

Name \_\_\_\_\_

Date \_\_\_\_\_

## Standard Deviation and Absolute Deviation- Step-by-Step Lesson

In the data set below, what is the mean absolute deviation?

1, 6, 8, 5, 5, 1, 2



### Explanation:

The mean absolute deviation (MAD) is a measure of how much a data set varies.

Step1) Compute the mean,  $\bar{x}$

First add all of the numbers in the data set together.

Then divide by the total number of values in the data set.

$$\bar{x} = \frac{1+6+8+5+5+1+2}{7} = \frac{28}{7} = 4$$

The mean  $\bar{x}$ , is 4

Step2) Compute the mean absolute deviation, MAD.

Take each number in the data set, subtract the mean and take absolute value. Then take the sum of the absolute values.

$$|1 - 4| + |6 - 4| + |8 - 4| + |5 - 4| + |5 - 4| + |1 - 4| + |2 - 4| = 16$$

Now compute the mean absolute deviation by dividing the sum above by the total number of values in the data set.

$$\text{MAD} = \frac{16}{7} = 2.29$$

The mean absolute deviation, MAD is 2.29.

