Quiz 6

This is a preview of the published version of the quiz

Started: Jan 8 at 1:39pm

Quiz Instructions

This quiz must be taken in person during the set time in class. If you take the quiz at some other time or outside of the classroom, then you may not earn credit for your answers/work.

Question 1 — 1 pts

(Objective 6a: Hypothesis Testing)

(Remember to include your work in your Excel file for this problem.)

An education researcher wants to know if the proportion of college students who find a certain subject challenging is not equal to 54%. He conducts a survey of college students.

Suppose that for $n = 205$ surveyed students, 129 found the subject challenging. Test the hypothesis that the proportion of all college students that find the subject challenging is not equal to 54%. (Let $\alpha = 0.05$.)

1. State the null hypothesis.
2. State the alternative hypothesis.
3. What is the p-value?
4. Using complete sentences, state the meaning of the p-value in the context of this problem.
5. What do we conclude? Why?

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Question 2

1 pts

(Objective 6b: Inference for Single Numerical Variables)

(Remember to include your work in your Excel file for this problem.)

A financial consultant examines the rates of return of stocks in a portfolio. He takes a random samples of stocks and analyzes them. Out of 22 analyzed stocks, the average % rate of return was $\overline{x} = -22.851\%$ return, with sample standard deviation $s = 50.999\%$ return.

1. Let $\alpha = 0.05$, and test the hypothesis that the average % rate of return for the portfolio is not equal to 5% return.
   A. State the null hypothesis.
   B. State the alternative hypothesis
   C. What is the p-value?
   D. Using complete sentences, state the meaning of the p-value in the context of this problem.
   E. What do we conclude? Why?
2. Find a 99% confidence interval for the the average % rate of return for the portfolio. Using complete sentences, explain what the confidence interval means in the context of this problem.

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