

10-3 Skills Practice

Measures of Spread

Find the minimum, lower quartile, median, upper quartile, and maximum values for each data set.

- SEASHELLS** Jorja collected the following number of seashells for the last nine trips to the beach: 5, 11, 7, 12, 13, 17, 3, 15, 14. **minimum: 3; lower quartile: 6; median: 12; upper quartile: 14.5; maximum: 17**
- SHOE SIZE** The following shoe sizes of students at a high school were randomly recorded for one hour: 6, 8, 8.5, 10, 12, 6.5, 7, 8, 8.5, 7.5, 9, 11.5, 10, 13, 5.5, 6.5, 5, 9.5. **minimum: 5; lower quartile: 6.5; median: 8.25; upper quartile: 10; maximum: 13**
- EXERCISE** Kent tracked his daily number of minutes of exercise. Find the mean and median of the data set, and then identify any outliers. If the set has an outlier, find the mean and median without the outlier, and state which measure is affected more by the removal of this value. **35.08; 35.5; no outlier**

Number of Minutes of Exercise					
30	35	25	28	40	38
36	29	34	45	42	39

Find and interpret the standard deviation of each set of data.

- {10, 9, 11, 6, 9}
1.67; Since the standard deviation is small compared to the mean of 9, the data are relatively close to the mean.
- {23, 18, 28, 36, 15}
7.46; Since the standard deviation is large compared to the mean of 24, the data are relatively spread out.
- PARKING** A city councilor wants to know how much revenue the city would earn by installing parking meters on Main Street. He counts the number of cars parked on Main Street each weekday: {64, 79, 81, 53, 63}. Find and interpret the standard deviation. **10.55; Since the standard deviation is small compared to the mean of 68 cars, the number of cars parked on Main Street each weekday is close to 68.**
- {6, 8, 2, 3, 2, 9}
2.83; Since the standard deviation is large compared to the mean of 5, the data are relatively spread out.
- {44, 35, 40, 37, 43, 38, 40}
2.97; Since the standard deviation is small compared to the mean of about 39.6, the data are relatively close to the mean.
- SOFTBALL** A statistician for the Rams softball team is comparing the number of strikeouts the Rams have at home games with the number of strikeouts the Rams have at away games. Compare the mean and standard deviation of each set of data.

Home Games				
3	1	5	2	2
6	10	2	4	5

Away Games				
7	9	5	8	12
10	5	4	8	9

The Rams had a mean of 4 strikeouts per game at home games with a standard deviation of 2.53 strikeouts. The Rams had a mean of about 7.7 strikeouts per game at away games with a standard deviation of about 2.37 strikeouts. The data sets had nearly the same variability while the Rams had a mean of almost 4 more strikeouts at away games than at home games. It can be concluded that the Rams consistently strikeout about 4 more times at away games than at home games.