**1.** Using the bike commuting time data (6 days), calculate the standard deviation.

Commuting Time (min): 44.5      45.0      48.0      47.0      49. 5      46.0

**Steps for calculating the standard deviation** $s$:

1. Compute the mean $\bar{x}$

$$\bar{x} = \frac{44.5 + 45.0 + 48.0 + 47.0 + 49.5 + 46.0}{6} =$$

| $x$ | $x - \bar{x}$ | $(x - \bar{x})^2$ |
|-----|---------------|-------------------|
| 44.5 | | |
| 45.0 | | |
| 48.0 | | |
| 47.0 | | |
| 49.5 | | |
| 46.0 | | |

2. For each data value, compute $x - \bar{x}$.

3. Square all values computed in Step 2.

4. Sum all of the squared values in Step 3.

5. Divide the sum from Step 4 by $n - 1$

6. Take the square root of the value in Step 5.

**2.** Compute the standard deviation for the customer waiting times using the data from the previous worksheet for the

**(a).** Multi-line data                              **(b).**  Single-line data

[Stop Here.]

**3.** Given the data set $3, 5, 4, 2, 5, 3, 4, 2,$

(a). Find the mean

(b). Find the standard deviation

(c). Find the range

**4.** Given the data set $3, 5, 4, 2, 5, 3, 4, 2, 67,$

(a). Find the mean

(b). Find the standard deviation

(c). Find the range

(d). Which of the measures (mean, standard deviation, and range) are affected by the outlier?

**5.** Given the data set $10, 25, 23, 27, 22, 28, 30,$

(a). Find the mean

(b). Find the standard deviation

(c). Find the minimum "usual" value

(d). Find the maximum "usual" value

(e). Is the value 18 considered "unusual"?

(f). Find the coefficient of variation

(g). Explain in your own words what the coefficient of variation measures.