Visualization Homework

2023-03-02

```r
acacia <- read.csv(file = "../data raw/ACACIA_DREPANOLOBIUM_SURVEY.txt",
        sep ="\t",
        na.strings = "dead")
is.numeric(acacia$HEIGHT)
```

```
## [1] TRUE
```

```r
head(acacia)
```

```
##   SURVEY YEAR  SITE BLOCK TREATMENT   PLOT    ID HEIGHT AXIS1 AXIS2 CIRC
## 1      1 2012 SOUTH     1     TOTAL S1TOTAL  581   2.25  2.75  2.15   20
## 2      1 2012 SOUTH     1     TOTAL S1TOTAL  582   2.65  4.10  3.90   28
## 3      1 2012 SOUTH     1     TOTAL S1TOTAL 3111   1.50  1.70  0.85   17
## 4      1 2012 SOUTH     1     TOTAL S1TOTAL 3112   2.01  1.80  1.60   12
## 5      1 2012 SOUTH     1     TOTAL S1TOTAL 3113   1.75  1.84  1.42   13
## 6      1 2012 SOUTH     1     TOTAL S1TOTAL 3114   1.65  1.62  0.85   15
##   FLOWERS BUDS FRUITS ANT
## 1       0    0     10  CS
## 2       0    0    150  TP
## 3       2    1     50  TP
## 4       0    0     75  CS
## 5       0    0     20  CS
## 6       0    0      0   E
```

```r
#View(acacia)
```

```r
trees <- read_tsv("../data raw/TREE_SURVEYS.txt")
```

```
## Rows: 7508 Columns: 16
## -- Column specification ----------------------------------------------------
## Delimiter: "\t"
## chr (9): SITE, TREATMENT, PLOT, SPECIES, DEAD, HEIGHT, AXIS_2, MEASUREMENT, ...
## dbl (7): SURVEY, YEAR, BLOCK, ORIGINAL_TAG, NEW_TAG, AXIS_1, CIRC
##
## i Use `spec()` to retrieve the full column specification for this data.
## i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```r
tail(trees$HEIGHT,500)
```

```
##   [1] "2.65" "1.91" "1.75" "2.73" "2.95" "1.89" "1.7"  "2.89" "2.1"  "1.79"
##  [11] "1.75" "2.2"  "2.6"  "1.7"  "1.55" "1.85" "2.6"  "1.9"  "1.6"  "1.5"
```

```
##  [21] "1.45" "1.5"  "1.57" "2.78" "2.8"  "0.8"  "2.6"  "2.6"  "1.7"  "1.7"
##  [31] "1.78" "2.05" "2"    "1.6"  "1.6"  "1.52" NA     NA     "2.17" "2.3"
##  [41] "2.13" "2.3"  "2.15" "1.45" "1.35" "1.3"  "0.8"  "0.9"  "2.1"  "2.4"
##  [51] "2.1"  "2.15" "2.13" "1.57" "1.85" "1.7"  "2.05" "2.1"  "2.57" "2.15"
##  [61] "2.04" "1.9"  "1.95" "3.1"  "3.05" "3.57" "4"    "4.75" "1.55" "1.7"
##  [71] "1.7"  "1.6"  "2"    "1.9"  "1.92" "2.07" "1.82" "1.95" "3"    "3.1"
##  [81] "3.24" "3.1"  "3.28" "3.38" "3.55" "3.63" "3.7"  "3.39" "2.69" "2.7"
##  [91] "3.05" "3"    "3.6"  "1.65" "1.85" "1.88" "2"    "2.28" "3.55" "3.55"
## [101] "4.04" "3.7"  "4.09" "2.31" "2.25" "2.57" "1.8"  "3.17" "3.28" "3.3"
## [111] "3.92" "4"    "4.37" "1.79" "1.8"  "1.8"  NA     NA     "2.68" "2.9"
## [121] "2.7"  "2.8"  "2.8"  "2.79" "3.37" "3.29" "2.9"  "3.13" "1.99" "2.09"
## [131] "2.26" "2.1"  "2.23" "1.86" "2.1"  "1.95" "1.8"  "1.67" "2.13" "2.24"
## [141] "2.66" "2.6"  "3.32" "1.75" "1.85" "2.05" "2.1"  "2.47" "1.92" "2.15"
## [151] "2.12" "2"    "1.72" "2.63" "2.79" "2.83" "2.7"  "3"    "2.17" "2.39"
## [161] "2.65" "3"    "3.45" "1.75" "1.7"  "1.5"  "1.75" "1.6"  "1.3"  "1.85"
## [171] "1.95" "1.8"  "1.6"  "1.98" "1.8"  "2.08" "2.2"  "1.67" "1.99" "1.7"
## [181] "1.95" "2"    "1.87" "1.63" "1.6"  "1.45" "1.2"  "1.06" "1.85" "1.85"
## [191] "1.85" "1.62" "1.68" "2.48" "1.75" "1.89" "2"    "1.82" "1.29" "1.3"
## [201] "1.4"  "0.7"  "1.58" "1.5"  "1.25" "1.4"  NA     NA     "1.65" "1.6"
## [211] "1.52" "2.4"  "1.35" "1.54" "1.2"  "1.4"  "1.75" NA     "1.38" "1.1"
## [221] "1.9"  "1.8"  "1.85" "2.44" "1.6"  "1.6"  "1.6"  "1.7"  "1.76" "1.45"
## [231] "2.45" "1.6"  "1.78" "1.25" "0.76" "1.6"  "1.8"  "2.2"  "1.4"  "1.3"
## [241] NA     "1.5"  "1.82" "1.93" "1.9"  "1.93" "1.8"  "2.25" "2.21" "2.3"
## [251] "2.21" "2.4"  "2.23" "1.85" "1.5"  "1.9"  "1.9"  "2.33" "1.65" "1.55"
## [261] NA     "2"    "2.05" "2.7"  "2.65" "3"    "2.78" "3.05" "2.4"  "2.5"
## [271] "2.8"  "2.95" "3.05" "3.57" "3.45" "4.1"  "3.8"  "3.82" "3.47" "3.55"
## [281] "4.2"  "3.7"  "4.09" "2.41" "2.25" "2.75" "3.7"  "3.47" "2.83" "2.7"
## [291] "2.65" "2.8"  "2.87" "1.7"  "1.75" "1.9"  "2"    "2.82" "2.38" "2.32"
## [301] "2.65" "3.1"  "2.64" "2.58" "2.62" "2.8"  "2.75" "2.69" "2.37" "2.5"
## [311] "2.6"  "2.5"  "2.84" "2.9"  "3.3"  "3.85" "4.1"  "4.17" "3.35" "3.4"
## [321] "3.5"  "5.23" "3.15" "3.2"  "2.5"  "2.9"  "3.6"  "3.35" "2.2"  "2.15"
## [331] "2.1"  "2.7"  "2.92" "3.52" "3.85" "4"    "3.8"  "4.01" "2.9"  "3"
## [341] "3.65" "3.5"  "4.28" "3.92" "3.5"  "4.2"  "4.15" "5.1"  "2.91" "3.3"
## [351] "4.1"  "4.8"  "4.49" "3.45" "3.7"  "3.7"  "3.25" "3.56" "2"    "2.01"
## [361] "2.2"  "2.35" "2.84" "2.1"  "2.1"  "2.95" "3.51" "3.68" "1.58" "1.62"
## [371] "1.6"  "1.62" "1.76" "1.7"  "1.75" "2.1"  "2.62" "2.71" "2.02" "2.55"
## [381] "2.5"  "2.65" "2.61" "1.7"  "1.94" "2.35" "2.27" "2.26" "1.3"  "2.15"
## [391] "1.95" "1.7"  "1.9"  "2"    "2.4"  "1.75" "2.5"  "2.1"  "1.8"  "1.2"
## [401] "2.25" "2.39" "3.18" "1.4"  "1.85" "1.4"  NA     NA     "1.9"  "1.9"
## [411] "2.2"  "2.6"  "2.77" "1.5"  "1.45" "1.45" "1.62" "1.75" "1.75" "1.85"
## [421] "2"    "2.15" "2.2"  "1.76" "1.85" "2"    "2.05" "2.06" "1.45" "1.4"
## [431] "1.45" "1.7"  "1.78" "1.8"  "1.95" "1.9"  "1.8"  "1.96" "1.99" "2.11"
## [441] "2"    NA     NA     "2.82" "3.1"  "3"    "3.1"  "2.86" "1.6"  "1.6"
## [451] "1.6"  "1.72" "1.93" "1.6"  "1.6"  "1.6"  "1.7"  "2.1"  "1.81" "1.92"
## [461] "1.85" "2.15" "2.33" "3.23" "3.74" "3.81" "4"    "3.91" "2.9"  "3.15"
## [471] "3.85" "3.35" "3.88" "1.89" "2.49" "2.65" "2.56" "3.06" "2.65" "2.45"
## [481] "3.65" "3.35" "4.3"  "3"    "2.12" "2.98" NA     NA     "2.54" "1.88"
## [491] "2.3"  "2"    "3.5"  "3.15" "2"    "3.4"  "2.6"  "2.69" NA     "4.36"
```

```
str(trees)
```

```
## spc_tbl_ [7,508 x 16] (S3: spec_tbl_df/tbl_df/tbl/data.frame)
##  $ SURVEY     : num [1:7508] 1 2 3 4 5 1 2 3 4 5 ...
##  $ YEAR       : num [1:7508] 2009 2010 2011 2012 2013 ...
```

2

```
## $ SITE         : chr [1:7508] "SOUTH" "SOUTH" "SOUTH" "SOUTH" ...
## $ TREATMENT    : chr [1:7508] "TOTAL" "TOTAL" "TOTAL" "TOTAL" ...
## $ BLOCK        : num [1:7508] 2 2 2 2 2 2 2 2 2 2 ...
## $ PLOT         : chr [1:7508] "S2TOTAL" "S2TOTAL" "S2TOTAL" "S2TOTAL" ...
## $ SPECIES      : chr [1:7508] "Acacia_etbaica" "Acacia_etbaica" "Acacia_etbaica" "Acacia_etbaica" ..
## $ ORIGINAL_TAG : num [1:7508] 1 1 1 1 1 2 2 2 2 2 ...
## $ NEW_TAG      : num [1:7508] NA NA NA NA NA NA NA NA NA NA ...
## $ DEAD         : chr [1:7508] "N" "N" "N" "N" ...
## $ HEIGHT       : chr [1:7508] "3.4" "3.32" "3.65" "3.74" ...
## $ AXIS_1       : num [1:7508] 6.1 8.25 8.85 5.5 5 2.2 2.75 3.3 NA 3.7 ...
## $ AXIS_2       : chr [1:7508] "5" "8.45" "9" "7.1" ...
## $ CIRC         : num [1:7508] 37.8 18.8 57 60 55 14.2 18.4 25 NA 31 ...
## $ MEASUREMENT  : chr [1:7508] "D" "D" "C" "C" ...
## $ STEMS        : chr [1:7508] "1" "1" "1" "1" ...
## - attr(*, "spec")=
##  .. cols(
##  ..    SURVEY = col_double(),
##  ..    YEAR = col_double(),
##  ..    SITE = col_character(),
##  ..    TREATMENT = col_character(),
##  ..    BLOCK = col_double(),
##  ..    PLOT = col_character(),
##  ..    SPECIES = col_character(),
##  ..    ORIGINAL_TAG = col_double(),
##  ..    NEW_TAG = col_double(),
##  ..    DEAD = col_character(),
##  ..    HEIGHT = col_character(),
##  ..    AXIS_1 = col_double(),
##  ..    AXIS_2 = col_character(),
##  ..    CIRC = col_double(),
##  ..    MEASUREMENT = col_character(),
##  ..    STEMS = col_character()
##  .. )
## - attr(*, "problems")=<externalptr>
```

trees$HEIGHT

```
##   [1] "3.4"    "3.32"   "3.65"   "3.74"   "3.59"   "2.3"    "2.32"
##   [8] "2.75"   NA       "2.86"   "1.8"    "2.95"   "3"      NA
##  [15] "3.43"   "2.1"    "2.25"   "2.6"    "2.7"    "2.89"   "3.35"
##  [22] "3.1"    "3.25"   "3.75"   "3.42"   "2.7"    "2.6"    "3.02"
##  [29] "3.35"   "3.86"   "3.45"   "3.35"   "3.45"   "3.81"   "3.3"
##  [36] "1.2"    "1.1"    "1.6"    "1.91"   "2.05"   "1.3"    "1.72"
##  [43] "2.12"   "2.36"   "2.73"   "2.2"    "2.6"    "2.87"   "3.31"
##  [50] "3.44"   "2.4"    "2.4"    "2.68"   "3.15"   "3.17"   "1.3"
##  [57] "1.4"    "1.2"    NA       "2.08"   "2"      "2.15"   "2.2"
##  [64] "2.1"    "2.18"   "1.95"   "2.1"    "2.3"    "2.32"   "2.45"
##  [71] "2.6"    "2.87"   "2.9"    "3.47"   "3.49"   "1.4"    "1.7"
##  [78] "1.84"   "2.2"    "2.51"   "1.55"   "1.7"    "1.9"    "2.1"
##  [85] "2.1"    "2.9"    "2.95"   "3.24"   "3.75"   "4.01"   "4.6"
##  [92] "4.95"   "5.1"    "4.3"    "4.4"    "2.3"    "2.5"    "2.78"
##  [99] "3"      "3.2"    "2.4"    "2.64"   "3.3"    "3.9"    "3.75"
## [106] "1.4"    "1.69"   "2.34"   "2.7"    "2.79"   "1.1"    "1.74"
## [113] "2"      "2.1"    "1.94"   "2.1"    "2.25"   "2.75"   "2.9"
```

```
## [120] "2.98"   "1.4"    "1.35"   "1.8"    "1.65"   NA       "1.15"
## [127] "0.9"    "1.35"   "1.8"    "2.42"   "1.9"    "2.29"   "2.9"
## [134] "3.4"    "3.51"   "2.85"   "3.42"   NA       "6.41"   "2.6"
## [141] "2.8"    "4"      "4.24"   "2.45"   "2.85"   "3.65"   "4.45"
## [148] "2.2"    "2.4"    "2.3"    "2.4"    "2.58"   "1.9"    "1.95"
## [155] "2.19"   "3.13"   "0.65"   "0.6"    "0.71"   "1.2"    "1.67"
## [162] "2.17"   "2.35"   "2.45"   "2.25"   "2.05"   "0.5"    NA
## [169] NA       "2.4"    "2.45"   "2.9"    "3.15"   "3.1"    "4"
## [176] "4"      "3"      "4.85"   "5.78"   "2.55"   "3.9"    "4.55"
## [183] "4"      "4.55"   "3.7"    "3.8"    "3.75"   "3.88"   "1.5"
## [190] "1.6"    "1.9"    "2.15"   "2.23"   "1"      "0.93"   "1.15"
## [197] "1.65"   "2.37"   "0.23"   "0.3"    "0.35"   "0.3"    "0.6"
## [204] "0.58"   "0.6"    "0.6"    "0.6"    "2.62"   "2.9"    "3.12"
## [211] "3.3"    "3.25"   "1.1"    "1.2"    "1.45"   "1.45"   "2.47"
## [218] "2.25"   "2.55"   "2.78"   "3.15"   "3.27"   "1.58"   "1.7"
## [225] "2.2"    "2.2"    "2.38"   "2.45"   "2.8"    "3.01"   "3"
## [232] "3.15"   "1.75"   "1.75"   "1.9"    "1.9"    "1.97"   "2"
## [239] "2.1"    "1.9"    "1.75"   "1.76"   "1.7"    "1.8"    "1.8"
## [246] "1.8"    "1.91"   "2.6"    "2.4"    "2.8"    "2.7"    "2.08"
## [253] "1.9"    "1.88"   "1.9"    "2.02"   "2.65"   "1.4"    "1.6"
## [260] "1.85"   "1.75"   "1.8"    "0.8"    "0.85"   "1.15"   "1.38"
## [267] "1.7"    "1.85"   "1.9"    "2"      "1.9"    "2.36"   "1.5"
## [274] "1.65"   "1.89"   "1.85"   "1.83"   "1.5"    "1.7"    "1.9"
## [281] "1.65"   "1.71"   "2.19"   "2.4"    "2.35"   "2.15"   "2.2"
## [288] "3.4"    "3.55"   "3.36"   "3.2"    "3"      "1.8"    "2"
## [295] "2.2"    "2.4"    "2.25"   "2"      "2.25"   "2.45"   "2.6"
## [302] "2.93"   "1.55"   "1.85"   "2.25"   "2.2"    "2.45"   "2.1"
## [309] "2.2"    "2.3"    "2.49"   "2.66"   "0.9"    "2.4"    "2.38"
## [316] "2.91"   "3.41"   "2"      "1.1"    "0.92"   "1.7"    "1.96"
## [323] "2.25"   "2.42"   "2.55"   "2.5"    "2.44"   "1.65"   "1.55"
## [330] "2.05"   "2.43"   "2.43"   "3.3"    "3.8"    "3.69"   "4"
## [337] "7.25"   "1.62"   "1.5"    "2"      "2.5"    "2.7"    "2.7"
## [344] "3.3"    "3.6"    "3.6"    "4"      "2.9"    "3"      "3.25"
## [351] "4"      "3.95"   "1.35"   "1.5"    "1.75"   "1.85"   "2.13"
## [358] "3.3"    "3.3"    "3.14"   "3.65"   "3.81"   "0.9"    NA
## [365] "0.95"   "0.74"   "0.7"    "10"     "6"      "7.2"    "7.6"
## [372] "4.7"    "2.44"   "2.8"    "3.2"    "4.1"    "4.49"   "2.3"
## [379] "2.63"   "2.71"   "3.34"   "0.79"   "1"      "0.6"    "0.5"
## [386] "0.6"    "2.27"   "2.5"    "3.31"   "3.2"    "3.82"   "1.45"
## [393] "1.4"    "1.5"    "1.15"   "1.44"   "1.13"   "1.2"    "0.61"
## [400] "0.73"   "0.65"   "0.53"   "0.6"    "0.47"   "0.55"   "2.55"
## [407] "2.4"    "2.53"   "2.5"    "2.13"   "1.8"    "2.05"   "2.25"
## [414] "2.75"   "2.1"    "2.05"   "2.35"   "2.63"   "2.25"   "1.14"
## [421] "2.6"    "2.55"   "2.79"   "2.8"    "3.8"    "2.52"   "2.8"
## [428] "2.7"    "2.8"    "3.4"    "1"      "1.1"    "1.35"   "1.3"
## [435] "1.22"   "1.75"   "1.8"    "1.85"   "1.55"   NA       "1.1"
## [442] "1"      "1.2"    "1.3"    "1.25"   "1.35"   "1.5"    "1.24"
## [449] NA       "1.4"    "1.45"   "1.55"   "1.5"    "1.62"   "1.6"
## [456] "1.7"    "1.75"   "1.65"   "1.75"   "2.16"   "2.3"    "2.16"
## [463] "2.17"   "2.43"   "1.3"    "1.28"   "1.45"   "1.28"   "1.25"
## [470] "1"      "1.1"    "1.4"    "1.07"   "1.1"    "0.75"   "0.63"
## [477] "0.82"   "0.67"   "0.7"    "0.5"    "0.45"   "0.62"   "0.68"
## [484] "0.9"    "2.15"   "2.15"   "2.25"   NA       NA       "3.74"
## [491] "3.75"   "4.35"   "4.1"    "5.9"    "2.45"   "2.37"   "2.75"
```

```
##  [498] "0.3"   NA      "2.7"   "3"     "3.25"  "2.9"   "4"
##  [505] "2.59"  "2.8"   "3.2"   "2.95"  "3.8"   "2.75"  "3.15"
##  [512] "3.3"   "2.95"  "3.66"  "2.72"  "2.65"  NA      NA
##  [519] NA      "2.64"  "2.84"  "3.1"   "3.15"  "3.45"  "3.94"
##  [526] "4"     "4"     "4.1"   "4.1"   "3.06"  "3.05"  "3.65"
##  [533] "3.57"  "3.6"   "1.95"  "2.05"  "2.55"  "2.3"   "2.87"
##  [540] "1"     "1.5"   "1.85"  "2.75"  "2.72"  "2.52"  "2.35"
##  [547] "2.5"   "2.4"   "2.92"  "2.2"   "2.8"   "2.65"  "2.9"
##  [554] "2.8"   "2.1"   "2.1"   "2.5"   "2.35"  "2.7"   "2.05"
##  [561] "2"     "2.25"  "1.4"   "1.9"   "1.6"   "2"     "2.2"
##  [568] "2.1"   "2.4"   "2.74"  "2.79"  "2.95"  "3"     "3.38"
##  [575] "1.62"  NA      "3.59"  "3.2"   "2.8"   NA      NA
##  [582] "2.1"   "2"     "2.07"  "2.15"  "1.64"  "2.09"  "2"
##  [589] "2.2"   "1.9"   "1.85"  "2.85"  "2.45"  "2.95"  "2.8"
##  [596] "2.61"  "3.31"  "2.5"   "2.4"   "1.8"   "1.71"  "2.08"
##  [603] NA      NA      NA      NA      "2.75"  "2.3"   "2.5"
##  [610] "2.95"  "3.63"  "1.25"  "0.78"  "1.5"   "2.05"  "2.38"
##  [617] "1.7"   "2.3"   "2.5"   "2.28"  "1.7"   "1.68"  "1.3"
##  [624] "1.6"   "1.47"  "1.72"  "1.65"  "1.5"   "1.4"   "1.25"
##  [631] "1.3"   "1.72"  "1.55"  "2.3"   "2.02"  "1.9"   "2.76"
##  [638] "3.17"  "2.95"  "2.65"  "3.18"  "1.25"  "1.25"  "1.5"
##  [645] "1.35"  "1.55"  "1.75"  "1.2"   "1.5"   "1.8"   "1.82"
##  [652] "1.76"  NA      NA      NA      NA      "1.8"   "1.75"
##  [659] "1.9"   "1.8"   "1.8"   "1.3"   NA      "1.75"  "2.88"
##  [666] NA      "2.07"  "2.05"  "2.2"   "1.3"   NA      "1.45"
##  [673] "2.25"  "1.6"   "1.3"   "1.46"  "2.58"  "2.65"  "2.7"
##  [680] "2.4"   "2.44"  "2.58"  "2.1"   NA      NA      NA
##  [687] "2.9"   "2.95"  "3.05"  "3.05"  "3.34"  "2.69"  "2.55"
##  [694] "2.65"  "2.6"   "2.99"  "2.75"  "3.05"  "2.87"  "2.87"
##  [701] "3.38"  "1.9"   "2.7"   "2.05"  "1.85"  "1.95"  "2.55"
##  [708] "2.55"  "2.76"  "2.3"   "2.45"  "1.89"  "2.04"  "2.02"
##  [715] NA      NA      "1.9"   "2.1"   "2.24"  "2.5"   "2.42"
##  [722] "2.34"  "2.32"  "2.6"   "2.35"  "2.69"  "1.3"   "1.35"
##  [729] "1.6"   "1.5"   "1.85"  "2.93"  "3"     "3.72"  "4.2"
##  [736] "4.56"  "1.94"  "1.9"   "2.4"   "2.35"  "2.85"  "2.05"
##  [743] "2.75"  "2.9"   "3.2"   "3.24"  "2.1"   "1.75"  "2.5"
##  [750] "4.5"   "2.49"  "2.45"  "2.45"  "2.8"   "3"     "3.8"
##  [757] "1.4"   "1.8"   "1.75"  "2.15"  "2.34"  "1.5"   "1.75"
##  [764] "2.1"   "2"     "2.3"   "3.5"   "3.9"   "3.92"  "3.9"
##  [771] "3.88"  "1.2"   "1.2"   "1.6"   "2.2"   "2.4"   "1.3"
##  [778] "1.45"  "1.8"   "2.15"  "2.09"  "2.9"   "2.9"   "3.15"
##  [785] "3.5"   NA      "2"     "2.5"   "2.9"   "2.83"  "2.74"
##  [792] "1.4"   "1.65"  "2.75"  "4.5"   "3.2"   "2.7"   "2.85"
##  [799] "3.05"  "3"     "2.35"  "1.3"   "1.4"   "1.91"  "2.2"
##  [806] "1.66"  "1.9"   "2.1"   "2.31"  "2.25"  "2.77"  "2.35"
##  [813] "2.4"   "2.11"  "3.15"  "3.36"  "3.44"  "2.4"   "2.48"
##  [820] "2.4"   "2.5"   "2.25"  "2.67"  "4"     "3.9"   "4.2"
##  [827] "3.37"  "3.59"  "4.5"   "4"     "3.55"  "2.64"  "2.65"
##  [834] "3.55"  "2.84"  "3.05"  "1.1"   "1.3"   "1.6"   "1.64"
##  [841] "2.08"  "2.8"   "3.03"  "2.64"  "2.4"   "2.7"   "2.6"
##  [848] "2.79"  "2.96"  "2.8"   "2.95"  "2.4"   "2.15"  "2.04"
##  [855] "2.22"  "2.15"  "3.25"  "3.1"   "3.24"  "2.9"   "3.14"
##  [862] "1.97"  "2.95"  "2.1"   "2.05"  "2"     "2.41"  "2.51"
##  [869] "2.73"  "2.6"   "2.98"  "3.45"  "3.27"  "3.33"  "2.2"
```

```
##  [876] "3.15"  "1.8"   "1.7"   "2.13"  "2.78"  "2.59"  "1.9"
##  [883] "1.7"   "1.91"  "2.55"  "2.24"  "4.51"  "5.4"   "5.9"
##  [890] "6.83"  "2.77"  NA      NA      "2.42"  "2.5"   "2.49"
##  [897] "2.88"  "2.95"  "2.05"  "2.28"  "2.17"  "1.75"  "2.15"
##  [904] "1.18"  "1.45"  "1.2"   "1.64"  "1.8"   NA      "2.55"
##  [911] "2.7"   "3.05"  "3.35"  "3.59"  "2.42"  "2.73"  "2.85"
##  [918] "3.15"  "2.9"   "3.25"  "3.31"  "3.55"  "3.82"  "4.23"
##  [925] "2.7"   "2.85"  "3.3"   "3.5"   "3.72"  "1.45"  "1.55"
##  [932] "2.45"  "2.9"   "4.79"  "3.15"  "3.35"  "3.95"  "4.5"
##  [939] "4.3"   "3.14"  "3.05"  "3.6"   "3.3"   "3.95"  "2.8"
##  [946] "2.9"   "2.95"  "3.4"   "2.98"  "2.52"  "2.25"  "2.8"
##  [953] "3"     "3.15"  "1.85"  "1.9"   "1.9"   "2"     "2.1"
##  [960] "2.65"  "3.19"  "3.1"   "3.6"   "3.9"   "3.9"   "4.02"
##  [967] "4.27"  "5"     "4.63"  "1.2"   "1.65"  "1.9"   "2.2"
##  [974] "2.5"   "5.2"   "5.85"  "5.75"  "7"     "6.27"  "3.3"
##  [981] "4.3"   "3.6"   "4.5"   "4.7"   "5.9"   "6.57"  "6.42"
##  [988] "6.3"   "6.6"   "1.85"  "2.2"   "2.45"  "2.8"   "3.21"
##  [995] "1.1"   "1.45"  "1.7"   "1.7"   "1.9"   "2.45"  "2.95"
## [1002] "3.05"  "2.8"   "3.85"  "1.02"  "1.6"   "4"     "2.6"
## [1009] "2.78"  "4"     "4"     "4.45"  "4.2"   "5.23"  "1.8"
## [1016] "1.8"   "2.8"   "2.2"   "2.44"  "1.5"   "2.65"  "3.4"
## [1023] "4.7"   "4"     "1.5"   "2.3"   "4"     "3.6"   "4.29"
## [1030] "1.5"   "1.23"  "2.1"   "2.6"   "2.71"  "2.6"   "2.6"
## [1037] "2.6"   "3"     "3.2"   "2.45"  "2.55"  "2.8"   "2.4"
## [1044] "2.8"   "2.9"   "2.4"   "2.75"  "3.1"   "2.89"  "2.72"
## [1051] NA      "2.25"  "2.5"   "2.6"   "1"     "1.1"   "1.4"
## [1058] "1.3"   "1.1"   "6.35"  "6.74"  "6.1"   "6.7"   "6.1"
## [1065] "3.2"   "3.35"  "4.6"   "4.2"   "5.19"  "1.72"  "2.05"
## [1072] "2.3"   "2.3"   "2.47"  "1.05"  "1.12"  "1.2"   "1.4"
## [1079] "1.64"  "1.41"  "1.55"  "1.85"  "2.25"  "2.49"  "2.63"
## [1086] "2.5"   "2.75"  "2.65"  "2.74"  "1.35"  "1.6"   "1.8"
## [1093] "2"     "2.15"  "2.55"  "1.83"  "2.8"   "2.5"   "2.6"
## [1100] "2"     "2.3"   "2.15"  "2.5"   "2.65"  "2.65"  "2"
## [1107] "3.15"  "3.2"   "3.35"  "1.5"   "1.75"  "1.8"   "1.85"
## [1114] "1.95"  "2.05"  "1.65"  "2.3"   "2.7"   "2.6"   "2.2"
## [1121] "1.6"   "2.4"   "2.4"   "2.45"  "2.6"   "1.87"  "2.85"
## [1128] "2.9"   "3"     "1.85"  "1.95"  "2.3"   "2.9"   "3.82"
## [1135] "1.4"   "1.7"   "1.8"   "1.85"  "2.05"  "2.7"   "2.5"
## [1142] "3"     "2.95"  "3.44"  "1.4"   "2.22"  "3.1"   "3.25"
## [1149] "3.55"  "1.85"  "3.25"  "2.04"  "2.3"   "2.9"   "2.32"
## [1156] "2.69"  "3.7"   "3.8"   "3.9"   "2.52"  "1.8"   "3.65"
## [1163] "3.85"  "4.5"   "2"     "2.1"   "2.65"  "2.6"   "2.66"
## [1170] "1.9"   "1.55"  "2.1"   "2.7"   "2.6"   "2.5"   "2.35"
## [1177] "2.57"  NA      "2.73"  "1.4"   "1.5"   "1.8"   "1.9"
## [1184] "2.23"  "1.9"   "2.1"   "2.6"   "2.6"   "2.77"  "2.5"
## [1191] "2.4"   "3.4"   "3.85"  "3.2"   "2.92"  "1.95"  "4"
## [1198] "3.55"  "3.85"  "2.24"  "1.73"  "3.1"   "3.7"   "3.73"
## [1205] "2"     "1.69"  "2.35"  "2.2"   "2.37"  "3.35"  "3.6"
## [1212] "3.8"   "2.6"   "2.57"  "1.4"   "1.7"   "2.45"  "2.95"
## [1219] "2.85"  "1.4"   "1.7"   "2.15"  "2.5"   "2.64"  "2.4"
## [1226] "2.2"   "3.1"   "2.7"   "3.3"   "2.6"   "2.9"   "4.25"
## [1233] "4.8"   "4.5"   "1.8"   "2"     "2.9"   "3.3"   "3.55"
## [1240] "2.1"   "2.85"  "3.5"   "3.65"  "3.63"  "2.1"   "3.9"
## [1247] "2.7"   "2.95"  "4.6"   "1.2"   "0.85"  "1.1"   "1"
```

```
## [1254] "0.9"   "3.95"  "3.92"  "4.3"   "4.3"   "4.61"  "2.34"
## [1261] "3.05"  "3.5"   "3.8"   "4.05"  "2.91"  "1.75"  "2.9"
## [1268] "3.1"   "2.9"   "2"     "2.6"   "2.4"   "2.45"  "2.4"
## [1275] "4.3"   "4.25"  "4.25"  "4.3"   "4.38"  "3.9"   "3.65"
## [1282] "5.1"   "4.1"   "3.95"  "2.49"  "2.55"  "3.4"   "3"
## [1289] "3.85"  "2.5"   "2.45"  "2.8"   "2.9"   "2.97"  "2.15"
## [1296] "1.95"  "1.85"  "2.2"   "2.29"  "2"     "2.08"  "2.15"
## [1303] "2.54"  "2.55"  "2.35"  "2.2"   "2.57"  "1.8"   "2.98"
## [1310] "2.75"  "2.8"   "2.95"  "2.85"  "3.27"  "2.4"   "2.42"
## [1317] "2.4"   "3.1"   "3.1"   "2.6"   "1.95"  NA      NA
## [1324] NA      "1.55"  "1.5"   "0.85"  "3.9"   "4.1"   "2.45"
## [1331] "2.2"   "2.3"   "1.6"   "2.65"  "1.85"  "9.9"   "2.45"
## [1338] "3"     "3.18"  "2.19"  "1.5"   "1.9"   "2.2"   "2.32"
## [1345] "3.35"  "3.5"   "2.45"  "1.8"   "1.5"   "1.4"   "1.51"
## [1352] "1.9"   "1.75"  "2.14"  "1.33"  "1.16"  "1.5"   "1.6"
## [1359] "1.45"  "1.4"   "1.15"  "0.9"   NA      "0.84"  "1.2"
## [1366] "1.75"  "1.5"   "1.9"   "2.23"  "1.35"  "0.81"  "1.4"
## [1373] "1.7"   "1.91"  "1.3"   "1.1"   "1.5"   "1.6"   "1.75"
## [1380] "1.3"   "0.96"  "1"     "1.2"   "1.47"  "1.8"   "1.48"
## [1387] "1.85"  "1.55"  "1.7"   "1.45"  "1.5"   "1.6"   "2.5"
## [1394] "1.35"  "1.92"  "1.85"  "1.9"   "1.85"  "1.82"  "2.15"
## [1401] "2.2"   "3"     "2.7"   "2.45"  "2.3"   "1.75"  "2"
## [1408] "1.75"  "1.75"  "1.55"  "2.15"  "1.8"   "1.7"   "1.12"
## [1415] "2.45"  "2.7"   "2.5"   "2.5"   "2.42"  "1.4"   "1.4"
## [1422] "1.4"   "1.45"  "1.3"   "3.1"   "3.15"  "2.95"  "2.9"
## [1429] "3.05"  "2.05"  "2.25"  "3.75"  "2.2"   "2.57"  "2.25"
## [1436] "2.1"   "1.9"   "2.7"   "2.2"   "1.2"   "1.25"  "1.7"
## [1443] "1.9"   "2.25"  "2.11"  "2.05"  "2.55"  "2.2"   "2.58"
## [1450] "1.6"   "1.8"   "1.95"  "2"     "1.95"  "2.29"  "2.45"
## [1457] "0.8"   "1.7"   "1.85"  "2.6"   "2.55"  "2.6"   "2.6"
## [1464] "2.35"  "1.68"  "1.52"  "1.2"   "2.2"   "1.35"  "2.16"
## [1471] "1.95"  "1.8"   "1.8"   "1.85"  "0.98"  "1.15"  "1.7"
## [1478] "1.5"   "1.55"  "2.66"  "2.8"   "2.9"   "2.5"   "2.8"
## [1485] "1.08"  "1.15"  "1.3"   "1.6"   "1.64"  "1.44"  NA
## [1492] "0.5"   NA      "0.73"  "2.8"   "3.75"  "3.35"  "3.5"
## [1499] "3.45"  "2.82"  "2.75"  "3.25"  "3.45"  "3.68"  "2.7"
## [1506] "2.75"  "3.2"   "3.14"  "3.6"   "1.9"   "1.7"   "2.3"
## [1513] "2.85"  "2.71"  "2.64"  "2.75"  "3.15"  "3.2"   "3.61"
## [1520] "2.35"  "2.4"   "2.55"  "2.9"   "3.24"  "2.34"  "3"
## [1527] "3.44"  "3.35"  "3.63"  "2.25"  "2.45"  "2.65"  "2.9"
## [1534] "2.92"  "2.05"  "1.75"  "2.05"  "2.35"  "2.78"  "2.1"
## [1541] "2.05"  "2.6"   "2.65"  "2.76"  "1.8"   "2"     "2.3"
## [1548] "2.5"   "2.61"  "3.3"   "3.67"  "4.2"   "4.2"   "5.08"
## [1555] "1.95"  "2.05"  "2.35"  "2.64"  "3.15"  "2.5"   "3.4"
## [1562] "3.3"   "3.7"   "4.73"  "1.25"  "1.65"  "1.95"  "2.74"
## [1569] "2.26"  "2.2"   "2.8"   "2.6"   "2.95"  "3.18"  "2.22"
## [1576] "2.2"   "2.8"   "3"     "3.1"   "2.8"   "2.8"   "3.25"
## [1583] "3.3"   "3.75"  "1.8"   "2"     "2.7"   "2.85"  "3.05"
## [1590] "2.4"   "2.29"  "3.2"   "3.35"  "3.69"  "2.42"  "2.4"
## [1597] "2.65"  "3.5"   "2.89"  "2.75"  "2.8"   "3"     "2.7"
## [1604] "4.09"  "2.8"   "2.85"  "2.8"   "2.4"   "2.63"  "2.35"
## [1611] "2.45"  "2.95"  "2.8"   "3.14"  "3.25"  "3.82"  "3.97"
## [1618] "3.8"   "4.22"  "1.4"   "1.2"   "2.15"  "2.44"  "2.73"
## [1625] "2.95"  "2.95"  "3.2"   "3.6"   "4.14"  "1.2"   "1.2"
```

```
## [1632] "1.85"    "1.9"     "1.5"     "2.05"    "2.05"    "2.2"       "2.1"
## [1639] "2.13"    "1.8"     "1.9"     "2.74"    "3.1"     "2.82"      "0.81"
## [1646] "1.2"     "1.6"     "1.74"    "1.95"    "2.5"     "1.85"      "3.1"
## [1653] "3.1"     "3.08"    "1.58"    "1.6"     "2"       "2.05"      "2.22"
## [1660] "1.35"    "1.45"    "1.87"    "2.2"     "2.34"    "1.49"      "2.3"
## [1667] "1.8"     "1.95"    "2.2"     "2.45"    "1.95"    "2.65"      "2.5"
## [1674] "2.56"    "2.1"     "1.9"     "2.5"     "2.6"     "2.75"      "1.9"
## [1681] "2.4"     "2.7"     "2.7"     "3.09"    "1.95"    "2.31"      "3.05"
## [1688] "3.05"    "2.95"    "4.09"    "4.35"    "5.14"    "4.95"      "4.39"
## [1695] "3.14"    "3.25"    "3.6"     "2.9"     "2.59"    "1.41"      "1.7"
## [1702] "2.8"     "3.3"     "3.66"    "2.08"    "2"       "2.2"       "2.05"
## [1709] "1.97"    "1.17"    "1.9"     "2.05"    "3.35"    "3.11"      "2.33"
## [1716] "2.4"     "2.05"    "2.65"    "3.23"    "3.2"     "3.15"      "3.8"
## [1723] "3.5"     "3.25"    "0.88"    "0.81"    "1"       "3.6"       "1.1"
## [1730] "1.51"    "1.3"     "1.8"     "1.87"    "2.05"    "2.25"      "2.35"
## [1737] "2.6"     "2.38"    "2.65"    "1.37"    "1.1"     "2.35"      "2.58"
## [1744] "2.35"    "2.03"    "2.7"     "2.2"     "2.65"    "2.5"       "1.47"
## [1751] "1.5"     NA        NA        NA        "2.94"    "2"         "2.3"
## [1758] "2.35"    "2.35"    "1.95"    "2.05"    "1.95"    "1.88"      "2.21"
## [1765] "2.45"    "2.3"     "2.6"     "3.1"     "3.63"    "3.8"       "2.65"
## [1772] "4.1"     "4.35"    "4.72"    "2.8"     "2.9"     "2.9"       "2.3"
## [1779] "3.35"    "2.45"    "2.24"    "3.1"     "3.7"     "3.97"      "2.6"
## [1786] "2.45"    "2.8"     "3.6"     "3.32"    "2.7"     "2.7"       "3.1"
## [1793] "3.35"    "3.08"    "1.9"     "1.8"     "2.2"     "2.5"       "2.1"
## [1800] "2.35"    "2.4"     "2.9"     "2.97"    "3.1"     "2.5"       "2"
## [1807] "2.7"     "2.9"     "2.68"    "2.35"    "2.25"    "2.65"      "3"
## [1814] "2.7"     "1.4"     "1.45"    "1.9"     "2.2"     "2.58"      "1.5"
## [1821] "1.51"    "1.9"     "2"       "2.39"    "2.5"     "2.3"       "2.8"
## [1828] "3.5"     "3.34"    "1.8"     "1.8"     "2.2"     "3"         "3.09"
## [1835] "1.8"     "1.89"    "2.2"     "2.8"     "3.16"    "1.85"      "1.85"
## [1842] "2.05"    "3.3"     "2.8"     "1.35"    "1.45"    "1.7"       "2.1"
## [1849] "2.29"    "2.5"     "2.8"     "2.8"     "3.05"    "3"         "1.45"
## [1856] "1.51"    "2.35"    "1.75"    "2.58"    "1.3"     "1.5"       "1.75"
## [1863] "2.8"     "2.1"     "1.59"    "1.75"    "1.9"     "2"         "2.06"
## [1870] "2.22"    "2.45"    "2.9"     "3"       "3.04"    "2.05"      "2"
## [1877] "2.15"    "2.05"    "2.3"     "2.37"    "2.4"     "2.75"      "2.94"
## [1884] "3.31"    "2.65"    "2.77"    "2.75"    "3.2"     "missing"   "1.63"
## [1891] "1.5"     "1.85"    "1.8"     "1.8"     "3.24"    "3.28"      "3.9"
## [1898] "3.8"     "3.9"     "2.08"    "1.14"    "2.55"    "3.48"      "4.34"
## [1905] "1.36"    "1.45"    "2.45"    "2.4"     "2.05"    "2.4"       "2.45"
## [1912] "2.7"     "2.5"     "2.79"    "1.28"    "1.3"     "1.6"       "1.9"
## [1919] "1.69"    "2.17"    "2"       "2.2"     "2"       "2.12"      "1.05"
## [1926] "1.2"     "1.4"     "1.35"    "1.25"    "1.48"    "1.5"       "1.8"
## [1933] "1.9"     "2"       "1.82"    "1.9"     "2.35"    "1.8"       "1.85"
## [1940] "3.12"    "2.5"     "2.9"     "2.8"     "2.62"    "1.57"      "1.5"
## [1947] "1.7"     "2"       "1.97"    "1.18"    "1.2"     "1.8"       "1.9"
## [1954] "1.75"    "2.16"    "2.04"    "2.12"    "2.45"    "2.38"      "3.64"
## [1961] "2.24"    "3.75"    "3.7"     "3.6"     "1.69"    "1.8"       "2.05"
## [1968] "2.25"    "2.4"     "2.15"    "2.75"    "3"       "3.1"       "3.4"
## [1975] "2.64"    "2.8"     "2.75"    "3.15"    "3.05"    "2.68"      "2.35"
## [1982] "2.65"    "2.55"    "2.62"    "1.99"    "2.2"     "2.5"       "2.35"
## [1989] "2.7"     "2.15"    "2.6"     "2.85"    "2.8"     "3.21"      "4.15"
## [1996] "4.09"    "4.1"     "3.84"    "4.24"    "4.24"    "4.36"      "4.4"
## [2003] "3.92"    "4.52"    "1.55"    "2.87"    "2.65"    "2.9"       "3.32"
```

```
## [2010] "4.55"  "4.45"  "5.1"   "4.4"   "5.6"   "2.1"   "2.04"
## [2017] NA       NA      NA      "1.85"  "1.78"  "1.75"  "1.8"
## [2024] "1.72"   "1.85"  "1.7"   "2.1"   "2.47"  "2.55"  "1.94"
## [2031] "1.8"    "1.92"  "2.15"  "2.1"   "1.8"   "1.75"  "1.75"
## [2038] "1.9"    "1.95"  "1.62"  "1.7"   "1.9"   "1.7"   "1.77"
## [2045] "1.1"    "1.1"   "1.5"   "1.95"  "2.23"  "1.4"   "1.35"
## [2052] "1.65"   "1.8"   "2"     "1.14"  "0.8"   "1.3"   "1.4"
## [2059] "1.68"   "1.09"  "1.1"   "1.35"  "1"     "0.95"  "1.3"
## [2066] "1.35"   "1.8"   "1.75"  "2.12"  "2.45"  "2.7"   "2.7"
## [2073] "3.1"    "3.65"  "2.75"  "2.9"   "3.3"   "2.84"  "3.3"
## [2080] "1.35"   "1.5"   "1.84"  "2.12"  "2.33"  "2.55"  "2.45"
## [2087] "2.8"    "3"     "3.35"  "2.17"  "2.04"  "2.9"   "2.6"
## [2094] "3.15"   "2.35"  "3.32"  "2.7"   "3.05"  "3.28"  "2.3"
## [2101] "2"      "2.5"   "2.4"   "2.65"  "2.15"  "2.05"  "2.3"
## [2108] "1.95"   "2.26"  "2.45"  "2.54"  "2.8"   "2.35"  "2.52"
## [2115] "2.4"    "2.61"  "2.9"   "3.1"   "3.39"  "2"     "2.08"
## [2122] "2.4"    "2.35"  "2.36"  "2.9"   "3.15"  "3.3"   "2.4"
## [2129] "3.35"   "1.8"   "1.8"   "2.35"  "2.4"   "2.63"  "2.6"
## [2136] "2.7"    "2.9"   "2.65"  "2.95"  "2.5"   "2.91"  "3.1"
## [2143] "2.86"   "3.38"  "1.2"   "1.2"   "1.3"   "1.45"  "1.66"
## [2150] "2.2"    "2.3"   "2.25"  NA      NA      "1.4"   "1.5"
## [2157] "1.8"    "1.83"  "1.84"  "2.7"   "2.7"   "3.25"  "2.8"
## [2164] "3.47"   "2.15"  "2.18"  "2.75"  "2.8"   "2.89"  "2.3"
## [2171] "2.47"   "2.9"   "3.55"  "3.05"  "1.9"   "2.44"  "2.7"
## [2178] "2.42"   "2.63"  "1.85"  "1.9"   "3.1"   "2.6"   "2.25"
## [2185] "1.75"   "1.8"   "2.8"   "2.82"  "3.27"  "2.15"  "2.22"
## [2192] "2.5"    "1.15"  "1.05"  "2.1"   "2.15"  "2.9"   "2.72"
## [2199] "2.76"   "2.6"   "2.55"  "3.6"   "3.8"   "4.2"   "2.24"
## [2206] "2.5"    "2.9"   "2.48"  "2.33"  "2.2"   "2.35"  "2.35"
## [2213] "2.55"   "2.64"  "1.12"  "1.15"  "1.5"   "1.44"  "1.78"
## [2220] "2.44"   "2.1"   "2.2"   "2.1"   "2.08"  "2.3"   "2.5"
## [2227] "2.17"   "1.3"   "1.85"  "2.52"  "2.34"  "2.5"   "2.25"
## [2234] "2.44"   "1.85"  "1.88"  "1.9"   "1.55"  "1.79"  "1.25"
## [2241] "1.2"    "1.6"   "1.45"  "1.76"  "1.29"  "1.4"   "1.8"
## [2248] "1.84"   "1.95"  "1.96"  "2.2"   "1.85"  "2.15"  "2.23"
## [2255] "1.84"   "1.7"   "1.9"   "1.97"  "2.89"  "1.6"   "1.8"
## [2262] "2"      "1.9"   "1.81"  "3.44"  "3.1"   "3.6"   "3.34"
## [2269] "3.5"    "2.15"  "2.1"   "2.65"  "2.85"  "3.35"  "5.09"
## [2276] "5.1"    "5.45"  "5.1"   "4.99"  "4.72"  "4.75"  "4.6"
## [2283] "4.45"   "4.9"   "3.99"  "3.9"   "4.1"   "3.75"  "3.95"
## [2290] "3.7"    "3.4"   "4.2"   "3.55"  "3.98"  "3.72"  "3.9"
## [2297] "4.4"    "4.1"   "4.39"  "2.44"  "2.4"   "2.45"  "2.4"
## [2304] "2.47"   "2.3"   "2.15"  "2.35"  "2.45"  "2.85"  "1.84"
## [2311] "1.85"   "1.8"   NA      NA      "1.95"  "2"     NA
## [2318] "1.8"    NA      "3.96"  "3.95"  "1.6"   "2.8"   "3.1"
## [2325] "3.62"   "3.34"  "3.6"   "3.7"   "3.73"  "2.05"  "2.2"
## [2332] "2.35"   "2.6"   "2.79"  "2.44"  "2.75"  "2.9"   "3.45"
## [2339] "3.39"   "3.95"  "3.85"  "4.75"  NA      "4.63"  "3.19"
## [2346] "3.35"   "2.4"   NA      NA      "1.4"   "1.3"   "1.9"
## [2353] "1.65"   "1.79"  "1.35"  "1.35"  "1.5"   "1.8"   "1.13"
## [2360] "1.94"   "1.96"  "2.2"   "2.3"   "2.87"  "2.1"   "2.16"
## [2367] "3"      "2.7"   "3.12"  "1.25"  "1.15"  "1.7"   "2"
## [2374] "2.05"   "2.17"  "2.25"  "2.65"  "1.9"   "2.23"  "2.47"
## [2381] "2.5"    "3.1"   "2.4"   "2.83"  "2.95"  "2.79"  "3.25"
```

```
## [2388] "3"     "2.86"  "2"     "2.21"  "2.4"   "1.15"  NA
## [2395] "2.3"   "2.46"  "2.07"  "2.95"  "3.45"  "2.3"   "2.4"
## [2402] "2.25"  "2.45"  "2.23"  "2.72"  "2.75"  "2.6"   "3.22"
## [2409] "3.44"  "2.62"  "2.62"  "2.7"   "2.9"   "2.23"  "2.89"
## [2416] "3.15"  "2.9"   "2.8"   "2.7"   "2.54"  "2.75"  "2.35"
## [2423] "2.2"   "2.59"  "2.82"  "2.75"  "3.2"   "3"     "3.21"
## [2430] "2.1"   "1.9"   "1.85"  "1.6"   "1.75"  "2.15"  "1.8"
## [2437] "2.1"   "1.97"  "1.92"  "1.89"  "1.6"   "1.82"  "1.8"
## [2444] "2"     "2.85"  "1.85"  "2.65"  "2.75"  "2.78"  "1.15"
## [2451] "1.05"  "1.6"   "1.6"   "1.4"   "2.38"  "2.22"  "2.4"
## [2458] "2.12"  "2.23"  "2.12"  "1.25"  "2.2"   "1.55"  "2.12"
## [2465] "2.34"  "2.23"  "2.35"  "2.1"   "2.5"   "1.5"   "1.45"
## [2472] "1.7"   "1.3"   "1.5"   "2.7"   "2.85"  "3"     "2.5"
## [2479] "3.35"  "1.43"  "1.45"  "2"     "1.75"  "2.55"  "1.7"
## [2486] "1.7"   "1.8"   "0.85"  "1.35"  "2.33"  "1.6"   "1.9"
## [2493] "2.05"  "1.83"  "1.15"  "1.16"  "1.2"   NA      NA
## [2500] "1.9"   "1.91"  "1.55"  "1.7"   "1.78"  "5.81"  "5.85"
## [2507] "5.2"   "5.37"  "5.28"  "5.34"  "5.6"   "6.9"   "4.9"
## [2514] "5.05"  "1.25"  "1.35"  "1.6"   NA      NA      "1.2"
## [2521] "1.4"   "1.4"   "0.9"   NA      "1.94"  "2"     "1.9"
## [2528] "1.9"   "1.9"   "1.65"  "1.8"   "1.6"   "1.5"   "1.52"
## [2535] "2.59"  "2.3"   "2.7"   "2.5"   "2.77"  "3.17"  "3.15"
## [2542] "3.15"  "3"     "3"     "2.76"  "2.65"  "3.3"   "3.7"
## [2549] "3.55"  "2.64"  "2.55"  "2.8"   "3.5"   "3.55"  "2.39"
## [2556] "2.2"   "2.7"   "3"     "2.95"  "3.16"  "2.9"   "3.3"
## [2563] "3.4"   "3.21"  "2.3"   "2.35"  "2.35"  "2.2"   "2.35"
## [2570] "4.65"  "4.7"   "5.1"   "4.9"   "4.56"  "2.8"   "3.06"
## [2577] "3"     "3.3"   "3.65"  "2.65"  "2.75"  "3.2"   "3.5"
## [2584] "3.95"  "3.1"   "3.35"  "3.25"  "3.3"   "3.75"  "2.2"
## [2591] "2.36"  "2.75"  "2.6"   "2.9"   "2"     "2.15"  "2.35"
## [2598] "2.5"   "2.8"   "3"     "3.7"   "3.8"   "3.2"   "3.75"
## [2605] "3.2"   "3.35"  "3.7"   "4.6"   "4.29"  "1.77"  "1.3"
## [2612] "2.35"  "3.6"   "2.7"   "3.21"  "3.05"  "3.6"   "3.5"
## [2619] "3.4"   "2.4"   "2.37"  "3"     "3.25"  "3.15"  "3.25"
## [2626] "3.45"  "4.9"   "3.2"   "4.87"  "3.54"  "2.7"   "3.35"
## [2633] "3.6"   "3.65"  "2.3"   "2.9"   "3.47"  "3.65"  "3.76"
## [2640] "3.6"   "3.55"  "4"     "3.4"   "3.85"  "2.17"  "2.2"
## [2647] "3"     "3.3"   "3.49"  "3.15"  "3"     "3.2"   "3.1"
## [2654] "3.35"  "3.12"  "3.2"   "3.45"  "3.45"  "3.4"   "2.6"
## [2661] "2.9"   "3"     "3"     "3.35"  "2.3"   "2.7"   "2.9"
## [2668] "2.8"   "2.95"  "2.45"  "2.85"  "2.55"  "2.6"   "2.8"
## [2675] "1.94"  "1.9"   "1.9"   "1.7"   "1.92"  "1.44"  "1.42"
## [2682] "1.5"   "1.4"   "1.45"  "2.06"  "2.04"  "2"     "2"
## [2689] "2.1"   "2.38"  "2.1"   "2.45"  "2.2"   "2.32"  "1.77"
## [2696] "2.1"   "2.3"   "2.2"   "2.3"   "2.58"  "2.34"  "2.65"
## [2703] "2.6"   "2.87"  "2.17"  "2.3"   "2.7"   "2.5"   "3.09"
## [2710] "1.62"  "1.5"   "2.1"   "2.1"   "2.45"  "2.49"  "2.15"
## [2717] "2.7"   "2.6"   "2.75"  "1.59"  "2"     "2.6"   "2.6"
## [2724] "2.55"  "4.45"  "4.1"   "4.6"   "3.9"   "4.41"  "3.37"
## [2731] "3.3"   "5"     "3.3"   "4.5"   "1.8"   "1.8"   "2.8"
## [2738] NA      "3.85"  "1.25"  "1.4"   "1.6"   "1.95"  "2.19"
## [2745] "0.44"  NA      NA      NA      NA      "2.45"  "2.4"
## [2752] "2.3"   "2.5"   "2.37"  "3.22"  "3.19"  "2.95"  "3.25"
## [2759] "3.82"  "2.95"  "3"     "2.45"  "3.1"   "3.49"  "3.34"
```

```
## [2766] "3.32"  "3.55"  "3.8"   "4.76"  "4.46"  "4.2"   "3.1"
## [2773] "4.2"   "4.12"  "2.24"  "2.25"  "2.5"   "2.8"   "2.36"
## [2780] "2.64"  "2.57"  "2.9"   "2.5"   "3.38"  "3.55"  "3.34"
## [2787] "3.3"   "3.7"   "4.03"  "3.65"  "3.45"  "3.85"  "4"
## [2794] "3.77"  "1.77"  "1.74"  "2.15"  "2.3"   "2.79"  "1.52"
## [2801] "1.9"   "2.35"  "3.37"  "2.73"  "2.99"  "3.25"  "2.35"
## [2808] "3.84"  "4.15"  "3.03"  "3.3"   "3.85"  "3.75"  "4.46"
## [2815] "1.85"  "2.1"   "2.34"  "2.9"   "3.02"  "1.43"  "1.5"
## [2822] "1.5"   "1.55"  "1.63"  "2.15"  "2.2"   "2.3"   "2.15"
## [2829] "2.4"   "4.23"  "4.8"   "4.05"  "4.3"   "4.48"  "2.21"
## [2836] "2.14"  "2.35"  "2.35"  "2.73"  "2.25"  "2.4"   "2.8"
## [2843] "2.8"   "3.02"  "2.02"  "2.4"   "2.65"  "2.9"   "3.13"
## [2850] "1.95"  "2.34"  "2.04"  "2"     "2"     "2.7"   "2.92"
## [2857] "3.34"  "3"     "2.94"  "2.24"  "2.9"   "2.87"  "2.5"
## [2864] "2.95"  "2.1"   "2.35"  "2.25"  "2.35"  "2.77"  "3.2"
## [2871] "3.54"  "3.65"  "3.65"  "3.64"  "1.7"   "1.5"   "1.75"
## [2878] "1.95"  "2.89"  "2.16"  "2.15"  "2.5"   "2.55"  "2.23"
## [2885] "3.02"  "3.35"  "3.15"  "3.25"  "3.29"  "2.95"  "3.24"
## [2892] "3.15"  "3.45"  "3.84"  "2.9"   "2.92"  "3.05"  "3.15"
## [2899] "3.77"  "1.79"  "2.1"   "2.2"   "2.6"   "2.55"  "1"
## [2906] "1.2"   "1.6"   "1.8"   "1.92"  "1.2"   "0.95"  "1.2"
## [2913] "1.5"   "1.75"  "1.5"   "1.6"   "2.15"  "2.5"   "2.85"
## [2920] "1.94"  "2.3"   "2.34"  "2.5"   "2.39"  "2.67"  "2.95"
## [2927] "2.84"  "2.7"   "2.96"  "2.7"   "2.55"  "2.82"  "2.8"
## [2934] "2.92"  "2.89"  "2"     "2.45"  "2.65"  "2.8"   "1.89"
## [2941] "2.4"   "2.75"  "2.8"   "2.83"  "2.88"  "2.95"  "3"
## [2948] "3.1"   "3.14"  "2.89"  "3.3"   "3.25"  "2.95"  "2.72"
## [2955] "0.58"  "1.05"  "1.75"  "1.7"   "1.87"  "3.46"  "3.55"
## [2962] "3.4"   "4.1"   "4.89"  "2.85"  "3.12"  "3.55"  "3.65"
## [2969] "4.2"   "1.6"   "1.7"   "1.85"  "1.62"  "2.84"  "4.35"
## [2976] "4.15"  "4.22"  "4.15"  "4.45"  "2.1"   "2.25"  "2.25"
## [2983] "2.15"  "2.55"  "2.65"  "2.8"   "2.6"   "2.24"  "2.69"
## [2990] "1.4"   "1.4"   "1.6"   "1.46"  "1.6"   "2.8"   "2.9"
## [2997] "3.03"  "2.9"   "2.8"   "2.5"   "2.55"  "2.6"   "2.45"
## [3004] "2.9"   "2.15"  "2.22"  "2.15"  "2.2"   "2.28"  "2.21"
## [3011] "2.8"   "3"     "3.12"  "4.2"   "1.91"  "2"     "2.1"
## [3018] "2"     "2.95"  "1.96"  "2.95"  "2.11"  "2.25"  "3"
## [3025] "1.87"  "1.9"   "2.05"  "2.2"   "2.5"   "2.7"   "2.48"
## [3032] "2.7"   NA      NA      "1.74"  "1.75"  "2.02"  "1.98"
## [3039] "2.58"  "4.46"  "3.84"  "4.6"   "4.1"   "4.5"   "4.05"
## [3046] "3.8"   "4.3"   "3.9"   "4.35"  "2.6"   "2.35"  "2.95"
## [3053] "2.9"   "3.55"  "1.18"  "1.45"  "1.7"   "2.05"  "2.3"
## [3060] "1.87"  "1.9"   "2.15"  "2.3"   "2.93"  "3.23"  "3.25"
## [3067] "3.65"  "3.35"  "3.55"  "1.45"  "1.5"   "1.5"   "1.45"
## [3074] "2.23"  "1.65"  "1.75"  "2"     "1.75"  "3.27"  "1.85"
## [3081] "1.7"   "2.85"  "2.1"   NA      "2.24"  "1.85"  "2.3"
## [3088] "2.1"   "2.2"   "2.57"  "2.1"   "2.43"  "2"     "2.23"
## [3095] "2.5"   "2.54"  "2.6"   "2.6"   "2.75"  "1.85"  "2.15"
## [3102] "2.34"  "2.2"   "2.2"   "1.69"  "1.4"   "1.4"   "1.25"
## [3109] "1.8"   "1.85"  "2.05"  "1.96"  "1.9"   "1.95"  "1.4"
## [3116] "1.2"   "1.6"   "1.8"   "2.15"  "1.15"  "1.3"   "1.5"
## [3123] "1.55"  "1.82"  "1"     "1.4"   "1.6"   "1.52"  "1.65"
## [3130] "1.65"  "1.7"   "1.65"  "1.6"   "1.6"   "2.25"  "2.5"
## [3137] "2.4"   "2.5"   "2.7"   "2.64"  "2.65"  "3.3"   "3.18"
```

```
## [3144] "3.47"  "1.79"  "1.75"  "1.95"  "2.25"  "2.65"  "0.77"
## [3151] "0.8"   "0.8"   NA      NA      "1.1"   "1"     "1.2"
## [3158] "1.4"   "1.48"  "4.25"  "4"     "4.65"  "4.2"   "5.17"
## [3165] "4.69"  "4.8"   "4.65"  "4.3"   "4.7"   "4.16"  "4.54"
## [3172] "4.86"  "4.9"   "5.1"   "2.56"  "2.7"   "2.66"  "2.71"
## [3179] "2.63"  "2.16"  "1.95"  "2.1"   "2.23"  "2.65"  "2.98"
## [3186] "1.65"  "2.9"   "2.9"   "3.27"  "3"     "2.9"   "3"
## [3193] "3.25"  "2.82"  "2.36"  "2.4"   "2.68"  "3.1"   "3.16"
## [3200] "3.53"  "3.4"   "3.49"  "3.83"  "3.28"  "3.43"  "3.3"
## [3207] "3.1"   "3.5"   "3"     "1.48"  "1.6"   "1.6"   "1.6"
## [3214] "1.73"  "1.14"  "0.95"  "1.45"  "1.3"   "1.64"  "1.9"
## [3221] "1.94"  "1.94"  "1.9"   NA      "2.77"  "2.85"  NA
## [3228] "3.1"   NA      "1.4"   "1.6"   "1.5"   NA      NA
## [3235] "2.04"  NA      "2.55"  "2.85"  "3.1"   "3.09"  "2.5"
## [3242] "2.8"   NA      "2.99"  "1.45"  "1.65"  "1.6"   "1.6"
## [3249] "1.83"  "1.65"  "1.8"   "0.84"  "1.7"   "1.76"  "2.05"
## [3256] "1.9"   "2.1"   "2.3"   NA      "2.51"  "2.4"   "2.6"
## [3263] "2.83"  "2.65"  "2"     "1.8"   "1.85"  "2"     "1.85"
## [3270] "1.19"  "1.35"  "1.35"  "1.1"   "1.35"  "1.87"  "1.9"
## [3277] "1.79"  "1.95"  "1.91"  "2.05"  "2.1"   "2"     "1.95"
## [3284] "1.77"  "2"     "1.25"  "0.65"  "2.05"  NA      "2.47"
## [3291] "2"     "1.8"   "2.6"   "1.2"   "2.2"   "2.52"  "3.41"
## [3298] "2.8"   "2.05"  "1.46"  "1.55"  "1.6"   "1.6"   "1.4"
## [3305] "1.63"  "1.7"   "1.7"   "1.75"  "1.7"   "1.95"  "2.05"
## [3312] "1.8"   "1.9"   "1.85"  "2.65"  "2.74"  "2.49"  "2.1"
## [3319] "1.93"  "2.6"   "2.24"  "2.25"  "2.61"  "1.98"  "1.55"
## [3326] "1.1"   "1.45"  "1.65"  "1.67"  "2.82"  "2.52"  "2.65"
## [3333] "2.65"  "2.45"  "1.32"  "1.4"   "1.4"   "1.5"   "1.57"
## [3340] "1.4"   "1.5"   "1.45"  "1.6"   "1.35"  "1.3"   "1.3"
## [3347] "1.4"   "1.35"  "1.3"   "1.85"  "1.8"   "1.8"   "1.9"
## [3354] "1.79"  "1.8"   "1.85"  "2.15"  "1.25"  "1.3"   "1.7"
## [3361] "1.85"  "1.9"   "1.85"  "1.98"  "1"     "1.3"   "1.45"
## [3368] "1.5"   "1.65"  "0.95"  NA      "1.2"   NA      NA
## [3375] "4.12"  "4.48"  "4.2"   "4.2"   "3.77"  "2.95"  "3.14"
## [3382] "3.25"  "3.05"  "3.1"   "5.44"  "3.8"   "5.24"  "5.45"
## [3389] "4.35"  "5.7"   "6.6"   "6.44"  "5.7"   "6.44"  "4.75"
## [3396] "4.9"   "4.17"  "3.95"  "3.87"  "2.4"   "2.57"  "2.8"
## [3403] "2.55"  "3.4"   "2.05"  "2.25"  "2"     "1.9"   "2.2"
## [3410] "2.34"  "2.7"   "3"     "3.15"  "2.85"  "1.9"   "2.15"
## [3417] "2.1"   "2.45"  "3.2"   "3.75"  "3.37"  "3.15"  "2.75"
## [3424] "3.38"  "2.15"  "2.25"  "2.65"  "2.42"  "3.15"  "2.25"
## [3431] "2.25"  "2.35"  "2.12"  "2.8"   "2.45"  "2.65"  "2.95"
## [3438] "2.52"  "3"     "2.94"  "2.95"  "2.9"   "2.95"  "2.55"
## [3445] "2.05"  "2.4"   "2.6"   "2.6"   "3.15"  "2.55"  "2.74"
## [3452] "2.8"   "2.7"   "3.27"  "2.44"  "2.2"   "2.55"  "2.5"
## [3459] "3.39"  "2.62"  "2.5"   "3.8"   "2.8"   "3.55"  "2.4"
## [3466] "2.55"  "2.8"   "2.65"  "3.39"  "1.8"   "1.7"   "1.85"
## [3473] "1.8"   "2.3"   "2.15"  "2.08"  "2.1"   "1.85"  "2.3"
## [3480] "2.3"   "2.74"  "2.95"  "3.45"  "3.15"  "2.84"  "1.9"
## [3487] "2.79"  "3.3"   "4.06"  "1.6"   "1.6"   "1.6"   "1.55"
## [3494] "1.8"   "2.15"  "2.22"  "2.2"   "1.9"   "2.47"  "2.65"
## [3501] "2.95"  "3.1"   "2.6"   "3"     "2.95"  "2.5"   "3.14"
## [3508] "1.9"   "2"     "2.74"  "3.4"   "3.3"   "3.2"   "3.45"
## [3515] "2.82"  "3.15"  "3.74"  "3.6"   "4.3"   "2.45"  "2.54"
```

```
## [3522] "2.7"   "2.4"   "2.95"  "1.94"  "2.15"  "2.25"  "2.45"
## [3529] "2.5"   "2.8"   "2.95"  "3.55"  "3.15"  "4.25"  "3.2"
## [3536] "3.6"   "3.7"   "3.8"   "3.6"   "2.62"  "2.84"  "2.8"
## [3543] "2.9"   "3.18"  "2.05"  "2.1"   "2.1"   "1.98"  "2.45"
## [3550] "1.62"  "1.7"   "2"     "2.2"   "2.35"  "1.25"  "1.4"
## [3557] "1.6"   "1.7"   "2.35"  "2.79"  "2.85"  "2.8"   "2.6"
## [3564] "2.5"   "1.44"  "1.4"   "1.3"   "1.45"  "1.49"  "1.3"
## [3571] "1.6"   "1.7"   "1.55"  "1.45"  "0.95"  "1.05"  "1.1"
## [3578] "1.4"   "1.07"  "1.53"  "1.5"   "1.7"   "1.85"  "2.2"
## [3585] "2.59"  "2.6"   "2.65"  "2.75"  "2.15"  "2.17"  "2.15"
## [3592] "2.5"   "2.2"   "2.64"  "2.27"  "2.5"   "2.8"   "1.9"
## [3599] "2.49"  "5.44"  "5.14"  "5.55"  "5.5"   "5.78"  "4.16"
## [3606] "5.2"   "5.07"  "4.8"   "5.39"  "2.74"  "2.74"  "3"
## [3613] "3.1"   "3.6"   "1.42"  "1.6"   "1.8"   "1.8"   "1.9"
## [3620] "3.1"   "3.25"  "3.25"  "2.82"  "3"     "2.5"   "2.7"
## [3627] "3"     "2.55"  "2.9"   "1.8"   "2.04"  "2.25"  "2.2"
## [3634] "2.9"   "2.25"  "2.45"  "2.35"  "2.2"   "2.53"  "2"
## [3641] "2.1"   "2.35"  "2.3"   "2.7"   "1.9"   "1.92"  "2.4"
## [3648] "2.65"  "2.86"  "2.25"  "2.3"   "2.5"   "2.55"  "3.3"
## [3655] "2.94"  "3.1"   "3.37"  "3.4"   "3.6"   "2.45"  NA
## [3662] "2.6"   "2.5"   "3"     "2.55"  NA      "3.1"   "2.72"
## [3669] "3.36"  "1.8"   NA      "2.12"  "2.3"   "2.8"   "1.85"
## [3676] NA      "2.25"  "2.7"   "3.37"  "3.45"  NA      "3.9"
## [3683] "4.05"  "4.45"  "3.1"   NA      "3.9"   "3.75"  "3.95"
## [3690] "3.1"   NA      "3.55"  "4.25"  "4.3"   "1.95"  NA
## [3697] "2.62"  "4.5"   "3.3"   "1.9"   NA      "2.2"   "3"
## [3704] "2.9"   "2.8"   NA      "3.25"  "3.5"   "3.3"   "2.6"
## [3711] "2.85"  "3.6"   "3.35"  "3.6"   "1.6"   "1.75"  "2.1"
## [3718] "2"     "1.95"  "1.7"   "1.7"   "2.8"   "1.47"  "1.8"
## [3725] "2.8"   "2.54"  "2.65"  "2.45"  "2.4"   "2.62"  "2.7"
## [3732] "3.15"  "2.85"  "3"     "1.8"   "1.75"  "1.85"  "1.8"
## [3739] "2.25"  "2.42"  "2.35"  "2.6"   "1.79"  "1.93"  "2.37"
## [3746] "2.54"  "2.95"  "3"     "2.92"  "2.45"  "2.7"   "2.45"
## [3753] "2.7"   NA      "2.52"  "2.15"  "2.6"   "2.55"  "1.5"
## [3760] "1.3"   "1.4"   "1.6"   "1.5"   "1.55"  "1.92"  "1.95"
## [3767] "2.1"   "1.85"  "1.99"  "2.05"  "2.94"  "1.95"  "1.8"
## [3774] "2.07"  "2.2"   "2.3"   "2.3"   "2.05"  "2.2"   "1.96"
## [3781] "2"     "2.65"  "2.8"   "3"     "1.61"  "1.74"  "2.05"
## [3788] "2.3"   "2.7"   "2.46"  "2.23"  "2.05"  "2.7"   "2.9"
## [3795] "2.19"  "2.05"  "2.4"   "2.3"   "2.8"   "1.99"  "2"
## [3802] "2.5"   "2.3"   "2.6"   "2.34"  "2.3"   "2.42"  "2.4"
## [3809] "2.6"   "4.16"  NA      "5"     "4.35"  "5"     "3.2"
## [3816] NA      "4.1"   "4.32"  "5"     "3.15"  NA      "4"
## [3823] "3.65"  "4"     "4.94"  NA      "4.92"  "5.3"   "5"
## [3830] "5.18"  NA      "5.7"   "5.32"  "4.2"   "2.15"  "2.1"
## [3837] "2.54"  "2.33"  "2.49"  "2.17"  "2.24"  "2.55"  "2.55"
## [3844] "3.5"   "2.75"  "2.7"   "2.8"   "2.75"  "3.8"   "2.68"
## [3851] "2.48"  "2.7"   "2.75"  "2.7"   "2.2"   "2.35"  "2.6"
## [3858] "2.65"  "2.85"  "2.75"  "2.8"   "2.65"  "2.35"  "2.65"
## [3865] "3.45"  "3.34"  "3.3"   "3.3"   "3.9"   "1.37"  "1.35"
## [3872] "1.55"  "1.25"  "1.1"   "3.4"   "3.08"  "3.05"  "3.1"
## [3879] "3.5"   "1.37"  "1.3"   "1.5"   "1.22"  "1.53"  "3.15"
## [3886] "3.1"   "3.5"   "3.6"   "4.3"   "2.82"  "2.95"  "2.9"
## [3893] "3"     "3"     "2.72"  "2.21"  "2.6"   "2.55"  "3.3"
```

```
## [3900] "2.7"   "2.95"  "3.04"  "2.87"  "3.6"   "3.65"  "3.65"
## [3907] "3.4"   "3.5"   "4"     "2.65"  "2.41"  "2.8"   "3.1"
## [3914] "3.88"  "2.3"   "2.23"  "2.4"   "2.4"   "2.4"   "1.95"
## [3921] "1.9"   "2"     "2"     "2.15"  "2.3"   "2.22"  "2.57"
## [3928] "2.64"  "3"     "1.85"  "1.84"  "1.94"  "1.6"   "1.9"
## [3935] "3.2"   "2.7"   "2.94"  "2.95"  "2.6"   "1.55"  "1.6"
## [3942] "1.85"  "1.55"  "3.35"  "2.26"  "2.3"   "2.2"   "2.1"
## [3949] "1.78"  "2.47"  "2.54"  "2.75"  "2.4"   "2.48"  "2.35"
## [3956] "2.34"  "2.15"  "1.5"   "2.25"  "2.2"   "2.3"   "2.4"
## [3963] "2.35"  "2.57"  "1.94"  "1.8"   "1.3"   "1.47"  "1.48"
## [3970] "1.42"  "1.35"  "1.95"  "2.3"   "2.35"  "2.65"  "2.74"
## [3977] "3"     "2.94"  "3"     "2.15"  "2.18"  "2.04"  "2.15"
## [3984] "2"     "1.44"  "1"     "1.9"   "2.3"   "3.05"  "2.35"
## [3991] "2.2"   "2.3"   "2.14"  "3.05"  "3.7"   "1.85"  "3"
## [3998] "3.1"   "4.05"  "2.25"  "2.24"  "2.2"   "2.4"   "2.9"
## [4005] "1.35"  "1.3"   "1.4"   "1.64"  "1.95"  "2.8"   "2.8"
## [4012] "2.9"   "2.7"   "2.72"  "1.51"  "1.4"   "1.65"  "1.55"
## [4019] "1.75"  "3.6"   "3.24"  "3.87"  "3.7"   "4.15"  "1.95"
## [4026] "1.7"   "1.95"  "1.82"  "2.6"   "1.46"  "1.45"  "1.55"
## [4033] "1.55"  "1.85"  "3.9"   "3.6"   "3.95"  "3.65"  "3.85"
## [4040] "2.8"   "2.76"  "2.9"   "2.38"  "3.05"  "2.5"   "2.59"
## [4047] "2.55"  "2.25"  "3.39"  "2.4"   "2.9"   "2.85"  "2.54"
## [4054] "2.95"  "2.12"  "1.73"  "1.95"  "1.9"   "2.49"  "1.55"
## [4061] NA      NA      NA      NA      "2.2"   "2.05"  "2.3"
## [4068] "2.15"  "2.7"   "2.5"   "2.51"  "2.3"   "2.1"   "1.78"
## [4075] "2.6"   "3"     "3"     "2.75"  "2.75"  "2.7"   "2.54"
## [4082] "2.3"   "2.2"   "3.06"  "2.2"   "1.9"   "1.95"  "2.1"
## [4089] "2.55"  "1.45"  "2.15"  "2.14"  "1.67"  "1.96"  "1.9"
## [4096] "1.75"  NA      NA      NA      "2"     "2.15"  "2.45"
## [4103] "2.87"  "2.23"  "1.6"   "1.64"  "1.85"  "1.5"   "1.6"
## [4110] "1.9"   "1.8"   "3.2"   "2.85"  "3.58"  "1.87"  "1.85"
## [4117] "1.9"   "2.7"   "1.78"  "2.95"  "2.7"   "2.3"   "2.42"
## [4124] "2.35"  "2.25"  "2.08"  "2.05"  "2.4"   "2"     "1.9"
## [4131] "1.64"  "1.8"   "0.5"   "1.21"  "1.68"  "1.72"  "1.9"
## [4138] "2.2"   "2.4"   "1.54"  "1.6"   "1.7"   NA      NA
## [4145] "2.56"  "1.97"  "2.05"  "2.35"  "2.22"  "1.52"  "1.48"
## [4152] "1.3"   NA      NA      "1.05"  "1"     "1.3"   "1.1"
## [4159] "1.5"   "2.2"   "2.11"  "2.1"   NA      NA      "1.9"
## [4166] "1.6"   "1.8"   "1.45"  "1.54"  "2.35"  "2.24"  "2.5"
## [4173] "2.3"   "2.45"  "1.25"  "1.25"  "1.3"   "1.2"   "1.22"
## [4180] "2.11"  "2.12"  "2.05"  "0.96"  "2.2"   "1"     "1.1"
## [4187] "1.05"  "1.98"  "0.95"  "3.4"   "2.8"   "2.65"  "2.3"
## [4194] "3.15"  "2.4"   "2.12"  "2.8"   "3"     "3.58"  "2.15"
## [4201] "2.1"   "2.2"   "2.4"   "2.92"  "2.95"  "3.1"   "3.1"
## [4208] "3.2"   "3.64"  "1.45"  "1.45"  "2.6"   "1.7"   "2.42"
## [4215] "2.54"  "2.65"  "2.6"   "2.15"  "3.1"   "2.54"  "2.75"
## [4222] "2.5"   "2.5"   "2.78"  "2.55"  "2.7"   "2.9"   "2.55"
## [4229] "2.99"  "0.96"  "1.1"   "1.1"   "0.9"   "1.65"  "3.62"
## [4236] "3.45"  "3.9"   "4"     "4.2"   "1.8"   "1.85"  "2.6"
## [4243] "3.1"   "3.03"  "2.85"  "3.8"   "4"     "4.35"  "4.29"
## [4250] "3.62"  "3.6"   "4.2"   "4.6"   "4.41"  "2.23"  "2.4"
## [4257] "2.8"   "2.6"   "2.65"  "2.05"  "2"     "2.3"   "2.8"
## [4264] "3.06"  "2.41"  "2.84"  "2.8"   "2.65"  "3.73"  "2.3"
## [4271] "2.1"   "2.2"   "2.3"   "2.98"  "1.94"  "1.9"   "2"
```

```
## [4278] "2"      "2.31"     "4.19"     "3.84"     "3.95"     "3.6"      "4.24"
## [4285] "3.04"    "3"        "3.4"      "3.2"      "3.31"     "2.01"     "2.15"
## [4292] "2.3"     "2.2"      "2.64"     "1.93"     "1.9"      "1.95"     "2.1"
## [4299] "2.36"    "2.57"     "1.85"     "3.1"      "3"        "3.35"     "2.75"
## [4306] "2.55"    "2.55"     "2.5"      "2.53"     "1.84"     "2"        "1.95"
## [4313] "2"       "1.85"     "2.18"     "2.05"     "2.1"      "2"        "1.97"
## [4320] "2.05"    "2.55"     "1.85"     "2.2"      "4.66"     "2.34"     "2.25"
## [4327] "2.85"    "2.4"      "3.27"     "2.12"     "2.9"      "2"        "3.1"
## [4334] "4.45"    "1.81"     "1.85"     "1.95"     "2"        "2.35"     "2.39"
## [4341] "2.1"     "2"        "2.2"      "2.83"     "1.5"      "1.65"     "1.6"
## [4348] "1.7"     "2.27"     "1.4"      "1.35"     "1.6"      "1.75"     "2.1"
## [4355] "1.85"    "2.62"     "2.15"     "2.15"     "2.28"     "1.04"     "1.15"
## [4362] "1.4"     "1.4"      "1.91"     "1.9"      "1.85"     "2"        "2"
## [4369] "2.16"    "1.18"     "1.3"      "1.4"      "1.4"      "1.64"     "1.47"
## [4376] "1.45"    "1.6"      "1.75"     "2.3"      "1.67"     "1.6"      "1.7"
## [4383] "2.1"     "2.65"     "1.6"      "1.65"     "1.7"      "1.95"     "2.58"
## [4390] "1.14"    "1.1"      "1.1"      "0.6"      "1.21"     "5.92"     "6"
## [4397] "5.7"     "5.1"      "5.83"     "3.14"     "3.6"      "4.2"      "3.7"
## [4404] "3.99"    "3.56"     "3.8"      "4.2"      "3.8"      "3.63"     "2.6"
## [4411] "2.6"     "2.8"      "3"        "3.38"     "2.3"      "2.25"     "2.9"
## [4418] "3.3"     "MISSING"  "3.1"      "3.25"     "3.85"     "4"        "4.38"
## [4425] "2.5"     "2.47"     "2.85"     "2.65"     "2.42"     "2.1"      "2.14"
## [4432] "3.43"    "3.6"      "MISSING"  "2.75"     "2.55"     "3.37"     "3.5"
## [4439] "3.85"    "1.5"      "1.62"     "1.8"      "1.7"      "2.33"     "1.8"
## [4446] "1.72"    "1.89"     "1.8"      "2.4"      "1.85"     "1.82"     "2"
## [4453] "2"       "2.35"     "2.1"      "2.15"     "3.39"     "3.42"     "3.7"
## [4460] "1.45"    "1.25"     "2.19"     "3.75"     "1.69"     "1.85"     "2.15"
## [4467] "2.85"    "3.1"      "2.98"     "2.15"     "2.35"     "2.79"     "2.75"
## [4474] "3.39"    "3"        "2.9"      "3.87"     "3.8"      "4.05"     "2.15"
## [4481] "2.2"     "2.37"     "2.45"     "3.1"      "2.6"      "2.51"     "2.85"
## [4488] "2.4"     "2.98"     "1.45"     "1.55"     "1.8"      "1.8"      "2.1"
## [4495] "2.5"     "3"        "3.07"     "3.49"     "3.53"     "2.15"     "2.49"
## [4502] "2.97"    "3.1"      "2.83"     "2.05"     "2.6"      "2.82"     "3"
## [4509] "3.67"    "2.3"      "2.9"      "3.1"      "3.35"     "3.8"      "1.5"
## [4516] "1.65"    "2.29"     "1.8"      "2.49"     "2.1"      "2.1"      "2.98"
## [4523] "2.95"    "3.18"     "2.5"      "2.2"      "2.25"     "2.35"     "2.23"
## [4530] "3.25"    "3.35"     "3.6"      "4"        "3.68"     "2.32"     "1.8"
## [4537] "2.25"    "2.4"      "MISSING"  "2.37"     "1.9"      "2.87"     "2.2"
## [4544] "2.23"    "2.15"     "2.25"     "2.5"      "2.2"      "2.55"     "1.5"
## [4551] "1.62"    "1.75"     "1.6"      "1.86"     "2.05"     "2"        "2.7"
## [4558] "2.42"    "2.52"     "2.64"     "2.9"      "2.88"     "2.9"      "2.87"
## [4565] "1.4"     "1.55"     "1.5"      "1.7"      "2.06"     "1.35"     "1.25"
## [4572] "1.2"     "1.6"      "1.87"     "1.5"      "1.5"      "1.7"      "1.7"
## [4579] "1.79"    "1.9"      "2.1"      "2.25"     "2.1"      "2.39"     "2.1"
## [4586] "2.15"    "2.3"      "2.06"     "2.18"     "1.9"      "1.75"     "1.75"
## [4593] "1.7"     "1.79"     "1.42"     "1.6"      "1.7"      "1.7"      "1.77"
## [4600] "1.84"    "1.7"      "2.05"     "1.9"      "2.09"     "1.9"      "1.82"
## [4607] "2.37"    "1.95"     "1.98"     "1.35"     "1.25"     "1.4"      "1.45"
## [4614] "1.1"     "2.54"     "3.31"     "3.16"     "3.65"     "3.78"     "4.17"
## [4621] "4.4"     "4.72"     "4.55"     "4.1"      "3.12"     "3.55"     "4"
## [4628] "4"       "4.09"     "3.6"      "3.9"      "3.99"     "3.2"      "3.34"
## [4635] "1.9"     "2.52"     "2.45"     "2.25"     "2.71"     "3.81"     "4.02"
## [4642] "4.89"    "4.3"      "4.53"     "4.67"     "5.1"      "4.84"     "4.25"
## [4649] "4.8"     "3.44"     "3.75"     "4.39"     "5.1"      "5.26"     "1.45"
```

```
## [4656] "1.35"     "1.4"    "1.55"   "1.59"   "3.14"   "3.92"   "4.6"
## [4663] "4.55"     "5.12"   "2.5"    "2.85"   "3.55"   "3.52"   "4.19"
## [4670] "1.55"     "1.72"   "1.6"    "1.75"   "2.23"   "2"      "2.05"
## [4677] "2.3"      "2.35"   "2.99"   "1.84"   "1.94"   "2.6"    "3.2"
## [4684] "2.75"     "2.34"   "2.5"    "2.9"    "3.25"   "3.55"   "2.4"
## [4691] "2.35"     "2.5"    "2.4"    "2.91"   "2.44"   "2.55"   "3"
## [4698] "2.8"      "3.46"   "1.4"    "1.45"   "1.5"    "1.6"    "2.07"
## [4705] "3.35"     "3.45"   "3.5"    "3.1"    "4.05"   "1.9"    "1.89"
## [4712] "2.1"      "2.07"   "2.62"   "2.7"    "2.72"   "2.9"    "3.15"
## [4719] "3.65"     "3.05"   "2.84"   "2.9"    NA       NA       "3.25"
## [4726] "3.05"     "3.6"    "3"      "4.07"   "3.8"    "3.85"   "4.3"
## [4733] "4.7"      "4.58"   "2.24"   "1.6"    "2.55"   "2.8"    "3.1"
## [4740] "4.05"     "4.17"   "4.45"   "4.95"   "2.77"   "3.9"    "4"
## [4747] "4.1"      "3.6"    "4.2"    "2.8"    "3.05"   "3.2"    "3.2"
## [4754] "3.44"     "1.9"    "1.65"   "1.9"    "1.65"   "1.9"    "1.5"
## [4761] "1.45"     "1.6"    NA       NA       "2.8"    "2.07"   "2.9"
## [4768] "2.05"     "2.82"   "2.2"    "2.3"    "2.34"   "2.35"   "2.78"
## [4775] "3.5"      "3.47"   "3.8"    "3.98"   "4.5"    "2.55"   "2.57"
## [4782] "2.9"      "2.95"   "3.68"   "1.43"   "1.7"    "2"      "1.95"
## [4789] "1.98"     "1.1"    "0.95"   "2.1"    "1.9"    "2.44"   "1.5"
## [4796] "1.5"      "1.9"    "1.59"   "2.43"   "1.8"    "1.75"   "1.8"
## [4803] NA         NA       "1.8"    "1.85"   "1.95"   "1.9"    "2.23"
## [4810] "2.4"      "2.65"   "3.2"    "3.1"    "3.02"   "1.43"   "1.55"
## [4817] "1.5"      "1.6"    "1.65"   "2"      "2.1"    "2.4"    "2.22"
## [4824] "2.3"      "3"      "3.13"   "3.35"   "2.95"   "3.32"   "1.8"
## [4831] "1.6"      "2.1"    "2"      "2.19"   "2.35"   "2.7"    "3.1"
## [4838] "2.9"      "2.95"   "1.34"   "1.4"    "1.6"    "1.7"    "2.15"
## [4845] "1.25"     "1.3"    "1.6"    "1.85"   "2.23"   "2.45"   "2.02"
## [4852] "2.55"     "2.35"   "3.01"   "2.62"   "3"      "3.2"    "3"
## [4859] "2.93"     "4.5"    "5.1"    "5"      "4.75"   "4.6"    "3.4"
## [4866] NA         "4.6"    "4.55"   NA       "3.2"    "3.6"    "3.8"
## [4873] "3.75"     "4.17"   "1.43"   "1.45"   "1.9"    "1.85"   "2.12"
## [4880] "2.24"     "2.24"   "2.55"   "2.65"   "3.05"   "1.55"   "1.55"
## [4887] NA         "0.4"    "0.5"    "1.8"    "1.95"   "1.89"   "2.25"
## [4894] "2.89"     "1.72"   "1.75"   "1.85"   "1.8"    "0.71"   "2.6"
## [4901] "2.7"      "3.19"   "3.65"   "3.75"   "1.5"    "1.64"   "2.19"
## [4908] "2.1"      "2.08"   "1.39"   "1.4"    "1.9"    "3.65"   "3.83"
## [4915] "1.9"      "1.95"   "2"      "1.95"   "2.25"   "1.84"   "1.9"
## [4922] "2.35"     "2.45"   "2.9"    "2.05"   "1.8"    "2.3"    "1.96"
## [4929] NA         "1.75"   "2.2"    NA       NA       NA       "1.31"
## [4936] "1.1"      "1.5"    "1.6"    "1.73"   "1.15"   "1"      "1.2"
## [4943] "1.4"      "0.85"   "1.94"   "1.3"    "2.47"   "2.6"    "2.65"
## [4950] "2.25"     "2"      "2.26"   NA       NA       "1.95"   "2"
## [4957] "2.3"      "1.56"   "1.25"   "1.8"    "1.6"    "1.8"    "1.7"
## [4964] "1.7"      "2.15"   "2"      "1.74"   "1.7"    "2.2"    "1.7"
## [4971] "1.5"      "1.85"   "1.72"   "2.25"   "1.95"   "2.54"   "2.48"
## [4978] "2.05"     "2.4"    "1.92"   "1.65"   "1.85"   "2.1"    "1.75"
## [4985] "1.85"     "1.84"   "1.95"   "2.9"    "2.45"   "1.42"   "1.8"
## [4992] "1.4"      "1.45"   "1.79"   "1.35"   "1.72"   "1.88"   NA
## [4999] "MISSING"  "1.8"    "2.3"    "3.38"   "3.33"   "3.05"   "2.34"
## [5006] "1.9"      "2.23"   "2.29"   "2.1"    "1.84"   "1.9"    "2.38"
## [5013] "2.3"      "2.05"   "2.27"   "2.25"   "2.27"   "1.62"   "1.39"
## [5020] "2"        "1.92"   "1.52"   "2.05"   "1.82"   "1.82"   "2"
## [5027] "1.62"     NA       NA       "1.42"   "1.55"   "1.28"   "1.45"
```

```
## [5034] "1.42"  "1.34"  "1.5"   "2.1"   "1.96"  "2.18"  "2.35"
## [5041] "2.4"   "2.85"  "2.8"   "2.89"  "1.85"  "1.6"   "1.95"
## [5048] "1.98"  "0.63"  "1.45"  "1.45"  "1.6"   "1.49"  "1.51"
## [5055] "1.2"   "1"     "1.35"  "1.1"   "1.5"   "1.42"  "1"
## [5062] "1.1"   "1"     "1.35"  "1.32"  "1.4"   "1.4"   "1.36"
## [5069] "1.55"  "2.52"  "2.46"  "2.85"  "2.62"  "2.7"   "1.9"
## [5076] "2.05"  "2.22"  "2.05"  "3"     "3.05"  "3.3"   "3.35"
## [5083] "3.46"  "3.75"  "4.9"   "5.3"   "6.01"  "5.54"  "6.08"
## [5090] "3.54"  "3.8"   "3.82"  "3.36"  "3.24"  "2.8"   "2.8"
## [5097] "3.1"   "2.8"   "3.55"  "1.4"   "1.5"   "1.6"   "1.45"
## [5104] "1.68"  "2.59"  "2.55"  "2.65"  "2.25"  "3"     "1.1"
## [5111] "1.2"   "1.25"  "1.45"  "1.59"  "1.89"  "1.84"  "2.45"
## [5118] "1.9"   "2.8"   "2.54"  "2.45"  "2.7"   "2.5"   "3.05"
## [5125] "1.4"   "1.5"   "1.6"   "1.4"   "1.43"  "2.37"  "2.8"
## [5132] "2.55"  "2.5"   "3.15"  "1.92"  "1.85"  "1.85"  "1.84"
## [5139] "1.75"  "1.74"  "1.75"  "1.84"  "1.65"  "1.95"  "3.95"
## [5146] "3.53"  "3.6"   "3.15"  "3.5"   "3.64"  "3.4"   "3.35"
## [5153] "3.1"   "4.15"  "2.79"  "2.9"   "3.35"  "3.25"  "3.4"
## [5160] "3.58"  "3.6"   "3.45"  "3"     "3.85"  "2.56"  "2.4"
## [5167] "2.74"  "2.4"   "3"     "1.4"   "1.3"   "1.5"   "1.45"
## [5174] "1.82"  "1.8"   "1.6"   "2"     "1.6"   "1.8"   "2.57"
## [5181] "2.1"   "2.34"  "2.15"  "3.45"  "1.7"   "1.5"   "2.1"
## [5188] "1.6"   "1.95"  "2.81"  "2.9"   "3.2"   "2.45"  "2.95"
## [5195] "2.14"  "2.14"  "2.5"   "2.5"   "2.3"   "2.57"  "1.97"
## [5202] "1.95"  "1.87"  "2.15"  "1.4"   "1.7"   "1.95"  "2.1"
## [5209] "3.7"   "2.2"   "1.05"  "2.1"   "1.9"   "2.3"   "1.74"
## [5216] "1.75"  "2.05"  "2.22"  "3.12"  "2.2"   "2.65"  "2.32"
## [5223] "2.3"   NA      "2.2"   "2"     "2.45"  "2.1"   "2.49"
## [5230] "1.91"  "1.9"   "2.07"  "2"     "2.52"  "1.3"   "1.3"
## [5237] "1.4"   "1.2"   NA      "1.15"  "1.1"   "1.65"  "1"
## [5244] "1.69"  "1.3"   "1.1"   "1.3"   "1.44"  "2.02"  "1.55"
## [5251] "1.4"   "1.5"   NA      NA      "2.56"  "2.08"  "2.15"
## [5258] "1.75"  "2.48"  "2.52"  "2.32"  "2.2"   "1.85"  "2.23"
## [5265] "1.4"   "1.4"   "1.55"  "1.35"  "1.25"  "1.75"  "1.68"
## [5272] "1.87"  "2"     "2.35"  "1.3"   "1.1"   "1.5"   "1.55"
## [5279] "1.77"  "1.7"   "1.7"   "1.55"  "1.55"  "1.85"  "1.4"
## [5286] "1.4"   "1.7"   "1.45"  "1.58"  "1.55"  "1.7"   "1.7"
## [5293] "1.6"   "1.8"   "4.73"  "4.95"  "4.95"  "3"     "5.25"
## [5300] "4.2"   "4.3"   "3.74"  "3.6"   "3.8"   "5"     NA
## [5307] NA      NA      "1.87"  "1.8"   "1.8"   "1.75"  "2.41"
## [5314] "3.58"  "3.2"   "3.44"  "3.72"  "3.95"  "3.59"  "3.5"
## [5321] "4.45"  "4.37"  "4.58"  "2.42"  "2.5"   "3.85"  "4"
## [5328] "4.68"  "2.9"   "2.85"  "3.95"  "4"     "4.78"  "4.3"
## [5335] "3.7"   "4.85"  "5"     "5.08"  "4.57"  "3.8"   "4.8"
## [5342] "4.79"  "5.1"   "3.15"  "3.5"   "4.52"  "4.75"  "5.67"
## [5349] "2.93"  "2.9"   "3.65"  "4.3"   "4.18"  "3.2"   "2.9"
## [5356] "3.35"  "3.4"   "3.65"  "2.93"  "2.9"   "3.5"   "3.95"
## [5363] "4.37"  "2.52"  "2.8"   "3.35"  "3.5"   "3.98"  "1.45"
## [5370] "1.55"  "1.9"   "2.02"  "2.23"  "1.95"  "1.8"   "2.5"
## [5377] "2.7"   "3.12"  "2.37"  "2.65"  "2.95"  "3.45"  "3.73"
## [5384] "2.83"  "2.8"   "3.7"   "3.3"   "3.75"  "3.56"  "3.1"
## [5391] "3.55"  "3.95"  "4.1"   "2.16"  "2.6"   "2.95"  "3"
## [5398] "4.2"   "2.46"  "2.9"   "3.4"   "3.6"   "4.31"  "2.5"
## [5405] "2.7"   "3.1"   "3.3"   "3.91"  "1.85"  "2"     "2.4"
```

```
## [5412] "1.85"  "2.74"  "1.8"   "1.9"   "2.24"  "2.2"   "2.16"
## [5419] "1.5"   "1.4"   "2.2"   "1.55"  "1.65"  "1.7"   "1.85"
## [5426] "1.85"  "2.1"   "2.53"  "1.7"   "2.1"   "3.05"  "2.65"
## [5433] "2.97"  "1.74"  "2.2"   "3.05"  "3.2"   "3.4"   "2.34"
## [5440] "2.24"  "6"     "3.8"   "4.83"  "1.56"  "1.8"   "2.65"
## [5447] "3.45"  "4.2"   "1.8"   "1.92"  "2.75"  "2.55"  "2.72"
## [5454] "2.3"   "2.25"  "3"     "3.15"  "3.74"  "2.41"  "2"
## [5461] "2.55"  "2.2"   "2.28"  "2.31"  "2.2"   "2.45"  "2.4"
## [5468] "2.39"  "1.15"  "1.2"   "1.25"  "1.3"   "1.42"  "2.91"
## [5475] "2.95"  "3.35"  "3.75"  "3.64"  "3.2"   "3.1"   "3.6"
## [5482] "4.07"  "4.51"  "2.46"  "2.55"  "3"     "3.05"  "3.72"
## [5489] "2.77"  "2.7"   "3.35"  "3.5"   "4.19"  "3.23"  "3.2"
## [5496] "3.85"  "3.75"  "4.14"  "3.65"  "3.8"   "4.25"  "3.9"
## [5503] "4.74"  "2.74"  "2.87"  "3.2"   "3.4"   "3.81"  "1.74"
## [5510] "1.95"  "2.05"  "2.15"  "2.39"  "1.1"   "1.35"  "2"
## [5517] "2.08"  "2.15"  "1.65"  "1.25"  "2.3"   "2.42"  "3.12"
## [5524] "2.5"   "2.45"  "3.15"  "3.05"  "3.85"  "1.75"  "1.8"
## [5531] "2.25"  "2.3"   "2.53"  "2.6"   "2.5"   "3.3"   "3.12"
## [5538] "3.49"  "2.45"  "2.8"   "3.12"  "3.7"   "3.94"  "1.15"
## [5545] "1"     "1.3"   "1.5"   "1.66"  "1.5"   "1.4"   "1.75"
## [5552] "1.72"  "2.23"  "1.6"   "1.4"   "1.9"   "1.8"   "2.37"
## [5559] "3.21"  "3.3"   "3.95"  "3.7"   "4.3"   "3.26"  "3"
## [5566] "3.7"   "3.7"   "3.98"  "2.95"  "3.1"   "3.8"   "3.55"
## [5573] "5.1"   "2.65"  "2.15"  "3.3"   "3.1"   "3.18"  "1.81"
## [5580] NA      NA      NA      "3.06"  "2.55"  "2.3"   "2.05"
## [5587] "3.5"   "3.92"  "2.75"  "2.6"   "1.9"   "4.5"   "4.52"
## [5594] "1.84"  "1.85"  "1.55"  "1.45"  "1.56"  "2.5"   "3"
## [5601] "3"     "3.1"   "2.35"  "2.15"  "1.8"   "2.15"  "2.26"
## [5608] "2.15"  "1.55"  "1.45"  "2.3"   "2.3"   "2.31"  "1.25"
## [5615] "1.8"   "1.9"   "1.6"   "1.73"  "1.81"  "2.02"  "2.55"
## [5622] "2.7"   "3.17"  "2.57"  "2.1"   "2.24"  "2.05"  "2.31"
## [5629] "2.69"  "2.6"   "2.65"  "2.4"   "2.45"  "1.6"   "1.45"
## [5636] "1.6"   "1.6"   "1.9"   "2.1"   "2.1"   "2.1"   "1.9"
## [5643] "2.04"  "2.2"   "1.9"   "2.15"  "2.05"  "2.42"  "1.95"
## [5650] "1.94"  "2.05"  "1.85"  "2.2"   "1.4"   "1.4"   "1.5"
## [5657] "1.7"   "1.85"  "1.85"  "1.9"   "1.9"   "1.9"   "2.06"
## [5664] "1.8"   "1.4"   "1.7"   "1.76"  "1.91"  "1.1"   "1.3"
## [5671] "1.8"   "1.75"  "1.87"  "2.45"  "2.6"   "3.4"   "3.75"
## [5678] "4.25"  "2.16"  "2.4"   "2.7"   "2.6"   "2.93"  "2.66"
## [5685] "2.42"  "3.1"   "3.05"  "3.36"  "2.7"   "3"     "3.25"
## [5692] "4"     "3.52"  "2.81"  "3"     "3.55"  "3.1"   "3.58"
## [5699] "2.8"   "2.8"   "3.35"  "3.25"  "3.91"  "2.99"  "3"
## [5706] "3.7"   "3.4"   "4.1"   "2.62"  "2.8"   "3.25"  "2.98"
## [5713] "2.93"  "3.5"   "3"     "4.2"   "3.9"   "4.35"  "3.89"
## [5720] "3.55"  "4.35"  "4.2"   "4.58"  "3.25"  "3.4"   "4.3"
## [5727] "4.3"   "4.72"  "2.67"  "2.81"  "3.05"  "2.9"   NA
## [5734] "2.45"  "2.5"   "2.9"   "2.7"   "1.79"  "1.75"  "1.9"
## [5741] "2.3"   "1.8"   "2.05"  "2.5"   "2.05"  "2.35"  "1.6"
## [5748] "2.99"  "3.7"   "3"     "3.3"   "3.15"  "3.5"   "2.42"
## [5755] "2.4"   "2.7"   "2.5"   "3.27"  "1.05"  "1.5"   "1.6"
## [5762] "1.63"  "1.92"  "2.15"  "3.4"   "2.4"   "2.5"   "3.22"
## [5769] "2.95"  "3"     "3.35"  "3.1"   "3.27"  "2.45"  "2.5"
## [5776] "3.35"  "3"     "3.4"   "1.82"  "1.85"  "2"     "1.7"
## [5783] "1.75"  "1.71"  "2.3"   "2.95"  "1.9"   "1.92"  "2.2"
```

```
## [5790] "2.45"  "2.25"  "2.15"  "2.15"  "2.75"  "2.4"   "2.15"
## [5797] "2.1"   "2.18"  "2.2"   "2.2"   "2.2"   "1.3"   "2.02"
## [5804] "1.59"  "1.3"   "1.35"  "1.2"   "1.18"  "2.5"   "2"
## [5811] "1.7"   "3.6"   "1.69"  "1"     "1.05"  "1.8"   "0.8"
## [5818] "0.85"  "1.2"   "1.3"   "1.95"  "1"     "1.95"  "1.9"
## [5825] "1.6"   "1.1"   "1.05"  "1.2"   "2.45"  "2.3"   "2.45"
## [5832] "2.1"   "2.49"  "1.75"  "1.2"   "1.4"   "1.5"   "1.8"
## [5839] "1.2"   "1.1"   "1.4"   "1.3"   "1.02"  "1.6"   "1.4"
## [5846] "1.9"   "2.05"  "2.15"  "1.4"   "1.2"   "1.5"   "1.6"
## [5853] "1.91"  "2.57"  "2.2"   "2.2"   "2.3"   "2.56"  "2"
## [5860] "1.95"  "2.55"  "2.03"  "1.88"  "1.7"   "1.7"   "1.8"
## [5867] "1.6"   "2.36"  "1.35"  "1.35"  "1.75"  "1.5"   "1.94"
## [5874] "3.1"   "3.1"   "4.15"  "3.82"  "4.99"  "2.17"  "2.3"
## [5881] "3.95"  "3.7"   "3.9"   "2.83"  "3.5"   "4.6"   "4.9"
## [5888] "5.3"   "4.33"  "4.51"  "5.2"   "6.1"   "4.85"  "4.57"
## [5895] "4.6"   "4.85"  "4.2"   "4.75"  "2.84"  "3.2"   "3.55"
## [5902] "3.56"  "3.87"  "1.97"  "1.95"  "3.5"   "2.8"   "4.1"
## [5909] "3.45"  "3.52"  "4.2"   "5"     "5"     "1.6"   "1.5"
## [5916] "1.95"  "1.78"  "2.42"  "1.8"   "1.9"   "2.25"  "3"
## [5923] "2.05"  "2.35"  "2.85"  "3.4"   "3.35"  "3.7"   "4.15"
## [5930] "4.35"  "5.1"   "3.2"   "3.95"  "1.3"   "1.4"   "1.9"
## [5937] "1.75"  "2.35"  "3.2"   "3.2"   "4"     "3.8"   "4.35"
## [5944] "2.12"  "2.8"   "3.4"   "3.8"   "4.35"  "1.6"   "1.45"
## [5951] "1.95"  "5.25"  "5.7"   "2.77"  "3.25"  "4.3"   "3.95"
## [5958] "4.75"  "1.8"   "1.95"  "2.7"   "2.65"  "2.87"  "2.56"
## [5965] "2.85"  "3.3"   "2.9"   "3.34"  "2.45"  "3.31"  "3.4"
## [5972] "3.6"   "3.9"   "2.93"  "2.75"  "4.25"  "3.8"   "4.77"
## [5979] "2.72"  "3.4"   "3.4"   "3.75"  "4.05"  "1.6"   "1.5"
## [5986] "1.7"   "1.5"   "1.82"  "1.3"   "1.4"   "1.7"   "1.75"
## [5993] "2.1"   "1.68"  "2.2"   "3.2"   "2.95"  "3.06"  "1.61"
## [6000] "1.95"  "2.55"  "3.6"   "2.48"  "1.45"  "2.2"   "2"
## [6007] "2.5"   "3.31"  "1.7"   "1.85"  "2.4"   "2.4"   "2.72"
## [6014] "1.2"   "1.55"  "2"     "2.2"   "2.38"  "1.89"  "2.21"
## [6021] "2.65"  "2.6"   "2.6"   "2.58"  "2.45"  "2.7"   "3"
## [6028] "2.89"  "1.63"  "1.9"   "1.95"  "2"     "2.35"  "1.35"
## [6035] "1.38"  "1.8"   "1.75"  "2.23"  "2.68"  "2.95"  "2.9"
## [6042] "2.65"  "2.57"  "1.74"  "1.9"   "2.05"  "2.25"  "2.3"
## [6049] "2.21"  "2.2"   "2.8"   "2.67"  "2.75"  "1.89"  "1.5"
## [6056] "2.8"   "2.3"   "2.8"   "1.45"  "1.95"  "1.6"   "1.5"
## [6063] "1.64"  "2.91"  "4.43"  "3.65"  "4.1"   "4.16"  "3.93"
## [6070] "3.22"  "4.29"  "4.15"  "4.7"   "3.96"  "4.25"  "4.5"
## [6077] "4.92"  "5.11"  "2.98"  "2.95"  "2.75"  "3.7"   "4.28"
## [6084] "4.12"  "3.75"  "4.25"  "4.05"  "4.56"  "2.13"  "2.2"
## [6091] "2.56"  "2.3"   "2.89"  "2.1"   "2.12"  "2.37"  "2.55"
## [6098] "3.44"  "3.61"  "4"     "4.27"  "4.23"  "4.6"   "2.57"
## [6105] "2.25"  "2.69"  "2.95"  "3.51"  "1.8"   "1.75"  "1.9"
## [6112] "2"     "2.49"  "2.54"  "2.15"  "2.43"  "2.5"   "2.87"
## [6119] "2.53"  "2.55"  "2.61"  "2.72"  "3.03"  "1.7"   "1.6"
## [6126] "1.8"   "1.6"   "2.05"  "1.65"  "1.5"   "1.8"   "1.62"
## [6133] "1.94"  "2.56"  "2.43"  "2.51"  "2.8"   "2.7"   "1.69"
## [6140] "1.8"   "1.8"   "1.85"  "2.22"  "1.72"  "1.4"   "1.55"
## [6147] NA      NA      "1"     "0.95"  "1"     "1.3"   "1.42"
## [6154] "1.5"   "1.3"   "1.05"  "0.7"   "1.17"  "1.6"   "1.5"
## [6161] "1.95"  "2.22"  "2.4"   "1.5"   "1.4"   "1.4"   "1.5"
```

```
## [6168] "1.67"    "1.82"    "1.6"     "1.2"     "1.25"    "1.4"     "1.3"
## [6175] "1.25"    "1.2"     NA        "MISSING" "2.5"     "2.15"    "2.2"
## [6182] "2"       "2.15"    "1.84"    "1.85"    "2.05"    "2.1"     "2.15"
## [6189] "1.9"     "1.8"     "1.9"     "1.65"    "1.96"    "2.2"     "2"
## [6196] "2.4"     "2.2"     "2.34"    "1.45"    "1.35"    "1.6"     "1.62"
## [6203] "1.87"    "1.7"     "1.6"     "1.75"    "1.6"     "1.81"    "2.27"
## [6210] "2.34"    "2.35"    NA        NA        "1.69"    "1.55"    "1.65"
## [6217] "1.6"     "1.69"    "1.4"     "1.3"     "1.4"     "1.45"    "1.7"
## [6224] "1.96"    "2.15"    "2.24"    "2.5"     "2.77"    "3.67"    "3.8"
## [6231] "3.95"    "4.9"     "4.05"    "4.26"    "4.29"    "4.12"    "3.65"
## [6238] "4.56"    "3.57"    "3.01"    "3.42"    "3.62"    "4"       "3.2"
## [6245] "3.55"    "3.3"     NA        NA        "3.97"    "3.66"    "3.8"
## [6252] "3.35"    "4.34"    "2.61"    "2.72"    "2.9"     "3.07"    "3.21"
## [6259] "1.78"    "1.82"    "1.6"     "1.95"    "2.25"    "2.55"    "2.7"
## [6266] "2.75"    "2.36"    "2.74"    "1.7"     "1.6"     "1.5"     "1.62"
## [6273] "1.94"    "1.55"    NA        NA        "2.7"     "3.12"    "2.59"
## [6280] "2.1"     "2.94"    "2.65"    "2.19"    "2.16"    "2"       "2.78"
## [6287] "2.8"     "3.05"    "2.49"    "3.1"     "3.53"    "3.67"    "4.2"
## [6294] "2.47"    "2.5"     "3.26"    "3.25"    "3.08"    "2.92"    "3.2"
## [6301] "4"       "4.4"     "4.4"     "3.2"     "2.85"    "3.6"     "4.65"
## [6308] "4.52"    "1.6"     "1.6"     "2.82"    "3.65"    "3.85"    "1.83"
## [6315] "1.95"    "1.98"    "2"       "2.6"     "1.91"    "1.96"    "2.09"
## [6322] "1.8"     "2.4"     "1.7"     "2.31"    "2.4"     "3.5"     "2.75"
## [6329] "2.73"    "2.93"    "2.9"     "2.95"    "2.64"    "2.17"    "2.5"
## [6336] "2.7"     "2.73"    "3.05"    "1.6"     "1.7"     "1.99"    "2.1"
## [6343] "3.2"     "1.55"    "1.45"    "2"       "2"       "2.03"    "1.6"
## [6350] "1.39"    "1.75"    "1.81"    "2.05"    "1.5"     "2.65"    "4.9"
## [6357] "1.45"    "0.9"     "3.53"    "3.4"     "3.6"     "3.7"     "3.18"
## [6364] "1.84"    "2.15"    "2.12"    "2.25"    "2.68"    "2.48"    NA
## [6371] NA        NA        NA        "1.6"     "1.6"     "1.8"     "1.9"
## [6378] "2.64"    "1.45"    "1.65"    "1.9"     "2"       "2.28"    "1.86"
## [6385] "1.86"    "2.25"    "2.4"     "2.77"    "2.41"    "2.8"     NA
## [6392] NA        NA        "2.64"    "1.4"     "1.35"    "1.6"     "1.83"
## [6399] "3.53"    "3.43"    "2.83"    NA        NA        "1.63"    "1.7"
## [6406] "1.55"    "1.8"     "1.62"    "1.6"     "1.4"     "1.1"     "1.6"
## [6413] "1.26"    "2.56"    "2.2"     "2.2"     "1.9"     "2.29"    "2.27"
## [6420] "2"       "2.14"    "1.9"     "1.97"    "1.8"     "1.8"     "2.58"
## [6427] "2.3"     "2.12"    "2.19"    "2.15"    "3.53"    "2.2"     "2.26"
## [6434] "2.23"    "1.6"     "1.75"    "1.65"    "1.4"     "2.3"     "1.6"
## [6441] "2.78"    NA        NA        "2.11"    "2.2"     "2.3"     "2.4"
## [6448] "2.18"    "1.7"     "2.05"    "2.3"     "2.41"    "2.37"    "2.1"
## [6455] "1.95"    "2.57"    "3.75"    "2.82"    "2.38"    "2.75"    "3.7"
## [6462] "3.05"    "3.43"    "1.6"     "1.4"     "1.83"    "1.8"     "1.98"
## [6469] "2.44"    "2.59"    "2.71"    "2.67"    "2.7"     "1.69"    "1.7"
## [6476] "1.9"     "1.85"    "1.94"    "1.68"    "1.4"     "2.14"    "2"
## [6483] "2.44"    "1.4"     "1.3"     "1.7"     "1.65"    "1.74"    "2.56"
## [6490] "1.6"     "1.94"    "1.85"    NA        "3.1"     "3.04"    "3.2"
## [6497] "3.05"    "3.04"    "2.23"    "2.45"    "2.63"    "2.45"    "2.58"
## [6504] "2.69"    "2.95"    "3.2"     "3.25"    "3.69"    "2.44"    "2.35"
## [6511] "3.06"    "2.8"     "2.96"    "3.4"     "3.25"    "3.29"    "3.8"
## [6518] "3.75"    "4.12"    "4.75"    "4.79"    "4.9"     "4.39"    "4.25"
## [6525] "4.23"    "4.79"    "5.2"     "4.63"    "2.19"    "2.44"    "2.84"
## [6532] "3.1"     "3.31"    "2.63"    "3"       "3.15"    "3.39"    "3.52"
## [6539] "3.13"    "3.3"     "3.17"    "3.42"    "3.44"    "3"       "3.2"
```

```
## [6546] "3.63"  "5.1"   "3.76"  "2.79"  "3.05"  "3.05"  "3.47"
## [6553] "3.53"  "1.77"  "1.8"   "2"     "2.2"   "2.55"  "2.95"
## [6560] "3.1"   "3.37"  "3.15"  "3.85"  "3.69"  "3.89"  "4"
## [6567] "4.2"   "4.18"  "2.6"   "2.69"  "2.73"  "3"     "3.24"
## [6574] "2.13"  "2.23"  "2.44"  "2.75"  "2.9"   "1.5"   "1.5"
## [6581] "2.5"   NA      NA      "1.67"  "1.82"  "2.06"  "1.8"
## [6588] "1.95"  "1.55"  "1.45"  "2.16"  "2"     "2.15"  "1.71"
## [6595] "1.55"  "1.7"   "2.12"  "2.21"  "1.71"  "1.84"  "2.6"
## [6602] "2.25"  "2.47"  "1.65"  "1.35"  "1.65"  NA      NA
## [6609] "1.7"   "1.55"  "1.95"  "2"     "1.92"  "1.9"   "1.85"
## [6616] "2.4"   "1.79"  "1.8"   "1.63"  "1.75"  "1.8"   "1.85"
## [6623] "1.92"  "1.73"  "1.9"   "2.6"   "2.5"   "2.43"  "1.85"
## [6630] "1.9"   "2.35"  "2.15"  "2.31"  "1.7"   "2.3"   "1.97"
## [6637] "1.9"   "2.05"  "1.55"  "1.4"   "1.5"   "1.5"   "MISSING"
## [6644] "2.3"   "2.6"   "2.5"   NA      NA      "1.65"  "1.6"
## [6651] "1.8"   "1.81"  "1.95"  "1.6"   "1.5"   "1.6"   "1.58"
## [6658] "1.96"  "1.9"   "2.1"   "1.5"   NA      NA      "1.74"
## [6665] "1.8"   "1.7"   NA      NA      "1.75"  "1.9"   "1.4"
## [6672] "1.72"  "2.06"  "1"     "1"     "1"     NA      NA
## [6679] "2.84"  "2.75"  "3"     "3.05"  "3.1"   "2.79"  "2.7"
## [6686] "3.1"   "3.45"  "3.17"  "2.23"  "2.15"  "2.2"   "2.15"
## [6693] "2.13"  "2.76"  "2.8"   "3.2"   "3.1"   "3.65"  "1.68"
## [6700] "1.75"  "1.7"   "1.7"   "1.8"   "3.25"  "3.45"  "3.85"
## [6707] "3.8"   "4.4"   "2.92"  "3"     "3.5"   "3.6"   "4.03"
## [6714] "2.93"  "3.1"   "3.5"   "3.7"   "3.58"  "1.7"   "1.55"
## [6721] "1.9"   "2.1"   "2.45"  "2.29"  "2.55"  "2.4"   "2.1"
## [6728] "2.76"  "2.4"   "2.15"  "1.9"   "1.95"  "2.25"  "1.97"
## [6735] "2.05"  "2"     "1.9"   "2.08"  "2.17"  "2.25"  "2.3"
## [6742] "2"     "2.05"  "2.63"  "2.9"   "2.75"  "2.6"   "2.51"
## [6749] "3.18"  "3.84"  "3.45"  "3.4"   "3.69"  "1.35"  "1.2"
## [6756] "1.6"   "4.37"  "2.35"  "2.3"   "2.33"  "2.9"   "3.45"
## [6763] "3.82"  "2.22"  "2.51"  "2.55"  "2.85"  "3.45"  "2.57"
## [6770] "2.1"   "2.3"   "2.5"   "2.75"  "2.35"  "2.66"  "2.9"
## [6777] "3.05"  "3.95"  "1.9"   "1.9"   "1.85"  "1.95"  "2.58"
## [6784] "1.97"  "1.53"  "2.6"   "4"     "4.2"   "2"     "1.25"
## [6791] "2.1"   "2.1"   "2.42"  "1.74"  "1.82"  "2.64"  "2.95"
## [6798] "3.2"   "1.45"  "1.55"  "1.8"   "1.85"  "2"     "3.3"
## [6805] "2.6"   "3.2"   "4.1"   "4.15"  "2.04"  "2.1"   "2.1"
## [6812] "2.42"  "3.35"  "1.6"   "2"     "2.15"  "2.6"   "2.99"
## [6819] "1.4"   "1.4"   "1.75"  "1.65"  "4.13"  "1.64"  "2"
## [6826] "2.5"   "3"     "3.09"  "1.99"  "1.9"   "1.95"  "2.1"
## [6833] "2.2"   "2.54"  "2.2"   "2.65"  "2.9"   "2.81"  "1.55"
## [6840] "1.55"  "1.75"  "1.86"  "2.25"  "1.9"   "1.9"   "2"
## [6847] "1.95"  "2.08"  "1.96"  "2"     "1.95"  "2.1"   "2.44"
## [6854] "1.42"  "1.35"  "1.6"   "1.9"   "1.97"  "2.45"  "2.55"
## [6861] "2.7"   "2.6"   "2.59"  "1.82"  "1.8"   "2.2"   "2.26"
## [6868] "2.39"  "1.8"   "1.75"  "1.6"   "1.6"   "2.01"  "1.6"
## [6875] "1.4"   "1.05"  "1.65"  "1.83"  "3.39"  "3.64"  "4.1"
## [6882] "4"     "3.94"  "2.4"   "2.6"   "3"     "3"     "3.39"
## [6889] "4.57"  "4.95"  "4.9"   "4.6"   "5.3"   "2.55"  "3.03"
## [6896] "3.09"  "3.4"   "3.67"  "4.43"  "4.51"  "4.6"   "2.45"
## [6903] "2.41"  "2.45"  "2.8"   "2.89"  "3.16"  "3.25"  "3.75"
## [6910] "3.8"   "3.95"  "3.55"  "4.03"  "3.61"  "3.6"   "4.22"
## [6917] "4.21"  "4.35"  "4.2"   "1.45"  "1.75"  "1.65"  "1.92"
```

```
## [6924] "1.95"   "2.67"   "2.68"   "2.83"   "3"      "3.18"   "1.88"
## [6931] "1.95"   "1.95"   "2.2"    "2.05"   "2.65"   "2.8"    "3"
## [6938] "3.2"    "3.14"   "2.34"   "2.2"    "2.53"   "2.61"   "2.24"
## [6945] "2.25"   "2.16"   "2.7"    "3.28"   "2.85"   "3.29"   "3.5"
## [6952] "3.47"   "2.79"   "2.8"    "3.32"   "3.6"    "2.5"    "2.4"
## [6959] "2.63"   "3"      "2.1"    "2.2"    "2.25"   "2.7"    "3.9"
## [6966] "3.8"    "3.77"   "4.05"   "4.7"    "1.96"   "2.1"    "2.4"
## [6973] "2.7"    "1.6"    "1.6"    "1.7"    "1.8"    "2"      "2"
## [6980] "1.85"   "2.3"    "1.55"   "2.1"    "1.9"    NA       "1.4"
## [6987] "2.2"    "2.49"   NA       "2.26"   "2.15"   "3.25"   NA
## [6994] "2.4"    "2"      "2.33"   "2.55"   "1.7"    "1.85"   "3.3"
## [7001] "3.4"    "2.28"   "1.95"   "2.42"   "2.1"    "1.99"   "1.8"
## [7008] "2.48"   "2.65"   "1.91"   "1.75"   "2.73"   "2.95"   "1.89"
## [7015] "1.7"    "2.89"   "2.1"    "1.79"   "1.75"   "2.2"    "2.6"
## [7022] "1.7"    "1.55"   "1.85"   "2.6"    "1.9"    "1.6"    "1.5"
## [7029] "1.45"   "1.5"    "1.57"   "2.78"   "2.8"    "0.8"    "2.6"
## [7036] "2.6"    "1.7"    "1.7"    "1.78"   "2.05"   "2"      "1.6"
## [7043] "1.6"    "1.52"   NA       NA       "2.17"   "2.3"    "2.13"
## [7050] "2.3"    "2.15"   "1.45"   "1.35"   "1.3"    "0.8"    "0.9"
## [7057] "2.1"    "2.4"    "2.1"    "2.15"   "2.13"   "1.57"   "1.85"
## [7064] "1.7"    "2.05"   "2.1"    "2.57"   "2.15"   "2.04"   "1.9"
## [7071] "1.95"   "3.1"    "3.05"   "3.57"   "4"      "4.75"   "1.55"
## [7078] "1.7"    "1.7"    "1.6"    "2"      "1.9"    "1.92"   "2.07"
## [7085] "1.82"   "1.95"   "3"      "3.1"    "3.24"   "3.1"    "3.28"
## [7092] "3.38"   "3.55"   "3.63"   "3.7"    "3.39"   "2.69"   "2.7"
## [7099] "3.05"   "3"      "3.6"    "1.65"   "1.85"   "1.88"   "2"
## [7106] "2.28"   "3.55"   "3.55"   "4.04"   "3.7"    "4.09"   "2.31"
## [7113] "2.25"   "2.57"   "1.8"    "3.17"   "3.28"   "3.3"    "3.92"
## [7120] "4"      "4.37"   "1.79"   "1.8"    "1.8"    NA       NA
## [7127] "2.68"   "2.9"    "2.7"    "2.8"    "2.8"    "2.79"   "3.37"
## [7134] "3.29"   "2.9"    "3.13"   "1.99"   "2.09"   "2.26"   "2.1"
## [7141] "2.23"   "1.86"   "2.1"    "1.95"   "1.8"    "1.67"   "2.13"
## [7148] "2.24"   "2.66"   "2.6"    "3.32"   "1.75"   "1.85"   "2.05"
## [7155] "2.1"    "2.47"   "1.92"   "2.15"   "2.12"   "2"      "1.72"
## [7162] "2.63"   "2.79"   "2.83"   "2.7"    "3"      "2.17"   "2.39"
## [7169] "2.65"   "3"      "3.45"   "1.75"   "1.7"    "1.5"    "1.75"
## [7176] "1.6"    "1.3"    "1.85"   "1.95"   "1.8"    "1.6"    "1.98"
## [7183] "1.8"    "2.08"   "2.2"    "1.67"   "1.99"   "1.7"    "1.95"
## [7190] "2"      "1.87"   "1.63"   "1.6"    "1.45"   "1.2"    "1.06"
## [7197] "1.85"   "1.85"   "1.85"   "1.62"   "1.68"   "2.48"   "1.75"
## [7204] "1.89"   "2"      "1.82"   "1.29"   "1.3"    "1.4"    "0.7"
## [7211] "1.58"   "1.5"    "1.25"   "1.4"    NA       NA       "1.65"
## [7218] "1.6"    "1.52"   "2.4"    "1.35"   "1.54"   "1.2"    "1.4"
## [7225] "1.75"   NA       "1.38"   "1.1"    "1.9"    "1.8"    "1.85"
## [7232] "2.44"   "1.6"    "1.6"    "1.6"    "1.7"    "1.76"   "1.45"
## [7239] "2.45"   "1.6"    "1.78"   "1.25"   "0.76"   "1.6"    "1.8"
## [7246] "2.2"    "1.4"    "1.3"    NA       "1.5"    "1.82"   "1.93"
## [7253] "1.9"    "1.93"   "1.8"    "2.25"   "2.21"   "2.3"    "2.21"
## [7260] "2.4"    "2.23"   "1.85"   "1.5"    "1.9"    "1.9"    "2.33"
## [7267] "1.65"   "1.55"   NA       "2"      "2.05"   "2.7"    "2.65"
## [7274] "3"      "2.78"   "3.05"   "2.4"    "2.5"    "2.8"    "2.95"
## [7281] "3.05"   "3.57"   "3.45"   "4.1"    "3.8"    "3.82"   "3.47"
## [7288] "3.55"   "4.2"    "3.7"    "4.09"   "2.41"   "2.25"   "2.75"
## [7295] "3.7"    "3.47"   "2.83"   "2.7"    "2.65"   "2.8"    "2.87"
```

```
## [7302] "1.7"    "1.75"   "1.9"    "2"      "2.82"   "2.38"   "2.32"
## [7309] "2.65"   "3.1"    "2.64"   "2.58"   "2.62"   "2.8"    "2.75"
## [7316] "2.69"   "2.37"   "2.5"    "2.6"    "2.5"    "2.84"   "2.9"
## [7323] "3.3"    "3.85"   "4.1"    "4.17"   "3.35"   "3.4"    "3.5"
## [7330] "5.23"   "3.15"   "3.2"    "2.5"    "2.9"    "3.6"    "3.35"
## [7337] "2.2"    "2.15"   "2.1"    "2.7"    "2.92"   "3.52"   "3.85"
## [7344] "4"      "3.8"    "4.01"   "2.9"    "3"      "3.65"   "3.5"
## [7351] "4.28"   "3.92"   "3.5"    "4.2"    "4.15"   "5.1"    "2.91"
## [7358] "3.3"    "4.1"    "4.8"    "4.49"   "3.45"   "3.7"    "3.7"
## [7365] "3.25"   "3.56"   "2"      "2.01"   "2.2"    "2.35"   "2.84"
## [7372] "2.1"    "2.1"    "2.95"   "3.51"   "3.68"   "1.58"   "1.62"
## [7379] "1.6"    "1.62"   "1.76"   "1.7"    "1.75"   "2.1"    "2.62"
## [7386] "2.71"   "2.02"   "2.55"   "2.5"    "2.65"   "2.61"   "1.7"
## [7393] "1.94"   "2.35"   "2.27"   "2.26"   "1.3"    "2.15"   "1.95"
## [7400] "1.7"    "1.9"    "2"      "2.4"    "1.75"   "2.5"    "2.1"
## [7407] "1.8"    "1.2"    "2.25"   "2.39"   "3.18"   "1.4"    "1.85"
## [7414] "1.4"    NA       NA       "1.9"    "1.9"    "2.2"    "2.6"
## [7421] "2.77"   "1.5"    "1.45"   "1.45"   "1.62"   "1.75"   "1.75"
## [7428] "1.85"   "2"      "2.15"   "2.2"    "1.76"   "1.85"   "2"
## [7435] "2.05"   "2.06"   "1.45"   "1.4"    "1.45"   "1.7"    "1.78"
## [7442] "1.8"    "1.95"   "1.9"    "1.8"    "1.96"   "1.99"   "2.11"
## [7449] "2"      NA       NA       "2.82"   "3.1"    "3"      "3.1"
## [7456] "2.86"   "1.6"    "1.6"    "1.6"    "1.72"   "1.93"   "1.6"
## [7463] "1.6"    "1.6"    "1.7"    "2.1"    "1.81"   "1.92"   "1.85"
## [7470] "2.15"   "2.33"   "3.23"   "3.74"   "3.81"   "4"      "3.91"
## [7477] "2.9"    "3.15"   "3.85"   "3.35"   "3.88"   "1.89"   "2.49"
## [7484] "2.65"   "2.56"   "3.06"   "2.65"   "2.45"   "3.65"   "3.35"
## [7491] "4.3"    "3"      "2.12"   "2.98"   NA       NA       "2.54"
## [7498] "1.88"   "2.3"    "2"      "3.5"    "3.15"   "2"      "3.4"
## [7505] "2.6"    "2.69"   NA       "4.36"
```

```r
trees$HEIGHT <- as.numeric(trees$HEIGHT)
```

```
## Warning: NAs introduced by coercion
```

```r
head(trees)
```

```
## # A tibble: 6 x 16
##   SURVEY  YEAR SITE  TREATMENT BLOCK PLOT   SPECIES ORIGI~1 NEW_TAG DEAD  HEIGHT
##    <dbl> <dbl> <chr> <chr>     <dbl> <chr>  <chr>     <dbl>   <dbl> <chr>  <dbl>
## 1      1  2009 SOUTH TOTAL         2 S2TOT~ Acacia~       1      NA N        3.4
## 2      2  2010 SOUTH TOTAL         2 S2TOT~ Acacia~       1      NA N       3.32
## 3      3  2011 SOUTH TOTAL         2 S2TOT~ Acacia~       1      NA N       3.65
## 4      4  2012 SOUTH TOTAL         2 S2TOT~ Acacia~       1      NA N       3.74
## 5      5  2013 SOUTH TOTAL         2 S2TOT~ Acacia~       1      NA N       3.59
## 6      1  2009 SOUTH TOTAL         2 S2TOT~ Acacia~       2      NA N        2.3
## # ... with 5 more variables: AXIS_1 <dbl>, AXIS_2 <chr>, CIRC <dbl>,
## #   MEASUREMENT <chr>, STEMS <chr>, and abbreviated variable name
## #   1: ORIGINAL_TAG
```

$Alternative Way

```
trees <- read_tsv("../data raw/TREE_SURVEYS.txt",
                  col_types = list(HEIGHT = col_double(),
                                   AXIS_2 = col_double())))
```

```
## Warning: One or more parsing issues, see 'problems()' for details
```

```
trees$canopy_area <- trees$AXIS_1 * trees$AXIS_2
head(trees)
```

```
## # A tibble: 6 x 17
##    SURVEY  YEAR SITE  TREATMENT BLOCK PLOT   SPECIES ORIGI~1 NEW_TAG DEAD  HEIGHT
##     <dbl> <dbl> <chr> <chr>     <dbl> <chr>  <chr>     <dbl>   <dbl> <chr>  <dbl>
## 1       1  2009 SOUTH TOTAL         2 S2TOT~ Acacia~       1      NA N       3.4
## 2       2  2010 SOUTH TOTAL         2 S2TOT~ Acacia~       1      NA N       3.32
## 3       3  2011 SOUTH TOTAL         2 S2TOT~ Acacia~       1      NA N       3.65
## 4       4  2012 SOUTH TOTAL         2 S2TOT~ Acacia~       1      NA N       3.74
## 5       5  2013 SOUTH TOTAL         2 S2TOT~ Acacia~       1      NA N       3.59
## 6       1  2009 SOUTH TOTAL         2 S2TOT~ Acacia~       2      NA N       2.3
## # ... with 6 more variables: AXIS_1 <dbl>, AXIS_2 <dbl>, CIRC <dbl>,
## #   MEASUREMENT <chr>, STEMS <chr>, canopy_area <dbl>, and abbreviated variable
## #   name 1: ORIGINAL_TAG
```

```
numbers <- 1:10
numbers[c(1:3, 5:10)]
```

```
## [1]  1  2  3  5  6  7  8  9 10
```

```
numbers[-4]
```

```
## [1]  1  2  3  5  6  7  8  9 10
```

```
trees [1:3,-(5:10)]
```

```
## # A tibble: 3 x 11
##    SURVEY  YEAR SITE  TREATMENT HEIGHT AXIS_1 AXIS_2  CIRC MEASUR~1 STEMS canop~2
##     <dbl> <dbl> <chr> <chr>      <dbl>  <dbl>  <dbl> <dbl> <chr>    <chr>   <dbl>
## 1       1  2009 SOUTH TOTAL       3.4    6.1    5     37.8 D        1        30.5
## 2       2  2010 SOUTH TOTAL       3.32   8.25   8.45  18.8 D        1        69.7
## 3       3  2011 SOUTH TOTAL       3.65   8.85   9     57   C        1        79.6
## # ... with abbreviated variable names 1: MEASUREMENT, 2: canopy_area
```

```
subset(trees, select =c (SURVEY, YEAR, SITE, canopy_area))
```

```
## # A tibble: 7,508 x 4
##    SURVEY  YEAR SITE  canopy_area
##     <dbl> <dbl> <chr>       <dbl>
## 1       1  2009 SOUTH        30.5
## 2       2  2010 SOUTH        69.7
## 3       3  2011 SOUTH        79.6
```

```
## 4        4  2012 SOUTH          39.0
## 5        5  2013 SOUTH          40.8
## 6        1  2009 SOUTH           6.16
## 7        2  2010 SOUTH           7.29
## 8        3  2011 SOUTH          12.5
## 9        4  2012 SOUTH          NA
## 10       5  2013 SOUTH           9.62
## # ... with 7,498 more rows
```
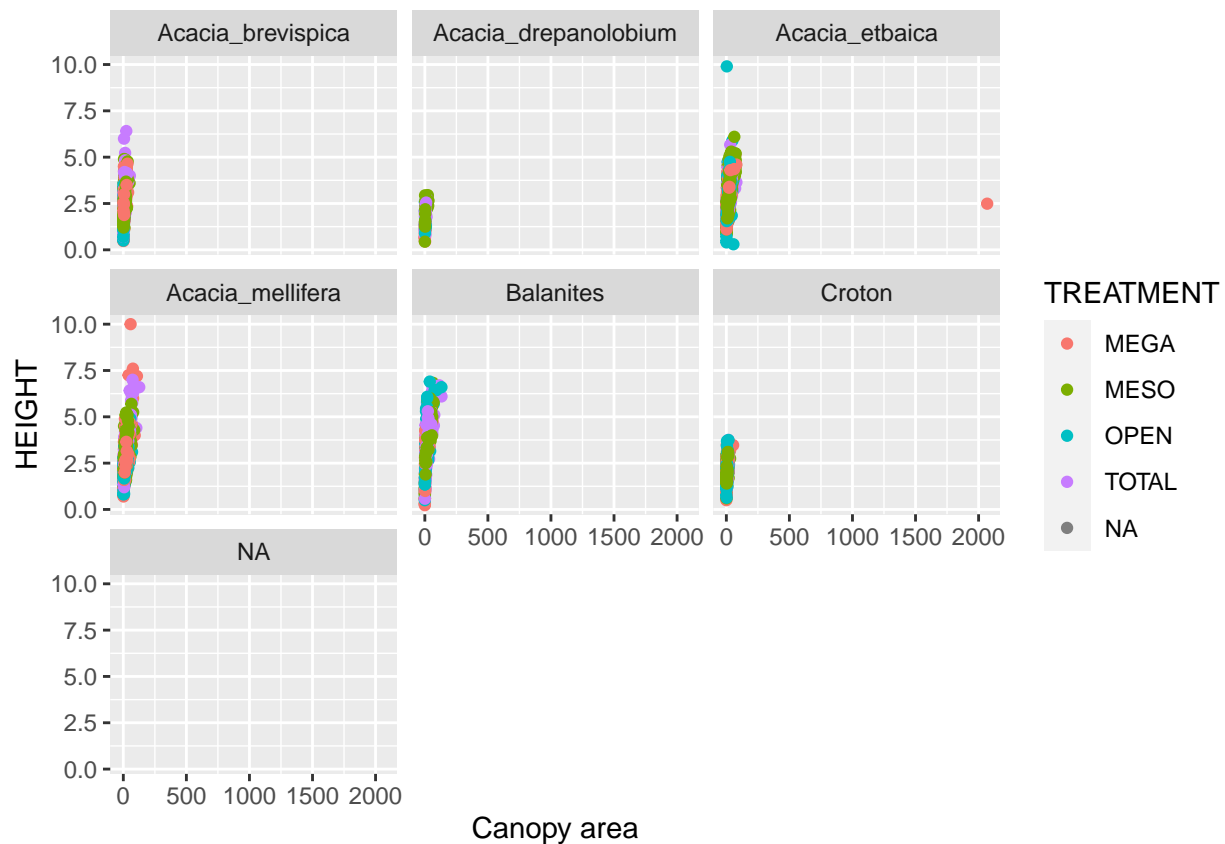
```
trees2 <- trees[,c("SURVEY", "YEAR", "SITE", "canopy_area")]
```

```
ggplot(data = trees, mapping = aes(x = canopy_area, y = HEIGHT, color = TREATMENT)) + geom_point() +
  labs (x = "Canopy area") +
facet_wrap(~SPECIES)
```

```
## Warning: Removed 215 rows containing missing values (`geom_point()`).
```



```
#or we can do this with teh subset function
trees3 <- subset(trees, canopy_area <=400)
# or finding the actual value that is the outlier
which(trees$canopy_area > 2000)
```

```
## [1] 3839
```

```
trees4 <- trees[-3839,]
```

```
trees3 <- subset(trees, canopy_area <= 400)
ggplot(data = trees3, mapping = aes(x = canopy_area, y= HEIGHT, color = TREATMENT)) + geom_point() + fa
```
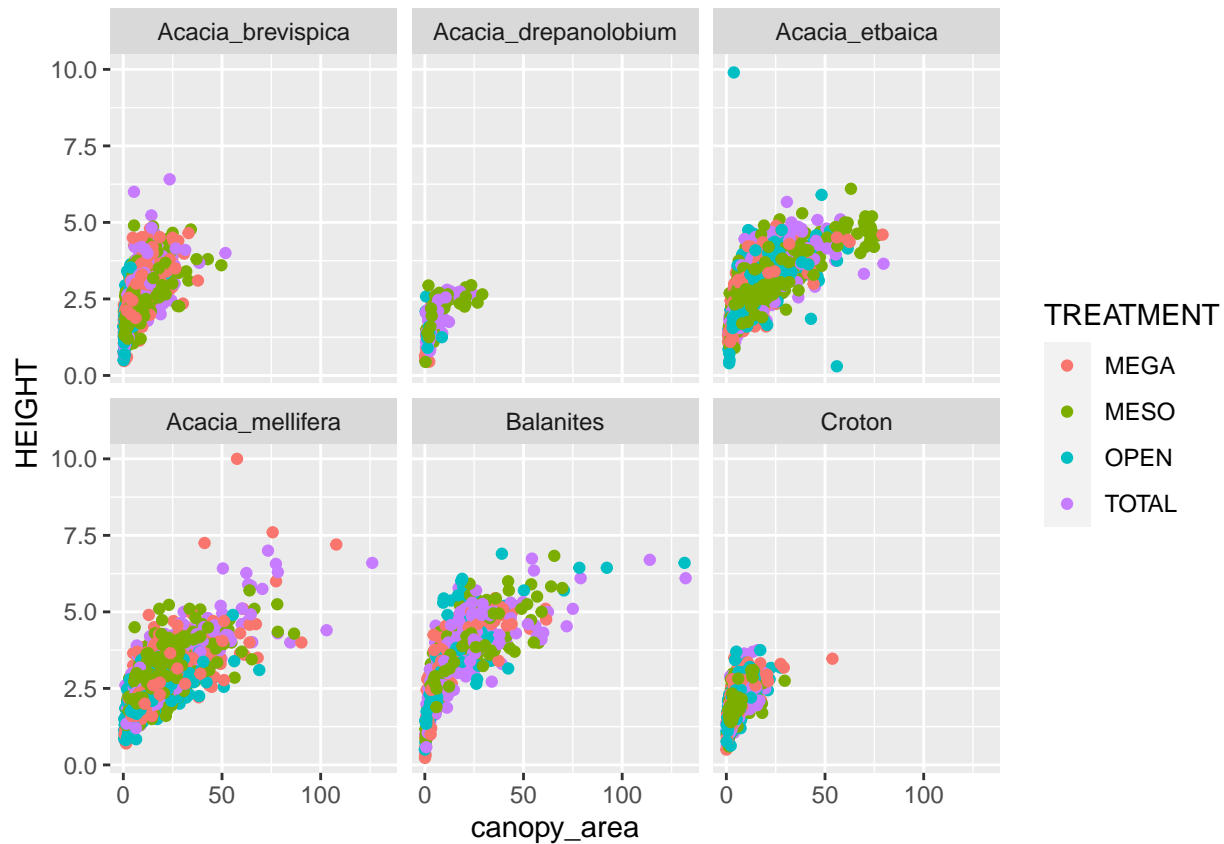

Exercise 4

```
ggplot() +
geom_point(data = trees,
mapping = aes(x = CIRC , y = HEIGHT), color = "gray") + geom_smooth(data = trees,
mapping = aes(x = CIRC , y = HEIGHT), color = "gray") + geom_point(data = acacia,
mapping = aes(x = CIRC , y = HEIGHT ), color = "red") + geom_smooth(data = acacia,
mapping = aes(x = CIRC , y = HEIGHT ), color = "red") + scale_x_log10() +scale_y_log10() + geom_smooth(r
```

```
## 'geom_smooth()' using method = 'gam' and formula = 'y ~ s(x, bs = "cs")'

## Warning: Removed 414 rows containing non-finite values ('stat_smooth()').

## 'geom_smooth()' using method = 'loess' and formula = 'y ~ x'

## Warning: Removed 4 rows containing non-finite values ('stat_smooth()').

## Warning: Removed 414 rows containing missing values ('geom_point()').
```

```
## Warning: Removed 4 rows containing missing values ('geom_point()').
```
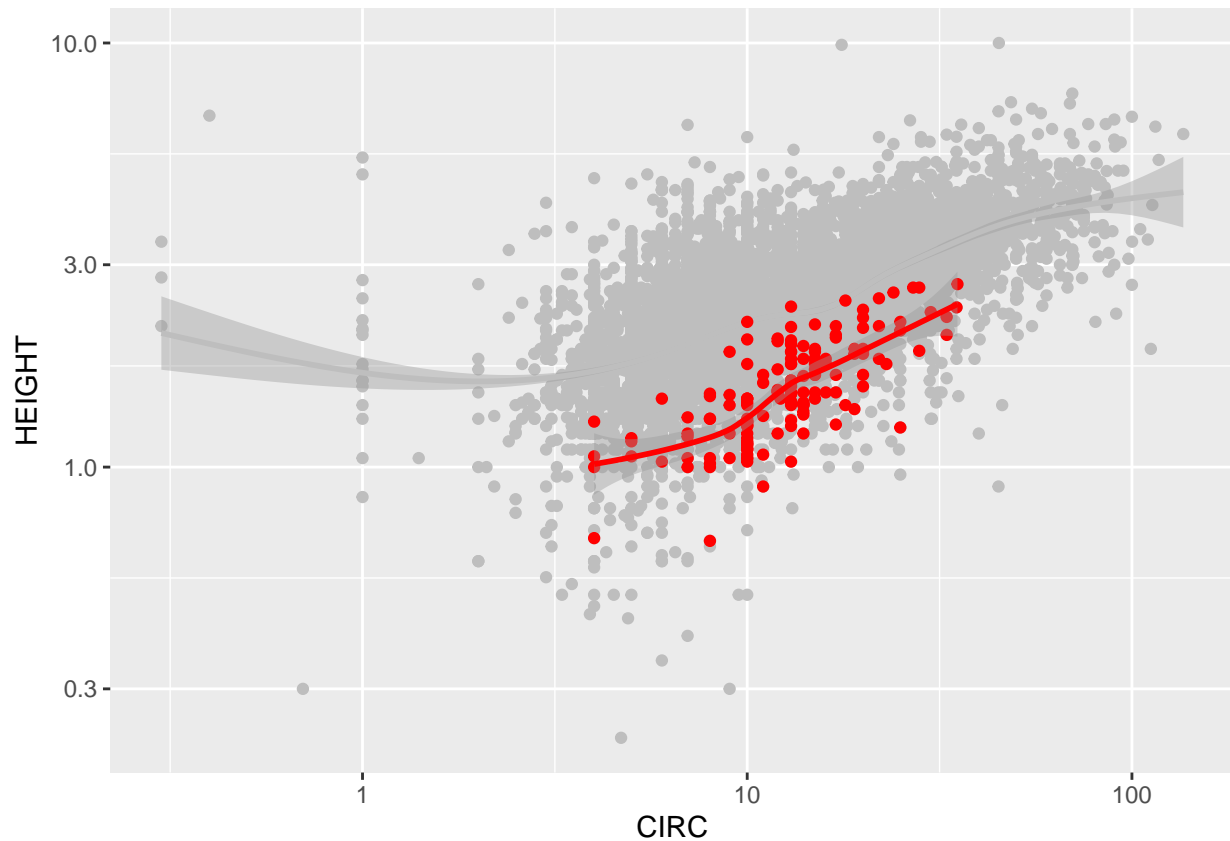


```
labs(x = "Circumference (cm)", y = "Height (m)", title = "Circumference to the Height Relationship of Ac
```

```
## $x
## [1] "Circumference (cm)"
##
## $y
## [1] "Height (m)"
##
## $title
## [1] "Circumference to the Height Relationship of Acacia"
##
## attr(,"class")
## [1] "labels"
```

Exercise 4 - Making the scatterplot in class

```
acacia <- read.csv(file = "../data raw/ACACIA_DREPANOLOBIUM_SURVEY.txt",
        sep ="\t",
        na.strings = "dead")
is.numeric(acacia$HEIGHT)
```

```
## [1] TRUE
```

```
trees <- read_tsv("../data raw/TREE_SURVEYS.txt",
                  col_types = list(HEIGHT = col_double(),
                                   AXIS_2 = col_double()))
```

```
## Warning: One or more parsing issues, see `problems()` for details
```

Visual Quality assurance and control with the function str()

```
str(acacia)
```

```
## 'data.frame':    157 obs. of  15 variables:
##  $ SURVEY   : int  1 1 1 1 1 1 1 1 1 1 ...
##  $ YEAR     : int  2012 2012 2012 2012 2012 2012 2012 2012 2012 2012 ...
##  $ SITE     : chr  "SOUTH" "SOUTH" "SOUTH" "SOUTH" ...
##  $ BLOCK    : int  1 1 1 1 1 1 1 1 1 1 ...
##  $ TREATMENT: chr  "TOTAL" "TOTAL" "TOTAL" "TOTAL" ...
##  $ PLOT     : chr  "S1TOTAL" "S1TOTAL" "S1TOTAL" "S1TOTAL" ...
##  $ ID       : int  581 582 3111 3112 3113 3114 3115 3199 941 942 ...
##  $ HEIGHT   : num  2.25 2.65 1.5 2.01 1.75 1.65 1.2 1.45 1.87 2.38 ...
##  $ AXIS1    : num  2.75 4.1 1.7 1.8 1.84 1.62 1.95 2 2.15 5.55 ...
##  $ AXIS2    : num  2.15 3.9 0.85 1.6 1.42 0.85 0.9 1.75 1.82 4.82 ...
##  $ CIRC     : num  20 28 17 12 13 15 9 12.2 13 35 ...
##  $ FLOWERS  : int  0 0 2 0 0 0 0 0 0 0 ...
##  $ BUDS     : int  0 0 1 0 0 0 0 0 0 0 ...
##  $ FRUITS   : int  10 150 50 75 20 0 0 25 0 50 ...
##  $ ANT      : chr  "CS" "TP" "TP" "CS" ...
```

```
is.numeric(acacia$CIRC)
```

```
## [1] TRUE
```

```
is.numeric(acacia$HEIGHT)
```

```
## [1] TRUE
```

```
str(trees)
```

```
## spc_tbl_ [7,508 x 16] (S3: spec_tbl_df/tbl_df/tbl/data.frame)
##  $ SURVEY      : num [1:7508] 1 2 3 4 5 1 2 3 4 5 ...
##  $ YEAR        : num [1:7508] 2009 2010 2011 2012 2013 ...
##  $ SITE        : chr [1:7508] "SOUTH" "SOUTH" "SOUTH" "SOUTH" ...
##  $ TREATMENT   : chr [1:7508] "TOTAL" "TOTAL" "TOTAL" "TOTAL" ...
##  $ BLOCK       : num [1:7508] 2 2 2 2 2 2 2 2 2 2 ...
##  $ PLOT        : chr [1:7508] "S2TOTAL" "S2TOTAL" "S2TOTAL" "S2TOTAL" ...
##  $ SPECIES     : chr [1:7508] "Acacia_etbaica" "Acacia_etbaica" "Acacia_etbaica" "Acacia_etbaica" ..
##  $ ORIGINAL_TAG: num [1:7508] 1 1 1 1 1 2 2 2 2 2 ...
##  $ NEW_TAG     : num [1:7508] NA NA NA NA NA NA NA NA NA NA ...
##  $ DEAD        : chr [1:7508] "N" "N" "N" "N" ...
```

```
##  $ HEIGHT      : num [1:7508] 3.4 3.32 3.65 3.74 3.59 2.3 2.32 2.75 NA 2.86 ...
##  $ AXIS_1      : num [1:7508] 6.1 8.25 8.85 5.5 5 2.2 2.75 3.3 NA 3.7 ...
##  $ AXIS_2      : num [1:7508] 5 8.45 9 7.1 8.15 2.8 2.65 3.8 NA 2.6 ...
##  $ CIRC        : num [1:7508] 37.8 18.8 57 60 55 14.2 18.4 25 NA 31 ...
##  $ MEASUREMENT : chr [1:7508] "D" "D" "C" "C" ...
##  $ STEMS       : chr [1:7508] "1" "1" "1" "1" ...
##  - attr(*, "spec")=
##   .. cols(
##   ..    SURVEY = col_double(),
##   ..    YEAR = col_double(),
##   ..    SITE = col_character(),
##   ..    TREATMENT = col_character(),
##   ..    BLOCK = col_double(),
##   ..    PLOT = col_character(),
##   ..    SPECIES = col_character(),
##   ..    ORIGINAL_TAG = col_double(),
##   ..    NEW_TAG = col_double(),
##   ..    DEAD = col_character(),
##   ..    HEIGHT = col_double(),
##   ..    AXIS_1 = col_double(),
##   ..    AXIS_2 = col_double(),
##   ..    CIRC = col_double(),
##   ..    MEASUREMENT = col_character(),
##   ..    STEMS = col_character()
##   .. )
##  - attr(*, "problems")=<externalptr>
```

```
is.numeric(trees$CIRC)
```
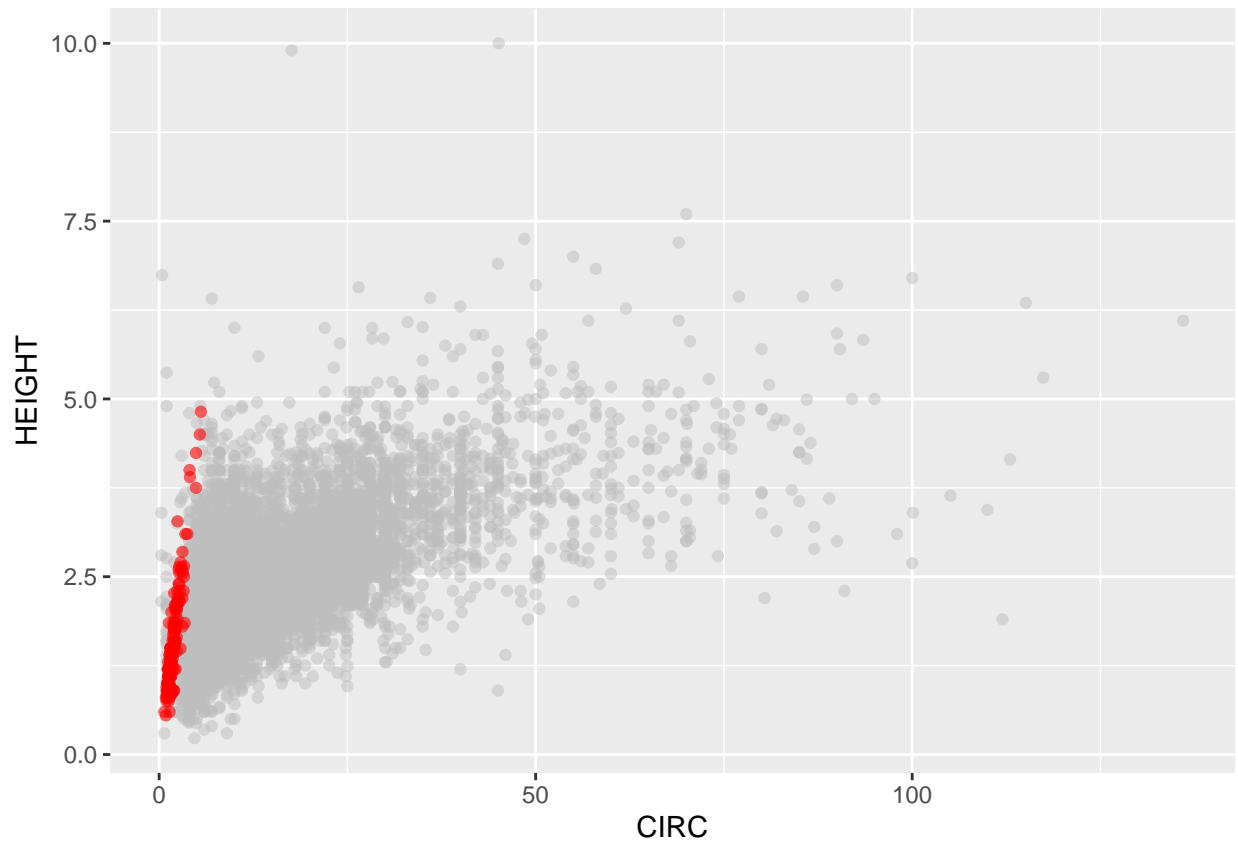
```
## [1] TRUE
```

```
is.numeric(trees$HEIGHT)
```

```
## [1] TRUE
```

```
ggplot() +
  geom_point(data = trees, mapping = aes(x= CIRC, y= HEIGHT), color = "gray", alpha = 0.5) +
  geom_point(data = acacia, mapping =aes (x = AXIS1, y=AXIS2), color = "red", alpha = 0.6)
```

```
## Warning: Removed 414 rows containing missing values (`geom_point()`).
```

```
## Warning: Removed 4 rows containing missing values (`geom_point()`).
```

```
ggplot() +
  geom_point(data = trees, mapping = aes(x= CIRC, y= HEIGHT), color = "gray", alpha = 0.5) +
  geom_point( color = "gray") +
  geom_point(data = acacia, mapping =aes (x = AXIS1, y=AXIS2), color = "red", alpha = 0.6) +
    scale_x_log10() +
    scale_y_log10() +
    geom_smooth(method = "lm") +
    geom_smooth(data = trees, mapping = aes(x= CIRC, y= HEIGHT), method = "lm")
```

`geom_smooth()` using formula = 'y ~ x'

Warning: Removed 414 rows containing non-finite values (`stat_smooth()`).

Warning: Removed 414 rows containing missing values (`geom_point()`).

Warning: Removed 4 rows containing missing values (`geom_point()`).