MATH 252-01: Probability and Statistics II

Problem Set 1

Assigned 2016 August 23
Due 2016 August 30

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 1, Problem 44

2 Devore Chapter 4, Problem 32

Note that problem 4.32 is different in the seventh and eighth editions of Devore. Be sure to do the problem from the eighth edition.

3 Devore Chapter 5, Problem 46

4 Computational Exercise

This is designed to give you some practice in dealing with larger data sets using a numerical computation environment such as minitab. Download the data for this problem from
`http://ccrg.rit.edu/~whelan/courses/2016_3fa_MATH_252/data/ps01_prob4.dat`
using the username and password given in class.

  a. Read the data into your software program.
  b. Determine the sample size n.
  c. Locate the option to calculate the sample median $\widetilde{x}$ of the data and evaluate it.
  d. Locate the option to calculate the sample mean $\overline{x}$ of the data and evaluate it.
  e. Locate the option to calculate the sample variance s^2 of the data and evaluate it.
  f. Verify that your software package has calculated the variance as

$$s^2 = \frac{1}{n-1} \sum (x_i - \overline{x})^2$$

  (with $n-1$ in the denominator and not n). If not, perform the necessary adjustment.