2016-2017 Advanced Placement Statistics Summer Assignment

To all A.P. Statistics students:

Welcome to AP Statistics. The following is your summer assignment. **It is due the first day of school and is worth a test grade**. If you have any questions please contact me at resnak.paula@mail.fcboe.org. Have a great summer.

Mrs. Paula Resnak

Part 1: Vocabulary Use any reference materials or the internet to define the following. When asked provide a unique example or the formula or a sketch for the word.

1. Categorical Variables (Example)
2. Quantitative Variables (Example)
3. Discrete Variables (Example)
4. Continuous Variables (Example)
5. Univariate Data
6. Bivariate Data
7. Population
8. Sample
9. Median
10. Mean Formula
11. Outlier
12. Parameter
13. Statistics
14. Range
15. Standard score (z-score) (Formula)
16. Center
17. Spread
18. Variance
19. Standard Deviation (Formula)
20. Symmetry (Sketch)
21. Unimodal (Sketch)
22. Bimodal (Sketch)
23. Skewed Right (Sketch)
24. Skewed Left (Sketch)
25. Five Number Summary
26. Interquartile Range
27. Normal Curve (Sketch)

Part 2: Problems

1. Find the mean, median, mode, and range of the following collection of scores on a test.

32, 72, 81, 95, 98, 58, 77, 75, 83, 97, 45, 89, 93, 57,
82, 97, 52, 75, 79, 78, 99, 98, 54, 75, 85, 61, 55, 86

2. Find the five number summary for the data in question 1 and construct a box-and-whisker plot.

3. Twenty-eight students in a class were asked how many cars their family owned. The results were as follows: Construct a frequency distribution and a dot plot for this data
2, 2, 3, 2, 1, 2, 2, 4, 3, 2, 0, 1, 0, 1, 1, 2, 2, 3, 2, 3, 3, 5, 1, 1, 3, 0, 1, 2

4. Each of the members of a recent high school graduating class was asked to name his/her favorite among these subjects: English, foreign language, history, mathematics, science. The results are shown in the table. Construct a bar graph that shows these results.
English: 62, Foreign Language :40, History: 40, Mathematics: 18, Science: 15

5. Construct a stem and leaf plot for the data: 15, 59, 66, 42, 48, 85, 16, 37, 59, 61, 23, 70, 81, 35, 51, 76, 25, 86, 11, 68, 29, 77, 92

6. Write two specific survey questions that you would ask voters in the next senatorial election in your state. Choose the type of question and response (yes/no, scale of 1 to 5, numerical responses, etc.) that would be most appropriate for the issues involved. What relationships would be expected when the responses are analyzed?

7. Find a set of numbers that will satisfy all of the following conditions:
• The median of a set of 20 numbers is 24.
• The range is 42.
• To the nearest whole number the mean is 24.
• No more than three numbers are the same.
Show your strategy.

8. Find a statistical study that interests you (from newspaper, magazines, journals, or the internet). Attach a copy of the study.

a) Determine whether the study was an experiment or observational study?
b) Do you think that the findings are significant? Why or why not?
c) Do you think there were any problems or biases in this study?
d) What do you think is the main conclusion of the study?