MATH 252-01: Probability and Statistics II

Problem Set 8

Assigned 2019 March 21
Due 2019 March 28

Show your work on all problems! If you use a computer to assist with numerical computations, turn in your source code as well.

1 Devore Chapter 10, Problem 12

2 Devore Chapter 12, Problem 4

Note that problem 12.4 is different in the eighth and ninth editions of Devore. Be sure to do the problem from the ninth edition, which is reproduced here.

3 Devore Chapter 12, Problem 12

Note that problem 12.12 is different in the eighth and ninth editions of Devore. Be sure to do the problem from the ninth edition, which is reproduced here.

4 Computational Exercise

Download the following data sets:
`http://ccrg.rit.edu/~whelan/courses/2019_1sp_MATH_252/data/ps08_prob4_set1.dat`
`http://ccrg.rit.edu/~whelan/courses/2019_1sp_MATH_252/data/ps08_prob4_set2.dat`
using the username and password given in class.

Perform a linear regression on this pair of data sets using statistical software, and obtain

a. The estimates $\hat{\beta}_0$, $\hat{\beta}_1$, and $\hat{\sigma}^2$.
b. The coëfficient of determination r^2.
c. A scatter plot of the data with the best-fit regression line shown.