PSTAT 10 Worksheet 3 Solutions

Problem 1: Contains Duplicate

Write the function `contains_duplicate(v)` that takes a numeric vector `v` and returns TRUE if any value appears **at least twice** in the vector and FALSE otherwise.

```
contains_duplicate <- function(v) {
  for (i in seq_along(v)){
    value <- v[i]
    new_v <- v[-i]
    if (value %in% new_v){
      return(TRUE)
    }
  }
  return(FALSE)
}
```

```
contains_duplicate(c(1, 2, 3, 1))
```

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

```
contains_duplicate(c(1, 2, 3, 4))
```

```
## [1] FALSE
```

```
contains_duplicate(c(1, 1, 1, 3, 3, 4, 3, 2, 4, 2))
```

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

Hint: One way is to use a loop and keep track of what elements you have seen. The `%in%` operator tests membership in a vector and could be helpful.

There is also an *extremely easy* way to do this using built-in R functionality.

Testing membership with `%in%`:

```
"cat" %in% c("dog", "cow", "cat", "owl")
```

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

```
12 %in% c(3, 6, 1, 0)
```

```
## [1] FALSE
```

Problem 2: More on iris

For this section, we need the tidyverse library:

```
library(tidyverse)
data("iris")

summary (iris)
```

```
##   Sepal.Length    Sepal.Width     Petal.Length    Petal.Width
##  Min.   :4.300   Min.   :2.000   Min.   :1.000   Min.   :0.100
##  1st Qu.:5.100   1st Qu.:2.800   1st Qu.:1.600   1st Qu.:0.300
##  Median :5.800   Median :3.000   Median :4.350   Median :1.300
##  Mean   :5.843   Mean   :3.057   Mean   :3.758   Mean   :1.199
##  3rd Qu.:6.400   3rd Qu.:3.300   3rd Qu.:5.100   3rd Qu.:1.800
##  Max.   :7.900   Max.   :4.400   Max.   :6.900   Max.   :2.500
##        Species
##  setosa    :50
##  versicolor:50
##  virginica :50
##
##
##
```

1. Convert the `iris` data frame to a tibble and call it `iris_tbl`

```
iris_tbl <- as_tibble(iris)
```

2. Find the median `Petal.Width` and then create a tibble that only contains petal widths greater than the median.

```
petal <- iris$Petal.Width
med_petal <- median(petal)
g_petal <- petal[petal > med_petal]
gp_tibble <- as.tibble(g_petal)
gp_tibble
```

```
## # A tibble: 72 x 1
##    value
##    <dbl>
##  1   1.4
##  2   1.5
##  3   1.5
##  4   1.5
##  5   1.6
##  6   1.4
##  7   1.5
##  8   1.4
##  9   1.4
## 10   1.5
## # i 62 more rows
```

3. Call the area of a petal its length times its width. Create a tibble containing only the variables `Sepal.Length`, `Sepal.Width`, `Species`, and `Petal.Area` and only the rows where the petal width is greater than the median.

```
width_m <- median(iris$Petal.Width)
fil_iris <- iris %>% filter(Petal.Width > width_m)
p_length <- fil_iris$Petal.Length
p_width <- fil_iris$Petal.Width
p_area <- p_length * p_width
new_info <- fil_iris %>% select(Sepal.Length, Sepal.Width, Species)
new_tbl <- new_info %>% mutate(Petal.Area = p_area)
new_tbl
```

```
##    Sepal.Length Sepal.Width    Species Petal.Area
## 1           7.0         3.2 versicolor       6.58
## 2           6.4         3.2 versicolor       6.75
## 3           6.9         3.1 versicolor       7.35
## 4           6.5         2.8 versicolor       6.90
## 5           6.3         3.3 versicolor       7.52
## 6           5.2         2.7 versicolor       5.46
## 7           5.9         3.0 versicolor       6.30
## 8           6.1         2.9 versicolor       6.58
## 9           6.7         3.1 versicolor       6.16
## 10          5.6         3.0 versicolor       6.75
## 11          6.2         2.2 versicolor       6.75
## 12          5.9         3.2 versicolor       8.64
## 13          6.3         2.5 versicolor       7.35
## 14          6.6         3.0 versicolor       6.16
## 15          6.8         2.8 versicolor       6.72
## 16          6.7         3.0 versicolor       8.50
## 17          6.0         2.9 versicolor       6.75
## 18          6.0         2.7 versicolor       8.16
## 19          5.4         3.0 versicolor       6.75
## 20          6.0         3.4 versicolor       7.20
## 21          6.7         3.1 versicolor       7.05
## 22          6.1         3.0 versicolor       6.44
## 23          6.3         3.3  virginica      15.00
## 24          5.8         2.7  virginica       9.69
## 25          7.1         3.0  virginica      12.39
## 26          6.3         2.9  virginica      10.08
## 27          6.5         3.0  virginica      12.76
## 28          7.6         3.0  virginica      13.86
## 29          4.9         2.5  virginica       7.65
## 30          7.3         2.9  virginica      11.34
## 31          6.7         2.5  virginica      10.44
## 32          7.2         3.6  virginica      15.25
## 33          6.5         3.2  virginica      10.20
## 34          6.4         2.7  virginica      10.07
## 35          6.8         3.0  virginica      11.55
## 36          5.7         2.5  virginica      10.00
## 37          5.8         2.8  virginica      12.24
## 38          6.4         3.2  virginica      12.19
## 39          6.5         3.0  virginica       9.90
## 40          7.7         3.8  virginica      14.74
```

```
## 41          7.7         2.6  virginica      15.87
## 42          6.0         2.2  virginica       7.50
## 43          6.9         3.2  virginica      13.11
## 44          5.6         2.8  virginica       9.80
## 45          7.7         2.8  virginica      13.40
## 46          6.3         2.7  virginica       8.82
## 47          6.7         3.3  virginica      11.97
## 48          7.2         3.2  virginica      10.80
## 49          6.2         2.8  virginica       8.64
## 50          6.1         3.0  virginica       8.82
## 51          6.4         2.8  virginica      11.76
## 52          7.2         3.0  virginica       9.28
## 53          7.4         2.8  virginica      11.59
## 54          7.9         3.8  virginica      12.80
## 55          6.4         2.8  virginica      12.32
## 56          6.3         2.8  virginica       7.65
## 57          6.1         2.6  virginica       7.84
## 58          7.7         3.0  virginica      14.03
## 59          6.3         3.4  virginica      13.44
## 60          6.4         3.1  virginica       9.90
## 61          6.0         3.0  virginica       8.64
## 62          6.9         3.1  virginica      11.34
## 63          6.7         3.1  virginica      13.44
## 64          6.9         3.1  virginica      11.73
## 65          5.8         2.7  virginica       9.69
## 66          6.8         3.2  virginica      13.57
## 67          6.7         3.3  virginica      14.25
## 68          6.7         3.0  virginica      11.96
## 69          6.3         2.5  virginica       9.50
## 70          6.5         3.0  virginica      10.40
## 71          6.2         3.4  virginica      12.42
## 72          5.9         3.0  virginica       9.18
```

My result is the following:

```
# A tibble: 72 × 4
   Sepal.Length Sepal.Width Species    Petal.Area
          <dbl>       <dbl> <fct>           <dbl>
 1          7           3.2 versicolor       6.58
 2          6.4         3.2 versicolor       6.75
 3          6.9         3.1 versicolor       7.35
 4          6.5         2.8 versicolor       6.9
 5          6.3         3.3 versicolor       7.52
 6          5.2         2.7 versicolor       5.46
 7          5.9         3   versicolor       6.3
 8          6.1         2.9 versicolor       6.58
 9          6.7         3.1 versicolor       6.16
10          5.6         3   versicolor       6.75
# 62 more rows
# Use ‘print(n = ...)‘ to see more rows
```

Problem 3: More on heights data

Load the `heights_df` data frame from worksheet 1.

```
heights_df <- read.csv("heights.csv")
```

Recall the `height` variable is given in centimeters (cm). In worksheet 2, we created `cm_to_ft_inch` that converts from cm to a string representation of feet and inches.

```
cm_to_inch <- function(cm){cm * 0.39}

cm_to_ft_inch <- function(cm){
  inches <- cm_to_inch(cm)
  r_inches <- round(inches)
  ft <- (r_inches %/% 12)
  inch <- (r_inches %% 12)
  s_ft <- as.character(ft)
  s_inch <- as.character(inch)
  return(paste(s_ft, s_inch))}
```

Using `dplyr` functionality, create a tibble with a variable `height_ft_in` in place of `height`. The output is given:

```
ft_inch <- cm_to_ft_inch(heights_df$height)
h_tbl <- heights_df %>% select(id_., gender, age)
ft_in_tbl <- h_tbl %>% mutate(height_ft_in = ft_inch)
ft_in_tbl
```

```
##     id_. gender age height_ft_in
## 1      1 Female  19          5 2
## 2      2 Female  19          5 7
## 3      3 Female  22          5 6
## 4      4   Male  19         5 11
## 5      5 Female  21          5 8
## 6      6   Male  19          6 2
## 7      7 Female  21          5 1
## 8      8 Female  21          5 5
## 9      9   Male  18          6 4
## 10    10 Female  18          5 4
## 11    11 Female  22          5 3
## 12    12 Female  18          5 7
## 13    13   Male  23          6 0
## 14    14 Female  20          5 2
## 15    15 Female  19          5 1
## 16    16   Male  20          5 7
## 17    17 Female  22          5 1
## 18    18   Male  22         5 11
## 19    19 Female  21          5 3
## 20    20 Female  22          5 6
## 21    21 Female  20          5 5
## 22    22   Male  37          5 8
## 23    23   Male  19          5 4
## 24    24 Female  38          5 0
## 25    25   Male  23         5 11
## 26    26 Female  26          4 9
## 27    27 Female  25          5 3
```

```
## 28    28   Male  24         5 11
## 29    29 Female  54          5 6
## 30    30   Male  22          5 7
## 31    31   Male  23          5 7
## 32    32   Male  19          6 3
## 33    33   Male  22          5 8
## 34    34   Male  18          5 7
## 35    35 Female  20          5 6
## 36    36   Male  21          5 9
## 37    37 Female  20         5 10
## 38    38   Male  23          6 0
## 39    39 Female  22          5 7
## 40    40 Female  21          5 7
## 41    41 Female  19          5 0
## 42    42 Female  20          5 1
## 43    43   Male  23          6 2
## 44    44 Female  20          5 7
## 45    45 Female  19          5 6
## 46    46   Male  19          5 2
## 47    47 Female  23          5 6
## 48    48   Male  20          5 7
## 49    49 Female  22          5 2
## 50    50   Male  23         5 11
## 51    51   Male  21          5 3
## 52    52 Female  25          5 4
## 53    53   Male  24          5 6
## 54    54   Male  20          5 8
## 55    55   Male  21          5 7
## 56    56   Male  22          6 0
## 57    57   Male  19          5 7
## 58    58 Female  20          5 5
## 59    59   Male  21         5 11
## 60    60 Female  23          5 2
## 61    61 Female  44          5 5
## 62    62   Male  18         5 11
## 63    63 Female  21          5 1
## 64    64 Female  20          5 7
## 65    65 Female  32          5 7
## 66    66   Male  20         5 11
## 67    67   Male  20          5 6
## 68    68   Male  22          5 5
## 69    69   Male  23          5 8
## 70    70   Male  41          6 4
## 71    71   Male  23         5 11
## 72    72 Female  24         4 11
## 73    73 Female  20          5 0
## 74    74 Female  24          5 2
## 75    75 Female  23          5 0
## 76    76 Female  20         4 10
## 77    77 Female  19          5 5
## 78    78 Female  25         4 10
## 79    79 Female  21          5 0
## 80    80   Male  22          5 9
## 81    81   Male  24         5 10
```

```
## 82    82 Female  24          5 2
## 83    83 Female  19          5 8
## 84    84   Male  23          5 8
## 85    85 Female  21          5 2
## 86    86 Female  19          5 2
## 87    87   Male  22          5 6
## 88    88 Female  21          5 5
## 89    89 Female  21          5 0
## 90    90   Male  26          5 9
## 91    91 Female  23          5 3
## 92    92 Female  21         5 11
## 93    93 Female  20          5 6
## 94    94   Male  20         5 11
## 95    95 Female  20          5 2
## 96    96   Male  23          5 9
## 97    97   Male  18          5 6
## 98    98   Male  19          5 9
## 99    99 Female  21          5 5
## 100  100 Female  23          5 7
## 101  101 Female  22          5 6
## 102  102 Female  21          5 0
## 103  103 Female  21          5 7
## 104  104   Male  21          5 9
## 105  105 Female  21          5 9
## 106  106   Male  22          6 2
## 107  107   Male  25          6 2
## 108  108   Male  20          5 8
## 109  109   Male  18         5 11
## 110  110 Female  24          5 3
## 111  111   Male  22          5 7
## 112  112   Male  20          6 3
## 113  113 Female  21          5 4
## 114  114   Male  20          6 3
## 115  115 Female  18          5 0
## 116  116 Female  18          5 9
## 117  117   Male  19          5 6
## 118  118 Female  19          5 8
## 119  119 Female  22          5 1
## 120  120 Female  22          5 4
## 121  121   Male  25          5 7
## 122  122 Female  23          5 5
## 123  123   Male  20          5 6
## 124  124   Male  22          5 6
## 125  125 Female  19          5 0
## 126  126   Male  21          5 8
## 127  127   Male  22          5 4
## 128  128   Male  18          5 9
## 129  129 Female  20          5 6
## 130  130 Female  23          5 2
## 131  131   Male  21          6 1
## 132  132 Female  19          5 0
## 133  133   Male  21          6 1
## 134  134 Female  21          5 7
## 135  135 Female  20          5 1
```

```
## 136  136 Female  21          5 3
## 137  137 Female  24          5 5
## 138  138 Female  22          5 4
## 139  139   Male  22          5 7
## 140  140   Male  23          5 7
## 141  141   Male  18          5 9
## 142  142   Male  24         5 10
## 143  143 Female  21          5 7
## 144  144 Female  23          5 5
## 145  145 Female  21          5 7
## 146  146   Male  25          5 7
## 147  147 Female  18          5 2
## 148  148   Male  24         5 10
## 149  149   Male  19          5 4
## 150  150 Female  23          5 2
## 151  151   Male  22         5 10
## 152  152 Female  22          5 2
## 153  153   Male  20          5 7
## 154  154 Female  23          5 3
## 155  155 Female  24          5 1
## 156  156   Male  20          6 2
## 157  157 Female  28          5 5
## 158  158   Male  21          5 7
## 159  159   Male  22         5 10
## 160  160   Male  21          6 0
## 161  161 Female  19         4 10
## 162  162 Female  22          5 3
## 163  163 Female  28          5 4
## 164  164   Male  19          6 0
## 165  165   Male  20          5 7
## 166  166   Male  19          5 8
## 167  167 Female  19          5 1
## 168  168 Female  21          5 3
## 169  169 Female  20          5 6
## 170  170 Female  37          5 2
## 171  171   Male  20          5 7
## 172  172   Male  43         5 10
## 173  173 Female  22          5 7
## 174  174 Female  57          5 1
## 175  175   Male  21          5 7
## 176  176   Male  22          6 1
## 177  177   Male  21          5 9
## 178  178 Female  22          5 4
## 179  179   Male  18          6 2
## 180  180   Male  20          5 9
## 181  181 Female  19          5 4
## 182  182 Female  25          5 0
## 183  183 Female  21         4 10
## 184  184 Female  19         4 11
## 185  185 Female  22          5 9
## 186  186 Female  19          5 4
## 187  187 Female  22          5 0
## 188  188 Female  19         5 11
## 189  189 Female  19          5 1
```

```
## 190  190   Male  22          5 6
## 191  191   Male  21          6 3
## 192  192   Male  19          6 0
## 193  193   Male  22          6 1
## 194  194   Male  19          5 9
## 195  195 Female  21         4 11
## 196  196 Female  24          5 1
## 197  197 Female  22          5 7
## 198  198 Female  24          5 3
## 199  199   Male  19          5 9
## 200  200   Male  22         5 10
## 201  201   Male  21          5 4
## 202  202   Male  20          5 6
## 203  203 Female  19          5 2
## 204  204 Female  20          4 9
## 205  205   Male  22          5 7
## 206  206   Male  19          5 5
## 207  207 Female  21          5 4
## 208  208 Female  19          5 5
## 209  209 Female  20          4 8
## 210  210   Male  19         5 11
## 211  211 Female  22          5 3
## 212  212 Female  19          5 8
## 213  213   Male  21          6 2
## 214  214 Female  23          5 3
## 215  215   Male  22          5 9
## 216  216 Female  21         4 11
## 217  217   Male  24          5 8
## 218  218   Male  20          5 4
## 219  219   Male  22          5 8
## 220  220 Female  21          5 3
## 221  221   Male  24          5 2
## 222  222   Male  25          5 6
## 223  223   Male  24          6 5
## 224  224 Female  50         4 10
## 225  225 Female  20          5 4
## 226  226 Female  21          5 2
## 227  227   Male  21          5 9
## 228  228   Male  19         5 10
## 229  229   Male  20          5 6
## 230  230   Male  19          5 6
## 231  231   Male  25          5 7
## 232  232 Female  24          5 6
## 233  233   Male  21         5 10
## 234  234   Male  43          5 7
## 235  235 Female  48          5 2
## 236  236 Female  21          5 6
## 237  237   Male  21         5 11
## 238  238   Male  21         5 11
## 239  239   Male  23          5 6
## 240  240 Female  21         4 11
## 241  241   Male  22          6 0
## 242  242   Male  20         5 11
## 243  243 Female  23          5 5
```

```
## 244  244 Female  21          5 6
## 245  245 Female  20          5 4
## 246  246 Female  21          5 6
## 247  247 Female  24          5 6
## 248  248 Female  23          5 1
## 249  249   Male  21          5 4
## 250  250 Female  22          5 4
## 251  251   Male  20          5 7
## 252  252 Female  21          5 6
## 253  253   Male  24         5 10
## 254  254 Female  20          5 3
## 255  255 Female  19          5 4
## 256  256   Male  23          6 1
## 257  257   Male  22         5 10
## 258  258   Male  21          6 2
## 259  259 Female  21          5 0
## 260  260   Male  23          5 7
## 261  261   Male  18          5 7
## 262  262   Male  20          5 9
## 263  263   Male  21          5 9
## 264  264 Female  21          4 8
## 265  265   Male  22          5 9
## 266  266 Female  26          5 3
## 267  267   Male  24         5 11
## 268  268   Male  20          5 6
## 269  269 Female  20         5 11
## 270  270   Male  18          6 1
## 271  271   Male  23          5 6
## 272  272   Male  21          5 7
## 273  273   Male  21         5 11
## 274  274 Female  21         4 11
## 275  275   Male  23          5 8
## 276  276 Female  21          5 1
## 277  277   Male  23          6 2
## 278  278   Male  19          5 1
## 279  279   Male  20         5 11
## 280  280 Female  20          5 7
## 281  281   Male  22          5 8
## 282  282   Male  20         5 11
## 283  283 Female  20          5 0
## 284  284   Male  25          5 4
## 285  285   Male  23          5 9
## 286  286 Female  22          5 1
## 287  287   Male  20          5 6
## 288  288   Male  21          6 2
## 289  289   Male  18         5 11
## 290  290 Female  19          5 7
## 291  291   Male  20          5 9
## 292  292   Male  22          5 6
## 293  293   Male  18          6 1
## 294  294 Female  20         4 10
## 295  295 Female  22          5 5
## 296  296 Female  24          5 4
## 297  297   Male  22          5 8
```

```
## 298  298 Female  21          5 1
## 299  299 Female  19          5 4
## 300  300   Male  35         5 10
## 301  301   Male  60         5 10
## 302  302   Male  21          6 3
## 303  303   Male  19          5 8
## 304  304   Male  20          6 1
## 305  305   Male  20          5 8
## 306  306 Female  25          5 2
## 307  307 Female  20          5 4
## 308  308 Female  21          5 2
## 309  309 Female  21          5 2
## 310  310   Male  21          5 9
## 311  311   Male  23         5 11
## 312  312   Male  21         5 11
## 313  313 Female  21          5 5
## 314  314 Female  21          5 0
## 315  315   Male  19          5 9
## 316  316   Male  39          5 8
## 317  317   Male  20         5 11
## 318  318   Male  22         5 11
## 319  319   Male  21          6 1
## 320  320   Male  20         5 11
## 321  321   Male  24         5 10
## 322  322 Female  20          5 6
## 323  323 Female  21          5 4
## 324  324   Male  19         5 10
## 325  325 Female  21          5 7
## 326  326 Female  19          5 3
## 327  327 Female  21          5 6
## 328  328   Male  23          5 8
## 329  329   Male  22          6 1
## 330  330   Male  21          5 8
## 331  331 Female  20          5 3
## 332  332 Female  22          5 6
## 333  333   Male  20          5 8
## 334  334 Female  23          5 8
## 335  335   Male  20          5 9
## 336  336 Female  23          5 4
## 337  337 Female  20          5 5
## 338  338   Male  55          6 1
## 339  339 Female  23          5 6
## 340  340   Male  21          5 9
## 341  341 Female  19          5 7
## 342  342   Male  27          5 5
## 343  343 Female  19          5 5
## 344  344 Female  43          5 9
## 345  345   Male  23          5 7
## 346  346 Female  21          5 1
## 347  347   Male  47          5 9
## 348  348 Female  21          5 4
## 349  349   Male  19          6 1
## 350  350 Female  22          5 4
## 351  351   Male  19          5 7
```

```
## 352  352   Male  22         5 11
## 353  353   Male  23          6 1
## 354  354   Male  23         5 11
## 355  355   Male  19          5 7
## 356  356 Female  19          5 5
## 357  357   Male  22         5 10
## 358  358 Female  21          5 8
## 359  359   Male  22         5 11
## 360  360   Male  22          5 7
## 361  361   Male  39          6 1
## 362  362   Male  53          5 9
## 363  363   Male  20         5 10
## 364  364   Male  24         5 11
## 365  365   Male  21          5 7
## 366  366   Male  19         5 10
## 367  367   Male  23          5 7
## 368  368   Male  21         5 11
## 369  369   Male  21          6 1
## 370  370 Female  61          5 6
## 371  371   Male  22          5 7
## 372  372 Female  22         4 11
## 373  373   Male  19          6 1
## 374  374 Female  22          5 8
## 375  375   Male  19          6 1
## 376  376 Female  21          5 5
## 377  377   Male  20          5 0
## 378  378   Male  22          5 7
## 379  379 Female  23         5 11
## 380  380 Female  24          5 2
## 381  381   Male  19         5 10
## 382  382   Male  22         5 11
## 383  383 Female  22          5 4
## 384  384 Female  20         4 11
## 385  385 Female  24          5 2
## 386  386   Male  20          5 0
## 387  387   Male  19         5 10
## 388  388   Male  19         5 10
## 389  389 Female  21          5 3
## 390  390 Female  20          5 4
## 391  391 Female  22          5 0
## 392  392 Female  24          5 5
## 393  393   Male  22          5 9
## 394  394 Female  23          5 4
## 395  395   Male  25         5 11
## 396  396 Female  22         4 10
## 397  397   Male  22          6 1
## 398  398   Male  22          5 2
## 399  399   Male  22          5 2
## 400  400   Male  20          5 5
## 401  401 Female  23          5 5
## 402  402   Male  23          6 1
## 403  403 Female  19          5 0
## 404  404 Female  21          5 7
## 405  405   Male  22         5 11
```

```
## 406  406 Female  21          5 9
## 407  407 Female  22          5 7
## 408  408 Female  50          5 9
## 409  409   Male  27         5 11
## 410  410   Male  25         5 11
## 411  411 Female  21          5 2
## 412  412   Male  19          5 7
## 413  413   Male  21          6 4
## 414  414 Female  22          5 4
## 415  415 Female  22          5 5
## 416  416 Female  21          5 3
## 417  417 Female  55          5 7
## 418  418   Male  24         5 11
## 419  419   Male  26         5 10
## 420  420   Male  22          6 1
## 421  421 Female  19          5 4
## 422  422   Male  20         5 11
## 423  423 Female  22          5 3
## 424  424 Female  52          5 4
## 425  425   Male  19          6 1
## 426  426 Female  20          5 1
## 427  427 Female  20         5 10
## 428  428   Male  23          5 7
## 429  429 Female  18          5 3
## 430  430 Female  18          5 0
## 431  431   Male  21          6 1
## 432  432   Male  22         5 10
## 433  433   Male  55          5 7
## 434  434   Male  21          6 2
## 435  435 Female  21          5 2
## 436  436 Female  22          5 4
## 437  437   Male  19          6 0
## 438  438 Female  19          5 4
## 439  439   Male  21          6 1
## 440  440 Female  22          5 1
## 441  441 Female  22          5 4
## 442  442   Male  21         5 11
## 443  443 Female  25          5 7
## 444  444   Male  20          5 8
## 445  445   Male  19          5 6
## 446  446   Male  19          5 8
## 447  447 Female  20          5 6
## 448  448   Male  50          6 1
## 449  449   Male  21          5 4
## 450  450 Female  18          5 2
## 451  451   Male  20          5 6
## 452  452   Male  22         5 11
## 453  453   Male  25         5 10
## 454  454   Male  19          5 8
## 455  455   Male  18          5 8
## 456  456   Male  19          6 2
## 457  457 Female  21          5 6
## 458  458 Female  23          5 1
## 459  459   Male  19          6 0
```

```
## 460  460   Male  22         5 11
## 461  461 Female  21          5 0
## 462  462 Female  34          5 5
## 463  463 Female  22          5 3
## 464  464 Female  22          5 4
## 465  465   Male  23         5 10
## 466  466   Male  20          5 7
## 467  467 Female  20          5 4
## 468  468   Male  19         5 11
## 469  469 Female  24          5 4
## 470  470   Male  22          5 5
## 471  471 Female  21          5 6
## 472  472   Male  22          5 9
## 473  473 Female  25          5 2
## 474  474   Male  21          6 6
## 475  475 Female  21          5 5
## 476  476 Female  20          5 2
## 477  477 Female  20          5 6
## 478  478   Male  20          5 8
## 479  479   Male  21         5 11
## 480  480   Male  18          5 7
## 481  481 Female  20          5 4
## 482  482 Female  21         4 10
## 483  483   Male  20          6 3
## 484  484 Female  21          5 7
## 485  485   Male  20          5 6
## 486  486   Male  24          5 5
## 487  487 Female  19          5 4
## 488  488 Female  21          5 3
## 489  489 Female  20          5 8
## 490  490 Female  20          5 6
## 491  491   Male  20          5 5
## 492  492   Male  22          5 8
## 493  493   Male  18         5 10
## 494  494   Male  20          6 5
## 495  495 Female  19          5 5
## 496  496   Male  21          5 9
## 497  497 Female  21          5 7
## 498  498   Male  21          5 7
## 499  499   Male  18          6 0
## 500  500 Female  24          5 0
## 501  501 Female  23          5 6
## 502  502 Female  18          5 8
## 503  503 Female  21         4 10
## 504  504 Female  19          5 3
## 505  505   Male  19          5 6
## 506  506 Female  22          5 7
```

A tibble: 506 × 4

id_# gender age height_ft_in
1 1 Female 19 5 3
2 2 Female 19 6 8

3 3 Female 22 6 6
4 4 Male 19 6 0
5 5 Female 21 6 9
6 6 Male 19 6 2
7 7 Female 21 5 1
8 8 Female 21 5 6
9 9 Male 18 6 5
10 10 Female 18 5 5
496 more rows # Use `print(n = ...)` to see more rows “‘