Elementary Statistics Project:

Due date is Dec. 19th

This is an individual project not to be turned in with any other student. Granted the calculations and statistical discoveries should be the same for all students, I am requiring you to have your own thoughts answering the questions following the study. Below is a complete guide for what needs to be completed for the statistics given the data set.

Calculate the Sample Mean and Sample Standard Deviation

The data in the MS Excel spreadsheet titled *Accuplacer Scores 2017 School Year* gives three sets of data. There have been three separate math tests given to students registering for courses at SCC: Arithmetic, Elementary Algebra and College Math. The spreadsheet has columns for these three tests. Calculate the following:

$$n - the\ total\ number\ in\ the\ sample$$
$$\bar{x} - sample\ mean$$
$$s\ -\ \ sample\ standard\ deviation$$

Estimate the Population Mean for a 90% confidence Interval

Use the information from the statistics found in the data sets to determine THREE different estimates for the population mean (Arithmetic, Elementary Algebra and College Math) assuming the data is approximately normally distributed.

Determine the Error

Calculate the Error for each of the three tests

Construct a 90% Confidence Interval for a Population Mean

Construct separate 90% confidence interval for each of the population means of the given three tests for the Accuplacer.

Interpret the statistics and information regarding the confidence intervals

Answer the following questions:

1. What distribution and Critical value did you use to calculate your margin of Error?
2. What can your confidence interval tell you about the population for Accuplacer tests given nationally?
3. In what ways do you think SCC could use this information for determining what math courses you need to take?

Perform a Hypothesis test using the following:

4. For the Arithmetic test, perform a hypothesis test to determine if there is sufficient evidence to support the claim that students score above the population mean score of a 56, at a 0.1 level of significance.
5. For the Algebra test, perform a hypothesis test to determine if there is sufficient evidence to support the claim that students score below the population mean score of a 76, at a 0.1 level of significance.
6. For the College Math test, perform a hypothesis test to determine if there is sufficient evidence to support the claim that the population mean score of a 40 is incorrect, at a 0.1 level of significance.
7. Determine what is means to the college whether there is sufficient evidence to support each claim or there is not sufficient evidence to support each claim.
8. Write about how taking this class and completing this project has helped you or hindered you toward your educational and graduation goals.

I am expecting a file in either MS Word or PDF format submitted to include both your statistical results (mean, standard deviation, error, etc) and your interpretations and responses to the questions above. You will be graded on what you turn in, whether it is printed or submitted via D2L. The grading is based on accurate calculation of the statistics and confidence interval, as well as the individualized answers given to the three questions regarding your interpretation of the data and statistics.