Camionetas

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```
library(readr)
camionetas <- read_csv("~/Diplomatura UNPA-YPF/Módulo III/Clase 10 Abril/camionetas.csv")
```

```
## New names:
## Rows: 32 Columns: 17
## -- Column specification
## -------------------------------------------------------- Delimiter: "," chr
## (1): ...1 dbl (16): mpg, cyl, disp, hp, drat, wt, qsec, vs, am, gear, carb,
## ...13, ......
## 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.
## * `` -> `...1`
## * `` -> `...13`
## * `` -> `...14`
## * `` -> `...15`
## * `` -> `...16`
## * `` -> `...17`
```

```
View(camionetas)
```

```
head (camionetas$drat)
```

```
## [1]   3   3  93 110 175 105
```

```
head(camionetas)
```

```
## # A tibble: 6 x 17
##   ...1     mpg   cyl  disp    hp  drat    wt  qsec    vs    am  gear  carb ...13
##   <chr>  <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl>
## 1 Mazda~    21     6   160   110     3     9     2    62    16    46     0     1
## 2 Mazda~    21     6   160   110     3     9     2   875    17     2     0     1
## 3 Datsu~    22     8     4   108    93     3    85     2    32    18    61     1
## 4 Horne~    21     4     6   258   110     3     8     3   215    19    44     1
## 5 Horne~    18     7     8   360   175     3    15     3    44    17     2     0
## 6 Chen ~    18     1     6   225   105     2    76     3    46    20    22     1
## # i 4 more variables: ...14 <dbl>, ...15 <dbl>, ...16 <dbl>, ...17 <dbl>
```

```
tail(camionetas$drat)
```

```
## [1]  91   1 264 175   3 109
```

```r
tail(camionetas)
```

```
## # A tibble: 6 x 17
##   ...1     mpg   cyl  disp    hp  drat    wt  qsec    vs    am  gear  carb ...13
##   <chr>  <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl>
## 1 Porsc~    26    12   120     3    91     4    43     2    14    16     7     0
## 2 Lotus~    30     4     4    95     1   113     3    77     1   513    16     9
## 3 Ford ~    15     8     8   351   264     4    22     3    17    14     5     0
## 4 RAM       19     7     6   145   175     3    62     2    77    15     5     0
## 5 Ford ~    15     8   301   335     3    54     3    57    14     6     0     1
## 6 Volvo~    21     4     4   121   109     4    11     2    78    18     6     1
## # i 4 more variables: ...14 <dbl>, ...15 <dbl>, ...16 <dbl>, ...17 <dbl>
```

```r
mean(camionetas$mpg)
```

```
## [1] 19.6875
```

```r
mean(camionetas$cyl)
```

```
## [1] 5.09375
```

```r
class(camionetas)
```

```
## [1] "spec_tbl_df" "tbl_df"      "tbl"         "data.frame"
```

```r
library(readr)
camionetas <- read_csv("~/Diplomatura UNPA-YPF/Módulo III/Clase 10 Abril/camionetas.csv")
```

```
## New names:
## Rows: 32 Columns: 17
## -- Column specification
## -------------------------------------------------------- Delimiter: "," chr
## (1): ...1 dbl (16): mpg, cyl, disp, hp, drat, wt, qsec, vs, am, gear, carb,
## ...13, ......
## 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.
## * `` -> `...1`
## * `` -> `...13`
## * `` -> `...14`
## * `` -> `...15`
## * `` -> `...16`
## * `` -> `...17`
```

```r
View(camionetas)
```

```r
class(camionetas)
```

```
## [1] "spec_tbl_df" "tbl_df"      "tbl"         "data.frame"
```

```r
camionetas <- na.omit(camionetas)
camionetas
```

```
## # A tibble: 10 x 17
##    ...1    mpg   cyl  disp    hp  drat    wt  qsec    vs    am  gear  carb ...13
##    <chr> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl>
##  1 Merc~    22     8     4   140     8    95     3    92     3    15    22     9
##  2 Merc~    19     2     6   167     6   123     3    92     3    44    18     3
##  3 Merc~    17     8     6   167     6   123     3    92     3    44    18     9
##  4 Merc~    16     4     8   275     8   180     3     7     4     7    17     4
##  5 Merc~    17     3     8   275     8   180     3     7     3    73    17     6
##  6 Fiat~    32     4     4    78     7    66     4     8     2     2    19    47
##  7 Hond~    30     6     4    75     7    52     4    93     1   615    18    52
##  8 Toyo~    33     9     4    71     1    65     4    22     1   835    19     9
##  9 Toyo~    21     5     4   120     1    97     3     7     2   465    20     1
## 10 Lotu~    30     4     4    95     1   113     3    77     1   513    16     9
## # i 4 more variables: ...14 <dbl>, ...15 <dbl>, ...16 <dbl>, ...17 <dbl>
```

```r
mean(camionetas$mpg)
```

```
## [1] 23.7
```

```r
camionetas1 <- camionetas[,c(2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15)]

camionetas1
```

```
## # A tibble: 10 x 14
##      mpg   cyl  disp    hp  drat    wt  qsec    vs    am  gear  carb ...13 ...14
##    <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl>
##  1    22     8     4   140     8    95     3    92     3    15    22     9     1
##  2    19     2     6   167     6   123     3    92     3    44    18     3     1
##  3    17     8     6   167     6   123     3    92     3    44    18     9     1
##  4    16     4     8   275     8   180     3     7     4     7    17     4     0
##  5    17     3     8   275     8   180     3     7     3    73    17     6     0
##  6    32     4     4    78     7    66     4     8     2     2    19    47     1
##  7    30     6     4    75     7    52     4    93     1   615    18    52     1
##  8    33     9     4    71     1    65     4    22     1   835    19     9     1
##  9    21     5     4   120     1    97     3     7     2   465    20     1     1
## 10    30     4     4    95     1   113     3    77     1   513    16     9     1
## # i 1 more variable: ...15 <dbl>
```

```r
sapply(camionetas1, function(x) mean(x))
```

```
##   mpg   cyl  disp    hp  drat    wt  qsec    vs    am  gear  carb ...13 ...14
##  23.7   5.3   5.2 146.3   5.3 109.4   3.3  49.7   2.3 261.3  18.4  14.9   0.8
## ...15
##   0.4
```

```r
mean(camionetas$...16, na.rm = T)
```

```
## [1] 3.8
```

```r
mean(camionetas$...17, na.rm = T)
```

```
## [1] 2.3
```

```r
camionetas2 <- camionetas[,c(2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15)]

camionetas2
```

```
## # A tibble: 10 x 14
##      mpg   cyl  disp    hp  drat    wt  qsec    vs    am  gear  carb ...13 ...14
##    <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl>
##  1    22     8     4   140     8    95     3    92     3    15    22     9     1
##  2    19     2     6   167     6   123     3    92     3    44    18     3     1
##  3    17     8     6   167     6   123     3    92     3    44    18     9     1
##  4    16     4     8   275     8   180     3     7     4     7    17     4     0
##  5    17     3     8   275     8   180     3     7     3    73    17     6     0
##  6    32     4     4    78     7    66     4     8     2     2    19    47     1
##  7    30     6     4    75     7    52     4    93     1   615    18    52     1
##  8    33     9     4    71     1    65     4    22     1   835    19     9     1
##  9    21     5     4   120     1    97     3     7     2   465    20     1     1
## 10    30     4     4    95     1   113     3    77     1   513    16     9     1
## # i 1 more variable: ...15 <dbl>
```

```r
sapply(camionetas2, function(x) sd(x))
```

```
##         mpg         cyl        disp          hp        drat          wt
##   6.7995098   2.3593784   1.6865481  76.5695762   3.0568684  44.5500966
##        qsec          vs          am        gear        carb       ...13
##   0.4830459  42.1163732   1.0593499 312.9689548   1.7126977  18.4959455
##       ...14       ...15
##   0.4216370   0.5163978
```

```r
sd(camionetas$...16, na.rm = T)
```

```
## [1] 0.6324555
```

```r
sd(camionetas$...17, na.rm = T)
```

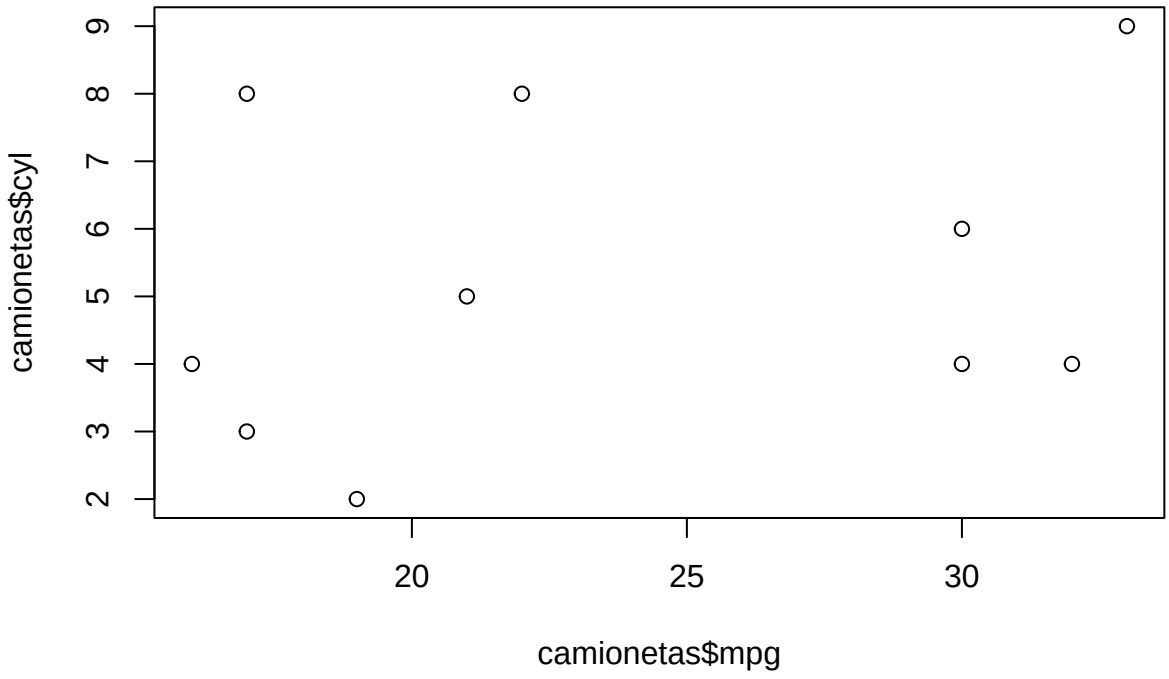
```
## [1] 1.159502
```

```r
summary(camionetas)
```

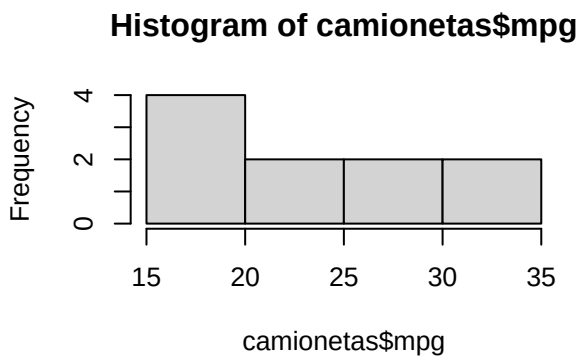
```
##      ...1                mpg             cyl             disp             hp
##  Length:10          Min.   :16.0   Min.   :2.0   Min.   :4.0   Min.   : 71.00
##  Class :character   1st Qu.:17.5   1st Qu.:4.0   1st Qu.:4.0   1st Qu.: 82.25
##  Mode  :character   Median :21.5   Median :4.5   Median :4.0   Median :130.00
##                     Mean   :23.7   Mean   :5.3   Mean   :5.2   Mean   :146.30
##                     3rd Qu.:30.0   3rd Qu.:7.5   3rd Qu.:6.0   3rd Qu.:167.00
##                     Max.   :33.0   Max.   :9.0   Max.   :8.0   Max.   :275.00
```

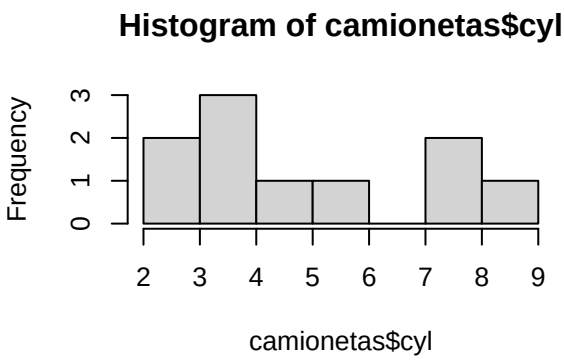
```
##       drat            wt             qsec            vs              am
##  Min.   :1.00   Min.   : 52.00   Min.   :3.00   Min.   : 7.00   Min.   :1.00
##  1st Qu.:2.25   1st Qu.: 73.25   1st Qu.:3.00   1st Qu.: 7.25   1st Qu.:1.25
##  Median :6.50   Median :105.00   Median :3.00   Median :49.50   Median :2.50
##  Mean   :5.30   Mean   :109.40   Mean   :3.30   Mean   :49.70   Mean   :2.30
##  3rd Qu.:7.75   3rd Qu.:123.00   3rd Qu.:3.75   3rd Qu.:92.00   3rd Qu.:3.00
##  Max.   :8.00   Max.   :180.00   Max.   :4.00   Max.   :93.00   Max.   :4.00
##       gear            carb          ...13          ...14          ...15
##  Min.   :  2.00   Min.   :16.00   Min.   : 1.0   Min.   :0.0   Min.   :0.0
##  1st Qu.: 22.25   1st Qu.:17.25   1st Qu.: 4.5   1st Qu.:1.0   1st Qu.:0.0
##  Median : 58.50   Median :18.00   Median : 9.0   Median :1.0   Median :0.0
##  Mean   :261.30   Mean   :18.40   Mean   :14.9   Mean   :0.8   Mean   :0.4
##  3rd Qu.:501.00   3rd Qu.:19.00   3rd Qu.: 9.0   3rd Qu.:1.0   3rd Qu.:1.0
##  Max.   :835.00   Max.   :22.00   Max.   :52.0   Max.   :1.0   Max.   :1.0
##      ...16          ...17
##  Min.   :3.00   Min.   :1.00
##  1st Qu.:3.25   1st Qu.:1.25
##  Median :4.00   Median :2.00
##  Mean   :3.80   Mean   :2.30
##  3rd Qu.:4.00   3rd Qu.:3.00
##  Max.   :5.00   Max.   :4.00
```

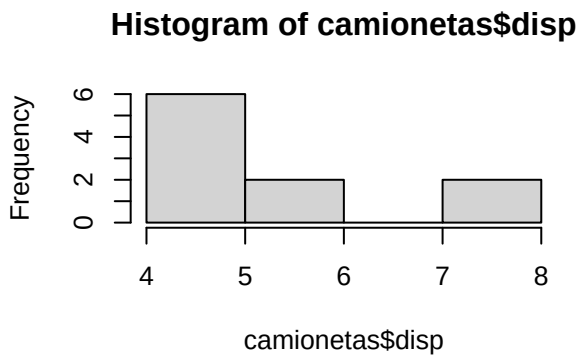
```
plot(camionetas$mpg, camionetas$cyl)
```

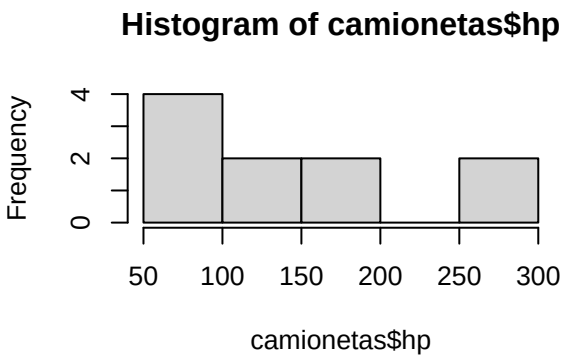


```r
par(mfrow=c(2,2))
hist(camionetas$mpg)
hist(camionetas$cyl)
hist(camionetas$disp)
hist(camionetas$hp)
```

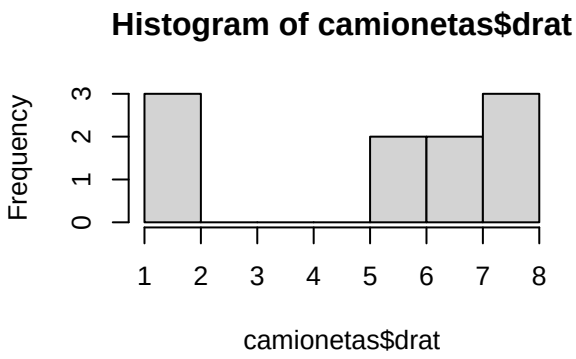


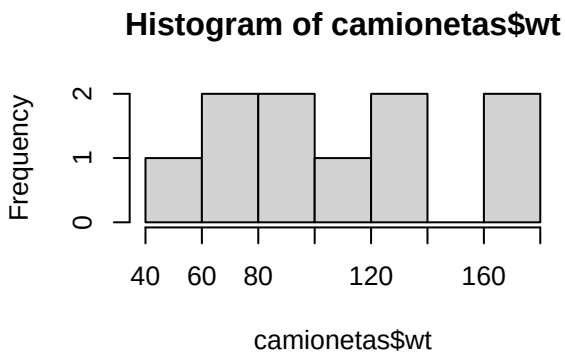


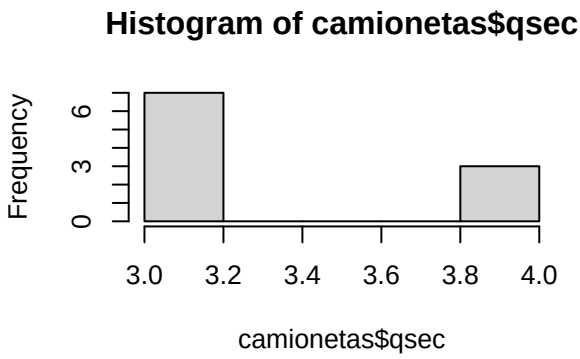


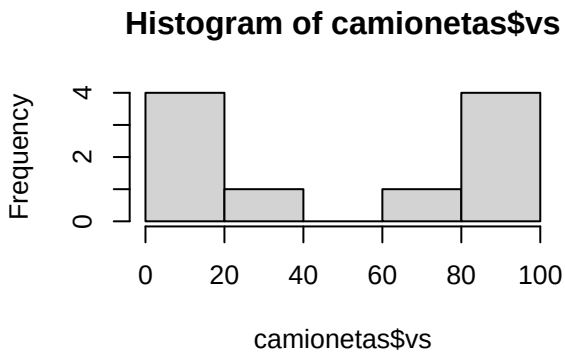



```r
hist(camionetas$drat)
hist(camionetas$wt)
hist(camionetas$qsec)
hist(camionetas$vs)
```

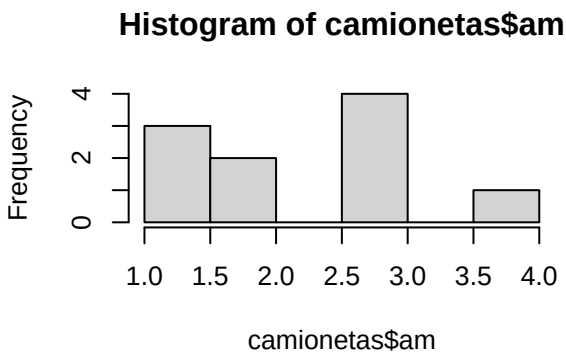


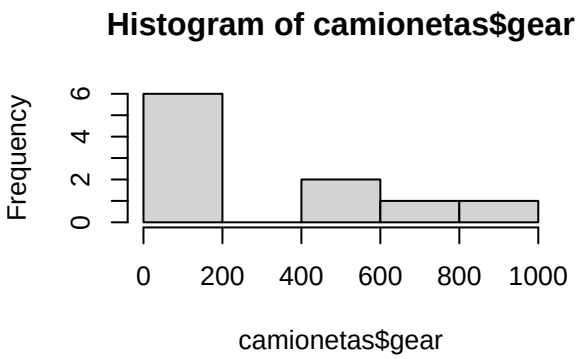


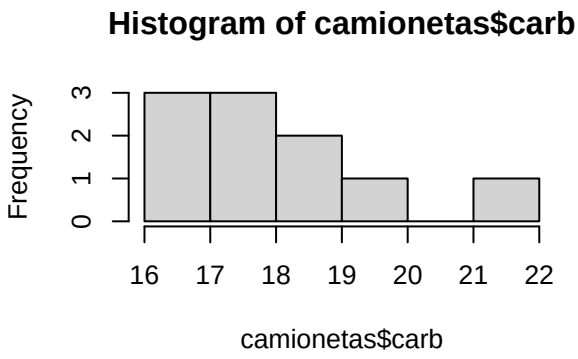


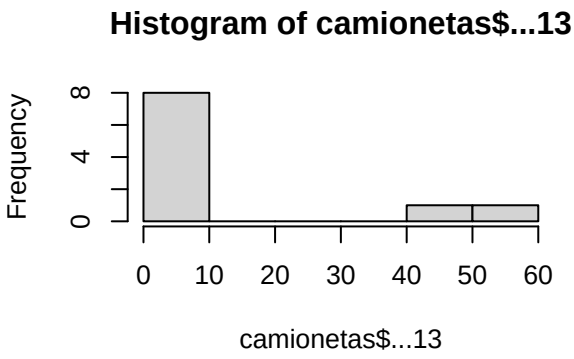



```
hist(camionetas$am)
hist(camionetas$gear)
hist(camionetas$carb)
hist(camionetas$...13)
```

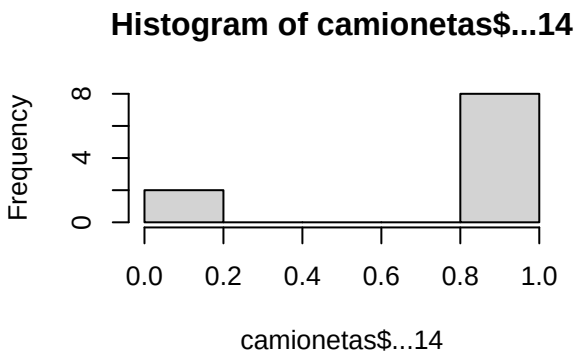


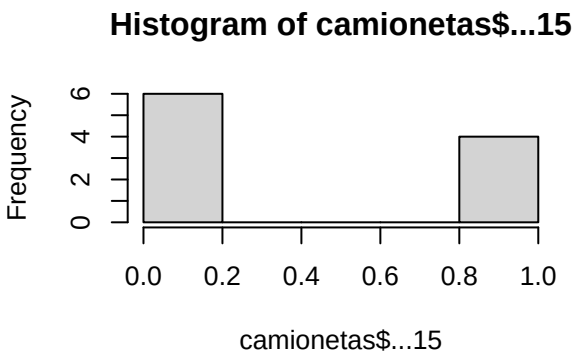


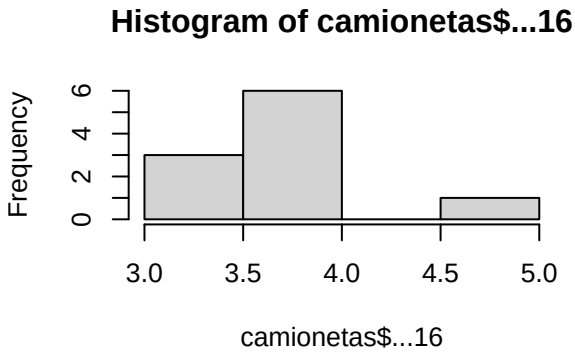


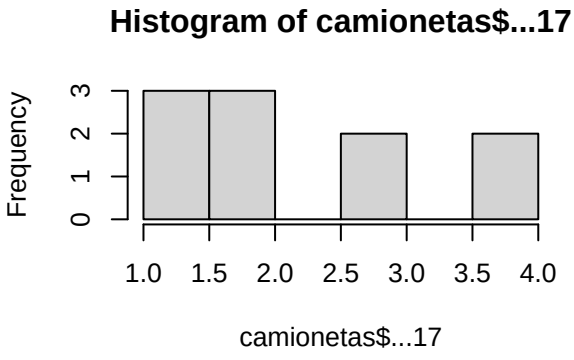



```
hist(camionetas$...14)
hist(camionetas$...15)
hist(camionetas$...16)
hist(camionetas$...17)
```

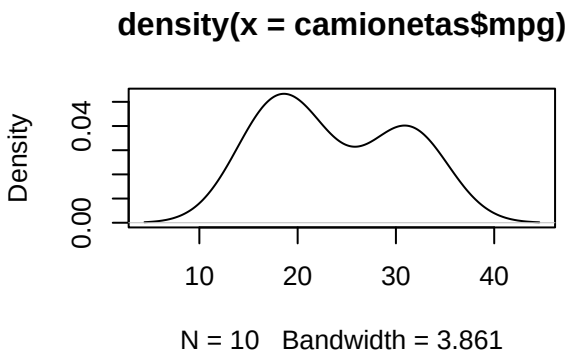


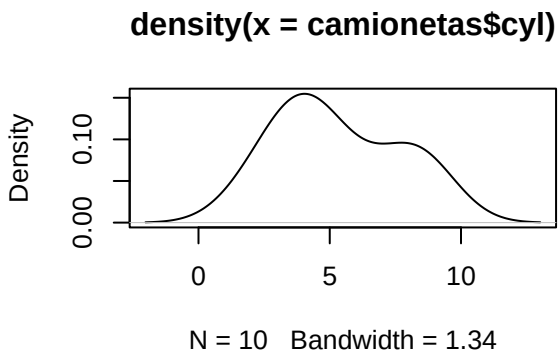


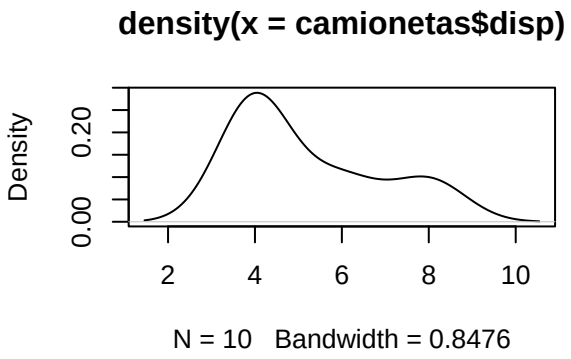


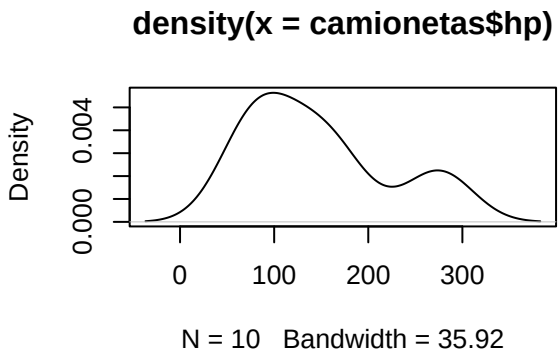



```
par(mfrow=c(2,2))
plot(density(camionetas$mpg))
plot(density(camionetas$cyl))
plot(density(camionetas$disp))
plot(density(camionetas$hp))
```

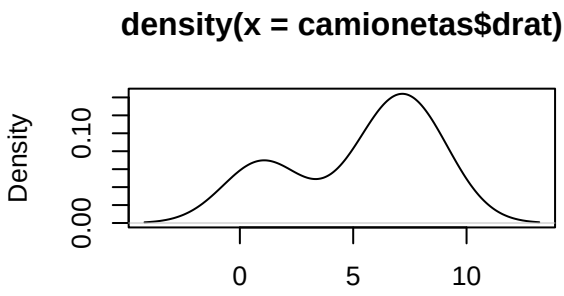


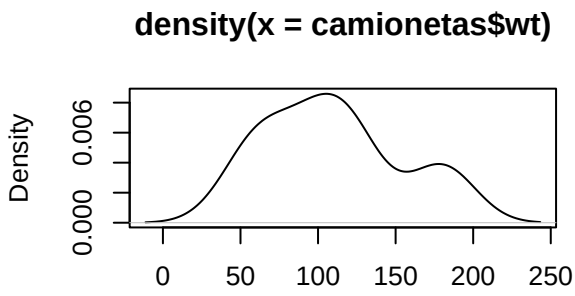


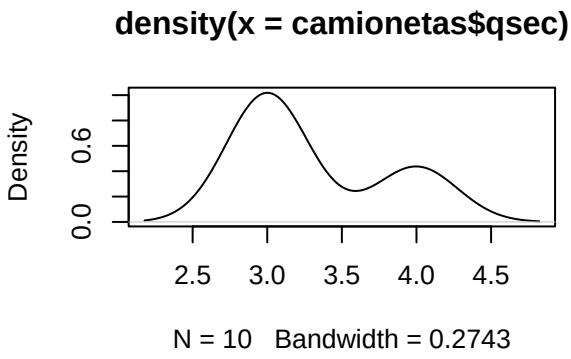


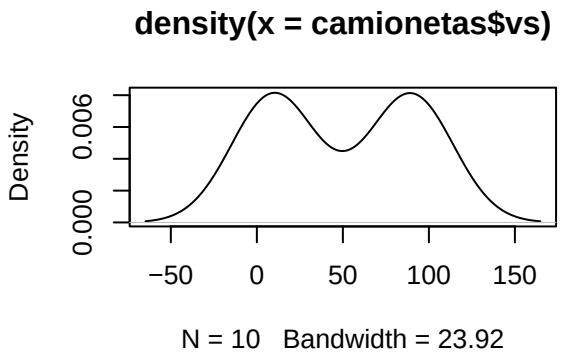



```
plot(density(camionetas$drat))
plot(density(camionetas$wt))
plot(density(camionetas$qsec))
plot(density(camionetas$vs))
```

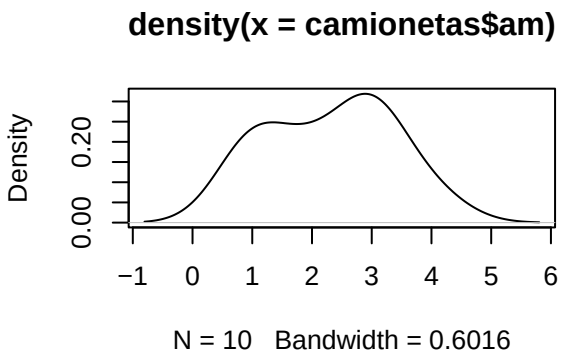


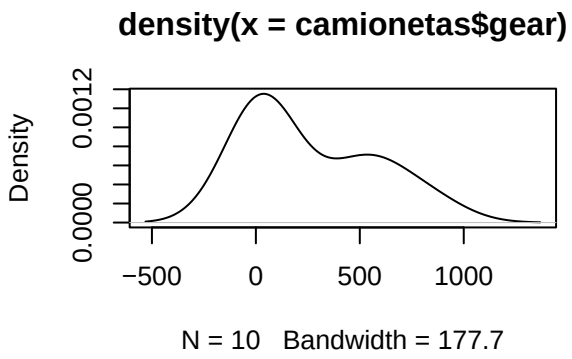


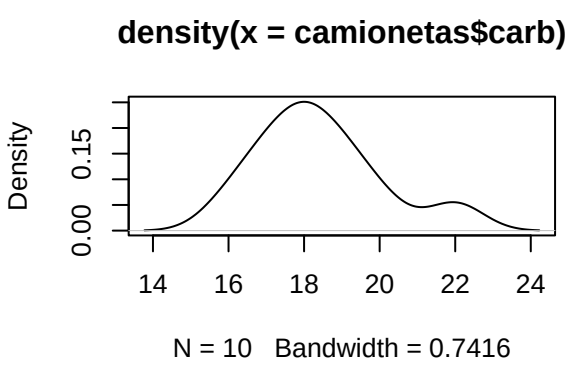


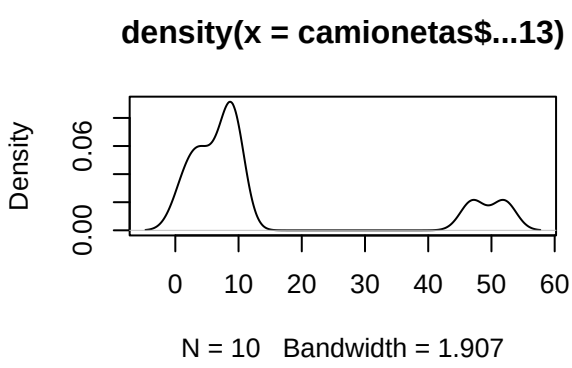



```
plot(density(camionetas$am))
plot(density(camionetas$gear))
plot(density(camionetas$carb))
plot(density(camionetas$...13))
```

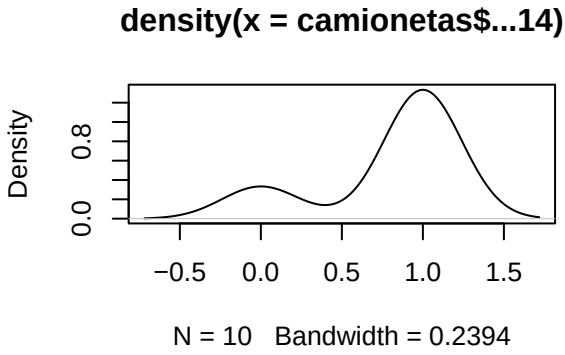


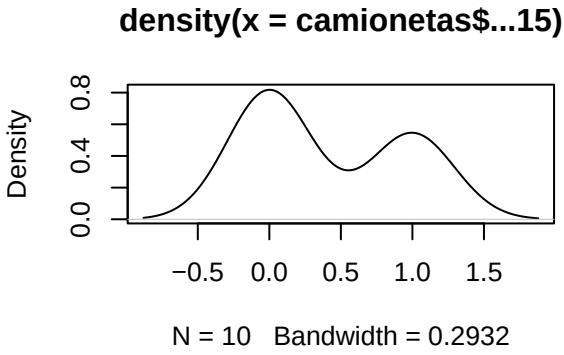


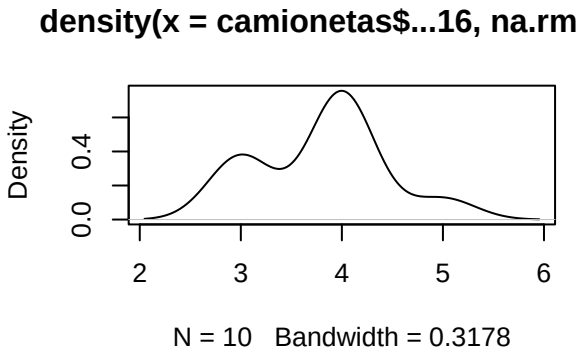


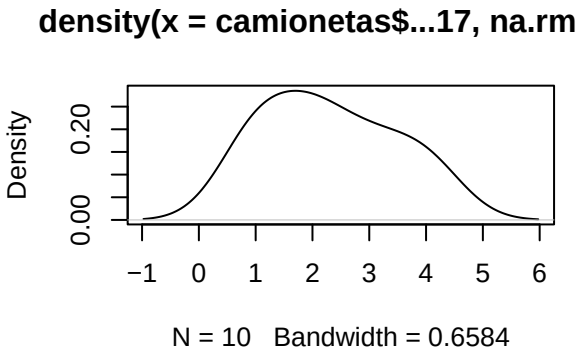



```
plot(density(camionetas$...14))
plot(density(camionetas$...15))
plot(density(camionetas$...16, na.rm = T))
plot(density(camionetas$...17, na.rm = T))
```

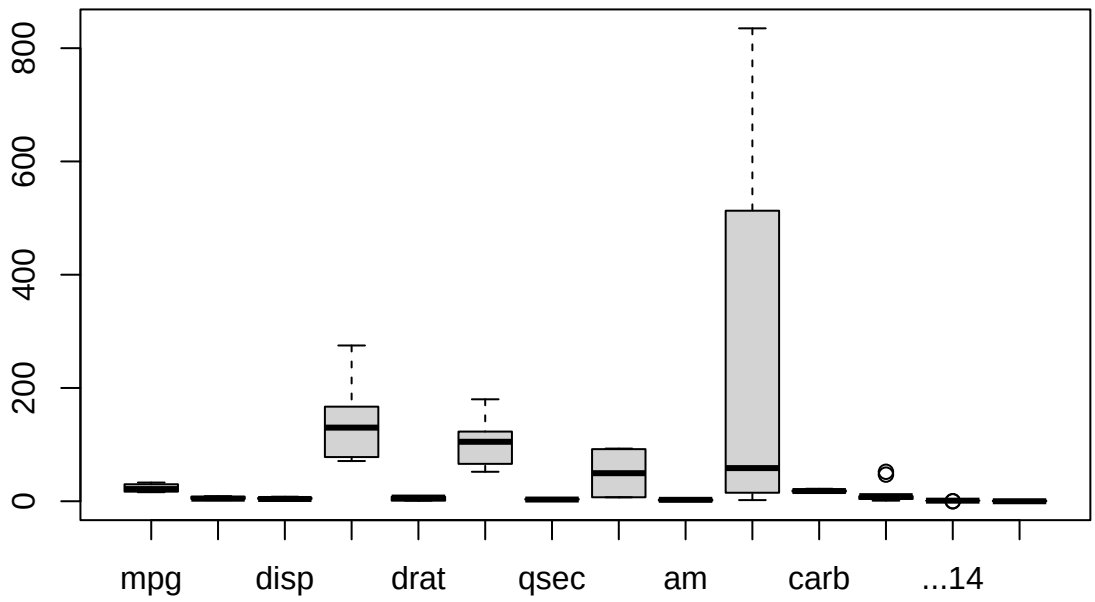




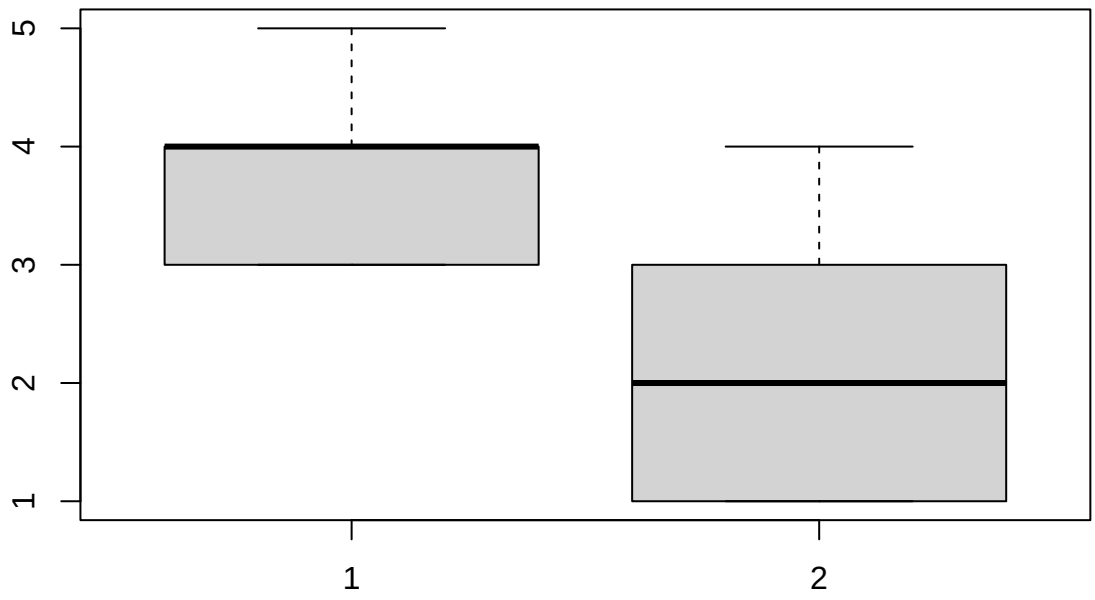




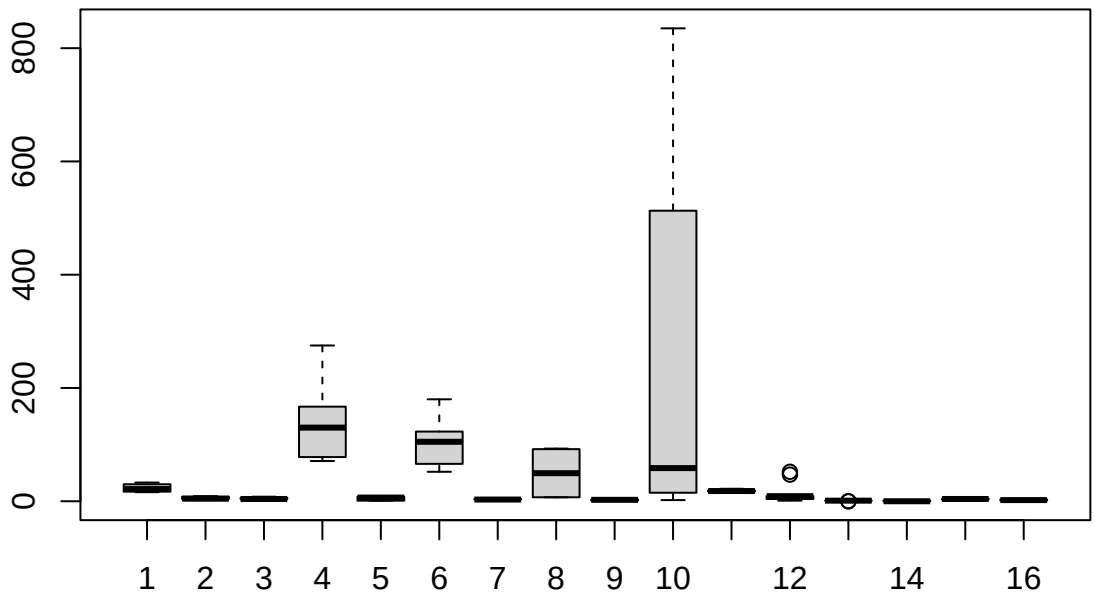

```
boxplot(camionetas2)
```




```
boxplot(camionetas$...16, camionetas$...17)
```

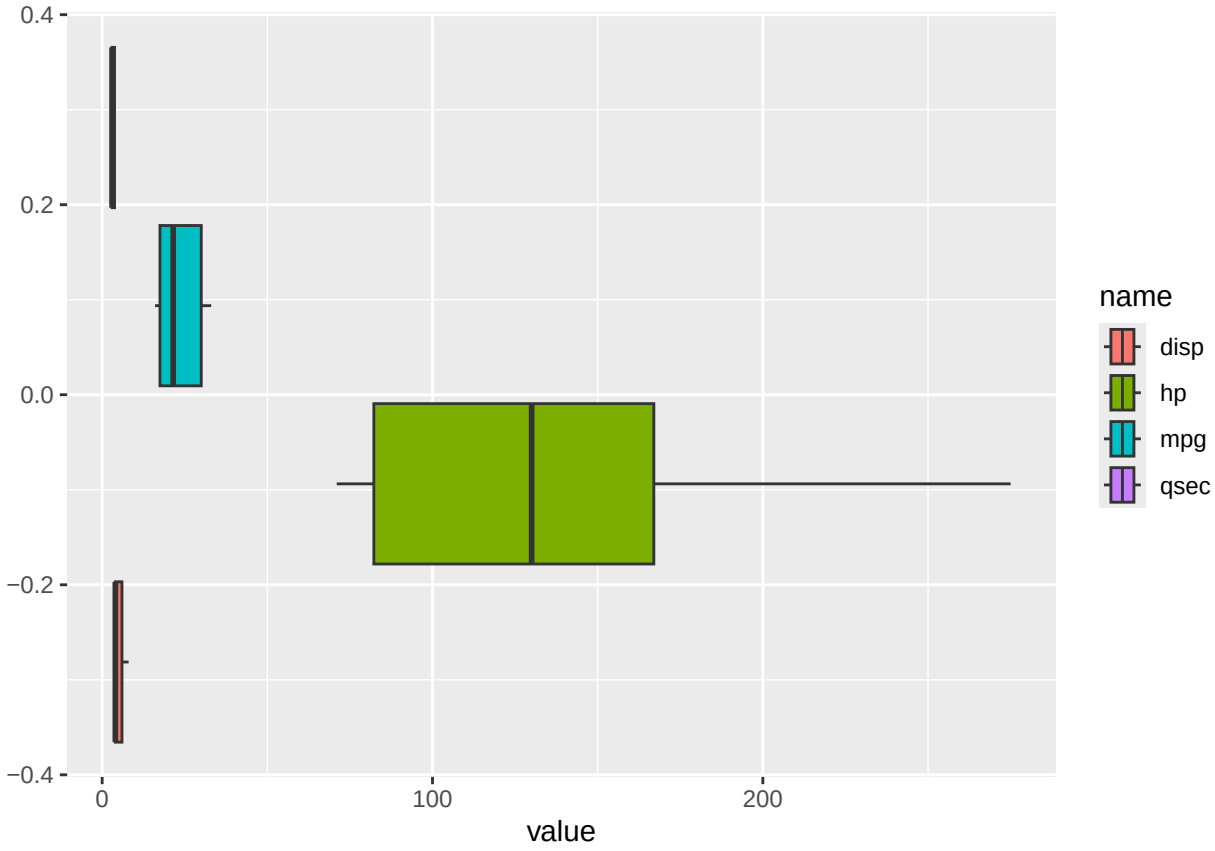



```
boxplot(camionetas$mpg, camionetas$cyl, camionetas$disp, camionetas$hp, camionetas$drat, camionetas$wt,
```

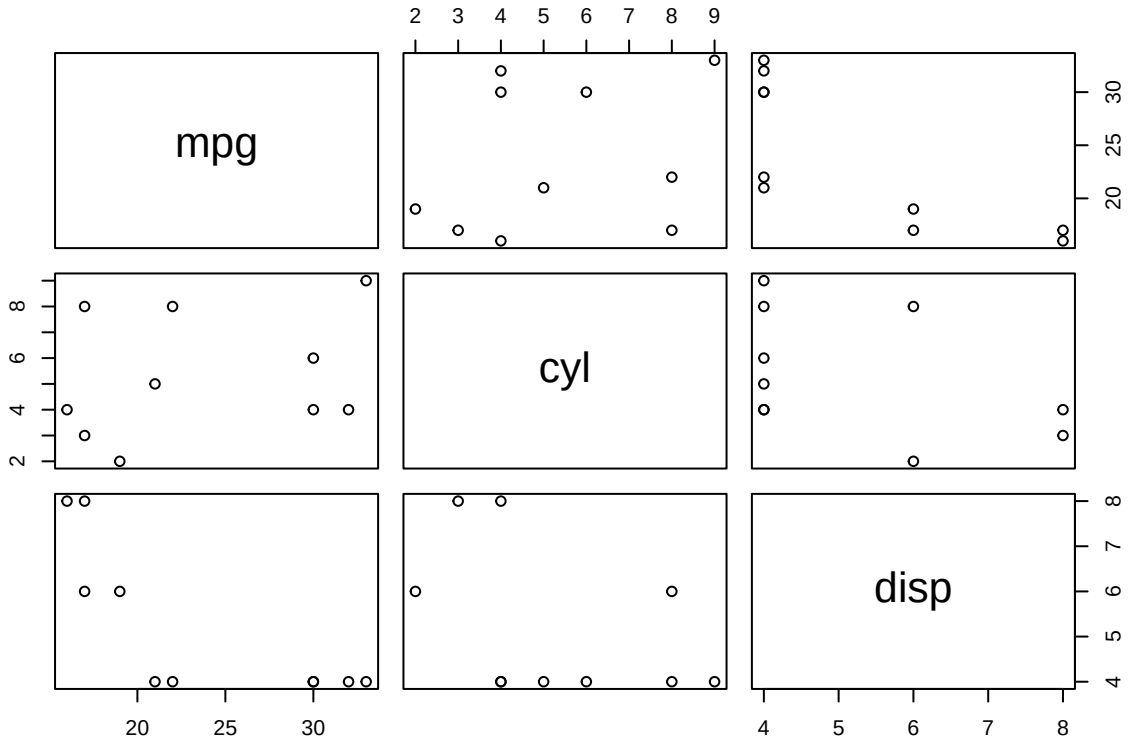



```
library(tidyr)
mtcars_long <- pivot_longer(camionetas, c("mpg", "disp", "hp", "qsec"))
```

```
library(ggplot2)
ggplot(mtcars_long, aes(x = value, fill= name)) + geom_boxplot()
```




```
plot(camionetas[, 2:4])
```




```
library(GGally)
```

```
## Registered S3 method overwritten by 'GGally':
##   method from
##   +.gg   ggplot2
```