

1. Use the given statement to represent a claim. Write its complement and state which is H_0 and which is H_a .

$$\mu \geq 347$$

Find the complement of the claim.

μ		347
$\geq$		
$>$		
$=$		
$<$		
$\leq$		
$\neq$		

Which is H_0 and which is H_a ?

☐ A. $H_0: \mu \geq 347$
 $H_a: \mu < 347$

☐ B. $H_0: \mu \geq 347$
 $H_a: \mu = 347$

☐ C. $H_0: \mu > 347$
 $H_a: \mu \geq 347$

☐ D. $H_0: \mu < 347$
 $H_a: \mu \geq 347$

☐ E. $H_0: \mu \geq 347$
 $H_a: \mu \neq 347$

☐ F. $H_0: \mu \leq 347$
 $H_a: \mu \geq 347$

☐ G. $H_0: \mu \geq 347$
 $H_a: \mu \leq 347$

☐ H. $H_0: \mu \geq 347$
 $H_a: \mu > 347$

☐ I. $H_0: \mu = 347$
 $H_a: \mu \geq 347$

2. A null and alternative hypothesis are given. Determine whether the hypothesis test is left-tailed, right-tailed, or two-tailed.

$$H_0: \sigma \geq 5.1$$

$$H_a: \sigma < 5.1$$

What type of test is being conducted in this problem?

☐ A. Two-tailed test

☐ B. Left-tailed test

☐ C. Right-tailed test

3. Write the null and alternative hypotheses. Identify which is the claim.

A light bulb manufacturer claims that the mean life of a certain type of light bulb is more than 900 hours.

Choose the correct null and alternative hypotheses below.

- | | | |
|--|--|--|
| ☐ A. $H_0: \mu > 900$
$H_a: \mu \leq 900$ | ☐ B. $H_0: \mu \neq 900$
$H_a: \mu = 900$ | ☐ C. $H_0: \mu = 900$
$H_a: \mu \neq 900$ |
| ☐ D. $H_0: \mu < 900$
$H_a: \mu \geq 900$ | ☐ E. $H_0: \mu \geq 900$
$H_a: \mu < 900$ | ☐ F. $H_0: \mu \leq 900$
$H_a: \mu > 900$ |

Identify which is the claim.

- ☐ The alternative hypothesis H_a is the claim.
- ☐ The null hypothesis H_0 is the claim.

4. Write the null and alternative hypotheses. Identify which is the claim.

The standard deviation of the base price of a certain type of car is no more than \$1430.

Choose the correct null and alternative hypotheses below.

- | | | |
|--|--|--|
| ☐ A. $H_0: \sigma > 1430$
$H_a: \sigma \leq 1430$ | ☐ B. $H_0: \sigma < 1430$
$H_a: \sigma \geq 1430$ | ☐ C. $H_0: \sigma \leq 1430$
$H_a: \sigma > 1430$ |
| ☐ D. $H_0: \sigma = 1430$
$H_a: \sigma \neq 1430$ | ☐ E. $H_0: \sigma \neq 1430$
$H_a: \sigma = 1430$ | ☐ F. $H_0: \sigma \geq 1430$
$H_a: \sigma < 1430$ |

Identify which is the claim.

- ☐ The alternative hypothesis H_a is the claim.
- ☐ The null hypothesis H_0 is the claim.

5. 18% of all homeowners have a home security alarm. Determine whether the hypothesis test for this claim is left-tailed, right-tailed, or two-tailed. Explain your reasoning.

The hypothesis test is two-tailed
right-tailed
left-tailed because the null
alternative hypothesis contains ≥
<
=
≠
≤
>.

6. A film developer claims that the mean number of pictures developed for a camera with 27 exposures is more than 22. If a hypothesis test is performed, how should you interpret a decision that (a) rejects the null hypothesis and (b) fails to reject the null hypothesis?

(a) Choose the correct answer below.

- ☐ A. There is enough evidence to support the claim that the mean number of pictures developed for a camera with 27 exposures is more than 22.
- ☐ B. There is not enough evidence to reject the claim that the mean number of pictures developed for a camera with 27 exposures is more than 22.
- ☐ C. There is enough evidence to reject the claim that the mean number of pictures developed for a camera with 27 exposures is more than 22.
- ☐ D. There is not enough evidence to support the claim that the mean number of pictures developed for a camera with 27 exposures is more than 22.

(b) Choose the correct answer below.

- ☐ A. There is not enough evidence to reject the claim that the mean number of pictures developed for a camera with 27 exposures is more than 22.
- ☐ B. There is enough evidence to reject the claim that the mean number of pictures developed for a camera with 27 exposures is more than 22.
- ☐ C. There is enough evidence to support the claim that the mean number of pictures developed for a camera with 27 exposures is more than 22.
- ☐ D. There is not enough evidence to support the claim that the mean number of pictures developed for a camera with 27 exposures is more than 22.

7. Find the P-value for the indicated hypothesis test with the given standardized test statistic, z . Decide whether to reject H_0 for the given level of significance α .

Two-tailed test with test statistic $z = -1.51$ and $\alpha = 0.05$

P-value = (Round to four decimal places as needed.)

State your conclusion.

- ☐ Fail to reject H_0
☐ Reject H_0

8. Find the critical z values. Assume that the normal distribution applies.

Right-tailed test; $\alpha = 0.005$

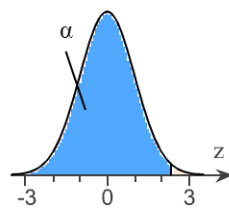
$z =$
(Round to two decimal places as needed. Use a comma to separate answers as needed.)

9. Find the critical value(s) for a left-tailed z -test with $\alpha = 0.01$. Include a graph with your answer.

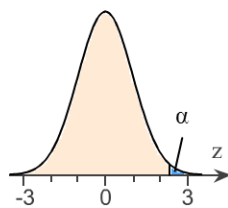
The critical value(s) is(are) .
(Round to two decimal places as needed. Use a comma to separate answers as needed.)

Draw a graph of the rejection region. Choose the correct graph below.

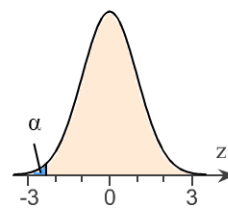
☐ A.



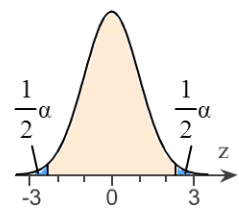
☐ B.



☐ C.



☐ D.



10. Test the claim about the population mean, μ , at the given level of significance using the given sample statistics.

Claim: $\mu = 50$; $\alpha = 0.02$. Sample statistics: $\bar{x} = 49.4$, $s = 3.24$, $n = 66$

Identify the null and alternative hypotheses. Choose the correct answer below.

- | | |
|--|--|
| ☐ A. $H_0: \mu = 50$
$H_a: \mu \neq 50$ | ☐ B. $H_0: \mu \neq 50$
$H_a: \mu = 50$ |
| ☐ C. $H_0: \mu = 50$
$H_a: \mu < 50$ | ☐ D. $H_0: \mu < 50$
$H_a: \mu = 50$ |
| ☐ E. $H_0: \mu > 50$
$H_a: \mu = 50$ | ☐ F. $H_0: \mu = 50$
$H_a: \mu > 50$ |

Calculate the standardized test statistic.

The standardized test statistic is .

(Round to two decimal places as needed.)

Determine the critical value(s). Select the correct choice below and fill in the answer box to complete your choice.

(Round to two decimal places as needed.)

- ☐ A. The critical value is .
- ☐ B. The critical values are $\pm$.

Determine the outcome and conclusion of the test. Choose the correct answer below.

- ☐ A. Reject H_0 . At the 2% significance level, there is enough evidence to reject the claim.
- ☐ B. Fail to reject H_0 . At the 2% significance level, there is not enough evidence to support the claim.
- ☐ C. Fail to reject H_0 . At the 2% significance level, there is not enough evidence to reject the claim.
- ☐ D. Reject H_0 . At the 2% significance level, there is enough evidence to support the claim.

11. Test the claim about the population mean, μ , at the given level of significance using the given sample statistics.

Claim: $\mu \neq 6000$; $\alpha = 0.09$. Sample statistics: $\bar{x} = 6200$, $s = 329$, $n = 42$

Identify the null and alternative hypotheses. Choose the correct answer below.

- | | |
|---|---|
| ☐ A. $H_0: \mu = 6000$
$H_a: \mu \neq 6000$ | ☐ B. $H_0: \mu \geq 6000$
$H_a: \mu \neq 6000$ |
| ☐ C. $H_0: \mu \neq 6000$
$H_a: \mu \geq 6000$ | ☐ D. $H_0: \mu \leq 6000$
$H_a: \mu \neq 6000$ |
| ☐ E. $H_0: \mu \neq 6000$
$H_a: \mu \leq 6000$ | ☐ F. $H_0: \mu \neq 6000$
$H_a: \mu = 6000$ |

Calculate the standardized test statistic.

The standardized test statistic is .

(Round to two decimal places as needed.)

Determine the critical value(s). Select the correct choice below and fill in the answer box to complete your choice.

(Round to two decimal places as needed.)

- ☐ A. The critical values are $\pm$.
- ☐ B. The critical value is .

Determine the outcome and conclusion of the test. Choose from the following.

- ☐ A. Fail to reject H_0 . At the 9% significance level, there is not enough evidence to support the claim.
- ☐ B. Fail to reject H_0 . At the 9% significance level, there is not enough evidence to reject the claim.
- ☐ C. Reject H_0 . At the 9% significance level, there is enough evidence to support the claim.
- ☐ D. Reject H_0 . At the 9% significance level, there is enough evidence to reject the claim.

12. A random sample of 82 eighth grade students' scores on a national mathematics assessment test has a mean score of 291 with a standard deviation of 36. This test result prompts a state school administrator to declare that the mean score for the state's eighth graders on this exam is more than 285. At $\alpha = 0.02$, is there enough evidence to support the administrator's claim? Complete parts (a) through (e).

(a) Write the claim mathematically and identify H_0 and H_a . Choose the correct answer below.

- ☐ A. $H_0: \mu \leq 285$
 $H_a: \mu > 285$ (claim)
 ☐ B. $H_0: \mu \leq 285$ (claim)
 $H_a: \mu > 285$
☐ C. $H_0: \mu < 285$
 $H_a: \mu \geq 285$ (claim)
 ☐ D. $H_0: \mu = 285$
 $H_a: \mu > 285$ (claim)
 ☐ E. $H_0: \mu \geq 285$ (claim)
 $H_a: \mu < 285$
☐ F. $H_0: \mu = 285$ (claim)
 $H_a: \mu > 285$

(b) Find the standardized test statistic z , and its corresponding area.

$z =$ (Round to two decimal places as needed.)

Area = (Round to three decimal places as needed.)

(c) Find the P-value.

P-value = (Round to three decimal places as needed.)

(d) Decide whether to reject or fail to reject the null hypothesis.

- ☐ Reject H_0
☐ Fail to reject H_0

(e) Interpret your decision in the context of the original claim.

At the 2% significance level, there is not enough evidence to support the administrator's claim that the mean score for the state's eighth graders on the exam is more than 285.

13.

A company that makes cola drinks states that the mean caffeine content per 12-ounce bottle of cola is 40 milligrams. You want to test this claim. During your tests, you find that a random sample of thirty 12-ounce bottles of cola has a mean caffeine content of 41.8 milligrams with a standard deviation of 6.8 milligrams. At $\alpha = 0.08$, can you reject the company's claim? Complete parts (a) through (e).

(a) Identify H_0 and H_a . Choose the correct answer below.

☐ A. $H_0: \mu \neq 40$
 $H_a: \mu = 40$

☐ B. $H_0: \mu \geq 41.8$
 $H_a: \mu < 41.8$

☐ C. $H_0: \mu = 41.8$
 $H_a: \mu \neq 41.8$

☐ D. $H_0: \mu \neq 41.8$
 $H_a: \mu = 41.8$

☐ E. $H_0: \mu = 40$
 $H_a: \mu \neq 40$

☐ F. $H_0: \mu \geq 40$
 $H_a: \mu < 40$

(b) Find the critical value(s). Select the correct choice below and fill in the answer box within your choice.

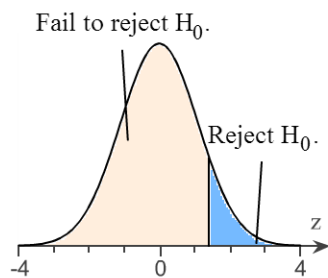
(Round to two decimal places as needed.)

☐ A. The critical values are $\pm$.

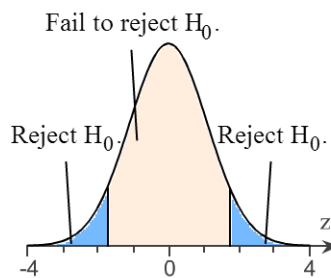
☐ B. The critical value is .

Identify the rejection region(s). Choose the correct answer below.

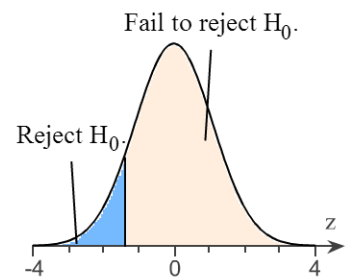
☐ A.



☐ B.



☐ C.



(c) Find the standardized test statistic.

$z =$ (Round to two decimal places as needed.)

(d) Decide whether to reject or fail to reject the null hypothesis.

13.
(cont.)
- ☐ A. Since z is not in the rejection region, fail to reject the null hypothesis.
 - ☐ B. Since z is not in the rejection region, reject the null hypothesis.
 - ☐ C. Since z is in the rejection region, reject the null hypothesis.
 - ☐ D. Since z is in the rejection region, fail to reject the null hypothesis.

(e) Interpret the decision in the context of the original claim.

At the 8% significance level, there

is not
is

 enough evidence to

reject
support

 the company's claim

that the mean caffeine content per 12-ounce bottle of cola

is different from
is equal to
is less than
is greater than

 milligrams.

14. A light bulb manufacturer guarantees that the mean life of a certain type of light bulb is at least 900 hours. A random sample of 47 light bulbs has a mean life of 892 hours with a standard deviation of 95 hours. Do you have enough evidence to reject the manufacturer's claim? Use $\alpha = 0.03$.

(a) Identify the null hypothesis and alternative hypothesis.

- | | | |
|--|--|--|
| ☐ A. $H_0: \mu = 892$
$H_a: \mu \neq 892$ | ☐ B. $H_0: \mu < 892$
$H_a: \mu \geq 892$ | ☐ C. $H_0: \mu > 900$
$H_a: \mu \leq 900$ |
| ☐ D. $H_0: \mu \neq 900$
$H_a: \mu = 900$ | ☐ E. $H_0: \mu \geq 900$
$H_a: \mu < 900$ | ☐ F. $H_0: \mu \leq 892$
$H_a: \mu > 892$ |

(b) Identify the critical value(s).

$$z_0 = \square$$

(Use a comma to separate answers as needed. Round to two decimal places as needed.)

(c) Identify the standardized test statistic.

$$z = \square \text{ (Round to two decimal places as needed.)}$$

(d) Decide whether to reject or fail to reject the null hypothesis.

- | | |
|---|---|
| ☐ A. Fail to reject H_0 . There is sufficient evidence to reject the claim that mean bulb life is at least 900 hours. | ☐ B. Reject H_0 . There is sufficient evidence to reject the claim that mean bulb life is at least 900 hours. |
| ☐ C. Fail to reject H_0 . There is not sufficient evidence to reject the claim that mean bulb life is at least 900 hours. | ☐ D. Reject H_0 . There is not sufficient evidence to reject the claim that mean bulb life is at least 900 hours. |

15. An environmentalist estimates that the mean waste recycled by adults in the country is more than 1 pound per person per day. You want to test this claim. You find that the mean waste recycled per person per day for a random sample of 16 adults in the country is 1.5 pounds and the standard deviation is 0.3 pound. At $\alpha = 0.10$, can you support the claim? Assume the population is normally distributed.

(a) Write the claim mathematically and identify H_0 and H_a .

Which of the following correctly states H_0 and H_a ?

- ☐ A. $H_0: \mu \leq 1$
 $H_a: \mu > 1$
☐ B. $H_0: \mu = 1$
 $H_a: \mu > 1$
☐ C. $H_0: \mu = 1$
 $H_a: \mu \neq 1$
☐ D. $H_0: \mu > 1$
 $H_a: \mu \leq 1$
☐ E. $H_0: \mu \geq 1$
 $H_a: \mu < 1$
☐ F. $H_0: \mu = 1$
 $H_a: \mu < 1$

(b) Find the critical value(s) and identify the rejection region(s).

What is(are) the critical value(s), t_0 ?

$t_0 =$

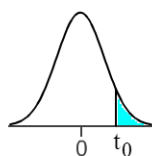
(Use a comma to separate answers as needed. Round to three decimal places as needed.)

Which of the following graphs best depicts the rejection region for this problem?

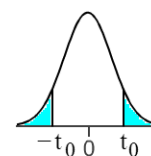
☐ A.



☐ B.



☐ C.



(c) Find the standardized test statistic.

$t =$ (Round to two decimal places as needed.)

(d) Decide whether to reject or fail to reject the null hypothesis.

15.
(cont.)
- ☐ A. Reject H_0 because the standardized test statistic is not in the rejection region.
 - ☐ B. Reject H_0 because the standardized test statistic is in the rejection region.
 - ☐ C. Fail to reject H_0 because the standardized test statistic is in the rejection region.
 - ☐ D. Fail to reject H_0 because the standardized test statistic is not in the rejection region.

(e) Interpret the decision in the context of the original claim.

- ☐ A. There is not sufficient evidence to support the claim that the mean waste recycled is less than 1 pound per person per day.
- ☐ B. There is sufficient evidence to support the claim that the mean waste recycled is more than 1 pound per person per day.
- ☐ C. There is not sufficient evidence to support the claim that the mean waste recycled is more than 1 pound per person per day.
- ☐ D. There is sufficient evidence to support the claim that the mean waste recycled is less than 1 pound per person per day.

16. A county is considering raising the speed limit on a road because they claim that the mean speed of vehicles is greater than 35 miles per hour. A random sample of 20 vehicles has a mean speed of 40 miles per hour and a standard deviation of 4.4 miles per hour. At $\alpha = 0.10$, do you have enough evidence to support the county's claim? Complete parts (a) through (d) below.

(a) Write the claim mathematically and identify H_0 and H_a . Choose the correct answer below.

☐ A. $H_0: \mu \leq 35$
 $H_a: \mu > 35$

☐ B. $H_0: \mu \geq 35$
 $H_a: \mu < 35$

☐ C. $H_0: \mu \neq 35$
 $H_a: \mu = 35$

☐ D. $H_0: \mu = 35$
 $H_a: \mu \neq 35$

(b) Calculate the standardized test statistic.

$t = \square$ (Round to two decimal places as needed.)

Use technology to calculate the P-value.

P-value = $\square$ (Round to three decimal places as needed.)

(c) Decide whether to reject or fail to reject the null hypothesis.

- ☐ A. Fail to reject H_0 because the P-value is less than the significance level, 0.10.
☐ B. Fail to reject H_0 because the P-value is greater than the significance level, 0.10.
☐ C. Reject H_0 because the P-value is greater than the significance level, 0.10.
☐ D. Reject H_0 because the P-value is less than the significance level, 0.10.

(d) Interpret the decision in the context of the original claim.

- ☐ A. There is not sufficient evidence to support the county's claim that the mean speed of vehicles is less than 35 miles per hour.
☐ B. There is not sufficient evidence to support the county's claim that the mean speed of vehicles is greater than 35 miles per hour.
☐ C. There is sufficient evidence to support the county's claim that the mean speed of vehicles is less than 35 miles per hour.
☐ D. There is sufficient evidence to support the county's claim that the mean speed of vehicles is greater than 35 miles per hour.

17. A travel association claims that the mean daily meal cost for two adults traveling together on vacation is \$125. A random sample of 15 such groups of adults has a mean daily meal cost of \$120 and a standard deviation of \$8.50. Is there enough evidence to reject the claim at $\alpha = 0.05$? Complete parts (a) through (d) below.

(a) Write the claim mathematically and identify H_0 and H_a . Choose the correct answer below.

☐ A. $H_0: \mu \leq 125$
 $H_a: \mu > 125$

☐ B. $H_0: \mu \geq 125$
 $H_a: \mu < 125$

☐ C. $H_0: \mu > 125$
 $H_a: \mu \leq 125$

☐ D. $H_0: \mu = 125$
 $H_a: \mu \neq 125$

(b) Calculate the standardized test statistic.

$t = \square$ (Round to two decimal places as needed.)

Use technology to calculate the P-value.

P-value = $\square$ (Round to three decimal places as needed.)

(c) Decide whether to reject or fail to reject the null hypothesis.

- ☐ A. Reject H_0 because the P-value is less than the significance level, 0.05.
☐ B. Fail to reject H_0 because the P-value is less than the significance level, 0.05.
☐ C. Fail to reject H_0 because the P-value is greater than the significance level, 0.05.
☐ D. Reject H_0 because the P-value is greater than the significance level, 0.05.

(d) Interpret the decision in the context of the original claim.

17.
(cont.)
- ☐ A. There is not sufficient evidence at the 5% level of significance to reject the travel association's claim that the mean daily meal cost for two adults traveling together on vacation is not \$125.
 - ☐ B. There is sufficient evidence at the 5% level of significance to reject the travel association's claim that the mean daily meal cost for two adults traveling together on vacation is not \$125.
 - ☐ C. There is sufficient evidence at the 5% level of significance to reject the travel association's claim that the mean daily meal cost for two adults traveling together on vacation is \$125.
 - ☐ D. There is not sufficient evidence at the 5% level of significance to reject the travel association's claim that the mean daily meal cost for two adults traveling together on vacation is \$125.
-

18. Decide whether the normal sampling distribution can be used. If it can be used, test the claim about the population proportion p at the given level of significance α using the given sample statistics.

Claim: $p \neq 0.22$; $\alpha = 0.10$; Sample statistics: $\hat{p} = 0.16$, $n = 125$

Can the normal sampling distribution be used?

- ☐ A. No, because np is less than 5.
- ☐ B. No, because nq is less than 5.
- ☐ C. Yes, because both np and nq are greater than or equal to 5.
- ☐ D. Yes, because pq is greater than $\alpha = 0.10$.

State the null and alternative hypotheses.

- ☐ A. $H_0: p \geq 0.22$
 $H_a: p < 0.22$
- ☐ B. $H_0: p = 0.22$
 $H_a: p \neq 0.22$
- ☐ C. $H_0: p \leq 0.22$
 $H_a: p > 0.22$
- ☐ D. The test cannot be performed.

Determine the critical value(s). Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- ☐ A. The critical value(s) is/are .
(Round to two decimal places as needed. Use a comma to separate answers as needed.)
- ☐ B. The test cannot be performed.

Find the z-test statistic. Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

18.
(cont.)
- ☐ A. $z = \square$
(Round to two decimal places as needed.)
- ☐ B. The test cannot be performed.

What is the result of the test?

- ☐ A. Reject H_0 . The data do not provide sufficient evidence to support the claim.
- ☐ B. Fail to reject H_0 . The data provide sufficient evidence to support the claim.
- ☐ C. Reject H_0 . The data provide sufficient evidence to support the claim.
- ☐ D. Fail to reject H_0 . The data do not provide sufficient evidence to support the claim.
- ☐ E. The test cannot be performed.

19.

(a) Write the claim mathematically and identify H_0 and H_a . (b) Find the critical value(s) and identify the rejection region(s). (c) Find the standardized test statistic. (d) Decide whether to reject or fail to reject the null hypothesis.

An environmental agency recently claimed more than 26% of consumers have stopped buying a certain product because of environmental concerns. In a random sample of 1060 consumers, you find 35% have stopped buying the product. At $\alpha = 0.03$, do you have enough evidence to support the claim?

(a) Which of the following correctly states H_0 and H_a ?

☐ A. $H_0: p \geq 0.26$
 $H_a: p < 0.26$

☐ B. $H_0: p = 0.26$
 $H_a: p \neq 0.26$

☐ C. $H_0: p < 0.26$
 $H_a: p \geq 0.26$

☐ D. $H_0: p > 0.26$
 $H_a: p \leq 0.26$

☐ E. $H_0: p \leq 0.26$
 $H_a: p > 0.26$

☐ F. $H_0: p = 0.26$
 $H_a: p > 0.26$

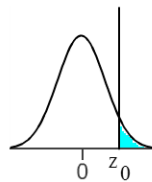
(b) What is (are) the critical value(s) z_0 ?

$z_0 =$

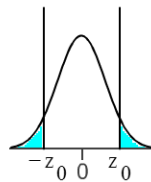
(Use a comma to separate answers as needed. Round to two decimal places as needed.)

Which of the following graphs has the rejection region(s) shaded correctly?

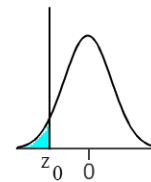
☐ A.



☐ B.



☐ C.



(c) What is the standardized test statistic?

$z =$

(Round to two decimal places as needed.)

(d) Which of the following is the correct conclusion for the test?

19.
(cont.)
- ☐ A. Reject H_0 . There is not enough evidence to support the claim.
 - ☐ B. Reject H_0 . There is enough evidence to support the claim.
 - ☐ C. Fail to reject H_0 . There is enough evidence to support the claim.
 - ☐ D. Fail to reject H_0 . There is not enough evidence to support the claim.
-

20. A humane society claims that less than 38% of U.S. households own a dog. In a random sample of 404 U.S. households, 152 say they own a dog. At $\alpha = 0.03$, is there enough evidence to support the society's claim?

(a) Write the claim mathematically and identify H_0 and H_a . (b) Find the critical value(s) and identify the rejection region(s). (c) Find the standardized test statistic. (d) Decide whether to reject or fail to reject the null hypothesis, and (e) interpret the decision in the context of the original claim.

(a) Which of the following correctly states H_0 and H_a ?

☐ A. $H_0: p < 0.38$
 $H_a: p \geq 0.38$

☐ B. $H_0: p \leq 0.38$
 $H_a: p > 0.38$

☐ C. $H_0: p = 0.38$
 $H_a: p \neq 0.38$

☐ D. $H_0: p \geq 0.38$
 $H_a: p < 0.38$

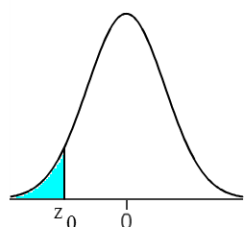
(b) What is (are) the critical value(s)?

The critical value(s) is/are .

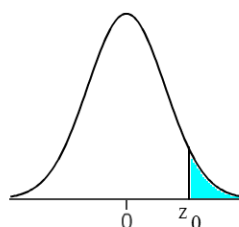
(Use a comma to separate answers as needed. Round to two decimal places as needed.)

Which of the following graphs has the rejection region(s) shaded correctly?

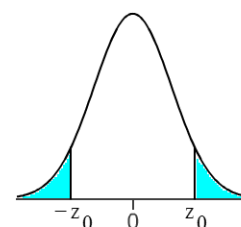
☐ A.



☐ B.



☐ C.



(c) What is the standardized test statistic?

$z =$ (Round to two decimal places as needed.)

(d) Which of the following is the correct conclusion for the test?

20.
(cont.)
- ☐ Reject H_0 .
 - ☐ Fail to reject H_0 .

(e) Interpret your results. Choose the correct answer below.

- ☐ A. There is not enough evidence to support the claim that less than 38% of U.S. households own a dog.
- ☐ B. There is enough evidence to support the claim that less than 38% of U.S. households own a dog.
- ☐ C. There is enough evidence to support the claim that 38% of U.S. households own a dog.
- ☐ D. There is not enough evidence to support the claim that 38% of U.S. households own a dog.