**Chapter 5: The Distribution of Sample Means and *z* for a Sample Mean**

1. We can create a distribution of sample means by selecting all possible random samples of the same size from the population.

\*True

False

Learning Objective: 5-1: Explain how a distribution of sample means is created.

Cognitive Domain: Knowledge

Answer Location: Distribution of Sample Means

2. When selecting a random sample, each score in the population \_\_\_\_\_\_\_\_\_\_\_.

A. must be sampled without replacement

\*B. must have the same probability of being selected

C. must be selected one time

D. must have a random mean

Learning Objective: 5-2: Explain how a random sample is obtained.

Cognitive Domain: Knowledge

Answer Location: Distribution of Sample Means

3. If you select a sample of size 100 from a population of raw scores and construct a distribution of sample means, what shape will the distribution of sample means have?

A. left skewed

B. right skewed

\*C. approximately normal

D. more information is needed about the shape of the population of raw scores

Learning Objective: 5-3: Determine the mean, the standard deviation, and the shape of a distribution of sample means.

Cognitive Domain: Knowledge

Answer Location: Distribution of Sample Means

4. Scores in a population are normally distributed with a mean of 50 and a standard deviation of 2. What is the mean of the distribution of sample means for samples of size *N* = 25?

A. 0.40

B. 2

C. 4.38

\*D. 50

Learning Objective: 5-3: Determine the mean, the standard deviation, and the shape of a distribution of sample means.

Cognitive Domain: Application

Answer Location: Distribution of Sample Means

5. Scores in a population are normally distributed with a mean of 50 and a standard deviation of 2. What is the standard deviation of the distribution of sample means for samples of size *N* = 25?

\*A. 0.40

B. 2

C. 4.38

D. 50

Learning Objective: 5-3: Determine the mean, the standard deviation, and the shape of a distribution of sample means.

Cognitive Domain: Application

Answer Location: Distribution of Sample Means

6. The standard error of the mean (*SEMp*) for sample means provides a measure of sampling error.

\*True

False

Learning Objective: 5-4: Explain what the standard error of the mean measures.

Cognitive Domain: Knowledge

Answer Location: Distribution of Sample Means

7. One reason the central limit theorem is important is that it tells us that sample means are likely to be close in value to the mean of their original population.

\*True

False

Learning Objective: 5-5: Explain the central limit theorem and why it is important.

Domain: Knowledge

Answer Location: Distribution of Sample Means

8. Another reason the central limit theorem is important is that it allows us to compute a measure of sampling error for a study.

\*True

False

Learning Objective: 5-6: Explain the law of large numbers.

Cognitive Domain: Knowledge

Answer Location: Distribution of Sample Means

9. According to the \_\_\_\_\_\_\_\_\_\_\_, a large sample will produce a mean that is closer to the real population mean than a small sample.

A. central limit theorem

B. unit normal table

C. sum of squares

\*D. law of large numbers

Learning Objective: 5-6: Explain the law of large numbers.

Cognitive Domain: Knowledge

Answer Location: Distribution of Sample Means

10. A population has a mean, µ = 120 and a standard deviation, σ = 18. What is the *z* score for a sample mean of 122, from a sample of 81 people?

A. +0.11

B. +0.22

\*C. +1.00

D. 9.09

Learning Objective: 5-7: Compute a *z* for a sample mean.

Cognitive Domain: Application

Answer Location: *z* For a Sample Mean

11. A test of psychology knowledge is normally distributed with a mean, µ = 80 and a standard deviation, σ = 5. If a sample of *N* = 25 students completes the test, what is the probability that their mean would be greater than 81.5?

A. 0.9332

B. 0.3821

C. 0.3000

\*D. 0.0668

Learning Objective: 5-8: Use the *z* for a sample mean and a unit normal table to determine how likely a given sample mean is to occur.

Cognitive Domain: Application

Answer Location: *z* For a Sample Mean