Test Bank for Essentials of Statistics for The Behavioral Sciences 9th Edition by Gravetter

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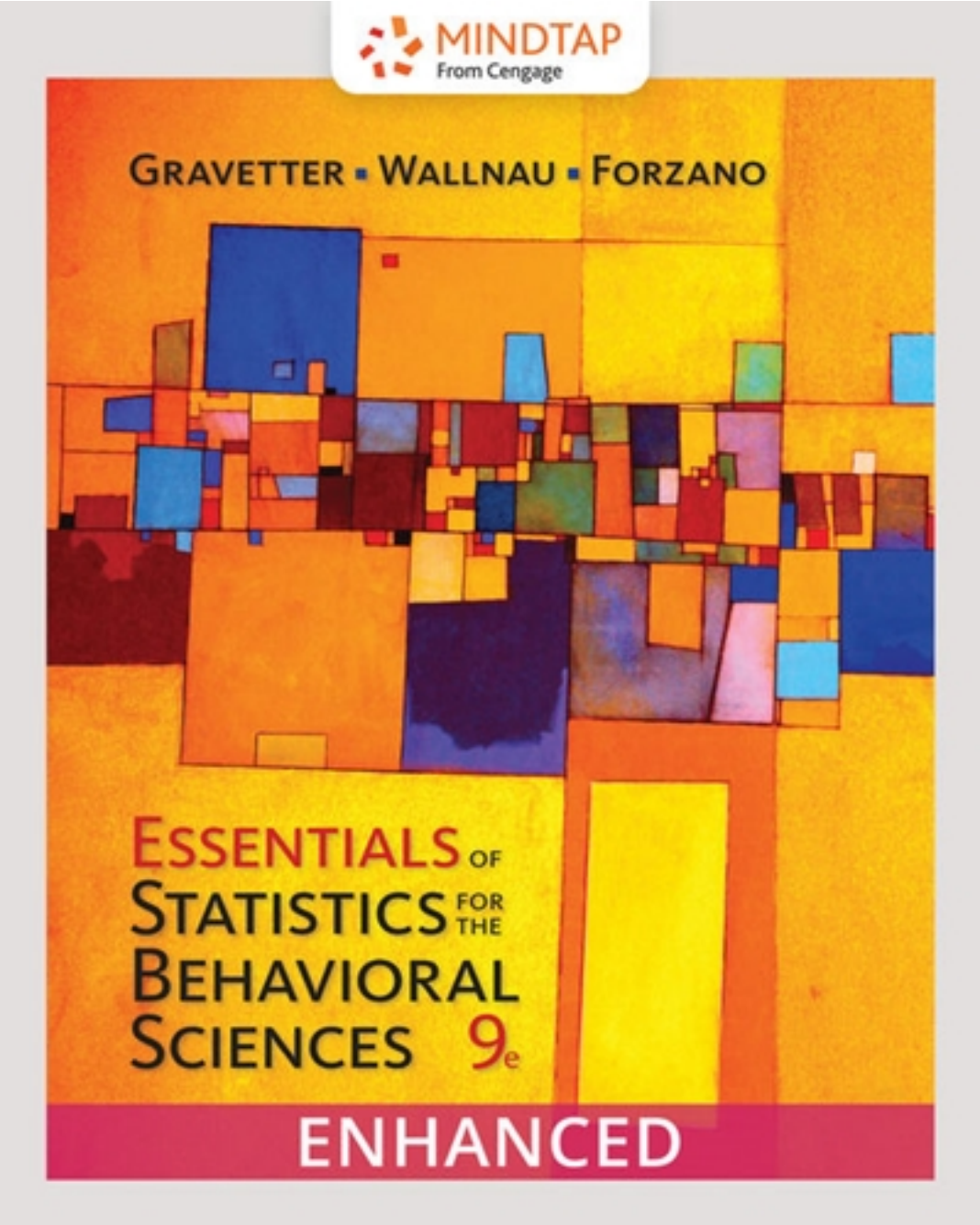


Test Bank

TRUE/FALSE

1 : A student takes a 10-point quiz each week in statistics class. If the students quiz scores for the first three weeks are 2, 6, and 10, then the mean score is M = 9.
A : true
B : false

Correct Answer : B

2 : A sample of n = 6 scores has X = 48. This sample has a mean of M = 8.
A : true
B : false

Correct Answer : A

3 : A sample of n = 8 scores has a mean of M = 16. For this sample, X = 2.
A : true
B : false

Correct Answer : B

4 : A sample with a mean of M = 20 has X = 120. There are n = 6 scores in the sample.
A : true
B : false

Correct Answer : A

5 : For the scores in the following frequency distribution table, the mean is M = 3. X f 4 1 3 4 2 2
A : true
B : false

Correct Answer : B

6 : The mean is considered to be the balance point for a distribution because exactly half of the scores are located above the mean and exactly half are below the mean.
A : true
B : false

Correct Answer : B

7 : In a sample of n = 3 scores, if two scores are each below the mean by 2 points, then the third score is above the mean by 4 points.
A : true
B : false

Correct Answer : A

8 : A sample has a mean of M = 40. If a new score of X = 35 is added to the sample, then the sample mean would increase.
A : true
B : false

Correct Answer : B

9 : A sample has n = 7 scores with a mean of M = 9. If one individual with a score of X = 3 is removed from the sample, the new mean will be M = 10.
A : true
B : false

Correct Answer : A

10 : After adding 6 points to every score in a sample, the new mean is found to be M = 18. The mean for the original sample was M = 24.
A : true
B : false

Correct Answer : B

11 : Adding a new score to a distribution will always change the value of the mean.
A : true
B : false

Correct Answer : B

12 : Changing the value of a score in a distribution will always change the value of the mean.
A : true
B : false

Correct Answer : B

13 : A sample of n = 6 scores has a mean of M = 9. If one individual with a score of X = 4 is removed from the sample, the new mean will be M = 10.
A : true
B : false

Correct Answer : A

14 : A sample of n = 7 scores has a mean of M = 5. After one new score is added to the sample, the new mean is calculated to be M = 6. The new score was X = 13.
A : true
B : false

Correct Answer : A

15 : A sample of n = 8 scores has a mean of M = 20. After one score is removed from the sample, the mean is calculated to be M = 23. The removed score must have a value greater than 20.
A : true
B : false

Correct Answer : B

16 : A sample of n = 10 scores has a mean of 50. A second sample has n = 5 scores and M= 60. If the two samples are combined, the combined sample mean will be greater than 55.
A : true

B : false

Correct Answer : B

17 : For a 100-point exam, a score of X = 65 is definitely above the median.
A : true
B : false

Correct Answer : B

18 : If a sample has an odd number of scores, at least one individual will have a score exactly equal to the median.
A : true
B : false

Correct Answer : A

19 : A sample has n = 5 scores: 2, 4, 5, 8, and 11. The median for the sample is 6.5.
A : true
B : false

Correct Answer : B

20 : For any distribution of scores, at least one individual will have a score exactly equal to the mean.
A : true
B : false

Correct Answer : B

21 : It is possible for a distribution to have more than one mode.
A : true
B : false

Correct Answer : A

22 : It is possible to have a distribution of scores where no individual has a score exactly equal to the mode.
A : true
B : false

Correct Answer : B

23 : For a set of scores measured on an ordinal scale, the median is preferred to the mean as a measure of central tendency.
A : true
B : false

Correct Answer : A

24 : There are situations for which it is either impossible to compute a mean or the mean does not provide a central, representative value.
A : true

B : false

Correct Answer : A

25 : For a severely skewed distribution, the median often provides a better measure of central tendency than the mean.
A : true
B : false

Correct Answer : A

26 : For a distribution with one or two extreme scores, the median is usually a more representative value than the mean.
A : true
B : false

Correct Answer : A

27 : It is impossible for the value of the mode to be greater than the value of the mean.
A : true
B : false

Correct Answer : B

28 : A distribution of scores has a mean of 50, a median of 53, and a mode of 56. Based on this information, it appears that the distribution is negatively skewed.
A : true
B : false

Correct Answer : A

29 : If a negatively skewed distribution has a mean of 50, then the median and the mode are probably both greater than 50.
A : true
B : false

Correct Answer : A

30 : For a positively skewed distribution, the mean usually has a larger value than either the median or the mode.
A : true
B : false

Correct Answer : A

SHORT RESPONSE

31 : What is the purpose for obtaining a measure of central tendency?

Correct Answer : The purpose of a measure of central tendency is to identify the center of the distribution and find the single score that best represents the entire distribution.?

32 : Explain why it is necessary to have more than one standard procedure for defining and measuring central tendency.

Correct Answer : No single method for measuring central tendency will produce a good, representative value in every situation. Although the mean works well in most situations, there are circumstances in which the mean is not representative or cannot be calculated.?

33 : A set of n = 3 scores has a mean of M = 10. Another set of scores has n = 7 and M = 6. If these two sets of scores are combined, what is the mean for the combined group?

Correct Answer : For the combined sample, n = 10, ?X = 72, and M = 7.2.?

34 : A sample of n = 7 scores has a mean of M = 11. If one score with a value of X = 5 is removed from the sample, what is the mean for the remaining scores?

Correct Answer : The original sample had n = 7 scores. ?X = 77. When the score is removed, there are n = 6 scores with ?X = 72. The new mean is M = 12.?

35 : A sample of n = 6 scores has a mean of M = 8. One new score is added to the sample, and the new mean is computed to be M = 7. What is the value of the score that was added to the sample?

Correct Answer : The original sample had n = 6 scores. ?X = 48. After the new score is added, there are n = 7 scores with ?X = 49. Because the sum increased by 1 point, the new score must be X = 1.?

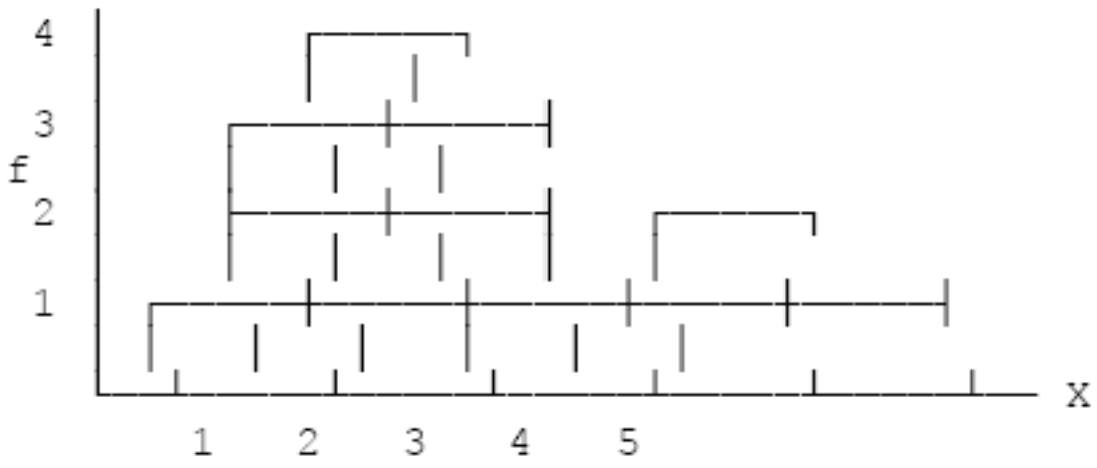
36 : Compute the mean, median, and mode for the set of scores shown in the following frequency distribution table. X f 7 1 6 2 5 3 4 4 3 1 2 0 1 1

Correct Answer : The mean is 54/12 = 4.5, the median is 4.5, and the mode is 4.?

37 : For the following sample of scores, 1, 1, 2, 2, 2, 2, 4,a. find the mean, median, and mode.b. if a new individual with a score of X = 2 is added to the sample, what happens to the values for the mean, the median, and the mode?c. if the score X = 4 in the original distribution is changed to X = 11, what happens to the values for the mean, the median, and the mode?

Correct Answer : a. The mean, median, and mode are all equal to 2.b. Adding a score of X = 2 does not change the mean, the median, or the mode.c. Changing X = 4 to X = 11 causes the mean to change to M = 3. The median and the mode are still equal to 2.?

38 :



Find the

mean, the median, and the mode for the set of scores in the frequency distribution histogram below.

Correct Answer : Mean = 33/11 = 3, the median = 3, the mode = 3.?

MULTIPLE CHOICE

39 : What is the mean for the following sample of scores? Scores: 1, 4, 5, 6
A : 16
B : 8
C : 4.5
D : 4

Correct Answer : D

40 : My electric bills for June, July, and August last summer were $75, $75, and $150, respectively. What was the mean amount for the three bills?
A : $75
B : $100
C : $125
D : $150

Correct Answer : B

41 : What is the mean for the following scores? Scores: 4, 6, 14
A : 12
B : 8
C : 7
D : 6

Correct Answer : B

42 : A population of N = 8 scores has X = 40. What is the population mean?
A : 320
B : 20
C : 5
D : .2

Correct Answer : C

43 : What is the mean for the population of scores shown in the frequency distribution table?X f5 24 13 32 2 1 2
A : 15/5 = 3
B : 15/10 = 1.50
C : 29/5 = 5.80
D : 29/10 = 2.90

Correct Answer : D

44 : What is the mean for the population of scores shown in the frequency distribution table?X f5 14 23 32 41 2

A : 15/5 = 3
B : 15/12 = 1.25
C : 32/5 = 6.60
D : 32/12 = 2.67

Correct Answer : D

45 : A population with a mean of = 6 has X = 54. How many scores are in the population?
A : N = 9
B : N = 27
C : N = 6´54 = 324
D : Cannot be determined from the information given

Correct Answer : A

46 : A sample of n = 5 scores has a mean of M = 12. What is X for this sample?
A : 12/5 = 2.40
B : 5/12 = 0.417
C : 5(12) = 60
D : Cannot be determined from the information given

Correct Answer : C

47 : After 5 points are subtracted from every score, the sample mean is found to be M = 24. What was the mean for the original sample?
A : 29
B : 24
C : 19
D : Cannot determine without knowing the number of scores in the sample

Correct Answer : A

48 : After every score in a sample is multiplied by 3, the mean is calculated and found to be M = 21. What was the mean for the original scores?
A : 7
B : 21
C : 63
D : Cannot be determined from the information given

Correct Answer : A

49 : A population has a mean of μ = 30. If 3 points are added to each score, what is the mean for the new distribution?
A : 27
B : 30
C : 33
D : Cannot be determined from the information given

Correct Answer : C

50 : A sample has a mean of M = 90. If each score in the sample is multiplied by 5, then what is the mean for the new distribution?
A : 18

B : 85
C : 95
D : 450

Correct Answer : D

51 : One sample with n = 4 scores has a mean of M = 12, and a second sample with n = 6 scores has a mean of M = 8. If the two samples are combined, what is the mean for the combined set of scores?
A : 4.8
B : 9.6
C : 10.0
D : 19.2

Correct Answer : B

52 : A sample of n = 8 scores has a mean of M = 10. After one score is removed from the sample, the mean for the remaining score is found to be M = 11. What was the score that was removed?
A : X = 3
B : X = 7
C : X = 8
D : Cannot be determined from the information provided

Correct Answer : A

53 : A sample of n = 6 scores has a mean of M = 5. One person with a score of X = 12 is added to the distribution. What is the mean for the new set of scores?
A : M = 5
B : M = 6
C : M = 7
D : M = 8

Correct Answer : B

54 : In a sample of n = 6 scores, the smallest score is X = 3, the largest score is X = 10, and the mean is M = 6. If the largest score is changed from X = 10 to X = 22, then what is the value of the new mean?
A : The mean is still M = 6
B : The mean is M = 7
C : The mean is M = 8
D : Cannot be determined from the information given

Correct Answer : C

55 : A distribution of scores has a mean of = 50. One new score is added to the distribution, and the new mean is found to be = 48. From this result, you can conclude that the new score was _____.
A : greater than 50
B : less than 50
C : equal to 48
D : cannot answer from the information given

Correct Answer : B

56 : Which of the following actions will always change the value of the mean?
A : Changing the value of one score
B : Adding a new score to the distribution
C : Removing a score from the distribution
D : All 3 of the other choices are correct

Correct Answer : A

57 : A set of N = 4 scores has a mean of μ = 11. If 8 points are subtracted from one of the scores, what is the new value for the population mean?
A : 13
B : 11
C : 10
D : 9

Correct Answer : D

58 : A set of N = 8 scores has a mean of μ = 11. If 16 points are added to one of the scores, what is the new value for the population mean?
A : 10
B : 11
C : 12
D : 13

Correct Answer : D

59 : A sample has a mean of M = 40. If 10 points are added to one of the scores, what is the new value for the sample mean?
A : Still 40
B : 41
C : 50
D : Cannot be determined from the information given

Correct Answer : D

60 : A sample has a mean of M = 86. If one new person is added to the sample, what effect will it have on the sample mean?
A : The sample mean will increase.
B : The sample mean will decrease.
C : The sample mean will remain the same.
D : Cannot be determined from the information given

Correct Answer : D

61 : A sample of n = 5 scores has a mean of M = 12. One new score is added to the sample, and the new mean is calculated to be M = 11. What is the value of new score?
A : X = 5
B : X = 6
C : X = 12
D : X = 60

Correct Answer : B

62 : A population of N = 10 scores has a mean of = 6. After one score is removed, the mean is found to be M = 5. What is the value of the score that was removed?
A : X = 10
B : X = 5
C : X = 3
D : X = 15

Correct Answer : D

63 : One sample has n = 4 scores and M = 10. A second sample has n = 8 scores and M = 4. If the two samples are combined, what is the mean for the combined sample?
A : 72/12 = 6
B : 14/5 = 2.8
C : 14/12 = 1.167
D : Cannot be determined with the information given

Correct Answer : A

64 : A sample of n = 4 scores has a mean of M = 8. If one new score with a value of X = 3 is added to the sample, what will be the value for the new mean?
A : M = 7
B : M = 8
C : M = 8.75
D : Cannot be determined with the information provided

Correct Answer : A

65 : A population of N = 7 scores has a mean of m = 10. If one score with a value of X = 4 is removed from the population, what is the value for the new mean?
A : 70/6
B : 66/7
C : 66/6 = 11
D : Cannot be determined from the information given

Correct Answer : C

66 : In a population of N = 6, five of the individuals all have scores that are exactly 1 point above the mean. From this information, what can you determine about the score for the 6th individual
A : It is also above the mean by 1 point.
B : It is below the mean by 1 point.
C : It is below the mean by 5 points.
D : There is not enough information to describe the 6th score.

Correct Answer : C

67 : What is the value of the median for the following set of scores? Scores: 1, 3, 4, 6, 8, 12, 13, 23, 25, 26
A : 7
B : 8
C : 10
D : 12.5

Correct Answer : C

68 : What is the median for the following set of scores? Scores: 1, 2, 6, 11, 17
A : 4
B : 6
C : 8.5
D : 8

Correct Answer : B

69 : What is the median for the population of scores shown in the frequency distribution table?X f5 14 23 32 41 2
A : 2.5
B : 3
C : 3.5
D : 4

Correct Answer : A

70 : What is the median for the set of scores shown in the frequency distribution table?X f5 14 13 2 2 3 1 4
A : 1
B : 1.5
C : 2
D : 2.5

Correct Answer : C

71 : Which of the following statements cannot be true for a distribution of scores?
A : 60% of the scores are above the mean.
B : 60% of the scores are above the median.
C : 60% of the scores are above the mode.
D : All of the other options are false statements.

Correct Answer : B

72 : What is the mode for the following sample of n = 8 scores? Scores: 0, 1, 1, 1, 2, 2, 3, 3
A : 1
B : 1.5
C : 13/8 = 1.625
D : 3

Correct Answer : A

73 : What is the mode for the population of scores shown in the frequency distribution table?X f5 14 23 32 41 2
A : 2
B : 3
C : 3.5
D : 4

Correct Answer : A

74 : Which of the following statements cannot be true for a distribution of scores?
A : No one has a score exactly equal to the mean.
B : No one has a score exactly equal to the median.
C : No one has a score exactly equal to the mode.
D : All of the other options are false statements.

Correct Answer : C

75 : Which of the following statements is true?
A : It is possible for a distribution to have two means.
B : It is possible for a distribution to have two medians.
C : It is possible for a distribution to have two modes
D : It is possible for a distribution to have two medians or two modes.

Correct Answer : C

76 : A researcher measures eye color for a sample of n = 50 people. Which measure of central tendency would be appropriate to summarize the measurements?
A : Mean
B : Median
C : Mode
D : Any of the three measures could be used

Correct Answer : C

77 : A researcher is measuring the amount of time needed to solve a set of anagrams for a sample of n = 15 students. However, one of the participants fails to solve the problems so the researcher has an undetermined score. What is the best measure of central tendency for these data?
A : The mean
B : The median
C : The mode
D : Central tendency cannot be determined for these data

Correct Answer : A

78 : One item on a questionnaire asks students how many times in a typical week they eat at a fast-food restaurant. The responses for a sample of n = 10 students are summarized in the frequency distribution. What is the best measure of central tendency for these data?X f5+ 24 33 22 11 10 1
A : the mean
B : the median
C : the mode
D : Central tendency cannot be determined for these data.

Correct Answer : B

79 : Under what circumstances is the median likely to produce a better measure of central tendency than the mean?
A : With a symmetrical distribution
B : With an extremely skewed distribution
C : When the data consist of nominal measurements

D : When the data are numerical scores from an interval or a ratio scale

Correct Answer : B

80 : What is the preferred measure of central tendency for scores measured on an ordinal scale?
A : The mean
B : The median
C : The mode
D : Central tendency cannot be determined for ordinal data

Correct Answer : B

81 : A population of scores has a mean of μ = 26, a median of 23, and a mode of 22. What is the most likely shape for the population distribution?
A : Symmetrical
B : Positively skewed
C : Negatively skewed
D : Cannot be determined from the information given

Correct Answer : B

82 : What is the most likely shape for a distribution with a mean of 40 and a mode of 45?
A : Symmetrical
B : Positively skewed
C : Negatively skewed
D : Either positively or negatively skewed

Correct Answer : C

83 : For a perfectly symmetrical distribution with μ = 30, what is the mode?
A : 30
B : Greater than 30
C : Less than 30
D : Cannot be determined from the information given

Correct Answer : D

84 : For a positively skewed distribution with a mean of M = 20, what is the most probable value for the median?
A : Greater than 20
B : Less than 20
C : 20
D : Cannot be determined from the information given

Correct Answer : B

85 : For a positively skewed distribution with a mode of X = 20 and a median of 25, what is the most likely value for the mean?
A : Greater than 25
B : Less than 20
C : Between 20 and 25
D : Cannot be determined from the information given

Correct Answer : A

86 : A distribution is positively skewed. Which is the most probable order, from smallest to largest, for the three measures of central tendency?
A : Mean, median, mode
B : Mode, median, mean
C : Mean, mode, median
D : Median, mean, mode

Correct Answer : B

87 : For a perfectly symmetrical distribution with a median of 30, what is the value of the mean?
A : 30
B : Greater than 30
C : Less than 30
D : Cannot be determined from the information given

Correct Answer : A

88 : For a perfectly symmetrical distribution, which relationship is always true?
A : Mean = median
B : Mean = mode
C : Median = mode
D : Mean = median = mode

Correct Answer : A