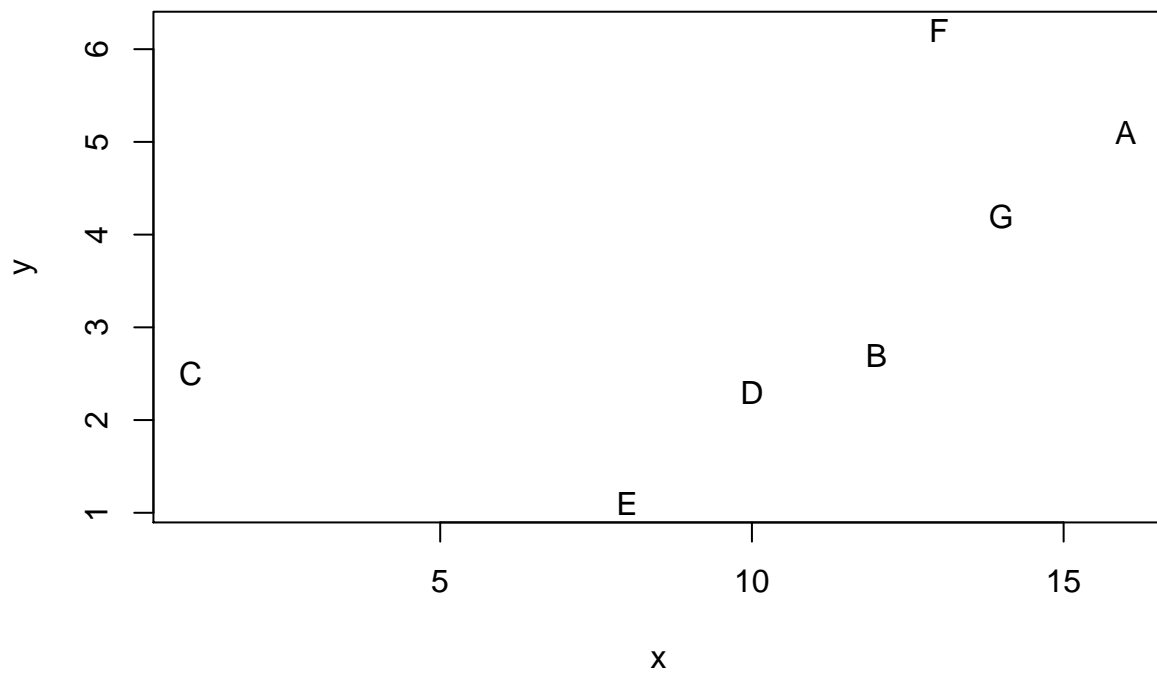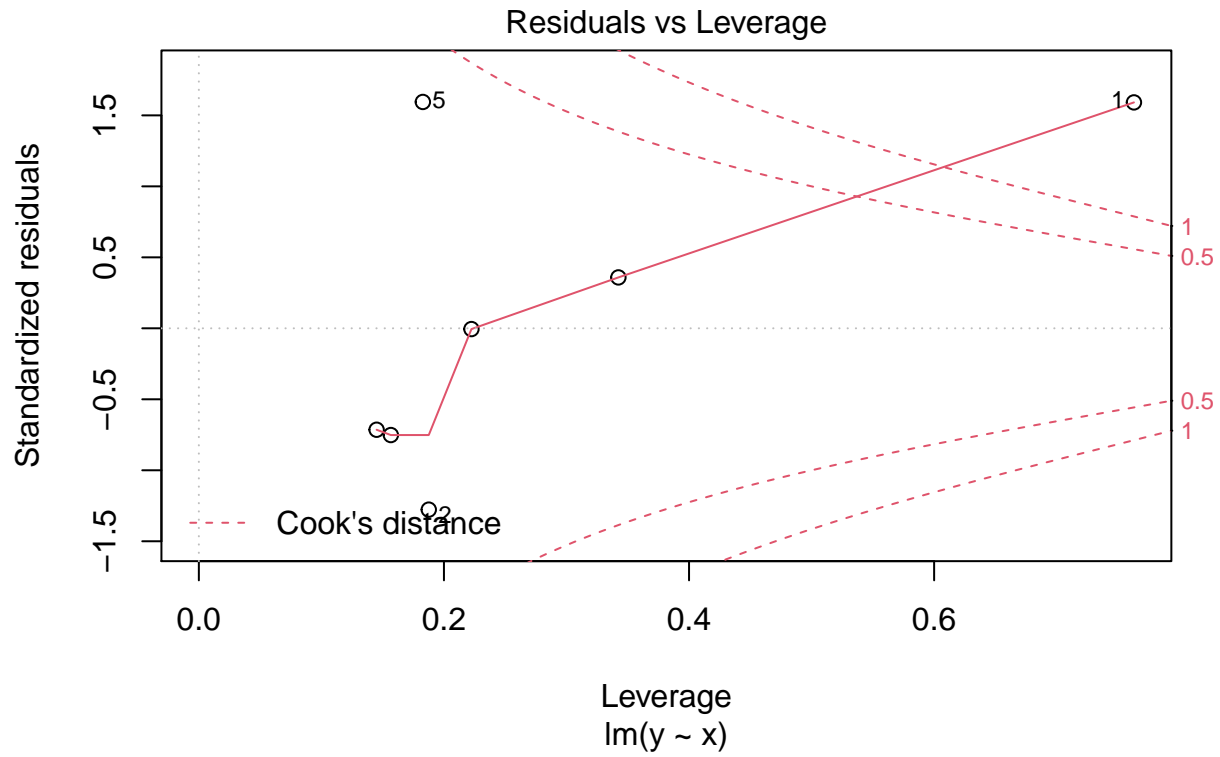# MATH 4939 Quiz 3

February 3, 2021

There are two questions on this quiz. Each is worth 5 marks.

Question 1:

Consider the following scatterplot with 7 observations:

The following plot is the Residual-Leverage plot for the regression of y on x:
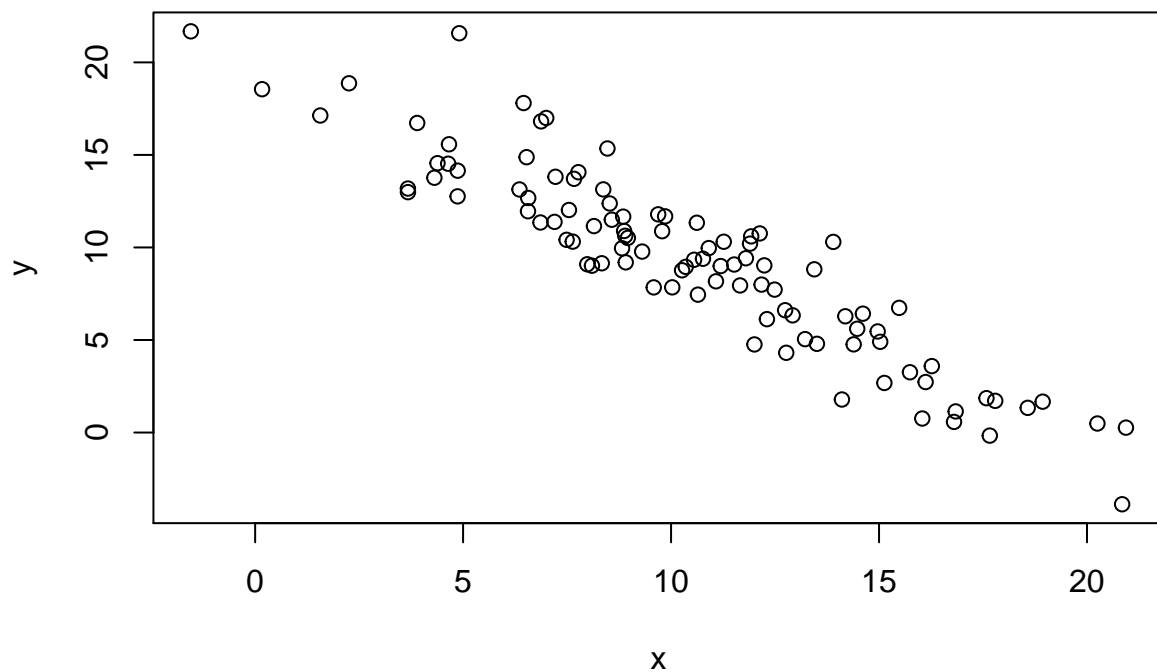
Residuals vs Leverage

lm(y ~ x)

Three points are labelled, 1, 2, and 5, in the Residual-Leverage plots.

Identify which point in the original plot corresponds to each of these three points, e.g. perhaps $1 = G$, etc. and justify your choice for each point.

Question 2:

This is a scatterplot displaying 100 observations on two variables, x and y.

a) Estimate the slope and the standard error of the estimate of the slope of the regression of y on x. Show or explain the method you used.

b) Estimate the variance covariance matrix of x and y. Show or explain the method you used method.