

Sampling and sampling distributions

MULTIPLE CHOICE

1. Parameters are
- numerical characteristics of a sample
 - numerical characteristics of a population
 - the averages taken from a sample
 - numerical characteristics of either a sample or a population

ANS: B

PTS: 1

TOP: Sampling

2. The purpose of statistical inference is to provide information about the
- sample based upon information contained in the population
 - population based upon information contained in the sample
 - population based upon information contained in the population
 - mean of the sample based upon the mean of the population

ANS: B

PTS: 1

TOP: Inference

3. From a group of 12 students, we want to select a random sample of 4 students to serve on a university committee. How many different random samples of 4 students can be selected?
- 48
 - 20,736
 - 16
 - 495

ANS: D

PTS: 1

TOP: Sampling

4. A population consists of 500 elements. We want to draw a simple random sample of 50 elements from this population. On the first selection, the probability of an element being selected is
- 0.100
 - 0.010
 - 0.001
 - 0.002

ANS: D

PTS: 1

TOP: Sampling

5. A population consists of 8 items. The number of different simple random samples of size 3 that can be selected from this population is
- 24
 - 56
 - 512
 - 128

ANS: B

PTS: 1

TOP: Combination

6. The number of random samples (without replacement) of size 3 that can be drawn from a population of size 5 is
- 15
 - 10
 - 20
 - 125

ANS: B PTS: 1 TOP: Sampling

7. There are 6 children in a family. The number of children defines a population. The number of simple random samples of size 2 (without replacement) which are possible equals
- 12
 - 15
 - 3
 - 16

ANS: B PTS: 1 TOP: Sampling

8. The number of different simple random samples of size 5 that can be selected from a population of size 8 is
- 40
 - 336
 - 13
 - 56

ANS: D PTS: 1 TOP: Sampling

9. How many different samples of size 3 can be taken from a finite population of size 10?
- 30
 - 1,000
 - 720
 - 120

ANS: D PTS: 1 TOP: Sampling

10. In point estimation
- data from the population is used to estimate the population parameter
 - data from the sample is used to estimate the population parameter
 - data from the sample is used to estimate the sample statistic
 - the mean of the population equals the mean of the sample

ANS: B PTS: 1 TOP: Sampling

11. The sample mean is the point estimator of
- μ
 - σ
 - \bar{x}
 - p

ANS: A PTS: 1 TOP: Inference

12. The standard deviation of a point estimator is called the

- a. standard deviation
- b. standard error
- c. point estimator
- d. variance of estimation

ANS: B

PTS: 1

TOP: Sampling

13. The sample statistic, such as \bar{x} , s , or \bar{p} , that provides the point estimate of the population parameter is known as

- a. a point estimator
- b. a parameter
- c. a population parameter
- d. a population statistic

ANS: A

PTS: 1

TOP: Inference

14. A simple random sample of 5 observations from a population containing 400 elements was taken, and the following values were obtained.

12 18 19 20 21

A point estimate of the mean is

- a. 400
- b. 18
- c. 20
- d. 10

ANS: B

PTS: 1

TOP: Inference

15. The following data was collected from a simple random sample of a population.

13 15 14 16 12

The point estimate of the population standard deviation is

- a. 2.500
- b. 1.581
- c. 2.000
- d. 1.414

ANS: B

PTS: 1

TOP: Inference

16. The following information was collected from a simple random sample of a population.

16 19 18 17 20 18

The point estimate of the population standard deviation is

- a. 2.000
- b. 1.291
- c. 1.414
- d. 1.667

ANS: C

PTS: 1

TOP: Inference