In these activities you will explain how data transformations affect measures of center and spread. After completing the activities, discuss and/or present your findings to the rest of the class.

Activity 1 [Page 1.3]

1. On page 1.3, suppose the manager decides to raise the minimum wages to $15 an hour.

    a. How many employees will be affected by the raise?

    b. What will happen to the range of the distribution?

    c. Describe what will happen to the median salary and the IQR. Explain your reasoning.

    d. Describe what will happen to the mean wage and the typical spread from the mean. Explain your reasoning.

2. Identify each of the following as true or false. Give a reason for your answer.

    If a value is added to each element in a data set,

    a. the spread of the data will not change.

    b. the shape of the data will be different.

    c. the center of the data distribution will change.

    d. the maximum value will be increased by the amount added.

Activity 2 [Page 2.2]

1. The holiday hourly wage is double the regular hourly wage.

    a. Describe what happens to the dot plot when the holiday hourly wages are computed.

    b. How do the measures of center change for holiday wages?

    c. Which employees earned the most money during the holiday season compared to what they usually earned?

2. The state tax for employees of this company is 20%. What is the mean amount of tax employees pay on their standard hourly wage?

3. How would you transform the prices of a set of items in a store so that each of the following is true:

    a. The middle half of the prices would double in cost.

    b. The mean price would be $5 higher.

    c. The typical deviation from the mean price would be one third as much as in the original set.

    d. The median price would remain the same.