**Chapter 8: Estimation With Confidence Intervals**

1. Identify which statistical process is useful for estimating a range of likely values for a population parameter.

A. significance testing

B. power

C. effect size

\*D. confidence intervals

Learning Objective: 8-1: Describe the distinct purposes of significance testing, effect sizes, and confidence intervals.

Cognitive Domain: Knowledge

Answer Location: Three Statistical Procedures With Three Distinct Purposes

2. Identify which statistical process is useful for determining if observed differences are likely to appear in the population or if they are likely to be due to sampling error.

\*A. significance testing

B. power

C. effect size

D. confidence intervals

Learning Objective: 8-1: Describe the distinct purposes of significance testing, effect sizes, and confidence intervals.

Cognitive Domain: Knowledge

Answer Location: Three Statistical Procedures With Three Distinct Purposes

3. Confidence intervals are constructed using a point estimate and a margin of error.

\*True

False

Learning Objective: 8-2: Explain the logic of confidence intervals.

Cognitive Domain: Knowledge

Answer Location: Logic of Confidence Intervals

4. A random sample of 46 college students reported the number of hours per day they typically spend on social media. Their sample mean is, *M* = 2.61, and their standard deviation is, *s* = 1.02. What is the point estimate of the mean time spent per day on social media for the population of college students?

A. 46

B. 6.91

\*C. 2.61

D. 1.02

Learning Objective: 8-3: Compute a confidence interval for a population mean.

Cognitive Domain: Application

Answer Location: Computing a Confidence Interval for a Population Mean

5. A random sample of 46 college students reported the number of hours per day they typically spend on social media. Their sample mean is, *M* = 2.61, and their standard deviation is, *s* = 1.02. If you plan to construct a 95% confidence interval for the population mean, what *t* critical value should you use based on this data?

A. 2.6896

\*B. 2.0141

C. 1.6794

D. 1.6787

Learning Objective: 8-3: Compute a confidence interval for a population mean.

Cognitive Domain: Application

Answer Location: Computing a Confidence Interval for a Population Mean

6. A random sample of 46 college students reported the number of hours per day they typically spend on social media. Their sample mean is, *M* = 2.61, and their standard deviation is, *s* = 1.02. What is the margin of error, (*t*)(*SEMs*), for this data?

A. 0.252

B. 0.253

C. 0.404

\*D. 0.303

Learning Objective: 8-3: Compute a confidence interval for a population mean.

Cognitive Domain: Application

Answer Location: Computing a Confidence Interval for a Population Mean

7. A random sample of 46 college students reported the number of hours per day they typically spend on social media. Their sample mean is, *M* = 2.61, and their standard deviation is, *s* = 1.02. What is the 95% confidence interval estimate of the mean number of hours per day college students spend on social media?

A. LB = 2.506, UB = 3.014

\*B. LB = 2.307, UB = 2.913

C. LB = 45.747, UB =46.253

D. LB = 0.768, UB = 1.272

Learning Objective: 8-3: Compute a confidence interval for a population mean.

Cognitive Domain: Application

Answer Location: Computing a Confidence Interval for a Population Mean

8. Identify the correct interpretation of the following confidence interval estimate of a population mean: 99% CI [26.59, 27.41].

A. There is a 99% chance that the sample mean is between 27.41 and 26.59.

B. There is a 99% chance that the population mean is between 27.41 and 26.59.

\*C. You can be 99% confident that the population mean is between 27.41 and 26.59.

D. You can be 99% confident that the sample mean is between 27.41 and 26.59.

Learning Objective: 8-6: Identify correct and incorrect interpretations of confidence intervals.

Cognitive Domain: Comprehension

Answer Location: Interpretations of Confidence Intervals

9. The national average cost of cable TV bills was reported as $99. You collect a random sample of 75 people in your town and find the average cable bill is $103 with a standard deviation of $13.50. You want to compute a 99% confidence interval estimate for the mean difference between the national average and your town average. What is the margin of error?

A. 3.106

B. 3.126

\*C. 4.121

D. 4.148

Learning Objective: 8-4: Compute a confidence interval for a mean difference between a sample mean and a population mean.

Cognitive Domain: Application

Answer Location: Computing Confidence Intervals for a Mean Difference

10. The national average cost of cable TV bills was reported as $99. You collect a random sample of 75 people in your town and find the average cable bill is $103 with a standard deviation of $13.50. You want to compute a 99% confidence interval estimate for the mean difference between the national average and your town average. What is 99% confidence interval?

\*A. LB = −0.121, UB =8.121

B. LB = 0.894, UB =7.106

C. LB = −7.126, UB = −0.874

D. LB = −8.148, UB =0.148

Learning Objective: 8-4: Compute a confidence interval for a mean difference between a sample mean and a population mean.

Cognitive Domain: Application

Answer Location: Computing Confidence Intervals for a Mean Difference