Q1

1 Point

Which of the following best describes the sample proportion ($\hat{p}$)?

◯ It is the standard deviation of the sample

◉ It is the proportion of a characteristic in a sample

◯ It is a fixed value for all samples of the same size

◯ It is always equal to the population proportion

Q2

1 Point

When estimating a population proportion, which of the following serves as a point estimate?

◯ Population proportion (p)

◯ Standard Error (SE)

◉ Sample proportion ($\hat{p}$)

◯ Sample mean ($\bar{x}$)

Q3

1 Point

The Central Limit Theorem can apply to:

◯ Only the sample proportion

◉ Both the sample mean and the sample proportion

◯ Neither the sample mean nor the sample proportion

◯ Only the sample mean

Q4

1 Point

If a sample of 200 people is taken and 15% say they are left-handed, does this sample meet the success/failure condition for applying the Central Limit Theorem to proportions?

○ Yes, but only if the population is less than 2000

○ No, because 200×0.15 is less than 30

● Yes, because 200×0.15 and 200×0.85 are both greater than 10

○ No, because the sample size is too large

Q5

1 Point

How is the width of a confidence interval affected by the sample size?

○ It increases as the sample size increases

● It decreases as the sample size increases

○ It is not affected by the sample size

○ The relationship between sample size and confidence interval width cannot be determined

Q6

1 Point

Which of the following steps is NOT a part of constructing a confidence interval?

● Choosing a sample size

○ Finding the z-score corresponding to the chosen confidence level

○ Calculating the sample proportion

○ Ensuring that the Central Limit Theorem conditions are met

Q7
1 Point

Compared to a 95% confidence interval, a 99% confidence interval is:

○ Narrower and reflects less certainty

○ Narrower and reflects less certainty

◉ Wider and reflects greater certainty

○ Wider and reflects less certainty

Q8
1 Point

In the context of constructing a confidence interval, why is it important to ensure that the conditions for the Central Limit Theorem are met?

○ It ensures that the population proportion is normally distributed

○ It decreases the standard error

○ It guarantees that the sample proportion will equal the population proportion

◉ It ensures that the sample proportion is nearly normally distributed