

Math 1342  
Elementary Statistics  
Lab Exercise # 8  
Mr. Shea

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Section: \_\_\_\_\_

Semester: \_\_\_\_\_

Grade: \_\_\_\_\_

**Attach computer printouts to this sheet and submit your assignment to your instructor.**

Use the TI-83 to answer the following questions:

- 8a. A company makes batteries that have an average life of 32 months and standard deviation of 6 months. How long should the warranty be so the company has to replace no more than 10% of the batteries that they sell.
- 8b. The length of a single trout taken at random from a pond is normally distributed with a mean of 10.2 inches and a standard deviation of 1.4 inches. Using a sample size of 15, find the mean and standard deviation of the sampling distribution.
- 8c. The salary of plumbers has a population mean of \$32,500 and a standard deviation of \$5,600. Using a random sample size of 45, what is the probability that the mean salary of the sample  $\bar{x}$ , is less than \$30,000. (Parameters from the Jobs Related Almanac)

**Elementary Statistics:            Lab # 8**

**\*\*\*If in doubt, Print it out!\*\*\***

8a.) These problems deal with the Central Limit Theorem. Refer to your text for reference if needed. This problem will have a bell shaped curve with a tail of 10%. To find this value on the TI-83 you use a key in the DISTR menu called 3: invNorm( enter the given tail value (in decimal form), mean, and the standard deviation (separated by commas) then close the parentheses. Print.

8b.) Refer to your text for the correct equation for this problem. Print your calculations.

8c.) For this problem you will use the normalcdf( function. Since you want to find the probability that is less than 30,000; your  $x$  values will be between 0 and 30,000. Now load up normalcdf( and enter the starting value, the ending value, the mean, and the standard deviation of  $\bar{x}$  distribution. (You have to calculate the standard deviation of the  $\bar{x}$  using the equation from your text. You can enter the calculation in the function.) Print.