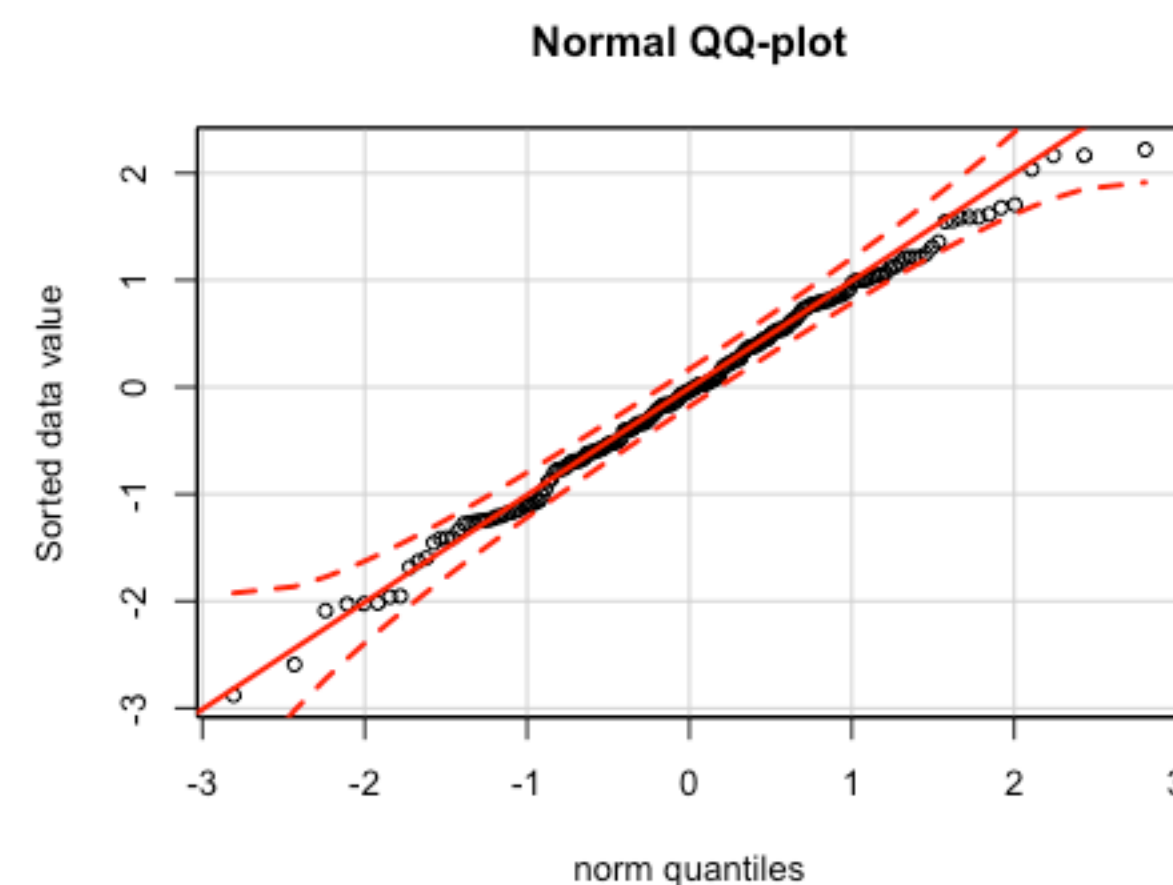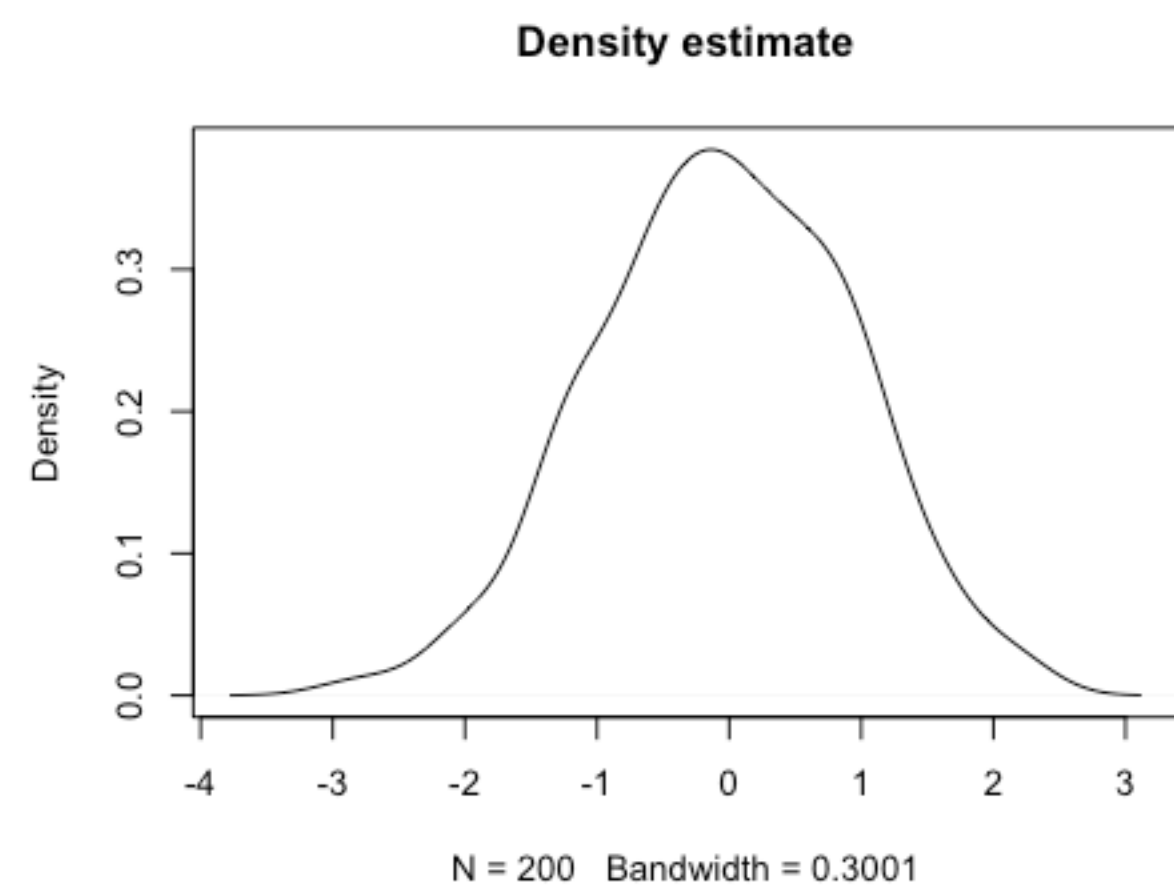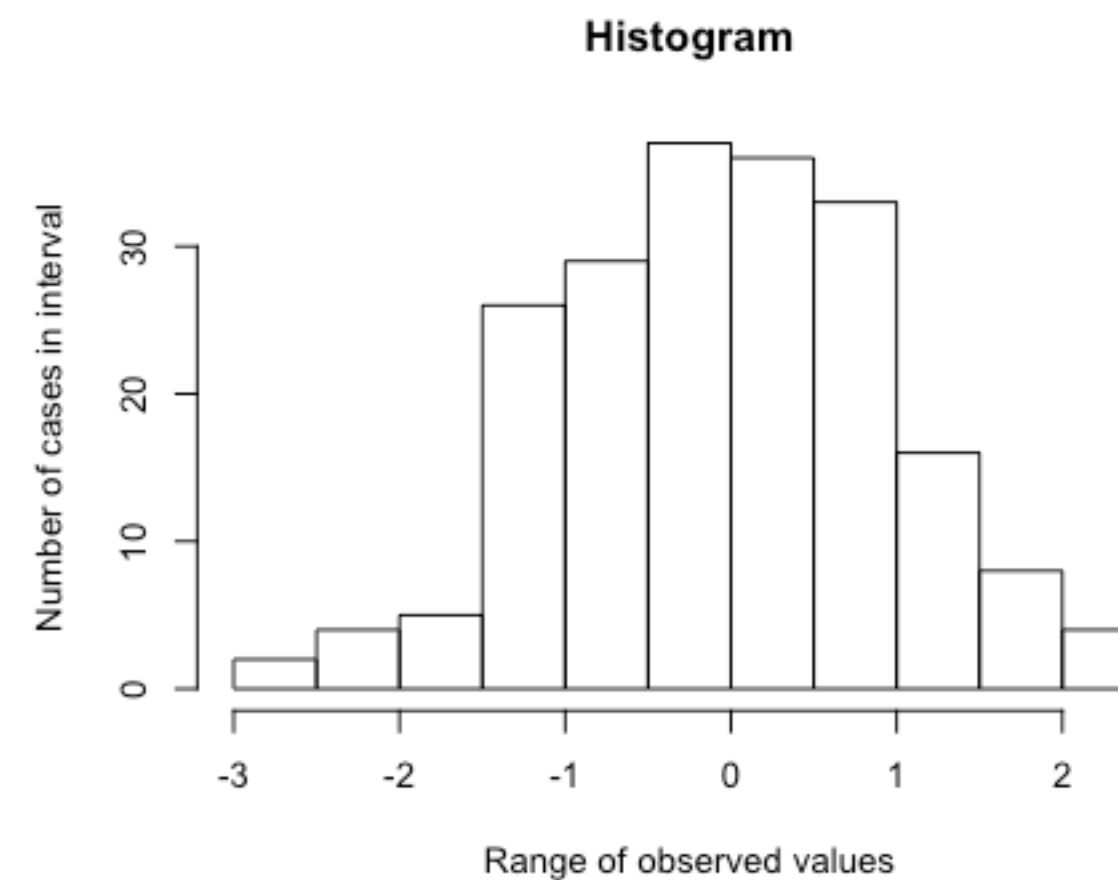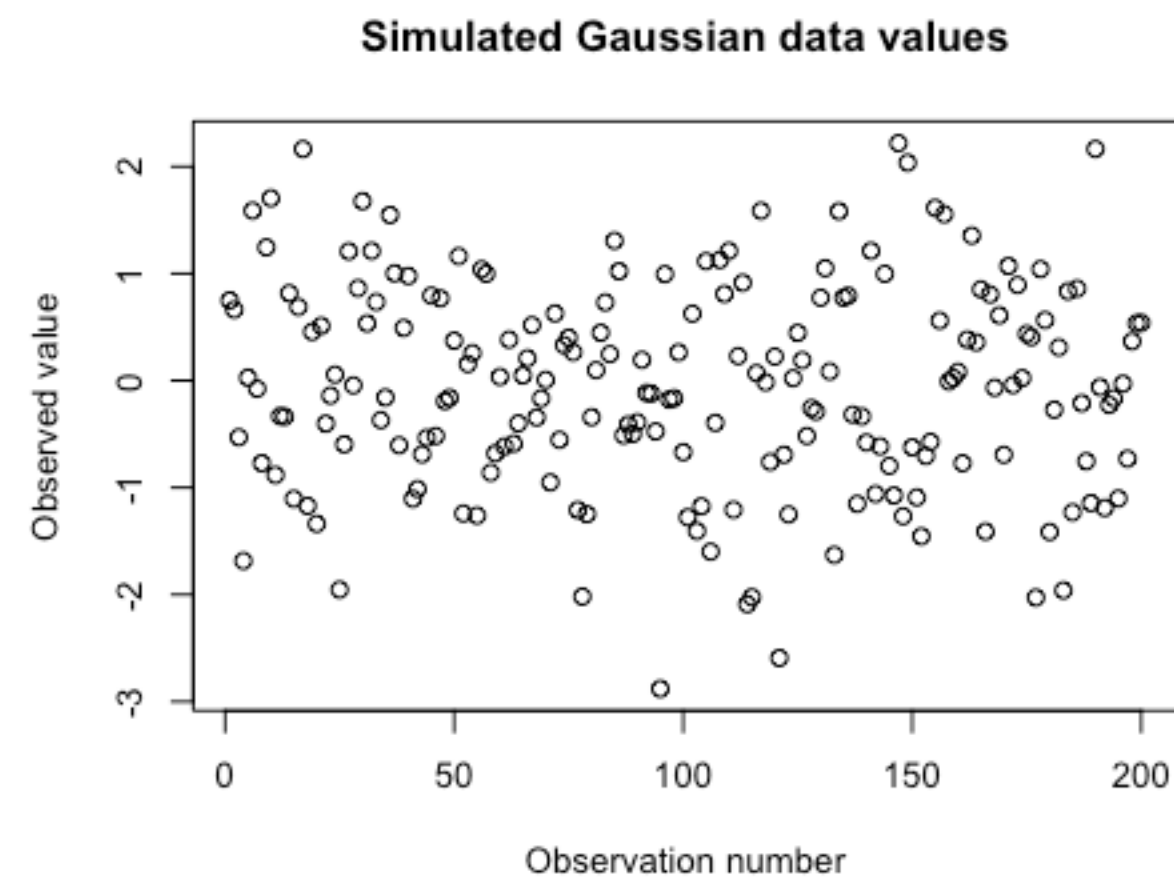DATA VISUALIZATION IN R

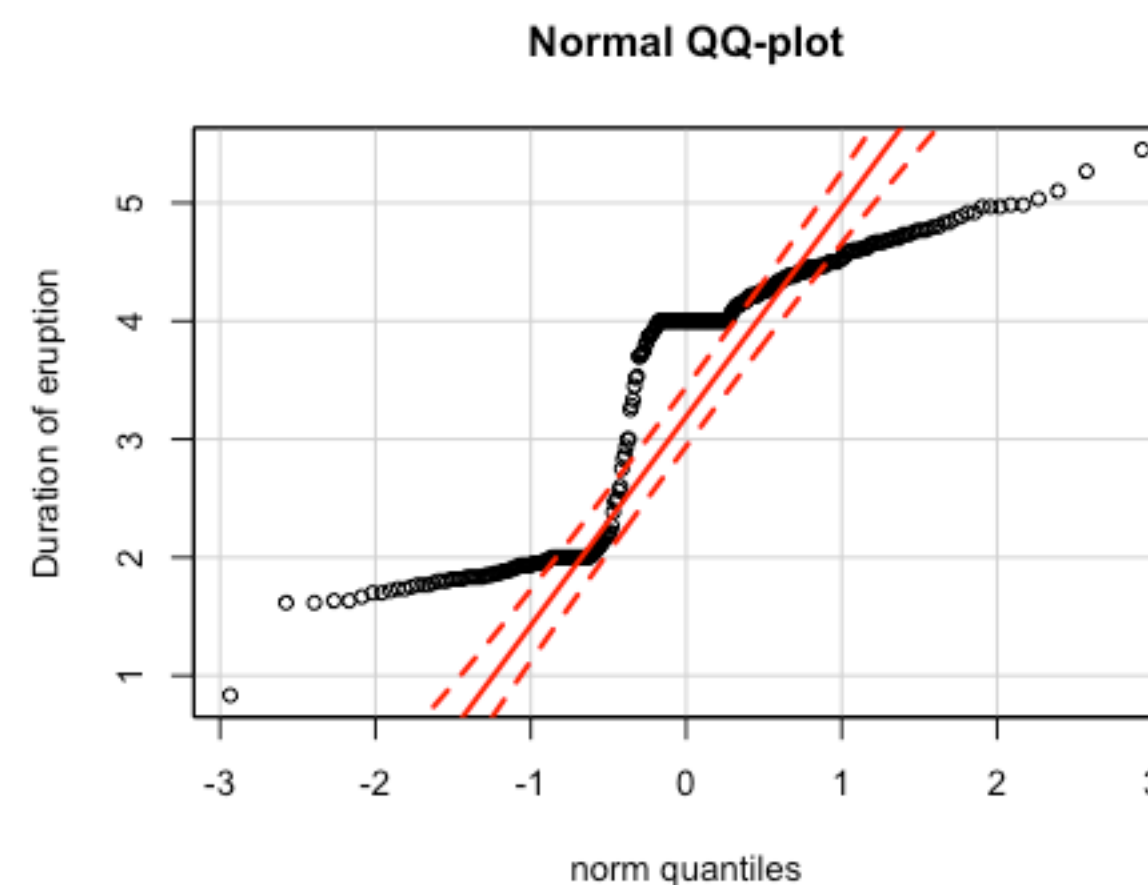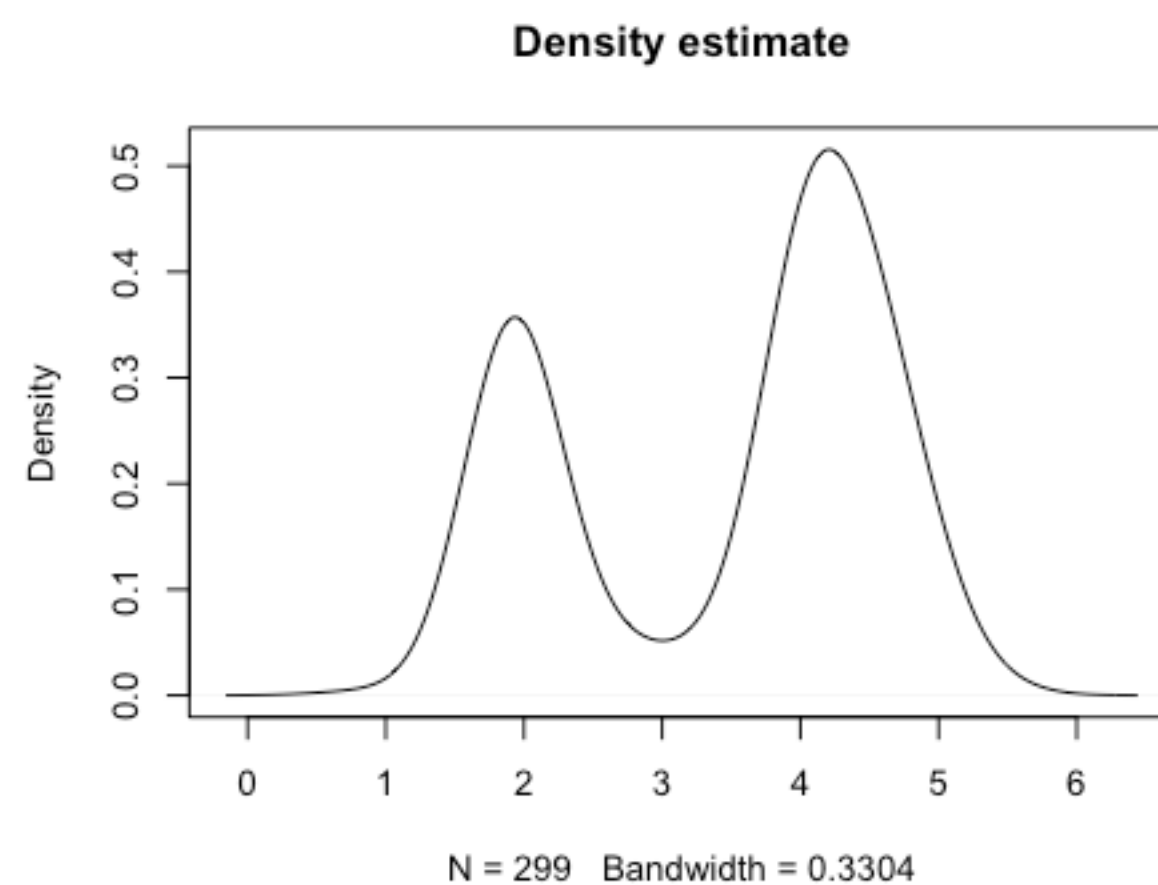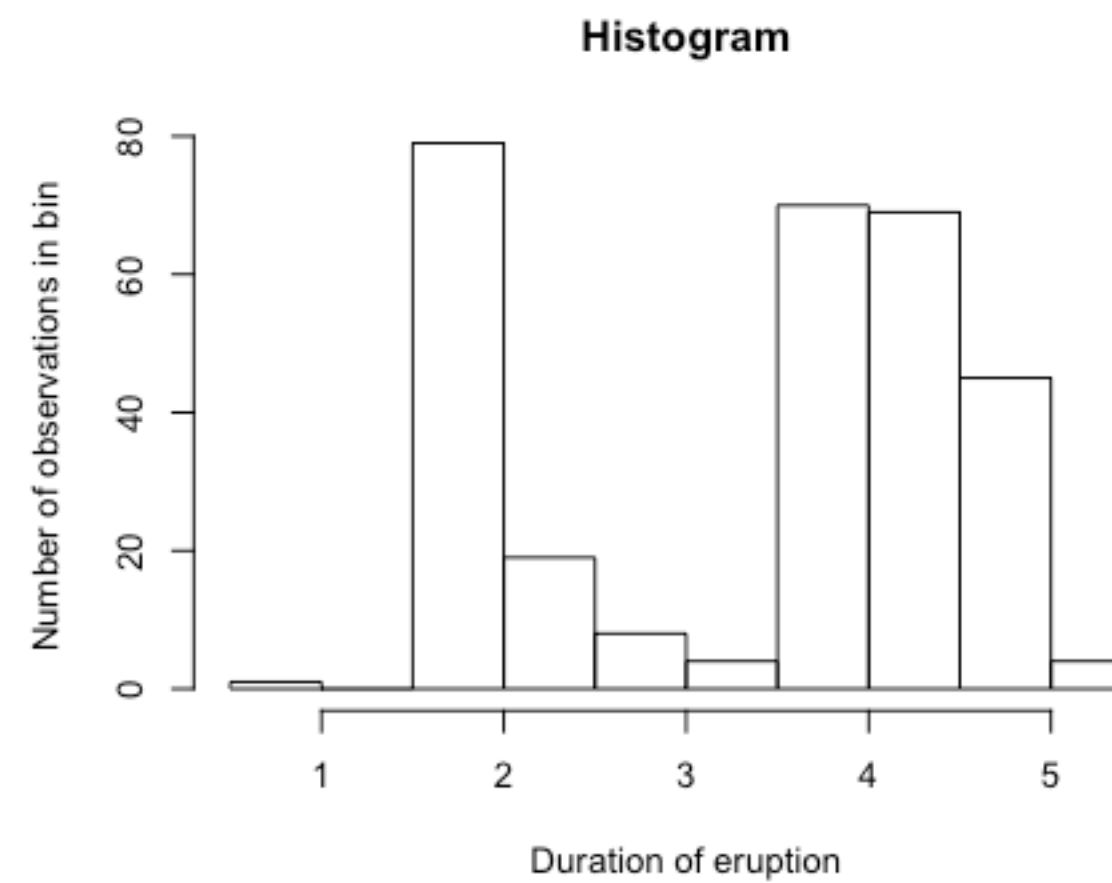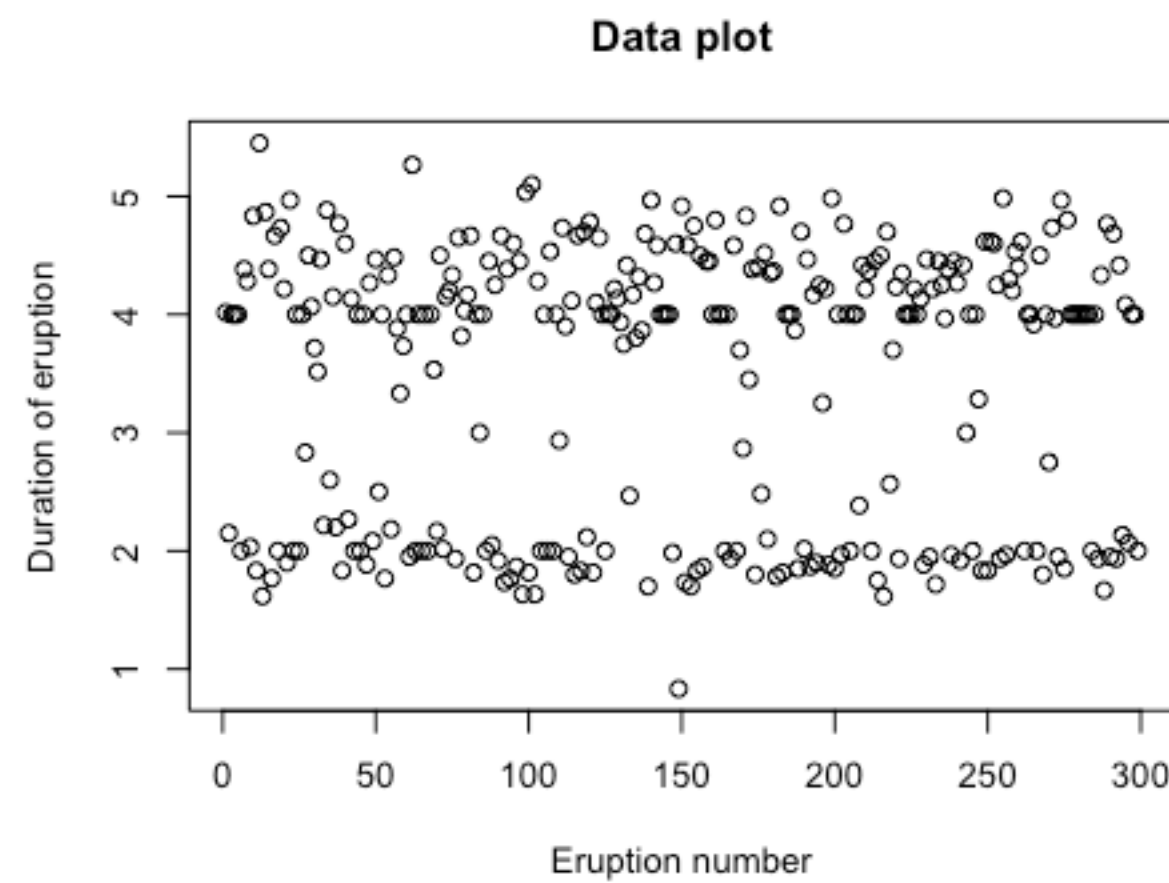# Characterizing a single variable

What do we expect to see?
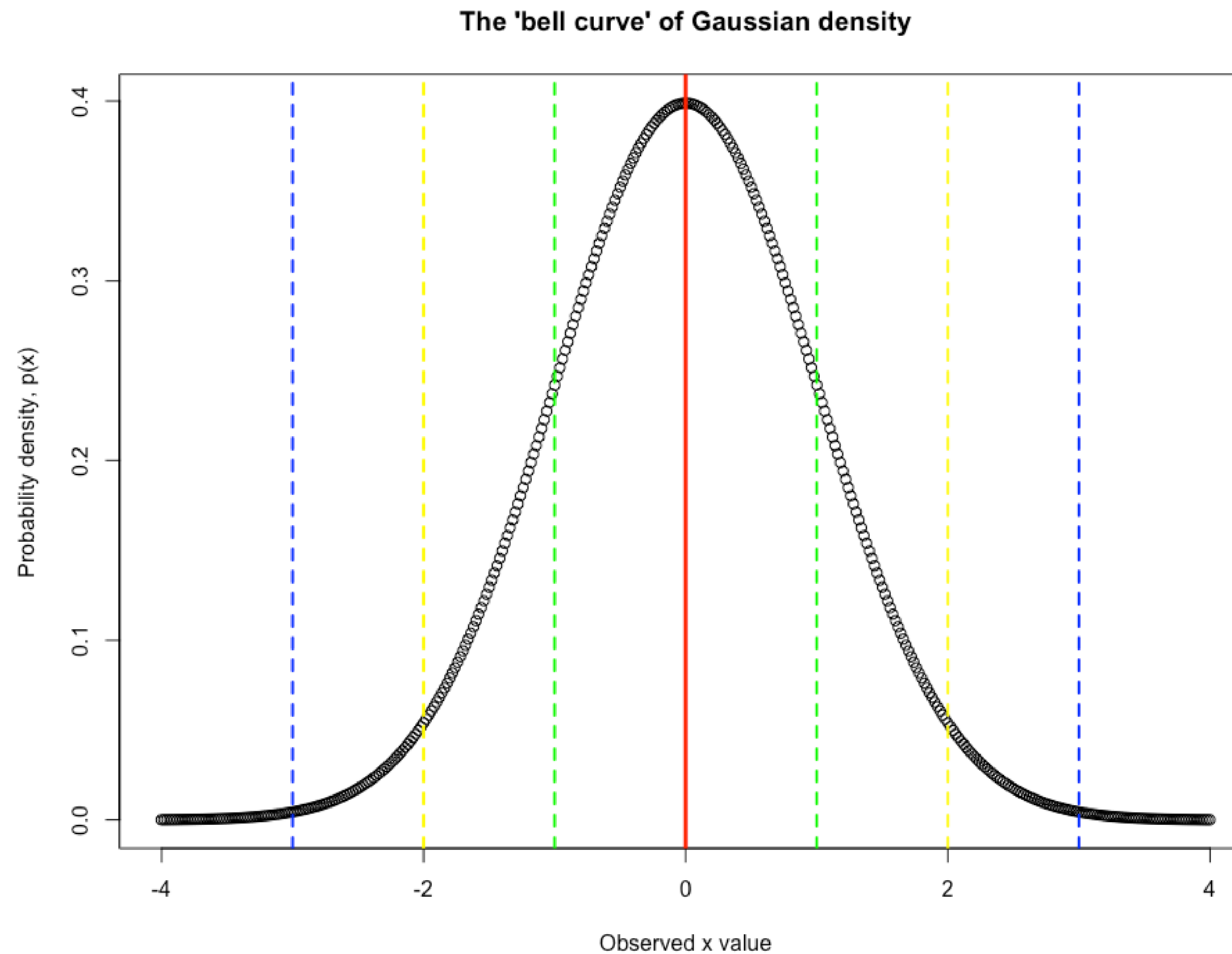
Useful characterization tools in base R graphics

Useful tools even when data are not Gaussian
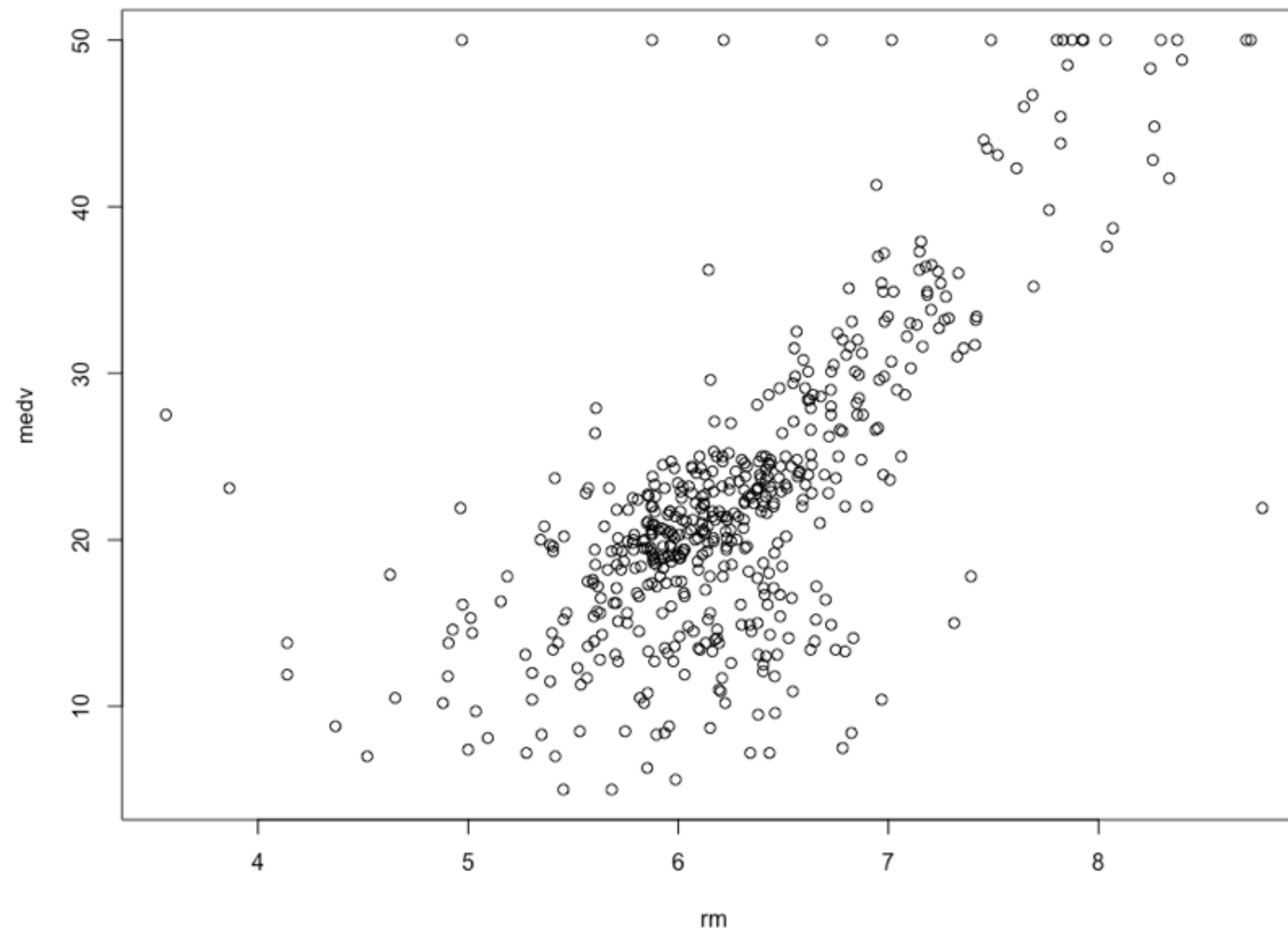
DATA VISUALIZATION IN R
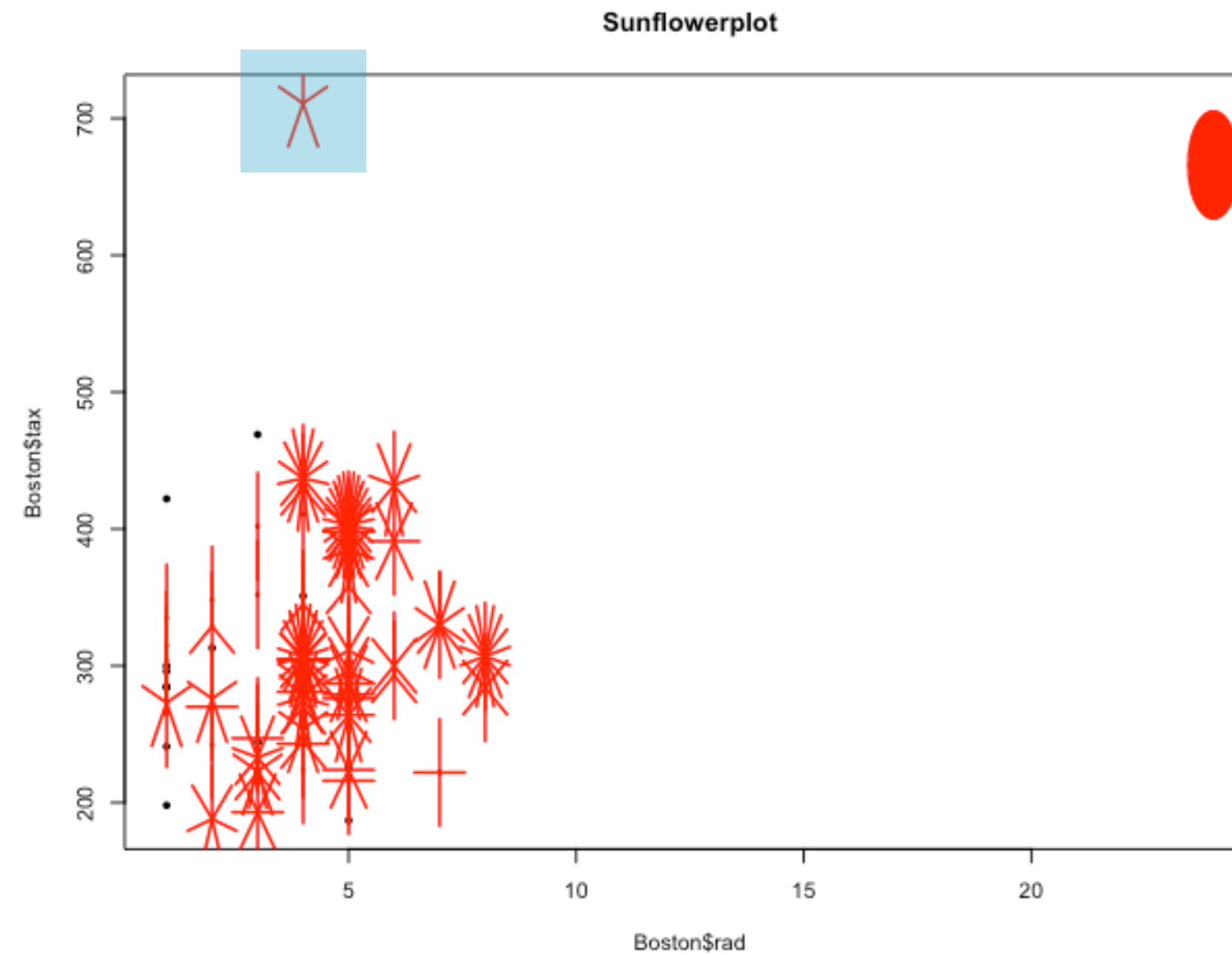
Let's practice!

DATA VISUALIZATION IN R

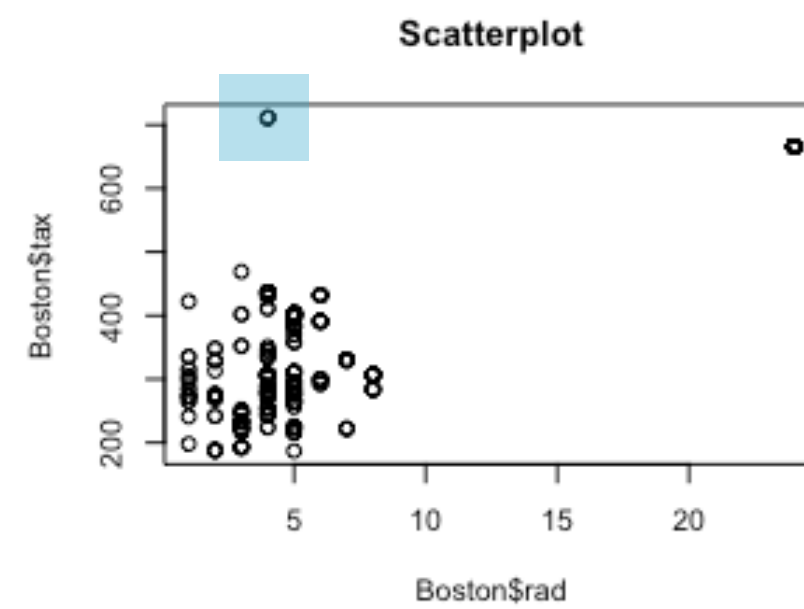# Visualizing relations between two variables

Scatterplots

```
> library(MASS)
> plot(medv ~ rm, data = Boston)
```
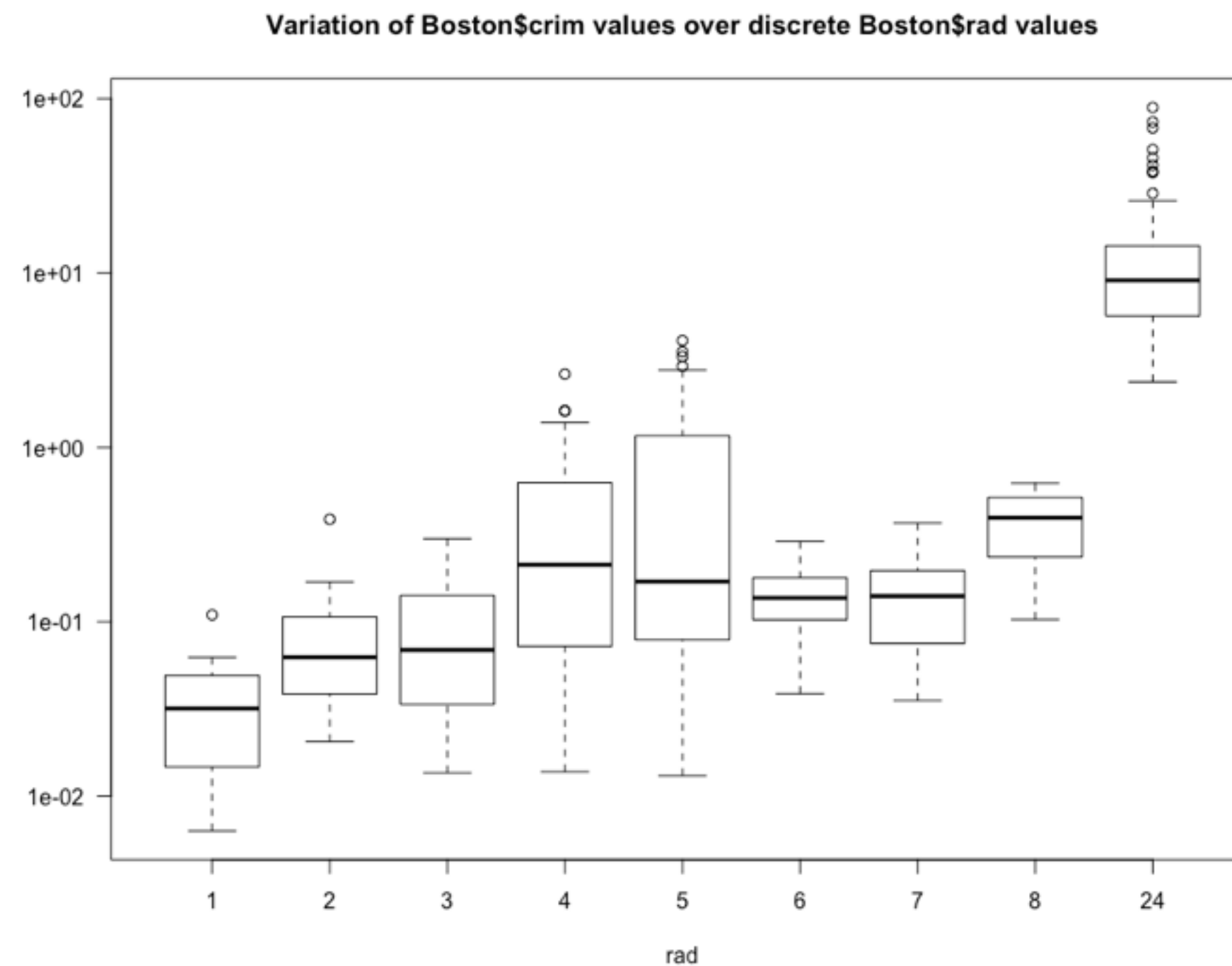
Sunflowerplots
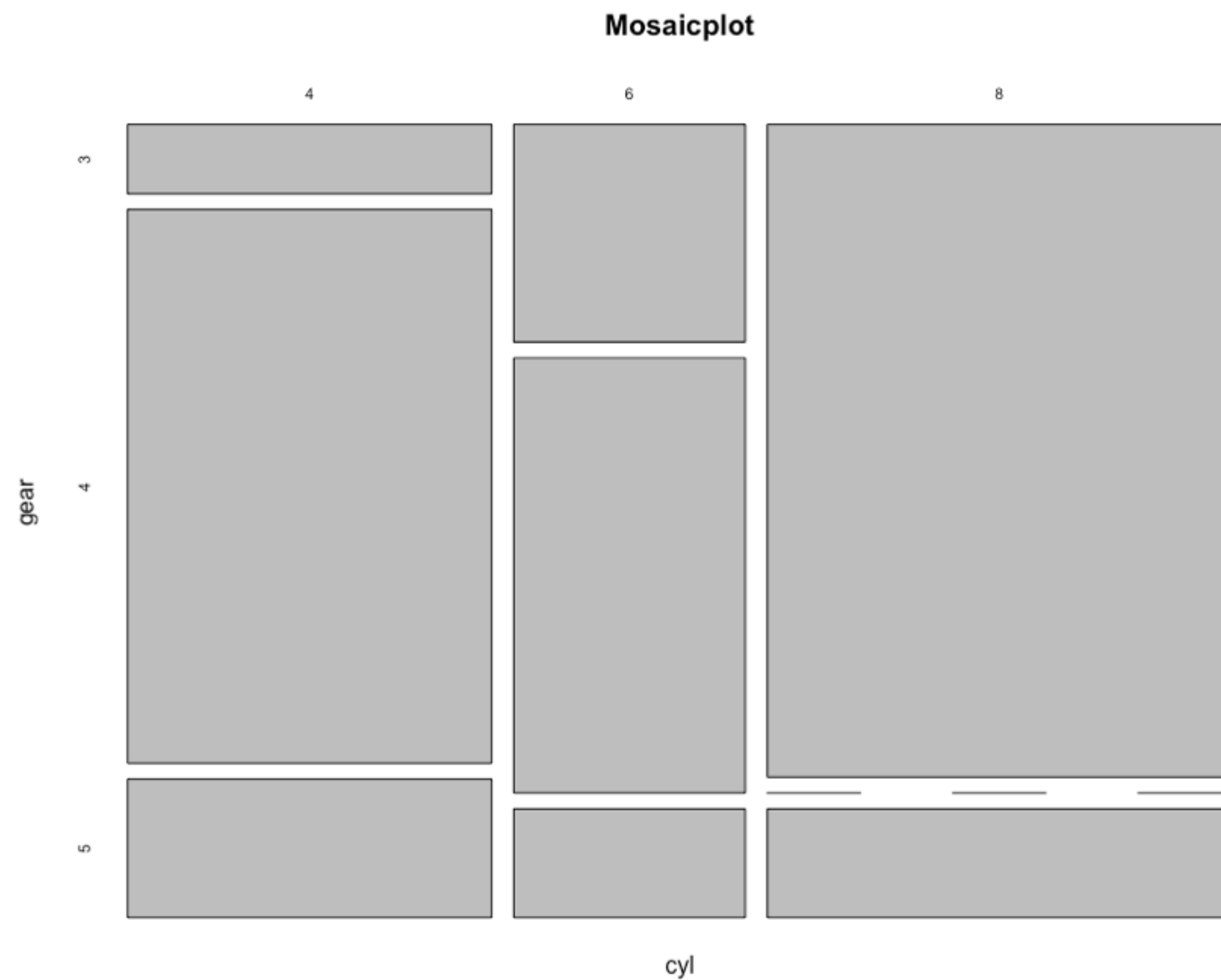
Boxplots

```
> library(MASS)
> boxplot(crim ~ rad, data = Boston, log = "y", las = 1,
          xlab = "rad")
> title("Variation of Boston$crim values over discrete
        Boston$rad values")
```


Variation of Boston$crim values over discrete Boston$rad values

Mosaic plots

```
> mosaicplot(cyl ~ gear, data = mtcars, main = "Mosaicplot")
```
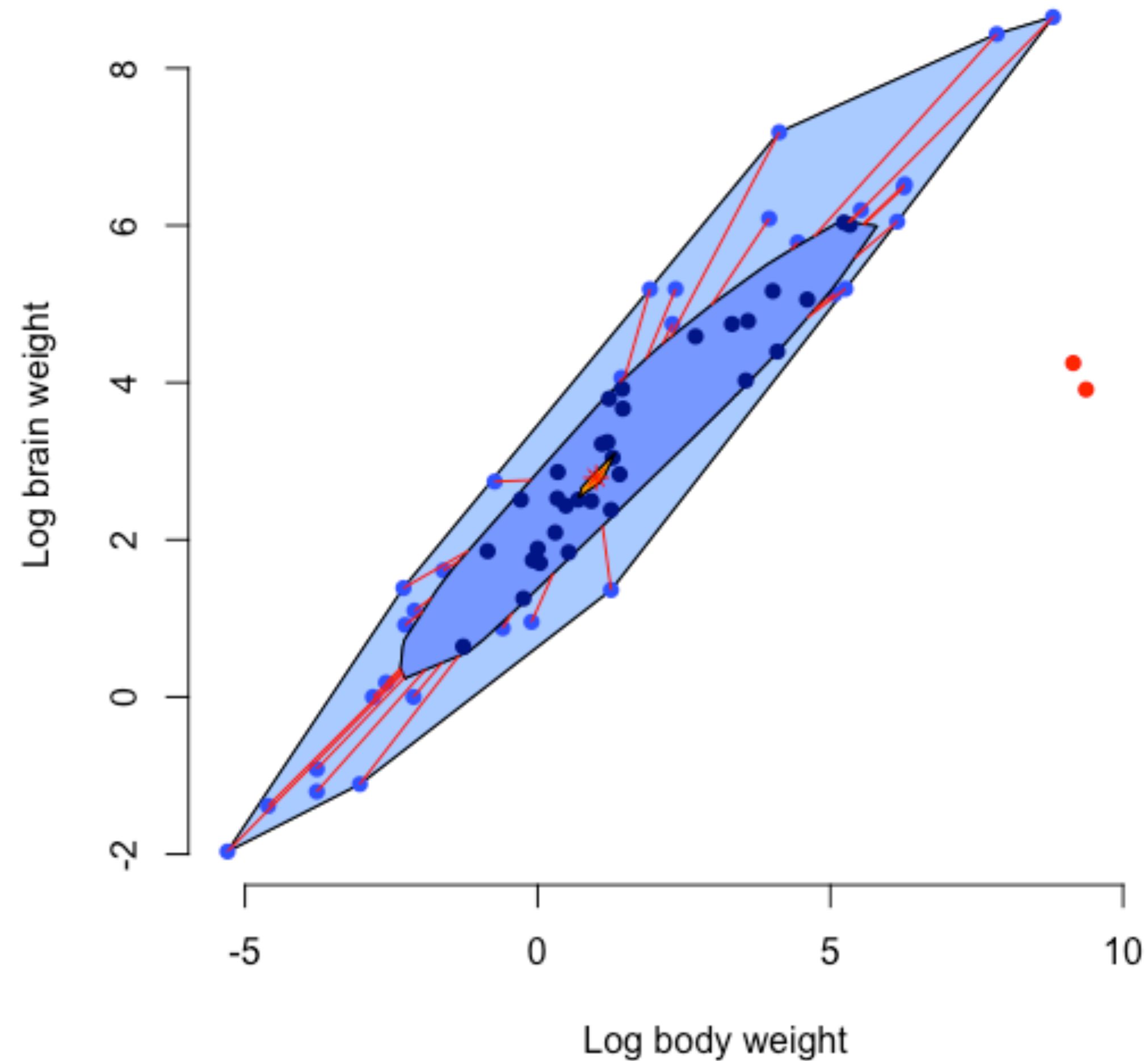
DATA VISUALIZATION IN R

Let's practice!
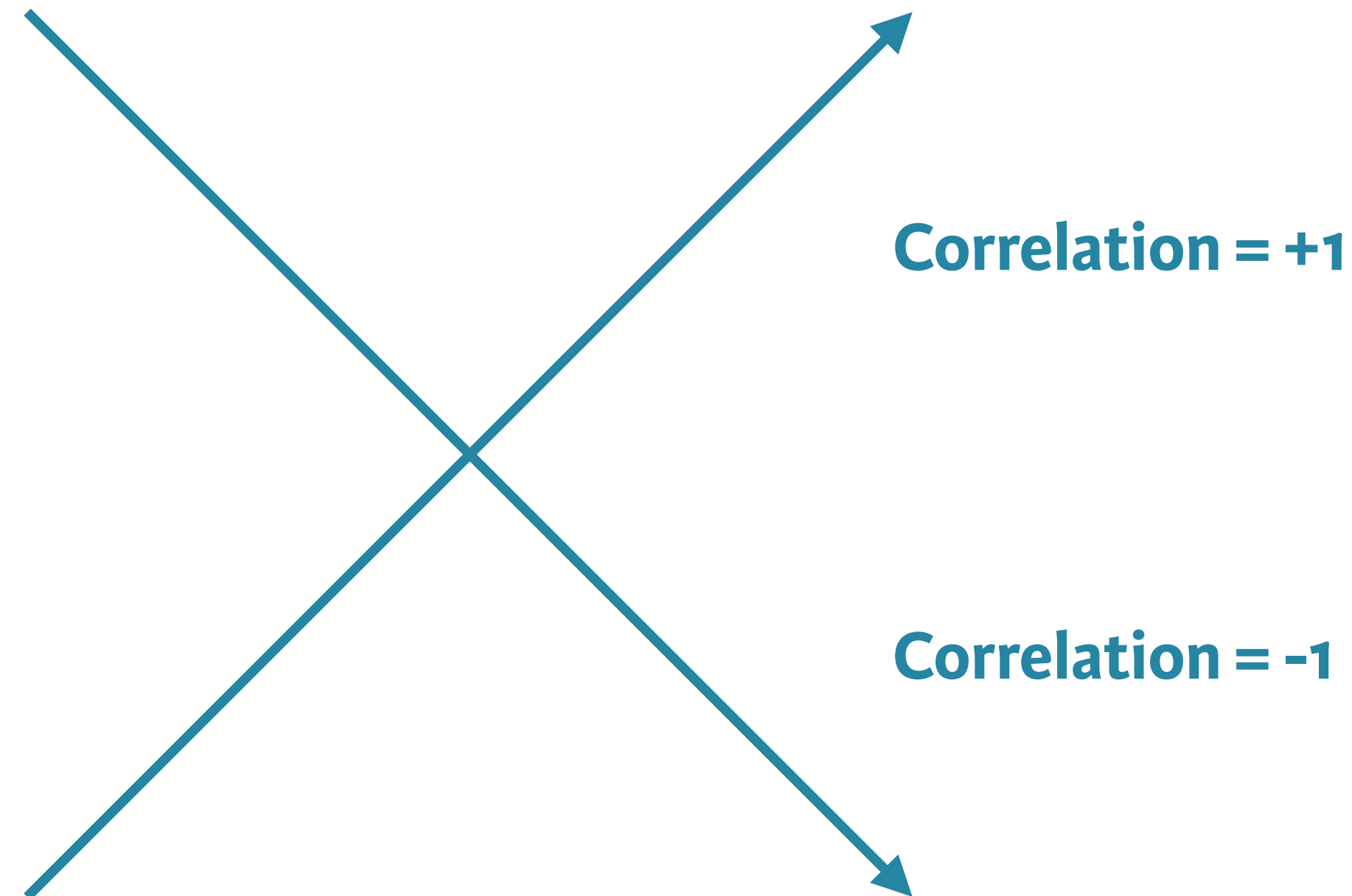
DATA VISUALIZATION IN R

Showing more complex relationships
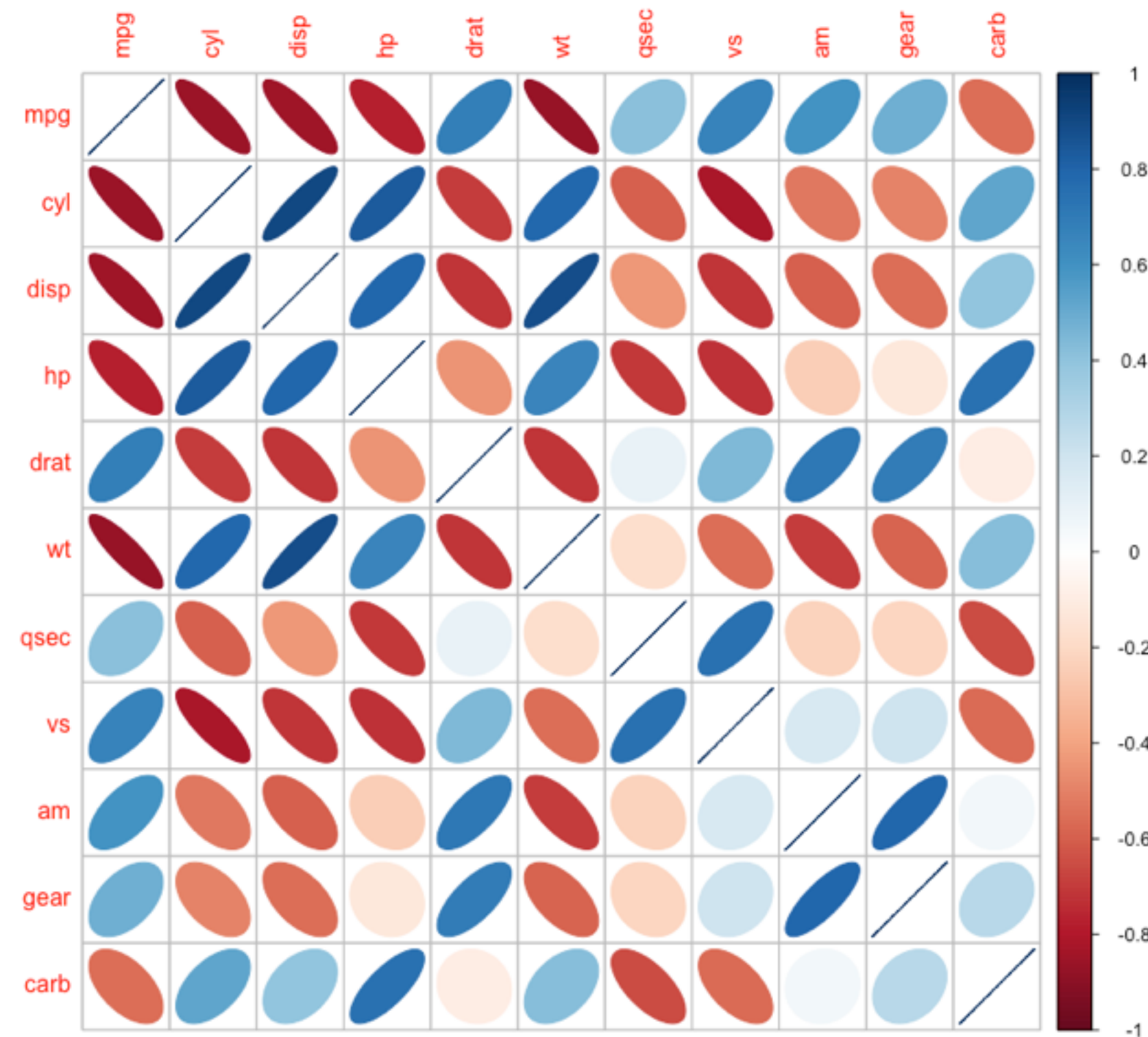
Bagplots: two-dimensional boxplots

Correlation coefficient

- Relationship between two numerical variables

- Number between -1 and +1

Correlation = +1

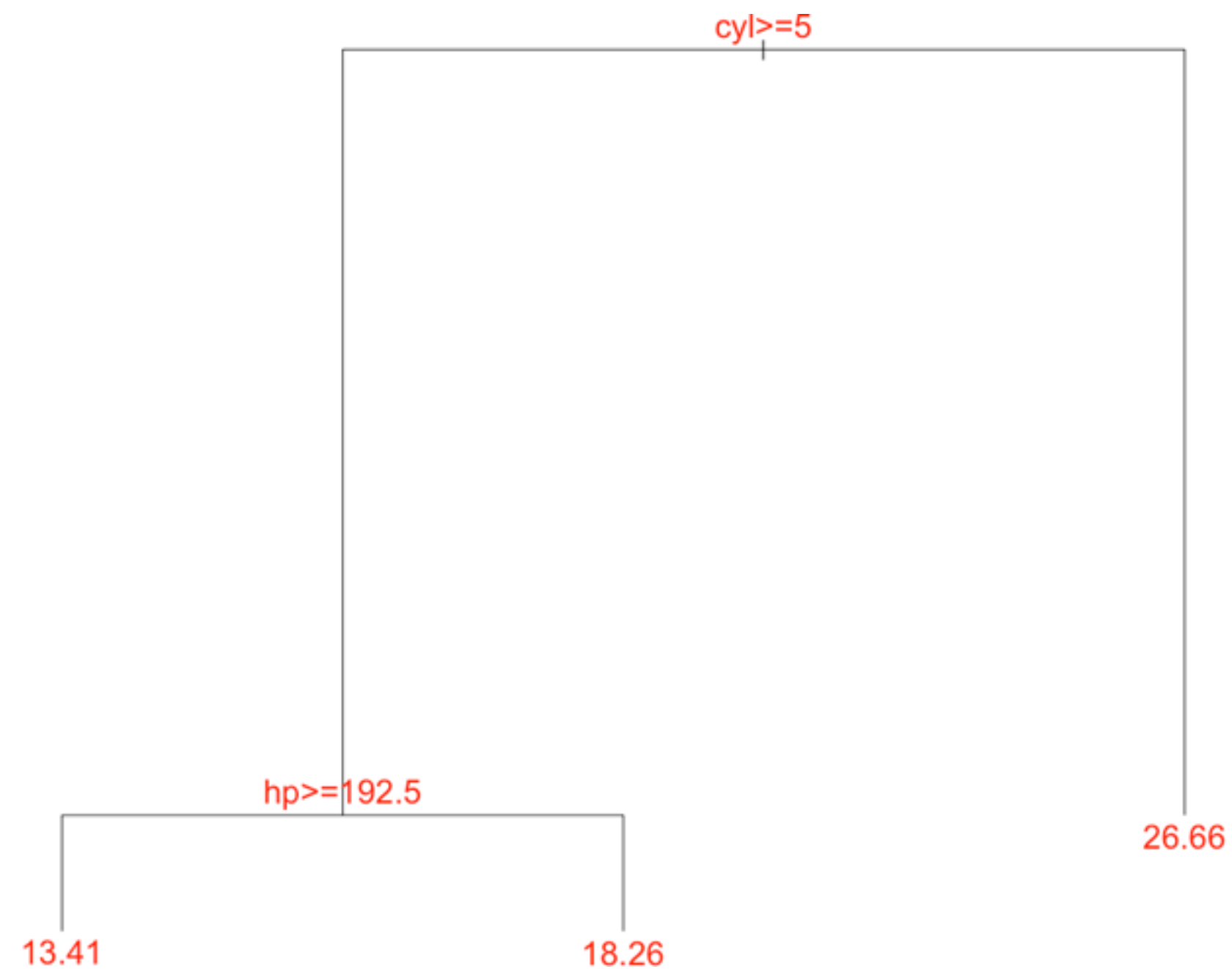**Correlation = -1**

Correlation plots

```
> mtCor <- cor(mtcars)
> library(corrplot)
> corrplot(mtCor, method = "ellipse")
```

Displaying decision tree models

```
> library(rpart)
> treeModel <- rpart(mpg ~ ., data = mtcars)
> plot(treeModel)
> text(treeModel, cex = 1.6, col = "red", xpd = TRUE)
```

DATA VISUALIZATION IN R

Let's practice!