Results

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91.67%

11
Out of 12 points

16:01
Time for this attempt

Your Answers:

1 1 / 1 point

Suppose in a random sample of 800 students from the University of X, 52% said that they plan to watch the Super Bowl. The 95% confidence interval has a margin of error of 3.5% points.
Does the confidence interval suggest that that the majority of students at the University of X plan to watch the Super Bowl? Why?

- Yes; the 95% confidence interval for the population proportion of students at the University of X who plan to watch the Super Bowl is (0.520, 0.555), this is strong evidence that the true proportion is greater than 50%.
- No; the 95% confidence interval for the population proportion of students at the University of X who plan to watch the Super Bowl is (0.520, 0.555), suggesting that the true proportion could be less than 50%.
- ✓ **No; the 95% confidence interval for the population proportion of students at the University of X who plan to watch the Super Bowl is (0.485, 0.555), suggesting that the true proportion could be less than 50%.**
- Yes; the 95% confidence interval for the population proportion of students at the University of X who plan to watch the Super Bowl is (0.485, 0.555),
  Since the confidence interval is mostly above 50%, this is strong evidence that the true proportion is greater than 50%.

2 0 / 1 point

Lawmakers in a certain state surveyed 50 randomly selected registered voters in the state to see if they favor stricter laws regarding motorcycle helmet use for riders over the age of 17. Suppose it it known that in the population the proportion in favor of changing the law is 84%.

Which of the following statements about the Central Limit Theorem conditions is correct?

- The population size is not large enough relative to the sample size.
- The sample is not random.
- The sample size is not large enough.
- ✗ **All the conditions of the CLT are met.**

Correct Answer: **The sample size is not large enough.**

3 1 / 1 point

Suppose it is known that 23% of students at a certain college participated in a textbook program each term. If a random sample of 500 students is selected, what proportion of the sample do we expect to participate in the textbook program?

- ✓ **We expect that the sample proportion to be close to 23%, but it will vary from sample to sample due to randomness.**
- We do not expect the sample proportion to be exactly 23% because it is a population parameter and you cannot know anything about a sample.
- We expect the sample proportion to be exactly 23% because that is the true proportion regardless of the sample or population size.
- We expect the sample proportion to be exactly 23% because the sample size is large.

4 1 / 1 point

A map website claims to be available 99% of the time (measured in minute-long increments). Suppose that we took random samples of n=1000 minutes from the population of minutes in a year and computed the proportion of minutes in each sample for which the website was available. We can assume the website's claim is accurate.

Which statement correctly describes the sampling distribution of the proportions of time that the website is available?

- Approximately normally distributed as N(0.99, 3.146)
- Skewed to the right

Skewed to the left

✓ Approximately normally distributed as N(0.99, 0.003)

5 1 / 1 point

Which of the following statements is correct about the standard error of the sample statistic?

The **standard error** measures the **accuracy** of the **population parameter**.

The **standard error** measures the **precision** of the **population parameter**.

✓ The **standard error** measures the **precision** of the **sample statistic**.

The **standard error** measures the **accuracy** of the **sample statistic**.

6 1 / 1 point

It is known that a batch of toys produced at a certain factory in a day has a defect rate of 1%.
Suppose the quality inspectors randomly inspect 500 toys from the batch and calculate the proportion of defective toys, what will the the sampling distribution of the proportion look like?
The sampling distribution of the **sample proportion** would be centered around ___, with a standard deviation of ___.

1%; 2.22

50; 0.44%

50; 2.22

✓ 1%; 0.44%

7 1 / 1 point

Which of the following statements is true about a sampling distribution? (select all that apply)

✓ ☑ It is used for making inferences about a population.

☐ It is the probability distribution of a parameter.

☐ It tells us how often we can expect to see particular values of our parameter.

✓ ☑ It gives characteristics of the sample statistic, such as bias and precision.

8 1 / 1 point

What is the value of the confidence multiplier **z*** for constructing a **97% confidence interval**? (Round to two decimal places)

1.88

✓ 2.17

1.64

1.96

9 1 / 1 point

Which of the following is true about the sample statistics?

✓ Sample statistics based on larger sample sizes have smaller standard errors.

The statistic is said to be accurate but imprecise if the estimates obtained from different samples are close to each other but far from the true parameter.

The value of a sample statistic is fixed as long as the population remains unchanged.

A statistic is said to be unbiased if its sampling distribution is centered at 0.

10 1 / 1 point

200 workers at a large company were randomly sampled and asked whether they went on a vacation for at least a week in the past year. A 95% confidence interval was found to be (0.50, 0.66).
Which of the following statements is correct about the 95% confidence interval from the previous question?

- The population proportion of workers that went on vacation for at least a week in the past year is 0.58.
- If we increase the confidence level to 99%, the confidence interval will become narrower.
- It's impossible that more than 66% of the workers in the company went on a vacation last year for at least a week.
- ✓ If the sample size is 500 instead of 200 while keeping everything else the same, the confidence interval will become narrower.

11 1 / 1 point

How do you find the z^* for a confidence level of 70%?

- Find the z value that has a right tail probability of 0.70.
- Find the z value that has a right tail probability of 0.85.
- ✓ Find the z value that has a left tail probability of 0.85.
- Find the z value that has a left tail probability of 0.70.

12 1 / 1 point

Which of the following statements about the confidence interval is correct? (select all that apply)

- ✓ The confidence interval is centered at the sample statistic.
- ✓ The length of the confidence interval is equal to twice the margin of error.
- The confidence interval is centered at the population parameter.
- When the confidence level increases, the confidence interval will become more precise.