Homework #1A - Chapter 1 (Montgomery & Runger, 4ed)

Chapter 1  The Role of Statistics in Engineering

Reading Assignment: pages 1 - 15

Study Assignment: Reference Learning Objectives, page 1: Have you mastered each of the objectives?

Homework #1B - Chapter 6 (Montgomery & Runger, 4ed)

Chapter 6  Random Sampling and Data Description

Reading Assignment: pages 198 - 203, 210 - 214, 217 - 224

Problems:
Answers to odd-numbered problems can be found in Appendix B.

6-1  Data Summary and Display

Pages 203 - 204, Problems 3, 5, 11, 13

Reference Problem 6-13, Page 204
a. Convert the temperature data to Degrees Celsius.  \( C = \frac{5}{9}(F - 32) \)
b. Predict (rather than calculate) how both the mean and the standard deviation will be affected.
c. Compute the sample mean and sample standard deviation for the converted data.
d. Compare your results to 6-13 a.
e. How do your results compare to your predictions?
f. Develop a rule as to what happens to the mean and the standard deviation if you add a constant to each data point or multiply each data point by a constant.

6-4  Frequency Distributions and Histograms

Use the data from Table 6-2, page 205.
a. Create a Frequency Table (9 groups, 20 units wide)
b. Use your table to create a Histogram
c. Create a Relative Frequency Table and Chart
d. Create an Cumulative Relative Frequency and Graph
e. Check your results see Table 6-4, page 211; and Figure 6-7, page 211; and Figure 6-10, page 213.
Note: Table 6-4 is displayed horizontally as compared to our vertically illustrated example in class.