

# April 29, 2015<sup>4th</sup>

*Get out your homework*



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**DOG NOSES LOOK LIKE ANGRY ALIENS**



*Jester*

## 4/29 Mean Absolute Deviation

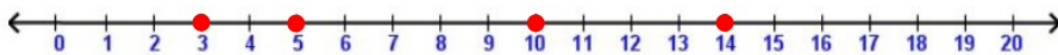
When you see "deviation," think "distance."

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.

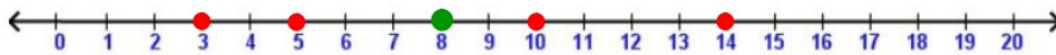
Find the **mean absolute deviation** of 3, 5, 10, and 14.  
Here it is visually:

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

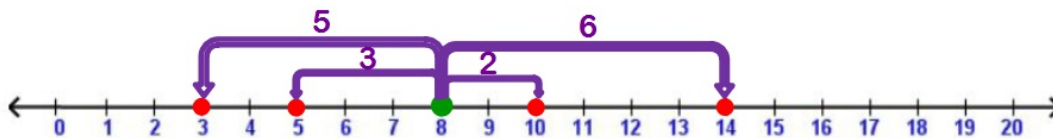


2. Find and graph the **mean**.

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



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

$$\frac{4+6+10+15+21}{5} = \frac{56}{5} = 11.2$$

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

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

3. Find the average of those distances.

$$\frac{7.2+5.2+1.2+3.8+9.8}{5} = \frac{27.2}{5} = 5.44$$

~~2~~, 6, ~~2~~, 9, 6, ~~4~~, 5, ~~2~~

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

$$\frac{2+3+3+4+5+6+6+9}{8} = \frac{38}{8} = 4.75$$

$$\begin{aligned} 4.75 - 2 &= 2.75 & 5 - 4.75 &= 0.25 \\ 4.75 - 3 &= 1.75 & 6 - 4.75 &= 1.25 \\ 4.75 - 3 &= 1.75 & 6 - 4.75 &= 1.25 \\ 4.75 - 4 &= 0.75 & 9 - 4.75 &= 4.25 \end{aligned}$$

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$$\begin{array}{r} 2.75 \\ 1.75 \\ 1.75 \\ 0.75 \\ 4.25 \\ 1.25 \\ 1.25 \\ + 4.25 \\ \hline 14.00 \div 8 = 1.75 \end{array}$$

Homework

Melon WS2

Due Thurs.