ENTREGA CLASE 22 PASO 1 A 3

Miguel Diaz

2022-06-06

```
#DATOS KEVIN (DATOS DEL EJEMPLO EN CLASE)
set.seed(888)
edad <- abs(round(rnorm(n = 1000,
                        mean = 67,
                        sd = 2)))
dap <- abs(round(rnorm(n = 1000,
                       mean = 30,
                       sd = 3), 1)) #diámetro a la altura del pecho
hibrido <- factor(rbinom(n = 1000,
                         size = 1,
                         prob = 0.6),
                  labels = c('h1', 'h2'))
rto <- abs(round(rnorm(n = 1000,
                       mean = 80,
                       sd = 5), 1)) #Rendimiento

cloA <- abs(round(rnorm(n = 1000,
                        mean = 320,
                        sd = 10)))

z <- 0.22 * edad - 0.12 * cloA + dap -8 #Variable artificial

pr <- 1/(1+exp(-z)) # Probabilidad de aborto

y = rbinom(1000,1,pr) # Abortos
```

```
#DATOS NUEVOS (DATOS DE LA ENTREGA)
library(faux)
```

```
##
## ************
## Welcome to faux. For support and examples visit:
## https://debruine.github.io/faux/
## - Get and set global package options with: faux_options()
## ************
```

```
set.seed(1014306760)
dfa <- rnorm_multi(n = 1000,
            mu = c(67, 30, 30, 320),
            sd = c(2, 3, 5, 10),
            varnames = c('Edad', 'dap', 'rto', 'clolA'),
```

```
            r = c(0.4, 0.6, 0.5, 0.6, 0.7, 0.8))

dfa$hibrido <- round(runif(n = 1000, min = 0,max = 1.2))

w <- 0.5 * dfa$clolA - 0.01 * dfa$dap - 0.6 * dfa$rto - 0.02 * dfa$Edad

dfa$abortos <- ifelse(w > 140, '1', '0') #1 es si aborto, 2 es no aborto
dfa$abortosn <- as.numeric(dfa$abortos)
dfa$abortosn
```

```
##    [1] 1 0 1 1 1 0 1 1 0 1 1 1 0 1 0 0 0 0 0 0 1 1 1 1 0 0 0 0 0 0 1 1 1 1 1 1 0
##   [38] 0 1 0 0 1 1 1 1 0 0 0 1 1 1 1 1 0 0 1 1 1 0 1 1 0 1 1 1 1 0 0 1 1 1 1 1 1
##   [75] 1 0 0 0 0 0 0 0 0 0 0 0 1 1 1 1 1 0 1 1 0 1 0 1 1 0 1 1 0 0 0 0 1 1 0 1 0
##  [112] 0 1 0 0 1 1 0 1 0 0 1 0 1 0 1 1 0 0 0 0 1 0 1 0 0 1 1 1 0 0 1 1 1 1 1 1 0
##  [149] 0 0 0 1 0 0 1 0 1 1 1 1 0 0 0 1 0 0 1 1 1 1 0 0 0 0 0 1 0 0 1 0 0 1 0 0 1
##  [186] 1 1 1 1 1 1 1 0 0 0 1 0 1 1 0 0 0 1 1 0 0 0 1 0 1 1 1 0 1 0 1 1 0 0 1 1 1
##  [223] 1 0 0 1 0 0 1 0 1 1 0 0 1 0 0 0 1 1 0 1 0 1 1 0 1 1 1 1 0 0 0 0 0 1 1 1 0
##  [260] 0 1 0 1 1 0 1 0 0 1 0 1 0 1 0 1 0 1 1 0 1 1 1 1 1 0 0 0 1 0 0 1 0 1 1 1 0
##  [297] 1 1 1 1 0 0 1 1 0 1 1 0 0 1 1 1 1 1 1 0 0 0 0 1 1 0 1 1 1 1 0 1 1 1 0 0 1
##  [334] 0 0 1 1 0 1 1 1 0 0 0 1 0 0 1 0 1 1 1 0 0 0 0 1 1 0 1 1 1 0 0 1 0 0 0 1 1
##  [371] 1 1 1 1 0 1 1 1 0 1 1 1 0 0 0 1 0 1 1 1 1 1 1 0 1 0 1 1 1 1 0 0 0 1 0 1 0
##  [408] 1 1 0 0 0 1 0 0 1 1 1 1 0 1 0 0 1 0 0 1 0 1 0 0 1 1 0 1 0 1 0 1 0 1 0 0 1
##  [445] 0 0 0 0 1 1 1 1 1 0 0 1 0 1 0 0 1 1 1 0 0 0 0 0 1 0 1 1 1 0 1 1 1 1 0 0 1
##  [482] 1 1 0 1 1 0 0 1 0 0 0 1 0 1 1 0 0 1 0 0 1 1 1 1 1 1 0 0 1 0 1 1 1 1 0 0 0 1
##  [519] 1 0 0 1 1 1 0 1 0 1 0 1 1 0 0 0 1 0 1 0 1 0 1 0 1 1 0 1 1 0 0 0 0 0 0 0 0
##  [556] 1 1 1 1 1 1 0 1 1 1 0 1 0 0 1 1 1 1 0 1 1 1 0 0 1 1 1 1 0 1 0 0 0 0 1 0 1
##  [593] 1 1 1 1 0 1 1 0 0 0 0 0 1 0 1 0 0 1 1 1 0 1 0 1 1 1 0 0 1 1 1 1 1 0 0 1 1
##  [630] 0 0 0 1 1 0 0 0 1 0 1 0 1 0 1 1 0 0 0 1 0 0 0 0 0 1 1 1 1 1 0 0 1 0 0 1 0
##  [667] 0 1 1 0 0 1 0 1 1 0 1 1 1 0 0 0 1 1 1 1 1 1 0 1 0 1 0 0 1 0 0 1 0 0 0 0 0
##  [704] 0 1 1 0 0 0 0 1 0 1 0 1 1 0 1 1 0 0 1 0 1 0 1 0 1 0 1 1 1 0 0 1 0 0 0 0 1
##  [741] 0 1 1 1 0 1 0 1 0 0 1 0 0 0 0 0 0 0 0 1 0 1 0 0 1 0 0 1 1 0 0 0 1 1 0 1 0
##  [778] 1 1 0 0 1 1 1 1 1 1 1 1 0 0 0 1 0 0 0 1 0 0 1 1 0 1 0 1 1 0 1 1 1 1 1 0 0
##  [815] 1 1 1 0 1 1 1 0 1 1 1 1 0 0 1 1 1 0 1 1 0 0 0 1 0 1 0 1 1 1 0 1 1 1 0 0 0
##  [852] 0 1 1 1 0 1 0 0 1 0 0 1 1 1 0 1 1 0 1 1 1 0 0 0 0 1 1 1 1 1 0 1 0 1 0 0 1
##  [889] 1 1 1 0 1 0 0 0 1 0 1 0 1 1 0 1 0 1 0 1 0 0 1 1 1 1 1 1 0 1 1 0 0 0 1 0 0 1
##  [926] 0 1 1 1 1 1 0 1 0 0 1 0 0 1 0 1 0 1 1 1 1 1 1 1 1 1 0 1 1 0 1 1 1 1 1 0 0 1 1 0
##  [963] 1 0 1 0 1 0 1 0 0 0 1 1 1 1 1 0 0 1 0 1 1 1 0 1 1 1 1 1 1 1 0 0 1 1 1 0 0 0 1 0
## [1000] 0
```

```
data <- data.frame(dfa$Edad,
                   dfa$dap,
                   dfa$hibrido,
                   dfa$rto,
                   dfa$clolA,
                   dfa$abortos)
data
```

```
##      dfa.Edad  dfa.dap dfa.hibrido  dfa.rto dfa.clolA dfa.abortos
## 1    68.36548 33.51144           0 41.10594  334.5466           1
## 2    61.11996 24.64589           0 16.23856  293.4211           0
## 3    65.67449 30.21260           1 26.43371  325.5389           1
## 4    65.79152 25.08038           0 26.36622  324.0659           1
## 5    66.08771 32.91521           1 28.16353  325.3727           1
```

```
## 6    64.01507 28.93312          1 25.82076  310.9683          0
## 7    66.15036 32.33331          1 33.03924  328.8934          1
## 8    67.96487 33.67805          1 34.62168  332.8217          1
## 9    65.21829 28.07795          0 31.69640  316.0827          0
## 10   63.91128 29.45197          1 26.52214  321.2637          1
## 11   65.66731 33.48864          0 27.50466  318.4108          1
## 12   70.03862 34.69724          0 36.28924  329.6989          1
## 13   67.27532 26.94840          0 28.07734  314.5779          0
## 14   70.07301 31.46010          0 32.25526  322.7617          1
## 15   64.86919 29.41059          1 29.63468  314.2238          0
## 16   68.83744 29.52844          1 30.39667  314.6206          0
## 17   64.66812 26.22646          1 30.27424  312.9895          0
## 18   65.94886 24.84199          1 25.49105  300.7208          0
## 19   66.48705 29.03715          0 28.79549  317.4519          0
## 20   67.18335 31.49858          1 30.65970  318.2046          0
## 21   64.38812 26.40191          0 26.72245  318.8255          1
## 22   66.60749 30.64094          1 23.11431  313.4486          1
## 23   67.84038 30.38544          1 24.86318  316.0024          1
## 24   62.39732 32.70281          0 25.10283  316.9748          1
## 25   65.91227 28.75947          0 27.62115  315.5636          0
## 26   66.24418 30.13401          0 30.41562  318.3954          0
## 27   65.18467 25.80338          1 25.85472  306.0680          0
## 28   67.71386 28.96199          1 26.97327  310.0017          0
## 29   68.42989 31.62191          1 28.92396  316.3265          0
## 30   65.63990 26.38097          1 20.60043  304.9082          0
## 31   68.60969 33.75229          1 35.60521  330.1365          1
## 32   68.55628 33.13187          0 32.54230  329.1321          1
## 33   67.15156 30.60312          1 23.29537  316.4234          1
## 34   65.35137 34.47451          1 29.13055  330.9468          1
## 35   66.23173 34.65283          1 34.62300  335.3528          1
## 36   69.59756 34.28037          1 37.12737  332.3892          1
## 37   66.13726 30.32130          0 24.69758  310.3818          0
## 38   64.76101 27.57008          1 28.31983  315.3792          0
## 39   66.40332 24.56174          0 21.03360  315.4735          1
## 40   64.16678 26.84052          1 26.97080  310.8485          0
## 41   69.15245 29.15919          1 29.03958  314.6922          0
## 42   65.28975 32.37721          0 31.53197  323.3415          1
## 43   69.51755 31.12588          1 31.67720  321.8795          1
## 44   68.56286 30.42743          1 32.81181  333.6348          1
## 45   68.75151 32.07967          0 35.11659  334.1594          1
## 46   67.71959 27.69035          0 30.29124  312.6893          0
## 47   69.88839 32.56997          1 44.94832  336.7004          0
## 48   65.39856 25.27892          0 27.49836  312.4500          0
## 49   64.56435 32.62083          1 29.95274  327.9181          1
## 50   66.61436 34.81818          1 34.68589  336.2106          1
## 51   64.59778 29.15025          1 26.11029  323.1640          1
## 52   66.14770 31.63384          0 24.05225  322.8238          1
## 53   66.46374 31.96539          0 32.75881  333.1539          1
## 54   66.72743 27.81648          0 32.18647  321.4790          0
## 55   64.11961 25.11320          1 23.27403  295.1088          0
## 56   65.12628 33.34780          0 32.13658  329.6132          1
## 57   67.92603 31.17420          0 32.90444  333.3804          1
## 58   66.48785 28.68062          1 24.42372  316.9671          1
## 59   63.39351 25.76389          1 22.84922  306.1449          0
```

```
## 60   69.97805 33.31196          0 37.31183  344.4046          1
## 61   67.69180 34.73333          1 37.14739  339.0269          1
## 62   68.55028 27.91011          1 34.02148  322.5382          0
## 63   67.66574 32.40194          1 32.20115  323.0587          1
## 64   68.99889 33.79531          1 36.49580  327.8887          1
## 65   71.00521 34.76241          1 39.41581  332.7029          1
## 66   66.87079 28.07476          0 26.53067  321.3757          1
## 67   63.00508 29.28519          1 29.33725  316.6443          0
## 68   67.62657 34.65521          0 32.09754  319.0370          0
## 69   66.79378 31.15961          1 31.02371  322.7630          1
## 70   67.34673 26.46577          1 24.43160  316.2660          1
## 71   68.30837 30.54960          1 33.01095  333.0402          1
## 72   68.13933 33.44547          0 34.56297  327.9018          1
## 73   69.49719 33.22436          1 37.43519  329.3807          1
## 74   66.96342 31.72040          1 41.02852  334.9423          1
## 75   69.64109 35.08635          0 41.61561  338.2345          1
## 76   66.43050 27.12760          1 34.05063  322.7732          0
## 77   62.71758 26.87616          0 19.92114  304.5786          0
## 78   65.21921 34.19524          1 34.27333  324.1718          0
## 79   66.24733 33.31085          0 32.04890  319.2331          0
## 80   68.99511 32.52239          1 29.70903  315.5507          0
## 81   67.34618 28.14624          1 30.29656  317.5279          0
## 82   67.59635 28.64140          1 28.59291  316.8445          0
## 83   68.36188 34.17445          0 32.09437  320.1023          0
## 84   67.48609 30.62186          1 31.43685  313.1722          0
## 85   66.40502 29.26060          1 26.63010  315.1769          0
## 86   67.56039 32.48380          1 37.56456  326.5195          0
## 87   69.04762 30.61893          1 29.77607  319.8674          1
## 88   68.89654 29.21452          1 35.61241  326.6293          1
## 89   68.09344 33.34638          0 36.10497  332.5354          1
## 90   67.18447 38.32347          1 38.60117  340.4202          1
## 91   71.02135 36.17074          0 37.65728  331.4772          1
## 92   61.92294 25.41836          1 23.39214  296.9173          0
## 93   69.13765 33.83357          1 34.24937  330.4579          1
## 94   64.88389 27.54242          1 22.45353  310.4902          1
## 95   67.62679 28.54804          1 29.85622  313.1355          0
## 96   68.50453 29.40184          1 33.81120  324.7976          1
## 97   65.84350 30.07631          1 31.21346  318.8754          0
## 98   65.90546 31.97642          0 31.33457  325.0584          1
## 99   67.61167 35.11543          1 34.76526  336.2629          1
## 100  67.22506 29.41671          1 28.26020  311.9218          0
## 101  68.35801 28.95551          1 29.03919  327.7727          1
## 102  67.87857 30.46274          1 36.26321  329.1958          1
## 103  64.65691 25.45525          0 26.68314  314.2086          0
## 104  68.88307 29.77038          1 33.77536  321.9731          0
## 105  63.02428 21.87355          0 17.62251  298.0510          0
## 106  64.94027 31.01336          0 29.06449  313.3455          0
## 107  65.35847 32.21684          0 24.94861  316.2067          1
## 108  67.29940 28.41220          1 33.26271  332.2101          1
## 109  67.25796 26.17350          0 27.03506  309.7955          0
## 110  67.26767 31.93472          0 30.28384  321.8417          1
## 111  71.54903 29.81325          1 35.71124  325.7063          0
## 112  64.36482 30.09574          0 25.09370  311.8825          0
## 113  67.59417 29.79610          1 31.59288  329.8749          1
```

```
## 114  66.83597 25.18317          1 23.07982  300.3035          0
## 115  66.22687 27.09042          0 23.31630  303.5547          0
## 116  69.56235 36.52143          1 38.28870  335.7253          1
## 117  64.25451 28.59255          1 21.02269  312.0240          1
## 118  64.36545 22.66715          1 25.00580  301.9789          0
## 119  69.17943 36.77596          1 30.38068  328.6139          1
## 120  67.53983 25.21055          0 29.62728  310.2810          0
## 121  67.54387 26.12804          0 29.21575  311.4635          0
## 122  64.94210 25.67074          0 22.13996  317.2479          1
## 123  66.24292 29.88657          1 34.89418  322.6988          0
## 124  65.15748 31.73664          1 31.85679  324.5735          1
## 125  68.74345 29.02839          0 35.36942  319.0260          0
## 126  68.74063 31.99163          0 26.52801  319.8182          1
## 127  68.00358 35.18832          1 34.65191  328.1760          1
## 128  67.50440 25.58922          1 31.84087  319.6643          0
## 129  66.99208 26.64447          1 28.88043  317.7577          0
## 130  64.48903 29.95788          1 22.19509  302.5587          0
## 131  68.00456 30.37686          0 33.68809  319.6248          0
## 132  68.72802 31.21130          1 25.59376  319.1660          1
## 133  67.41727 26.05048          1 29.39110  305.2719          0
## 134  68.18040 28.09246          0 32.94795  324.9957          1
## 135  67.17736 26.22072          1 32.52944  314.4065          0
## 136  68.05039 30.67538          0 33.47430  321.9094          0
## 137  66.68063 34.91363          1 34.75022  331.2253          1
## 138  68.07626 31.06411          1 31.66979  328.0659          1
## 139  70.73729 32.69236          0 28.93725  322.6087          1
## 140  66.57289 29.36569          1 37.12180  322.2321          0
## 141  68.36034 29.14222          0 25.60538  307.8003          0
## 142  67.25763 34.78234          1 34.55980  327.8028          1
## 143  65.93201 32.16884          1 35.22087  329.3967          1
## 144  69.46287 34.19996          1 29.70910  327.0123          1
## 145  67.05365 32.46410          1 31.85656  325.9961          1
## 146  67.28004 30.73796          1 27.32464  318.2861          1
## 147  64.77469 28.84141          0 30.84258  327.7647          1
## 148  65.59923 32.99555          1 31.65242  320.4388          0
## 149  67.03554 25.98901          1 31.48159  315.1808          0
## 150  64.34667 29.23927          0 27.72032  315.5542          0
## 151  67.28606 34.82862          1 34.39749  324.1395          0
## 152  67.08712 31.57531          1 37.10466  329.7390          1
## 153  66.89484 32.66732          0 26.73333  306.1664          0
## 154  65.36693 29.47672          1 34.31711  317.6892          0
## 155  66.33390 31.05488          1 31.78217  323.8634          1
## 156  69.05480 34.02762          1 29.32762  317.3460          0
## 157  68.66988 30.43558          0 32.13410  328.8862          1
## 158  65.96966 26.46300          1 22.82826  311.1970          1
## 159  70.62492 36.38550          1 37.20093  340.2179          1
## 160  65.62662 33.96922          1 31.47500  321.9649          1
## 161  66.69880 26.67441          0 28.91157  306.9930          0
## 162  67.45962 27.77520          1 30.47725  311.3778          0
## 163  65.81016 28.69303          1 26.77795  310.6803          0
## 164  69.55104 36.45139          0 39.58898  340.5704          1
## 165  65.75650 27.01758          0 27.91627  307.4815          0
## 166  62.73898 27.89052          0 20.54855  299.8551          0
## 167  67.05902 29.40970          0 23.81129  312.8525          1
```

```
## 168  67.61545 29.38104          1 33.06249  323.6130          1
## 169  64.47553 31.09664          1 23.97382  312.5453          1
## 170  69.48561 30.40629          1 32.50579  328.1062          1
## 171  64.43562 31.20392          0 28.89464  317.2470          0
## 172  64.74844 26.86375          1 30.50195  309.9765          0
## 173  65.94498 28.86250          1 23.45146  301.1315          0
## 174  68.55100 27.71363          0 34.64764  320.9646          0
## 175  67.22620 34.54121          0 35.86456  325.7601          0
## 176  66.83867 32.36564          1 23.82636  316.6957          1
## 177  66.32358 31.39260          0 27.57159  314.0187          0
## 178  65.43313 26.98851          1 28.06715  308.3451          0
## 179  63.87682 26.67117          1 25.18609  316.1010          1
## 180  66.03073 26.41658          0 22.32474  298.8537          0
## 181  71.46559 30.54122          1 34.81634  324.2372          0
## 182  62.62129 27.25990          1 22.72542  312.1382          1
## 183  64.18239 24.42583          1 22.90004  299.7995          0
## 184  67.60020 28.02817          1 28.64158  309.7180          0
## 185  68.07083 34.94295          0 39.91815  334.0927          1
## 186  66.55853 35.26634          1 30.68227  333.0135          1
## 187  69.34608 36.65091          0 37.15459  339.2652          1
## 188  69.98072 36.28009          1 35.53134  335.7107          1
## 189  71.88453 37.62531          1 40.20413  336.2165          1
## 190  65.38466 33.36869          0 33.47401  333.7410          1
## 191  67.23321 32.54075          1 37.44373  335.9665          1
## 192  64.26400 29.81506          0 18.52928  312.0150          1
## 193  64.61964 25.30831          1 25.57505  307.7248          0
## 194  66.71559 30.30148          1 24.68360  310.2342          0
## 195  67.53623 30.22573          0 34.24758  318.7181          0
## 196  69.13041 30.35090          1 34.86830  325.5017          1
## 197  68.25914 27.77500          1 30.75478  312.0692          0
## 198  66.55193 33.65795          1 33.05388  331.6589          1
## 199  70.12154 29.82038          0 26.57676  318.3336          1
## 200  68.83530 24.73508          0 21.91909  306.9430          0
## 201  65.85186 25.36981          0 21.19540  300.8102          0
## 202  69.01098 29.63113          1 31.28584  319.6867          0
## 203  67.23549 29.07867          0 30.56066  320.2709          1
## 204  71.52736 30.41428          1 35.42600  329.3022          1
## 205  63.63112 24.73521          0 28.73387  307.0048          0
## 206  64.65431 29.70710          1 28.71354  315.5592          0
## 207  62.96178 31.21680          0 21.97486  309.1624          0
## 208  63.44866 31.15292          0 25.93297  315.1796          1
## 209  64.88829 22.91025          1 22.43602  292.2165          0
## 210  64.94003 25.27930          0 24.52872  313.9633          1
## 211  68.05366 31.95416          1 30.24688  323.6764          1
## 212  69.26365 31.87331          0 34.39714  330.7359          1
## 213  67.59017 27.54161          1 29.94423  317.7373          0
## 214  64.54073 28.91080          0 24.17149  313.6187          1
## 215  67.54614 26.69847          0 34.03874  324.0487          0
## 216  63.34511 33.38033          1 30.88300  327.1966          1
## 217  64.12729 28.69653          1 25.65947  314.3516          1
## 218  69.42926 29.92055          1 33.56784  317.6518          0
## 219  64.69069 27.96687          1 25.69924  307.6942          0
## 220  68.49025 32.59066          1 29.98157  328.4499          1
## 221  66.54923 32.81556          0 30.94675  321.4921          1
```

```
## 222  67.62289 24.93919          0 31.32578  321.5041          1
## 223  71.21523 33.24862          1 38.72599  331.2116          1
## 224  66.36562 29.28229          0 29.69178  316.5900          0
## 225  69.40013 36.15899          0 36.37611  323.8235          0
## 226  69.67000 34.14789          0 37.83408  331.6166          1
## 227  70.64103 28.73157          0 32.70309  317.9711          0
## 228  67.88929 29.70066          0 32.65977  321.4556          0
## 229  68.05735 36.45780          0 37.51807  344.7733          1
## 230  68.04351 31.51560          0 38.60847  322.6745          0
## 231  67.52212 31.01185          1 32.07682  321.8569          1
## 232  65.70045 30.23470          1 30.69729  325.0014          1
## 233  66.49448 28.11233          0 21.79530  299.9496          0
## 234  63.97868 25.12530          0 20.23492  305.0983          0
## 235  65.44683 32.74219          0 31.82066  322.7397          1
## 236  66.42839 31.00983          1 28.61031  315.1422          0
## 237  66.22945 27.87707          1 30.17014  317.6991          0
## 238  66.70698 24.52830          0 30.94018  319.7682          0
## 239  67.39133 31.48412          1 34.41726  327.2873          1
## 240  65.86504 30.52955          0 32.17250  324.2803          1
## 241  62.72619 23.28556          1 22.68939  297.8351          0
## 242  66.35917 28.82061          1 30.55799  323.8267          1
## 243  65.84156 31.08824          0 25.11778  310.7412          0
## 244  66.75583 31.50524          0 30.79994  322.7524          1
## 245  68.14361 33.66946          1 33.46837  333.8465          1
## 246  65.06608 25.35554          1 21.35562  299.1627          0
## 247  65.66126 32.74577          1 34.89882  340.2998          1
## 248  69.16817 26.46572          1 34.62664  326.1302          1
## 249  68.45359 31.75987          0 31.76158  324.5892          1
## 250  63.14363 35.43809          0 29.42510  332.3420          1
## 251  68.81582 29.29518          1 32.84828  318.0282          0
## 252  68.17988 32.26331          0 24.19704  311.6750          0
## 253  61.63403 25.63540          0 22.43337  306.3216          0
## 254  65.96865 31.02761          0 32.26252  318.8740          0
## 255  69.12321 29.37873          0 30.85438  316.3922          0
## 256  67.31801 27.22341          1 34.63795  325.8905          1
## 257  68.40137 31.20760          0 29.97783  322.0648          1
## 258  66.06649 30.67890          1 23.77082  320.6838          1
## 259  66.43693 29.84110          1 32.12456  320.5253          0
## 260  63.71723 29.18280          1 28.72595  312.4323          0
## 261  69.68483 32.52814          1 37.13257  333.9300          1
## 262  66.61422 27.44566          0 24.11774  306.2228          0
## 263  68.75762 30.88994          1 30.87639  326.8616          1
## 264  67.80398 28.98502          0 29.77432  328.7901          1
## 265  64.42186 25.01539          0 22.61474  302.4259          0
## 266  69.77855 30.48930          0 40.05379  334.6631          1
## 267  67.93361 32.31697          0 36.93576  320.9021          0
## 268  65.38582 26.01821          0 25.73221  302.1004          0
## 269  68.15042 32.56321          1 39.03909  342.1480          1
## 270  67.42009 30.37454          1 30.63580  319.9657          0
## 271  67.72820 32.72761          1 33.80896  324.7548          1
## 272  66.40662 25.98589          1 24.76905  309.1357          0
## 273  66.62083 31.26640          0 27.33932  326.4642          1
## 274  64.67171 28.75504          1 25.95259  303.5417          0
## 275  64.59121 34.15827          1 28.71379  328.8027          1
```

```
## 276  65.79105 30.41959          0 30.35190  317.6663          0
## 277  66.28692 25.85808          0 29.33299  320.2876          1
## 278  68.94916 27.94616          1 29.53014  324.2895          1
## 279  63.58107 26.30886          1 27.39283  304.2677          0
## 280  64.46241 28.20056          0 26.42682  316.1401          1
## 281  67.19060 29.45208          1 21.68306  310.2302          1
## 282  64.80716 28.37866          1 26.15879  320.6703          1
## 283  67.35204 34.59547          1 32.81348  331.9118          1
## 284  70.49763 35.32858          1 36.24560  331.7058          1
## 285  67.76810 31.28160          0 30.99498  317.7288          0
## 286  65.64471 29.11274          1 27.13357  308.2463          0
## 287  63.98486 25.85710          0 24.10575  305.8391          0
## 288  63.27469 27.08050          0 20.55858  312.4289          1
## 289  62.82391 25.77526          1 25.79046  311.9456          0
## 290  66.49075 31.35809          0 32.82265  317.5502          0
## 291  67.29143 30.90773          1 33.84663  324.4514          1
## 292  69.41572 35.57148          0 30.43621  317.9217          0
## 293  66.31664 25.72416          1 28.49592  320.4184          1
## 294  70.84937 34.18382          1 36.18574  331.0862          1
## 295  69.01771 35.56031          1 42.72794  344.6804          1
## 296  68.46086 31.25897          1 33.26750  323.1388          0
## 297  68.93212 30.90699          1 30.56423  326.0913          1
## 298  67.19194 30.42883          1 32.19642  326.1261          1
## 299  66.62670 29.32537          1 31.50661  323.5576          1
## 300  64.79249 29.48562          1 27.02783  317.5932          1
## 301  64.82249 30.87735          1 29.31549  317.6834          0
## 302  69.55812 30.24546          1 33.84915  313.4958          0
## 303  67.89138 33.41405          0 34.70426  329.3814          1
## 304  66.23600 35.63035          1 31.07526  329.7231          1
## 305  66.04336 24.85989          1 26.50301  311.9507          0
## 306  67.69152 32.08611          1 31.54803  324.3671          1
## 307  66.48605 30.17606          0 31.02196  326.8934          1
## 308  63.12877 27.78987          1 25.09959  312.4016          0
## 309  67.32391 30.05710          0 29.62673  308.9837          0
## 310  66.62574 29.22436          0 27.34538  321.6447          1
## 311  67.25115 27.92499          0 32.01694  324.8964          1
## 312  68.92086 30.27065          0 31.40463  327.9103          1
## 313  69.12132 34.97658          0 39.10705  340.4107          1
## 314  68.32459 31.77349          1 30.41088  328.8169          1
## 315  64.29479 30.86857          1 34.34369  335.4565          1
## 316  65.43860 30.90340          1 29.62046  314.9658          0
## 317  66.63670 31.67858          0 31.74934  321.2472          0
## 318  66.58314 25.48365          1 25.37844  311.5253          0
## 319  65.97540 29.37154          1 29.88045  318.6414          0
## 320  66.09939 30.84442          1 26.54295  316.7275          1
## 321  66.12565 29.09361          1 29.64825  323.5419          1
## 322  67.76653 26.12899          1 28.23295  316.8752          0
## 323  64.43882 26.22425          0 28.40123  319.2552          1
## 324  68.90878 31.78275          0 33.80479  332.5293          1
## 325  69.31474 32.57899          1 28.22374  318.1977          1
## 326  66.49113 31.36152          0 23.72878  314.0797          1
## 327  66.22574 28.35150          1 25.41319  304.0061          0
## 328  67.24918 28.37039          1 22.77188  312.9351          1
## 329  68.08252 31.61020          1 28.45444  318.4733          1
```

```
## 330  67.70080 31.63256          0 34.65298  328.7585          1
## 331  69.24209 28.15146          1 29.23817  309.4954          0
## 332  65.76672 25.22044          0 32.12451  320.8296          0
## 333  66.31234 31.88211          1 29.77457  322.9533          1
## 334  64.54975 28.35746          1 28.08866  311.8703          0
## 335  69.26051 29.90076          0 37.99398  327.5269          0
## 336  65.67355 35.47448          1 30.38878  333.7035          1
## 337  63.40764 29.31434          1 29.60833  329.1376          1
## 338  64.38382 32.99314          1 25.60710  310.5428          0
## 339  67.39824 32.66067          1 35.26051  334.1446          1
## 340  64.97424 30.97664          0 29.62868  327.1342          1
## 341  70.18159 33.45799          1 37.51377  346.5699          1
## 342  69.37013 27.74225          1 30.08750  317.8427          0
## 343  70.79372 32.84938          1 33.62618  322.4410          0
## 344  66.14779 24.93868          1 24.90687  303.6376          0
## 345  66.53875 27.70121          1 25.15388  314.1305          1
## 346  64.01494 26.58328          1 31.03187  312.4745          0
## 347  70.04530 32.71356          1 34.89099  324.8158          0
## 348  65.04594 28.65836          1 32.25805  326.3384          1
## 349  65.19211 24.78493          1 25.01001  312.2302          0
## 350  65.81400 32.03156          1 32.73406  328.0786          1
## 351  68.32325 33.50709          0 27.10956  332.2674          1
## 352  64.99512 30.73056          1 19.37351  312.8614          1
## 353  65.23493 24.84499          0 31.09157  309.8901          0
## 354  66.35016 30.51476          1 27.08815  315.0843          0
## 355  68.08652 30.05504          1 26.85359  314.8181          0
## 356  63.28062 23.67726          1 19.58342  298.1163          0
## 357  66.44333 31.45444          1 27.54991  324.9632          1
## 358  66.61659 33.17199          0 33.97112  346.3242          1
## 359  66.55158 30.51419          0 27.00823  314.0038          0
## 360  63.81433 29.22320          0 26.16221  321.1938          1
## 361  66.81006 30.57757          1 28.65814  322.9137          1
## 362  68.48875 32.82559          1 29.94434  325.9798          1
## 363  68.36662 31.56788          1 34.26932  319.6988          0
## 364  65.92010 24.12180          0 23.04380  299.8046          0
## 365  66.77320 28.82820          0 28.11088  317.3613          1
## 366  66.85605 27.56457          1 28.09885  309.8330          0
## 367  69.20383 31.59039          1 33.91206  320.0138          0
## 368  67.19723 30.03512          1 30.85430  316.7796          0
## 369  68.48842 25.70686          1 27.33539  316.8515          1
## 370  66.13725 32.80541          0 30.75052  323.6108          1
## 371  69.30915 26.16524          1 26.95815  316.3597          1
## 372  68.28114 31.33780          1 31.45025  324.7198          1
## 373  69.15349 34.69103          1 34.49669  328.1882          1
## 374  70.25801 35.86594          1 42.32365  345.9012          1
## 375  69.85391 29.70987          0 28.93236  313.6793          0
## 376  65.42394 32.72464          0 27.53962  317.6339          1
## 377  68.16922 29.19311          1 30.68180  326.6775          1
## 378  67.71547 28.56383          1 33.97656  325.3624          1
## 379  66.14641 27.94634          0 30.60831  317.6422          0
## 380  68.61138 29.74727          1 27.74655  326.4587          1
## 381  70.56046 31.07248          1 35.95638  331.6867          1
## 382  70.96952 31.00066          1 32.99361  330.9660          1
## 383  63.26859 30.83489          0 28.63482  312.4722          0
```

```
## 384  65.85542 27.66185          1 23.86841  311.3223          0
## 385  66.35837 25.43330          1 15.17842  298.3999          0
## 386  64.32207 32.77240          1 30.25465  321.8412          1
## 387  71.40178 33.89954          1 34.13116  321.9495          0
## 388  64.60653 31.22957          0 31.70890  323.6751          1
## 389  65.40458 32.14631          0 34.22012  342.0575          1
## 390  68.24893 28.55098          1 24.40988  313.4342          1
## 391  67.28936 30.21708          0 31.70487  323.5861          1
## 392  68.16922 28.56368          1 31.96988  326.7386          1
## 393  67.91107 30.89865          1 34.17127  328.5416          1
## 394  62.25028 26.47456          1 22.38859  308.1182          0
## 395  70.81714 34.58778          1 35.95167  334.3711          1
## 396  70.32986 30.52539          1 31.06924  314.5286          0
## 397  67.11351 32.19762          0 29.41186  323.9983          1
## 398  64.33879 30.38711          0 27.25499  324.7370          1
## 399  67.39429 31.84946          0 33.79830  331.7579          1
## 400  67.24620 35.32841          0 38.95640  338.5223          1
## 401  69.25668 29.88633          1 41.66194  324.8077          0
## 402  65.35332 28.19222          0 27.78307  310.8305          0
## 403  65.82461 27.05865          1 26.94571  311.5314          0
## 404  66.77486 31.28869          1 37.50339  328.6219          1
## 405  66.14649 29.41748          1 29.62544  317.5462          0
## 406  68.23447 34.59718          1 25.52411  321.4222          1
## 407  67.96909 29.85131          1 31.08612  310.0223          0
## 408  65.96580 30.81064          0 26.39106  318.0622          1
## 409  66.68085 27.96488          1 28.09642  317.9691          1
## 410  65.51753 26.76905          0 28.30419  313.7351          0
## 411  63.65059 26.45402          0 19.28180  303.0545          0
## 412  69.28983 28.52095          0 31.50081  312.8574          0
## 413  65.39961 29.90232          1 26.36925  318.0241          1
## 414  66.25866 29.76343          1 30.29571  317.9704          0
## 415  64.90006 27.09276          0 23.84099  308.2385          0
## 416  68.04258 29.90336          1 31.72210  322.2668          1
## 417  68.42062 33.26454          1 37.05927  337.4935          1
## 418  70.64818 31.13354          0 30.40252  323.5776          1
## 419  67.47982 28.05977          0 30.03318  332.6120          1
## 420  65.30341 29.99410          1 25.07690  303.7296          0
## 421  68.52527 29.80708          1 26.19394  320.6334          1
## 422  67.32729 26.44187          0 22.75459  297.8873          0
## 423  66.20982 25.76713          1 26.70802  299.6780          0
## 424  65.22795 30.75899          1 27.47562  318.5634          1
## 425  65.71940 28.62214          1 26.53994  309.4870          0
## 426  64.04228 30.26245          1 23.61469  302.6687          0
## 427  66.25681 28.33778          1 24.10008  313.6577          1
## 428  67.31768 29.54636          0 29.58976  315.0136          0
## 429  64.45918 31.91421          0 29.62026  330.4273          1
## 430  65.29225 24.96949          1 22.24492  289.6815          0
## 431  62.93034 27.05684          0 20.02505  294.4983          0
## 432  67.31744 31.30156          1 27.50430  316.9843          1
## 433  68.21178 29.25054          1 26.50761  322.1601          1
## 434  69.57897 32.28163          1 30.01805  316.4448          0
## 435  64.74974 28.04938          1 22.89082  317.4156          1
## 436  66.27626 30.18518          0 31.50564  314.7697          0
## 437  68.08275 34.39173          1 34.17585  324.5228          1
```

```
## 438  67.23469 28.05803          0 31.85246  319.8375          0
## 439  73.45403 33.49093          1 30.91510  331.8518          1
## 440  62.60420 23.82893          1 17.95714  300.0334          0
## 441  66.23902 26.57945          1 28.38368  319.6813          1
## 442  66.45432 28.76527          1 24.93081  311.3388          0
## 443  64.73096 29.65968          0 35.72692  319.6032          0
## 444  67.01679 29.84318          0 29.80828  323.7458          1
## 445  65.25293 28.06629          1 29.30048  310.7203          0
## 446  65.60972 24.57265          0 27.98502  309.9452          0
## 447  66.85586 23.86002          0 29.41822  308.9576          0
## 448  65.29790 26.75465          1 25.21042  303.2523          0
## 449  66.69263 28.78115          0 26.86956  324.1583          1
## 450  68.26408 28.68860          1 28.87951  320.9213          1
## 451  64.20990 31.40144          1 26.43139  323.9196          1
## 452  69.69752 29.24705          0 33.61068  325.5590          1
## 453  64.37822 29.84392          1 29.29904  320.2372          1
## 454  65.06653 28.64672          1 27.46389  313.9166          0
## 455  65.93797 30.14543          1 33.29948  321.0826          0
## 456  66.06212 29.70801          1 26.44480  321.0703          1
## 457  64.94609 30.12882          1 29.91593  318.5144          0
## 458  68.21000 34.38638          0 36.99849  330.7356          1
## 459  65.16915 30.72470          1 29.07496  313.4598          0
## 460  64.43425 29.20236          0 26.23002  311.9608          0
## 461  69.83897 33.04308          1 33.72720  323.9276          1
## 462  66.56865 34.27901          1 31.73417  331.3909          1
## 463  68.11496 32.23809          1 29.50167  321.7676          1
## 464  65.83612 30.15283          1 26.81681  312.0927          0
## 465  66.44623 27.39499          0 29.87409  316.7064          0
## 466  67.08285 29.10633          1 32.09768  321.7273          0
## 467  67.25918 29.07587          1 34.09775  319.7908          0
## 468  69.29528 31.86904          0 34.60644  323.2933          0
## 469  67.79228 30.36782          1 34.87799  328.1910          1
## 470  66.75870 28.22296          1 28.35797  312.5263          0
## 471  69.68387 32.02233          1 31.60078  328.3649          1
## 472  67.09339 32.57273          1 32.37665  327.7100          1
## 473  67.95235 30.99446          0 36.03739  332.6632          1
## 474  70.61525 31.65167          1 38.57124  327.4954          0
## 475  68.73650 32.66696          0 32.72290  323.7421          1
## 476  69.06875 26.33297          0 34.69565  325.3166          1
## 477  67.29668 32.36820          0 29.97467  328.5368          1
## 478  67.54390 31.50675          1 31.50512  326.6739          1
## 479  63.29933 25.51903          1 27.08907  313.5165          0
## 480  64.78745 25.94209          1 23.66612  310.2856          0
## 481  69.95653 32.75193          1 35.42977  329.2005          1
## 482  67.40086 26.81794          0 30.84564  322.2325          1
## 483  66.84760 29.70182          1 30.54419  325.6840          1
## 484  65.79493 28.58603          1 28.79895  309.5107          0
## 485  69.14195 32.67851          0 31.08018  332.4246          1
## 486  67.20166 31.72795          0 32.07580  321.9927          1
## 487  68.39015 31.00624          0 33.62422  322.6306          0
## 488  65.17372 28.04902          0 21.33929  300.8828          0
## 489  63.14459 32.60090          1 26.97129  321.7070          1
## 490  66.70822 27.19285          1 26.93055  302.1478          0
## 491  70.09390 31.95136          0 30.27584  318.8038          0
```

```
## 492  65.28934 24.85723          1 21.85487  300.6678          0
## 493  68.20135 33.50318          0 25.98813  316.7258          1
## 494  61.85233 30.75893          1 22.30407  306.3200          0
## 495  68.42291 31.94472          0 33.40600  330.5266          1
## 496  66.61697 30.13848          1 29.14059  333.9360          1
## 497  67.05489 31.59553          1 32.09004  320.1783          0
## 498  64.54117 25.43915          1 22.48135  302.8899          0
## 499  65.23813 31.25376          1 18.56777  307.6291          1
## 500  62.00353 25.36026          0 17.16074  296.1636          0
## 501  67.47910 29.74922          1 34.32042  323.1232          0
## 502  67.89919 29.99362          1 30.41533  320.3533          1
## 503  65.27241 31.61597          0 29.15396  321.8593          1
## 504  66.52984 30.03832          0 29.04029  328.6609          1
## 505  62.66452 29.62161          1 26.37518  315.1059          1
## 506  70.93558 31.35029          1 33.35973  326.0034          1
## 507  68.29255 29.95965          1 27.04495  314.5194          0
## 508  68.63447 32.32362          1 32.33630  305.7477          0
## 509  66.95124 34.32173          1 38.60173  339.6861          1
## 510  65.86071 29.51792          0 27.59848  314.9309          0
## 511  66.90473 29.38064          0 26.96221  319.2978          1
## 512  68.77962 35.59814          1 34.91167  337.7305          1
## 513  68.81206 32.69259          0 34.15861  333.1916          1
## 514  64.44998 35.48396          1 31.68993  328.7048          1
## 515  67.57413 27.77962          1 26.45222  312.9075          0
## 516  65.77150 27.91620          0 28.09277  314.2564          0
## 517  65.52408 30.86464          1 27.18519  311.9819          0
## 518  67.01125 31.45994          1 31.19969  322.0828          1
## 519  66.33049 27.69987          1 31.98554  333.4450          1
## 520  68.35511 27.77757          1 27.05029  310.6921          0
## 521  69.14289 33.73156          0 34.93088  320.9807          0
## 522  68.91921 31.05398          1 33.57241  332.8561          1
## 523  70.95169 33.70816          1 40.16331  336.1629          1
## 524  65.68528 31.55789          1 30.42517  327.0362          1
## 525  65.46054 26.76196          1 24.29845  302.6755          0
## 526  63.34054 33.07277          0 26.30804  315.8263          1
## 527  66.40706 28.83661          1 26.35350  309.8040          0
## 528  70.33550 31.79824          0 34.96670  327.4104          1
## 529  67.65920 24.54989          0 26.70909  308.2630          0
## 530  70.73883 32.29104          1 36.64056  333.6232          1
## 531  62.68579 29.31426          1 25.21807  318.8832          1
## 532  64.98426 28.15698          1 25.14710  311.4955          0
## 533  66.30939 22.06721          0 27.03711  309.6695          0
## 534  67.67819 30.73587          1 26.43702  306.7769          0
## 535  64.88833 33.85554          1 27.79918  319.6373          1
## 536  64.27763 28.61037          1 27.39383  311.5422          0
## 537  65.37470 31.74642          1 27.03133  319.9534          1
## 538  70.61623 32.65199          0 40.86384  330.8177          0
## 539  66.69282 30.52675          0 30.99417  323.8200          1
## 540  69.45393 29.26167          1 33.72529  321.4805          0
## 541  65.84584 28.47515          0 22.41352  311.4252          1
## 542  68.12318 27.09844          1 30.14405  311.2117          0
## 543  65.83227 28.25138          1 22.41077  310.8083          1
## 544  67.05115 32.88081          0 37.92166  338.8871          1
## 545  64.34350 25.23309          0 25.89829  309.6482          0
```

```
## 546  69.75979 30.18124          1 35.78035  326.9441          1
## 547  69.70765 35.54199          1 31.18151  328.8242          1
## 548  68.89569 28.49460          0 35.87640  326.3638          0
## 549  65.26109 27.14055          1 25.11128  311.1246          0
## 550  65.12777 30.03681          1 24.72368  310.7571          0
## 551  63.68989 29.80512          1 23.83843  311.1804          0
## 552  65.14660 22.92758          1 21.16170  299.3663          0
## 553  68.41342 28.35878          0 31.13322  311.5384          0
## 554  67.41652 27.33168          1 34.67927  319.9476          0
## 555  68.97064 29.99889          1 24.29530  309.3449          0
## 556  65.31610 28.96935          1 26.46813  315.3740          1
## 557  68.84034 34.57810          1 33.99451  333.5210          1
## 558  67.03445 35.35998          0 39.31577  342.6038          1
## 559  65.68407 33.19209          1 35.63009  330.4049          1
## 560  64.83076 31.09558          1 27.26780  316.9468          1
## 561  66.42568 30.69962          1 33.59829  327.7219          1
## 562  65.18847 31.43915          0 27.55588  315.6622          0
## 563  65.75188 28.01520          1 32.55608  325.8223          1
## 564  68.24110 30.56240          0 27.94177  321.0608          1
## 565  66.74337 31.11861          1 32.50490  322.3199          1
## 566  71.43479 32.13102          0 34.21139  319.7567          0
## 567  66.89237 26.78632          1 27.78175  327.8946          1
## 568  68.43079 33.16132          1 26.01764  310.0160          0
## 569  65.15166 30.56674          1 20.41737  304.7843          0
## 570  65.88261 33.17421          0 26.36222  318.9297          1
## 571  66.69483 32.31729          1 33.69801  334.7971          1
## 572  64.56342 28.96698          1 21.98092  313.7243          1
## 573  69.10549 34.25974          0 38.49389  335.1010          1
## 574  70.89358 35.43775          1 40.03301  326.5933          0
## 575  66.83410 31.20519          0 29.12677  332.4101          1
## 576  67.33960 33.96112          1 39.50534  335.6414          1
## 577  67.07041 33.10617          0 28.42001  327.5960          1
## 578  65.93717 29.00596          1 27.24788  309.3595          0
## 579  69.46726 28.56867          0 36.46786  323.2974          0
## 580  63.06517 30.90675          1 29.43096  320.3531          1
## 581  69.76682 35.49325          0 41.01946  335.7408          1
## 582  68.45740 30.99406          0 35.27966  330.0619          1
## 583  67.75463 33.71150          1 38.01062  341.2582          1
## 584  69.01523 28.84075          1 37.99468  326.5225          0
## 585  66.44365 27.60254          1 33.42540  332.1040          1
## 586  68.71063 31.93046          1 32.11923  320.8123          0
## 587  65.62563 33.06833          0 36.42610  322.3492          0
## 588  65.05938 30.36800          1 25.30033  311.2204          0
## 589  62.77113 26.85321          1 18.42922  301.4072          0
## 590  66.26357 32.81263          0 29.59235  325.2855          1
## 591  64.16647 25.85438          0 23.91598  302.8466          0
## 592  65.84687 29.55849          1 35.35375  327.5704          1
## 593  68.85410 36.85084          1 36.88005  330.6976          1
## 594  65.45497 34.06617          1 27.50261  318.8291          1
## 595  69.11912 31.63891          1 38.16980  340.0591          1
## 596  67.21433 27.18336          1 28.95178  324.0056          1
## 597  66.85061 29.38929          0 28.05230  311.6777          0
## 598  68.49181 30.31771          1 26.60388  322.3126          1
## 599  65.51635 29.24061          1 29.29997  330.8867          1
```

```
## 600  62.93158 33.84988          0 35.51099  323.5593          0
## 601  64.69143 29.17379          1 29.26279  311.1816          0
## 602  67.74916 26.76418          0 32.51073  313.8537          0
## 603  67.37638 25.15678          1 29.24083  314.6224          0
## 604  66.75629 24.05527          0 25.97476  301.5757          0
## 605  65.71933 30.34625          0 29.33802  324.1365          1
## 606  64.62776 21.80743          0 17.27580  303.3441          0
## 607  66.84506 29.16531          1 25.99533  321.8241          1
## 608  66.65564 29.31843          1 22.58157  309.5214          0
## 609  68.39816 25.96324          0 27.64338  308.1608          0
## 610  66.51841 31.06562          1 33.83277  329.4293          1
## 611  64.90020 31.51238          1 29.39414  323.1075          1
## 612  69.63733 34.31588          0 30.63333  333.2193          1
## 613  69.29931 31.76573          0 33.40865  320.6228          0
## 614  71.42013 32.66852          0 36.67998  344.4459          1
## 615  66.99898 30.00555          1 31.01567  315.9729          0
## 616  70.71214 30.28165          1 38.00353  337.1720          1
## 617  67.43760 27.75774          0 33.61462  324.9222          1
## 618  68.07446 34.34476          0 37.09402  328.9946          1
## 619  68.39513 30.36199          1 29.77469  315.7372          0
## 620  64.17178 28.52007          1 28.99011  308.7771          0
## 621  67.77231 33.28059          1 34.00334  332.0531          1
## 622  70.70858 31.51018          1 30.13931  328.2091          1
## 623  69.24417 33.70719          1 35.23663  336.0430          1
## 624  65.88087 27.87602          0 26.60367  321.2514          1
## 625  66.03867 25.97708          0 24.24348  316.2636          1
## 626  66.55020 29.13941          0 26.32477  312.1571          0
## 627  66.92325 27.54914          1 27.49627  315.3067          0
## 628  67.64039 30.52926          1 33.73407  324.2278          1
## 629  63.54607 28.91686          1 26.00763  314.8656          1
## 630  66.31819 27.67596          1 29.58986  317.1943          0
## 631  65.55667 26.43828          1 29.64477  305.0759          0
## 632  66.72427 33.60197          1 31.50694  319.4474          0
## 633  68.96085 34.38096          1 34.12445  333.6878          1
## 634  64.83219 31.27550          1 26.08906  318.1554          1
## 635  67.27683 27.15415          0 25.04828  309.6195          0
## 636  68.79176 31.43243          1 29.42207  314.8045          0
## 637  67.41386 29.60929          1 31.41874  313.9175          0
## 638  68.99615 29.31101          0 27.97866  328.8341          1
## 639  65.44296 25.25821          0 20.17629  297.7670          0
## 640  67.63528 30.80917          1 36.70470  332.4380          1
## 641  65.25305 28.81715          1 29.90881  314.7333          0
## 642  69.09615 31.79843          1 32.15943  334.5534          1
## 643  68.76475 34.15387          0 31.71714  319.5415          0
## 644  69.14008 32.65566          1 38.61761  334.4695          1
## 645  68.70004 36.39773          0 39.63651  340.1961          1
## 646  69.06280 29.87885          0 27.18270  307.2747          0
## 647  69.19081 30.94367          0 30.75940  318.3958          0
## 648  65.21022 30.05257          1 25.12138  310.9961          0
## 649  66.79420 30.20697          0 34.65512  333.3321          1
## 650  66.70991 25.39448          1 25.00467  307.6691          0
## 651  64.36085 31.49712          0 30.51195  318.1934          0
## 652  64.36949 28.73013          0 28.05879  315.1953          0
## 653  67.74494 23.89955          0 24.51782  305.1668          0
```

```
## 654  65.85217 29.62528          0 22.47781  306.7117          0
## 655  68.23222 35.88714          0 34.26640  331.8697          1
## 656  69.23896 32.83057          1 34.00244  336.8703          1
## 657  68.79355 33.80854          1 33.54285  328.8909          1
## 658  65.19780 32.33168          1 28.70382  317.7103          1
## 659  64.81359 27.32012          1 24.06562  315.2289          1
## 660  66.27095 24.34492          1 25.59736  301.2900          0
## 661  64.75067 28.68024          1 26.85264  313.2579          0
## 662  65.44452 30.82567          1 29.55525  324.4504          1
## 663  69.73085 32.05715          0 30.80572  312.9854          0
## 664  69.77100 30.73903          0 29.98804  318.5194          0
## 665  67.15383 31.23465          0 32.13476  327.0611          1
## 666  66.88582 28.50342          0 22.73212  307.1712          0
## 667  65.19095 26.65355          1 33.55774  319.4926          0
## 668  64.19327 26.56895          1 21.11615  309.4154          1
## 669  64.45829 25.94062          1 22.05503  310.7832          1
## 670  67.49291 32.68254          0 32.24028  317.9484          0
## 671  63.35123 23.28308          0 17.19923  295.9143          0
## 672  64.17073 26.13637          1 21.41788  310.9602          1
## 673  62.43343 28.96005          0 21.20479  305.6405          0
## 674  67.44936 28.07797          0 35.07387  335.4515          1
## 675  66.34318 28.58905          0 31.53717  327.4751          1
## 676  68.31744 29.23454          1 21.99976  309.6414          0
## 677  63.37605 26.74234          0 22.45498  313.4476          1
## 678  65.32737 27.27545          1 25.26681  314.2925          1
## 679  70.05568 32.29082          0 38.20869  337.3984          1
## 680  65.87146 26.53540          1 22.59708  308.8515          0
## 681  68.52894 25.65651          1 34.34329  315.8716          0
## 682  68.69163 28.87441          1 27.93267  308.3698          0
## 683  69.60690 30.67692          0 35.51238  329.6484          1
## 684  68.00724 34.04189          1 27.58032  327.4437          1
## 685  66.69937 32.68302          1 33.03288  326.9967          1
## 686  67.14144 30.40372          0 28.59264  323.3178          1
## 687  69.00446 28.77130          0 33.15917  325.9798          1
## 688  68.00488 32.25251          0 38.80909  337.0157          1
## 689  67.63833 25.63068          1 32.50568  321.0478          0
## 690  66.89016 29.28165          1 26.18961  322.6865          1
## 691  68.24293 30.11113          1 28.60203  310.4031          0
## 692  68.81500 33.16603          1 31.05506  333.6144          1
## 693  65.05598 26.50352          1 25.37566  307.9780          0
## 694  66.18703 27.27445          0 28.62064  312.1628          0
## 695  64.38496 28.40847          1 27.89541  316.9880          1
## 696  66.37061 31.58866          1 28.60794  314.9604          0
## 697  64.12348 25.08052          0 22.66532  302.8563          0
## 698  64.41139 29.60419          1 30.22585  319.9270          1
## 699  63.93861 29.56355          1 24.61415  310.8795          0
## 700  65.61731 29.54117          1 26.80558  312.4519          0
## 701  66.36357 28.31300          1 34.22166  321.4682          0
## 702  67.28192 29.15939          1 31.74121  317.9626          0
## 703  65.63557 27.22595          1 32.43701  309.2785          0
## 704  65.65654 29.13542          1 32.52278  318.4571          0
## 705  66.81416 31.79567          0 30.97067  323.1804          1
## 706  69.34023 30.33150          0 34.12265  324.8373          1
## 707  63.67791 22.91947          1 20.47989  304.1477          0
```

```
## 708  70.26769 29.33773          1 30.18350  315.0044          0
## 709  67.82174 29.06909          1 24.10113  311.5090          0
## 710  67.82470 29.06322          1 33.75603  320.2672          0
## 711  70.04830 32.53070          0 40.00228  335.1985          1
## 712  65.49926 31.29868          1 31.07773  316.8880          0
## 713  69.17644 29.78902          1 36.70497  335.7676          1
## 714  63.92293 31.02695          1 32.10483  314.3650          0
## 715  68.96580 29.70813          0 31.34266  323.6920          1
## 716  64.98545 32.13967          1 25.65600  315.0880          1
## 717  66.08902 31.69371          1 29.44080  315.8164          0
## 718  68.04857 32.59602          1 29.91576  323.8401          1
## 719  68.13715 28.48226          1 29.90620  327.6491          1
## 720  67.72685 32.45553          0 25.86298  299.1702          0
## 721  66.19166 31.14718          1 26.97507  313.6872          0
## 722  64.48688 28.91485          1 30.04169  324.5005          1
## 723  69.00152 26.67491          0 28.73655  314.9100          0
## 724  65.10387 28.33665          0 26.79957  328.1224          1
## 725  64.80189 30.11048          0 25.37299  306.3742          0
## 726  65.04666 26.91846          1 26.60825  317.9273          1
## 727  66.84517 29.74008          1 31.06148  318.3092          0
## 728  68.06427 30.44182          0 29.81985  326.3340          1
## 729  67.98800 29.93139          0 29.62452  316.4358          0
## 730  69.45282 30.80195          0 32.62582  328.1878          1
## 731  66.51478 31.33117          1 31.15078  323.6667          1
## 732  68.07042 31.69410          1 28.86896  328.3915          1
## 733  66.77279 28.42025          0 30.07250  316.5487          0
## 734  68.53660 29.77608          0 38.38307  325.5697          0
## 735  67.74429 34.41403          0 39.03347  336.0610          1
## 736  64.11105 29.14539          0 31.85966  320.1130          0
## 737  61.17273 23.73504          0 16.78627  285.0503          0
## 738  65.91502 26.41667          0 15.32633  296.9212          0
## 739  67.13689 27.54428          0 32.05648  311.9497          0
## 740  64.27098 30.51616          0 28.55587  321.0006          1
## 741  65.91504 28.69536          1 24.87546  305.3919          0
## 742  68.85557 27.07304          1 31.77541  324.5987          1
## 743  65.72734 31.39433          0 29.94736  320.1642          1
## 744  68.01057 27.50123          0 27.73131  317.9713          1
## 745  66.23589 28.36239          0 30.18048  311.5658          0
## 746  68.86926 29.80140          0 32.71918  326.6305          1
## 747  64.95714 31.40721          1 33.16074  322.7511          0
## 748  66.50059 34.67789          0 39.47751  343.5066          1
## 749  67.21518 30.62928          0 25.97455  314.3155          0
## 750  70.24032 32.31736          0 36.28886  322.9999          0
## 751  67.11029 33.53058          0 34.14388  324.9244          1
## 752  67.23965 29.19421          1 29.75963  310.6404          0
## 753  65.23185 31.79559          1 27.52130  311.3966          0
## 754  66.18956 28.29163          0 34.72048  314.6216          0
## 755  69.31340 30.92357          1 37.18403  322.7363          0
## 756  67.95830 33.05793          1 35.43949  324.3202          0
## 757  64.97226 31.66397          1 29.86774  313.1754          0
## 758  63.74882 34.92689          1 29.65762  318.8335          0
## 759  64.94643 26.99440          0 29.95558  308.6117          0
## 760  67.49829 29.72684          0 32.48357  322.3073          1
## 761  68.04488 33.29413          1 33.11471  314.9793          0
```

```
## 762  69.01030 32.20579          0 34.27744  332.0862          1
## 763  68.28100 21.35196          1 24.08760  295.5938          0
## 764  63.58323 29.17700          1 25.34613  308.2010          0
## 765  67.31763 28.14473          0 28.26846  317.8392          1
## 766  64.36499 23.75378          1 23.80605  298.1253          0
## 767  66.07334 24.20701          0 22.33530  304.7866          0
## 768  66.70308 26.88672          0 25.69580  314.1403          1
## 769  66.56314 29.56402          1 25.86476  315.3155          1
## 770  65.05622 29.36110          0 25.70402  307.3632          0
## 771  67.18426 26.88963          0 31.69799  321.0441          0
## 772  67.76489 26.65395          1 25.11865  306.8445          0
## 773  68.66598 31.46025          1 35.10617  328.0480          1
## 774  66.46483 33.92779          0 32.73571  327.0264          1
## 775  66.98297 27.22336          1 29.32873  307.5595          0
## 776  67.59793 29.63941          1 33.87824  326.1573          1
## 777  64.80226 37.91700          1 35.36357  324.8175          0
## 778  67.61313 30.95891          1 28.88337  328.9142          1
## 779  66.83211 31.18988          1 33.90433  328.7663          1
## 780  68.02792 28.54422          0 32.81334  319.4071          0
## 781  66.43162 31.90570          1 29.79522  318.8784          0
## 782  66.95941 32.91184          0 27.12560  320.1288          1
## 783  66.13997 31.91666          1 26.54078  326.9251          1
## 784  67.66983 29.61510          0 33.69739  330.0908          1
## 785  64.76920 26.70508          0 27.53895  322.7615          1
## 786  66.40378 27.82474          0 22.57218  313.8798          1
## 787  67.48575 32.35233          1 31.65975  326.8509          1
## 788  65.73312 35.50884          0 37.10656  329.4254          1
## 789  69.89742 34.37028          0 38.62985  338.3769          1
## 790  65.48429 23.31676          0 29.05936  314.0680          0
## 791  66.62514 27.60302          0 25.30872  311.3485          0
## 792  65.94431 29.21113          0 32.20250  316.7922          0
## 793  63.68891 27.92014          0 22.37744  312.7655          1
## 794  66.37778 26.88016          1 25.07337  311.1874          0
## 795  65.67355 28.88297          0 25.67023  307.7627          0
## 796  64.91010 27.90738          1 19.31094  301.0923          0
## 797  67.64624 32.49284          0 30.66861  321.8147          1
## 798  66.15790 28.24523          0 28.32742  315.8241          0
## 799  61.94763 26.60491          1 25.14932  303.4118          0
## 800  69.30108 35.40891          1 34.44900  337.8080          1
## 801  69.00968 35.72586          1 38.03928  331.6644          1
## 802  67.71011 29.61245          1 34.51734  321.0998          0
## 803  67.77002 31.64196          0 34.51919  330.1757          1
## 804  67.23129 34.48856          1 41.35904  331.2468          0
## 805  67.90662 31.15335          0 28.80596  331.3437          1
## 806  65.67181 28.81919          1 32.03978  321.9951          1
## 807  62.35861 24.82808          1 27.30272  310.8789          0
## 808  67.36255 26.31639          1 29.39835  319.4445          1
## 809  68.09216 32.08096          1 29.82655  321.6419          1
## 810  67.28769 31.99236          1 36.28846  326.9274          1
## 811  69.48712 36.18774          0 34.00235  332.5632          1
## 812  68.88877 29.10408          0 27.70363  324.7564          1
## 813  62.13298 29.62854          1 20.93401  305.8587          0
## 814  64.60544 25.63735          0 21.47419  300.7370          0
## 815  67.92501 34.07969          1 33.07521  325.1629          1
```

```
## 816  64.52060 29.81091          0 25.92195  318.7065          1
## 817  64.33770 29.14811          0 24.83224  313.1905          1
## 818  65.23181 25.78832          1 29.70638  306.8923          0
## 819  70.57599 31.25355          1 30.67503  326.8842          1
## 820  61.55198 30.20055          1 25.32407  318.0327          1
## 821  69.01635 32.47168          0 37.47234  334.5522          1
## 822  65.49781 24.64731          1 20.07615  295.2276          0
## 823  66.17407 31.30923          1 35.25030  330.2566          1
## 824  64.91825 36.41335          0 32.06715  327.9576          1
## 825  65.55871 26.80561          1 20.43667  309.0888          1
## 826  70.11146 30.15502          1 34.90089  329.8905          1
## 827  66.89873 33.35323          1 28.88148  317.3855          0
## 828  64.94833 29.86311          1 27.11881  311.8826          0
## 829  66.78884 29.28316          1 29.29359  318.6547          1
## 830  65.06951 29.34303          1 33.11094  326.8939          1
## 831  69.18378 28.47032          0 35.49609  330.2333          1
## 832  70.03541 29.60610          0 34.11741  323.8505          0
## 833  66.70270 31.38928          1 31.43636  324.9517          1
## 834  64.56541 26.81141          0 25.16182  316.7061          1
## 835  68.02767 32.34115          0 28.38459  304.8204          0
## 836  63.04171 24.13881          1 22.68452  306.3719          0
## 837  64.42138 28.14356          1 29.84265  315.7519          0
## 838  66.82208 32.12816          0 27.56245  326.2704          1
## 839  65.15151 26.20781          1 23.37679  309.2105          0
## 840  69.89078 36.93966          0 33.89379  334.0567          1
## 841  65.36492 27.82580          0 19.83348  291.5804          0
## 842  69.71699 36.87822          1 40.62199  346.1519          1
## 843  65.49871 37.57465          1 33.50453  343.1531          1
## 844  67.84738 35.16648          1 30.93874  330.3713          1
## 845  66.05913 30.14367          0 28.38284  311.7397          0
## 846  67.72883 32.44597          1 41.10066  340.8590          1
## 847  67.70754 32.76310          0 28.84705  325.4213          1
## 848  69.20791 31.36483          1 33.92086  326.6287          1
## 849  66.21816 27.95772          1 19.16444  304.1321          0
## 850  68.14473 31.26965          0 36.15329  323.6092          0
## 851  66.89970 32.65724          1 37.44649  323.6974          0
## 852  62.55209 28.70308          1 28.45161  316.7505          0
## 853  62.86783 29.30483          1 29.18484  323.1109          1
## 854  70.40326 34.74405          0 40.23228  348.1215          1
## 855  67.08418 30.11972          1 29.17905  323.7149          1
## 856  67.85134 31.51069          1 29.18503  317.6085          0
## 857  66.34599 30.03406          1 34.91275  328.5051          1
## 858  66.90180 29.50028          1 29.07365  317.1386          0
## 859  67.80703 29.57401          1 28.94265  315.9392          0
## 860  66.67745 30.57368          1 31.16021  321.3392          1
## 861  64.45533 23.91006          0 25.22337  305.0277          0
## 862  66.75897 29.73502          1 25.44366  310.3192          0
## 863  67.42711 31.20680          1 29.30283  326.3209          1
## 864  62.78391 28.36965          1 21.35871  313.1118          1
## 865  66.32915 32.93968          1 30.44695  321.0329          1
## 866  59.83978 20.99936          0 15.34652  300.0027          0
## 867  69.15003 30.90705          0 31.10079  322.1860          1
## 868  67.41049 28.84526          1 21.89166  316.3466          1
## 869  69.68811 29.82211          1 33.64283  321.2978          0
```

```
## 870  70.20565 30.41208          0 34.47271  326.6479          1
## 871  67.05490 29.53941          1 30.80954  322.2828          1
## 872  68.69454 32.24995          0 28.05978  327.2393          1
## 873  69.81691 31.73474          1 35.10095  317.9377          0
## 874  62.23115 22.75869          1 19.19790  302.4175          0
## 875  69.05689 28.39978          1 33.37813  323.3750          0
## 876  63.41564 24.72208          0 25.74148  310.6834          0
## 877  68.64692 31.49008          1 36.60158  332.4264          1
## 878  67.74554 33.09438          1 23.32506  321.2737          1
## 879  67.46377 30.22225          1 31.92285  324.1160          1
## 880  65.73344 30.44574          1 27.28650  324.7442          1
## 881  70.94230 32.81136          0 34.13440  337.8601          1
## 882  66.80238 28.95790          0 27.96470  313.5577          0
## 883  66.63911 30.74262          1 25.43922  314.2011          1
## 884  67.09830 29.00321          1 24.24647  307.7370          0
## 885  69.24803 31.44768          1 33.48223  329.0398          1
## 886  63.86944 32.85404          1 30.23285  315.5085          0
## 887  65.20622 27.29336          1 28.56150  314.0012          0
## 888  68.89380 31.97850          0 34.83047  326.7711          1
## 889  62.88923 29.43124          0 29.55755  328.5948          1
## 890  65.39054 33.66215          1 30.94186  332.7022          1
## 891  67.41562 32.05001          1 32.96520  325.7835          1
## 892  67.21080 25.54360          1 26.17645  305.2615          0
## 893  64.87114 30.06131          1 23.56881  315.1673          1
## 894  64.14255 25.72977          0 26.89174  311.1541          0
## 895  63.34839 25.15428          1 20.65415  301.7569          0
## 896  70.07267 24.20771          0 26.11387  312.7806          0
## 897  63.89990 25.20975          0 21.10914  310.4902          1
## 898  65.29667 27.10829          0 23.15863  308.0615          0
## 899  66.46014 29.42992          1 27.51683  318.2524          1
## 900  67.80520 30.40694          0 27.64643  314.5179          0
## 901  69.71704 30.77297          1 32.74575  330.5852          1
## 902  68.65551 31.59649          0 29.90476  324.2801          1
## 903  65.76816 26.43513          0 27.38029  315.4126          0
## 904  67.85826 28.86992          1 30.29371  322.2761          1
## 905  64.00940 28.39624          1 27.64024  314.5061          0
## 906  66.92148 33.38942          1 39.02681  330.8808          1
## 907  67.57558 30.66012          1 33.59878  318.2162          0
## 908  70.70819 33.86295          1 38.94217  333.8791          1
## 909  69.87597 28.01526          0 29.22676  315.7492          0
## 910  67.45012 31.67127          1 33.82003  322.7451          0
## 911  70.56928 38.32499          0 40.17628  342.1996          1
## 912  67.82174 31.46777          1 29.80398  328.9261          1
## 913  63.30542 30.17162          1 28.60923  321.3808          1
## 914  69.66393 33.66128          1 41.08790  344.5223          1
## 915  67.38428 35.88348          0 33.94953  326.3765          1
## 916  69.00841 28.96371          1 29.76815  316.8429          0
## 917  62.50595 25.86678          0 24.84277  314.3722          1
## 918  66.10602 30.78830          1 31.66767  326.4867          1
## 919  69.68813 31.00043          0 37.33243  327.4619          0
## 920  69.21438 31.69372          1 33.60596  322.1170          0
## 921  66.09912 32.85339          1 32.27504  318.6398          0
## 922  70.80834 34.62794          0 38.96575  338.1843          1
## 923  69.09494 28.90151          0 26.94132  311.8169          0
```

```
## 924  66.93526 28.63135          0 29.77503  313.9634          0
## 925  65.61373 31.02659          1 36.55512  330.4872          1
## 926  71.12416 33.07208          0 33.72406  322.5044          0
## 927  65.85077 32.86111          0 30.24509  319.8679          1
## 928  65.02208 27.28222          0 27.87632  321.3948          1
## 929  68.27696 36.06479          1 33.54433  331.3647          1
## 930  67.88893 29.13955          0 31.53510  324.6613          1
## 931  67.99139 28.61851          1 25.51904  313.2792          0
## 932  69.55824 31.85786          0 30.76704  321.8062          1
## 933  67.90729 27.92033          1 31.58415  313.6567          0
## 934  65.22568 27.18779          0 27.12041  312.7233          0
## 935  65.87924 36.23847          0 39.54841  346.3083          1
## 936  68.21870 29.95949          0 32.87971  320.3267          0
## 937  72.08580 28.32875          1 34.91448  324.4541          0
## 938  67.71012 28.98600          1 33.10547  323.8144          1
## 939  62.57536 24.66160          1 18.81592  304.2448          0
## 940  66.16736 27.15498          1 24.36061  317.5962          1
## 941  67.32715 29.50587          1 31.01726  316.5994          0
## 942  68.23273 32.90285          0 36.75974  328.7539          1
## 943  69.00100 33.46642          1 38.32147  331.9747          1
## 944  68.97136 33.16385          0 39.57490  338.1154          1
## 945  69.57568 31.99076          1 39.02976  333.6727          1
## 946  65.54782 27.32967          1 26.88076  320.3121          1
## 947  65.92089 31.01990          1 32.10774  334.5432          1
## 948  67.51103 28.21463          1 33.80998  330.3456          1
## 949  71.58583 34.64195          0 38.78522  330.5486          1
## 950  66.24755 27.33248          1 32.03948  319.8120          0
## 951  63.68079 28.31848          1 29.38110  322.3733          1
## 952  67.41144 31.13595          1 36.01256  333.9755          1
## 953  67.35450 33.96245          0 30.25470  310.9476          0
## 954  67.16805 32.82898          1 31.35947  323.9211          1
## 955  65.31174 28.23866          1 30.36604  319.7865          1
## 956  64.01837 32.61410          1 24.03539  319.0887          1
## 957  65.98614 31.36824          0 32.22940  329.9126          1
## 958  63.77351 25.78161          1 27.96620  310.8945          0
## 959  68.10622 30.31166          0 36.19989  324.3495          0
## 960  64.78304 30.03127          1 30.19376  324.1565          1
## 961  63.97175 27.99549          0 28.28148  320.5932          1
## 962  67.43476 27.03576          0 24.33908  311.5036          0
## 963  64.12722 26.81077          1 27.43914  324.1525          1
## 964  70.62706 32.70205          0 40.16653  328.4001          0
## 965  69.22922 34.63178          0 32.99623  329.6339          1
## 966  70.30632 30.97733          0 34.57911  320.3709          0
## 967  69.83279 31.46854          0 34.55927  327.8138          1
## 968  69.73532 31.28013          0 30.20650  311.3035          0
## 969  64.83619 24.42767          0 25.21379  313.9646          1
## 970  65.05118 25.31812          0 30.14905  312.1155          0
## 971  68.28150 28.47667          1 26.93800  313.8718          0
## 972  65.07010 31.52577          1 28.54625  319.3633          1
## 973  70.45880 31.38862          1 34.78148  328.2712          1
## 974  66.71653 30.75402          1 22.63006  311.8856          1
## 975  65.46049 33.35007          1 28.62017  326.0630          1
## 976  64.27287 25.26592          0 21.43495  298.4258          0
## 977  68.44831 30.72439          1 33.51544  321.8556          0
```

```
## 978  66.02081 29.01491           0 23.30142  317.3849           1
## 979  67.55163 27.55928           0 26.65638  305.8441           0
## 980  69.35104 34.67762           1 35.23934  331.8793           1
## 981  68.41294 27.89819           0 26.97399  322.4132           1
## 982  68.04933 34.20614           1 38.90412  338.0543           1
## 983  64.73696 23.00685           1 20.99680  301.1880           0
## 984  66.93553 29.40742           0 29.50874  321.5949           1
## 985  67.03044 34.69814           1 34.09944  333.4082           1
## 986  67.73068 31.70764           1 31.30266  334.6761           1
## 987  67.48544 31.01939           1 34.12570  333.8368           1
## 988  66.34382 26.94867           1 26.12687  317.3451           1
## 989  68.23981 34.76319           1 30.97767  321.5697           1
## 990  66.08877 29.17492           1 31.61186  316.8233           0
## 991  62.67335 25.02585           0 22.97099  301.9745           0
## 992  65.36204 28.73545           1 24.75227  314.0965           1
## 993  64.49986 24.84314           1 23.84209  316.2311           1
## 994  69.40515 32.02273           0 33.33508  326.2928           1
## 995  65.37957 25.44476           0 21.22395  297.9936           0
## 996  65.37371 25.04946           1 23.39048  306.5177           0
## 997  70.45650 36.96792           1 40.62693  331.7861           0
## 998  68.80723 29.91399           0 31.13381  328.1399           1
## 999  67.19524 29.62473           0 26.02773  309.6063           0
## 1000 66.67748 26.96686           1 24.35153  307.6401           0
```

PASO 1: Analisis univariado

```
univariable_edad <- glm(dfa$abortosn ~ dfa$Edad, family = binomial, data = data)
summary(univariable_edad)
```

```
##
## Call:
## glm(formula = dfa$abortosn ~ dfa$Edad, family = binomial, data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.6789  -1.1895   0.8807   1.0942   1.5530
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept) -12.41670    2.17745  -5.702 1.18e-08 ***
## dfa$Edad      0.18792    0.03257   5.769 7.96e-09 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 1381.1  on 999  degrees of freedom
## Residual deviance: 1346.2  on 998  degrees of freedom
## AIC: 1350.2
##
## Number of Fisher Scoring iterations: 4
```

```r
univariable_dap <- glm(dfa$abortosn ~ dfa$dap, family = binomial, data = data)
summary(univariable_dap)
```

```
##
## Call:
## glm(formula = dfa$abortosn ~ dfa$dap, family = binomial, data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.4489  -1.0358   0.4954   0.9560   1.9773
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept) -10.40302    0.84781  -12.27   <2e-16 ***
## dfa$dap       0.35210    0.02825   12.46   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 1381.1  on 999  degrees of freedom
## Residual deviance: 1175.4  on 998  degrees of freedom
## AIC: 1179.4
##
## Number of Fisher Scoring iterations: 3
```

```r
univariable_h <- glm(dfa$abortosn ~ dfa$hibrido, family = binomial, data = data)
summary(univariable_h) #No relacionada
```

```
##
## Call:
## glm(formula = dfa$abortosn ~ dfa$hibrido, family = binomial,
##     data = data)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -1.256  -1.256   1.101   1.101   1.141
##
## Coefficients:
##             Estimate Std. Error z value Pr(>|z|)
## (Intercept)  0.08526    0.10022   0.851    0.395
## dfa$hibrido  0.09828    0.12944   0.759    0.448
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 1381.1  on 999  degrees of freedom
## Residual deviance: 1380.5  on 998  degrees of freedom
## AIC: 1384.5
##
## Number of Fisher Scoring iterations: 3
```

```r
univariable_rto <- glm(dfa$abortosn ~ dfa$rto, family = binomial, data = data)
summary(univariable_rto)
```

```
##
## Call:
## glm(formula = dfa$abortosn ~ dfa$rto, family = binomial, data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.0333  -1.1531   0.7288   1.0660   1.7079
##
## Coefficients:
##             Estimate Std. Error z value Pr(>|z|)
## (Intercept) -3.38584    0.42935  -7.886 3.12e-15 ***
## dfa$rto      0.11831    0.01425   8.300  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 1381.1  on 999  degrees of freedom
## Residual deviance: 1304.5  on 998  degrees of freedom
## AIC: 1308.5
##
## Number of Fisher Scoring iterations: 4
```

```r
univariable_cloA <- glm(dfa$abortosn ~ dfa$clolA, family = binomial, data = data)
summary(univariable_cloA)
```

```
##
## Call:
## glm(formula = dfa$abortosn ~ dfa$clolA, family = binomial, data = data)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.9643  -0.5890   0.1353   0.6078   2.3735
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept) -78.27016    4.90288  -15.96   <2e-16 ***
## dfa$clolA     0.24547    0.01536   15.98   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 1381.11  on 999  degrees of freedom
## Residual deviance:  804.08  on 998  degrees of freedom
## AIC: 808.08
##
## Number of Fisher Scoring iterations: 5
```

PASO 2: Comparaciones de modelos multivariados

```r
model1 <- glm(dfa$abortosn ~ dfa$Edad + dfa$dap + dfa$hibrido + dfa$rto + dfa$clolA, family = binomial,
summary(model1)
```

```
##
## Call:
## glm(formula = dfa$abortosn ~ dfa$Edad + dfa$dap + dfa$hibrido +
##     dfa$rto + dfa$clolA, family = binomial, data = data)
##
## Deviance Residuals:
##       Min         1Q     Median         3Q        Max
## -0.004052   0.000000   0.000000   0.000000   0.004977
##
## Coefficients:
##               Estimate Std. Error z value Pr(>|z|)
## (Intercept) -2.831e+05  2.526e+06  -0.112    0.911
## dfa$Edad    -2.889e+01  9.552e+02  -0.030    0.976
## dfa$dap     -1.468e+01  6.051e+02  -0.024    0.981
## dfa$hibrido  8.142e+00  1.806e+03   0.005    0.996
## dfa$rto     -1.216e+03  1.083e+04  -0.112    0.911
## dfa$clolA    1.008e+03  8.955e+03   0.113    0.910
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 1.3811e+03  on 999  degrees of freedom
## Residual deviance: 6.8798e-05  on 994  degrees of freedom
## AIC: 12
##
## Number of Fisher Scoring iterations: 25
```

```r
#Ninguna variable se esta quedando
```

```r
model2 <- glm(dfa$abortosn ~ dfa$Edad + dfa$dap + dfa$rto + dfa$clolA, family = binomial, data = data)
summary(model2)
```

```
##
## Call:
## glm(formula = dfa$abortosn ~ dfa$Edad + dfa$dap + dfa$rto + dfa$clolA,
##     family = binomial, data = data)
##
## Deviance Residuals:
##       Min         1Q     Median         3Q        Max
## -0.004119   0.000000   0.000000   0.000000   0.005058
##
## Coefficients:
##               Estimate Std. Error z value Pr(>|z|)
## (Intercept) -282927.85 2513368.51  -0.113    0.910
## dfa$Edad        -29.00     967.13  -0.030    0.976
## dfa$dap         -14.74     611.70  -0.024    0.981
## dfa$rto       -1214.79   10782.48  -0.113    0.910
## dfa$clolA      1007.76    8914.65   0.113    0.910
##
## (Dispersion parameter for binomial family taken to be 1)
```

```
##
##     Null deviance: 1.3811e+03  on 999  degrees of freedom
## Residual deviance: 6.8893e-05  on 995  degrees of freedom
## AIC: 10
##
## Number of Fisher Scoring iterations: 25
```

```
#Ninguna variable se esta quedando
#El modelo no sirve?
```

```
delta.coef <- abs((coef(model2)-coef(model1)[-c(4)])/coef(model1)[-c(4)])
round(delta.coef, 6)
```

```
## (Intercept)    dfa$Edad     dfa$dap     dfa$rto   dfa$clolA
##    0.000686    0.004095    0.004144    0.000652    0.000622
```

```
#no hay cambio superior al 20%, entonces hibrido queda por fuera
```

```
library(lmtest)
```

```
## Loading required package: zoo
```

```
##
## Attaching package: 'zoo'
```

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

```
lrtest(model2, model1)
```

```
## Likelihood ratio test
##
## Model 1: dfa$abortosn ~ dfa$Edad + dfa$dap + dfa$rto + dfa$clolA
## Model 2: dfa$abortosn ~ dfa$Edad + dfa$dap + dfa$hibrido + dfa$rto + dfa$clolA
##   #Df      LogLik Df Chisq Pr(>Chisq)
## 1   5 -3.4446e-05
## 2   6 -3.4399e-05  1     0     0.9998
```

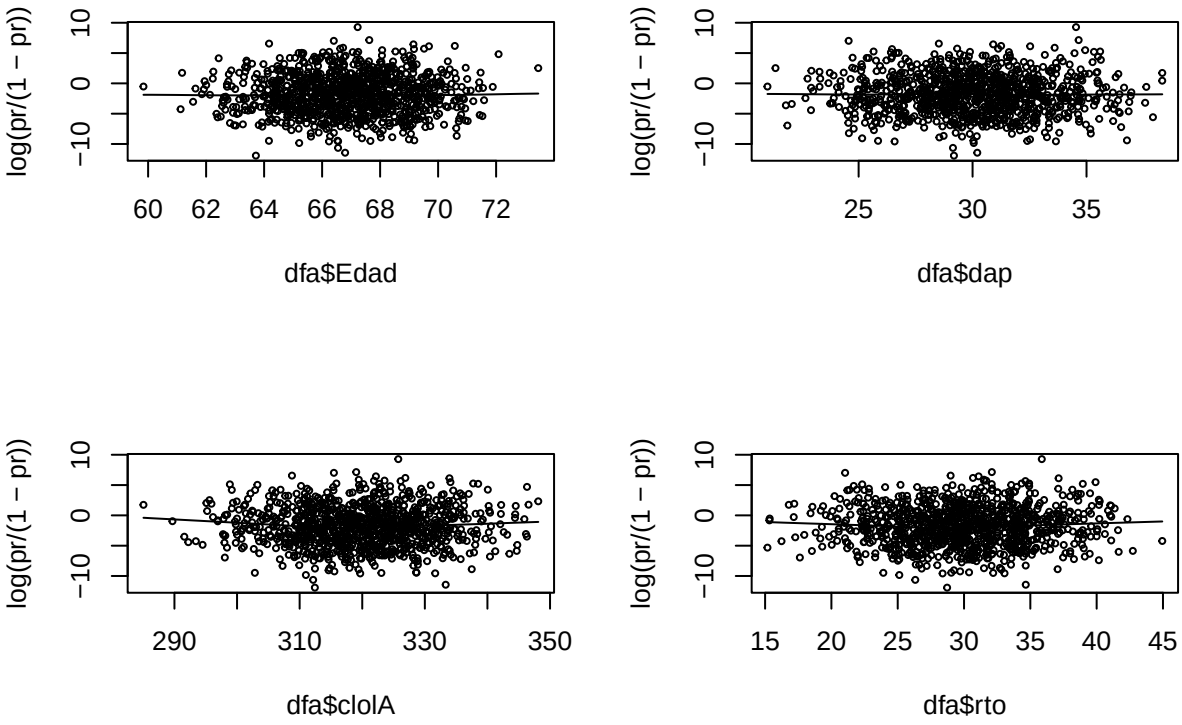
```
anova(model2, model1, test = 'Chisq')
```

```
## Analysis of Deviance Table
##
## Model 1: dfa$abortosn ~ dfa$Edad + dfa$dap + dfa$rto + dfa$clolA
## Model 2: dfa$abortosn ~ dfa$Edad + dfa$dap + dfa$hibrido + dfa$rto + dfa$clolA
##   Resid. Df Resid. Dev Df   Deviance Pr(>Chi)
## 1       995 6.8893e-05
## 2       994 6.8798e-05  1 9.5214e-08   0.9998
```

```
#Ambos modelos son iguales, teoricamente se podria quedar con el modelo mas corto
```

PASO 3: Suposicion de linealidad

```
par(mfrow = c(2,2))
scatter.smooth(dfa$Edad, log(pr/(1-pr)), cex = 0.5)
scatter.smooth(dfa$dap, log(pr/(1-pr)), cex = 0.5)
scatter.smooth(dfa$clolA, log(pr/(1-pr)), cex = 0.5)
scatter.smooth(dfa$rto, log(pr/(1-pr)), cex = 0.5)
```




```
##Ninguna variable tiene relacion lineal con los abortos
```