

hw_02

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10/4/2021

1. (2 points) Fix each of the following common data frame subsetting errors:

```
#fix mtcars[mtcars$cyl < 6]
subset(mtcars, cyl < 6)
```

```
##           mpg cyl  disp  hp drat   wt  qsec vs am gear carb
## Datsun 710  22.8  4 108.0  93 3.85 2.320 18.61  1  1   4    1
## Merc 240D   24.4  4 146.7  62 3.69 3.190 20.00  1  0   4    2
## Merc 230    22.8  4 140.8  95 3.92 3.150 22.90  1  0   4    2
## Fiat 128    32.4  4  78.7  66 4.08 2.200 19.47  1  1   4    1
## Honda Civic 30.4  4  75.7  52 4.93 1.615 18.52  1  1   4    2
## Toyota Corolla 33.9  4  71.1  65 4.22 1.835 19.90  1  1   4    1
## Toyota Corona 21.5  4 120.1  97 3.70 2.465 20.01  1  0   3    1
## Fiat X1-9    27.3  4  79.0  66 4.08 1.935 18.90  1  1   4    1
## Porsche 914-2 26.0  4 120.3  91 4.43 2.140 16.70  0  1   5    2
## Lotus Europa 30.4  4  95.1 113 3.77 1.513 16.90  1  1   5    2
## Volvo 142E   21.4  4 121.0 109 4.11 2.780 18.60  1  1   4    2
```

```
mtcars[mtcars$cyl < 6, ]
```

```
##           mpg cyl  disp  hp drat   wt  qsec vs am gear carb
## Datsun 710  22.8  4 108.0  93 3.85 2.320 18.61  1  1   4    1
## Merc 240D   24.4  4 146.7  62 3.69 3.190 20.00  1  0   4    2
## Merc 230    22.8  4 140.8  95 3.92 3.150 22.90  1  0   4    2
## Fiat 128    32.4  4  78.7  66 4.08 2.200 19.47  1  1   4    1
## Honda Civic 30.4  4  75.7  52 4.93 1.615 18.52  1  1   4    2
## Toyota Corolla 33.9  4  71.1  65 4.22 1.835 19.90  1  1   4    1
## Toyota Corona 21.5  4 120.1  97 3.70 2.465 20.01  1  0   3    1
## Fiat X1-9    27.3  4  79.0  66 4.08 1.935 18.90  1  1   4    1
## Porsche 914-2 26.0  4 120.3  91 4.43 2.140 16.70  0  1   5    2
## Lotus Europa 30.4  4  95.1 113 3.77 1.513 16.90  1  1   5    2
## Volvo 142E   21.4  4 121.0 109 4.11 2.780 18.60  1  1   4    2
```

```
# mtcars[-1:3,]
mtcars[-c(1:3),]
```

```
##           mpg cyl  disp  hp drat   wt  qsec vs am gear carb
## Hornet 4 Drive 21.4  6 258.0 110 3.08 3.215 19.44  1  0   3    1
## Hornet Sportabout 18.7  8 360.0 175 3.15 3.440 17.02  0  0   3    2
## Valiant        18.1  6 225.0 105 2.76 3.460 20.22  1  0   3    1
```

```
## Duster 360      14.3   8 360.0 245 3.21 3.570 15.84 0 0   3   4
## Merc 240D      24.4   4 146.7  62 3.69 3.190 20.00 1 0   4   2
## Merc 230      22.8   4 140.8  95 3.92 3.150 22.90 1 0   4   2
## Merc 280      19.2   6 167.6 123 3.92 3.440 18.30 1 0   4   4
## Merc 280C     17.8   6 167.6 123 3.92 3.440 18.90 1 0   4   4
## Merc 450SE     16.4   8 275.8 180 3.07 4.070 17.40 0 0   3   3
## Merc 450SL     17.3   8 275.8 180 3.07 3.730 17.60 0 0   3   3
## Merc 450SLC    15.2   8 275.8 180 3.07 3.780 18.00 0 0   3   3
## Cadillac Fleetwood 10.4  8 472.0 205 2.93 5.250 17.98 0 0   3   4
## Lincoln Continental 10.4  8 460.0 215 3.00 5.424 17.82 0 0   3   4
## Chrysler Imperial 14.7  8 440.0 230 3.23 5.345 17.42 0 0   3   4
## Fiat 128      32.4   4  78.7  66 4.08 2.200 19.47 1 1   4   1
## Honda Civic   30.4   4  75.7  52 4.93 1.615 18.52 1 1   4   2
## Toyota Corolla 33.9   4  71.1  65 4.22 1.835 19.90 1 1   4   1
## Toyota Corona 21.5   4 120.1  97 3.70 2.465 20.01 1 0   3   1
## Dodge Challenger 15.5  8 318.0 150 2.76 3.520 16.87 0 0   3   2
## AMC Javelin   15.2   8 304.0 150 3.15 3.435 17.30 0 0   3   2
## Camaro Z28    13.3   8 350.0 245 3.73 3.840 15.41 0 0   3   4
## Pontiac Firebird 19.2  8 400.0 175 3.08 3.845 17.05 0 0   3   2
## Fiat X1-9     27.3   4  79.0  66 4.08 1.935 18.90 1 1   4   1
## Porsche 914-2 26.0   4 120.3  91 4.43 2.140 16.70 0 1   5   2
## Lotus Europa  30.4   4  95.1 113 3.77 1.513 16.90 1 1   5   2
## Ford Pantera L 15.8   8 351.0 264 4.22 3.170 14.50 0 1   5   4
## Ferrari Dino   19.7   6 145.0 175 3.62 2.770 15.50 0 1   5   6
## Maserati Bora  15.0   8 301.0 335 3.54 3.570 14.60 0 1   5   8
## Volvo 142E    21.4   4 121.0 109 4.11 2.780 18.60 1 1   4   2
```

```
# mtcars[mtcars$cyl = 8, ]
mtcars[mtcars$cyl == 8, ]
```

```
##      mpg cyl  disp  hp drat    wt  qsec vs am gear carb
## Hornet Sportabout 18.7   8 360.0 175 3.15 3.440 17.02 0 0   3   2
## Duster 360      14.3   8 360.0 245 3.21 3.570 15.84 0 0   3   4
## Merc 450SE       16.4   8 275.8 180 3.07 4.070 17.40 0 0   3   3
## Merc 450SL       17.3   8 275.8 180 3.07 3.730 17.60 0 0   3   3
## Merc 450SLC      15.2   8 275.8 180 3.07 3.780 18.00 0 0   3   3
## Cadillac Fleetwood 10.4  8 472.0 205 2.93 5.250 17.98 0 0   3   4
## Lincoln Continental 10.4  8 460.0 215 3.00 5.424 17.82 0 0   3   4
## Chrysler Imperial 14.7  8 440.0 230 3.23 5.345 17.42 0 0   3   4
## Dodge Challenger 15.5  8 318.0 150 2.76 3.520 16.87 0 0   3   2
## AMC Javelin      15.2   8 304.0 150 3.15 3.435 17.30 0 0   3   2
## Camaro Z28       13.3   8 350.0 245 3.73 3.840 15.41 0 0   3   4
## Pontiac Firebird 19.2  8 400.0 175 3.08 3.845 17.05 0 0   3   2
## Ford Pantera L   15.8   8 351.0 264 4.22 3.170 14.50 0 1   5   4
## Maserati Bora    15.0   8 301.0 335 3.54 3.570 14.60 0 1   5   8
```

```
# mtcars[mtcars$cyl == 4 | 6, ]
mtcars[mtcars$cyl != 8, ]
```

```
##      mpg cyl  disp  hp drat    wt  qsec vs am gear carb
## Mazda RX4      21.0   6 160.0 110 3.90 2.620 16.46 0 1   4   4
## Mazda RX4 Wag  21.0   6 160.0 110 3.90 2.875 17.02 0 1   4   4
## Datsun 710     22.8   4 108.0  93 3.85 2.320 18.61 1 1   4   1
```

```
## Hornet 4 Drive 21.4 6 258.0 110 3.08 3.215 19.44 1 0 3 1
## Valiant 18.1 6 225.0 105 2.76 3.460 20.22 1 0 3 1
## Merc 240D 24.4 4 146.7 62 3.69 3.190 20.00 1 0 4 2
## Merc 230 22.8 4 140.8 95 3.92 3.150 22.90 1 0 4 2
## Merc 280 19.2 6 167.6 123 3.92 3.440 18.30 1 0 4 4
## Merc 280C 17.8 6 167.6 123 3.92 3.440 18.90 1 0 4 4
## Fiat 128 32.4 4 78.7 66 4.08 2.200 19.47 1 1 4 1
## Honda Civic 30.4 4 75.7 52 4.93 1.615 18.52 1 1 4 2
## Toyota Corolla 33.9 4 71.1 65 4.22 1.835 19.90 1 1 4 1
## Toyota Corona 21.5 4 120.1 97 3.70 2.465 20.01 1 0 3 1
## Fiat X1-9 27.3 4 79.0 66 4.08 1.935 18.90 1 1 4 1
## Porsche 914-2 26.0 4 120.3 91 4.43 2.140 16.70 0 1 5 2
## Lotus Europa 30.4 4 95.1 113 3.77 1.513 16.90 1 1 5 2
## Ferrari Dino 19.7 6 145.0 175 3.62 2.770 15.50 0 1 5 6
## Volvo 142E 21.4 4 121.0 109 4.11 2.780 18.60 1 1 4 2
```

```
mtcars[mtcars$cyl == c(4, 6), ]
```

```
##      mpg cyl  disp  hp drat   wt  qsec vs am gear carb
## Mazda RX4 Wag 21.0 6 160.0 110 3.90 2.875 17.02 0 1 4 4
## Datsun 710 22.8 4 108.0 93 3.85 2.320 18.61 1 1 4 1
## Hornet 4 Drive 21.4 6 258.0 110 3.08 3.215 19.44 1 0 3 1
## Valiant 18.1 6 225.0 105 2.76 3.460 20.22 1 0 3 1
## Merc 230 22.8 4 140.8 95 3.92 3.150 22.90 1 0 4 2
## Merc 280 19.2 6 167.6 123 3.92 3.440 18.30 1 0 4 4
## Honda Civic 30.4 4 75.7 52 4.93 1.615 18.52 1 1 4 2
## Toyota Corona 21.5 4 120.1 97 3.70 2.465 20.01 1 0 3 1
## Porsche 914-2 26.0 4 120.3 91 4.43 2.140 16.70 0 1 5 2
## Ferrari Dino 19.7 6 145.0 175 3.62 2.770 15.50 0 1 5 6
```

2. (1 point) Why does the following code generated five missing values? `x = 1:5; x[NA]` NA in, NA out I created a vector using numbers 1-5 then applied the logical constant NA to vector X the above commands executed the equivalent of `is.na<- x` setting all elements of x (from first argument) to NA(with second argument)
3. (2 points) Why does `mtcars[1:15]` return an error? How does it differ from `mtcars[1:15,]`? the first argument `mtcars[1:15]` specifies the dataset but not the variable/observation. the first argument lacks a comma designating 1-15 as the specific observations or variables depending on placement. `mtcars[1:15,]` specifies selection of the first 15 observations of the mtcars dataset along with their corresponding variables
4. (2 points) Explain how does the following code work.

```
x = matrix(c(1:3, NA, 5:7, NA, NA), nrow = 3)
x[is.na(x)] = 0
```

In R a matrix must be a two dimensional data structure of homogenous elements. first x was set as a matrix with 3 rows and based on the elements provided the length was inferred by prioritizing the dimensions then the data. with 9 elements and three rows specified 3 columns was determined. because byrow wasnt specified (`byrow = TRUE`)the matrix was filled columnwise. then with `is.na(x)` all NA values of matrix X were designated as zero

5. (3 points) Load the Car Road Tests dataset (in R, run `data("mtcars")`, `?mtcars`), then add a new column named as `mpg_2` for the mtcars data frame. You can use `if ... else ...` or `ifelse` or any other

functions that can get the job done. This new column will categorize mpg into four categories using the thresholds below:mpg_2 (low- mpg<16, low_intermediate 16 <= mpg < 21, intermediate_high 21 <= mpg < 26,high 26 <= mpg)

```
mtcars |> dplyr::mutate(mpg_2 = dplyr::case_when(
  mtcars$mpg < 16 ~ "low",
  mtcars$mpg < 21 ~ "low_intermediate",
  mtcars$mpg < 25 ~ "intermediate_high",
  mtcars$mpg >= 26 ~ "high",
  TRUE ~ "A"
))
```

| | mpg | cyl | disp | hp | drat | wt | qsec | vs | am | gear | carb |
|------------------------|------|-----|-------|-----|------|-------------------|-------|----|----|------|------|
| ## Mazda RX4 | 21.0 | 6 | 160.0 | 110 | 3.90 | 2.620 | 16.46 | 0 | 1 | 4 | 4 |
| ## Mazda RX4 Wag | 21.0 | 6 | 160.0 | 110 | 3.90 | 2.875 | 17.02 | 0 | 1 | 4 | 4 |
| ## Datsun 710 | 22.8 | 4 | 108.0 | 93 | 3.85 | 2.320 | 18.61 | 1 | 1 | 4 | 1 |
| ## Hornet 4 Drive | 21.4 | 6 | 258.0 | 110 | 3.08 | 3.215 | 19.44 | 1 | 0 | 3 | 1 |
| ## Hornet Sportabout | 18.7 | 8 | 360.0 | 175 | 3.15 | 3.440 | 17.02 | 0 | 0 | 3 | 2 |
| ## Valiant | 18.1 | 6 | 225.0 | 105 | 2.76 | 3.460 | 20.22 | 1 | 0 | 3 | 1 |
| ## Duster 360 | 14.3 | 8 | 360.0 | 245 | 3.21 | 3.570 | 15.84 | 0 | 0 | 3 | 4 |
| ## Merc 240D | 24.4 | 4 | 146.7 | 62 | 3.69 | 3.190 | 20.00 | 1 | 0 | 4 | 2 |
| ## Merc 230 | 22.8 | 4 | 140.8 | 95 | 3.92 | 3.150 | 22.90 | 1 | 0 | 4 | 2 |
| ## Merc 280 | 19.2 | 6 | 167.6 | 123 | 3.92 | 3.440 | 18.30 | 1 | 0 | 4 | 4 |
| ## Merc 280C | 17.8 | 6 | 167.6 | 123 | 3.92 | 3.440 | 18.90 | 1 | 0 | 4 | 4 |
| ## Merc 450SE | 16.4 | 8 | 275.8 | 180 | 3.07 | 4.070 | 17.40 | 0 | 0 | 3 | 3 |
| ## Merc 450SL | 17.3 | 8 | 275.8 | 180 | 3.07 | 3.730 | 17.60 | 0 | 0 | 3 | 3 |
| ## Merc 450SLC | 15.2 | 8 | 275.8 | 180 | 3.07 | 3.780 | 18.00 | 0 | 0 | 3 | 3 |
| ## Cadillac Fleetwood | 10.4 | 8 | 472.0 | 205 | 2.93 | 5.250 | 17.98 | 0 | 0 | 3 | 4 |
| ## Lincoln Continental | 10.4 | 8 | 460.0 | 215 | 3.00 | 5.424 | 17.82 | 0 | 0 | 3 | 4 |
| ## Chrysler Imperial | 14.7 | 8 | 440.0 | 230 | 3.23 | 5.345 | 17.42 | 0 | 0 | 3 | 4 |
| ## Fiat 128 | 32.4 | 4 | 78.7 | 66 | 4.08 | 2.200 | 19.47 | 1 | 1 | 4 | 1 |
| ## Honda Civic | 30.4 | 4 | 75.7 | 52 | 4.93 | 1.615 | 18.52 | 1 | 1 | 4 | 2 |
| ## Toyota Corolla | 33.9 | 4 | 71.1 | 65 | 4.22 | 1.835 | 19.90 | 1 | 1 | 4 | 1 |
| ## Toyota Corona | 21.5 | 4 | 120.1 | 97 | 3.70 | 2.465 | 20.01 | 1 | 0 | 3 | 1 |
| ## Dodge Challenger | 15.5 | 8 | 318.0 | 150 | 2.76 | 3.520 | 16.87 | 0 | 0 | 3 | 2 |
| ## AMC Javelin | 15.2 | 8 | 304.0 | 150 | 3.15 | 3.435 | 17.30 | 0 | 0 | 3 | 2 |
| ## Camaro Z28 | 13.3 | 8 | 350.0 | 245 | 3.73 | 3.840 | 15.41 | 0 | 0 | 3 | 4 |
| ## Pontiac Firebird | 19.2 | 8 | 400.0 | 175 | 3.08 | 3.845 | 17.05 | 0 | 0 | 3 | 2 |
| ## Fiat X1-9 | 27.3 | 4 | 79.0 | 66 | 4.08 | 1.935 | 18.90 | 1 | 1 | 4 | 1 |
| ## Porsche 914-2 | 26.0 | 4 | 120.3 | 91 | 4.43 | 2.140 | 16.70 | 0 | 1 | 5 | 2 |
| ## Lotus Europa | 30.4 | 4 | 95.1 | 113 | 3.77 | 1.513 | 16.90 | 1 | 1 | 5 | 2 |
| ## Ford Pantera L | 15.8 | 8 | 351.0 | 264 | 4.22 | 3.170 | 14.50 | 0 | 1 | 5 | 4 |
| ## Ferrari Dino | 19.7 | 6 | 145.0 | 175 | 3.62 | 2.770 | 15.50 | 0 | 1 | 5 | 6 |
| ## Maserati Bora | 15.0 | 8 | 301.0 | 335 | 3.54 | 3.570 | 14.60 | 0 | 1 | 5 | 8 |
| ## Volvo 142E | 21.4 | 4 | 121.0 | 109 | 4.11 | 2.780 | 18.60 | 1 | 1 | 4 | 2 |
| ## | | | | | | | | | | | |
| ## | | | | | | mpg_2 | | | | | |
| ## Mazda RX4 | | | | | | intermediate_high | | | | | |
| ## Mazda RX4 Wag | | | | | | intermediate_high | | | | | |
| ## Datsun 710 | | | | | | intermediate_high | | | | | |
| ## Hornet 4 Drive | | | | | | intermediate_high | | | | | |
| ## Hornet Sportabout | | | | | | low_intermediate | | | | | |
| ## Valiant | | | | | | low_intermediate | | | | | |
| ## Duster 360 | | | | | | low | | | | | |
| ## Merc 240D | | | | | | intermediate_high | | | | | |

```
## Merc 230             intermediate_high
## Merc 280             low_intermediate
## Merc 280C            low_intermediate
## Merc 450SE           low_intermediate
## Merc 450SL           low_intermediate
## Merc 450SLC          low
## Cadillac Fleetwood   low
## Lincoln Continental   low
## Chrysler Imperial    low
## Fiat 128             high
## Honda Civic          high
## Toyota Corolla       high
## Toyota Corona        intermediate_high
## Dodge Challenger     low
## AMC Javelin          low
## Camaro Z28           low
## Pontiac Firebird     low_intermediate
## Fiat X1-9            high
## Porsche 914-2        high
## Lotus Europa         high
## Ford Pantera L       low
## Ferrari Dino         low_intermediate
## Maserati Bora        low
## Volvo 142E           intermediate_high
```

```
mtcars3 <- mtcars |> dplyr::mutate( mpg2= (mtcars$mpg))
mtcars3$mpg2 <-
  ifelse(mtcars3$mpg2 < 16, "low",
  ifelse(mtcars3$mpg2 < 20, "low_intermediate",
  ifelse(mtcars3$mpg2 < 25, "intermediate_high",
  ifelse(mtcars3$mpg2 < 34, "high", mtcars3$mpg2))))
mtcars3
```

| ## | mpg | cyl | disp | hp | drat | wt | qsec | vs | am | gear | carb |
|------------------------|------|-----|-------|-----|------|-------|-------|----|----|------|------|
| ## Mazda RX4 | 21.0 | 6 | 160.0 | 110 | 3.90 | 2.620 | 16.46 | 0 | 1 | 4 | 4 |
| ## Mazda RX4 Wag | 21.0 | 6 | 160.0 | 110 | 3.90 | 2.875 | 17.02 | 0 | 1 | 4 | 4 |
| ## Datsun 710 | 22.8 | 4 | 108.0 | 93 | 3.85 | 2.320 | 18.61 | 1 | 1 | 4 | 1 |
| ## Hornet 4 Drive | 21.4 | 6 | 258.0 | 110 | 3.08 | 3.215 | 19.44 | 1 | 0 | 3 | 1 |
| ## Hornet Sportabout | 18.7 | 8 | 360.0 | 175 | 3.15 | 3.440 | 17.02 | 0 | 0 | 3 | 2 |
| ## Valiant | 18.1 | 6 | 225.0 | 105 | 2.76 | 3.460 | 20.22 | 1 | 0 | 3 | 1 |
| ## Duster 360 | 14.3 | 8 | 360.0 | 245 | 3.21 | 3.570 | 15.84 | 0 | 0 | 3 | 4 |
| ## Merc 240D | 24.4 | 4 | 146.7 | 62 | 3.69 | 3.190 | 20.00 | 1 | 0 | 4 | 2 |
| ## Merc 230 | 22.8 | 4 | 140.8 | 95 | 3.92 | 3.150 | 22.90 | 1 | 0 | 4 | 2 |
| ## Merc 280 | 19.2 | 6 | 167.6 | 123 | 3.92 | 3.440 | 18.30 | 1 | 0 | 4 | 4 |
| ## Merc 280C | 17.8 | 6 | 167.6 | 123 | 3.92 | 3.440 | 18.90 | 1 | 0 | 4 | 4 |
| ## Merc 450SE | 16.4 | 8 | 275.8 | 180 | 3.07 | 4.070 | 17.40 | 0 | 0 | 3 | 3 |
| ## Merc 450SL | 17.3 | 8 | 275.8 | 180 | 3.07 | 3.730 | 17.60 | 0 | 0 | 3 | 3 |
| ## Merc 450SLC | 15.2 | 8 | 275.8 | 180 | 3.07 | 3.780 | 18.00 | 0 | 0 | 3 | 3 |
| ## Cadillac Fleetwood | 10.4 | 8 | 472.0 | 205 | 2.93 | 5.250 | 17.98 | 0 | 0 | 3 | 4 |
| ## Lincoln Continental | 10.4 | 8 | 460.0 | 215 | 3.00 | 5.424 | 17.82 | 0 | 0 | 3 | 4 |
| ## Chrysler Imperial | 14.7 | 8 | 440.0 | 230 | 3.23 | 5.345 | 17.42 | 0 | 0 | 3 | 4 |
| ## Fiat 128 | 32.4 | 4 | 78.7 | 66 | 4.08 | 2.200 | 19.47 | 1 | 1 | 4 | 1 |
| ## Honda Civic | 30.4 | 4 | 75.7 | 52 | 4.93 | 1.615 | 18.52 | 1 | 1 | 4 | 2 |
| ## Toyota Corolla | 33.9 | 4 | 71.1 | 65 | 4.22 | 1.835 | 19.90 | 1 | 1 | 4 | 1 |

| | | | | | | | | | | | |
|------------------------|------|---|-------|-----|------|-------------------|-------|---|---|---|---|
| ## Toyota Corona | 21.5 | 4 | 120.1 | 97 | 3.70 | 2.465 | 20.01 | 1 | 0 | 3 | 1 |
| ## Dodge Challenger | 15.5 | 8 | 318.0 | 150 | 2.76 | 3.520 | 16.87 | 0 | 0 | 3 | 2 |
| ## AMC Javelin | 15.2 | 8 | 304.0 | 150 | 3.15 | 3.435 | 17.30 | 0 | 0 | 3 | 2 |
| ## Camaro Z28 | 13.3 | 8 | 350.0 | 245 | 3.73 | 3.840 | 15.41 | 0 | 0 | 3 | 4 |
| ## Pontiac Firebird | 19.2 | 8 | 400.0 | 175 | 3.08 | 3.845 | 17.05 | 0 | 0 | 3 | 2 |
| ## Fiat X1-9 | 27.3 | 4 | 79.0 | 66 | 4.08 | 1.935 | 18.90 | 1 | 1 | 4 | 1 |
| ## Porsche 914-2 | 26.0 | 4 | 120.3 | 91 | 4.43 | 2.140 | 16.70 | 0 | 1 | 5 | 2 |
| ## Lotus Europa | 30.4 | 4 | 95.1 | 113 | 3.77 | 1.513 | 16.90 | 1 | 1 | 5 | 2 |
| ## Ford Pantera L | 15.8 | 8 | 351.0 | 264 | 4.22 | 3.170 | 14.50 | 0 | 1 | 5 | 4 |
| ## Ferrari Dino | 19.7 | 6 | 145.0 | 175 | 3.62 | 2.770 | 15.50 | 0 | 1 | 5 | 6 |
| ## Maserati Bora | 15.0 | 8 | 301.0 | 335 | 3.54 | 3.570 | 14.60 | 0 | 1 | 5 | 8 |
| ## Volvo 142E | 21.4 | 4 | 121.0 | 109 | 4.11 | 2.780 | 18.60 | 1 | 1 | 4 | 2 |
| ## | | | | | | mpg2 | | | | | |
| ## Mazda RX4 | | | | | | intermediate_high | | | | | |
| ## Mazda RX4 Wag | | | | | | intermediate_high | | | | | |
| ## Datsun 710 | | | | | | intermediate_high | | | | | |
| ## Hornet 4 Drive | | | | | | intermediate_high | | | | | |
| ## Hornet Sportabout | | | | | | low_intermediate | | | | | |
| ## Valiant | | | | | | low_intermediate | | | | | |
| ## Duster 360 | | | | | | low | | | | | |
| ## Merc 240D | | | | | | intermediate_high | | | | | |
| ## Merc 230 | | | | | | intermediate_high | | | | | |
| ## Merc 280 | | | | | | low_intermediate | | | | | |
| ## Merc 280C | | | | | | low_intermediate | | | | | |
| ## Merc 450SE | | | | | | low_intermediate | | | | | |
| ## Merc 450SL | | | | | | low_intermediate | | | | | |
| ## Merc 450SLC | | | | | | low | | | | | |
| ## Cadillac Fleetwood | | | | | | low | | | | | |
| ## Lincoln Continental | | | | | | low | | | | | |
| ## Chrysler Imperial | | | | | | low | | | | | |
| ## Fiat 128 | | | | | | high | | | | | |
| ## Honda Civic | | | | | | high | | | | | |
| ## Toyota Corolla | | | | | | high | | | | | |
| ## Toyota Corona | | | | | | intermediate_high | | | | | |
| ## Dodge Challenger | | | | | | low | | | | | |
| ## AMC Javelin | | | | | | low | | | | | |
| ## Camaro Z28 | | | | | | low | | | | | |
| ## Pontiac Firebird | | | | | | low_intermediate | | | | | |
| ## Fiat X1-9 | | | | | | high | | | | | |
| ## Porsche 914-2 | | | | | | high | | | | | |
| ## Lotus Europa | | | | | | high | | | | | |
| ## Ford Pantera L | | | | | | low | | | | | |
| ## Ferrari Dino | | | | | | low_intermediate | | | | | |
| ## Maserati Bora | | | | | | low | | | | | |
| ## Volvo 142E | | | | | | intermediate_high | | | | | |