

Name: _____

Score: _____ / _____

Homework 6

Part 1

null

1

What are the critical values for a one-independent sample nondirectional (two-tailed) z-test at a .05 level of significance?

- A. ± 1.26
- B. ± 1.96
- C. ± 2.12
- D. ± 2.92

Answer Point Value: 0.5 points

Answer Key: B

2

The alpha level determines the risk of a Type I error.

- True
- False

Answer Point Value: 0.5 points

Answer Key: True

3

The level of significance for a hypothesis test is:

- A. the probability to incorrectly rejecting the null hypothesis
- B. the probability of committing a Type I error
- C. the alpha level
- D. all of the above

Answer Point Value: 0.5 points

Answer Key: D

4

A researcher incorrectly decides to retain a null hypothesis that is actually false. The researcher committed a:

- A. Type I error
- B. Type II error
- C. Type III error
- D. All of the above

Answer Point Value: 0.5 points

Answer Key: B

5

A population is known to have a mean of $\mu = 45$. If a researcher predicts that the experimental treatment will produce a *decrease* in the scores, then the null hypothesis for a one-tailed test would state _____.

- A. $\mu \geq 45$
- B. $\mu \leq 45$
- C. $M \geq 45$
- D. $M \leq 45$

Answer Point Value: 0.5 points

Answer Key: A

- 6 If the obtained sample data are in the critical region, then the correct decision is to reject the null hypothesis.
- True
 - False

Answer Point Value: 0.5 points

Answer Key: True

- 7 If the sample is located in the critical region with $\alpha = .01$, then the sample would definitely be in the critical region if alpha is changed to $\alpha = .05$.
- True
 - False

Answer Point Value: 0.5 points

Answer Key: True

- 8 A researcher administers a treatment to a sample of $n = 25$ participants and uses a hypothesis test to evaluate the effect of the treatment. The hypothesis test produces a z-score of $z = 2.77$. Assuming that the researcher is using a two-tailed test,
- A. the researcher rejects the null hypothesis with $\alpha = .05$ but not with $\alpha = .01$.
 - B. the researcher should reject the null hypothesis with either $\alpha = .05$ or $\alpha = .01$.
 - C. the researcher should fail to reject H_0 with either $\alpha = .05$ or $\alpha = .01$.
 - D. cannot answer without additional information.

Answer Point Value: 0.5 points

Answer Key: B

9

In general, the null hypothesis states that the sample mean (after treatment) is equal to the original population mean (before treatment).

- True
- False

Answer Point Value: 0.5 points

Answer Key: True

10

A researcher reports the following result for a one-independent sample z-test at a .05 level of significance:

$z = 1.88$, $p = .06$ ($d = .25$). Is this result significant?

- A. Yes, the decision is to reject the null.
- B. no, the decision is to retain the null.
- C. yes, because the effect size is large.
- D. no, because the effect size is small.

Answer Point Value: 0.5 points

Answer Key: B

11

If the alpha level is increased from $\alpha = .01$ to $\alpha = .05$, what happens to the size of the critical region.

- A. It increases
- B. It decreases
- C. The alpha level has no influence on the size of the critical region

Answer Point Value: 0.5 points

Answer Key: A

12

The critical boundaries for a hypothesis test are $z = +1.96$ and -1.96 . If the z-score for the sample data is $z = -1.90$, then what is the correct statistical decision?

- A. Fail to reject H_1
- B. Fail to reject H_0
- C. Reject H_1
- D. Reject H_0

Answer Point Value: 0.5 points

Answer Key: B

13

If $\alpha = .05$ (one-tailed test, upper tail critical), what is the decision for $z_{\text{obt}} = 1.70$?

- A. Reject the null hypothesis
- B. Fail to reject the null hypothesis (retain the null hypothesis)

Answer Point Value: 0.5 points

Answer Key: A

14

What will increase the power of a hypothesis test?

- A. change from $\alpha = .05$ to $\alpha = .01$
- B. change the sample size from 25 to 100
- C. change from a one-tailed test to a two-tailed test
- D. none of the other will increase power

Answer Point Value: 0.5 points

Answer Key: B

15

In a hypothesis test, the critical region consist of

- A. samples values that are very unlikely to occur if the null hypothesis is true
- B. samples values that are very likely to occur if the null hypothesis is true
- C. samples values that are very unlikely to occur if the null hypothesis is false
- D. sample values that prove that the nullhypothesis is true

Answer Point Value: 0.5 points

Answer Key: A

16

If $\alpha = .05$ (one-tailed test, upper tail critical), what is the decision for $z_{\text{obt}} = -3.30$?

- A. Reject the null hypothesis
- B. Fail to reject the null hypothesis (retain the null hypothesis)

Answer Point Value: 0.5 points

Answer Key: B

17

A hypothesis test is being used to evaluate a treatment effect with $\alpha = .05$. If the sample data produce a z-score of $z = -2.24$, then what is the correct decision?

- A. Reject the null hypothesis and conclude that the treatment has no effect.
- B. Reject the null hypothesis and conclude that the treatment has an effect.
- C. Fail to reject the null hypothesis and conclude that the treatment has no effect.
- D. Fail to reject the null hypothesis and conclude that the treatment has an effect.

Answer Point Value: 0.5 points

Answer Key: B

18

If the sample size is increased from $n = 20$ to $n = 50$, what happens to the size of the critical region.

- A. It increases
- B. It decreases
- C. The sample size has no influence on the size of the critical region.

Answer Point Value: 0.5 points

Answer Key: C

19

If a hypothesis test results in rejecting the null hypothesis, then the researcher must conclude that the treatment "does not have a significant effect."

- True
- False

Answer Point Value: 0.5 points

Answer Key: False

20

If $\alpha = .01$ (two-tailed test), what is the decision for $z_{\text{obt}} = 2.10$?

- A. Reject the null hypothesis
- B. Fail to reject the null hypothesis (retain the null hypothesis)

Answer Point Value: 0.5 points

Answer Key: B