Week 6 Assignment

Question 1 – the concepts

Professor Walters knows that the mean score on the midterm exam from all the years he has been teaching is 83%.  Kennedy was in his most recent class, and his class’s mean score on the final exam was 81%.  Kennedy decided to run a hypothesis test to determine if the mean score of his class was different than the mean score of the population.  α = .01.

         What is the mean score of the population?

         What is the mean score of the sample?

         Is this test one-tailed or two-tailed? Why?

         What are the null and alternative hypotheses in this case?

         Let’s pretend that p was calculated, and p = 0.005, should Kennedy reject or fail to reject the null hypothesis? Why?

         What should Kennedy’s statement of conclusion be?  (This circles back to what is being tested).

The next two ask you do to a hypothesis test. Remember, hypothesis tests follow a series of steps. They are not just a computer printout.  Make sure if you use a computer printout, you identify which parts of the printout apply to the problem. All of the parts of the printout will NOT apply.

Question 2 – hypothesis test with guidance

A sample of 14 account balances of a credit company showed a mean customer balance of $4,550, but the marketing manager claimed that the mean balance for the population was $4,325.  The marketing manager did NOT have the population standard deviation, but the sample standard deviation was found to be $500.  Use the p-value approach to conduct a full hypothesis test (all steps) that can be used to determine whether the mean of all account balances is significantly different from $4,325.   Let α = .10.

To help you go through the steps of hypothesis testing, follow these prompts:

The null hypothesis is

The alternative hypothesis is

I will use a **\_\_\_\_\_\_\_\_\_** in my formula because

I have calculated the value of t to be

I have used t to get the value of p. My p value is

Alpha, which is given in the problem, is

When I compared p to alpha, p is **\_\_\_\_\_\_\_\_\_\_** alpha.

Because of this, I know I should **\_\_\_\_\_\_\_\_\_\_** my null hypothesis.

**Choose one.** The mean balance is different than $4325. / The mean balance is NOT different than $4325.

Question 3 -on your own

A sample of 510 homes for sale in ABC City showed a mean asking price of $258,000, but the city claimed that the mean asking price for the population was $249,000.  The population standard deviation of all homes for sale was $9,000.  Use the p-value approach to conduct a full hypothesis test (all steps- follow the guidance in the last problem) that can be used to determine whether the mean asking price is significantly greater than $249,000.   Let α = .05.