

Statistics practical class 1

- 1) Create a vector of 100 numbers from a normal distribution with $\mu = 0$ and $\sigma^2 = 1$. (see ?
rnorm). Store this in an object called “myNorm.01.100”.
- 2) Calculate the different measures of location and spread. (see ?mean).
- 3) Plot the 100 observations from two normal distributions, the first one with $\mu = 5$ and $\sigma^2 = 3$ and the second with $\mu = 5$ and $\sigma^2 = 10$ (“myNorm.53.100” and “myNorm.510.100”).
What can you say about the difference between the two?
(See ?hist)
- 4) Calculate and plot the z-scores for both normal distributions. Explain your results.
- 5) Load the table bioenv-1.csv and histogram columns a, b and c. (see ?read.csv).
 1. Make sure R understands that your data are numeric. (see ?class)
 2. Calculate the various measures of location spread discussed in the lecture. What can you say about these distributions?
 3. Transform the non-normal distributions such that they approach normality. Which transformations did you use and why?
- 6) Calculate the coefficients of variation for your distributions. Can you compare this statistic across samples with different locations and spreads? Why?
- 7) Find out how to calculate the geometric mean in R. Do so for your various distributions.