Notes:

MEAN

To understand a set of data, you often need to be able to describe the approximate "center" of that data. One way to do this is to find the **mean** of the data set, which is also called the **arithmetic average**.

To find the mean of a set of data, add the values of the data elements (numbers) and then divide by the number of items of data. The mean is a useful way to describe the data when the set of data does not contain **outliers**. Outliers are numbers that are much smaller or much larger than most of the other data in the set.

Suppose the following data set represents the number of home runs hit by the best seven players on a Major League Baseball team during one season:

16, 26, 21, 9, 13, 15, and 9.

The mean is $\frac{16+26+21+9+13+15+9}{7} = \frac{109}{7} \approx 15.57$.

This number shows that a typical player among the best seven home-run hitters on the team hits about 15 or 16 home runs each season.

MEDIAN

The mean is a useful way to find the center when data values are close together or are evenly spaced. Another tool, the **median**, also locates the approximate "center" of a set of data in a different way.

The **median** is the middle number in a set of data *arranged numerically*. If there is an even number of values, the median is the mean of the two middle numbers. The median is more accurate than the mean as a way to find the center when there are outliers in the data set.

Suppose the following data set represents the number of home runs hit by the best seven players on a Major League Baseball team:

16, 26, 21, 9, 13, 15, and 9.

In this example, the median is 15. This is because when the data are arranged in order (9, 9, 13, 15, 16, 21, 26), the middle number is 15.

Mean and median are called **measures of central tendency** because they each describe the "center" of a set of data, but in different ways.

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