Statistics for People Who (Think They) Hate Statistics 6th edition Salkind Test Bank

SKU: 9781506360904-TEST-BANK

Chapter 2: Means to an End: Computing and Understanding Averages

Test Bank

Multiple Choice

1. The _____ value that best represents an entire group of scores.
a. mean
b. median
c. mode
d. average
Ans: d
Answer Location: Computing the Mean
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Knowledge
Difficulty Level: Easy

2. Which of the following is NOT a measure of central tendency?
a. median
b. mode
c. standard deviation
d. mean
Ans: c
Answer Location: Computing the Mean
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Application
Difficulty Level: Easy

3. This measure of central tendency can be considered the most precise.
a. mode
b. median
c. mean
d. average
Ans: c
Answer Location: In Sum . . .
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Knowledge
Difficulty Level: Easy

4. This measure of central tendency can be considered the least precise.
a. median
b. mode
c. mean
d. other

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Ans: b
Answer Location: Computing the Mode
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Knowledge
Difficulty Level: Easy

5. What should be used to determine central tendency?
a. a correlation
b. a graph
c. the standard deviation
d. the average
Ans: d
Answer Location: Computing the Mean
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Application
Difficulty Level: Easy

6. This consists of the middle point of a set of values:
a. mean
b. median
c. mode
d. other
Ans: b
Answer Location: Computing the Median
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Knowledge
Difficulty Level: Easy

7. What is the most common average computed?
a. mode
b. mean
c. variance
d. median
Ans: b
Answer Location: Computing the Mean
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Knowledge
Difficulty Level: Easy

8. What is the symbol used to represent the mean?
a. N
b. n
c. $\bar{x}$
d. X
Ans: c
Answer Location: Computing the Mean

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Learning Objective: Understanding measures of central tendency
Cognitive Domain: Knowledge
Difficulty Level: Easy

9. What is another term for the mean?
a. midpoint
b. frequency
c. arithmetic average
d. distribution
Ans: c
Answer Location: Computing the Mean
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Knowledge
Difficulty Level: Easy

10. What value is most often used to represent an entire group of scores?
a. mode
b. N
c. median
d. mean
Ans: d
Answer Location: Computing the Mean
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Knowledge
Difficulty Level: Easy

11. If a distribution is "significantly distorted," what is this called?
a. variability
b. outliers
c. skew
d. percentile
Ans: c
Answer Location: Computing the Median
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Comprehension
Difficulty Level: Easy

12. What is another way of describing "measures of central tendency"?
a. statistical measures
b. measures of variability
c. averages
d. deviation scores
Ans: c
Answer Location: Introduction
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Knowledge

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Difficulty Level: Easy

13. What is the formula for computing the mean?
a. ΣX + n
b. ΣY / X
c. ΣX / n
d. ΣN + y
Ans: c
Answer Location: Computing the Mean
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Knowledge
Difficulty Level: Medium

14. This is calculated by multiplying values by the frequency of their occurrence, adding the total of all the products, and then dividing by the total number of occurrences.
a. mean
b. arithmetic mean
c. mode
d. weighted mean
Ans: d
Answer Location: Computing a Weighted Mean
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Knowledge
Difficulty Level: Medium

15. Which of the following symbols represents the individual score?
a. X
b. n
c. N
d. Σ
Ans: a
Answer Location: Computing the Mean
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Knowledge
Difficulty Level: Easy

16. What does the Σ symbol represent?
a. the mean
b. the sum of values
c. the sample size
d. an individual score
Ans: b
Answer Location: Computing the Mean
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Knowledge
Difficulty Level: Easy

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17. What is the name of the letter Σ?
a. phi
b. rho
c. sigma
d. alpha
Ans: c
Answer Location: Computing the Mean
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Knowledge
Difficulty Level: Easy

18. Which of the following symbols represents sample size?
a. X
b. y
c. n
d. M
Ans: c
Answer Location: Computing the Mean
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Knowledge
Difficulty Level: Easy

19. What does the symbol M represent?
a. population size
b. sample size
c. mean
d. individual score
Ans: c
Answer Location: Computing the Mean
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Knowledge
Difficulty Level: Easy

20. If you know M = 5, and the sum of scores is 20, what is n?
a. 4
b. .25
c. 100
d. need more information
Ans: a
Answer Location: Computing the Mean
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Application
Difficulty Level: Medium

21. If ΣX = 4,390 and n = 4, what is M?

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a. 17,560
b. .0100
c. 1097.5
d. Need more information
Ans: c
Answer Location: Computing the Mean
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Application
Difficulty Level: Medium

22. What is the mean value for the following scores: 10, 35, 40, 60, 55, 25, 50?
a. 45
b. 44.17
c. 40
d. 39.29
Ans: d
Answer Location: Computing the Mean
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Application
Difficulty Level: Medium

23. What is the mean value of the following scores: 12, 25, 15, 27, 32, 8?
a. 19.83
b. 21.24
c. 20.00
d. 19.98
Ans: a
Answer Location: Computing the Mean
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Application
Difficulty Level: Medium

24. What is the mean value of the following scores: 1.11, 1.17, 1.15, 2.02, 2.07, 3.11, 2.14?
a. 2.14
b. 2.07
c. 1.74
d. 1.82
Ans: d
Answer Location: Computing the Mean
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Application
Difficulty Level: Medium

25. What is the mean value of the following scores: 117, 132, 147, 156, 196?
a. 151.2
b. 149.6

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c. 147.0
d. 148.7
Ans: b
Answer Location: Computing the Mean
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Application
Difficulty Level: Medium

26. Your current exam mean is 97.2. If you receive a 99 on the next exam, this will have the effect of _____.
a. increasing your mean
b. decreasing your mean
c. having no effect on your mean
d. cannot be determined
Ans: a
Answer Location: Computing the Mean
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Analysis
Difficulty Level: Hard

27. Your current exam mean is 93.2. If you receive an 87 on the next exam, this will have the effect of _____.
a. increasing your mean
b. decreasing your mean
c. having no effect on your mean
d. cannot determine
Ans: b
Answer Location: Computing the Mean
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Analysis
Difficulty Level: Hard

28. Your current exam mean is 95. If you receive a 95 on the next exam, this will have the effect of _____.
a. increasing your mean
b. decreasing your mean
c. having no effect on your mean
d. cannot be determined
Ans: c
Answer Location: Computing the Mean
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Analysis
Difficulty Level: Hard

29. Which measure of central tendency is most influenced by outliers?
a. median

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b. mode
c. mean
d. variance
Ans: c
Answer Location: Computing the Mean
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Knowledge
Difficulty Level: Easy

30. What does the large N represent?
a. sample size
b. population size
c. sum of scores
d. mean score
Ans: b
Answer Location: Computing the Mean
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Knowledge
Difficulty Level: Easy

31. What does the small n represent?
a. sample size
b. population size
c. sum of scores
d. mean score
Ans: a
Answer Location: Computing the Mean
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Knowledge
Difficulty Level: Easy

32. Which measure of central tendency is also known as the midpoint for a set of scores?
a. mode
b. mean
c. median
d. sum
Ans: c
Answer Location: Computing the Median
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Knowledge
Difficulty Level: Easy

33. Which of the following best describes the mode?
a. sum of all values in a group
b. midpoint in a set of scores
c. number of subject collected

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d. most frequently occurring value(s)
Ans: d
Answer Location: Computing the Mode
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Knowledge
Difficulty Level: Easy

34. The mode will always consist of the _____.
a. the number of cases in the category
b. the name of the category
c. the format of the category
d. the size of the category
Ans: b
Answer Location: Computing the Mode
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Knowledge
Difficulty Level: Easy

35. What is the mode of the following data: 47 Republicans, 49 Democrats, and 52 independents?
a. 52
b. Republicans
c. Democrats
d. Independents
Ans: d
Answer Location: Computing the Mode
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Application
Difficulty Level: Medium

36. What is the mode of the following data: 57 males and 43 females?
a. 57
b. males
c. females
d. cannot be determined
Ans: b
Answer Location: Computing the Mode
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Application
Difficulty Level: Medium

37. What is the mode of the following data: 52 bowls of spaghetti, 37 bowls of cereal, 14 sandwiches, and 17 personal pizzas?
a. bowls of cereal
b. sandwiches
c. 52

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d. bowls of spaghetti
Ans: d
Answer Location: Computing the Mode
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Application
Difficulty Level: Medium

38. Which of the following defines the *median*?
a. sum of all values in a group
b. most frequently occurring value
c. average variability in a set of scores
d. midpoint in a set of scores
Ans: d
Answer Location: Computing the Median
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Knowledge
Difficulty Level: Easy

39. What is the median for the following amounts: $11.75, $12.75, $13.00, $10.75, $11.50, $10.50, $10.75?
a. $11.50
b. $11.75
c. $11.57
d. $11.00
Ans: a
Answer Location: Computing the Median
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Application
Difficulty Level: Medium

40. What is the median for the following amounts: $13,400; $17,560; $45,440; $68,550; $96,400?
a. $13,400
b. $48,240
c. $45,440
d. $96,400
Ans: c
Answer Location: Computing the Median
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Application
Difficulty Level: Medium

41. What is the median of the following set of scores: 23, 17, 15, 32, 38, 47?
a. 23
b. 32
c. 17.4

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d. 27.5
Ans: d
Answer Location: Computing the Median
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Application
Difficulty Level: Medium

42. What is the median of the following set of scores: 1.3, 4.7, 2.3, 3.3, 3.0, 2.9?
a. 2.95
b. 3.05
c. 2.90
d. 3.00
Ans: a
Answer Location: Computing the Median
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Application
Difficulty Level: Medium

43. When there is an even number of scores, how is the median calculated?
a. average the two middle scores.
b. use the smaller of the two middle scores.
c. use the larger of the two middle scores.
d. the median cannot be calculated.
Ans: a
Answer Location: Computing the Median
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Comprehension
Difficulty Level: Easy

44. With regard to percentile points, what is the median also known as?
a. Q1
b. Q2
c. Q3
d. Q4
Ans: b
Answer Location: Computing the Median
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Knowledge
Difficulty Level: Easy

45. What is the 25th percentile also known as?
a. Q1
b. Q2
c. Q3
d. Q4
Ans: a

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Answer Location: Computing the Median
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Knowledge
Difficulty Level: Easy

46. What is the 75th percentile also known as?
a. Q1
b. Q2
c. Q3
d. Q4
Ans: c
Answer Location: Computing the Median
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Knowledge
Difficulty Level: Easy

47. Market researchers sent out a survey to college students in Ohio to assess their preferences in regard to three different brands of honey. When examining the average preference of the respondents, which measure of central tendency is most likely to be used to describe them?
a. median
b. mean
c. mode
d. cannot be determined
Ans: c
Answer Location: In Sum…
Learning Objective: Selecting a measure of central tendency
Cognitive Domain: Application
Difficulty Level: Medium

48. What impact do extreme scores have on the median?
a. positive skew
b. negative skew
c. minimal impact
d. nullify the value
Ans: c
Answer Location: Computing the Median
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Comprehension
Difficulty Level: Medium

49. Which of the following are used to define the percentage of cases equal to and below a certain point in a distribution of scores?
a. T scores
b. Q points
c. standard scores
d. percentile points

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Ans: d
Answer Location: Computing the Median Learning Objective: Understanding measures of central tendency
Cognitive Domain: Knowledge
Difficulty Level: Easy

50. A test score in the 97th percentile would be considered _____.
a. very high
b. very low
c. about average
d. cannot be determined
Ans: a
Answer Location: Computing the Median
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Comprehension
Difficulty Level: Medium

51. A test score in the 3rd percentile would be considered _____.
a. very high
b. very low
c. about average
d. cannot be determined
Ans: b
Answer Location: Computing the Median Learning Objective: Understanding measures of central tendency
Cognitive Domain: Comprehension
Difficulty Level: Medium

52. A test score in the 47th percentile would be considered _____.
a. very high
b. very low
c. about average
d. cannot be determined
Ans: c
Answer Location: Computing the Median Learning Objective: Understanding measures of central tendency
Cognitive Domain: Comprehension
Difficulty Level: Medium

53. If you were to calculate the average of individual income, and you found many extreme scores, which measure of central tendency should be used?
a. mean
b. median
c. mode
d. standard error
Ans: b

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Answer Location: Computing the Median
Learning Objective: Selecting a measure of central tendency
Cognitive Domain: Application
Difficulty Level: Medium

54. If you were to calculate the average of individual income, and you found no outliers, which measure of central tendency should you use?
a. mode
b. median
c. mean
d. other
Ans: c
Answer Location: Computing the Mean
Learning Objective: Selecting a measure of central tendency
Cognitive Domain: Application
Difficulty Level: Medium

55. What does the term *skew* mean?
a. significantly distort
b. divide
c. add
d. equalize
Ans: a
Answer Location: Computing the Median
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Knowledge
Difficulty Level: Easy

56. Which of the following sets of data illustrates skew?
a. 2, 3, 5, 7, 9
b. 450, 472, 523, 547, 601
c. 23, 37, 42, 51, 147
d. 12, 14, 15, 17, 19
Ans: c
Answer Location: Computing the Median
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Application
Difficulty Level: Medium

57. What would be your preferred measure of central tendency if you had the following data: $32,400; $42,500; $47,250; $49,570; $145,850?
a. mean
b. median
c. mode
d. weighted mean
Ans: b

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Answer Location: Computing the Median
Learning Objective: Selecting a measure of central tendency
Cognitive Domain: Analysis
Difficulty Level: Medium

58. What would be your preferred measure of central tendency if you had the following data: $31,550; $33,750; $34,700; $37,550; $39,275?
a. mean
b. mode
c. median
d. average
Ans: a
Answer Location: Computing the Median
Learning Objective: Selecting a measure of central tendency
Cognitive Domain: Analysis
Difficulty Level: Medium

59. What would be your preferred measure of central tendency if you had the following data: 23 Americans, 57 Mexicans, and 14 Canadians?
a. mean
b. weighted mean
c. median
d. mode
Ans: d
Answer Location: Computing the Mode
Learning Objective: Selecting a measure of central tendency
Cognitive Domain: Analysis
Difficulty Level: Medium

60. What would be your preferred measure of central tendency if you had the following data: 57 males and 23 females?
a. median
b. weighted mean
c. mean
d. mode
Ans: d
Answer Location: Computing the Mode
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Analysis
Difficulty Level: Medium

True/False

1. While there are three measures of central tendency, the mean, median, and mode are all interchangeable anyway.

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Ans: F
Answer Location: Introduction
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Comprehension
Difficulty Level: Easy

2. A researcher should use the mode as a measure of central tendency when the data are qualitative in nature.
Ans: T
Answer Location: Computing the Mode
Learning Objective: Selecting measures of central tendency
Cognitive Domain: Comprehension
Difficulty Level: Easy

3. The nominal level of measurement is defined by categories.
Ans. T
Answer Location: A Rose by any Other Name
Learning Objective: Understanding basic measurement concepts
Cognitive Domain: Knowledge
Difficulty Level: medium

4. The nominal level can be the least precise level of measurement.
Ans: T
Answer Location: A Rose by any Other Name
Learning Objective: Understanding basic measurement concepts
Cognitive Domain: Knowledge
Difficulty Level: medium

5. Nominal levels of measurements have categories that are not mutually exclusive.
Ans: F
Answer Location: A Rose by any Other Name
Learning Objective: Understanding basic measurement concepts
Cognitive Domain: Knowledge
Difficulty Level: medium

6. The ordinal level of measurement stands for order.
Ans: T
Answer Location: Any Order Is Fine by Me
Learning Objective: Understanding basic measurement concepts
Cognitive Domain: Knowledge
Difficulty Level: Medium

7. The interval level of measurement is based on some underlying continuum.
Ans: T
Answer Location: 1 + 1 = 2: The Interval Level of Measurement
Learning Objective: Understanding basic measurement concepts

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Cognitive Domain: Knowledge
Difficulty Level: medium

8. The ratio level of measure does have a zero on the scale. Ans: T
Answer Location:
Can Anyone Have Nothing of Anything?
The Ratio Level of Measurement
Learning Objective: Understanding basic measurement concepts
Cognitive Domain: Knowledge
Difficulty Level: Hard

9. The ratio level is the most precise level of measurement.
Ans: T
Answer Location: In Sum…
Learning Objective: Understanding basic measurement concepts
Cognitive Domain: Knowledge
Difficulty Level: medium

10. The more precise scales contain all the qualities of the scales below them.
Ans: T
Answer Location: In Sum…
Learning Objective: Understanding basic measurement concepts
Cognitive Domain: Knowledge
Difficulty Level: Medium

Short Answer

1. Why is the mean the most frequently used measure of central tendency?
Ans: When the distribution of scores is free of outliers (i.e., extreme scores), the mean tends to be the most precise measure of central tendency.
Answer Location: In sum . . .
Learning Objective: Selecting a measure of central tendency
Cognitive Domain: Comprehension
Difficulty Level: Medium

2. What is the formula for calculating the mean? What does each of the symbols represent?
Ans: $\Sigma X / n$, where Σ represents summation, X represents individual scores, and n represents the sample size.
Answer Location: Computing the Mean
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Knowledge
Difficulty Level: Medium

3. What is meant by the term *outlier*?
Ans: An outlier refers to any extreme scores in a data set.
Answer Location: Computing the Median

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Learning Objective: Understanding measures of central tendency
Cognitive Domain: Comprehension
Difficulty Level: Medium

4. When might the median be the more appropriate measure of central tendency over the mean?
Ans: When there are extreme scores in a distribution, calculating the mean would result in skewed results. The median provides a more accurate measure of the average.
Answer Location: Computing the Median
Learning Objective: Selecting a measure of central tendency
Cognitive Domain: Application
Difficulty Level: Hard

5. What does the term *bimodal* mean?
Ans: Bimodal refers to a distribution of scores that has two different modes, or two scores that occur most frequently.
Answer Location: Apple Pie a la Bimodal
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Comprehension
Difficulty Level: Medium

6. When is the mode the best measure of central tendency to use?
Ans: The mode should be used when working with categorical or nominal data (e.g., gender).
Answer Location: Computing the Mode Learning Objective: Selecting a measure of central tendency
Cognitive Domain: Application
Difficulty Level: Medium

7. How would you calculate a weighted mean?
Ans: First, list all values in the sample. Second, list the frequency associated with each value. Third, multiply the value by its frequency. Fourth, sum all "Value x Frequency." Fifth and finally, divide by total frequency or n.
Answer Location: Computing a Weighted Mean
Learning Objective: Understanding measures of central tendency
Cognitive Domain: Comprehension
Difficulty Level: Hard

8. When is the nominal level of measurement the correct level of measurement to use?
Ans: When we measure a variable that has categories like female or male, we can use the nominal level of measurement.
Answer Location: A Rose by Any Other Name
Learning Objective: Understanding basic measurement concepts
Cognitive Domain: Comprehension
Difficulty Level: Hard

9. When is the ordinal level of measurement the correct level of measurement to use?

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Ans: When we measure a variable that has a ranking order like class ranking, we can use the ordinal level of measurement.
Answer Location: Any Order is Fine With Me
Learning Objective: Understanding basic measurement concepts
Cognitive Domain: Comprehension
Difficulty Level: Hard

10. When is the ratio level of measurement the correct level of measurement to use?
Ans: When we measure a variable that has the true zero on the scale like watching TV or doing homework by hour, we can use the ratio level of measurement.
Answer Location: Can Anyone Have Nothing of Anything?
Learning Objective: Understanding basic measurement concepts
Cognitive Domain: Comprehension
Difficulty Level: Hard

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