Test Bank for Essentials of Statistics for the Behavioral Sciences 10th Gravetter

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Chapter 01

1. A researcher uses an anonymous survey to investigate the television-viewing habits of 100 American adolescents. The researcher plans to make an inference about the television-viewing habits of all American adolescents based on the results of the survey. The entire group of American adolescents is an example of a _____.

a. sample
b. statistic
c. population
d. parameter

ANSWER: c
DIFFICULTY: Apply
REFERENCES: 1.1 Statistics, Science, and Observations
KEYWORDS: Bloom's: Apply

2. A researcher uses an anonymous survey to investigate the social media habits of American college students. Based on the set of 300 surveys that were completed and returned, the researcher finds that students spend an average of 2 hours each day using social media. The set of 300 students who returned surveys is an example of a _____.

a. parameter
b. statistic
c. population
d. sample

ANSWER: d
DIFFICULTY: Apply
REFERENCES: 1.1 Statistics, Science, and Observations
KEYWORDS: Bloom's: Apply

3. In order for a researcher to obtain a random sample, they need to specifically do which of the following things?

a. rule out confounding variables
b. ensure that each person in the population has an equal chance of being selected for the sample
c. make certain that results are valid
d. make sure that each participant has an equal chance of being assigned to each experimental condition

ANSWER: b
DIFFICULTY: Understand
REFERENCES: 1.1 Statistics, Science, and Observations
KEYWORDS: Bloom's: Understand

4. In contrast to a datum, which of the following descriptions is most consistent with the concept of data?

a. the mean average of 15 participants' individual scores on a problem-solving task
b. the percentile that the score of 1 participant on a problem-solving task falls into
c. the individual scores of 15 participants on a problem-solving task
d. the individual score of 1 participant on a problem-solving task

ANSWER: c
DIFFICULTY: Analyze
REFERENCES: 1.1 Statistics, Science, and Observations

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KEYWORDS: Bloom's: Analyze

5. A researcher is curious about the average monthly car insurance bill for high school students in the state of Florida. If this average could be obtained, it would be an example of a _____.

a. parameter
b. statistic
c. population
d. sample

ANSWER: a
DIFFICULTY: Apply
REFERENCES: 1.1 Statistics, Science, and Observations
KEYWORDS: Bloom's: Apply

6. Which statement below regarding populations is true?

a. Populations typically are small in size.
b. Populations cannot consist of non-human animal research subjects.
c. The experimental research method should be used to examine populations.
d. It usually is challenging to obtain data from every person in a population.

ANSWER: d
DIFFICULTY: Understand
REFERENCES: 1.1 Statistics, Science, and Observations
KEYWORDS: Bloom's: Understand

7. The relationship between a statistic and a sample is the same as the relationship between _____.

a. a sample and a population
b. a statistic and a parameter
c. a parameter and a population
d. descriptive and inferential statistics

ANSWER: c
DIFFICULTY: Understand
REFERENCES: 1.1 Statistics, Science, and Observations
KEYWORDS: Bloom's: Understand

8. Organizing a set of scores in a table or computing an average to summarize a data set is an example of using _____.

a. parameters
b. random sampling
c. descriptive statistics
d. inferential statistics

ANSWER: c
DIFFICULTY: Remember
REFERENCES: 1.1 Statistics, Science, and Observations
KEYWORDS: Bloom's: Remember

9. A characteristic, usually a numerical value, which describes a sample is called a _____.

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a. parameter
b. statistic
c. variable
d. constant

ANSWER: b
DIFFICULTY: Remember
REFERENCES: 1.1 Statistics, Science, and Observations
KEYWORDS: Bloom's: Remember

10. A researcher is interested in average first semester change in weight (gain or loss) for students at a local college. Thus, they record the individual change in weight for a small group of 25 freshman from this college during their first semester. Then, the researcher calculates the average change in weight during the first semester among these 25 students. The average is an example of a _____.

a. statistic
b. parameter
c. variable
d. constant

ANSWER: a
DIFFICULTY: Apply
REFERENCES: 1.1 Statistics, Science, and Observations
KEYWORDS: Bloom's: Apply

11. The average verbal SAT score for the entire class of incoming college freshmen in the United States is 530. However, if a sample of 20 incoming college freshmen is randomly selected from the United States, it is likely that this sample's average verbal SAT score will not be exactly 530. This is consistent with the concept of _____.

a. statistical error
b. inferential error
c. sampling error
d. descriptive error

ANSWER: c
DIFFICULTY: Apply
REFERENCES: 1.1 Statistics, Science, and Observations
KEYWORDS: Bloom's: Apply

12. Random assignment helps to strengthen causal inferences within an experiment by ruling out potential confounding variables otherwise introduced to an experiment due to individual differences in participants.

a. True
b. False

ANSWER: True
DIFFICULTY: Understand
REFERENCES: 1.3 Three Data Structures, Research Methods, and Statistics
KEYWORDS: Bloom's: Understand

13. A recent study reported that students who just finished playing a prosocial video game were more likely to help others than students who had just finishing playing a neutral or antisocial game. For this study, the kind of game given to the

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students was the _____.

a. control group
b. quasi-independent variable
c. independent variable
d. dependent variable

ANSWER: c
DIFFICULTY: Apply
REFERENCES: 1.3 Three Data Structures, Research Methods, and Statistics
KEYWORDS: Bloom's: Apply

14. Which of the following statements is consistent with a research study conducted with the correlational method?

a. One variable is measured, and two groups are compared.
b. Two variables are measured, and two groups are compared.
c. One variable is measured, and there is only one group of participants.
d. Two variables are measured, and there is only one group of participants.

ANSWER: d
DIFFICULTY: Understand
REFERENCES: 1.3 Three Data Structures, Research Methods, and Statistics
KEYWORDS: Bloom's: Understand

15. For a research study examining how participant gender influences support for equality in society, participant gender is an example of which kind of variable?

a. quasi-independent variable
b. independent variable
c. quasi-dependent variable
d. dependent variable

ANSWER: a
DIFFICULTY: Apply
REFERENCES: 1.3 Three Data Structures, Research Methods, and Statistics
KEYWORDS: Bloom's: Apply

16. For an experiment comparing the effectiveness of two different teaching methods for improving the social skills of autistic children, the dependent variable would be the _____.

a. experimental methodology
b. autistic children
c. teaching methods used to teach social skills
d. levels of improvement in social skills among autistic children

ANSWER: d
DIFFICULTY: Understand
REFERENCES: 1.3 Three Data Structures, Research Methods, and Statistics
KEYWORDS: Bloom's: Understand

17. The number of absences for each student within a psychology class is an example of a _____ variable.

a. nominal

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b. discrete
c. continuous
d. dependent

ANSWER: b
DIFFICULTY: Apply
REFERENCES: 1.2 Variables and Measurement
KEYWORDS: Bloom's: Apply

18. The amount of time that it takes a person to solve a problem is an example of a(n) _____ variable.
a. independent
b. nominal
c. continuous
d. discrete

ANSWER: c
DIFFICULTY: Apply
REFERENCES: 1.2 Variables and Measurement
KEYWORDS: Bloom's: Apply

19. If it is impossible to divide the existing categories of a variable, then it is an example of a(n) _____ variable.
a. interval
b. ordinal
c. discrete
d. continuous

ANSWER: c
DIFFICULTY: Understand
REFERENCES: 1.2 Variables and Measurement
KEYWORDS: Bloom's: Understand

20. Which kind of variable requires the use of real limits?
a. ordinal
b. interval
c. discrete
d. continuous

ANSWER: d
DIFFICULTY: Remember
REFERENCES: 1.2 Variables and Measurement
KEYWORDS: Bloom's: Remember

21. A doctor is measuring children's heights to the nearest inch and obtains scores such as 40, 41, 42, and so on. What are the real limits for a score of $X = 42$?
a. 41 and 43
b. 41.5 and 42.5
c. 41.75 and 42.25

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d. 41.25 and 42.75

ANSWER: b
DIFFICULTY: Understand
REFERENCES: 1.2 Variables and Measurement
KEYWORDS: Bloom's: Analyze

22. Students in an introductory art class are classified as art majors and non-art majors. Which scale of measurement is being used to classify the students?

a. nominal
b. ordinal
c. interval
d. ratio

ANSWER: a
DIFFICULTY: Understand
REFERENCES: 1.2 Variables and Measurement
KEYWORDS: Bloom's: Understand

23. The participants in a research study self-report their sleep quality levels by choosing the response option that best characterizes their average sleep quality per night from the following response options: 1 = extremely low sleep quality, 2 = very low sleep quality, 3 = low sleep quality, 4 = extremely high sleep quality. Which measurement scale is being used to classify sleep quality?

a. nominal
b. ordinal
c. interval
d. ratio

ANSWER: b
DIFFICULTY: Understand
REFERENCES: 1.2 Variables and Measurement
KEYWORDS: Bloom's: Understand

24. Barbara is a psychologist who measures relationship satisfaction among couples by observing non-verbal behavior (e.g., smiling, mimicking partner actions). In this example, non-verbal behavior is an example of a(n) _____.

a. discrete variable
b. operational definition
c. construct
d. real limits

ANSWER: b
DIFFICULTY: Apply
REFERENCES: 1.2 Variables and Measurement
KEYWORDS: Bloom's: Apply

25. Martha conducts a research study in which she measures how long participants spend trying to solve an impossible problem-solving task before giving up as a measure of perseverance. In this example, perseverance is an example of a(n) _____.

a. operational definition

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b. independent variable
c. dependent variable
d. construct

ANSWER: d
DIFFICULTY: Apply
REFERENCES: 1.2 Variables and Measurement
KEYWORDS: Bloom's: Apply

26. What additional information is obtained by measuring two individuals on an ordinal scale compared to a nominal scale?

a. whether the measurements are the same or different
b. the direction of the difference
c. the size of the difference
d. whether the measurements are valid

ANSWER: b
DIFFICULTY: Understand
REFERENCES: 1.2 Variables and Measurement
KEYWORDS: Bloom's: Understand

27. What additional information is obtained by measuring two individuals on an interval scale compared to an ordinal scale?

a. whether the measurements are the same or different
b. the direction of the difference
c. the size of the difference
d. whether the measurements are reliable

ANSWER: c
DIFFICULTY: Understand
REFERENCES: 1.2 Variables and Measurement
KEYWORDS: Bloom's: Understand

28. What scale of measurement is being used when a researcher measures the amount of car accidents that participants have been involved in during their lifetime?

a. nominal
b. ordinal
c. interval
d. ratio

ANSWER: d
DIFFICULTY: Understand
REFERENCES: 1.2 Variables and Measurement
KEYWORDS: Bloom's: Understand

29. After assessing two individuals' intelligence levels using a questionnaire, a researcher can conclude that Tom's intelligence score is 4 points higher than Bill's. The observations that serve as the basis for this conclusion must come from a(n) _____.

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a. construct.
b. discrete variable
c. ordinal scale of measurement
d. interval scale of measurement

ANSWER: d
DIFFICULTY: Apply
REFERENCES: 1.2 Variables and Measurement
KEYWORDS: Bloom's: Apply

30. Sam is a researcher measuring individuals' attitudes toward police officers. Individuals respond to a survey question that asks them to choose the number (0-4) that best characterizes their attitudes toward police officers using the provided response options: 0 = Extremely negative attitude, 1 = Negative attitude, 2 = Neutral attitude, 3 = Positive attitude, 4 = Extremely positive attitude. In this example, attitudes toward police officers are being measured using a(n) _____ scale of measurement.

a. ordinal
b. nominal
c. interval
d. ratio

ANSWER: c
DIFFICULTY: Understand
REFERENCES: 1.2 Variables and Measurement
KEYWORDS: Bloom's: Understand

31. The main distinction between an interval and ratio scale of measurement is that _____.

a. a score of 0 on a ratio scale does not represent the complete absence of that variable
b. a ratio scale does not allow for comparisons between two scores regarding whether one score is higher or lower than the other
c. a score of 0 on a ratio scale represents the complete absence of that variable
d. a ratio scale does not allow for comparisons between two scores regarding differences in size

ANSWER: c
DIFFICULTY: Understand
REFERENCES: 1.2 Variables and Measurement
KEYWORDS: Bloom's: Understand

32. Consider the mathematical expressions of $(\Sigma X)^2$ and ΣX^2. A valid generalization is that _____.

a. in both equations summing will be the last operation performed
b. in both equations squaring will be the last operation performed
c. the first equation typically will yield a higher computed value
d. the first equation typically will yield a lower computed value

ANSWER: c
DIFFICULTY: Analyze
REFERENCES: 1.4 Statistical Notation
KEYWORDS: Bloom's: Analyze

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33. Keith conducts a research study to examine how mental fatigue influences frustration levels. He has one group of participants complete a mentally exhausting problem-solving task for ten minutes, and a second group of participants complete an easy crossword puzzle for ten minutes. Then, he observes participant reactions to being prevented from achieving a desired goal on a second unrelated task as a measure of frustration levels. In this research study, the experimental condition is _____.

a. the group of participants who complete the easy crossword puzzle
b. the group of participants who complete the mentally exhausting problem-solving task
c. frustration levels
d. task type

ANSWER: b
DIFFICULTY: Understand
REFERENCES: 1.3 Three Data Structures, Research Methods, and Statistics
KEYWORDS: Bloom's: Understand

34. The mathematical expression of $\Sigma X - 2$ differs from the mathematical expression of $\Sigma(X - 2)$ in each of the following ways except for which?

a. The first step to solving each expression is different.
b. The final step to solving each expression is different.
c. Original scores are added together in one expression but not the other.
d. Squaring takes place in one equation but not the other.

ANSWER: d
DIFFICULTY: Analyze
REFERENCES: 1.4 Statistical Notation
KEYWORDS: Bloom's: Analyze

35. Consider the mathematical expressions of $\Sigma(X + 2)$ and $\Sigma(X + 2)^2$. A valid generalization is that _____.

a. in both equations squaring will be the last operation performed
b. in both equations squaring will be the first operation performed
c. the first equation typically will yield a higher computed value
d. the first equation typically will yield a lower computed value

ANSWER: d
DIFFICULTY: Analyze
REFERENCES: 1.4 Statistical Notation
KEYWORDS: Bloom's: Analyze

36. The value of $(\Sigma X)^2$ for the scores 1, 5, and 2 is 64.

a. True
b. False

ANSWER: False
DIFFICULTY: Understand
REFERENCES: 1.4 Statistical Notation
KEYWORDS: Bloom's: Understand

37. The value of ΣX^2 for the scores 1, 0, 2, and 4 is 14.

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a. True
b. False

ANSWER: False
DIFFICULTY: Understand
REFERENCES: 1.4 Statistical Notation
KEYWORDS: Bloom's: Understand

38. The value of $\Sigma X + 1$ for the scores 1, 0, 2, and 4 is 10.
a. True
b. False

ANSWER: False
DIFFICULTY: Understand
REFERENCES: 1.4 Statistical Notation
KEYWORDS: Bloom's: Understand

39. What is the value of $\Sigma(X + 2)$ for the scores 1, 2, 1, and 3?
a. 10
b. 8
c. 7
d. 15

ANSWER: d
DIFFICULTY: Understand
REFERENCES: 1.4 Statistical Notation
KEYWORDS: Bloom's: Understand

40. What is the value of $\Sigma(X + 1)^2$ for the scores 0, 1, 2, 4?
a. 100
b. 39
c. 36
d. 49

ANSWER: b
DIFFICULTY: Understand
REFERENCES: 1.4 Statistical Notation
KEYWORDS: Bloom's: Understand

41. Which of the following is a critical unique aspect of the experimental method when examining the relationship between two variables?
a. manipulation of one variable
b. prediction of one variable
c. manipulation of two variables
d. prediction of two variables

ANSWER: a
DIFFICULTY: Understand

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REFERENCES: 1.3 Three Data Structures, Research Methods, and Statistics
KEYWORDS: Bloom's: Understand

42. Sarah is conducting a research study in which one group of participants consume one cup of coffee, whereas another group of participants consume two cups of coffee. Then, she assesses attention levels of these participants following coffee consumption. This is an example of a(n) _____ research study.

a. descriptive
b. correlational
c. quasi-experimental
d. experimental

ANSWER: d
DIFFICULTY: Apply
REFERENCES: 1.3 Three Data Structures, Research Methods, and Statistics
KEYWORDS: Bloom's: Apply

43. What is the value of ΣX^2 for the scores 2, 4, and 5?

a. 11
b. 45
c. 36
d. 33

ANSWER: b
DIFFICULTY: Understand
REFERENCES: 1.4 Statistical Notation
KEYWORDS: Bloom's: Understand

44. What is the value of $\Sigma(X + 1)$ for the scores 2, 3, 5?

a. 6
b. 9
c. 11
d. 13

ANSWER: d
DIFFICULTY: Understand
REFERENCES: 1.4 Statistical Notation
KEYWORDS: Bloom's: Understand

45. What is the value of $\Sigma(X - 1)^2$ for the scores 1, 3, and 4?

a. 49
b. 12
c. 13
d. 30

ANSWER: c
DIFFICULTY: Understand
REFERENCES: 1.4 Statistical Notation

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KEYWORDS: Bloom's: Understand

46. You are instructed to subtract 2 points from each score, square each of these resulting values, and then find the sum of these squared values. How would this set of instructions be expressed in summation notation?

a. $\Sigma(X - 2)$

b. $\Sigma(X - 2)^2$

c. $\Sigma X - 2$

d. $(X - 2)^2$

ANSWER: b
DIFFICULTY: Understand
REFERENCES: 1.4 Statistical Notation
KEYWORDS: Bloom's: Understand

47. You are instructed to square each score and subtract four points from the sum of these squared scores. How would this set of instructions be expressed in summation notation?

a. $\Sigma(X^2) - 4$

b. $(\Sigma X)^2 - 4$

c. $(X - 4)^2$

d. $\Sigma X^2 - 4$

ANSWER: a
DIFFICULTY: Understand
REFERENCES: 1.4 Statistical Notation
KEYWORDS: Bloom's: Understand

48. Of the following options, which of the following is done first in the order of operations?

a. squaring

b. division

c. addition

d. summation (Σ)

ANSWER: a
DIFFICULTY: Understand
REFERENCES: 1.4 Statistical Notation
KEYWORDS: Bloom's: Understand

49. Using the average score to describe a sample is an example of an inferential statistic.

a. True

b. False

ANSWER: False
DIFFICULTY: Understand
REFERENCES: 1.1 Statistics, Science, and Observations
KEYWORDS: Bloom's: Understand

50. Using polling results from a sample of 100 registered voters in Iowa to predict the outcome of a statewide election set

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to take place one week later is an example of using inferential statistics.

a. True

b. False

ANSWER: True

DIFFICULTY: Understand

REFERENCES: 1.1 Statistics, Science, and Observations

KEYWORDS: Bloom's: Understand

51. A population is the set of all individuals of interest in a particular study.

a. True

b. False

ANSWER: True

DIFFICULTY: Remember

REFERENCES: 1.1 Statistics, Science, and Observations

KEYWORDS: Bloom's: Remember

52. A researcher interested in vocabulary development among toddlers obtains a sample of 2-year-old children to participate in a research study. The average vocabulary development score for the group of toddlers is an example of a parameter.

a. True

b. False

ANSWER: False

DIFFICULTY: Apply

REFERENCES: 1.1 Statistics, Science, and Observations

KEYWORDS: Bloom's: Apply

53. The goal for an experiment is to examine whether changes in one variable are responsible for causing changes in a second variable.

a. True

b. False

ANSWER: True

DIFFICULTY: Understand

REFERENCES: 1.3 Three Data Structures, Research Methods, and Statistics

KEYWORDS: Bloom's: Understand

54. An environmental psychologist conducts a correlational research study by assessing the energy consumption rates of students in college dorms over a one year period.

a. True

b. False

ANSWER: False

DIFFICULTY: Apply

REFERENCES: 1.3 Three Data Structures, Research Methods, and Statistics

KEYWORDS: Bloom's: Apply

55. A recent study uncovered a correlation between gum disease and heart disease. This result indicates that gum disease

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causes individuals to develop heart disease.

a. True
b. False

ANSWER: False
DIFFICULTY: Understand
REFERENCES: 1.3 Three Data Structures, Research Methods, and Statistics
KEYWORDS: Bloom's: Understand

56. A variable is a characteristic or condition that changes or has different values for different individuals.

a. True
b. False

ANSWER: True
DIFFICULTY: Remember
REFERENCES: 1.1 Statistics and Behavioral Sciences
KEYWORDS: Bloom's: Remember

57. A recent newspaper report describes that having more siblings causes increases in social skills. This is a valid statement to make given the nature of this research.

a. True
b. False

ANSWER: False
DIFFICULTY: Apply
REFERENCES: 1.3 Three Data Structures, Research Methods, and Statistics
KEYWORDS: Bloom's: Apply

58. A research study uncovers that college graduates have higher lifetime work earnings than individuals who do not receive college degrees. This is an example of a nonequivalent groups study.

a. True
b. False

ANSWER: True
DIFFICULTY: Understand
REFERENCES: 1.3 Three Data Structures, Research Methods, and Statistics
KEYWORDS: Bloom's: Understand

59. A discrete variable must be measured on a nominal or an ordinal scale.

a. True
b. False

ANSWER: False
DIFFICULTY: Understand
REFERENCES: 1.2 Variables and Measurement
KEYWORDS: Bloom's: Understand

60. Classifying people into groups based on college major is an example of measurement using an ordinal scale.

a. True

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b. False

ANSWER: False
DIFFICULTY: Understand
REFERENCES: 1.2 Variables and Measurement
KEYWORDS: Bloom's: Understand

61. To determine the size of a difference between two individuals on a measured variable, a researcher must use either an interval or a ratio scale of measurement.

a. True
b. False

ANSWER: True
DIFFICULTY: Understand
REFERENCES: 1.2 Variables and Measurement
KEYWORDS: Bloom's: Understand

62. If a researcher assesses two individuals using a measurement tool with a nominal scale, it is impossible to determine which individual has the larger score on the construct of interest.

a. True
b. False

ANSWER: True
DIFFICULTY: Understand
REFERENCES: 1.2 Variables and Measurement
KEYWORDS: Bloom's: Understand

63. If a researcher measures two individuals on an ordinal scale, it is possible to determine how much difference exists between the two people.

a. True
b. False

ANSWER: False
DIFFICULTY: Understand
REFERENCES: 1.2 Variables and Measurement
KEYWORDS: Bloom's: Understand

64. For statistical purposes, there usually is not much reason to differentiate between interval and ordinal scales of measurement.

a. True
b. False

ANSWER: False
DIFFICULTY: Understand
REFERENCES: 1.2 Variables and Measurement
KEYWORDS: Bloom's: Understand

65. Participants reporting the number of cell phones they have owned in their lifetime would be an example of a discrete variable.

a. True

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b. False

ANSWER: True
DIFFICULTY: Understand
REFERENCES: 1.2 Variables and Measurement
KEYWORDS: Bloom's: Understand

66. A high school gym teacher records the weights of students prior to beginning a fitness regimen. This is an example of measuring a discrete variable.

a. True
b. False

ANSWER: False
DIFFICULTY: Understand
REFERENCES: 1.2 Variables and Measurement
KEYWORDS: Bloom's: Understand

67. In an introductory theater class, the professor records each student's favorite movie at the beginning of the semester. The teacher is measuring a continuous variable.

a. True
b. False

ANSWER: False
DIFFICULTY: Understand
REFERENCES: 1.2 Variables and Measurement
KEYWORDS: Bloom's: Understand

68. A data set is described as consisting of $N = 15$ scores. Based on the notation being used, the data set is a sample and contains data from a subset of the population.

a. True
b. False

ANSWER: False
DIFFICULTY: Understand
REFERENCES: 1.4 Statistical Notation
KEYWORDS: Bloom's: Understand

69. To compute ΣX^2, you first square the scores and then add together the squared scores.

a. True
b. False

ANSWER: True
DIFFICULTY: Understand
REFERENCES: 1.4 Statistical Notation
KEYWORDS: Bloom's: Understand

70. When conducting an experimental research study, it is important that researchers treat participants within experimental conditions in the same manner except for the experimental group that they are assigned to. This helps to reduce the impact of potential confounding variables otherwise introduced to an experiment due to individual differences in participants.

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a. True
b. False

ANSWER: False
DIFFICULTY: Understand
REFERENCES: 1.3 Three Data Structures, Research Methods, and Statistics
KEYWORDS: Bloom's: Understand

71. Corey is an English teacher in high school. On the first day of class, he assesses his students' vocabulary knowledge using a test he has created. Then, at the end of the course, he measures students' vocabulary knowledge using the same test to examine whether vocabulary knowledge has increased for students following completion of his course. This is an example of a pre-post study.

a. True
b. False

ANSWER: True
DIFFICULTY: Understand
REFERENCES: 1.3 Three Data Structures, Research Methods, and Statistics
KEYWORDS: Bloom's: Understand

72. For the following scores, $\Sigma X^2 = (\Sigma X)^2$. Scores: 1, 2, 3, 4

a. True
b. False

ANSWER: False
DIFFICULTY: Understand
REFERENCES: 1.4 Statistical Notation
KEYWORDS: Bloom's: Understand

73. For the following scores, $\Sigma(X + 1) = 18$. Scores: 2, 3, 5, 6

a. True
b. False

ANSWER: False
DIFFICULTY: Understand
REFERENCES: 1.4 Statistical Notation
KEYWORDS: Bloom's: Understand

74. For the following scores, $\Sigma(X + 1)^2 = 74$. Scores: 1, 2, 4, 5

a. True
b. False

ANSWER: True
DIFFICULTY: Understand
REFERENCES: 1.4 Statistical Notation
KEYWORDS: Bloom's: Understand

75. The term "margin of error" that is frequently utilized when reporting the results of political polls is consistent with the concept of parameters.

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a. True
b. False

ANSWER: False
DIFFICULTY: Understand
REFERENCES: 1.1 Statistics and Behavioral Sciences
KEYWORDS: Bloom's: Understand

76. For the following scores, $\Sigma X^2 = 64$. Scores: 1, 2, 5
a. True
b. False

ANSWER: False
DIFFICULTY: Understand
REFERENCES: 1.4 Statistical Notation
KEYWORDS: Bloom's: Understand

77. Lauren is a psychologist interested in whether observing helpful actions while consuming media causes greater future helping behavior. She designs a research study in which one group of participants watch a pleasant television show depicting people helping others for 20 minutes, whereas a second group of participants watch a pleasant television show for 20 minutes where no helping behavior takes place. After watching the show assigned to them, participants in each group are then provided the opportunity to help another student who drops a folder of papers, and Lauren records whether each participant helps this other student or not. In this research study, the control condition is _____.
a. the group of participants who watch the pleasant television show for 20 minutes where no helping behavior takes place
b. the group of participants who watch the pleasant television show for 20 minutes where helping behavior takes place
c. the participants that help the student who drops the folder of papers
d. the participants that do not help the student who drops the folder of papers

ANSWER: a
DIFFICULTY: Understand
REFERENCES: 1.3 Three Data Structures, Research Methods, and Statistics
KEYWORDS: Bloom's: Understand

78. A quasi-independent variable is most similar to and consistent with which of the following terms?
a. pre-post research study
b. non-equivalent groups research study
c. control group
d. manipulation

ANSWER: b
DIFFICULTY: Analyze
REFERENCES: 1.3 Three Data Structures, Research Methods, and Statistics
KEYWORDS: Bloom's: Analyze

79. A datum is different from data as a term in that a datum refers to _____.
a. a sample
b. a population

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c. one score

d. a set of scores

ANSWER: c

DIFFICULTY: Understand

REFERENCES: 1.1 Statistics and Behavioral Sciences

KEYWORDS: Bloom's: Understand

80. Inferential statistics allow researchers to _____.

a. describe data sets

b. make predictions and generalizations about populations

c. operationally define a construct

d. verify the validity of a research study

ANSWER: b

DIFFICULTY: Remember

REFERENCES: 1.1 Statistics and Behavioral Sciences

KEYWORDS: Bloom's: Remember

81. A tenet of the scientific method is that _____ allow researchers to examine mental processes and behavior in an empirical, scientific manner.

a. correlational research studies

b. experimental research studies

c. operational definitions

d. constructs

ANSWER: c

DIFFICULTY: Analyze

REFERENCES: 1.2 Observations, Measurement, and Variables

KEYWORDS: Bloom's: Analyze

82. Statistical techniques are classified into two major categories: descriptive and inferential. Describe the general purpose of each category.

ANSWER: The purpose of descriptive statistics is to summarize and simplify the organization and presentation of data. The purpose of inferential statistics is to use the limited data from a sample as the basis for making general conclusions about the population.

DIFFICULTY: Understand

REFERENCES: 1.1 Statistics, Science, and Observations

KEYWORDS: Bloom's: Understand

83. Describe the concept of "sampling error." Note: your description should include the concepts of sample, population, statistic, parameter, and random sample.

ANSWER: A *parameter* is a value that is obtained from a *population* of scores and is used to describe the population. A *statistic* is a value obtained from a *sample* and used to describe the sample. Typically, it is impossible to obtain measurements for an entire population, so researchers must rely on information from samples. When sampling, obtaining a *random sample* from the population of interest such that every person in the population has an equal chance of being selected for the sample is ideal. Obtaining a random sample maximizes the likelihood that statistics computed from samples are consistent with unknown population parameters. However, samples provide only limited information about their

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populations. Thus, sample statistics are usually not identical to their corresponding population parameters. The error or discrepancy between a statistic and the corresponding parameter is called *sampling error*.

DIFFICULTY: Understand

REFERENCES: 1.1 Statistics, Science, and Observations

KEYWORDS: Bloom's: Understand

84. Describe the distinctions between descriptive study, correlational, and experimental research methods.

ANSWER: When using the *descriptive study* research method, a researcher measures one or more variables to better understand and describe each variable. In contrast, when using the *correlational* research method, a researcher measures two variables to examine the relationship between these two variables. When using the *experimental* research method, a researcher manipulates an independent variable by assigning participants to different levels of that variable, and then subsequently measures their standing on a dependent variable. The *descriptive study* research method allows researchers to describe variables in isolation, *correlational* research methods allow researchers to understand relationships between variables, and *experimental* research methods allow researchers to determine whether one variable causes change in another.

DIFFICULTY: Understand

REFERENCES: 1.3 Three Data Structures, Research Methods, and Statistics

KEYWORDS: Bloom's: Understand

85. Calculate each value requested for the following set of scores. Scores: 1, 3, 4

a. $\Sigma(X - 1)$

b. ΣX^2

c. $(\Sigma X)^2$

d. $\Sigma(X - 1)^2$

ANSWER:
a. 5
b. 26
c. $(8)^2 = 64$
d. 13

DIFFICULTY: Understand

REFERENCES: 1.4 Statistical Notation

KEYWORDS: Bloom's: Understand

86. Calculate each value requested for the following set of scores.

a. ΣX
b. ΣY
c. $\Sigma X \Sigma Y$
d. ΣXY

X	Y
1	0
2	4
3	–1
5	–2

ANSWER:
a. 11
b. 1
c. 11
d. –5

DIFFICULTY: Understand

REFERENCES: 1.4 Statistical Notation

KEYWORDS: Bloom's: Understand

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