Q1

1 Point

Which of the following represents a two-sided test?

○ $H_0 : p \geq 0.1 \ versus \ H_A : p < 0.1$

○ $H_0 : \mu = 100 \ versus \ H_A : \mu > 100$

◉ $H_0 : \mu = 75 \ versus \ H_A : \mu \neq 75$

○ $H_0 : \mu \leq 50 \ versus \ H_A : \mu > 50$

Q2

1 Point

Which of the following can be done to reduce the likelihood of a Type I error?

○ Decrease the sample size

○ Increase the sample size

○ Increase the significance level

◉ Decrease the significance level

Q3

1 Point

What is the relationship between Type I and Type II errors?

◉ Reducing Type I error increases the likelihood of Type II error

○ Type I and Type II errors are not related

○ Type I and Type II errors always occur together

○ Reducing Type I error reduces the likelihood of Type II error

Q4

1 Point

If the p-value in a hypothesis test is less than the significance level, what is the appropriate action?

○ Accept the null hypothesis

○ Fail to reject the null hypothesis

◉ Reject the null hypothesis

○ Increase the sample size

Q5

1 Point

If you have a z-score of 2.5 for a two-sided hypothesis test, what is the p-value?

○ 0.9938

○ 0.0062

◉ 0.0124

○ 0.9876

Q6

1 Point

In hypothesis testing, how is the Central Limit Theorem used?

○ To determine the null hypothesis

○ To calculate the test statistic

◉ To justify the use of the normal distribution for the sampling distribution of the sample proportion when the condition for using CLT is met

○ To calculate the p-value

Q7

1 Point

Which of the following statements is true about the conclusion of a hypothesis test?

◉ A small p-value provides strong evidence against the null hypothesis

○ A small p-value confirms that the null hypothesis is false

○ A large p-value confirms that the null hypothesis is true

○ A large p-value proves that the alternative hypothesis is false

Q8

1 Point

In a medical trial for a new drug, why might a researcher choose a very low significance level?

○ To minimize the risk of not detecting an effect when there is one

○ To increase the chances of proving the drug's effectiveness

◉ To minimize the risk of falsely declaring the drug effective when it is not

○ To increase the power of the test.