Central Tendency and Spread Practice Worksheet #1

Name_____ **Class Period**_____

Measures of Central Tendency – Mean and Median

1. What is the difference between mean and median?

2. Give an example of data when the mean and median might have the same value.

    Give an example when the mean and the median do NOT have the same value.

3. Is it possible to have more than half of the data values above (or below) the mean?

4. Find the mean, median, and mode for this set of data: 5, 11, 16, 8, 4, 7, 15, 6, 11, 7

5. Kara had 85, 83, 92, 88, and 69 on her first five math tests. She knows that she needs an average of 85 to get a B. What score must she get on her last test to get a B?

Measures of Spread – Range, IQR, and Mean Absolute Deviation

Man Absolute Deviation of a numerical data set is the average positive deviations of the data from the mean.

$$Mean\ Absolute\ Deviation = \frac{\left|x_1 - \bar{x}\right| + \left|x_2 - \bar{x}\right| + ... + \left|x_n - \bar{x}\right|}{n}$$

A measure of distribution is a measure of how spread out data is, or how the data is distributed from its smallest values to its largest values. Suppose, for instance, that **Joe** has test scores of 60, 68, 69, 78, 90, 95, and 100. **Sam** scores 78, 78, 79, 79, 82, 82, and 82.

6. Calculate Joe's mean test score. Then calculate Sam's mean test score. What do you notice about Joe's scores compared to Sammy's?

Measuring the mean will not tell you much about the characteristics of the test takers. A measure of distribution, or spread, will help you see that Sam consistently scores near 80, while Joe's scores are spread out, or distributed, over a much larger range.

7. To examine the distribution of test scores, find the mean absolute deviation. Follow the steps below to find the mean absolute deviation of Sam's test scores (Joe's example is given).

Steps	Joe	Sam
a) Calculate the mean, symbolically, $\bar{x}$, of the data.	Mean:	
b) Find the deviation, or distance from the mean, for each piece of data.	Deviation:	
c) Find the absolute value of the mean deviations.		
d) Find the average of the positive deviations found in part c.	MAD:	

8. Why do you think the MAD of Joe's test scores is higher than the MAD of Sammy's test scores?