1) Introduction

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R basics

Simple functions

Generate a vector of length 10 containing some numbers. Try what happens when you apply the `sort()` function. Check its help pages to see what additional options you can specify. What do the related `rank()` and `order()` functions do?

Trigonometric functions

Use the `seq()` function to generate a vector `x` of length~100 of evenly spaced numbers between 0 and 2π. Draw a plot (using "`plot()`'') of `x` vs. `sin(x)`. Use the `plot()` function's `type` argument to draw a connecting line. Use the `lines()` function to also add the cosine to the plot.

Data management and descriptive methods

CASE STUDY: In a clinical trial 12 patients are randomly assigned to two different treatments. Blood measurements are taken before and after the treatment.

Loading data

Read the data (`F:/neuroscience_ws2018/exercise_001/study1.csv`) into the R workspace .

Summary statistics

Calculate mean, median, variance, standard deviation, quartiles and the sum of the measurements before treatment (`mean()`).

Box Plot

Plot a boxplot and a histogram of the measurements before treatment. Correct title of axes. Choose appropriate range of axes (`boxplot()`).

Bar Chart

Determine the absolute and relative frequencies of patients in the study groups. Plot a bar chart of the parameter "group" (`pie()` and `barplot()`).