Test Bank for Statistics Data Analysis and Decision Modeling 5th Edition Evans 0132744287 9780132744287

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Test Bank*:*

Solution Manual:

Statistics, Data Analysis, and Decision Modeling, 5e **(Evans)**
Chapter 2   Descriptive Statistics and Data Analysis

1) _____ refers to a collection of quantitative measures and ways of describing data. A) Statistical inference
B) Descriptive statistics
C) Frequency distribution
D) Categorical data
Answer: B
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Categorical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

2) All of the following are examples of measures of central tendency except _____.
A) mean
B) median
C) standard
deviation D) mode
Answer: C
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics
Learning Outcome: Compare and contrast methods of summarizing and describing data

3) All of the following are examples of measures of dispersion except _____.
A) range
B) variance
C) standard deviation
D) mode
Answer: D
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics
Learning Outcome: Compare and contrast methods of summarizing and describing data

4) In Microsoft Excel 2010, the function that computes the standard deviation of a set of data, assumed to be a sample, is _____.
A) STDEV.P(*data range*)
B) MODE.SNGL(*data range*)
C) STAND.MULT(*data range*) D) STDEV.S(*data range*) Answer: D
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics
Learning Outcome: Compare and contrast methods of summarizing and describing data

2) In Microsoft Excel 2010, the function that computes the standard deviation of a set of data, assumed to be a population, is _____.
A) STDEV.S(*data range*)
B) STAND.SNGL(*data range*)
C) STDEV.P(*data range*)
D) STAND.MULT(*data range*)
Answer: C
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics
Learning Outcome: Compare and contrast methods of summarizing and describing data

6) In Microsoft Excel 2010, the function that computes the single most frequently occurring value in a set of data is _____.
A) MEDIAN(*data range*)
B) MODE.SNGL(*data range*)
C) STDEV.P(*data range*)
D) SKEW(*data range*)
Answer: B
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics
Learning Outcome: Compare and contrast methods of summarizing and describing data

7) Using Microsoft Excel 2010, the function that computes the most frequently occurring values of a set of data is _____.
A) MODE.SNGL(*data range*)
B) MEDIAN(*data range*)
C) STDEV.P(*data range*)
D) MODE.MULT(*data range*) Answer: D
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics
Learning Outcome: Compare and contrast methods of summarizing and describing data

8) A table that shows the number of observations in each of several nonoverlapping groups is called a _____.
A) frequency distribution
B) scatter plot
C) histogram
D) chart
Answer: A
Diff: 1
Blooms: Remember
Topic: Frequency Distributions, Histograms, and Data Profiles
Learning Outcome: Compare and contrast methods of summarizing and describing data

9) The sum of relative frequencies will always equal _____.
A) 100
B) 1.0 C)
10 D) 0.01
Answer: B
Diff: 1

Blooms: Remember
Topic: Frequency Distributions, Histograms, and Data Profiles
Learning Outcome: Compare and contrast methods of summarizing and describing data

10) A graphical depiction of a frequency distribution for numerical data in the form of a column chart is called a _____.
A) scatter plot
B) box-and-whisker plot
C) pie chart
D) histogram
Answer: D
Diff: 1
Blooms: Remember
Topic: Frequency Distributions, Histograms, and Data Profiles
Learning Outcome: Compare and contrast methods of summarizing and describing data

11) The proportion of the total sample that falls at or below the upper limit value is represented by _____.
A) dispersion
B) cumulative relative
frequency C) median
D) standard deviation
Answer: B
Diff: 1
Blooms: Remember
Topic: Frequency Distributions, Histograms, and Data Profiles
Learning Outcome: Compare and contrast methods of summarizing and describing data

12) The _____ is a value at or below which at least k percent of the observations lie.
A) k^{th} percentile
B) k^{th} ratio
C) k^{th} quartile

D) k^{th} mean
Answer: A
Diff: 1
Blooms: Remember
Topic: Frequency Distributions, Histograms, and Data Profiles
Learning Outcome: Compare and contrast methods of summarizing and describing data

13) The formula to calculate kth percentile is given by _____.
A) $100/Nk + 0.05$
B) $100/Nk - 0.05$
C) $Nk/100 +$
0.05 D) $Nk/100 -$
0.05 Answer: C
Diff: 1
Blooms: Remember

Topic: Frequency Distributions, Histograms, and Data Profiles
Learning Outcome: Compare and contrast methods of summarizing and describing data

14) _____ is the quartile representing the 25th percentile.

A) Q_1

B) Q_2

C) Q_3

D) Q_4
Answer: A
Diff: 1
Blooms: Remember

Topic: Frequency Distributions, Histograms, and Data Profiles
Learning Outcome: Compare and contrast methods of summarizing and describing data

15) _____ is the quartile representing the 50th percentile. A) Q_1

B) Q_2
C) Q_3
D) Q_4
Answer: B
Diff: 1
Blooms: Remember
Topic: Frequency Distributions, Histograms, and Data Profiles
Learning Outcome: Compare and contrast methods of summarizing and describing data

16) _____ is the quartile representing the 75th percentile. A) Q_1

B) Q_2 C)

Q_3 D) Q_4
Answer: C
Diff: 1
Blooms: Remember
Topic: Frequency Distributions, Histograms, and Data Profiles
Learning Outcome: Compare and contrast methods of summarizing and describing data

17) _____ is the quartile representing the 100th percentile. A) Q1

B) Q2 C)

Q3 D) Q4
Answer: D
Diff: 1
Blooms: Remember
Topic: Frequency Distributions, Histograms, and Data Profiles
Learning Outcome: Compare and contrast methods of summarizing and describing data

18) One-fourth of the data falls below the _____ quartile.
A) fourth
B) second
C) first D)
third
Answer: C
Diff: 1
Blooms: Remember
Topic: Frequency Distributions, Histograms, and Data Profiles
Learning Outcome: Compare and contrast methods of summarizing and describing data

19) Three-fourths of the data fall below the _____
quartile. A) fourth
B) second
C) first D)
third
Answer: D
Diff: 1
Blooms: Remember
Topic: Frequency Distributions, Histograms, and Data Profiles
Learning Outcome: Compare and contrast methods of summarizing and describing data

20) The _____ is the sum of all observations divided by the number of observations.
A) arithmetic mean
B) median
C) mode D)
midrange
Answer: A
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

21) The _____ is the middle value when the data are arranged from smallest to largest.
A) mode
B) median
C) midrange D)
arithmetic mean
Answer: B Diff:
1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

22) The _____ is the observation that occurs the most frequently in the data set.
A) arithmetic mean
B) median
C) mode
D) midrange
Answer: C
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

23) The _____ is the average of the largest and smallest values in the data set.
A) arithmetic mean
B) median
C) mode D)
midrange
Answer: D
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

24) An observation that is radically different from the rest is called _____.
A) the median
B) the mean
C) an outlier
D) the mode
Answer: C
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

25) The population mean is represented by _____.
A) α
B) μ
C) λ
D) π
Answer: B
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

26) The sample mean is represented by _____.
A) $\bar{x}$
B) α
C) μ D) η
Answer: A
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

27) The midrange for a data set containing all the values between 50 and 67 is _____.
A) 67
B) 58.5 C) 50
D) -17 Answer:
B Diff: 2
Blooms: Apply

AACSB: Analytic Skills
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

28) The degree of variation in or the numerical spread of the data is known as _____.
A) quartile
B) median C)
dispersion D)
mean
Answer: C
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

29) Which of the following can be used to represent dispersion in a data
set? A) proportion
B) range
C) mode
D) median
Answer: B
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

30) Which of the following provides an estimate that represents "centering" of the entire set
of data?
A) range B)
variance C)
midrange
D) standard deviation
Answer: C
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

31) Computing the difference between the maximum value and the minimum value gives the
_____ of the data set.
A) variance
B) standard
deviation C) range
D) median
Answer: C
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

32) The range of the middle 50% of the data is called the _____.
A) midrange
B) interquartile range
C) variance
D) mode
Answer: B
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

33) The sample variance is denoted as _____.
A) s^2
B) v^2
C) σ^2
D) α^2
Answer: A
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

34) The population variance is denoted as _____.
A) s^2
B) v^2
C) σ^2
D) α^2
Answer: C
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

35) The square root of the variance is called the _____.
A) mean
B) standard deviation
C) median D)
interquartile range
Answer: B
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

36) The standard deviation for the population is denoted as _____.
A) μ
B) Ω
C) s
D) σ
Answer: D
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

37) The standard deviation for a sample is denoted as _____.
A) μ
B) Ω
C) s
D) σ
Answer: C
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

38) Which of the following state(s) that for any set of data, the proportion of values that lie within k standard deviations (k>1) of the mean is at least $1 - 1/k^2$?
A) empirical rules
B) interquartile range
C) Chebyshev's theorem
D) standard deviation
Answer: C
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

39) Using Chebyshev's theorem, k = 2 would mean that _____.
A) at least two-thirds of the data lie within two standard deviations of the mean
B) at least 89% of the data lie within two standard deviations of the mean
C) less than three-fourths of the data lie within three standard deviations of the mean
D) at least three-fourths of the data lie within two standard deviations of the mean Answer: D
Diff: 1
Blooms: Understand
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

40) Using Chebyshev's theorem, k = 3 means that _____.
A) at least two-thirds of the data lie within three standard deviations of the mean
B) at least 89% of the data lie within three standard deviations of the mean
C) less than 29% of the data lie within three standard deviations of the mean
D) at least three-fourths of the data lie within two standard deviations of the mean Answer: B
Diff: 1
Blooms: Understand
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

41) Which of the following is included in the empirical rules?
A) Approximately 59% of the observations will fall within two standard deviations of the mean, or within x ± 2s.
B) Approximately 68% of the observations will fall within one standard deviation of the mean, or between x - s and x + s.
C) Approximately 89% of the observations will fall within three standard deviations of the mean, or within x ± 3s.
D) Approximately 28% of the observations will fall within three standard deviations of the mean, or within x ± 3s.
Answer: B
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

42) According to the empirical rules, approximately 99.7% of the observations will fall within _____.
A) one standard deviation of the mean
B) two standard deviations of the mean
C) three standard deviations of the mean
D) four standard deviations of the mean
Answer: C
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

43) According to the empirical rules, approximately 95% of the observations will fall within _____.
A) one standard deviation of the mean
B) two standard deviations of the mean
C) three standard deviations of the mean
D) four standard deviations of the mean
Answer: B
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

44) The _____ is used to compare the variability of two or more data sets with different scales.
A) coefficient of variation
B) variance
C) median
D) coefficient of
skewness Answer: A
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

45) The coefficient of variation (CV) is calculated as _____.
A) mode/standard deviation
B) standard deviation/mean
C) standard deviation/variance
D) range/standard deviation
Answer: B
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

46) Given that the standard deviation is equal to 0.568, the median equals 5, and the mean value is 3.5, what is the value of the coefficient of variation?
A) 0.1136 B)
0.162 C) 6.16
D) 0.7 Answer:
B Diff: 2
Blooms: Apply

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Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

47) When more of the mass of the data is concentrated on one side and the distribution of values tails off to the other side, the histogram is said to be _____.
A) symmetric
B) skewed C)
curved
D) positively
sloped Answer: B
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

48) When a histogram is positively skewed, it _____.
A) tails off to the right
B) is symmetrical C)
tails off to the left
D) has a slope greater than one
Answer: A
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

49) When a histogram is negatively skewed, it _____.
A) is symmetrical
B) tails off to the left
C) has a slope lesser than one
D) tails off to the
right Answer: B
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

50) The degree of asymmetry of observations around the mean is measured by the
_____. A) coefficient of correlation
B)   coefficient   of
symmetry   C)   coefficient
of skewness D) coefficient
of deviation Answer: C
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

51) Which of the following coefficients of skewness values has the lowest degree of skewness?
A) 1
B) 1.1 C)
0.5 D) 0.05
Answer: D
Diff: 1

Blooms: Understand
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

52) A coefficient of skewness that indicates relative symmetry would lie between _____.
A) 0.5 and -0.5
B) 5 and -5
C) 1 and -1
D) 0.95 and 1
Answer: A
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

53) A coefficient of skewness that indicates moderate skewness would lie between _____.
A) 1 and 2
B) 0.5 and 1
C) 0 and 1
D) 0.5 and -0.5
Answer: B
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

54) A histogram with only one peak _____.
A) does not have a mode value
B) is unimodal
C) is bimodal
D) has a high degree of
kurtosis Answer: B
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

55) A histogram with exactly two peaks _____.
A) is unimodal
B) has a low degree of kurtosis
C) has the same values for mean and mode
D) is bimodal
Answer: D
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

56) If the distribution of observations were perfectly symmetrical and unimodal, _____.
A) the mean would be greater than the mode
B) the mean, median, and mode would be the same
C) the mode would be lesser than the median
D) the median would be greater than the
mean Answer: B
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

57) The degree of flatness or peakedness of a population is measured by the _____.
A) coefficient of kurtosis
B) coefficient of skewness
C) coefficient of variation
D) coefficient of deviation
Answer: A
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

58) A distribution that is relatively flat with a wide degree of dispersion has a coefficient of kurtosis that is _____.
A) more than 3
B) less than 3
C) less than 6
D) more than 6
Answer: B
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

59) A distribution that is relatively peaked with a low degree of dispersion has a coefficient of kurtosis that is _____.
A) equal to 0
B) less than 0
C) more than
3 D) equal to 3
Answer: C
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

60) _____ is a measure of a linear relationship between two variables.
A) Variance
B) Proportion
C) Correlation
D) Kurtosis
Answer: C
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

61) The correlation coefficient is a number between _____.
A) 0 and +1
B) -1 and 0
C) -1 and +1
D) -2 and +2
Answer: A
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

62) The correlation coefficient for two variables that are not linearly related will be equal to
_____.
A) 1
B) 2 C) 0
D) 3
Answer: C
Diff: 1

Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

63) What does a positive correlation coefficient indicate?
A) When one variable increases, the other variable decreases.
B) When one variable increases, the other variable also increases.
C) When one variable decreases, the other variable remains constant.
D) Both the variables are not linearly related.
Answer: B
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

64) What does a negative correlation coefficient indicate?
A) When one variable increases, the other variable decreases. B)
There is a nonlinear relationship between the two variables.
C) When one variable increases, the other variable increases by a smaller proportion.
D) A change in one variable does not lead to a change in the other variable.
Answer: A
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

65) The formal statistical measure for categorical data is called the _____.
A) sample mean
B) sample median
C) sample mode
D) sample proportion
Answer: D
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Categorical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

66) Sample proportion is usually denoted as
_____. A) sp
B) p_2
C) p^2
D) s
Answer: B
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Categorical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

67) The subcategories of the variables in a contingency table must _____.
A) be mutually exclusive
B) sum up to a total of 1
C) be arranged in ascending order
D) lie between 0 and 1 Answer:
A
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Categorical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

68) A _____ displays the minimum, first quartile, median, third quartile, and maximum of a data set.
A) scatter plot
B) contingency table
C) box plot
D) stacked column
chart Answer: C
Diff: 1
Blooms: Remember
Topic: Visual Display of Statistical Measures
Learning Outcome: Compare and contrast methods of summarizing and describing data

69) In a box-and-whisker plot, the whiskers represent the _____.
A) Q_1 and Q_3
B) minimum and maximum values
C) median and mode
D) cumulative
frequencies Answer: B
Diff: 1
Blooms: Remember
Topic: Visual Display of Statistical Measures
Learning Outcome: Compare and contrast methods of summarizing and describing data

70) In a box plot, the outer boundaries of the box represent the
_____. A) interquartile range
B) median and mode
C) minimum and maximum
D) outlier values Answer:
A
Diff: 1
Blooms: Remember
Topic: Visual Display of Statistical Measures
Learning Outcome: Compare and contrast methods of summarizing and describing data

71) In a box plot, the line inside the box represents the _____.
A) mean
B) median
C) mode
D) range
Answer: B
Diff: 1
Blooms: Remember
Topic: Visual Display of Statistical Measures
Learning Outcome: Compare and contrast methods of summarizing and describing data

72) Outliers defined as being between 1.5*IQR and 3*IQR to the left of $Q1$ or to the right of $Q3$ are considered _____.
A) weak
B) extreme
C) mild
D) statistically significant
Answer: C
Diff: 1
Blooms: Remember
Topic: Visual Display of Statistical Measures
Learning Outcome: Compare and contrast methods of summarizing and describing data

73) Outliers defined as being more than 3*IQR away from $Q1$ and $Q3$ are considered _____.
A) mild
B) extreme
C) weak
D) irrelevant
Answer: B
Diff: 1
Blooms: Remember
Topic: Visual Display of Statistical Measures
Learning Outcome: Compare and contrast methods of summarizing and describing data

74) Which of the following is true of outliers in a data set?
A) All outliers should be eliminated in order to portray accurate information.
B) Outliers that are within 1 standard deviation of the mean must be eliminated.
C) The mean and range are sensitive to outliers in the data.
D) Outliers do not make any difference in the results obtained from statistical
analyses. Answer: C
Diff: 1
Blooms: Remember
Topic: Visual Display of Statistical Measures
Learning Outcome: Compare and contrast methods of summarizing and describing data

75) Pivot tables can be used to create
_____. A) dot-scale diagrams.
B) box-and-whisker plots.
C) cross-tabulations for categorical data.
D) scatter plots.
Answer: C
Diff: 1
Blooms: Remember
Topic: Data Analysis Using Pivot tables
Learning Outcome: Compare and contrast methods of summarizing and describing data

76) Frequency distributions can only be constructed for numerical
data. Answer: FALSE
Diff: 1
Blooms: Remember
Topic: Frequency Distributions, Histograms, and Data Profiles
Learning Outcome: Compare and contrast methods of summarizing and describing data

77) The sum of relative frequencies must equal 100.
Answer: FALSE
Diff: 1
Blooms: Remember
Topic: Frequency Distributions, Histograms, and Data Profiles
Learning Outcome: Compare and contrast methods of summarizing and describing data

78) The cumulative relative frequency represents the proportion of the total sample that falls
at or below the upper limit value.
Answer: TRUE
Diff: 1
Blooms: Remember
Topic: Frequency Distributions, Histograms, and Data Profiles
Learning Outcome: Compare and contrast methods of summarizing and describing data

79) Point estimates that accurately represent population parameters are called
outliers. Answer: FALSE
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

80) The standard deviation is the square root of the variance.
Answer: TRUE
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

81) The formula used for calculating the variance of a population is different from that used for
calculating the variance of a sample.
Answer: TRUE
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

82) A negative correlation coefficient indicates a linear relationship between variables where one variable increases as the other increases.
Answer: FALSE
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

83) Statistics such as means and variances are not appropriate for categorical data.
Answer: TRUE
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Categorical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

84) Box-and-whisker plots graphically display five key statistics of a data set: the minimum, first quartile, mean, third quartile, and maximum.
Answer: FALSE
Diff: 1
Blooms: Remember
Topic: Visual Display of Statistical Measures
Learning Outcome: Compare and contrast methods of summarizing and describing data

85) Box plots and dot-scale diagrams can help identify possible outliers visually.
Answer: TRUE
Diff: 1
Blooms: Remember
Topic: Visual Display of Statistical Measures
Learning Outcome: Compare and contrast methods of summarizing and describing data

86) For a stock that displays a large standard deviation, the returns may be high but risk is high too.
Answer: TRUE
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

87) According to the empirical rules, approximately 38% of the observations will fall within two standard deviations of the mean.
Answer: FALSE
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

88) The coefficient of variation (CV) provides a relative measure of the dispersion in data relative to the mean.
Answer: TRUE
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

89) For a negatively skewed distribution, the mode is greater than the median, which is greater than the mean.
Answer: TRUE
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
Learning Outcome: Compare and contrast methods of summarizing and describing data

90) The higher the kurtosis, the more area the histogram has in the middle rather than in the tails.
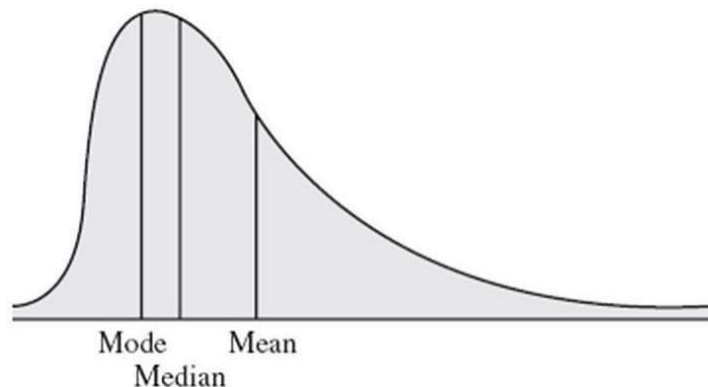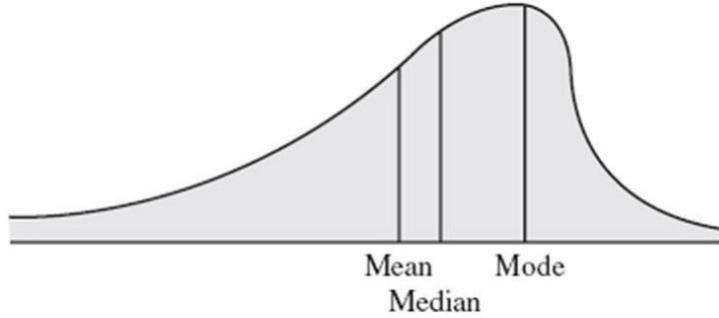Answer: FALSE
Diff: 1
Blooms: Remember
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91) Sketch a positively skewed distribution.
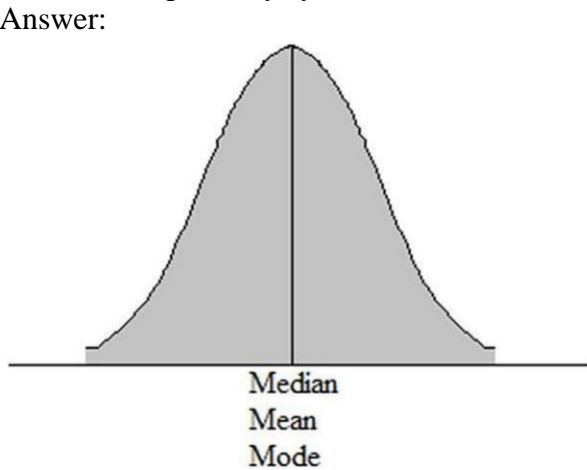Answer:

Diff: 1
Blooms: Remember
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92) Sketch a negatively skewed
distribution. Answer:

Mean   Mode
Median

Diff: 1
Blooms: Remember
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93) Sketch a perfectly symmetrical and unimodal distribution.
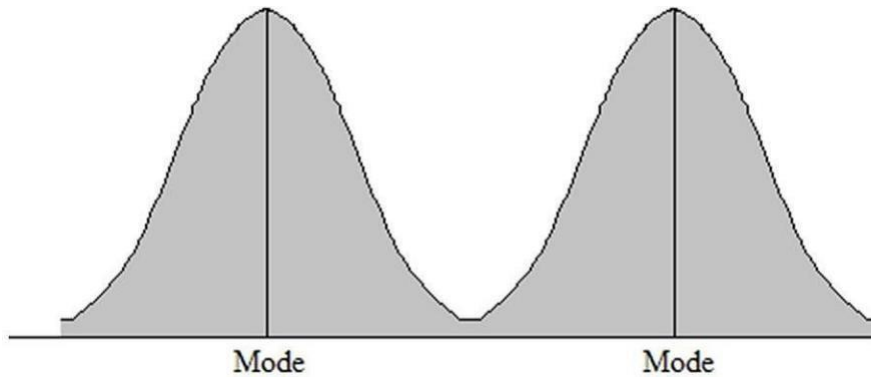Answer:

Median
Mean
Mode

Diff: 1
Blooms: Understand
Topic: Descriptive Statistics for Numerical Data
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94) Sketch a bimodal distribution.
Answer:

Mode   Mode

Diff: 1
Blooms: Understand
Topic: Descriptive Statistics for Numerical Data
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Use the table below to answer the following question(s). The table shows the crude oil prices in dollars per barrel, for 2007.

Jan: $54.63	Feb: $52.11	Mar: $57.83
Apr: $64.93	May: $63.40	Jun: $65.37
Jul: $69.91	Aug: $73.81	Sep: $71.42
Oct: $75.57	Nov: $86.02	Dec: $85.91

95) Calculate the mean price of crude oil in 2007.
Answer: $68.41
Diff: 2
Blooms: Apply
AACSB: Analytic Skills
Topic: Descriptive Statistics for Numerical Data
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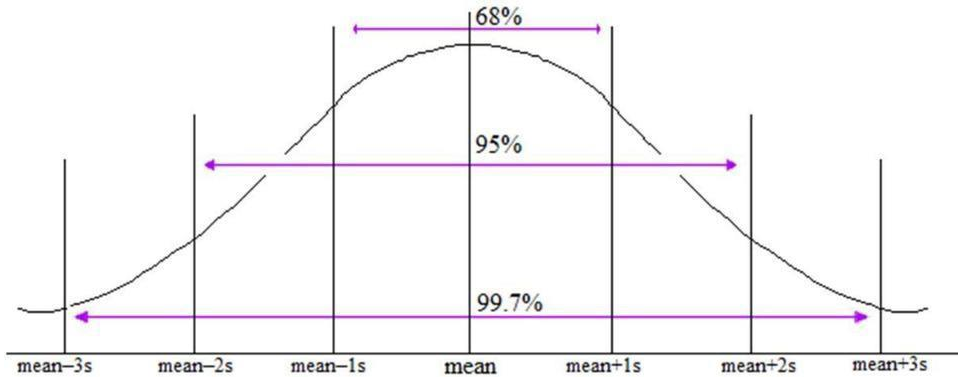96) Locate the median price of crude oil in 2007.
Answer: $67.64
Diff: 1
Blooms: Remember
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97) Sketch a normal distribution and label the sections of the empirical rules.
Answer:

According to the empirical rules:
1. Approximately 68% of the observations will fall within one standard deviation of the mean.
2. Approximately 95% of the observations will fall within two standard deviations of the mean.
3. Approximately 99.7% of the observations will fall within three standard deviations of the mean.
Diff: 1
Blooms: Remember
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98) Explain Chebyshev's theorem.
Answer: Chebyshev's theorem states that for any set of data, the proportion of values that lie within k standard deviations ($k > 1$) of the mean is at least $1 - 1/k^2$. Thus, for $k = 2$ at least three-fourths of the data lie within two standard deviations of the mean; for $k = 3$ at least $\frac{8}{9}$, or 89%, of the data lie within three standard deviations of the mean.
Diff: 1
Blooms: Remember
Topic: Descriptive Statistics for Numerical Data

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99) List three statistical measures that characterize dispersion.
Answer: Range is the difference between the maximum and minimum values in a data set and measures how spread out the data is. Variance involves all the values in the data set and measures how spread out the data is around the mean. The third measure is the standard deviation, which is defined as the square root of the variance. Diff: 1

Blooms: Remember
Topic: Descriptive Statistics for Numerical Data
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