R Markdown Tutorial - Assignment

Spring 2023

1. The Cauchy distribution is an example of a "heavy-tailed" distribution in that it will have outliers in both tails. This problem involves comparing it with a normal distribution which typically has very few outliers.

   (a) Use `set.seed(124)` and `rcauchy()` with `n = 100, location = 0, scale = 0.1` to generate a random sample designated as y.
   Generate a second random sample designated as x with `set.seed(127)` and `rnorm()` using `n = 100, mean = 0, sd = 0.15`. Print their sample standard deviations.

   (b) Plot their histogram side by side.

   (c) QQ plots are useful for detecting the presence of heavy tailed distributions. Using `qqnorm()` and `qqline()` to conduct QQ plots for both sets of samples. Add color and titles. Use `cex = 0.5` to control the size of the plotted data points.