

Math 1342  
Elementary Statistics  
Lab Exercise # 10

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:

10a. *Consumer Reports* indicated that the mean braking distance (from 60 m.p.h.) on wet pavement for the Mercury Sable was 159 feet. Suppose that some Sables are equipped with tires having a tread designed to grip the road better on wet pavement that were used in 45 tests (braking from 60 m.p.h.). The sample mean braking distance was 148 feet with a standard deviation of 23.5 feet. Does this information indicate that the population mean braking distance for the Mercury Sable is reduced for the new tire tread? Use  $\alpha = 0.01$ .

10b. An archeology professor claims that the population mean of floor space of Mesa Verde Anasazi kivas is  $12 m^2$ . However, in the book, *Architecture of Social Integration in Prehistoric Pueblos*, (W. Lipe and M. Hegmon, Crow Canyon Archeological Center Press) it is stated that a random sample of 56 Mesa Verde Anasazi kivas had a sample mean area of  $12.3 m^2$  with a standard deviation of  $3.4 m^2$ . Does this data indicate that the mean floor area of all such Mesa Verde kivas is different from  $\mu = 12 m^2$ ?

**Elementary Statistics:            Lab # 10**

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

- 10a.) These problems are Hypothesis Testing. Refer to text if needed. Notice that  $n > 30$ , so we will use Z-Test under the [STAT], TESTS menu. Make sure Stats is selected and enter the values given. Be careful to enter the right number with the correct symbol. Decide what hypothesis you are going to test based on the problem. Select Calculate. Print screen. Go back to Z-Test, scroll down without changing any values, and select Draw. Print Screen. Interpret the value the calculator gives you for  $p$ .
- 10b.) Repeat all the steps from 10a. Decide what your hypothesis will be and interpret your result.