1178,]  1.0    0  0.0  0.0
## [1179,]  0.8    0  0.2  0.0
## [1180,]  0.1    0  0.4  0.5
## [1181,]  0.8    0  0.2  0.0
## [1182,]  0.8    0  0.2  0.0
## [1183,]  0.7    0  0.3  0.0
## [1184,]  0.0    0  0.4  0.6
## [1185,]  0.8    0  0.2  0.0
## [1186,]  0.0    0  0.4  0.6
## [1187,]  0.8    0  0.2  0.0
## [1188,]  0.8    0  0.2  0.0
## [1189,]  0.0    0  0.4  0.6
## [1190,]  0.0    0  0.4  0.6
## [1191,]  0.8    0  0.2  0.0
```

```
## [1192,]  0.3    0  0.4  0.3
## [1193,]  0.0    0  0.4  0.6
## [1194,]  0.0    0  0.4  0.6
## [1195,]  0.0    0  0.4  0.6
## [1196,]  1.0    0  0.0  0.0
## [1197,]  0.0    0  0.4  0.6
## [1198,]  0.0    0  0.4  0.6
## [1199,]  0.8    0  0.2  0.0
## [1200,]  0.0    0  0.4  0.6
## [1201,]  0.1    0  0.4  0.5
## [1202,]  0.8    0  0.2  0.0
## [1203,]  0.0    0  0.4  0.6
## [1204,]  0.0    0  0.4  0.6
## [1205,]  1.0    0  0.0  0.0
## [1206,]  0.0    0  0.4  0.6
## [1207,]  1.0    0  0.0  0.0
## [1208,]  0.0    0  0.4  0.6
## [1209,]  0.0    0  0.4  0.6
## [1210,]  0.0    0  0.4  0.6
## [1211,]  0.1    0  0.4  0.5
## [1212,]  0.1    0  0.4  0.5
## [1213,]  1.0    0  0.0  0.0
## [1214,]  0.1    0  0.4  0.5
## [1215,]  0.7    0  0.3  0.0
## [1216,]  0.1    0  0.4  0.5
## [1217,]  0.0    0  0.4  0.6
## [1218,]  0.0    0  0.4  0.6
## [1219,]  1.0    0  0.0  0.0
## [1220,]  0.0    0  0.4  0.6
## [1221,]  0.0    0  0.4  0.6
## [1222,]  0.0    0  0.4  0.6
## [1223,]  1.0    0  0.0  0.0
## [1224,]  0.0    0  0.4  0.6
## [1225,]  0.1    0  0.4  0.5
## [1226,]  0.0    0  0.4  0.6
## [1227,]  0.8    0  0.2  0.0
## [1228,]  0.9    0  0.1  0.0
## [1229,]  0.3    0  0.4  0.3
## [1230,]  0.7    0  0.3  0.0
## [1231,]  0.0    0  0.4  0.6
## [1232,]  1.0    0  0.0  0.0
## [1233,]  0.4    0  0.4  0.2
## [1234,]  0.0    0  0.4  0.6
## [1235,]  1.0    0  0.0  0.0
## [1236,]  0.0    0  0.4  0.6
## [1237,]  1.0    0  0.0  0.0
## [1238,]  0.0    0  0.4  0.6
## [1239,]  0.9    0  0.1  0.0
## [1240,]  0.4    0  0.4  0.2
## [1241,]  0.0    0  0.4  0.6
## [1242,]  1.0    0  0.0  0.0
## [1243,]  0.0    0  0.4  0.6
## [1244,]  0.0    0  0.4  0.6
## [1245,]  1.0    0  0.0  0.0
```

```
## [1246,]  0.0    0  0.4  0.6
## [1247,]  1.0    0  0.0  0.0
## [1248,]  1.0    0  0.0  0.0
## [1249,]  0.0    0  0.4  0.6
## [1250,]  0.8    0  0.2  0.0
## [1251,]  0.4    0  0.4  0.2
## [1252,]  0.0    0  0.4  0.6
## [1253,]  0.0    0  0.4  0.6
## [1254,]  0.1    0  0.4  0.5
## [1255,]  1.0    0  0.0  0.0
## [1256,]  0.5    0  0.4  0.1
## [1257,]  0.8    0  0.2  0.0
## [1258,]  0.8    0  0.2  0.0
## [1259,]  0.7    0  0.3  0.0
## [1260,]  0.0    0  0.4  0.6
## [1261,]  1.0    0  0.0  0.0
## [1262,]  0.4    0  0.4  0.2
## [1263,]  1.0    0  0.0  0.0
## [1264,]  0.3    0  0.4  0.3
## [1265,]  0.7    0  0.3  0.0
## [1266,]  0.9    0  0.1  0.0
## [1267,]  0.8    0  0.2  0.0
## [1268,]  1.0    0  0.0  0.0
## [1269,]  0.5    0  0.4  0.1
## [1270,]  1.0    0  0.0  0.0
## [1271,]  0.5    0  0.4  0.1
## [1272,]  0.0    0  0.4  0.6
## [1273,]  0.8    0  0.2  0.0
## [1274,]  1.0    0  0.0  0.0
## [1275,]  1.0    0  0.0  0.0
## [1276,]  0.0    0  0.4  0.6
## [1277,]  0.7    0  0.3  0.0
## [1278,]  0.5    0  0.4  0.1
## [1279,]  0.1    0  0.4  0.5
## [1280,]  0.7    0  0.3  0.0
## [1281,]  0.1    0  0.4  0.5
## [1282,]  0.0    0  0.4  0.6
## [1283,]  0.0    0  0.4  0.6
## [1284,]  1.0    0  0.0  0.0
## [1285,]  0.9    0  0.1  0.0
## [1286,]  0.8    0  0.2  0.0
## [1287,]  0.0    0  0.4  0.6
## [1288,]  0.1    0  0.4  0.5
## [1289,]  0.8    0  0.2  0.0
## [1290,]  0.8    0  0.2  0.0
## [1291,]  0.6    0  0.4  0.0
## [1292,]  1.0    0  0.0  0.0
## [1293,]  0.1    0  0.4  0.5
## [1294,]  0.0    0  0.4  0.6
## [1295,]  0.8    0  0.2  0.0
## [1296,]  0.0    0  0.4  0.6
## [1297,]  0.8    0  0.2  0.0
## [1298,]  0.0    0  0.4  0.6
## [1299,]  1.0    0  0.0  0.0
```

```
## [1300,]  0.0    0  0.4  0.6
## [1301,]  1.0    0  0.0  0.0
## [1302,]  0.0    0  0.4  0.6
## [1303,]  1.0    0  0.0  0.0
## [1304,]  1.0    0  0.0  0.0
## [1305,]  1.0    0  0.0  0.0
## [1306,]  0.0    0  0.4  0.6
## [1307,]  0.0    0  0.4  0.6
## [1308,]  1.0    0  0.0  0.0
## [1309,]  1.0    0  0.0  0.0
## [1310,]  1.0    0  0.0  0.0
## [1311,]  0.0    0  0.4  0.6
## [1312,]  0.0    0  0.4  0.6
## [1313,]  0.9    0  0.1  0.0
## [1314,]  1.0    0  0.0  0.0
## [1315,]  1.0    0  0.0  0.0
## [1316,]  0.1    0  0.4  0.5
## [1317,]  0.9    0  0.1  0.0
## [1318,]  0.1    0  0.4  0.5
## [1319,]  1.0    0  0.0  0.0
## [1320,]  0.0    0  0.4  0.6
## [1321,]  1.0    0  0.0  0.0
## [1322,]  0.4    0  0.4  0.2
## [1323,]  1.0    0  0.0  0.0
## [1324,]  0.0    0  0.4  0.6
## [1325,]  1.0    0  0.0  0.0
## [1326,]  1.0    0  0.0  0.0
## [1327,]  0.2    0  0.4  0.4
## [1328,]  1.0    0  0.0  0.0
## [1329,]  0.0    0  0.4  0.6
## [1330,]  1.0    0  0.0  0.0
## [1331,]  0.0    0  0.4  0.6
## [1332,]  0.0    0  0.4  0.6
## [1333,]  1.0    0  0.0  0.0
## [1334,]  1.0    0  0.0  0.0
## [1335,]  0.0    0  0.4  0.6
## [1336,]  0.0    0  0.4  0.6
## [1337,]  0.7    0  0.3  0.0
## [1338,]  0.1    0  0.4  0.5
## [1339,]  1.0    0  0.0  0.0
## [1340,]  0.4    0  0.4  0.2
## [1341,]  1.0    0  0.0  0.0
## [1342,]  1.0    0  0.0  0.0
## [1343,]  0.0    0  0.4  0.6
## [1344,]  1.0    0  0.0  0.0
## [1345,]  0.0    0  0.4  0.6
## [1346,]  0.1    0  0.4  0.5
## [1347,]  0.1    0  0.4  0.5
## [1348,]  0.8    0  0.2  0.0
## [1349,]  0.7    0  0.3  0.0
## [1350,]  0.8    0  0.2  0.0
## [1351,]  1.0    0  0.0  0.0
## [1352,]  0.8    0  0.2  0.0
## [1353,]  0.8    0  0.2  0.0
```

```
## [1354,]  0.7    0  0.3  0.0
## [1355,]  0.1    0  0.4  0.5
## [1356,]  0.8    0  0.2  0.0
## [1357,]  0.4    0  0.4  0.2
## [1358,]  0.1    0  0.4  0.5
## [1359,]  0.5    0  0.4  0.1
## [1360,]  1.0    0  0.0  0.0
## [1361,]  0.8    0  0.2  0.0
## [1362,]  0.3    0  0.4  0.3
## [1363,]  0.7    0  0.3  0.0
## [1364,]  0.0    0  0.4  0.6
## [1365,]  1.0    0  0.0  0.0
## [1366,]  0.6    0  0.4  0.0
## [1367,]  0.8    0  0.2  0.0
## [1368,]  0.0    0  0.4  0.6
## [1369,]  1.0    0  0.0  0.0
## [1370,]  0.1    0  0.4  0.5
## [1371,]  0.9    0  0.1  0.0
## [1372,]  0.8    0  0.2  0.0
## [1373,]  0.1    0  0.4  0.5
## [1374,]  1.0    0  0.0  0.0
## [1375,]  0.1    0  0.4  0.5
## [1376,]  0.7    0  0.3  0.0
## [1377,]  0.4    0  0.4  0.2
## [1378,]  1.0    0  0.0  0.0
## [1379,]  0.0    0  0.4  0.6
## [1380,]  0.5    0  0.4  0.1
## [1381,]  0.0    0  0.4  0.6
## [1382,]  1.0    0  0.0  0.0
## [1383,]  0.3    0  0.4  0.3
## [1384,]  0.8    0  0.2  0.0
## [1385,]  0.8    0  0.2  0.0
## [1386,]  0.7    0  0.3  0.0
## [1387,]  1.0    0  0.0  0.0
## [1388,]  0.3    0  0.4  0.3
## [1389,]  0.0    0  0.4  0.6
## [1390,]  0.4    0  0.4  0.2
## [1391,]  0.8    0  0.2  0.0
## [1392,]  0.9    0  0.1  0.0
## [1393,]  0.1    0  0.4  0.5
## [1394,]  0.0    0  0.4  0.6
## [1395,]  0.0    0  0.4  0.6
## [1396,]  1.0    0  0.0  0.0
## [1397,]  0.7    0  0.3  0.0
## [1398,]  0.0    0  0.4  0.6
## [1399,]  1.0    0  0.0  0.0
## [1400,]  0.0    0  0.4  0.6
##
## $class
##    [1] "3" "3" "3" "0" "0" "0" "3" "3" "0" "3" "0" "0" "3" "2" "0" "0" "3" "3"
##   [19] "3" "3" "0" "3" "0" "0" "3" "3" "0" "3" "0" "0" "0" "0" "3" "0" "3" "0"
##   [37] "0" "0" "3" "3" "3" "0" "0" "0" "0" "3" "3" "3" "3" "0" "3" "3" "0" "3"
##   [55] "0" "0" "3" "0" "3" "3" "0" "0" "0" "0" "3" "2" "3" "0" "0" "0" "0" "0"
##   [73] "0" "3" "0" "3" "0" "0" "0" "3" "3" "0" "0" "0" "3" "3" "3" "0" "3" "3"
```

```
##   [91] "3" "3" "3" "3" "0" "3" "0" "0" "3" "0" "0" "0" "0" "3" "0" "3" "0" "3"
##  [109] "2" "0" "0" "0" "3" "0" "3" "3" "0" "2" "3" "0" "0" "3" "0" "3" "3" "0"
##  [127] "0" "3" "3" "0" "0" "0" "2" "3" "3" "0" "3" "3" "3" "0" "3" "3" "0" "0"
##  [145] "0" "0" "3" "3" "0" "3" "3" "0" "0" "3" "3" "3" "3" "3" "3" "3" "3" "0"
##  [163] "0" "3" "0" "0" "3" "0" "3" "3" "0" "3" "3" "0" "0" "0" "3" "3" "0" "0"
##  [181] "0" "3" "0" "0" "0" "3" "0" "3" "3" "0" "3" "0" "3" "3" "0" "0" "3" "0"
##  [199] "0" "2" "0" "3" "3" "3" "0" "0" "0" "3" "0" "0" "3" "0" "0" "3" "0" "0"
##  [217] "3" "0" "3" "0" "3" "3" "0" "0" "0" "0" "3" "0" "0" "0" "3" "3" "0" "0"
##  [235] "0" "0" "0" "3" "3" "0" "0" "3" "0" "0" "3" "3" "3" "3" "3" "3" "3" "3"
##  [253] "0" "0" "3" "0" "0" "3" "3" "0" "0" "3" "3" "3" "0" "3" "3" "0" "3" "0"
##  [271] "0" "3" "2" "3" "2" "3" "3" "3" "0" "3" "3" "0" "0" "3" "3" "3" "0" "3"
##  [289] "3" "0" "3" "0" "0" "3" "0" "3" "2" "0" "0" "0" "3" "0" "0" "3" "3" "0"
##  [307] "0" "0" "3" "0" "0" "3" "0" "0" "3" "0" "0" "3" "0" "3" "0" "0" "3" "2"
##  [325] "0" "0" "0" "3" "0" "0" "0" "3" "3" "0" "2" "3" "3" "3" "0" "3" "0" "3"
##  [343] "0" "0" "3" "0" "0" "0" "0" "3" "0" "3" "3" "0" "3" "0" "0" "0" "3" "0"
##  [361] "3" "3" "0" "3" "0" "3" "3" "3" "3" "0" "3" "3" "3" "3" "3" "2" "3" "3"
##  [379] "3" "0" "3" "0" "0" "3" "0" "0" "3" "0" "0" "0" "0" "3" "3" "0" "0" "0"
##  [397] "3" "0" "0" "3" "3" "3" "3" "0" "3" "3" "0" "0" "3" "3" "3" "0" "3" "0"
##  [415] "0" "3" "3" "0" "3" "0" "0" "0" "3" "0" "0" "0" "3" "0" "3" "0" "3" "0"
##  [433] "3" "3" "0" "3" "0" "0" "2" "0" "0" "0" "0" "0" "3" "3" "0" "3" "0" "0" "0"
##  [451] "3" "0" "3" "0" "3" "0" "3" "0" "0" "0" "0" "0" "0" "0" "0" "0" "3" "3" "0"
##  [469] "0" "0" "0" "3" "3" "3" "3" "3" "0" "0" "0" "3" "3" "0" "3" "0" "0" "3"
##  [487] "0" "3" "3" "3" "0" "3" "0" "0" "3" "0" "3" "3" "0" "3" "3" "0" "0" "0"
##  [505] "0" "0" "0" "3" "3" "3" "3" "3" "0" "3" "3" "0" "3" "3" "0" "0" "0" "0"
##  [523] "3" "0" "3" "0" "0" "0" "3" "0" "0" "3" "0" "3" "3" "0" "0" "0" "3" "3"
##  [541] "0" "3" "3" "0" "0" "0" "3" "3" "3" "3" "3" "0" "0" "3" "0" "0" "3" "0"
##  [559] "0" "3" "3" "3" "3" "0" "0" "0" "0" "3" "3" "0" "0" "3" "3" "0" "3" "3"
##  [577] "3" "3" "3" "3" "3" "3" "3" "3" "3" "3" "3" "3" "0" "3" "0" "0" "3" "0"
##  [595] "0" "3" "0" "0" "2" "0" "3" "2" "0" "3" "0" "0" "3" "0" "3" "3" "0" "3"
##  [613] "3" "3" "2" "0" "0" "0" "0" "3" "3" "3" "3" "0" "3" "3" "0" "0" "0" "3"
##  [631] "3" "0" "3" "0" "0" "3" "0" "3" "0" "3" "0" "0" "0" "0" "3" "3" "0" "0"
##  [649] "3" "3" "0" "0" "3" "0" "3" "3" "3" "3" "3" "3" "3" "3" "0" "0" "0" "3"
##  [667] "0" "0" "0" "0" "0" "0" "3" "3" "0" "3" "3" "3" "0" "0" "0" "0" "0" "3"
##  [685] "0" "0" "3" "0" "0" "3" "3" "0" "0" "0" "3" "3" "0" "0" "0" "0" "0" "0"
##  [703] "3" "3" "3" "3" "0" "0" "0" "3" "3" "0" "0" "0" "0" "0" "3" "0" "0" "0"
##  [721] "0" "0" "3" "0" "3" "0" "0" "3" "0" "0" "3" "0" "0" "3" "3" "3" "0" "3"
##  [739] "0" "0" "0" "3" "0" "3" "0" "3" "0" "0" "0" "0" "3" "0" "3" "0" "0" "3"
##  [757] "0" "0" "0" "3" "3" "0" "0" "0" "0" "0" "0" "0" "3" "0" "0" "3" "0" "0"
##  [775] "3" "3" "3" "3" "3" "3" "0" "3" "3" "3" "3" "3" "0" "0" "0" "3" "0" "0"
##  [793] "0" "0" "3" "0" "3" "3" "3" "0" "2" "3" "0" "0" "0" "0" "3" "0" "3" "0"
##  [811] "0" "0" "3" "3" "2" "0" "3" "0" "0" "3" "0" "3" "3" "3" "3" "3" "3" "0"
##  [829] "3" "0" "0" "0" "0" "3" "0" "3" "0" "3" "0" "0" "0" "3" "0" "3" "0" "3"
##  [847] "0" "3" "0" "0" "3" "0" "2" "0" "3" "0" "3" "0" "3" "0" "0" "3" "3" "0"
##  [865] "0" "3" "3" "0" "0" "0" "3" "3" "0" "0" "0" "0" "3" "0" "3" "0" "0" "3"
##  [883] "0" "3" "0" "3" "0" "0" "3" "3" "0" "3" "0" "0" "3" "0" "3" "0" "3" "3"
##  [901] "0" "0" "3" "0" "0" "3" "0" "3" "0" "0" "3" "0" "0" "3" "0" "3" "2" "3"
##  [919] "3" "0" "3" "0" "3" "0" "0" "0" "3" "0" "3" "0" "3" "0" "0" "3" "3" "0"
##  [937] "0" "0" "0" "3" "0" "0" "0" "0" "0" "0" "0" "3" "3" "3" "3" "0" "0" "0" "3"
##  [955] "0" "3" "3" "3" "0" "3" "3" "0" "3" "3" "2" "0" "0" "3" "0" "0" "0" "0"
##  [973] "3" "0" "0" "0" "3" "0" "3" "3" "0" "0" "0" "0" "3" "0" "0" "3" "3" "3"
##  [991] "0" "0" "0" "0" "0" "3" "0" "0" "0" "0" "0" "3" "0" "0" "0" "0" "0" "0"
## [1009] "0" "0" "3" "0" "0" "0" "3" "3" "0" "0" "0" "3" "0" "0" "3" "0" "0" "0"
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## [1171] "0" "0" "3" "0" "0" "3" "0" "0" "0" "3" "0" "0" "0" "3" "0" "3" "0" "0"
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## [1207] "0" "3" "3" "3" "3" "3" "0" "3" "0" "3" "3" "3" "0" "3" "3" "3" "0" "3"
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## [1243] "3" "3" "0" "3" "0" "0" "3" "0" "0" "3" "3" "3" "0" "0" "0" "0" "0" "3"
## [1261] "0" "0" "0" "2" "0" "0" "0" "0" "0" "0" "0" "3" "0" "0" "0" "3" "0" "0"
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##
## $samples
##         [,1] [,2] [,3] [,4] [,5] [,6] [,7] [,8] [,9] [,10]
##    [1,]   73 1357 1220  566   30  545  943 1037  977   813
##    [2,]  168  871  893 1311  409 1013  159 1164 1197   141
##    [3,]  822  404  569  344 1090 1331  997 1278  391   505
##    [4,] 1195 1105  560  675  988  405  203 1138  827  1309
##    [5,]  222 1231  805 1052  958  629  110 1400  997   253
##    [6,]  109  839  457  158  140  704  228  648  619   705
##    [7,] 1075  376  478 1011  329  272  483  774  701  1358
##    [8,]  890  833 1012 1359 1199  859 1014  312  568  1285
##    [9,]  443  627 1099 1395  811 1341  110  714 1171  1303
##   [10,] 1337 1272  407  988   68  645  633  255 1182  1238
##   [11,]  277  848  123  887   23 1205  593  758 1397   206
##   [12,] 1046  634 1322  724  387 1023  671  994  975  1023
##   [13,]  403 1364  750 1030   37  680  387  956 1052  1240
##   [14,]  131  350   69 1225 1181 1383  755  460  167   738
##   [15,]  714  427 1361 1083  207  786 1349 1392   18   368
##   [16,]  187 1260  657  506 1352  305  609  177  767   334
##   [17,] 1053  222 1087 1208  965  577  956 1231  681  1180
##   [18,] 1152  498  716   30  926  264  345  611   66  1125
##   [19,] 1254  960  359  876 1061   28  452   29  599   458
##   [20,]  892   76  829   97  154  203  182  889  251   445
##   [21,]  107  890  742  284  213 1362  670 1343   93   698
##   [22,]  110 1078  364  622  756  257  642  580  372    48
##   [23,]  417  995  203  526  214 1053  983 1290  685   987
##   [24,]  926 1011   37  713   31 1309  685  439   10  1040
##   [25,]  965 1009  926   60  585  684  766  919 1046   318
##   [26,]  452  882 1123  692 1359 1175   40  939  809   726
##   [27,] 1107  566  528  963  388  604 1151  698 1142  1240
##   [28,] 1326  222  181   16  619  603  822 1059  777   254
##   [29,]  753 1221  991  113 1276 1267 1364 1347  796    93
##   [30,]  783  262  833 1012   61 1354  468  580  700   201
##   [31,]  773  962  239  970  858  288   50 1264  303   923
##   [32,]  166 1246  929  410  754 1366  563  614 1064   596
```

```
##   [33,]   91  506  747  580  542  260   89   89  144  1049
##   [34,] 1074  927  972 1041  246  977  723  981  183   530
##   [35,]  101 1315 1249  468  386  740   97  709  340    91
##   [36,]  263  697  377  741 1363  340  618 1395  299   478
##   [37,]  939  516    2  502  274   43 1053  822   96  1124
##   [38,]  500 1346 1120  988 1018  995  348 1210 1271   911
##   [39,]  521  275  134  708  507  785  176  376  225   857
##   [40,] 1313  871 1202  752 1263  768 1107  301  113  1293
##   [41,]  475  246  704 1134 1221  772 1085  109  573   412
##   [42,]  849  776   28  371  544 1394  752  620  452   922
##   [43,]   45 1199  311  502  889   69   66  902 1011   210
##   [44,]  350  465 1336 1242  172  441  636  598  174   532
##   [45,]  151  253  827  218  531  762 1377  674  888   654
##   [46,]  553 1372  532  606  868 1125 1035  216 1196  1357
##   [47,] 1263  531  500  670  397 1375  224  977  859   368
##   [48,]  253  842  895 1197  698 1122   86  590  689   747
##   [49,]  211  975  702 1276 1325  767  798 1364   63   304
##   [50,]   41 1048  750 1226 1357  994  567 1001  233  1305
##   [51,]  256 1213  221  673 1278 1227   83 1310  229   558
##   [52,] 1229  275  143  824 1296 1296 1016   30  128   181
##   [53,]  933  189  491   56  703 1247  603  969  354  1175
##   [54,] 1268 1081  600 1361  814  541 1285  564  775  1210
##   [55,]  266  199 1389   92  675  709  925 1203   26   922
##   [56,] 1042 1207  474  856  784  390  107  534 1310   981
##   [57,]  792  248  662  358 1391  744 1074  998  244   689
##   [58,]  116 1151  607  499  879  274  399 1394  436   125
##   [59,]  463  626  865 1393  548  215  417  284  781   612
##   [60,]  740 1131 1239  532  129  850  728  606  600   191
##   [61,]  109  664 1133 1066 1167 1339  327 1063 1073   868
##   [62,] 1101 1341  603 1318  471  889  829  372  135  1290
##   [63,] 1355  320 1181 1298   95   63 1384  205  622  1093
##   [64,]  172 1193  983  300  423   99  679 1001 1003   467
##   [65,]  724  687  281 1343 1270  607 1319  975  565   477
##   [66,]  769  273  666  317  594  763  759  621  488  1279
##   [67,]  644   29  385  437  633 1138 1310 1381  440     1
##   [68,]  159  835 1007 1046  613  226  997  500   76  1335
##   [69,]  800 1175 1361  157 1088  493  525  616  604  1301
##   [70,]  151 1161  478 1346  785  797    3  317  500   698
##   [71,] 1026  354 1360  777   78  378  657   44  874   719
##   [72,]  158  544  410  310  914   53  933  968  539   322
##   [73,]  916 1063  344  851  970 1062  943   17 1309   298
##   [74,]   10 1260 1377  798   64  328  509  574  549   225
##   [75,]  312  598  923  219 1120  363 1187  549  376    78
##   [76,]  781 1068  950  440  695  691  993  667  766  1259
##   [77,]  493  702  648  329 1363  806 1034  558  272  1204
##   [78,]  419  120 1185  321  844 1213 1000  563  838   813
##   [79,] 1005  864 1047  213  520  817   82 1055 1185  1026
##   [80,]  578  384 1083  820 1397  755 1095  979 1235   874
##   [81,]  721 1115  162   70  738  345  989 1362   77   389
##   [82,]  754  675 1065  562  300  970 1061  779  195  1113
##   [83,]  856  484  985  633  101 1074  328 1266 1129   250
##   [84,] 1020  468  698 1372  353 1111 1182  633  531     3
##   [85,]  498 1058 1184 1371  497 1229   64  366  874   635
##   [86,]  711   62  932   37  696  822  415  870  558    68
```

```
##   [87,]  542 1070 1357  446 1274  590  881  574  596 1101
##   [88,]  650 1141 1179  379 1299  783  839 1090  374  729
##   [89,] 1258  419  762  491  705   98  874  553  104  448
##   [90,]  986  826  751  519  528  963  507   31  286  901
##   [91,]  641  653 1205   82  758  678 1340 1160 1236  425
##   [92,] 1302 1191  286 1263 1356 1070  226  381  717 1064
##   [93,]  871  980 1315  500 1272  291  760 1238 1160  746
##   [94,] 1192  438  714  920 1395  906 1239  302 1311  851
##   [95,]  124  397  864  632 1054   79 1101   41  618   79
##   [96,] 1086  503 1043   63   65   70 1130  435  380  615
##   [97,]  559   56  529  570 1056  611  300  614 1162  966
##   [98,]  192 1062  765  713  394  311 1327   85 1021 1353
##   [99,]  373  335 1263  798  730  417  556 1275  849   86
##  [100,]   52  362 1311  806  757  900 1289 1300  143  375
##  [101,]  715  183   97  765  385  876 1070 1345   66  492
##  [102,]  509 1159 1199  268  276 1000 1088  282   23  839
##  [103,]   25  512  799  792 1398  555  799  493  991  331
##  [104,]  857 1258  893  842    1 1314 1336  397  462  573
##  [105,] 1195 1015  284 1138  797   24 1266  836  239  254
##  [106,]  852  724  776 1115   63  375 1236  868  617 1328
##  [107,]  932  165  233 1364  468 1098    8  437  126   90
##  [108,] 1085 1111  450  613  621 1337 1338   67 1174  500
##  [109,] 1044  860  539  193 1208  848  335  528  989  267
##  [110,]  792  794  914  871  824 1161  702 1139 1180   99
##  [111,] 1057  873  506  621  141  747 1138 1351 1090  143
##  [112,]  288 1156 1287 1370  540  428  164  566 1374 1330
##  [113,] 1395  353  907  230 1063  966  280 1150 1171  678
##  [114,]   63   97  193 1156 1144  395  914  589  471  367
##  [115,]  299  257 1120  314  197  715  209   78  207  523
##  [116,] 1143 1245 1216 1088  717  398  939  685  105  718
##  [117,]  259  243  635  176  805  916  117   15  814  894
##  [118,]  223  521  391  705  417  527  386  201  496  515
##  [119,]  188 1164  724  574 1029  222  710 1032  954  452
##  [120,]  340 1085 1386  143  652 1214 1281  143   23   69
##  [121,]  192  337  866  926  519  427  855   18  320  749
##  [122,] 1006 1106  891    8  433  671 1083  823  998 1207
##  [123,]  614  480 1293  279 1226  913  512 1291  477  696
##  [124,] 1168  234 1068 1094  152  917  348  737  803  539
##  [125,]  170 1194 1060  560  351 1012  601  332  585 1092
##  [126,] 1172  417  961   99 1155  549  925  456  310   52
##  [127,] 1000  780  307  198   89  478 1109 1257  650  809
##  [128,] 1031 1054  571  307 1072  429 1160  948    4  992
##  [129,]  945  977   80 1319  213  508  991  987   28 1340
##  [130,] 1104  592 1139  215  884  617  804  958  527  366
##  [131,]  406  573  235   20  258  366  590  107  332  826
##  [132,]  133  904 1030  156  892  638 1382  403 1215  654
##  [133,]  255  619  689  403  874 1120   87  519  145  987
##  [134,]  835 1006  277  318   43 1157   16 1146  524 1250
##  [135,] 1173 1205 1056  106 1131  257 1376   23  471 1278
##  [136,] 1390  342  800 1344 1170  961  738  453  972  254
##  [137,]  603 1310 1261  725 1369  289 1292  876  108  850
##  [138,]  373  353 1143 1279   66 1125  960  407   38  631
##  [139,]   32  255 1389  395 1014  310  381   99 1148   51
##  [140,] 1139  308 1322 1038  372  805 1303 1038  830  281
```

```
##  [141,]  586  171   62 1019  250 1070  272 1376  198   975
##  [142,] 1153  787  103  547  434  631  495  710 1285  1083
##  [143,]  559  366  433  574 1205  845 1273  348 1235   511
##  [144,] 1072   12  711  844  375  988  107   57  950   602
##  [145,]  573  244  991  378 1014  135  490  983  857   974
##  [146,]  124 1338  923 1181 1217 1009  641    4  320   243
##  [147,]  427 1166  827  170  635 1132  124  867  431   361
##  [148,]  241 1109 1183  239  832 1115 1312  499  239  1038
##  [149,] 1044  399  938  956  448  331  181 1099  956   709
##  [150,]  239  175  748 1205  612 1240  743 1154 1274   637
##  [151,]  258 1265  564  288  619 1338  841 1298 1373  1109
##  [152,] 1041   11 1084   43  349 1261  768 1021  956  1165
##  [153,]  260  784   16 1339  450 1331   30    1  337  1390
##  [154,]  576  362  368 1381  741  884 1053 1351 1109  1364
##  [155,]  264  220 1285  374  214  342  819 1175   51   276
##  [156,] 1316 1103  421  645 1332  118 1395  206  923    44
##  [157,]  128  900  790  837 1044  331  398  867 1290    74
##  [158,]  591  177   36  919  395  722 1225   43  335   494
##  [159,]  979  326  295   40  548 1272  339  206 1036   908
##  [160,] 1105  371 1174 1340  953 1282  433 1246 1171  1161
##  [161,]  245  848 1008  376 1112  281  217 1331 1052  1028
##  [162,]  438  876 1120  133 1041  370  408  472 1322   467
##  [163,]   83  409 1012  221 1300 1005  875  121  281   562
##  [164,]  678  901 1292  823 1161  204  922 1203   29   770
##  [165,]  592  928  616 1012 1068  505 1262 1342 1066   208
##  [166,]  266  752  432  324  937  155  256  140 1022   778
##  [167,] 1233  144 1286 1246  148  462 1257  656  821  1156
##  [168,]  777  882  754 1087 1136 1126  208  619  150  1078
##  [169,]  682  878 1180 1258  431  703  990  208  105   142
##  [170,]  388  649   59 1167  633  293 1069   54  526   827
##  [171,]  835  271  419  554  904  688  304   86  686    94
##  [172,] 1174 1026 1106  957   40 1087  396  623  741   276
##  [173,]   85 1219  647   81  642  953 1263 1050 1136  1087
##  [174,] 1358 1341  624  776  472  526  806   25  116   724
##  [175,]   12 1108  776  645  343  824  244 1270   53   143
##  [176,]  785  499  365 1016  205  387  765  840  653   218
##  [177,] 1039  716  434  670  651 1213  328  917  769  1191
##  [178,]  511  245 1089 1394  297  120 1041  679  454   738
##  [179,]  477  459 1093  261    8 1206 1387 1398 1083   961
##  [180,]  814  689  564 1293   42  721  769  632 1282  1397
##  [181,]  466 1095  730   46 1006  568  557 1387  942  1386
##  [182,] 1114 1233  488  880  748  247  378  154  985  1391
##  [183,] 1373  381  246  386 1075  387  792  356 1187   958
##  [184,] 1214  826  599  383  167 1108  507 1055  121   743
##  [185,]  965  670  408 1317  196  354  494  464 1011   579
##  [186,]  539  380  621  777  897 1180  924 1281  873  1215
##  [187,] 1005  514 1030    6 1020  626  346  214 1375   937
##  [188,]  855  873  375 1143 1203  613  839   22    3   950
##  [189,]  217   68 1149  993  897  976  714  763  243   511
##  [190,]  498  297 1216  367  243   48  673 1029 1153   987
##  [191,]   32 1271 1042  525 1067 1367  777  618  599    71
##  [192,]   40  515 1315  313 1217  235  490  577 1152   851
##  [193,]  420  862   33 1264  498  737  435   15  141   318
##  [194,] 1159  702 1310  578  809  919 1294  609  593   558
```

```
##  [195,] 1181  864   82  232  643  445 1089 1065 1257    15
##  [196,]  740  384  514  241  472    1   46  691  644    16
##  [197,]  864  612  427  709  557  604  860 1317  712   241
##  [198,]  565  965 1347 1038  129  129  138   38  476   139
##  [199,]   62  944  212  565 1142  640  127  567  762  1218
##  [200,] 1323   10 1121  356  304  455   36 1124  834   934
##  [201,]  591    6 1111  927  259 1176  386  758  413   368
##  [202,]  391  734  152 1191  397 1085  690 1071   21   140
##  [203,]  343  794 1145  164 1096 1359 1266 1101 1177    37
##  [204,]  383  266  293  983  802 1020  760 1157 1248   611
##  [205,] 1114  109 1073  310  532  962  730  390  452  1180
##  [206,]  213  348  450 1053  472 1203  808  936 1343   597
##  [207,]  642  364  864  495  550  252  417 1322  766   691
##  [208,] 1146 1149  822 1187  502  411   15 1078  803    91
##  [209,]  182 1061  202 1393  777  449 1167  593  661   428
##  [210,]  383  160  966   87  773  847  206  897  869   589
##  [211,]  704  413  214  825  587  564 1084   63  919  1098
##  [212,]  442  216 1126 1106  928  150 1150  489 1017   602
##  [213,] 1226 1338   53  211  786  812 1325  514 1154   371
##  [214,] 1372   72 1088  961  373  175 1182  924  538   222
##  [215,]  893  427   79 1066  109  723  884   65 1279   172
##  [216,]  508  643 1040  809 1252  571   56 1161  993   502
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## [1325,]  683 1181  224  898   57  621  712  362  898   288
## [1326,] 1163  718  277 1194 1394  422  982  955   63  1308
## [1327,]  540  454  453  946  101 1330  557  604  173   243
## [1328,]   90  530  491  887  129 1201  897  293  916  1395
```

```
## [1329,]  955  955  328  968   17  607   75  631  975  1382
## [1330,]  187 1268  472  425  139  301 1041  343 1121  1129
## [1331,]  538  972  996  382 1018  508 1060  555  343   884
## [1332,]  982  776  990   51  558 1233 1232 1239  951   790
## [1333,]  445  958  141   95  968 1084  964  416 1135  1024
## [1334,]  393  158   71 1187 1052  530 1274 1208  973  1268
## [1335,] 1034 1101  575 1010 1133  346  593 1355 1356   494
## [1336,]  527  200  777 1092  234 1280 1127  945 1353  1356
## [1337,]  775  847  951  950 1304  608  565 1044  789   296
## [1338,]  431  962  575  286 1298 1321   26  683   74  1026
## [1339,]  729 1304 1008  578 1366 1005  528  592  839   145
## [1340,] 1231  592   76  712 1235 1054 1102  821  382  1080
## [1341,] 1274  172  271 1190   23  884 1095  591 1250  1264
## [1342,]  216 1185  156  494  273  301  620  725  696   377
## [1343,] 1026 1325  527 1009  517  913  755  940 1040  1347
## [1344,]   53  206  315 1207  209 1025  806   72  191  1354
## [1345,]  871 1395  906  742  142  853 1399  499   32   293
## [1346,] 1389  811  880  714  918 1393  108  161  252   115
## [1347,] 1166 1081  194 1366  859  342 1237 1268  790   523
## [1348,]  777  674   84  195  681 1079  151  987 1123   447
## [1349,] 1098  208 1174 1036  199 1023  832 1204 1270   306
## [1350,]  886  348  321  317 1028  531  505  425  303   309
## [1351,]  679  830  787  341  936  266  797  714  930  1091
## [1352,] 1240  928 1392 1323 1196  353 1031   30 1028   357
## [1353,]   62 1084  896  818  157 1126 1074  675  751   274
## [1354,]  626   82  392  125 1308   64  454   44  883  1313
## [1355,] 1113   27 1285 1375  697 1229  260  966  856   746
## [1356,]   53 1020 1220  462  955 1133  151 1041   52   761
## [1357,]  680 1363  819 1058  837 1102  615  476  865   370
## [1358,]  140  211 1273   98  523  124  258 1038  539  1092
## [1359,] 1213  328 1138 1035 1384  750  202 1023 1384   793
## [1360,]  343  249 1226  331  840 1083  492 1163    4   297
## [1361,] 1179  598  648  882   37 1006 1160  426 1312  1248
## [1362,]  390  630  188   14 1170  268 1139  771  641   686
## [1363,]  426  240  658 1116 1188  129  707  489  591    54
## [1364,]  819  900 1155  225  691  720 1346  447  583   183
## [1365,] 1179  617  752 1194 1184  253  121  767  362   225
## [1366,] 1206   79  914   86  299  201  513  320  292  1046
## [1367,]   59 1356  396  610  131 1297  965 1317  228  1076
## [1368,]  585  391  328  712 1055  621 1183  512  231   318
## [1369,]  264  569  906 1247 1271 1396  729  957  336   800
## [1370,]  550 1248 1308 1101  256  133  120  393  208   926
## [1371,] 1085  864  222 1397  905 1282 1320  929 1272   189
## [1372,]  454 1142  256 1098  495  796  395  466  479    96
## [1373,]   16 1102  587 1120  684 1352  889  156 1120   925
## [1374,]  994  254  915 1007 1293  933  722  423  906  1035
## [1375,]  792  681 1054  183   65 1253 1382  325  239   903
## [1376,] 1160 1333  927 1210  906  782 1298 1313  906   587
## [1377,]  653 1300  807  259  201  383 1029 1087  379   464
## [1378,]  120  232   70   39  210  462  679 1032  672   592
## [1379,]  926  674  206  530    7 1097  738   52  926   197
## [1380,]  451 1252 1006  727  594  767  829  799 1398   186
## [1381,]  397 1096 1172 1218   29  570 1272  830  332   294
## [1382,]  292  724  219  871  243  111  162  826  852   257
```

```
## [1383,]  834  872  542  679  666 1093 1008  771  569   685
## [1384,]   42  573  574  900  410  657 1315  726  192  1331
## [1385,] 1282 1317  612 1008 1198  447   81  743 1251   192
## [1386,]  487   15  850 1013  229  396  984  467  256     9
## [1387,]  487  948 1262 1259  796 1366 1330 1036  154  1160
## [1388,]  526 1393  764 1086  702  856  577  682  808   170
## [1389,] 1381  836  490  896  810 1231  374 1318  109  1321
## [1390,]  410 1193 1112 1190  707 1167  919 1116  128  1114
## [1391,] 1119  688  252  731  227 1207  936  754 1373   565
## [1392,]  213  158  898  921  851  687  703  621 1189  1210
## [1393,]  827  481  603 1300  513   82  772  701  438  1025
## [1394,]  794  537  294  817  950 1292  609  923  510  1006
## [1395,] 1257 1192  739   13  540 1260  613  104  148   915
## [1396,]  651  481  902  133  564 1051   84   31  318  1357
## [1397,] 1349  877 1336   81  765  216 1390  603   54   100
## [1398,] 1037  781  451  719  898 1360  808  801  587   540
## [1399,]  792  222 1076  155 1043  683 1036  106 1119   261
## [1400,]  583 1086  774 1027  429  589  109   71  482  1219
##
## $importance
## battery_power          blue   clock_speed      dual_sim            fc
##             0             0             0             0             0
##        four_g    int_memory         m_dep     mobile_wt       n_cores
##             0             0             0             0             0
##            pc     px_height      px_width           ram          sc_h
##             0             0             0           100             0
##          sc_w     talk_time       three_g  touch_screen          wifi
##             0             0             0             0             0
##
## $terms
## price_range ~ battery_power + blue + clock_speed + dual_sim +
##     fc + four_g + int_memory + m_dep + mobile_wt + n_cores +
##     pc + px_height + px_width + ram + sc_h + sc_w + talk_time +
##     three_g + touch_screen + wifi
## attr(,"variables")
## list(price_range, battery_power, blue, clock_speed, dual_sim,
##     fc, four_g, int_memory, m_dep, mobile_wt, n_cores, pc, px_height,
##     px_width, ram, sc_h, sc_w, talk_time, three_g, touch_screen,
##     wifi)
## attr(,"factors")
##               battery_power blue clock_speed dual_sim fc four_g int_memory
## price_range               0    0           0        0  0      0          0
## battery_power             1    0           0        0  0      0          0
## blue                      0    1           0        0  0      0          0
## clock_speed               0    0           1        0  0      0          0
## dual_sim                  0    0           0        1  0      0          0
## fc                        0    0           0        0  1      0          0
## four_g                    0    0           0        0  0      1          0
## int_memory                0    0           0        0  0      0          1
## m_dep                     0    0           0        0  0      0          0
## mobile_wt                 0    0           0        0  0      0          0
## n_cores                   0    0           0        0  0      0          0
## pc                        0    0           0        0  0      0          0
## px_height                 0    0           0        0  0      0          0
```

```
## px_width                 0    0          0        0  0      0          0
## ram                      0    0          0        0  0      0          0
## sc_h                     0    0          0        0  0      0          0
## sc_w                     0    0          0        0  0      0          0
## talk_time                0    0          0        0  0      0          0
## three_g                  0    0          0        0  0      0          0
## touch_screen             0    0          0        0  0      0          0
## wifi                     0    0          0        0  0      0          0
##               m_dep mobile_wt n_cores pc px_height px_width ram sc_h sc_w
## price_range       0         0       0  0         0        0   0    0    0
## battery_power     0         0       0  0         0        0   0    0    0
## blue              0         0       0  0         0        0   0    0    0
## clock_speed       0         0       0  0         0        0   0    0    0
## dual_sim          0         0       0  0         0        0   0    0    0
## fc                0         0       0  0         0        0   0    0    0
## four_g            0         0       0  0         0        0   0    0    0
## int_memory        0         0       0  0         0        0   0    0    0
## m_dep             1         0       0  0         0        0   0    0    0
## mobile_wt         0         1       0  0         0        0   0    0    0
## n_cores           0         0       1  0         0        0   0    0    0
## pc                0         0       0  1         0        0   0    0    0
## px_height         0         0       0  0         1        0   0    0    0
## px_width          0         0       0  0         0        1   0    0    0
## ram               0         0       0  0         0        0   1    0    0
## sc_h              0         0       0  0         0        0   0    1    0
## sc_w              0         0       0  0         0        0   0    0    1
## talk_time         0         0       0  0         0        0   0    0    0
## three_g           0         0       0  0         0        0   0    0    0
## touch_screen      0         0       0  0         0        0   0    0    0
## wifi              0         0       0  0         0        0   0    0    0
##               talk_time three_g touch_screen wifi
## price_range           0       0            0    0
## battery_power         0       0            0    0
## blue                  0       0            0    0
## clock_speed           0       0            0    0
## dual_sim              0       0            0    0
## fc                    0       0            0    0
## four_g                0       0            0    0
## int_memory            0       0            0    0
## m_dep                 0       0            0    0
## mobile_wt             0       0            0    0
## n_cores               0       0            0    0
## pc                    0       0            0    0
## px_height             0       0            0    0
## px_width              0       0            0    0
## ram                   0       0            0    0
## sc_h                  0       0            0    0
## sc_w                  0       0            0    0
## talk_time             1       0            0    0
## three_g               0       1            0    0
## touch_screen          0       0            1    0
## wifi                  0       0            0    1
## attr(,"term.labels")
##  [1] "battery_power" "blue"          "clock_speed"   "dual_sim"
```

```
##  [5] "fc"           "four_g"        "int_memory"    "m_dep"
##  [9] "mobile_wt"    "n_cores"       "pc"            "px_height"
## [13] "px_width"     "ram"           "sc_h"          "sc_w"
## [17] "talk_time"    "three_g"       "touch_screen"  "wifi"
## attr(,"order")
##  [1] 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
## attr(,"intercept")
## [1] 1
## attr(,"response")
## [1] 1
## attr(,".Environment")
## <environment: R_GlobalEnv>
## attr(,"predvars")
## list(price_range, battery_power, blue, clock_speed, dual_sim,
##     fc, four_g, int_memory, m_dep, mobile_wt, n_cores, pc, px_height,
##     px_width, ram, sc_h, sc_w, talk_time, three_g, touch_screen,
##     wifi)
## attr(,"dataClasses")
##   price_range battery_power          blue   clock_speed      dual_sim
##      "factor"     "numeric"     "numeric"     "numeric"     "numeric"
##            fc        four_g    int_memory         m_dep     mobile_wt
##     "numeric"     "numeric"     "numeric"     "numeric"     "numeric"
##       n_cores            pc     px_height      px_width           ram
##     "numeric"     "numeric"     "numeric"     "numeric"     "numeric"
##          sc_h          sc_w     talk_time       three_g  touch_screen
##     "numeric"     "numeric"     "numeric"     "numeric"     "numeric"
##          wifi
##     "numeric"
##
## $call
## bagging(formula = price_range ~ ., data = data_train, mfinal = 10,
##     control = rpart.control(maxdepth = 1))
##
## attr(,"vardep.summary")
##   0   1   2   3
## 350 350 350 350
## attr(,"class")
## [1] "bagging"
```

```
data.predbagging <- predict.bagging(data.bagging, newdata = data_test)
data.predbagging
```

```
## $formula
## price_range ~ .
##
## $votes
##        [,1] [,2] [,3] [,4]
##   [1,]    1    0    4    5
##   [2,]    0    0    4    6
##   [3,]   10    0    0    0
##   [4,]   10    0    0    0
##   [5,]    0    0    4    6
##   [6,]    8    0    2    0
##   [7,]    0    0    4    6
```

```
##   [8,]    0    0    4    6
##   [9,]    0    0    4    6
##  [10,]    1    0    4    5
##  [11,]   10    0    0    0
##  [12,]   10    0    0    0
##  [13,]    5    0    4    1
##  [14,]    0    0    4    6
##  [15,]    4    0    4    2
##  [16,]    0    0    4    6
##  [17,]   10    0    0    0
##  [18,]    0    0    4    6
##  [19,]    5    0    4    1
##  [20,]    4    0    4    2
##  [21,]   10    0    0    0
##  [22,]    9    0    1    0
##  [23,]    0    0    4    6
##  [24,]    0    0    4    6
##  [25,]    9    0    1    0
##  [26,]   10    0    0    0
##  [27,]    0    0    4    6
##  [28,]    1    0    4    5
##  [29,]    3    0    4    3
##  [30,]    0    0    4    6
##  [31,]   10    0    0    0
##  [32,]   10    0    0    0
##  [33,]    1    0    4    5
##  [34,]    0    0    4    6
##  [35,]    9    0    1    0
##  [36,]    0    0    4    6
##  [37,]    1    0    4    5
##  [38,]    3    0    4    3
##  [39,]    1    0    4    5
##  [40,]    1    0    4    5
##  [41,]    0    0    4    6
##  [42,]    4    0    4    2
##  [43,]    0    0    4    6
##  [44,]    5    0    4    1
##  [45,]   10    0    0    0
##  [46,]   10    0    0    0
##  [47,]   10    0    0    0
##  [48,]   10    0    0    0
##  [49,]    0    0    4    6
##  [50,]    5    0    4    1
##  [51,]    8    0    2    0
##  [52,]    8    0    2    0
##  [53,]    0    0    4    6
##  [54,]    4    0    4    2
##  [55,]    8    0    2    0
##  [56,]    0    0    4    6
##  [57,]    9    0    1    0
##  [58,]    0    0    4    6
##  [59,]    9    0    1    0
##  [60,]    0    0    4    6
##  [61,]    1    0    4    5
```

```
##  [62,]    5    0    4    1
##  [63,]   10    0    0    0
##  [64,]    0    0    4    6
##  [65,]   10    0    0    0
##  [66,]    8    0    2    0
##  [67,]   10    0    0    0
##  [68,]    0    0    4    6
##  [69,]   10    0    0    0
##  [70,]    0    0    4    6
##  [71,]    1    0    4    5
##  [72,]    8    0    2    0
##  [73,]    3    0    4    3
##  [74,]   10    0    0    0
##  [75,]    4    0    4    2
##  [76,]   10    0    0    0
##  [77,]    0    0    4    6
##  [78,]   10    0    0    0
##  [79,]   10    0    0    0
##  [80,]    8    0    2    0
##  [81,]   10    0    0    0
##  [82,]   10    0    0    0
##  [83,]    3    0    4    3
##  [84,]   10    0    0    0
##  [85,]    0    0    4    6
##  [86,]    8    0    2    0
##  [87,]    4    0    4    2
##  [88,]    0    0    4    6
##  [89,]    0    0    4    6
##  [90,]   10    0    0    0
##  [91,]    0    0    4    6
##  [92,]   10    0    0    0
##  [93,]   10    0    0    0
##  [94,]   10    0    0    0
##  [95,]   10    0    0    0
##  [96,]    0    0    4    6
##  [97,]    9    0    1    0
##  [98,]    1    0    4    5
##  [99,]    0    0    4    6
## [100,]    7    0    3    0
## [101,]    0    0    4    6
## [102,]    2    0    4    4
## [103,]   10    0    0    0
## [104,]   10    0    0    0
## [105,]   10    0    0    0
## [106,]    1    0    4    5
## [107,]   10    0    0    0
## [108,]   10    0    0    0
## [109,]    1    0    4    5
## [110,]    0    0    4    6
## [111,]    0    0    4    6
## [112,]    0    0    4    6
## [113,]    0    0    4    6
## [114,]    0    0    4    6
## [115,]   10    0    0    0
```

```
## [116,]    0    0    4    6
## [117,]    0    0    4    6
## [118,]    0    0    4    6
## [119,]    0    0    4    6
## [120,]    0    0    4    6
## [121,]    4    0    4    2
## [122,]    0    0    4    6
## [123,]    8    0    2    0
## [124,]    0    0    4    6
## [125,]   10    0    0    0
## [126,]    0    0    4    6
## [127,]   10    0    0    0
## [128,]   10    0    0    0
## [129,]   10    0    0    0
## [130,]    8    0    2    0
## [131,]    0    0    4    6
## [132,]    8    0    2    0
## [133,]    4    0    4    2
## [134,]    0    0    4    6
## [135,]   10    0    0    0
## [136,]    0    0    4    6
## [137,]    2    0    4    4
## [138,]   10    0    0    0
## [139,]    0    0    4    6
## [140,]    7    0    3    0
## [141,]   10    0    0    0
## [142,]    0    0    4    6
## [143,]    0    0    4    6
## [144,]   10    0    0    0
## [145,]    0    0    4    6
## [146,]    0    0    4    6
## [147,]    4    0    4    2
## [148,]   10    0    0    0
## [149,]    4    0    4    2
## [150,]    0    0    4    6
## [151,]   10    0    0    0
## [152,]    7    0    3    0
## [153,]    0    0    4    6
## [154,]   10    0    0    0
## [155,]   10    0    0    0
## [156,]    8    0    2    0
## [157,]    1    0    4    5
## [158,]    0    0    4    6
## [159,]    0    0    4    6
## [160,]    1    0    4    5
## [161,]    4    0    4    2
## [162,]    7    0    3    0
## [163,]    0    0    4    6
## [164,]    8    0    2    0
## [165,]   10    0    0    0
## [166,]    3    0    4    3
## [167,]    0    0    4    6
## [168,]   10    0    0    0
## [169,]   10    0    0    0
```

```
## [170,]    0    0    4    6
## [171,]    0    0    4    6
## [172,]   10    0    0    0
## [173,]   10    0    0    0
## [174,]   10    0    0    0
## [175,]   10    0    0    0
## [176,]    0    0    4    6
## [177,]    0    0    4    6
## [178,]    0    0    4    6
## [179,]    2    0    4    4
## [180,]    5    0    4    1
## [181,]   10    0    0    0
## [182,]    9    0    1    0
## [183,]    0    0    4    6
## [184,]    0    0    4    6
## [185,]    0    0    4    6
## [186,]    1    0    4    5
## [187,]    1    0    4    5
## [188,]    9    0    1    0
## [189,]   10    0    0    0
## [190,]    0    0    4    6
## [191,]    5    0    4    1
## [192,]    8    0    2    0
## [193,]    1    0    4    5
## [194,]    8    0    2    0
## [195,]    8    0    2    0
## [196,]   10    0    0    0
## [197,]    1    0    4    5
## [198,]   10    0    0    0
## [199,]   10    0    0    0
## [200,]    0    0    4    6
## [201,]    1    0    4    5
## [202,]   10    0    0    0
## [203,]    0    0    4    6
## [204,]    4    0    4    2
## [205,]    0    0    4    6
## [206,]    8    0    2    0
## [207,]    4    0    4    2
## [208,]    7    0    3    0
## [209,]    1    0    4    5
## [210,]   10    0    0    0
## [211,]    8    0    2    0
## [212,]   10    0    0    0
## [213,]    0    0    4    6
## [214,]    4    0    4    2
## [215,]    3    0    4    3
## [216,]   10    0    0    0
## [217,]    0    0    4    6
## [218,]    1    0    4    5
## [219,]    0    0    4    6
## [220,]   10    0    0    0
## [221,]    1    0    4    5
## [222,]    0    0    4    6
## [223,]    7    0    3    0
```

```
## [224,]   10    0    0    0
## [225,]    0    0    4    6
## [226,]    8    0    2    0
## [227,]    1    0    4    5
## [228,]    8    0    2    0
## [229,]    9    0    1    0
## [230,]    0    0    4    6
## [231,]    8    0    2    0
## [232,]    1    0    4    5
## [233,]    0    0    4    6
## [234,]   10    0    0    0
## [235,]    0    0    4    6
## [236,]    0    0    4    6
## [237,]    4    0    4    2
## [238,]   10    0    0    0
## [239,]    8    0    2    0
## [240,]    5    0    4    1
## [241,]    0    0    4    6
## [242,]    1    0    4    5
## [243,]    0    0    4    6
## [244,]   10    0    0    0
## [245,]    8    0    2    0
## [246,]    0    0    4    6
## [247,]   10    0    0    0
## [248,]   10    0    0    0
## [249,]   10    0    0    0
## [250,]    8    0    2    0
## [251,]    5    0    4    1
## [252,]   10    0    0    0
## [253,]    0    0    4    6
## [254,]    0    0    4    6
## [255,]    7    0    3    0
## [256,]    0    0    4    6
## [257,]    8    0    2    0
## [258,]   10    0    0    0
## [259,]    0    0    4    6
## [260,]   10    0    0    0
## [261,]    0    0    4    6
## [262,]    0    0    4    6
## [263,]    7    0    3    0
## [264,]    7    0    3    0
## [265,]    0    0    4    6
## [266,]   10    0    0    0
## [267,]    0    0    4    6
## [268,]    4    0    4    2
## [269,]    5    0    4    1
## [270,]    8    0    2    0
## [271,]   10    0    0    0
## [272,]   10    0    0    0
## [273,]   10    0    0    0
## [274,]    8    0    2    0
## [275,]   10    0    0    0
## [276,]    1    0    4    5
## [277,]    0    0    4    6
```

```
## [278,]    8    0    2    0
## [279,]    0    0    4    6
## [280,]   10    0    0    0
## [281,]   10    0    0    0
## [282,]    5    0    4    1
## [283,]    0    0    4    6
## [284,]    0    0    4    6
## [285,]   10    0    0    0
## [286,]    0    0    4    6
## [287,]    0    0    4    6
## [288,]   10    0    0    0
## [289,]    8    0    2    0
## [290,]    0    0    4    6
## [291,]   10    0    0    0
## [292,]    0    0    4    6
## [293,]    7    0    3    0
## [294,]    0    0    4    6
## [295,]   10    0    0    0
## [296,]   10    0    0    0
## [297,]    0    0    4    6
## [298,]    0    0    4    6
## [299,]   10    0    0    0
## [300,]   10    0    0    0
## [301,]    0    0    4    6
## [302,]    1    0    4    5
## [303,]    0    0    4    6
## [304,]    9    0    1    0
## [305,]    0    0    4    6
## [306,]   10    0    0    0
## [307,]    7    0    3    0
## [308,]    9    0    1    0
## [309,]    1    0    4    5
## [310,]   10    0    0    0
## [311,]    5    0    4    1
## [312,]    8    0    2    0
## [313,]    0    0    4    6
## [314,]    7    0    3    0
## [315,]    7    0    3    0
## [316,]    0    0    4    6
## [317,]    0    0    4    6
## [318,]    4    0    4    2
## [319,]    0    0    4    6
## [320,]   10    0    0    0
## [321,]   10    0    0    0
## [322,]    8    0    2    0
## [323,]    0    0    4    6
## [324,]    7    0    3    0
## [325,]   10    0    0    0
## [326,]    9    0    1    0
## [327,]    1    0    4    5
## [328,]    8    0    2    0
## [329,]    0    0    4    6
## [330,]    7    0    3    0
## [331,]   10    0    0    0
```

```
## [332,]    8    0    2    0
## [333,]   10    0    0    0
## [334,]    1    0    4    5
## [335,]    1    0    4    5
## [336,]    4    0    4    2
## [337,]    0    0    4    6
## [338,]    0    0    4    6
## [339,]    8    0    2    0
## [340,]    1    0    4    5
## [341,]    0    0    4    6
## [342,]    0    0    4    6
## [343,]    1    0    4    5
## [344,]   10    0    0    0
## [345,]    1    0    4    5
## [346,]   10    0    0    0
## [347,]    0    0    4    6
## [348,]    4    0    4    2
## [349,]    8    0    2    0
## [350,]    0    0    4    6
## [351,]    1    0    4    5
## [352,]    0    0    4    6
## [353,]    0    0    4    6
## [354,]    0    0    4    6
## [355,]    0    0    4    6
## [356,]    9    0    1    0
## [357,]    0    0    4    6
## [358,]   10    0    0    0
## [359,]    0    0    4    6
## [360,]    1    0    4    5
## [361,]    1    0    4    5
## [362,]   10    0    0    0
## [363,]    0    0    4    6
## [364,]    0    0    4    6
## [365,]    8    0    2    0
## [366,]   10    0    0    0
## [367,]    0    0    4    6
## [368,]    0    0    4    6
## [369,]    5    0    4    1
## [370,]   10    0    0    0
## [371,]    1    0    4    5
## [372,]    8    0    2    0
## [373,]    0    0    4    6
## [374,]    0    0    4    6
## [375,]   10    0    0    0
## [376,]    0    0    4    6
## [377,]    0    0    4    6
## [378,]   10    0    0    0
## [379,]    9    0    1    0
## [380,]   10    0    0    0
## [381,]   10    0    0    0
## [382,]    0    0    4    6
## [383,]   10    0    0    0
## [384,]    0    0    4    6
## [385,]    0    0    4    6
```

```
## [386,]    0    0    4    6
## [387,]    7    0    3    0
## [388,]    9    0    1    0
## [389,]    3    0    4    3
## [390,]    5    0    4    1
## [391,]   10    0    0    0
## [392,]   10    0    0    0
## [393,]    0    0    4    6
## [394,]    0    0    4    6
## [395,]   10    0    0    0
## [396,]    0    0    4    6
## [397,]    0    0    4    6
## [398,]   10    0    0    0
## [399,]    8    0    2    0
## [400,]   10    0    0    0
## [401,]   10    0    0    0
## [402,]    0    0    4    6
## [403,]   10    0    0    0
## [404,]    0    0    4    6
## [405,]    1    0    4    5
## [406,]   10    0    0    0
## [407,]    1    0    4    5
## [408,]    4    0    4    2
## [409,]   10    0    0    0
## [410,]    0    0    4    6
## [411,]   10    0    0    0
## [412,]    0    0    4    6
## [413,]    0    0    4    6
## [414,]    9    0    1    0
## [415,]   10    0    0    0
## [416,]    8    0    2    0
## [417,]    8    0    2    0
## [418,]   10    0    0    0
## [419,]   10    0    0    0
## [420,]   10    0    0    0
## [421,]   10    0    0    0
## [422,]    0    0    4    6
## [423,]    4    0    4    2
## [424,]   10    0    0    0
## [425,]   10    0    0    0
## [426,]   10    0    0    0
## [427,]   10    0    0    0
## [428,]   10    0    0    0
## [429,]    1    0    4    5
## [430,]    0    0    4    6
## [431,]   10    0    0    0
## [432,]   10    0    0    0
## [433,]    0    0    4    6
## [434,]    8    0    2    0
## [435,]   10    0    0    0
## [436,]    0    0    4    6
## [437,]   10    0    0    0
## [438,]    2    0    4    4
## [439,]   10    0    0    0
```

```
## [440,]    0    0    4    6
## [441,]    8    0    2    0
## [442,]    8    0    2    0
## [443,]    1    0    4    5
## [444,]    0    0    4    6
## [445,]    0    0    4    6
## [446,]    0    0    4    6
## [447,]    4    0    4    2
## [448,]   10    0    0    0
## [449,]    0    0    4    6
## [450,]    0    0    4    6
## [451,]    0    0    4    6
## [452,]    1    0    4    5
## [453,]    0    0    4    6
## [454,]   10    0    0    0
## [455,]   10    0    0    0
## [456,]   10    0    0    0
## [457,]   10    0    0    0
## [458,]    3    0    4    3
## [459,]    9    0    1    0
## [460,]    4    0    4    2
## [461,]   10    0    0    0
## [462,]    0    0    4    6
## [463,]    8    0    2    0
## [464,]    1    0    4    5
## [465,]    7    0    3    0
## [466,]    7    0    3    0
## [467,]    4    0    4    2
## [468,]    8    0    2    0
## [469,]    1    0    4    5
## [470,]    8    0    2    0
## [471,]   10    0    0    0
## [472,]    7    0    3    0
## [473,]    1    0    4    5
## [474,]    0    0    4    6
## [475,]    0    0    4    6
## [476,]   10    0    0    0
## [477,]    0    0    4    6
## [478,]    0    0    4    6
## [479,]    0    0    4    6
## [480,]    3    0    4    3
## [481,]   10    0    0    0
## [482,]    0    0    4    6
## [483,]    8    0    2    0
## [484,]    0    0    4    6
## [485,]   10    0    0    0
## [486,]    0    0    4    6
## [487,]    8    0    2    0
## [488,]   10    0    0    0
## [489,]    8    0    2    0
## [490,]    0    0    4    6
## [491,]   10    0    0    0
## [492,]    8    0    2    0
## [493,]    7    0    3    0
```

```
## [494,]    8    0    2    0
## [495,]    0    0    4    6
## [496,]    0    0    4    6
## [497,]    9    0    1    0
## [498,]    1    0    4    5
## [499,]   10    0    0    0
## [500,]   10    0    0    0
## [501,]   10    0    0    0
## [502,]    1    0    4    5
## [503,]   10    0    0    0
## [504,]    4    0    4    2
## [505,]   10    0    0    0
## [506,]   10    0    0    0
## [507,]    8    0    2    0
## [508,]    8    0    2    0
## [509,]    9    0    1    0
## [510,]   10    0    0    0
## [511,]   10    0    0    0
## [512,]   10    0    0    0
## [513,]   10    0    0    0
## [514,]    1    0    4    5
## [515,]    8    0    2    0
## [516,]    8    0    2    0
## [517,]   10    0    0    0
## [518,]    0    0    4    6
## [519,]   10    0    0    0
## [520,]    0    0    4    6
## [521,]    0    0    4    6
## [522,]    3    0    4    3
## [523,]   10    0    0    0
## [524,]    0    0    4    6
## [525,]    4    0    4    2
## [526,]    0    0    4    6
## [527,]    8    0    2    0
## [528,]    0    0    4    6
## [529,]   10    0    0    0
## [530,]    0    0    4    6
## [531,]    5    0    4    1
## [532,]    0    0    4    6
## [533,]   10    0    0    0
## [534,]    0    0    4    6
## [535,]    8    0    2    0
## [536,]    0    0    4    6
## [537,]   10    0    0    0
## [538,]    0    0    4    6
## [539,]    0    0    4    6
## [540,]   10    0    0    0
## [541,]    1    0    4    5
## [542,]    7    0    3    0
## [543,]   10    0    0    0
## [544,]   10    0    0    0
## [545,]    0    0    4    6
## [546,]    1    0    4    5
## [547,]    0    0    4    6
```

```
## [548,]   10    0    0    0
## [549,]   10    0    0    0
## [550,]    1    0    4    5
## [551,]   10    0    0    0
## [552,]    0    0    4    6
## [553,]   10    0    0    0
## [554,]    0    0    4    6
## [555,]   10    0    0    0
## [556,]    1    0    4    5
## [557,]    7    0    3    0
## [558,]    0    0    4    6
## [559,]    0    0    4    6
## [560,]    3    0    4    3
## [561,]    0    0    4    6
## [562,]    8    0    2    0
## [563,]    8    0    2    0
## [564,]    8    0    2    0
## [565,]   10    0    0    0
## [566,]    1    0    4    5
## [567,]    8    0    2    0
## [568,]   10    0    0    0
## [569,]    0    0    4    6
## [570,]    0    0    4    6
## [571,]    8    0    2    0
## [572,]    3    0    4    3
## [573,]    1    0    4    5
## [574,]   10    0    0    0
## [575,]    1    0    4    5
## [576,]    8    0    2    0
## [577,]    9    0    1    0
## [578,]    0    0    4    6
## [579,]    8    0    2    0
## [580,]    0    0    4    6
## [581,]    0    0    4    6
## [582,]    1    0    4    5
## [583,]    0    0    4    6
## [584,]   10    0    0    0
## [585,]   10    0    0    0
## [586,]    8    0    2    0
## [587,]   10    0    0    0
## [588,]    0    0    4    6
## [589,]    0    0    4    6
## [590,]    1    0    4    5
## [591,]    8    0    2    0
## [592,]    1    0    4    5
## [593,]   10    0    0    0
## [594,]   10    0    0    0
## [595,]   10    0    0    0
## [596,]    0    0    4    6
## [597,]    8    0    2    0
## [598,]   10    0    0    0
## [599,]   10    0    0    0
## [600,]    0    0    4    6
##
```

```
## $prob
##         [,1] [,2] [,3] [,4]
##   [1,]  0.1    0  0.4  0.5
##   [2,]  0.0    0  0.4  0.6
##   [3,]  1.0    0  0.0  0.0
##   [4,]  1.0    0  0.0  0.0
##   [5,]  0.0    0  0.4  0.6
##   [6,]  0.8    0  0.2  0.0
##   [7,]  0.0    0  0.4  0.6
##   [8,]  0.0    0  0.4  0.6
##   [9,]  0.0    0  0.4  0.6
##  [10,]  0.1    0  0.4  0.5
##  [11,]  1.0    0  0.0  0.0
##  [12,]  1.0    0  0.0  0.0
##  [13,]  0.5    0  0.4  0.1
##  [14,]  0.0    0  0.4  0.6
##  [15,]  0.4    0  0.4  0.2
##  [16,]  0.0    0  0.4  0.6
##  [17,]  1.0    0  0.0  0.0
##  [18,]  0.0    0  0.4  0.6
##  [19,]  0.5    0  0.4  0.1
##  [20,]  0.4    0  0.4  0.2
##  [21,]  1.0    0  0.0  0.0
##  [22,]  0.9    0  0.1  0.0
##  [23,]  0.0    0  0.4  0.6
##  [24,]  0.0    0  0.4  0.6
##  [25,]  0.9    0  0.1  0.0
##  [26,]  1.0    0  0.0  0.0
##  [27,]  0.0    0  0.4  0.6
##  [28,]  0.1    0  0.4  0.5
##  [29,]  0.3    0  0.4  0.3
##  [30,]  0.0    0  0.4  0.6
##  [31,]  1.0    0  0.0  0.0
##  [32,]  1.0    0  0.0  0.0
##  [33,]  0.1    0  0.4  0.5
##  [34,]  0.0    0  0.4  0.6
##  [35,]  0.9    0  0.1  0.0
##  [36,]  0.0    0  0.4  0.6
##  [37,]  0.1    0  0.4  0.5
##  [38,]  0.3    0  0.4  0.3
##  [39,]  0.1    0  0.4  0.5
##  [40,]  0.1    0  0.4  0.5
##  [41,]  0.0    0  0.4  0.6
##  [42,]  0.4    0  0.4  0.2
##  [43,]  0.0    0  0.4  0.6
##  [44,]  0.5    0  0.4  0.1
##  [45,]  1.0    0  0.0  0.0
##  [46,]  1.0    0  0.0  0.0
##  [47,]  1.0    0  0.0  0.0
##  [48,]  1.0    0  0.0  0.0
##  [49,]  0.0    0  0.4  0.6
##  [50,]  0.5    0  0.4  0.1
##  [51,]  0.8    0  0.2  0.0
##  [52,]  0.8    0  0.2  0.0
```

```
##  [53,]  0.0    0  0.4  0.6
##  [54,]  0.4    0  0.4  0.2
##  [55,]  0.8    0  0.2  0.0
##  [56,]  0.0    0  0.4  0.6
##  [57,]  0.9    0  0.1  0.0
##  [58,]  0.0    0  0.4  0.6
##  [59,]  0.9    0  0.1  0.0
##  [60,]  0.0    0  0.4  0.6
##  [61,]  0.1    0  0.4  0.5
##  [62,]  0.5    0  0.4  0.1
##  [63,]  1.0    0  0.0  0.0
##  [64,]  0.0    0  0.4  0.6
##  [65,]  1.0    0  0.0  0.0
##  [66,]  0.8    0  0.2  0.0
##  [67,]  1.0    0  0.0  0.0
##  [68,]  0.0    0  0.4  0.6
##  [69,]  1.0    0  0.0  0.0
##  [70,]  0.0    0  0.4  0.6
##  [71,]  0.1    0  0.4  0.5
##  [72,]  0.8    0  0.2  0.0
##  [73,]  0.3    0  0.4  0.3
##  [74,]  1.0    0  0.0  0.0
##  [75,]  0.4    0  0.4  0.2
##  [76,]  1.0    0  0.0  0.0
##  [77,]  0.0    0  0.4  0.6
##  [78,]  1.0    0  0.0  0.0
##  [79,]  1.0    0  0.0  0.0
##  [80,]  0.8    0  0.2  0.0
##  [81,]  1.0    0  0.0  0.0
##  [82,]  1.0    0  0.0  0.0
##  [83,]  0.3    0  0.4  0.3
##  [84,]  1.0    0  0.0  0.0
##  [85,]  0.0    0  0.4  0.6
##  [86,]  0.8    0  0.2  0.0
##  [87,]  0.4    0  0.4  0.2
##  [88,]  0.0    0  0.4  0.6
##  [89,]  0.0    0  0.4  0.6
##  [90,]  1.0    0  0.0  0.0
##  [91,]  0.0    0  0.4  0.6
##  [92,]  1.0    0  0.0  0.0
##  [93,]  1.0    0  0.0  0.0
##  [94,]  1.0    0  0.0  0.0
##  [95,]  1.0    0  0.0  0.0
##  [96,]  0.0    0  0.4  0.6
##  [97,]  0.9    0  0.1  0.0
##  [98,]  0.1    0  0.4  0.5
##  [99,]  0.0    0  0.4  0.6
## [100,]  0.7    0  0.3  0.0
## [101,]  0.0    0  0.4  0.6
## [102,]  0.2    0  0.4  0.4
## [103,]  1.0    0  0.0  0.0
## [104,]  1.0    0  0.0  0.0
## [105,]  1.0    0  0.0  0.0
## [106,]  0.1    0  0.4  0.5
```

```
## [107,]  1.0    0  0.0  0.0
## [108,]  1.0    0  0.0  0.0
## [109,]  0.1    0  0.4  0.5
## [110,]  0.0    0  0.4  0.6
## [111,]  0.0    0  0.4  0.6
## [112,]  0.0    0  0.4  0.6
## [113,]  0.0    0  0.4  0.6
## [114,]  0.0    0  0.4  0.6
## [115,]  1.0    0  0.0  0.0
## [116,]  0.0    0  0.4  0.6
## [117,]  0.0    0  0.4  0.6
## [118,]  0.0    0  0.4  0.6
## [119,]  0.0    0  0.4  0.6
## [120,]  0.0    0  0.4  0.6
## [121,]  0.4    0  0.4  0.2
## [122,]  0.0    0  0.4  0.6
## [123,]  0.8    0  0.2  0.0
## [124,]  0.0    0  0.4  0.6
## [125,]  1.0    0  0.0  0.0
## [126,]  0.0    0  0.4  0.6
## [127,]  1.0    0  0.0  0.0
## [128,]  1.0    0  0.0  0.0
## [129,]  1.0    0  0.0  0.0
## [130,]  0.8    0  0.2  0.0
## [131,]  0.0    0  0.4  0.6
## [132,]  0.8    0  0.2  0.0
## [133,]  0.4    0  0.4  0.2
## [134,]  0.0    0  0.4  0.6
## [135,]  1.0    0  0.0  0.0
## [136,]  0.0    0  0.4  0.6
## [137,]  0.2    0  0.4  0.4
## [138,]  1.0    0  0.0  0.0
## [139,]  0.0    0  0.4  0.6
## [140,]  0.7    0  0.3  0.0
## [141,]  1.0    0  0.0  0.0
## [142,]  0.0    0  0.4  0.6
## [143,]  0.0    0  0.4  0.6
## [144,]  1.0    0  0.0  0.0
## [145,]  0.0    0  0.4  0.6
## [146,]  0.0    0  0.4  0.6
## [147,]  0.4    0  0.4  0.2
## [148,]  1.0    0  0.0  0.0
## [149,]  0.4    0  0.4  0.2
## [150,]  0.0    0  0.4  0.6
## [151,]  1.0    0  0.0  0.0
## [152,]  0.7    0  0.3  0.0
## [153,]  0.0    0  0.4  0.6
## [154,]  1.0    0  0.0  0.0
## [155,]  1.0    0  0.0  0.0
## [156,]  0.8    0  0.2  0.0
## [157,]  0.1    0  0.4  0.5
## [158,]  0.0    0  0.4  0.6
## [159,]  0.0    0  0.4  0.6
## [160,]  0.1    0  0.4  0.5
```

```
## [161,]  0.4    0  0.4  0.2
## [162,]  0.7    0  0.3  0.0
## [163,]  0.0    0  0.4  0.6
## [164,]  0.8    0  0.2  0.0
## [165,]  1.0    0  0.0  0.0
## [166,]  0.3    0  0.4  0.3
## [167,]  0.0    0  0.4  0.6
## [168,]  1.0    0  0.0  0.0
## [169,]  1.0    0  0.0  0.0
## [170,]  0.0    0  0.4  0.6
## [171,]  0.0    0  0.4  0.6
## [172,]  1.0    0  0.0  0.0
## [173,]  1.0    0  0.0  0.0
## [174,]  1.0    0  0.0  0.0
## [175,]  1.0    0  0.0  0.0
## [176,]  0.0    0  0.4  0.6
## [177,]  0.0    0  0.4  0.6
## [178,]  0.0    0  0.4  0.6
## [179,]  0.2    0  0.4  0.4
## [180,]  0.5    0  0.4  0.1
## [181,]  1.0    0  0.0  0.0
## [182,]  0.9    0  0.1  0.0
## [183,]  0.0    0  0.4  0.6
## [184,]  0.0    0  0.4  0.6
## [185,]  0.0    0  0.4  0.6
## [186,]  0.1    0  0.4  0.5
## [187,]  0.1    0  0.4  0.5
## [188,]  0.9    0  0.1  0.0
## [189,]  1.0    0  0.0  0.0
## [190,]  0.0    0  0.4  0.6
## [191,]  0.5    0  0.4  0.1
## [192,]  0.8    0  0.2  0.0
## [193,]  0.1    0  0.4  0.5
## [194,]  0.8    0  0.2  0.0
## [195,]  0.8    0  0.2  0.0
## [196,]  1.0    0  0.0  0.0
## [197,]  0.1    0  0.4  0.5
## [198,]  1.0    0  0.0  0.0
## [199,]  1.0    0  0.0  0.0
## [200,]  0.0    0  0.4  0.6
## [201,]  0.1    0  0.4  0.5
## [202,]  1.0    0  0.0  0.0
## [203,]  0.0    0  0.4  0.6
## [204,]  0.4    0  0.4  0.2
## [205,]  0.0    0  0.4  0.6
## [206,]  0.8    0  0.2  0.0
## [207,]  0.4    0  0.4  0.2
## [208,]  0.7    0  0.3  0.0
## [209,]  0.1    0  0.4  0.5
## [210,]  1.0    0  0.0  0.0
## [211,]  0.8    0  0.2  0.0
## [212,]  1.0    0  0.0  0.0
## [213,]  0.0    0  0.4  0.6
## [214,]  0.4    0  0.4  0.2
```

```
## [215,]  0.3    0  0.4  0.3
## [216,]  1.0    0  0.0  0.0
## [217,]  0.0    0  0.4  0.6
## [218,]  0.1    0  0.4  0.5
## [219,]  0.0    0  0.4  0.6
## [220,]  1.0    0  0.0  0.0
## [221,]  0.1    0  0.4  0.5
## [222,]  0.0    0  0.4  0.6
## [223,]  0.7    0  0.3  0.0
## [224,]  1.0    0  0.0  0.0
## [225,]  0.0    0  0.4  0.6
## [226,]  0.8    0  0.2  0.0
## [227,]  0.1    0  0.4  0.5
## [228,]  0.8    0  0.2  0.0
## [229,]  0.9    0  0.1  0.0
## [230,]  0.0    0  0.4  0.6
## [231,]  0.8    0  0.2  0.0
## [232,]  0.1    0  0.4  0.5
## [233,]  0.0    0  0.4  0.6
## [234,]  1.0    0  0.0  0.0
## [235,]  0.0    0  0.4  0.6
## [236,]  0.0    0  0.4  0.6
## [237,]  0.4    0  0.4  0.2
## [238,]  1.0    0  0.0  0.0
## [239,]  0.8    0  0.2  0.0
## [240,]  0.5    0  0.4  0.1
## [241,]  0.0    0  0.4  0.6
## [242,]  0.1    0  0.4  0.5
## [243,]  0.0    0  0.4  0.6
## [244,]  1.0    0  0.0  0.0
## [245,]  0.8    0  0.2  0.0
## [246,]  0.0    0  0.4  0.6
## [247,]  1.0    0  0.0  0.0
## [248,]  1.0    0  0.0  0.0
## [249,]  1.0    0  0.0  0.0
## [250,]  0.8    0  0.2  0.0
## [251,]  0.5    0  0.4  0.1
## [252,]  1.0    0  0.0  0.0
## [253,]  0.0    0  0.4  0.6
## [254,]  0.0    0  0.4  0.6
## [255,]  0.7    0  0.3  0.0
## [256,]  0.0    0  0.4  0.6
## [257,]  0.8    0  0.2  0.0
## [258,]  1.0    0  0.0  0.0
## [259,]  0.0    0  0.4  0.6
## [260,]  1.0    0  0.0  0.0
## [261,]  0.0    0  0.4  0.6
## [262,]  0.0    0  0.4  0.6
## [263,]  0.7    0  0.3  0.0
## [264,]  0.7    0  0.3  0.0
## [265,]  0.0    0  0.4  0.6
## [266,]  1.0    0  0.0  0.0
## [267,]  0.0    0  0.4  0.6
## [268,]  0.4    0  0.4  0.2
```

```
## [269,]  0.5    0  0.4  0.1
## [270,]  0.8    0  0.2  0.0
## [271,]  1.0    0  0.0  0.0
## [272,]  1.0    0  0.0  0.0
## [273,]  1.0    0  0.0  0.0
## [274,]  0.8    0  0.2  0.0
## [275,]  1.0    0  0.0  0.0
## [276,]  0.1    0  0.4  0.5
## [277,]  0.0    0  0.4  0.6
## [278,]  0.8    0  0.2  0.0
## [279,]  0.0    0  0.4  0.6
## [280,]  1.0    0  0.0  0.0
## [281,]  1.0    0  0.0  0.0
## [282,]  0.5    0  0.4  0.1
## [283,]  0.0    0  0.4  0.6
## [284,]  0.0    0  0.4  0.6
## [285,]  1.0    0  0.0  0.0
## [286,]  0.0    0  0.4  0.6
## [287,]  0.0    0  0.4  0.6
## [288,]  1.0    0  0.0  0.0
## [289,]  0.8    0  0.2  0.0
## [290,]  0.0    0  0.4  0.6
## [291,]  1.0    0  0.0  0.0
## [292,]  0.0    0  0.4  0.6
## [293,]  0.7    0  0.3  0.0
## [294,]  0.0    0  0.4  0.6
## [295,]  1.0    0  0.0  0.0
## [296,]  1.0    0  0.0  0.0
## [297,]  0.0    0  0.4  0.6
## [298,]  0.0    0  0.4  0.6
## [299,]  1.0    0  0.0  0.0
## [300,]  1.0    0  0.0  0.0
## [301,]  0.0    0  0.4  0.6
## [302,]  0.1    0  0.4  0.5
## [303,]  0.0    0  0.4  0.6
## [304,]  0.9    0  0.1  0.0
## [305,]  0.0    0  0.4  0.6
## [306,]  1.0    0  0.0  0.0
## [307,]  0.7    0  0.3  0.0
## [308,]  0.9    0  0.1  0.0
## [309,]  0.1    0  0.4  0.5
## [310,]  1.0    0  0.0  0.0
## [311,]  0.5    0  0.4  0.1
## [312,]  0.8    0  0.2  0.0
## [313,]  0.0    0  0.4  0.6
## [314,]  0.7    0  0.3  0.0
## [315,]  0.7    0  0.3  0.0
## [316,]  0.0    0  0.4  0.6
## [317,]  0.0    0  0.4  0.6
## [318,]  0.4    0  0.4  0.2
## [319,]  0.0    0  0.4  0.6
## [320,]  1.0    0  0.0  0.0
## [321,]  1.0    0  0.0  0.0
## [322,]  0.8    0  0.2  0.0
```

```
## [323,]  0.0    0  0.4  0.6
## [324,]  0.7    0  0.3  0.0
## [325,]  1.0    0  0.0  0.0
## [326,]  0.9    0  0.1  0.0
## [327,]  0.1    0  0.4  0.5
## [328,]  0.8    0  0.2  0.0
## [329,]  0.0    0  0.4  0.6
## [330,]  0.7    0  0.3  0.0
## [331,]  1.0    0  0.0  0.0
## [332,]  0.8    0  0.2  0.0
## [333,]  1.0    0  0.0  0.0
## [334,]  0.1    0  0.4  0.5
## [335,]  0.1    0  0.4  0.5
## [336,]  0.4    0  0.4  0.2
## [337,]  0.0    0  0.4  0.6
## [338,]  0.0    0  0.4  0.6
## [339,]  0.8    0  0.2  0.0
## [340,]  0.1    0  0.4  0.5
## [341,]  0.0    0  0.4  0.6
## [342,]  0.0    0  0.4  0.6
## [343,]  0.1    0  0.4  0.5
## [344,]  1.0    0  0.0  0.0
## [345,]  0.1    0  0.4  0.5
## [346,]  1.0    0  0.0  0.0
## [347,]  0.0    0  0.4  0.6
## [348,]  0.4    0  0.4  0.2
## [349,]  0.8    0  0.2  0.0
## [350,]  0.0    0  0.4  0.6
## [351,]  0.1    0  0.4  0.5
## [352,]  0.0    0  0.4  0.6
## [353,]  0.0    0  0.4  0.6
## [354,]  0.0    0  0.4  0.6
## [355,]  0.0    0  0.4  0.6
## [356,]  0.9    0  0.1  0.0
## [357,]  0.0    0  0.4  0.6
## [358,]  1.0    0  0.0  0.0
## [359,]  0.0    0  0.4  0.6
## [360,]  0.1    0  0.4  0.5
## [361,]  0.1    0  0.4  0.5
## [362,]  1.0    0  0.0  0.0
## [363,]  0.0    0  0.4  0.6
## [364,]  0.0    0  0.4  0.6
## [365,]  0.8    0  0.2  0.0
## [366,]  1.0    0  0.0  0.0
## [367,]  0.0    0  0.4  0.6
## [368,]  0.0    0  0.4  0.6
## [369,]  0.5    0  0.4  0.1
## [370,]  1.0    0  0.0  0.0
## [371,]  0.1    0  0.4  0.5
## [372,]  0.8    0  0.2  0.0
## [373,]  0.0    0  0.4  0.6
## [374,]  0.0    0  0.4  0.6
## [375,]  1.0    0  0.0  0.0
## [376,]  0.0    0  0.4  0.6
```

```
## [377,]  0.0    0  0.4  0.6
## [378,]  1.0    0  0.0  0.0
## [379,]  0.9    0  0.1  0.0
## [380,]  1.0    0  0.0  0.0
## [381,]  1.0    0  0.0  0.0
## [382,]  0.0    0  0.4  0.6
## [383,]  1.0    0  0.0  0.0
## [384,]  0.0    0  0.4  0.6
## [385,]  0.0    0  0.4  0.6
## [386,]  0.0    0  0.4  0.6
## [387,]  0.7    0  0.3  0.0
## [388,]  0.9    0  0.1  0.0
## [389,]  0.3    0  0.4  0.3
## [390,]  0.5    0  0.4  0.1
## [391,]  1.0    0  0.0  0.0
## [392,]  1.0    0  0.0  0.0
## [393,]  0.0    0  0.4  0.6
## [394,]  0.0    0  0.4  0.6
## [395,]  1.0    0  0.0  0.0
## [396,]  0.0    0  0.4  0.6
## [397,]  0.0    0  0.4  0.6
## [398,]  1.0    0  0.0  0.0
## [399,]  0.8    0  0.2  0.0
## [400,]  1.0    0  0.0  0.0
## [401,]  1.0    0  0.0  0.0
## [402,]  0.0    0  0.4  0.6
## [403,]  1.0    0  0.0  0.0
## [404,]  0.0    0  0.4  0.6
## [405,]  0.1    0  0.4  0.5
## [406,]  1.0    0  0.0  0.0
## [407,]  0.1    0  0.4  0.5
## [408,]  0.4    0  0.4  0.2
## [409,]  1.0    0  0.0  0.0
## [410,]  0.0    0  0.4  0.6
## [411,]  1.0    0  0.0  0.0
## [412,]  0.0    0  0.4  0.6
## [413,]  0.0    0  0.4  0.6
## [414,]  0.9    0  0.1  0.0
## [415,]  1.0    0  0.0  0.0
## [416,]  0.8    0  0.2  0.0
## [417,]  0.8    0  0.2  0.0
## [418,]  1.0    0  0.0  0.0
## [419,]  1.0    0  0.0  0.0
## [420,]  1.0    0  0.0  0.0
## [421,]  1.0    0  0.0  0.0
## [422,]  0.0    0  0.4  0.6
## [423,]  0.4    0  0.4  0.2
## [424,]  1.0    0  0.0  0.0
## [425,]  1.0    0  0.0  0.0
## [426,]  1.0    0  0.0  0.0
## [427,]  1.0    0  0.0  0.0
## [428,]  1.0    0  0.0  0.0
## [429,]  0.1    0  0.4  0.5
## [430,]  0.0    0  0.4  0.6
```

```
## [431,]  1.0    0  0.0  0.0
## [432,]  1.0    0  0.0  0.0
## [433,]  0.0    0  0.4  0.6
## [434,]  0.8    0  0.2  0.0
## [435,]  1.0    0  0.0  0.0
## [436,]  0.0    0  0.4  0.6
## [437,]  1.0    0  0.0  0.0
## [438,]  0.2    0  0.4  0.4
## [439,]  1.0    0  0.0  0.0
## [440,]  0.0    0  0.4  0.6
## [441,]  0.8    0  0.2  0.0
## [442,]  0.8    0  0.2  0.0
## [443,]  0.1    0  0.4  0.5
## [444,]  0.0    0  0.4  0.6
## [445,]  0.0    0  0.4  0.6
## [446,]  0.0    0  0.4  0.6
## [447,]  0.4    0  0.4  0.2
## [448,]  1.0    0  0.0  0.0
## [449,]  0.0    0  0.4  0.6
## [450,]  0.0    0  0.4  0.6
## [451,]  0.0    0  0.4  0.6
## [452,]  0.1    0  0.4  0.5
## [453,]  0.0    0  0.4  0.6
## [454,]  1.0    0  0.0  0.0
## [455,]  1.0    0  0.0  0.0
## [456,]  1.0    0  0.0  0.0
## [457,]  1.0    0  0.0  0.0
## [458,]  0.3    0  0.4  0.3
## [459,]  0.9    0  0.1  0.0
## [460,]  0.4    0  0.4  0.2
## [461,]  1.0    0  0.0  0.0
## [462,]  0.0    0  0.4  0.6
## [463,]  0.8    0  0.2  0.0
## [464,]  0.1    0  0.4  0.5
## [465,]  0.7    0  0.3  0.0
## [466,]  0.7    0  0.3  0.0
## [467,]  0.4    0  0.4  0.2
## [468,]  0.8    0  0.2  0.0
## [469,]  0.1    0  0.4  0.5
## [470,]  0.8    0  0.2  0.0
## [471,]  1.0    0  0.0  0.0
## [472,]  0.7    0  0.3  0.0
## [473,]  0.1    0  0.4  0.5
## [474,]  0.0    0  0.4  0.6
## [475,]  0.0    0  0.4  0.6
## [476,]  1.0    0  0.0  0.0
## [477,]  0.0    0  0.4  0.6
## [478,]  0.0    0  0.4  0.6
## [479,]  0.0    0  0.4  0.6
## [480,]  0.3    0  0.4  0.3
## [481,]  1.0    0  0.0  0.0
## [482,]  0.0    0  0.4  0.6
## [483,]  0.8    0  0.2  0.0
## [484,]  0.0    0  0.4  0.6
```

```
## [485,]  1.0    0  0.0  0.0
## [486,]  0.0    0  0.4  0.6
## [487,]  0.8    0  0.2  0.0
## [488,]  1.0    0  0.0  0.0
## [489,]  0.8    0  0.2  0.0
## [490,]  0.0    0  0.4  0.6
## [491,]  1.0    0  0.0  0.0
## [492,]  0.8    0  0.2  0.0
## [493,]  0.7    0  0.3  0.0
## [494,]  0.8    0  0.2  0.0
## [495,]  0.0    0  0.4  0.6
## [496,]  0.0    0  0.4  0.6
## [497,]  0.9    0  0.1  0.0
## [498,]  0.1    0  0.4  0.5
## [499,]  1.0    0  0.0  0.0
## [500,]  1.0    0  0.0  0.0
## [501,]  1.0    0  0.0  0.0
## [502,]  0.1    0  0.4  0.5
## [503,]  1.0    0  0.0  0.0
## [504,]  0.4    0  0.4  0.2
## [505,]  1.0    0  0.0  0.0
## [506,]  1.0    0  0.0  0.0
## [507,]  0.8    0  0.2  0.0
## [508,]  0.8    0  0.2  0.0
## [509,]  0.9    0  0.1  0.0
## [510,]  1.0    0  0.0  0.0
## [511,]  1.0    0  0.0  0.0
## [512,]  1.0    0  0.0  0.0
## [513,]  1.0    0  0.0  0.0
## [514,]  0.1    0  0.4  0.5
## [515,]  0.8    0  0.2  0.0
## [516,]  0.8    0  0.2  0.0
## [517,]  1.0    0  0.0  0.0
## [518,]  0.0    0  0.4  0.6
## [519,]  1.0    0  0.0  0.0
## [520,]  0.0    0  0.4  0.6
## [521,]  0.0    0  0.4  0.6
## [522,]  0.3    0  0.4  0.3
## [523,]  1.0    0  0.0  0.0
## [524,]  0.0    0  0.4  0.6
## [525,]  0.4    0  0.4  0.2
## [526,]  0.0    0  0.4  0.6
## [527,]  0.8    0  0.2  0.0
## [528,]  0.0    0  0.4  0.6
## [529,]  1.0    0  0.0  0.0
## [530,]  0.0    0  0.4  0.6
## [531,]  0.5    0  0.4  0.1
## [532,]  0.0    0  0.4  0.6
## [533,]  1.0    0  0.0  0.0
## [534,]  0.0    0  0.4  0.6
## [535,]  0.8    0  0.2  0.0
## [536,]  0.0    0  0.4  0.6
## [537,]  1.0    0  0.0  0.0
## [538,]  0.0    0  0.4  0.6
```

```
## [539,]  0.0    0  0.4  0.6
## [540,]  1.0    0  0.0  0.0
## [541,]  0.1    0  0.4  0.5
## [542,]  0.7    0  0.3  0.0
## [543,]  1.0    0  0.0  0.0
## [544,]  1.0    0  0.0  0.0
## [545,]  0.0    0  0.4  0.6
## [546,]  0.1    0  0.4  0.5
## [547,]  0.0    0  0.4  0.6
## [548,]  1.0    0  0.0  0.0
## [549,]  1.0    0  0.0  0.0
## [550,]  0.1    0  0.4  0.5
## [551,]  1.0    0  0.0  0.0
## [552,]  0.0    0  0.4  0.6
## [553,]  1.0    0  0.0  0.0
## [554,]  0.0    0  0.4  0.6
## [555,]  1.0    0  0.0  0.0
## [556,]  0.1    0  0.4  0.5
## [557,]  0.7    0  0.3  0.0
## [558,]  0.0    0  0.4  0.6
## [559,]  0.0    0  0.4  0.6
## [560,]  0.3    0  0.4  0.3
## [561,]  0.0    0  0.4  0.6
## [562,]  0.8    0  0.2  0.0
## [563,]  0.8    0  0.2  0.0
## [564,]  0.8    0  0.2  0.0
## [565,]  1.0    0  0.0  0.0
## [566,]  0.1    0  0.4  0.5
## [567,]  0.8    0  0.2  0.0
## [568,]  1.0    0  0.0  0.0
## [569,]  0.0    0  0.4  0.6
## [570,]  0.0    0  0.4  0.6
## [571,]  0.8    0  0.2  0.0
## [572,]  0.3    0  0.4  0.3
## [573,]  0.1    0  0.4  0.5
## [574,]  1.0    0  0.0  0.0
## [575,]  0.1    0  0.4  0.5
## [576,]  0.8    0  0.2  0.0
## [577,]  0.9    0  0.1  0.0
## [578,]  0.0    0  0.4  0.6
## [579,]  0.8    0  0.2  0.0
## [580,]  0.0    0  0.4  0.6
## [581,]  0.0    0  0.4  0.6
## [582,]  0.1    0  0.4  0.5
## [583,]  0.0    0  0.4  0.6
## [584,]  1.0    0  0.0  0.0
## [585,]  1.0    0  0.0  0.0
## [586,]  0.8    0  0.2  0.0
## [587,]  1.0    0  0.0  0.0
## [588,]  0.0    0  0.4  0.6
## [589,]  0.0    0  0.4  0.6
## [590,]  0.1    0  0.4  0.5
## [591,]  0.8    0  0.2  0.0
## [592,]  0.1    0  0.4  0.5
```

```
## [593,]  1.0    0  0.0  0.0
## [594,]  1.0    0  0.0  0.0
## [595,]  1.0    0  0.0  0.0
## [596,]  0.0    0  0.4  0.6
## [597,]  0.8    0  0.2  0.0
## [598,]  1.0    0  0.0  0.0
## [599,]  1.0    0  0.0  0.0
## [600,]  0.0    0  0.4  0.6
##
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##  [91] "3" "0" "0" "0" "0" "3" "0" "3" "3" "0" "3" "2" "0" "0" "0" "3" "0" "0"
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## [199] "0" "3" "3" "0" "3" "0" "3" "0" "0" "0" "3" "0" "0" "0" "3" "0" "2" "0"
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## [397] "3" "0" "0" "0" "0" "3" "0" "3" "3" "0" "3" "0" "0" "3" "0" "3" "3" "0"
## [415] "0" "0" "0" "0" "0" "0" "0" "3" "0" "0" "0" "0" "0" "0" "3" "3" "0" "0"
## [433] "3" "0" "0" "3" "0" "2" "0" "3" "0" "0" "3" "3" "3" "3" "0" "0" "3" "3"
## [451] "3" "3" "3" "0" "0" "0" "0" "2" "0" "0" "0" "3" "0" "3" "0" "0" "0" "0"
## [469] "3" "0" "0" "0" "3" "3" "3" "0" "3" "3" "3" "2" "0" "3" "0" "3" "0" "3"
## [487] "0" "0" "0" "3" "0" "0" "0" "0" "0" "3" "3" "0" "3" "0" "0" "0" "3" "0" "0"
## [505] "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "3" "0" "0" "0" "3" "0" "3" "3" "2"
## [523] "0" "3" "0" "3" "0" "3" "0" "3" "0" "3" "0" "3" "0" "3" "0" "3" "3" "0"
## [541] "3" "0" "0" "0" "3" "3" "3" "0" "0" "3" "0" "3" "0" "3" "0" "3" "0" "3"
## [559] "3" "2" "3" "0" "0" "0" "0" "3" "0" "0" "3" "3" "0" "2" "3" "0" "3" "0"
## [577] "0" "3" "0" "3" "3" "3" "3" "0" "0" "0" "0" "3" "3" "3" "0" "3" "0" "0"
## [595] "0" "3" "0" "0" "0" "3"
##
## $confusion
##                Observed Class
## Predicted Class   0   1   2   3
##               0 150 140  37   1
##               2   0   2  12   2
##               3   0   8 101 147
##
## $error
## [1] 0.485
```

```
data.baggingcv <- bagging.cv(price_range ~., v = 10, data = data_train, mfinal = 10, control = rpart.co
data.baggingcv
```

```
## $class
##    [1] "3" "3" "3" "0" "0" "0" "3" "3" "0" "2" "0" "0" "3" "3" "0" "0" "3" "3"
##   [19] "3" "2" "1" "3" "0" "0" "3" "3" "0" "3" "0" "2" "0" "0" "3" "0" "3" "1"
##   [37] "0" "0" "3" "2" "3" "0" "0" "0" "0" "3" "3" "3" "3" "0" "3" "3" "0" "3"
##   [55] "0" "1" "3" "0" "3" "2" "1" "0" "0" "0" "3" "3" "3" "0" "0" "0" "0" "0"
##   [73] "0" "3" "0" "3" "0" "0" "0" "2" "3" "0" "3" "0" "3" "3" "3" "0" "3" "2"
##   [91] "3" "3" "3" "3" "0" "3" "0" "3" "3" "0" "0" "0" "0" "3" "0" "3" "3" "3"
##  [109] "3" "0" "0" "0" "3" "0" "3" "3" "0" "3" "3" "2" "1" "3" "0" "3" "3" "1"
##  [127] "0" "3" "3" "2" "0" "0" "3" "3" "3" "0" "3" "3" "3" "2" "3" "3" "0" "0"
##  [145] "0" "0" "3" "3" "0" "2" "3" "0" "0" "3" "3" "3" "3" "3" "3" "2" "3" "0"
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##  [181] "0" "3" "0" "1" "0" "3" "0" "3" "3" "0" "3" "0" "3" "3" "0" "0" "3" "0"
##  [199] "0" "2" "0" "3" "3" "3" "0" "0" "0" "3" "0" "0" "3" "0" "0" "3" "0" "1"
##  [217] "3" "0" "3" "0" "3" "3" "0" "0" "0" "0" "3" "0" "0" "0" "3" "3" "0" "1"
##  [235] "0" "1" "0" "3" "3" "0" "1" "3" "0" "0" "3" "3" "3" "3" "3" "2" "3" "3"
##  [253] "3" "0" "3" "0" "0" "3" "3" "0" "0" "3" "3" "3" "3" "3" "3" "0" "3" "0"
##  [271] "0" "3" "3" "3" "3" "3" "3" "3" "0" "2" "3" "0" "0" "3" "3" "3" "0" "3"
##  [289] "3" "2" "3" "3" "0" "3" "0" "3" "3" "0" "0" "2" "3" "0" "0" "3" "3" "0"
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##  [433] "3" "3" "0" "3" "0" "0" "3" "0" "0" "0" "0" "3" "3" "0" "3" "3" "0" "2"
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##  [469] "0" "0" "0" "3" "3" "3" "3" "3" "0" "0" "0" "2" "3" "0" "3" "3" "0" "3"
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##  [505] "0" "0" "0" "3" "3" "2" "3" "3" "3" "3" "3" "0" "3" "3" "0" "2" "0" "0"
##  [523] "3" "0" "3" "0" "0" "0" "3" "0" "1" "3" "0" "3" "3" "0" "0" "0" "3" "2"
##  [541] "0" "3" "3" "0" "0" "0" "3" "3" "3" "2" "3" "0" "0" "3" "0" "0" "3" "0"
##  [559] "0" "2" "3" "3" "3" "0" "0" "1" "0" "3" "3" "0" "0" "3" "3" "0" "3" "3"
##  [577] "3" "3" "3" "2" "3" "3" "3" "3" "3" "3" "3" "3" "0" "2" "0" "0" "3" "0"
##  [595] "0" "3" "0" "0" "3" "0" "3" "3" "0" "3" "0" "1" "3" "0" "3" "2" "1" "3"
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## [1099] "0" "0" "3" "3" "3" "3" "3" "3" "0" "0" "3" "0" "3" "3" "0" "3" "0" "1"
## [1117] "0" "0" "0" "0" "0" "3" "0" "0" "3" "3" "3" "0" "3" "0" "3" "3" "0" "3"
## [1135] "3" "0" "3" "3" "3" "2" "3" "3" "3" "3" "3" "1" "3" "0" "0" "2" "0" "3"
## [1153] "3" "0" "0" "1" "0" "0" "0" "2" "3" "3" "3" "0" "3" "0" "0" "3" "0" "0"
## [1171] "0" "0" "3" "0" "0" "3" "3" "0" "0" "2" "0" "0" "0" "3" "0" "3" "0" "0"
## [1189] "3" "2" "0" "3" "3" "3" "3" "0" "3" "3" "0" "2" "3" "0" "3" "3" "0" "3"
## [1207] "0" "3" "3" "2" "3" "3" "0" "3" "0" "3" "3" "3" "0" "2" "3" "3" "0" "3"
## [1225] "3" "3" "0" "0" "3" "2" "3" "0" "3" "3" "0" "3" "0" "3" "0" "2" "3" "0"
## [1243] "3" "3" "0" "3" "0" "0" "3" "2" "1" "3" "3" "3" "0" "1" "0" "0" "0" "2"
## [1261] "0" "3" "0" "3" "0" "0" "0" "0" "0" "0" "1" "3" "0" "0" "0" "3" "0" "0"
## [1279] "3" "2" "3" "3" "3" "0" "0" "1" "3" "3" "0" "2" "1" "0" "3" "3" "0" "3"
## [1297] "0" "3" "0" "2" "0" "3" "0" "0" "0" "3" "3" "0" "0" "0" "3" "3" "0" "0"
## [1315] "0" "3" "0" "3" "0" "2" "0" "0" "0" "3" "0" "0" "3" "0" "3" "0" "3" "3"
## [1333] "0" "0" "3" "3" "0" "3" "0" "2" "0" "0" "3" "0" "3" "3" "3" "0" "0" "0"
## [1351] "0" "0" "0" "1" "3" "1" "3" "3" "0" "0" "0" "3" "0" "3" "0" "1" "0" "3"
## [1369] "0" "2" "0" "0" "3" "0" "3" "1" "3" "0" "3" "2" "3" "0" "3" "0" "0" "1"
## [1387] "0" "3" "3" "2" "0" "0" "3" "3" "3" "0" "0" "3" "0" "2"
##
## $confusion
##                Observed Class
## Predicted Class   0   1   2   3
##               0 347 253  55   0
##               1   2  28  19   1
##               2   1  18  25  41
##               3   0  51 251 308
##
## $error
## [1] 0.4942857
```

```
data.bagging.margins <- margins(data.bagging, data_train)
data.bagging.predmargins <- margins(data.predbagging, data_test)
data.bagging.margins
```

```
## $margins
##    [1] -0.1 -0.1 -0.2 -0.9 -1.0  1.0  0.2  0.2 -0.8 -0.1  1.0  1.0  0.2 -0.4
##   [15] -0.9  1.0 -0.5 -0.2  0.2  0.2 -0.4  0.2  1.0 -0.9  0.2 -0.2 -0.1 -0.1
##   [29] -0.8 -0.8  1.0 -1.0  0.2  1.0  0.2 -0.1 -0.1 -0.9 -0.2 -0.1 -0.2 -0.8
##   [43]  1.0  1.0 -0.1 -0.2  0.2  0.2  0.2  1.0  0.2  0.2  1.0  0.2  1.0 -0.8
##   [57]  0.2 -0.8  0.2 -0.1 -0.7 -0.7 -1.0  1.0 -0.2  0.1  0.2 -0.4 -0.9  1.0
##   [71] -0.6  0.8 -0.8  0.1 -0.9 -0.5  1.0  1.0 -0.8  0.1  0.2 -0.7 -0.4  1.0
##   [85]  0.2  0.2 -0.2 -0.7 -0.1  0.2  0.2  0.2  0.2 -0.2 -0.8  0.2  1.0 -0.4
##   [99]  0.2  1.0  0.8 -0.8  1.0  0.2  1.0  0.2  0.0 -0.2 -0.4 -0.9 -0.9  1.0
```

```
##  [113]  0.2 -1.0 -0.2 -0.2  1.0  0.1  0.2 -0.5 -0.4  0.1 -0.8 -0.2  0.2  0.0
##  [127]  1.0  0.1 -0.2 -0.8  0.6  1.0  0.1  0.2  0.2  1.0  0.2  0.2 -0.5  0.0
##  [141]  0.2 -0.2 -0.8 -1.0  1.0  1.0 -0.1 -0.1  0.0  0.2 -0.2  1.0  1.0  0.2
##  [155]  0.2  0.2 -0.1 -0.1  0.2  0.2  0.2  1.0 -0.4 -0.2  1.0 -0.8  0.2  1.0
##  [169] -0.2  0.2 -0.6  0.2  0.2 -0.8 -0.8  1.0 -0.2 -0.1  1.0  1.0 -0.8  0.2
##  [183] -1.0 -0.7  1.0  0.2 -1.0  0.1 -0.1  1.0  0.2 -0.8 -0.1  0.2 -0.8  1.0
##  [197]  0.2 -1.0 -0.7  0.1 -0.8  0.2  0.2  0.2 -1.0  1.0 -0.8  0.2 -1.0 -0.8
##  [211]  0.2  1.0  1.0 -0.2  1.0 -0.6  0.2 -0.6  0.2  1.0 -0.2  0.2 -1.0  1.0
##  [225] -0.8  1.0  0.2  1.0  1.0  1.0 -0.2 -0.2 -0.8 -0.5 -1.0 -0.8 -1.0 -0.2
##  [239]  0.2  1.0 -0.5  0.2  1.0 -1.0 -0.2 -0.2 -0.2 -0.2 -0.5  0.1 -0.1 -0.2
##  [253]  0.0  1.0  0.2 -1.0  1.0  0.2 -0.2  0.6  1.0  0.2 -0.1  0.2 -0.4  0.2
##  [267] -0.1  1.0 -0.5  1.0 -1.0 -0.2  0.1 -0.2 -0.4 -0.2  0.2  0.2 -0.5  0.2
##  [281]  0.2  0.8 -0.8 -0.1  0.2  0.2 -0.6 -0.1  0.2  0.4 -0.2  0.0  1.0  0.2
##  [295] -1.0 -0.1 -0.4 -0.8  1.0 -0.8 -0.1 -0.1  1.0 -0.2 -0.2  1.0 -0.8 -0.8
##  [309]  0.2 -1.0  1.0  0.2  1.0 -1.0  0.2 -1.0  1.0 -0.1 -0.7  0.2 -0.7  0.8
##  [323] -0.1  0.1 -0.8  1.0  1.0  0.2  1.0  1.0 -0.8  0.2  0.2  0.6  0.1 -0.2
##  [337]  0.2  0.2  1.0  0.2  1.0  0.2 -0.8  1.0 -0.2 -0.1 -1.0 -0.4  1.0 -0.2
##  [351] -0.7 -0.1  0.2  1.0  0.2 -1.0  1.0 -0.9 -0.1 -0.4  0.2  0.2 -0.5 -0.2
##  [365] -0.8  0.2  0.2  0.2  0.2 -0.9  0.2  0.2  0.2 -0.1  0.2  0.1 -0.1  0.2
##  [379] -0.2  1.0 -0.2 -0.8  1.0  0.2 -0.8 -0.8  0.2 -1.0  0.8  1.0  1.0 -0.1
##  [393] -0.2  1.0 -0.8 -0.4 -0.2  1.0  1.0  0.2  0.2  0.2  0.2  1.0 -0.2 -0.2
##  [407]  1.0  1.0  0.2  0.2  0.2  1.0  0.2 -0.9  1.0 -0.2  0.2 -1.0 -0.2  1.0
##  [421]  1.0  1.0  0.2  1.0 -0.8 -1.0 -0.1  1.0 -0.2  0.0  0.2  1.0 -0.2  0.2
##  [435] -0.8  0.2 -1.0 -0.9 -0.4  1.0  1.0 -1.0 -0.8  0.2  0.2 -0.9 -0.2  0.0
##  [449]  1.0 -0.7  0.2 -0.7 -0.2  0.0 -0.5  1.0  0.2 -0.6 -0.8  1.0 -1.0 -0.6
##  [463]  1.0  1.0  1.0 -0.2  0.2 -0.8  1.0  0.8  1.0 -0.2  0.2 -0.1  0.2 -0.1
##  [477] -0.1  1.0  1.0  0.2 -0.5 -1.0  0.2  0.0  1.0  0.2  1.0  0.2  0.2  0.2
##  [491]  1.0 -0.2  1.0 -0.9  0.2  1.0 -0.5 -0.2 -1.0  0.2  0.2  1.0 -0.4  1.0
##  [505] -0.4  1.0  1.0 -0.2 -0.1  0.2  0.2 -0.1 -0.4 -0.2  0.2 -1.0 -0.2  0.2
##  [519] -1.0  0.0 -1.0  1.0 -0.2  1.0  0.2  1.0  1.0  1.0  0.2  0.8 -0.4  0.2
##  [533] -0.5  0.2 -0.1  1.0  1.0  0.6  0.2 -0.1  1.0 -0.2 -0.1  1.0  0.0  1.0
##  [547]  0.2  0.2 -0.1  0.2 -0.2 -0.8  1.0  0.2 -0.8  1.0 -0.2 -0.7 -0.8  0.2
##  [561]  0.2  0.2  0.2  1.0  1.0 -0.8  1.0 -0.2 -0.2  0.8  1.0  0.2  0.2 -0.9
##  [575]  0.1  0.2 -0.1  0.2  0.2 -0.5  0.2  0.2  0.2  0.2 -0.2  0.2 -0.5  0.2
##  [589]  0.0  0.2  1.0  1.0  0.2  1.0  1.0 -0.2 -0.7  1.0  0.1 -0.9 -0.2  0.1
##  [603] -0.9 -0.2 -0.1  0.6 -0.2  1.0 -0.1 -0.2 -0.4  0.2  0.2  0.2 -0.4  1.0
##  [617] -1.0  1.0  1.0  0.1  0.2 -0.1 -0.2 -0.9 -0.2 -0.2  1.0 -0.8 -0.7  0.2
##  [631]  0.2 -0.8  0.2 -0.4  1.0  0.2 -0.6 -0.2  1.0  0.2  1.0 -1.0 -0.8  1.0
##  [645] -0.2  0.2  1.0  0.8  0.2 -0.1 -0.5 -0.7 -0.2  1.0  0.2 -0.1 -0.2  0.2
##  [659]  0.2 -0.2 -0.1  0.2  1.0 -0.8  1.0  0.2  1.0  0.0 -0.8 -0.9  1.0 -0.8
##  [673]  0.2  0.2 -1.0  0.2 -0.1  0.2 -0.8  1.0 -0.8 -0.9  1.0 -0.2  1.0 -1.0
##  [687]  0.2 -0.9  1.0  0.2  0.2  1.0  1.0  1.0  0.2  0.2 -0.7 -0.8 -0.8 -0.9
##  [701]  1.0  1.0 -0.2  0.2  0.2 -0.2  0.6  1.0 -1.0  0.1 -0.1  1.0  1.0 -0.6
##  [715]  1.0  0.8  0.2 -0.8  1.0  1.0  1.0 -0.8 -0.1  0.0 -0.2  1.0  1.0  0.2
##  [729] -0.9  1.0  0.1 -0.4  1.0 -0.2  0.2  0.2 -0.8 -0.5 -0.9 -1.0  0.0 -0.5
##  [743] -0.9 -0.2  1.0  0.2  1.0  1.0  1.0  1.0  0.2  1.0 -0.5 -1.0  1.0  0.2
##  [757] -0.6 -0.8  0.0 -0.1 -0.1 -0.8  1.0 -0.4  0.0  1.0  1.0 -0.8  0.1 -1.0
##  [771]  1.0  0.2 -0.8  1.0  0.2  0.2  0.2  0.2  0.2 -0.2  1.0 -0.1 -0.1  0.2
##  [785]  0.2 -0.1 -0.5  0.0  1.0 -0.1 -1.0 -0.5 -0.4  1.0 -0.2  1.0 -0.2 -0.1
##  [799] -0.2 -0.5  0.1 -0.1 -0.8 -0.9 -0.7 -0.8  0.2  0.8  0.2  1.0  0.0  1.0
##  [813] -0.1 -0.2  0.0 -0.6 -0.2  1.0  0.8 -0.2  1.0  0.2 -0.5  0.2 -0.2 -0.2
##  [827]  0.2  1.0  0.2 -1.0  1.0  1.0 -0.1 -0.2  1.0 -0.2  1.0 -0.2  1.0 -0.9
##  [841]  0.0 -0.1 -0.8 -0.2  1.0 -0.1 -0.8 -0.1 -0.7 -0.8  0.2  1.0 -0.4 -1.0
##  [855] -0.2  1.0  0.2 -0.8 -0.2 -0.1 -0.8  0.2 -0.1  1.0 -0.4 -0.1  0.2  1.0
```

```
##  [869] -1.0  1.0 -0.1  0.2  1.0  1.0  1.0 -0.1  0.2  1.0 -0.1 -0.8 -1.0 -0.1
##  [883] -1.0 -0.1 -0.4  0.2  1.0  1.0 -0.2  0.2 -0.7  0.2 -0.8  1.0  0.2  1.0
##  [897]  0.2 -1.0 -0.1  0.2  0.8  1.0 -0.5  1.0 -1.0  0.2 -0.7 -0.1 -0.4  1.0
##  [911]  0.2 -0.7  1.0  0.2  1.0 -0.1  0.0  0.2 -0.1  1.0  0.2 -1.0  0.2 -0.5
##  [925] -0.9  0.6  0.2 -0.5  0.2 -0.5 -0.2  1.0 -1.0  0.2  0.2 -0.8  0.6 -0.8
##  [939] -0.8  0.2 -0.5 -1.0 -1.0 -0.7 -0.9 -0.8 -0.2 -0.1  0.2  0.2 -0.6 -0.4
##  [953] -0.9 -0.1 -0.8 -0.2  0.2 -0.2  1.0  0.2  0.2 -1.0 -0.2  0.2  0.1 -0.8
##  [967] -0.9 -0.1 -0.8 -1.0  1.0  1.0 -0.2 -0.8 -1.0  1.0 -0.1  1.0 -0.1  0.2
##  [981] -0.8  0.8  1.0 -0.8  0.1  1.0 -1.0  0.2 -0.1  0.2 -0.6 -0.4  1.0  1.0
##  [995]  1.0  0.2  1.0  1.0  0.8  1.0 -0.8 -0.2  1.0  1.0 -0.4  1.0 -0.6 -0.1
## [1009]  1.0  1.0  0.2 -0.8 -0.9 -0.9  0.2  0.2  1.0 -0.9  1.0  0.2 -0.8  1.0
## [1023] -0.1  1.0  0.0  1.0 -0.4 -0.1 -0.8 -0.5 -0.1 -0.8  0.2  0.2  0.2  1.0
## [1037] -0.8 -0.1  0.2  0.8 -0.9 -1.0  0.0 -0.2  0.2 -0.8  0.2 -0.6 -0.5 -0.1
## [1051]  1.0 -1.0  0.0  0.2  1.0 -0.4  1.0  1.0  1.0  1.0  0.2 -0.5 -0.4 -0.1
## [1065] -0.6 -0.9  0.2 -0.4  0.0  0.0  0.2 -0.4 -0.7  1.0  0.2  0.2 -0.9 -0.7
## [1079]  1.0 -0.9 -0.2 -0.9 -1.0  0.2  0.2  1.0 -0.2 -0.8 -0.1 -0.1  1.0 -0.6
## [1093]  0.2 -0.1  0.1  0.0 -0.4 -0.9 -0.1 -1.0  0.2 -0.2  0.0  0.0  0.1 -0.5
## [1107]  1.0  1.0 -0.2  1.0  0.2 -0.2  1.0  0.2  1.0 -0.2 -1.0  1.0  1.0  1.0
## [1121]  1.0  0.2 -0.8 -0.8  0.2  0.2  0.1 -0.6  0.2  1.0  0.2  0.2  1.0 -0.2
## [1135] -0.5 -0.9 -0.2  0.2 -0.1  0.2 -0.1  0.2  0.2  0.2 -0.1 -0.6  0.2 -0.7
## [1149] -1.0 -0.8  1.0  0.2 -0.2 -0.8  1.0 -0.8  1.0 -0.6 -0.8 -0.1  0.2 -0.2
## [1163]  0.2 -0.8 -0.4 -1.0 -0.8 -0.2 -0.9  1.0 -0.8  1.0  0.2  1.0 -0.4  0.2
## [1177] -0.4 -1.0 -0.8  0.1 -0.8 -0.8 -0.4  0.2 -0.8  0.2 -0.6 -0.8 -0.2  0.2
## [1191] -0.6 -0.4  0.2  0.2  0.2  1.0  0.2  0.2 -0.6  0.2 -0.1 -0.6  0.2  0.2
## [1205]  1.0 -0.2  1.0 -0.2 -0.2 -0.2 -0.1 -0.1  1.0 -0.1 -0.7 -0.1  0.2  0.2
## [1219]  1.0 -0.2  0.2  0.2 -1.0 -0.2 -0.5  0.2 -0.8 -0.9  0.1 -0.7  0.2  1.0
## [1233] -0.4  0.2  1.0 -0.2  1.0  0.2 -0.9 -0.4 -0.2  1.0  0.2  0.2  1.0  0.2
## [1247]  1.0  1.0 -0.2 -0.8 -0.2  0.2  0.2 -0.1  1.0 -0.5 -0.8  0.6 -0.7  0.2
## [1261]  1.0 -0.4  1.0 -0.4 -0.7 -0.9  0.6  1.0 -0.5  1.0 -0.5  0.2 -0.8  1.0
## [1275]  1.0  0.2 -0.7 -0.1 -0.1 -0.7 -0.1  0.2  0.2  1.0  0.8 -0.8 -0.2 -0.1
## [1289] -0.8 -0.6 -0.6  1.0 -0.1  0.2  0.6  0.2  0.6  0.2  1.0  0.2  1.0  0.2
## [1303]  1.0  1.0  1.0  0.2 -0.2  1.0  1.0  1.0  0.2  0.2 -0.9  1.0  1.0 -0.5
## [1317] -0.9 -0.1  1.0  0.2  1.0 -0.4  1.0  0.2  1.0  1.0 -0.4  1.0  0.2  1.0
## [1331] -0.2  0.2  1.0 -1.0  0.2  0.2 -0.7  0.1  1.0 -0.4  1.0  1.0 -0.2  1.0
## [1345]  0.2 -0.5 -0.1 -0.8 -0.4 -0.8  1.0 -0.8 -0.8 -0.7 -0.1 -0.8  0.0 -0.1
## [1359] -0.1  1.0  0.6  0.1 -0.7 -0.2 -1.0 -0.6  0.6  0.2  1.0  0.1 -0.9 -0.8
## [1373] -0.1  1.0 -0.1 -0.4 -0.4  1.0  0.2 -0.5  0.2  1.0  0.1 -0.8 -0.8 -0.7
## [1387] -1.0  0.1 -0.2 -0.4 -0.8  0.8 -0.5  0.2  0.2  1.0 -0.4  0.2  1.0  0.2
##
## attr(,"class")
## [1] "margins"
```

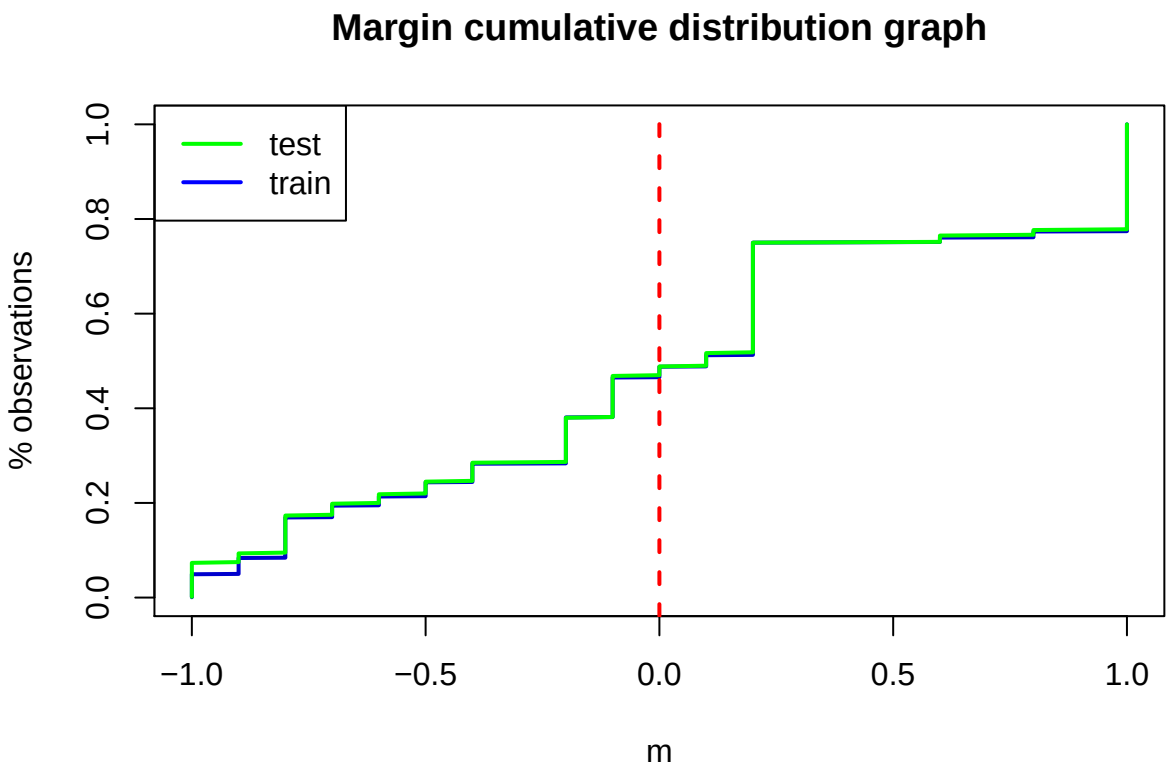
```
data.bagging.predmargins
```

```
## $margins
##   [1] -0.5  0.2  1.0  1.0  0.2 -0.8  0.2  0.2  0.2 -0.1  1.0  1.0 -0.5  0.2 -0.4
##  [16]  0.2  1.0  0.2 -0.5  0.0  1.0  0.8  0.2  0.2  0.8  1.0  0.2  0.1 -0.1 -0.2
##  [31]  1.0 -1.0 -0.1  0.2 -0.9 -0.2 -0.5  0.1 -0.1 -0.1  0.2 -0.4  0.2 -0.1  1.0
##  [46]  1.0  1.0 -1.0  0.2 -0.1 -0.6 -0.8  0.2  0.0 -0.6  0.2 -0.9 -0.2 -0.9  0.2
##  [61] -0.1 -0.1  1.0  0.2  1.0 -0.8 -1.0  0.2  1.0  0.2 -0.1 -0.8  0.1  1.0 -0.4
##  [76]  1.0 -0.2  1.0  1.0 -0.8 -1.0  1.0  0.1  1.0  0.2 -0.8 -0.4  0.2  0.2  1.0
##  [91]  0.2  1.0 -1.0 -1.0  1.0  0.2 -0.9 -0.1 -0.2 -0.4 -0.2  0.0  1.0 -1.0  1.0
## [106] -0.1 -1.0  1.0  0.1  0.2 -0.2  0.2  0.2  0.2 -1.0  0.2  0.2  0.2  0.2 -0.2
## [121] -0.4  0.2 -0.8  0.2  1.0  0.2 -1.0  1.0  1.0 -0.6 -0.2 -0.8 -0.4  0.2  1.0
```

```
## [136]  0.2  0.0 -1.0  0.2 -0.7  1.0  0.2  0.2  1.0 -0.2  0.2 -0.4  1.0  0.0 -0.2
## [151]  1.0 -0.7  0.2  1.0  1.0 -0.8 -0.1 -0.2 -0.6 -0.5 -0.4 -0.4 -0.2 -0.8 -1.0
## [166]  0.1  0.2 -1.0 -1.0  0.2  0.2  1.0  1.0  1.0 -1.0  0.2 -0.2 -0.2 -0.4 -0.1
## [181]  1.0 -0.9 -0.2 -0.2 -0.2 -0.1 -0.1 -0.9  1.0  0.2 -0.5 -0.8 -0.1 -0.8  0.6
## [196]  1.0 -0.1  1.0  1.0  0.2 -0.1  1.0 -0.2 -0.4  0.2  0.6  0.0 -0.7 -0.5  1.0
## [211] -0.8  1.0  0.2 -0.4  0.1  1.0  0.2 -0.1  0.2 -1.0 -0.1  0.2 -0.7  1.0  0.2
## [226] -0.8  0.1 -0.8 -0.9  0.2 -0.8 -0.1  0.2 -1.0 -0.2  0.2  0.0  1.0 -0.8 -0.5
## [241]  0.2 -0.1  0.2  1.0 -0.6  0.2  1.0  1.0  1.0 -0.8 -0.5  1.0  0.2 -0.2 -0.4
## [256]  0.2  0.6  1.0  0.2  1.0 -0.2  0.2 -0.7 -0.4  0.2  1.0  0.2 -0.4 -0.5 -0.8
## [271]  1.0 -1.0  1.0 -0.8 -1.0 -0.1  0.2 -0.8 -0.2  1.0  1.0 -0.5  0.2  0.2 -1.0
## [286] -0.2  0.2  1.0 -0.8  0.2  1.0  0.2 -0.7  0.2  1.0  1.0 -0.2  0.2  1.0 -1.0
## [301] -0.2  0.1  0.2 -0.9  0.2  1.0 -0.7 -0.9 -0.1  1.0 -0.5 -0.8 -0.2 -0.7 -0.7
## [316]  0.2 -0.2  0.0  0.2 -1.0  1.0 -0.8  0.2 -0.7  1.0 -0.9 -0.1 -0.6  0.2 -0.7
## [331]  1.0  0.6  1.0 -0.1 -0.5 -0.4  0.2  0.2 -0.8 -0.1 -0.2  0.2 -0.1  1.0 -0.1
## [346]  1.0 -0.2 -0.4 -0.8 -0.2 -0.1  0.2  0.2  0.2  0.2  0.8 -0.2  1.0  0.2 -0.1
## [361] -0.1  1.0 -0.2 -0.2 -0.8  1.0  0.2  0.2 -0.5 -1.0  0.1 -0.8  0.2 -0.2  1.0
## [376]  0.2  0.2 -1.0 -0.8  1.0  1.0  0.2 -1.0  0.2  0.2  0.2 -0.7  0.8  0.1 -0.1
## [391]  1.0  1.0 -0.2 -0.2  1.0  0.2  0.2  1.0 -0.8  1.0  1.0  0.2  1.0 -0.2 -0.1
## [406] -1.0 -0.5  0.0 -1.0  0.2  1.0 -0.2 -0.2 -0.9 -1.0 -0.8 -0.6  1.0  1.0  1.0
## [421]  1.0 -0.2 -0.4  1.0 -1.0 -1.0 -1.0  1.0 -0.1  0.2 -1.0 -1.0  0.2 -0.8  1.0
## [436]  0.2  1.0 -0.4  1.0  0.2 -0.8  0.6 -0.5  0.2  0.2 -0.2 -0.2  1.0 -0.2  0.2
## [451]  0.2 -0.1 -0.2 -1.0  1.0  1.0  1.0  0.1  0.8 -0.4 -1.0 -0.2 -0.8 -0.1 -0.4
## [466] -0.7  0.0 -0.8 -0.1 -0.8  1.0 -0.7 -0.1  0.2 -0.2  1.0  0.2  0.2  0.2  0.1
## [481]  1.0  0.2 -0.8  0.2 -1.0  0.2 -0.6  1.0 -0.8 -0.2 -1.0 -0.8 -0.4 -0.8  0.2
## [496] -0.2 -0.9  0.1  1.0  1.0  1.0 -0.1  1.0  0.0  1.0 -1.0 -0.8 -0.6  0.8  1.0
## [511]  1.0 -1.0  1.0 -0.1 -0.8  0.6  1.0 -0.2  1.0  0.2  0.2  0.1  1.0 -0.2  0.0
## [526]  0.2 -0.6 -0.2  1.0 -0.2 -0.1  0.2 -1.0  0.2 -0.8 -0.2  1.0  0.2  0.2 -1.0
## [541] -0.1 -0.7  1.0  1.0  0.2 -0.1 -0.2  1.0  1.0  0.1  1.0  0.2  1.0  0.2  1.0
## [556] -0.1 -0.4  0.2 -0.2 -0.1 -0.2  0.6 -0.8 -0.6  1.0 -0.1 -0.8  1.0  0.2  0.2
## [571] -0.8  0.1 -0.1  1.0 -0.1 -0.8  0.8  0.2 -0.6  0.2  0.2 -0.1  0.2 -1.0  1.0
## [586]  0.6  1.0  0.2  0.2 -0.1  0.6 -0.1 -1.0  1.0 -1.0  0.2 -0.8  1.0  1.0  0.2
##
## attr(,"class")
## [1] "margins"
```

```
margins.test <- data.bagging.predmargins[[1]]
margins.train <- data.bagging.margins[[1]]

plot(sort(margins.train), (1:length(margins.train)) / length(margins.train), type = "l", xlim = c(-1,1)
abline(v = 0, col = "red", lty = 2, lwd = 2)
lines(sort(margins.test), (1:length(margins.test)) / length(margins.test), type = "l", cex = 0.5, col =
legend("topleft", c("test","train"), col = c("green", "blue"), lty = 1, lwd = 2)
```


Margin cumulative distribution graph
test
train
% observations
0.0
0.2
0.4
0.6
0.8
1.0
−1.0
−0.5
0.0
0.5
1.0
m