Name: _____ Math 212 POW Three

FORMAT

- Write neatly and clearly on white paper (lined or unlined)
- Attach a POW cover sheet to the front of your work for turn in

Before starting your problem solving process:

- ✓ Refer to your POW directions (linked to your Math 212 home page)
- ✓ Read **all** of the directions given here

SPECIAL DIRECTIONS

- This POW features statistical computations. You do not have to use a formal problem solving strategy or formal Polya's four step strategy to do these problems.
- You should neatly and carefully show your work throughout this POW and, ask asked, explain your process.
- Use the same **vertical scale** for the graph of each Data Set that you may visually compare the data sets as much as possible. Determine your solutions for questions #1 - #4 ***before*** you start graphing.
- Label everything, especially the axes, neatly. If you are drawing the graphs by hand, use graph paper. Graphs drawn on non-graph paper will be returned to be recopied (and will incur late penalties). If you are using technology to create the graphs, be sure to label everything clearly.

1. Create Data Set One, a set of 6 numbers, A, B, C, D, E, F with the given properties:

DATA SET ONE PROPERTIES
Mean = 5
There is a Mode
Median ≠ Mode
Median ≠ Mean

   a. Briefly explain how you determined your set of numbers.
   b. Graph Data Set One using a line plot. Your horizontal axis categories should be the number names: A, B, C, D, E, F and your vertical axis should show the value of the number (i.e., if A = 2, A will be a line plot category two Xs tall).
   c. Compute the mean for your data set, show your work.
   d. Mark the mean of your data set visually on your graph by drawing a light horizontal line at the “mean height” on the y-axis. Label the line.
   e. Compute the mode and the median for your data set, show your work
   f. Compute the (data) range, show your work.

2. Create Data Set Two, a set of 6 numbers, A, B, C, D, E, and F where each number is DOUBLE the corresponding number in Data Set One.
   a. Graph Data Set Two using a line plot.
   b. Compute the mean for your data set, show your work.
   c. Mark the mean of your data set visually on your graph by drawing a light horizontal line
   d. Compute the mode and the median for this data set, show your work
   e. Compute the (data) range, show your work.

3. Create Data Set Three, a set of 6 numbers, A, B, C, D, E, and F where each number is HALF the corresponding number in Data Set One.
   a. Graph Data Set Three using a line plot.
   b. Compute the mean for your data set, show your work.
   c. Mark the mean of your data set visually on your graph by drawing a light horizontal line
   d. Compute the mode and the median for this data set, show your work
   e. Compute the (data) range, show your work.

4. Create Data Set Four, a set of 6 numbers, A, B, C, D, E, and F where each number is TWO MORE than the corresponding number in Data Set One.
   a. Graph Data Set Four using a line plot.
   b. Compute the mean for your data set, show your work.
   c. Mark the mean of your data set visually on your graph by drawing a light horizontal line
   d. Compute the mode and the median for this data set, show your work
   e. Compute the (data) range, show your work.

5. Let *n* be a whole number *n* = 2, 3, 4, 5, … Explain what happens to the:

Mean
Median
Mode
Range

   a. If each of the 6 numbers in Data Set One are multiplied by *n*.
   b. If each of the 6 numbers in Data Set One are divided by *n*. This would mean cutting the stacks in half, in thirds, in fourths, etc.
   c. If each of the 6 numbers in Data Set One have the number *n* added to them.