

April 30, 2015 ^{5th}
^{6th}



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Jester

4/30 Mean Absolute Deviation

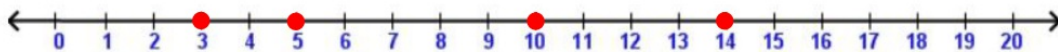
When you see "deviation," think "distance."

The Mean Absolute Deviation of a set of numbers is the mean of each number's distance from the mean.

The average of the distances from the average.

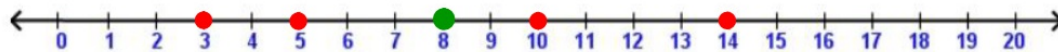
Find the **mean absolute deviation** of 3, 5, 10, and 14.
Here it is visually:

1. Graph all of the **points**.

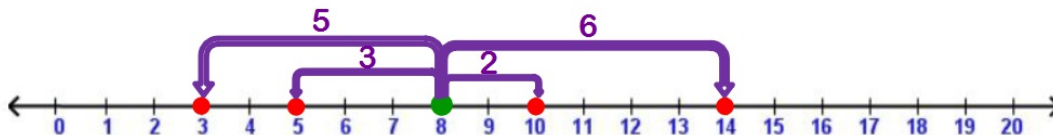


2. Find and graph the **mean**.

$$\text{average} \quad \frac{3 + 5 + 10 + 14}{4} = \frac{32}{4} = 8$$



3. Find the distance from each point to the median.



4. Find the average of those distances.

$$\frac{5 + 3 + 2 + 6}{4} = \frac{16}{4} = 4$$

5. The answer is the **mean absolute deviation**:
--the average distance of the distances from the average

Find the mean absolute deviation for each set of numbers.

4, 6, 10, 15, 21

1. Find the average of the #'s

$$\frac{4+6+10+15+21}{5} = 11.2$$

2. Find the distance of each # from the average.

$$\begin{aligned} 11.2 - 4 &= 7.2 \\ 11.2 - 6 &= 5.2 \\ 11.2 - 10 &= 1.2 \\ 15 - 11.2 &= 3.8 \\ 21 - 11.2 &= 9.8 \end{aligned}$$

3. Find the average of those distances.

$$\frac{7.2+5.2+1.2+3.8+9.8}{5} = 5.44$$

3, 6, 3, 9, 6, 4, 5, 2

$$\frac{2+3+3+4+5+6+6+9}{8}$$

$$= 38$$

$$= 4.75$$

$$4.75 - 2 = 2.75$$

$$4.75 - 3 = 1.75$$

$$4.75 - 3 = 1.75$$

$$4.75 - 4 = 0.75$$

$$5 - 4.75 = 0.25$$

$$6 - 4.75 = 1.25$$

$$6 - 4.75 = 1.25$$

$$9 - 4.75 = 4.25$$

$$\frac{14.00}{8} = 1.75$$

Homework

Due