Task card 1 Hypothesis Testing: z-Test Statist...

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 36 has a sample mean of 494 grams. The population standard deviation is σ = 15 grams. Test at α = 0.01. Should you reject H0 or fail to reject H0? (Answer reject or fail to reject.)

Task card 2 Hypothesis Testing: z-Test Statist...

A claim says the proportion of seeds who sprout is p = 0.5. To test H0: p = 0.5 against Ha: p ≠ 0.5, a random sample of 100 seeds finds that 60 sprout. Test at α = 0.05. Should you reject H0 or fail to reject H0? (Answer reject or fail to reject.)

Task card 3 Hypothesis Testing: z-Test Statist...

A claim says the proportion of students who bike to school is p = 0.5. To test H0: p = 0.5 against Ha: p < 0.5, a random sample of 400 students finds that 172 bike to school. Find the z test statistic.

Task card 4 Hypothesis Testing: z-Test Statist...

A two-tailed z-test at α = 0.01 gives z = -1.77. Should you reject H0 or fail to reject H0? (Answer reject or fail to reject.)

Task card 5 Hypothesis Testing: z-Test Statist...

A politician says 60% of voters support her plan. A researcher wants to know whether the true value is different. Which hypotheses should be tested? (A) H0: p = 0.6, Ha: p ≠ 0.6 (B) H0: p ≠ 0.6, Ha: p = 0.6 (C) H0: p = 0.6, Ha: p > 0.6 (D) H0: p = 0.6, Ha: p < 0.6

Task card 6 Hypothesis Testing: z-Test Statist...

Find the critical value z* for a left-tailed z-test at α = 0.01.

Task card 7 Hypothesis Testing: z-Test Statist...

A delivery service says its mean delivery time is 30 minutes. To test H0: $\mu = 30$ against Ha: $\mu > 30$, a random sample of 16 has a sample mean of 31.6 minutes. The population standard deviation is $\sigma = 4$ minutes. Find the z test statistic.

Task card 8 Hypothesis Testing: z-Test Statist...

A battery maker says its batteries last a mean of 40 hours. To test H0: $\mu = 40$ against Ha: $\mu < 40$, a random sample of 16 has a sample mean of 38.6 hours. The population standard deviation is $\sigma = 4$ hours. Test at $\alpha = 0.01$. Should you reject H0 or fail to reject H0? (Answer reject or fail to reject.)

Task card 9 Hypothesis Testing: z-Test Statist...

A claim says the proportion of voters who support the plan is $p = 0.2$. To test H0: $p = 0.2$ against Ha: $p < 0.2$, a random sample of 100 voters finds that 12 support the plan. Test at $\alpha = 0.05$. Should you reject H0 or fail to reject H0? (Answer reject or fail to reject.)

Task card 10 Hypothesis Testing: z-Test Statist...

A claim says the proportion of students who bike to school is $p = 0.9$. To test H0: $p = 0.9$ against Ha: $p > 0.9$, a random sample of 900 students finds that 828 bike to school. Find the z test statistic.

Task card 11 Hypothesis Testing: z-Test Statist...

A left-tailed z-test at $\alpha = 0.05$ gives $z = -1.56$. Should you reject H0 or fail to reject H0? (Answer reject or fail to reject.)

Task card 12 Hypothesis Testing: z-Test Statist...

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: $\mu > 680$, Ha: $\mu = 680$ (B) H0: $\mu = 680$, Ha: $\mu < 680$ (C) H0: $\mu = 680$, Ha: $\mu > 680$ (D) H0: $\mu = 680$, Ha: $\mu \neq 680$

Task card 13 Hypothesis Testing: z-Test Statist...

Find the critical value z* for a left-tailed z-test at α = 0.05.

Task card 14 Hypothesis Testing: z-Test Statist...

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 144 has a sample mean of 38.6 hours. The population standard deviation is σ = 6 hours. Find the z test statistic.

Task card 15 Hypothesis Testing: z-Test Statist...

A bakery says its loaves weigh a mean of 680 grams. To test H0: μ = 680 against Ha: μ < 680, a random sample of 100 has a sample mean of 665 grams. The population standard deviation is σ = 50 grams. Test at α = 0.05. Should you reject H0 or fail to reject H0? (Answer reject or fail to reject.)

Task card 16 Hypothesis Testing: z-Test Statist...

A claim says the proportion of adults who recycle is p = 0.5. To test H0: p = 0.5 against Ha: p > 0.5, a random sample of 100 adults finds that 54 recycle. Test at α = 0.01. Should you reject H0 or fail to reject H0? (Answer reject or fail to reject.)

Task card 17 Hypothesis Testing: z-Test Statist...

A claim says the proportion of teens who read for fun every week is p = 0.5. To test H0: p = 0.5 against Ha: p ≠ 0.5, a random sample of 100 teens finds that 52 read for fun every week. Find the z test statistic.

Task card 18 Hypothesis Testing: z-Test Statist...

A right-tailed z-test at α = 0.05 gives z = 2.11. Should you reject H0 or fail to reject H0? (Answer reject or fail to reject.)

Task card 19 Hypothesis Testing: z-Test Statist...

A politician says 60% of voters support her plan. A researcher suspects the true value is higher. Which hypotheses should be tested? (A) H0: $p > 0.6$, Ha: $p = 0.6$ (B) H0: $p = 0.6$, Ha: $p < 0.6$ (C) H0: $p = 0.6$, Ha: $p \neq 0.6$ (D) H0: $p = 0.6$, Ha: $p > 0.6$

Task card 20 Hypothesis Testing: z-Test Statist...

A school says its students sleep a mean of 8 hours a night. To test H0: $\mu = 8$ against Ha: $\mu > 8$, a random sample of 36 has a sample mean of 9.1 hours. The population standard deviation is $\sigma = 3$ hours. Find the z test statistic.

Task card 21 Hypothesis Testing: z-Test Statist...

A delivery service says its mean delivery time is 30 minutes. To test H0: $\mu = 30$ against Ha: $\mu < 30$, a random sample of 16 has a sample mean of 29.1 minutes. The population standard deviation is $\sigma = 2$ minutes. Test at $\alpha = 0.01$. Should you reject H0 or fail to reject H0? (Answer reject or fail to reject.)

Task card 22 Hypothesis Testing: z-Test Statist...

A claim says the proportion of customers who buy a drink is $p = 0.2$. To test H0: $p = 0.2$ against Ha: $p \neq 0.2$, a random sample of 100 customers finds that 17 buy a drink. Test at $\alpha = 0.01$. Should you reject H0 or fail to reject H0? (Answer reject or fail to reject.)

Task card 23 Hypothesis Testing: z-Test Statist...

A claim says the proportion of teens who read for fun every week is $p = 0.8$. To test H0: $p = 0.8$ against Ha: $p \neq 0.8$, a random sample of 100 teens finds that 88 read for fun every week. Find the z test statistic.

Task card 24 Hypothesis Testing: z-Test Statist...

A right-tailed z-test at $\alpha = 0.1$ gives $z = 1.94$. Should you reject H0 or fail to reject H0? (Answer reject or fail to reject.)

Hypothesis Testing: z-Test Statistics Task Cards

Recording sheet · Grade 12 · Solve each problem. For lettered choices, write the letter. Give z to 2 decimal places, and answer decisions with "reject" or "fail to reject" (H0).

Scan to check your answers

Name: _____ Date: _____

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24

Hypothesis Testing: z-Test Statistics Task Cards: Answer Key

Grade 12 · Hard

The answers online

1. reject	**2.** reject	**3.** -2.8
4. fail to reject	**5.** A	**6.** -2.326
7. 1.6	**8.** fail to reject	**9.** reject
10. 2	**11.** fail to reject	**12.** C
13. -1.645	**14.** -2.8	**15.** reject
16. fail to reject	**17.** 0.4	**18.** reject
19. D	**20.** 2.2	**21.** fail to reject
22. fail to reject	**23.** 2	**24.** reject