Student: Lauren Garner
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Instructor: Stanislaus Simon Solomon
Course: MBA 521 - Hybrid Section (Fall 2020)

Assignment: Copy of HW 4 - Statistical Inference (Ungraded, Op

1. A national magazine stated that at most, 16% of millennials have a gym membership. Formulate an appropriate one-sample test of hypothesis to test this.

   Determine the null hypothesis, H_0, and the alternative hypothesis, H_1.

H_0: (1) _____ (2) _____

H_1: (3) _____ (4) _____
(Type whole numbers.)

(1) ○ σ ○ π ○ μ ○ p̂ (2) ○ > ○ < ○ ≠ ○ = (3) ○ μ ○ p ○ π ○ σ (4) ○ ≠ ○ ≥ ○ = ○ <

2. The price of a certain combo meal at different franchises of a national fast food company varies from $5.00 to $ 17.31 and has a known standard deviation of $2.16. A sample of 28 students in an online course that includes students across the country stated that their average price is $5.75. The students have also stated that they are generally unwilling to pay more than $6.50 for this meal. Formulate and conduct a hypothesis test to determine if you can conclude that the population mean is less than $6.50. Use a level of significance of 0.01.

   Is there sufficient evidence at the 0.01 level of significance that the population mean is less than

   $6.50? Determine the null hypothesis, H_0, and the alternative hypothesis, H_1.

   H_0: (1) _____ (2) _____

   H_1: (3) _____ (4) _____
   (Type integers or decimals. Do not round.)

   Compute the test statistic.
(Round to two decimal places as needed.)

   Find the p-value for the test.
(Round to three decimal places as needed.)

   State the conclusion.

   The p-value is (5)_____ the chosen value of , so (6)_____ the null hypothesis. There is

   (7)_____ evidence to conclude that the population mean is less than $6.50

(1) ○ σ ○ μ ○ π (2) ○ > ○ ≤ ○ < ○ ≠ ○ = ○ ≥ (3) ○ μ ○ π ○ σ (4) ○ = ○ ≥ ○ ≤ ○ ≠ ○ < ○ > (5) ○ less than ○ greater than

(6) do not rejec ○ reject (7) ○ insufficient ○ sufficient

3. According to a magazine, people read an average of more than two books in a month. A survey of 25 random individuals found that the mean number of books they read was 2.1 with a standard deviation of 1.23.
   a. To test the magazine's claim, what should the appropriate hypotheses be?
   b. Compute the test statistic.
   c. Using a level of significance of 0.05, what is the critical value?
   d. Find the p-value for the test.
   e. What is your conclusion?

To test the magazine's claim, what should the appropriate hypotheses be?

a.

Determine the null hypothesis, H_0, and the alternative hypothesis, H_1.

H_0: (1) _____ (2)_____

H_1: (3) _____ (4)_____

(Type whole numbers.)

b. Compute the test statistic.

(Round to two decimal places as needed.)

Using a level of significance of 0.05, what is the critical value?

c.

(Round to two decimal places as needed.)

d. Find the p-value for the test.

(Round to three decimal places as needed.)

e. What is your conclusion?

The p-value is (5)_____ the chosen value of , so (6)_____ the null hypothesis. There is (7)_____ evidence to conclude that mean is greater than 2.