MAT453 - Assignment 1

Spring 2025

Assignment Due (by 11:59 P.M.): Friday, Jan 17

Directions: You may discuss the exercises with other students and with the instructor, but the work you turn in must be your own. You will need the to submit your R code and answers to the questions below in **one** word or pdf file.

   Data: The dataset *iris* is a built-in dataset in R. Run *data(iris)* in R to obtain the dataset. Run *names(iris)* to see the names of the variables in the dataset.

   Exercises: (10 points total) Answer the following questions:

1. Fit a linear model to predict Petal.Length from Petal.Width in R. Report your predictive model (i.e., linear regression equation) here.

2. Report the p-value of the t-test on the slope. What is your conclusion?

3. Draw a scatterplot with Petal.Width on the X-axis and Petal.Length on the Y-axis. Add the regression line.

4. Draw a QQ plot for the model residuals. What can you conclude from the QQ plot?