Hypothesis Testing: z-Test Statistics · 1

A company says its light bulbs last a mean of 1200 hours. A researcher suspects the true value is higher. Which hypotheses should be tested? (A) H0: μ > 1200, Ha: μ = 1200 (B) H0: μ = 1200, Ha: μ < 1200 (C) H0: μ = 1200, Ha: μ > 1200 (D) H0: μ = 1200, Ha: μ ≠ 1200

Hypothesis Testing: z-Test Statistics · 2

A hypothesis test gives a P-value of 0.131. At α = 0.05, should you reject H0 or fail to reject H0? (Answer reject or fail to reject.)

Hypothesis Testing: z-Test Statistics · 3

A bakery says its loaves weigh a mean of 680 grams. To test H0: μ = 680 against Ha: μ < 680, a random sample of 144 has a sample mean of 678.2 grams. The population standard deviation is σ = 12 grams. Find the z test statistic.

Hypothesis Testing: z-Test Statistics · 4

Find the critical value z* for a two-tailed z-test at α = 0.05 (give the positive one).

Hypothesis Testing: z-Test Statistics · 5

A cereal maker says its boxes hold a mean of 500 grams. To test H0: μ = 500 against Ha: μ ≠ 500, a random sample of 144 has a sample mean of 505 grams. The population standard deviation is σ = 60 grams. Find the z test statistic.

Hypothesis Testing: z-Test Statistics · 6

A hypothesis test gives a P-value of 0.156. At α = 0.05, should you reject H0 or fail to reject H0? (Answer reject or fail to reject.)

Hypothesis Testing: z-Test Statistics · 7

A hypothesis test gives a P-value of 0.132. At α = 0.01, should you reject H0 or fail to reject H0? (Answer reject or fail to reject.)

Hypothesis Testing: z-Test Statistics · 8

A battery maker says its batteries last a mean of 40 hours. To test H0: μ = 40 against Ha: μ ≠ 40, a random sample of 25 has a sample mean of 45.6 hours. The population standard deviation is σ = 10 hours. Find the z test statistic.

Hypothesis Testing: z-Test Statistics · 2

ANSWER

fail to reject

Hypothesis Testing: z-Test Statistics · 1

ANSWER

C

Hypothesis Testing: z-Test Statistics · 4

ANSWER

1.96

Hypothesis Testing: z-Test Statistics · 3

ANSWER

-1.8

Hypothesis Testing: z-Test Statistics · 6

ANSWER

fail to reject

Hypothesis Testing: z-Test Statistics · 5

ANSWER

1

Hypothesis Testing: z-Test Statistics · 8

ANSWER

2.8

Hypothesis Testing: z-Test Statistics · 7

ANSWER

fail to reject

A delivery service says its mean delivery time is 30 minutes. A researcher suspects the true value is higher. Which hypotheses should be tested? (A) H0: μ = 30, Ha: μ < 30 (B) H0: μ > 30, Ha: μ = 30 (C) H0: μ = 30, Ha: μ > 30 (D) H0: μ = 30, Ha: μ ≠ 30

A company says its light bulbs last a mean of 1200 hours. To test H0: μ = 1200 against Ha: μ < 1200, a random sample of 100 has a sample mean of 1199 hours. The population standard deviation is σ = 5 hours. Find the z test statistic.

Find the critical value z* for a left-tailed z-test at α = 0.1.

A right-tailed z-test at α = 0.05 gives z = 0.87. Should you reject H0 or fail to reject H0? (Answer reject or fail to reject.)

A hypothesis test gives a P-value of 0.167. At α = 0.1, should you reject H0 or fail to reject H0? (Answer reject or fail to reject.)

A company says its light bulbs last a mean of 1200 hours. A researcher wants to know whether the true value is different. Which hypotheses should be tested? (A) H0: μ = 1200, Ha: μ ≠ 1200 (B) H0: μ ≠ 1200, Ha: μ = 1200 (C) H0: μ = 1200, Ha: μ < 1200 (D) H0: μ = 1200, Ha: μ > 1200

A school says its students sleep a mean of 8 hours a night. A researcher suspects the true value is higher. Which hypotheses should be tested? (A) H0: μ = 8, Ha: μ > 8 (B) H0: μ > 8, Ha: μ = 8 (C) H0: μ = 8, Ha: μ ≠ 8 (D) H0: μ = 8, Ha: μ < 8

A cereal maker says its boxes hold a mean of 500 grams. To test H0: μ = 500 against Ha: μ < 500, a random sample of 64 has a sample mean of 497.4 grams. The population standard deviation is σ = 8 grams. Find the z test statistic.

Hypothesis Testing: z-Test Statistics · 10

ANSWER

-2

Hypothesis Testing: z-Test Statistics · 9

ANSWER

C

Hypothesis Testing: z-Test Statistics · 12

ANSWER

fail to reject

Hypothesis Testing: z-Test Statistics · 11

ANSWER

-1.282

Hypothesis Testing: z-Test Statistics · 14

ANSWER

A

Hypothesis Testing: z-Test Statistics · 13

ANSWER

fail to reject

Hypothesis Testing: z-Test Statistics · 16

ANSWER

-2.6

Hypothesis Testing: z-Test Statistics · 15

ANSWER

A

Find the critical value z* for a two-tailed z-test at α = 0.1 (give the positive one).

A left-tailed z-test at α = 0.01 gives z = -1.46. Should you reject H0 or fail to reject H0? (Answer reject or fail to reject.)

A hypothesis test gives a P-value of 0.082. At α = 0.1, should you reject H0 or fail to reject H0? (Answer reject or fail to reject.)

A school says its students sleep a mean of 8 hours a night. To test H0: μ = 8 against Ha: μ ≠ 8, a random sample of 36 has a sample mean of 6.6 hours. The population standard deviation is σ = 3 hours. Find the z test statistic.

A two-tailed z-test at α = 0.1 gives z = -2.95. Should you reject H0 or fail to reject H0? (Answer reject or fail to reject.)

A bakery says its loaves weigh a mean of 680 grams. A researcher suspects the true value is higher. Which hypotheses should be tested? (A) H0: μ > 680, Ha: μ = 680 (B) H0: μ = 680, Ha: μ ≠ 680 (C) H0: μ = 680, Ha: μ < 680 (D) H0: μ = 680, Ha: μ > 680

A hypothesis test gives a P-value of 0.145. At α = 0.1, should you reject H0 or fail to reject H0? (Answer reject or fail to reject.)

A school says its students sleep a mean of 8 hours a night. To test H0: μ = 8 against Ha: μ ≠ 8, a random sample of 25 has a sample mean of 7.1 hours. The population standard deviation is σ = 2.5 hours. Find the z test statistic.

Hypothesis Testing: z-Test Statistics · 18

ANSWER

fail to reject

Hypothesis Testing: z-Test Statistics · 17

ANSWER

1.645

Hypothesis Testing: z-Test Statistics · 20

ANSWER

-2.8

Hypothesis Testing: z-Test Statistics · 19

ANSWER

reject

Hypothesis Testing: z-Test Statistics · 22

ANSWER

D

Hypothesis Testing: z-Test Statistics · 21

ANSWER

reject

Hypothesis Testing: z-Test Statistics · 24

ANSWER

-1.8

Hypothesis Testing: z-Test Statistics · 23

ANSWER

fail to reject