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

A cereal maker says its boxes hold a mean of 500 grams. To test H0: $\mu = 500$ against Ha: $\mu < 500$, a random sample of 100 has a sample mean of 495 grams. The population standard deviation is $\sigma = 50$ grams. Find the z test statistic.

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

A claim says the proportion of customers who buy a drink is $p = 0.5$. To test H0: $p = 0.5$ against Ha: $p > 0.5$, a random sample of 100 customers finds that 58 buy a drink. Find the z test statistic.

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

A two-tailed z-test at $\alpha = 0.1$ gives $z = 2.77$. Should you reject H0 or fail to reject H0? (Answer reject or fail to reject.)

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

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

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

A company says its light bulbs last a mean of 1200 hours. To test H0: $\mu = 1200$ against Ha: $\mu > 1200$, a random sample of 16 has a sample mean of 1200.6 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 6 Hypothesis Testing: z-Test Statist...

Find the critical value z^* for a left-tailed z-test at $\alpha = 0.01$.

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

A hypothesis test gives a P-value of 0.192. At $\alpha = 0.1$, should you reject H0 or fail to reject H0? (Answer reject or fail to reject.)

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 36 has a sample mean of 37.2 hours. The population standard deviation is $\sigma = 6$ hours. Find the z test statistic.

Task card 9 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: $p \neq 0.5$, a random sample of 400 adults finds that 188 recycle. Find the z test statistic.

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

A right-tailed z-test at $\alpha = 0.1$ gives $z = 3.04$. Should you reject H0 or fail to reject H0? (Answer reject or fail to reject.)

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

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: $\mu = 1200$, Ha: $\mu \neq 1200$ (B) H0: $\mu = 1200$, Ha: $\mu < 1200$ (C) H0: $\mu \neq 1200$, Ha: $\mu = 1200$ (D) H0: $\mu = 1200$, Ha: $\mu > 1200$

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

A cereal maker says its boxes hold a mean of 500 grams. To test H0: $\mu = 500$ against Ha: $\mu \neq 500$, a random sample of 100 has a sample mean of 497.4 grams. The population standard deviation is $\sigma = 10$ grams. Test at $\alpha = 0.01$. Should you reject H0 or fail to reject H0? (Answer reject or fail to reject.)

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

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

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

A hypothesis test gives a P-value of 0.078. At α = 0.1, should you reject H0 or fail to reject H0? (Answer reject or fail to reject.)

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 684 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 44 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 customers who buy a drink is p = 0.5. To test H0: p = 0.5 against Ha: p > 0.5, a random sample of 1600 customers finds that 832 buy a drink. Find the z test statistic.

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

A two-tailed z-test at α = 0.01 gives z = -2.23. 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 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: $p \neq 0.6$ (D) H0: $p \neq 0.6$, 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. A test of H0: $\mu = 8$ against Ha: $\mu < 8$ at $\alpha = 0.01$ rejects H0. Which conclusion is correct? (A) There is enough evidence that the mean is less than 8 hours. (B) There is not enough evidence that the mean is less than 8 hours. (C) The test proves the mean is exactly 8 hours. (D) The sample mean must equal 8 hours.

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

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

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

A company says its light bulbs last a mean of 1200 hours. To test H0: $\mu = 1200$ against Ha: $\mu \neq 1200$, a random sample of 25 has a sample mean of 1200.8 hours. The population standard deviation is $\sigma = 2.5$ hours. Find the z test statistic.

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

A bakery says its loaves weigh a mean of 680 grams. To test H0: $\mu = 680$ against Ha: $\mu \neq 680$, a random sample of 49 has a sample mean of 674.8 grams. The population standard deviation is $\sigma = 14$ grams. Find the z test statistic.

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

A claim says the proportion of adults who recycle is $p = 0.2$. To test H0: $p = 0.2$ against Ha: $p \neq 0.2$, a random sample of 400 adults finds that 60 recycle. Find the z test statistic.

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 · Medium

The answers online

1. -1	**2.** 1.6	**3.** reject
4. D	**5.** fail to reject	**6.** -2.326
7. fail to reject	**8.** -2.8	**9.** -1.2
10. reject	**11.** A	**12.** reject
13. 1.282	**14.** reject	**15.** fail to reject
16. fail to reject	**17.** 1.6	**18.** fail to reject
19. C	**20.** A	**21.** 1.96
22. 1.6	**23.** -2.6	**24.** -2.5