Current Score	Due Date
QUESTION 1 2 3 4 POINTS 9/9 ✓ 1/1 ✓ 1/1 ✓ 4/4 ✓ TOTAL SCORE 15/15 100.0%	MON, DEC 11, 2023 11:59 PM GMT+3 Request Extension

Instructions

1) You are allowed for two submissions.
2) Do only parts (a) and (b) of Question 4 .
3) Use the continuity correction formula for question 4. (Use your calculator because SALT does not apply z_corr.)

Assignment Submission & Scoring

Assignment Submission

For this assignment, you submit answers by questions.

Assignment Scoring

Your best submission for each entire question is used for your score.

1. [9/9 Points] DETAILS ROSBIOSTAT8 7.E.001-005.S. 1/2 Submissions Used

MY NOTES ASK YOUR TEACHER

Renal Disease

The mean serum-creatinine level measured in 11 patients 24 hours after they received a newly proposed antibiotic was 1.1 mg/dL.

You can use SALT to answer parts of this question.

(a) If the mean and standard deviation of serum creatinine in the general population are 1.0 and 0.4 mg/dL, respectively, then, using a significance level of 0.05, test whether the mean serum-creatinine level in this group is different from that of the general population.

State the null and alternative hypotheses (in mg/dL). (Enter != for ≠ as needed.)

H_0: $\mu = 1$ ✓

H_1: $\mu! = 1$ ✓

Find the test statistic. (Round your answer to two decimal places.)

0.83 ✓

Find the rejection region. (Round your answers to two decimal places. If the test is one-sided, enter NONE for the unused region.)

test statistic > 1.96 ✓

test statistic < -1.96 ✓

State your conclusion.

- (●) Fail to reject H_0. There is insufficient evidence to conclude that the mean serum-creatinine level in this particular group of patients is different from that of the general population.
- ( ) Reject H_0. There is sufficient evidence to conclude that the mean serum-creatinine level in this particular group of patients is different from that of the general population.

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- Reject H_0. There is sufficient evidence to conclude that the mean serum-creatinine level in this particular group of patients is different from that of the general population.
- Fail to reject H_0. There is sufficient evidence to conclude that the mean serum-creatinine level in this particular group of patients is different from that of the general population.

(b) What is the p-value for the test? (Use technology to find the p-value. Round your answer to four decimal places.)

p-value = 0.4070

(c) Suppose the sample standard deviation of serum creatinine in part (a) is 0.5 mg/dL. Assume that the standard deviation of serum creatinine is not known, and perform the hypothesis test in part (a). Report a p-value.

Find the test statistic. (Round your answer to two decimal places.)

0.66

Use technology to report a p-value. (Round your answer to four decimal places.)

p-value = 0.5221

State your conclusion.

- (selected) Fail to reject H_0. There is insufficient evidence to conclude that the mean serum-creatinine level in this particular group of patients is different from that of the general population.
- Reject H_0. There is insufficient evidence to conclude that the mean serum-creatinine level in this particular group of patients is different from that of the general population.
- Reject H_0. There is sufficient evidence to conclude that the mean serum-creatinine level in this particular group of patients is different from that of the general population.
- Fail to reject H_0. There is sufficient evidence to conclude that the mean serum-creatinine level in this particular group of patients is different from that of the general population.

(d) Compute a two-sided 95% CI for the true mean serum-creatinine level (in mg/dL) in part (c). (Enter your answer using interval notation. Round your numerical values to two decimal places.)

$(0.76, 1.44)$ mg/dL

(e) How does your answer to part (d) relate to your answer to part (c).

The interval contains the mean for the general population. This supports the conclusion of our test in part (c).

Need Help? Read It

Submit Answer

2. [1/1 Points] DETAILS **ROSBIOSTAT8 7.E.007.S.** 1/2 Submissions Used

MY NOTES ASK YOUR TEACHER

Use a computer program or SALT to compute the probability that a t distribution with 33 df exceeds 2.8. (Round your answer to four decimal places.)

USE SALT

0.0042

MY NOTES | ASK YOUR TEACHER

Use a computer program or SALT to compute the lower 10th percentile of a t distribution with 56 df. (Round your answer to two decimal places.)

USE SALT

-1.30 ✓

Need Help? Read It

Submit Answer

4. [4/4 Points] DETAILS ROSBIOSTAT8 7.E.017-020.S. 2/2 Submissions Used

MY NOTES | ASK YOUR TEACHER

Pulmonary Disease

Suppose the annual incidence of asthma in the general population among children 0–4 years of age is 1.4% for boys and 1% for girls.

You can use the Distribution Calculators page in SALT to find critical values and/or p-values to answer parts of this question. Please note that the Inferential Statistics page does not use the continuity-corrected version of the test statistic.

(a) If 12 cases are observed over 1 year among 570 boys 0–4 years of age with smoking mothers, then test whether there is a significant difference in asthma incidence between this group and the general population of boys 0–4 years of age using the critical-value method with a two-sided test. (Use $\alpha = 0.05$.)

State the null and alternative hypotheses. (Enter != for ≠ as needed.)

H_0: $p = 0.014$ ✓

H_1: $p! = 0.014$ ✓

What is the test statistic? (Round your answer to two decimal places.)

1.25 ✓

What is the critical value? (Round your answer to two decimal places.)

1.96 ✓

What conclusions can we draw from these results?

- (●) Fail to reject H_0; based on the results we find that there is insufficient evidence to conclude that there is a significant difference in asthma incidence between the population of boys 0–4 years of age with smoking mothers and the general population.
- ( ) Reject H_0; based on the results we find that there is insufficient evidence to conclude that there is a significant difference in asthma incidence between the population of boys 0–4 years of age with smoking mothers and the general population.
- ( ) Fail to reject H_0; based on the results we find that there is sufficient evidence to conclude that there is a significant difference in asthma incidence between the population of boys 0–4 years of age with smoking mothers and the general population.
- ( ) Reject H_0; based on the results we find that there is sufficient evidence to conclude that there is a significant difference in asthma incidence between the population of boys 0–4 years of age with smoking mothers and the general population. ✓

(b) Report a p-value corresponding to your answer to (a). (Round your answer to four decimal places.)

0.2095 ✓