CHAPTER FIVE FINDING CONFIDENCE INTERVALS FOR PROPORTIONS and MEANS

CLASSWORK (Submit a Word File and an Rmardown File)

**Problem 1**

A random sample of 200 students was extracted from a population in order to produce a confidence interval for the proportion of the student population who purchased iphones within the last year.

Use and show R coding to produce the following intervals (the sample proportion is **.07** for each problem a – d)

a) Produce the 95% confidence interval for the sample size of 200 students.

b) Produce the 95% confidence interval for the sample size of 500 students.

c) Produce the 95% confidence interval for the sample size of 800 students.

d) Produce the 95% confidence interval for the sample size of 1100 students.

e) What observation do you feel is important as you study widths of each confidence interval? Are they getting wider, narrower, or are they approximately the same.

f) Offer a summary statement regarding a relationship between the size of a sample and the width of the confidence interval?

**Problem 2**

a) Use the step by step method illustrated in the notes to produce a 95% confidence interval for a mean population if the sample size is 27, the sample standard deviation is 4, and the sample mean is 42. Interpret your interval SHOW ALL OF YOUR WORK

b) Use the step by step method illustrated in the notes to produce a 90% confidence interval for a mean population if the sample size is 27, the sample standard deviation is 4, and the sample mean is 42. Interpret your interval SHOW ALL OF YOUR WORK

**Problem 3**

**True or False?**

The sample proportion is always a value inside of your generated confidence interval for the population proportion.