Business Statistics 10th edition Groebner Test Bank

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Business Statistics, 9e **(Groebner/Shannon/Fry)**
Chapter 2 Graphs, Charts and Tables—Describing Your Data

1) For the same data, a graph of a relative frequency distribution will look exactly the same as a graph of the frequency distribution.
Answer: TRUE
Diff: 1
Keywords: graph, relative, frequency, distribution
Section: 2-1 Frequency Distributions and Histograms
Outcome: 1

2) When choosing class boundaries for a frequency distribution, classes such as 60-70, 70-80, 80-90 would be acceptable.
Answer: FALSE
Diff: 1
Keywords: frequency distribution, classes
Section: 2-1 Frequency Distributions and Histograms
Outcome: 1

3) Recently a survey was conducted in which customers of a large insurance company were asked to indicate the number of speeding tickets they had received in the past three years. The data in this case would most likely be analyzed using a frequency distribution with the data grouped into classes such as 0-2, 3-5, 6-8, etc.
Answer: FALSE
Diff: 2
Keywords: frequency, distribution, classes
Section: 2-1 Frequency Distributions and Histograms
Outcome: 1

4) Recently a survey was conducted in which customers of a large insurance company were asked to indicate the number of speeding tickets they had received in the past three years. The minimum value in the data was zero and the largest was six tickets. If you wished to illustrate the proportion of people who had three or fewer tickets, you would most likely construct a cumulative relative frequency distribution.
Answer: TRUE
Diff: 2
Keywords: cumulative, relative, frequency distribution
Section: 2-1 Frequency Distributions and Histograms
Outcome: 1

5) Frequency distributions are specifically for analyzing discrete data.
Answer: FALSE
Diff: 1
Keywords: frequency, distribution, discrete
Section: 2-1 Frequency Distributions and Histograms
Outcome: 1

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6) When developing a frequency distribution, the following bin classifications follow the definition of appropriate intervals of a variable:
0 to < 10
10 to < 20
20 to < 25
Answer: FALSE
Diff: 1
Keywords: frequency distribution, classes
Section: 2-1 Frequency Distributions and Histograms
Outcome: 1

7) It is often a good idea to convert frequency distributions to relative frequency distributions when you wish to compare two distributions with different amounts of data.
Answer: TRUE
Diff: 1
Keywords: relative, frequency, distribution
Section: 2-1 Frequency Distributions and Histograms
Outcome: 1

8) In a report describing the number of people in the family of each of the 400 employees at a manufacturing company, the frequency count at the value 3 was 220. This means that the relative frequency at the 3 level is .44.
Answer: FALSE
Diff: 1
Keywords: relative, frequency
Section: 2-1 Frequency Distributions and Histograms
Outcome: 1

9) One way to develop a frequency distribution using Excel is to use the Frequency function.
Answer: TRUE
Diff: 2
Keywords: frequency, distribution, Excel
Section: 2-1 Frequency Distributions and Histograms
Outcome: 1

10) There is no difference between cumulative frequency and relative frequency.
Answer: FALSE
Diff: 2
Keywords: frequency
Section: 2-1 Frequency Distributions and Histograms
Outcome: 1

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11) A study of 2000 Verizon cellphone customers listed the annual incomes of the customers as well as other variables. The lowest income was $25,000 and the highest income was $145,000. To develop a frequency distribution with 6 classes, the smallest value that the class width can be is 20K.
Answer: TRUE
Diff: 2
Keywords: frequency, distribution, class, width
Section: 2-1 Frequency Distributions and Histograms
Outcome: 1

12) A cumulative frequency distribution shows the percentage of observations for the variable of interest with values less than or equal to the upper limit of each class.
Answer: FALSE
Diff: 2
Keywords: cumulative, frequency, distribution
Section: 2-1 Frequency Distributions and Histograms
Outcome: 1

13) In constructing a frequency distribution for the savings account balances for customers at a bank, the following class boundaries might be acceptable if the minimum balance is $5.00 and the maximum balance is $18,700:
$0.00 - $5,000
$5,000 - 10,000
$10,000 - $15,000
$15,000 - $20,000
Answer: FALSE
Diff: 1
Keywords: frequency, distribution, class, boundary
Section: 2-1 Frequency Distributions and Histograms
Outcome: 1

14) The appropriate number of classes should generally be between 5 and 20.
Answer: TRUE
Diff: 2
Keywords: frequency distribution, classes
Section: 2-1 Frequency Distributions and Histograms
Outcome: 1

15) Once you have determined the class width using the formula, high-low divided by the number of classes, it is appropriate to round to the nearest integer to make the analysis easier.
Answer: FALSE
Diff: 2
Keywords: class, width, formula
Section: 2-1 Frequency Distributions and Histograms
Outcome: 1

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16) There is no hard-and-fast rule regarding the number of classes that must be used when establishing a frequency distribution for a continuous variable.
Answer: TRUE
Diff: 1
Keywords: class, frequency, distribution, continuous
Section: 2-1 Frequency Distributions and Histograms
Outcome: 1

17) The upper and lower limits of each class in a frequency distribution are also referred to as the data array.
Answer: FALSE
Diff: 2
Keywords: class, frequency, distribution, array
Section: 2-1 Frequency Distributions and Histograms
Outcome: 1

18) The following class limits would be acceptable for developing a frequency distribution on income:
$0 < $5,000
$5001 < $10,000
$10,001 < $20,000
Over $20,000
Answer: FALSE
Diff: 2
Keywords: class, limit, frequency, distribution
Section: 2-1 Frequency Distributions and Histograms
Outcome: 1

19) A histogram can be created for discrete or continuous data.
Answer: TRUE
Diff: 1
Keywords: histogram
Section: 2-1 Frequency Distributions and Histograms
Outcome: 1

20) In a recent study at First National Bank, a frequency count was made for the variable marital status for the bank's 10,000 customers. It would also be appropriate to develop a histogram for this variable to show how marital status is distributed.
Answer: FALSE
Diff: 2
Keywords: frequency, histogram, distribution
Section: 2-1 Frequency Distributions and Histograms
Outcome: 2

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21) After developing a frequency distribution for a quantitative variable, a histogram can be developed with the horizontal axis representing the values of the variable and the vertical axis representing the frequency of occurrence in each class or group.
Answer: TRUE
Diff: 2
Keywords: frequency, distribution, histogram, class
Section: 2-1 Frequency Distributions and Histograms
Outcome: 2

22) A histogram can be constructed for data that are either quantitative or qualitative.
Answer: FALSE
Diff: 1
Keywords: histogram, quantitative, qualitative
Section: 2-1 Frequency Distributions and Histograms
Outcome: 2

23) In a recent study of retail daily sales by stores at a mall in Kansas, the minimum daily sales was $700 and the maximum was $51,000. If you wish to construct a frequency distribution with 10 classes, the minimum class width would be $5,100.
Answer: FALSE
Diff: 2
Keywords: frequency, distribution, class, width
Section: 2-1 Frequency Distributions and Histograms
Outcome: 1

24) Consider a situation in which both a frequency distribution and a relative frequency distribution have been developed for the same quantitative variable. If histograms are constructed from each distribution, the graphs will appear to have the same shape.
Answer: TRUE
Diff: 2
Keywords: relative, frequency, distribution, histogram, quantitative
Section: 2-1 Frequency Distributions and Histograms
Outcome: 2

25) When a histogram is constructed for discrete numerical data, there should be spaces between the bars of the histogram.
Answer: FALSE
Diff: 2
Keywords: histogram
Section: 2-1 Frequency Distributions and Histograms
Outcome: 2

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26) When the Histogram tool in Excel is used to construct a frequency distribution and histogram, the default histogram is in the proper format and will require only that you add appropriate labels.
Answer: FALSE
Diff: 2
Keywords: histogram, Excel, frequency, distribution
Section: 2-1 Frequency Distributions and Histograms
Outcome: 2

27) When using the Histogram tool in Excel to construct a frequency distribution and histogram, the bins represent the upper class limits.
Answer: TRUE
Diff: 2
Keywords: histogram, Excel, frequency, bin, class
Section: 2-1 Frequency Distributions and Histograms
Outcome: 2

28) When using the Histogram tool in Excel to construct a frequency distribution and histogram, if the first bin value is 10 and the second bin value is 20, the frequency count for the second class will include all values from 10 up to, but not including, 20.
Answer: FALSE
Diff: 3
Keywords: histogram, Excel, bin, frequency
Section: 2-1 Frequency Distributions and Histograms
Outcome: 2

29) If you wish to construct a graph of a relative frequency distribution, you would most likely construct an ogive.
Answer: FALSE
Diff: 2
Keywords: ogive, relative, frequency, distribution
Section: 2-1 Frequency Distributions and Histograms
Outcome: 2

30) A joint frequency distribution is used to describe the number of occurrences where two observations in a data set have the same value.
Answer: FALSE
Diff: 1
Keywords: joint, frequency, distribution
Section: 2-1 Frequency Distributions and Histograms
Outcome: 3

31) A joint frequency distribution can be constructed for either quantitative or qualitative data.
Answer: TRUE
Diff: 2
Keywords: joint, frequency, distribution
Section: 2-1 Frequency Distributions and Histograms
Outcome: 3

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32) If a manager is interested in analyzing the relationship between the age of customers and the dollar volume of business that is done in the store, a relative frequency distribution would be most appropriate.
Answer: FALSE
Diff: 2
Keywords: relative, frequency, distribution
Section: 2-1 Frequency Distributions and Histograms
Outcome: 1

33) A recent study of students at the university contained data on year in school and student age. An appropriate tool for analyzing the relationship between these two variables would be a joint frequency distribution.
Answer: TRUE
Diff: 2
Keywords: joint, frequency, distribution
Section: 2-1 Frequency Distributions and Histograms
Outcome: 3

34) A histogram can be used to display a joint frequency distribution between two quantitative variables.
Answer: FALSE
Diff: 3
Keywords: histogram, joint, frequency, distribution
Section: 2-1 Frequency Distributions and Histograms
Outcome: 3

35) In Excel, joint frequency distributions can be generated using the Pivot Table feature under the Data tab.
Answer: TRUE
Diff: 2
Keywords: Excel, joint, distribution, pivot
Section: 2-1 Frequency Distributions and Histograms
Outcome: 3

36) An ogive is a graph that shows cumulative relative frequency.
Answer: TRUE
Diff: 1
Keywords: ogive
Section: 2-1 Frequency Distributions and Histograms
Outcome: 2

37) If you have constructed a joint frequency distribution manually and now wish to convert it to a joint relative distribution, the proper method is to divide each cell frequency by the cell's row total.
Answer: FALSE
Diff: 2
Keywords: joint, relative, frequency, distribution
Section: 2-1 Frequency Distributions and Histograms
Outcome: 3

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38) Another name for a joint frequency distribution is a cross-tabulation table.
Answer: TRUE
Diff: 1
Keywords: joint, frequency, distribution, cross-tabulation
Section: 2-1 Frequency Distributions and Histograms
Outcome: 3

39) Two separate frequency distributions for two variables provide the same information as one joint frequency distribution involving the same two variables.
Answer: FALSE
Diff: 3
Keywords: joint frequency distribution
Section: 2-1 Frequency Distributions and Histograms
Outcome: 3

40) In Excel a joint frequency distribution table can be created using a tool called PivotTable.
Answer: TRUE
Diff: 2
Keywords: Excel, joint, frequency, distribution, pivot
Section: 2-1 Frequency Distributions and Histograms
Outcome: 3

41) An ogive is a graph of a joint frequency distribution.
Answer: FALSE
Diff: 1
Keywords: ogive, joint, frequency, distribution
Section: 2-1 Frequency Distributions and Histograms
Outcome: 3

42) A histogram is an effective tool for graphically describing a joint frequency distribution.
Answer: FALSE
Diff: 2
Keywords: histogram, joint, frequency, distribution
Section: 2-1 Frequency Distributions and Histograms
Outcome: 3

43) In a study involving car owners, one question asked the owner for the number of miles driven last year. A second question asked the owner for the age of the vehicle. A joint frequency distribution would be useful for determining whether newer cars tend to be driven more miles than older cars.
Answer: TRUE
Diff: 2
Keywords: joint, frequency, distribution
Section: 2-1 Frequency Distributions and Histograms
Outcome: 3

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44) In a study involving car owners, one question asked the owner for the number of miles driven last year. A second question asked the owner for the age of the vehicle. A histogram would be useful for analyzing the relationship between miles driven and the age of the vehicle.
Answer: FALSE
Diff: 3
Keywords: histogram, joint, frequency, distribution
Section: 2-1 Frequency Distributions and Histograms
Outcome: 3

45) In constructing a histogram for a joint frequency distribution, the histogram will have the most meaning for the decision maker if there are no gaps between the bars on the histogram.
Answer: FALSE
Diff: 2
Keywords: histogram, gap, bar, joint, frequency, distribution
Section: 2-1 Frequency Distributions and Histograms
Outcome: 3

46) A bar chart is the same as a histogram.
Answer: FALSE
Diff: 1
Keywords: bar, chart, histogram
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 4

47) Histograms cannot have gaps between the bars, whereas bar charts can have gaps.
Answer: TRUE
Diff: 1
Keywords: histogram, gap, bar, chart
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 4

48) The regional sales manager for a medical supply company recently collected data on the reasons why customers returned the merchandise for a refund. She actually formed a frequency distribution for this variable. It would now be acceptable to construct a bar chart to graphically display the results.
Answer: TRUE
Diff: 2
Keywords: frequency, distribution, bar, chart
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 4

49) Bar charts can typically be formed with the bars vertical or horizontal without adversely affecting the interpretation.
Answer: TRUE
Diff: 2
Keywords: bar, chart, horizontal, vertical
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 4

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50) Bar charts can show either frequency or percentage.
Answer: TRUE
Diff: 1
Keywords: bar chart
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 4

51) A tire store manager has collected data showing the number of tires of each brand sold during the past month. A bar chart might be effective in graphically illustrating which brands tend to sell best at this store.
Answer: TRUE
Diff: 2
Keywords: bar chart
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 4

52) A pie chart is almost always constructed when the variable of interest is qualitative.
Answer: FALSE
Diff: 2
Keywords: pie, chart, qualitative
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 4

53) In situations involving two or more variables, both histograms and bar charts can be used for multiple variables on the same graph.
Answer: FALSE
Diff: 3
Keywords: multiple, variable, histogram, bar chart
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 4

54) The Wilson company monitors customer complaints and organizes these complaints into six distinct categories. Over the past year, the company has received 534 complaints. One possible graphical method for representing these data would be a histogram.
Answer: FALSE
Diff: 2
Keywords: histogram, category
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 4

55) The difference between bar charts and histograms is that bar charts always show percentage while histograms always show frequency.
Answer: FALSE
Diff: 1
Keywords: bar, chart, histogram, percentage
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 4

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56) When developing a bar chart, it is usually preferable to organize the bars in order from high to low.
Answer: FALSE
Diff: 2
Keywords: bar, chart
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 4

57) A stem and leaf diagram is most similar to a bar chart.
Answer: FALSE
Diff: 1
Keywords: stem, leaf, diagram
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 5

58) One of the differences between a stem and leaf diagram and a histogram is that even for variables involving a large number of different values, the stem and leaf diagram shows the individual data values whereas the histogram requires you to group the data and lose the individual values.
Answer: TRUE
Diff: 2
Keywords: stem, leaf, histogram
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 5

59) A study was recently conducted in which makers of toothpaste tracked sales for the month at different stores in a market area. The variable of interest was the number of units sold. The numbers ranged from 1,200 to 22,700. In this case, the stems in a stem and leaf diagram might be values such as 1 and 22 while the leaves would be 200 and 700.
Answer: TRUE
Diff: 2
Keywords: stem, leaf
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 5

60) In constructing a stem and leaf diagram, the stem and leaves are defined using a similar method to the definition of the bins of a histogram.
Answer: TRUE
Diff: 1
Keywords: stem, leaf
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 5

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61) A stem and leaf diagram is more appropriate for graphically displaying a joint frequency distribution than is a histogram since the stems can be used to display one variable while the leaves can be used to display the second variable.
Answer: FALSE
Diff: 2
Keywords: stem, leaf, joint, frequency
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 5

62) If the Viking Sales Company plans to display the sales for each of its six major products for the year 2001, an effective chart to do this would be a histogram.
Answer: FALSE
Diff: 2
Keywords: histogram, chart
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 4

63) In preparing a line chart, the horizontal axis shows time and the vertical axis shows the value of the variable of interest.
Answer: TRUE
Diff: 1
Keywords: line, chart, axis
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 6

64) In a scatter plot the points should always be connected with a line.
Answer: FALSE
Diff: 1
Keywords: scatter, plot, line, chart
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 7

65) A university recently collected data for a sample of 200 business majors. One variable collected was the number of credits left to be taken before graduation. This variable could effectively be displayed using a line chart.
Answer: FALSE
Diff: 2
Keywords: line, chart
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 6

66) A scatter diagram is a line graph without the points connected by a line.
Answer: FALSE
Diff: 1
Keywords: scatter, diagram, line
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 7

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67) A major insurance company believes that for drivers between 16 years of age and 60 years of age, the number of accidents per year tends to decrease as age increases. If this is the case, a scatter diagram should show a negative relationship between the two variables.
Answer: TRUE
Diff: 2
Keywords: scatter, diagram
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 7

68) Sawyer & Company is a law firm in Dallas, Texas. Recently, the administrative manager prepared a report for the managing partners that showed the number of court cases handled by the firm monthly over the past three years. It was appropriate for her to use a line chart in this case.
Answer: TRUE
Diff: 2
Keywords: line, chart
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 6

69) Sawyer & Company is a law firm in Dallas, Texas. Recently, the administrative manager prepared a report for the managing partners that showed the number of court cases handled by the firm monthly over the past three years. One of the objectives of graphing these data might have been to identify a trend in the number of court cases.
Answer: TRUE
Diff: 1
Keywords: trend, graph
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 6

70) To show the relationship between amount of rainfall and the number of car accidents, the best type of graph to use is a scatter diagram.
Answer: TRUE
Diff: 1
Keywords: scatter diagram
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 7

71) The J.B. Hanson Company is interested in analyzing the relationship between end-of-the-week inventory levels and sales for the same week. The graph that most likely would be used to show this relationship is a histogram.
Answer: FALSE
Diff: 2
Keywords: scatter, relationship, histogram
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 7

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72) A study at State University involved an analysis of students' GPAs and the number of hours that they work at jobs off-campus. An appropriate graph to display the relationship between these two variables might be a scatter diagram.
Answer: TRUE
Diff: 2
Keywords: scatter, diagram, relationship
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 7

73) When developing a scatter diagram, it is appropriate to connect the points on the graph with straight lines or the lines can be omitted.
Answer: FALSE
Diff: 2
Keywords: scatter, diagram, connect
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 7

74) Scatter diagrams can be used for either quantitative or qualitative data.
Answer: FALSE
Diff: 1
Keywords: scatter diagram, data
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 7

75) If two variables are graphed on the same line chart, two separate scales are always required.
Answer: FALSE
Diff: 2
Keywords: variable, graph, scale
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 6

76) If a scatter diagram shows points that are reasonably aligned and are sloping downward from left to right, this implies that there is a negative linear relationship between the two variables.
Answer: TRUE
Diff: 2
Keywords: scatter, diagram, linear, relationship
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 7

77) In constructing and analyzing a scatter diagram, it is important to focus on the data points of interest by establishing appropriate scales for both the x and y axes. Otherwise, a nonlinear relationship can appear to be linear.
Answer: TRUE
Diff: 2
Keywords: scatter, diagram, relationship, nonlinear
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 7

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78) A scatter diagram can show whether a pair of variables has a strong or weak relationship, and also whether it is linear or curved.
Answer: TRUE
Diff: 2
Keywords: scatter, diagram
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 7

79) Roscoe and Associates makes computer software for use in the telecommunications industry. Recently, managers at the company collected data for the year 2001 on three variables: total dollars spent on research and development, total sales dollars, and total employee salaries. To graphically present these three variables, the managers would be justified in using a line chart with all three variables plotted.
Answer: FALSE
Diff: 3
Keywords: line, chart
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 6

80) On a scatter diagram, the independent variable should be placed on the horizontal axis and the dependent variable should be placed on the vertical axis.
Answer: TRUE
Diff: 2
Keywords: scatter, diagram, independent
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 7

81) In analyzing a single quantitative variable, you will generally choose to use a scatter diagram if the variable is measured over time and a histogram if the variable is cross-sectional.
Answer: FALSE
Diff: 2
Keywords: scatter, diagram, histogram
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 7

82) A histogram is most commonly used to analyze which of the following?
A) Nominal level data
B) Quantitative data
C) Time-series data
D) Ordinal data
Answer: B
Diff: 2
Keywords: histogram, quantitative, data
Section: 2-1 Frequency Distributions and Histograms
Outcome: 2

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83) The Maple Grove Hotel manager has collected data on the number of rooms occupied each evening for the past 700 nights. The fewest rooms occupied during that period was 11 and the most was the capacity, 430. Based on this information, which of the following would be reasonable class limits for the first class if the manager wishes to use 8 classes to develop a frequency distribution?
A) 0 to 40
B) 10 to < 65
C) 11 to 19
D) 0 to 52.38
Answer: B
Diff: 2
Keywords: histogram, class, limit
Section: 2-1 Frequency Distributions and Histograms
Outcome: 2

84) Recently a study of fans attending the New York Mets baseball games was conducted and 500 fans were surveyed. In forming a frequency distribution of the number of miles fans traveled from home to the stadium, it was found that 247 fans traveled between 0 and 5 miles. Based on this information what was the relative frequency for this class?
A) 0.247
B) 0.30
C) 0.494
D) Can't be determined without more information.
Answer: C
Diff: 2
Keywords: relative, frequency, distribution
Section: 2-1 Frequency Distributions and Histograms
Outcome: 1

85) Frequency distributions can be formed from which of the following types of data?
A) Both discrete and continuous
B) Discrete only
C) Continuous only
D) Only qualitative data
Answer: A
Diff: 2
Keywords: frequency, distribution, data
Section: 2-1 Frequency Distributions and Histograms
Outcome: 1

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86) A common rule of thumb for determining how many classes to use when developing a frequency distribution with classes is:
A) between 5 and 20 classes.
B) no fewer than 6 classes.
C) equal to 0.25 times the number of data values.
D) at least 10 classes.
Answer: A
Diff: 1
Keywords: frequency, distribution, classes
Section: 2-1 Frequency Distributions and Histograms
Outcome: 1

87) Which of the following is an acceptable format for setting up class boundaries for a frequency distribution?
A) 20 to under 40
B) 20 to 40
C) 200 to 299.99
D) All of the above.
Answer: D
Diff: 2
Keywords: class, boundaries, frequency, distribution
Section: 2-1 Frequency Distributions and Histograms
Outcome: 1

88) Which of the following is not considered desirable when constructing a frequency distribution for continuous data?
A) Open-ended classes
B) Mutually exclusive classes
C) Equal-width classes
D) All-inclusive classes
Answer: A
Diff: 1
Keywords: frequency, distribution, continuous, classes
Section: 2-1 Frequency Distributions and Histograms
Outcome: 1

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89) Many Walmart stores have automotive departments where customers can buy tires, have their vehicles serviced, and obtain other automotive services. Recently, the manager at an Ohio Walmart collected data on the time customers had to wait to get the desired automotive service. Of the 500 cars in the sample, the shortest time any customer spent waiting was 3 minutes and the longest time was 183 minutes. Assuming that the manager wishes to develop a frequency distribution with 9 classes, which of the following would be an appropriate class width for each class?
A) 10.50
B) 19.99
C) 20.00
D) 3 to 23
Answer: C
Diff: 2
Keywords: class, width, frequency, distribution
Section: 2-1 Frequency Distributions and Histograms
Outcome: 1

90) A histogram is used to display which of the following characteristics for a quantitative variable?
A) The approximate center of the data
B) The spread in the data
C) The shape of the distribution
D) All of the above.
Answer: D
Diff: 2
Keywords: histogram, display, quantitative, variable
Section: 2-1 Frequency Distributions and Histograms
Outcome: 2

91) When using Excel's Histogram option under the Data Analysis tool, the term bins refers to:
A) the mid-point of each class.
B) the column where the data are located.
C) the upper limits of each class.
D) the lower limits of each class.
Answer: C
Diff: 2
Keywords: Excel, histogram, bin, class
Section: 2-1 Frequency Distributions and Histograms
Outcome: 2

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92) In forming the classes for a frequency distribution and histogram, suppose there were a number of empty classes. You should:
A) increase the class width.
B) decrease the class width.
C) keep the current class width.
D) use an ogive instead.
Answer: B
Diff: 2
Keywords: histogram, Excel, gaps
Section: 2-1 Frequency Distributions and Histograms
Outcome: 2

93) A frequency histogram should be computed from which type of data?
A) Quantitative data
B) Categorical data
C) Nominal level data
D) Ordinal data
Answer: A
Diff: 2
Keywords: frequency, histogram, data, quantitative
Section: 2-1 Frequency Distributions and Histograms
Outcome: 2

94) Which of the following is a reason for constructing a joint frequency distribution?
A) To determine the trend between the two variables
B) To measure the spread between the two variables
C) To help analyze the relationship between the two variables
D) To show the average of two variables
Answer: C
Diff: 1
Keywords: joint, frequency, distribution
Section: 2-1 Frequency Distributions and Histograms
Outcome: 3

95) Joint frequency distributions are used to display:
A) the histograms of two variables analyzed simultaneously.
B) the number of occurrences at each of the possible joint occurrences of two variables.
C) the cumulative distribution of a variable with two possible outcomes.
D) the relative frequency of two variables.
Answer: B
Diff: 2
Keywords: joint, frequency, distribution
Section: 2-1 Frequency Distributions and Histograms
Outcome: 3

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96) A study was recently done in which the brand preference for breakfast cereal was analyzed against the gender of the shopper. The study consisted of 200 male shoppers and 300 female shoppers. Three different cereal brands were considered: A, B, and C. A total of 250 female shoppers preferred brand A, 25 female shoppers preferred brand C. The number of female shoppers that preferred brand B was:
A) 25.
B) 100.
C) 75.
D) 50.
Answer: A
Diff: 1
Keywords: joint, frequency, distribution
Section: 2-1 Frequency Distributions and Histograms
Outcome: 3

97) A study was recently done in which the brand preference for breakfast cereal was analyzed against the gender of the shopper. The study consisted of 200 male shoppers and 300 female shoppers. Three different cereal brands were considered: A, B, and C. A total of 250 female shoppers preferred brand A, 25 female shoppers preferred brand C. A total of 100 shoppers preferred brand B. The number of male shoppers that preferred brand B was:
A) 25.
B) 100.
C) 75.
D) 50.
Answer: C
Diff: 2
Keywords: joint, frequency, distribution
Section: 2-1 Frequency Distributions and Histograms
Outcome: 3

98) The undergraduate students at your university are classified as freshmen, sophomores, juniors, or seniors. A recent study of undergraduates asked the students to indicate the number of credits they were registered for this term. The responses were 3, 6, 9, 12, 15, and 18. The number of cells in a joint frequency distribution for the two variables, class standing, and credit hours is:
A) 4.
B) 10.
C) 24.
D) None of the above.
Answer: C
Diff: 1
Keywords: joint, frequency, distribution, cells
Section: 2-1 Frequency Distributions and Histograms
Outcome: 3

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99) Which of the following CANNOT be shown effectively with a histogram?
A) A frequency distribution
B) A joint frequency distribution
C) A relative frequency distribution
D) The center, shape and spread of a distribution
Answer: B
Diff: 2
Keywords: histogram, frequency, distribution
Section: 2-1 Frequency Distributions and Histograms
Outcome: 2

100) Which of the following is NOT true of a bar chart?
A) It is used for numerical data.
B) The bars can be either horizontal or vertical.
C) It can show either frequency or relative frequency.
D) It is used for categorical data.
Answer: A
Diff: 2
Keywords: bar chart
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 4

101) One characteristic of a bar chart is:
A) the bars can be displayed either vertically or horizontally.
B) there can be no gaps between the bars.
C) it is used to display the distribution of a continuous variable.
D) it shows cumulative frequency.
Answer: A
Diff: 1
Keywords: bar, chart
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 4

102) A bar chart is most likely used to display which of the following?
A) A continuous variable
B) A nominal level variable
C) An ordinal level variable
D) Either B or C
Answer: D
Diff: 2
Keywords: bar, chart, variable
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 4

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103) A study was recently conducted by the regional electric and gas company. Data were collected for three customer categories showing the dollar amount of natural gas and the dollar amount of electricity consumed during the year. Which of the following graphs would most likely be used to display both sets of data together?
A) Pie chart
B) Bar chart
C) Line chart
D) Histogram
Answer: B
Diff: 2
Keywords: bar, chart, display
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 4

104) One of the key differences between a bar chart and histogram is:
A) the histogram contains gaps between the bars and the bar chart does not.
B) a bar chart is used to display a categorical variable and a histogram is used to display the distribution of a quantitative variable.
C) the histogram shows relative frequency while the bar chart shows frequency.
D) the bar chart must be vertical while the histogram must be horizontal.
Answer: B
Diff: 2
Keywords: bar, chart, histogram, variable
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 4

105) The city counsel has just voted to pass the city's budget for next year. If you were writing a report describing the budget so the citizens could understand how the total tax dollars will be spent, which of the following graphs might be most appropriate?
A) Pie chart
B) Scatter diagram
C) Histogram
D) Ogive
Answer: A
Diff: 2
Keywords: pie, chart
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 4

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106) Which of the following is a false statement?
A) A bar chart is usually constructed so that gaps exist between the bars.
B) The bars on a bar chart can be different colors.
C) A histogram is usually constructed without gaps between the bars.
D) A bar chart and histogram can typically be used interchangeably.
Answer: D
Diff: 2
Keywords: bar, chart, histogram
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 4

107) At a manufacturing plant workers are divided into 4 different teams that rotate shifts. The number of units produced by each team is recorded. The best type of chart to display the data is a:
A) pie chart.
B) histogram.
C) ogive.
D) line chart.
Answer: A
Diff: 2
Keywords: pie, chart
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 4

108) A homeowners association consists of 20 homes. The family in each home is considered an automatic member of the association. Recently, one of the homes fell into a state of disrepair. A survey was conducted of the homeowners both on the same street as the house in question and on the second street. At issue was whether legal action should be brought against the homeowner with the problem house. There are 8 homes on the same street as the problem house and 6 of these called for legal action. The percentage of houses on the second street that favored legal action is 50 percent. Which type of chart might be most effective for conveying the information about percentage of residents favoring legal action by street?
A) Histogram
B) Stem and leaf diagram
C) Bar chart
D) Pie chart
Answer: C
Diff: 2
Keywords: bar, chart
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 4

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109) Which of the following is a key difference between a bar chart and a histogram?
A) A bar chart typically has gaps between the bars while a histogram has no gaps.
B) A bar chart is developed to analyze a continuous variable, while a histogram is used to analyze discrete variables.
C) Both A and B are correct.
D) There is actually no real difference between a bar chart and a histogram.
Answer: A
Diff: 2
Keywords: bar, chart, histogram
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 4

110) The Grangeville Power Company has four classifications for its customers. For each customer classification, the company tracks the total amount of electricity used during the year. Which of the following types of graphs would be most appropriate to use?
A) A horizontal bar chart
B) A vertical bar chart
C) Both A and B would be appropriate.
D) A histogram
Answer: C
Diff: 2
Keywords: bar, chart, horizontal, vertical
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 4

111) Which of the following is true about the difference between stem and leaf diagrams and histograms?
A) There is no difference.
B) The stem and leaf diagram shows more information by showing the individual values.
C) The histogram shows the shape center and spread of the distribution while the stem and leaf does not.
D) The stem and leaf diagram shows less information than a histogram.
Answer: B
Diff: 2
Keywords: stem and leaf, histogram
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 5

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112) Ace Hardware Store collected data on the sales volume for five locations for the past four months. The data are input into an Excel spreadsheet where columns A through E represents the location names and column F represents the sales for each day for the past four months at that location. In order to construct a scatter diagram that displays the percent of total sales by location for each day for the past six months, the required steps in Excel will be to:

1) Determine the total sales by location.
2) Input the daily sales for each location
3) Divide the daily sales for a particular location by the total sales for that location.

What would be the correct order of these steps?
A) 1) 2) 3).
B) 2) 1) 3).
C) 2) 3) 1).
D) 1) 3) 2).
Answer: B
Diff: 3
Keywords: Excel, bar, chart
Section: 2-3 Line Charts, Scatter Diagrams, and Pareto Charts
Outcome: 6

113) A bar chart possesses which of the following?
A) Capability of displaying the distribution for a quantitative variable
B) The option of displaying the data in scatter diagram form
C) The option for displaying two or more variables on the same chart
D) An easy method for displaying the general shape of a continuous variable
Answer: C
Diff: 2
Keywords: bar, chart
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 4

114) The Canyon Water Company collects data on the number of gallons of water consumed during a month for each customer. The production manager has divided the usage into 6 classes. To display these data effectively, she could use which of the following types of graphs to convey information about the water usage?
A) A stem and leaf diagram
B) A bar chart
C) A histogram
D) Either a histogram or a pie chart
Answer: D
Diff: 2
Keywords: histogram, pie, chart
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 4

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115) A stem and leaf diagram is used to:
A) display the distribution of a quantitative variable.
B) show the joint relationship between two variables.
C) graph a joint frequency distribution.
D) show relative cumulative frequency.
Answer: A
Diff: 2
Keywords: stem, leaf, quantitative
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 5

116) A stem and leaf diagram is an alternative to using:
A) a pie chart.
B) a bar chart.
C) a histogram.
D) an ogive.
Answer: C
Diff: 2
Keywords: stem, leaf, histogram
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 5

117) One of the advantages that a stem and leaf diagram has over a histogram is:
A) the detail of the data is preserved.
B) it shows the general distribution of a quantitative variable.
C) it can be used with nominal data.
D) There are no advantages.
Answer: A
Diff: 2
Keywords: stem, leaf, histogram
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 5

118) If two variables show a positive linear relationship in a scatter diagram:
A) most of the data values will plot in the lower left-hand quadrant.
B) most of the data values will plot in the lower left-hand and upper right-hand quadrants.
C) most of the data values will cluster close to the x and y axes.
D) the data will cluster in the center of the graph.
Answer: B
Diff: 2
Keywords: scatter, diagram, linear, relationship
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 7

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119) To show how the price of a stock has changed over the last 3 months, the best type of chart to use is:
A) a pie chart.
B) a histogram.
C) a line chart.
D) a bar chart.
Answer: C
Diff: 1
Keywords: line, chart, trend
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 6

120) A line chart is most appropriate for:
A) cross-sectional data.
B) nominal level data.
C) ordinal level data.
D) time-series data.
Answer: D
Diff: 1
Keywords: line, chart, time, series
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 6

121) The managers at Harris Pizza in Boston have tracked the tips received by their drivers along with the total bill to the customer. An appropriate graph for analyzing the relationship between these two variables is:
A) a scatter diagram.
B) a line chart.
C) a histogram.
D) a pie chart.
Answer: A
Diff: 2
Keywords: scatter, diagram, relationship
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 7

122) A scatter diagram can be used to do which of the following?
A) Determine the trend in a variable
B) Analyze the relationship between two variables
C) Describe the basic distribution for a quantitative variable
D) Show the percentage of a variable that is associated with each category into which that variable has been divided
Answer: B
Diff: 2
Keywords: scatter, diagram, relationship
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 7

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123) In constructing a scatter diagram:
A) the independent variable should be on the vertical axis.
B) the independent variable should be on the horizontal axis.
C) the dependent variable should be on the horizontal axis.
D) It does not matter which variable goes on which axis.
Answer: B
Diff: 2
Keywords: scatter, diagram, independent, dependent
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 7

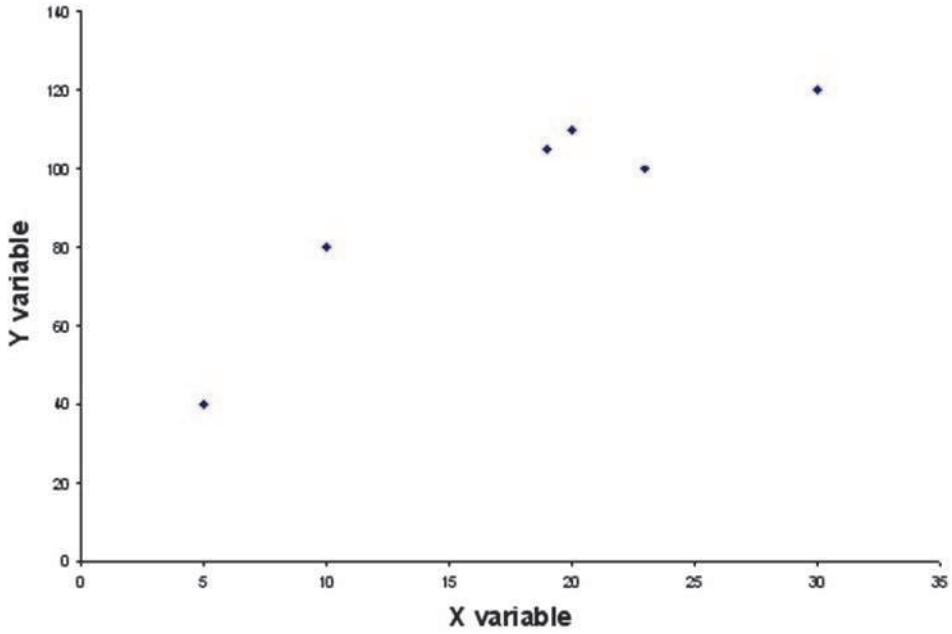
124) Which of the following questions CANNOT be answered using a scatter diagram?
A) Is there a causal relationship between the 2 variables?
B) Is there a curved or linear relation between the 2 variables?
C) Is there a weak or strong relation between the 2 variables?
D) Is there a positive or negative relation between the 2 variables?
Answer: A
Diff: 2
Keywords: scatter diagram
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 7

125) The sales manager at Western Furniture Company tracked data on the number of customers who came into the store each day and the total dollar volume of sales at the store during the same day. She is considering putting together a report for top management and wishes to show the relationship between these two variables. Which of the following graphs would likely be most useful? She has a sample of 36 days worth of data.
A) Scatter diagram
B) Bar chart
C) Frequency histogram
D) Pie chart
Answer: A
Diff: 2
Keywords: scatter, diagram, relationship
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 7

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126) Consider the following chart. Which of the following statements is most correct?

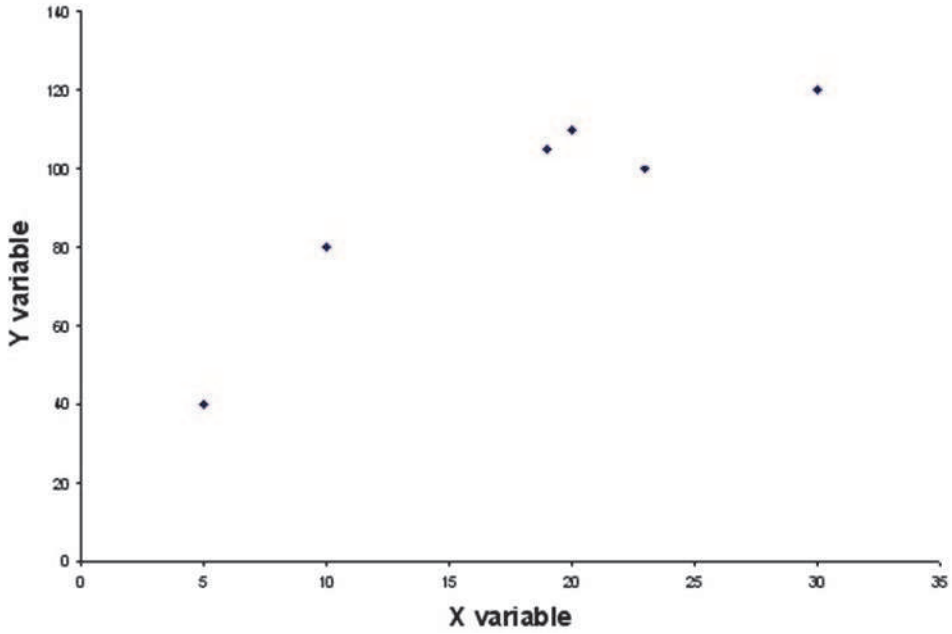


A) There is a negative linear relationship between the two variables.
B) There is a positive linear relationship between the two variables.
C) There is a perfect linear relationship between the two variables.
D) There is no apparent relationship between the two variables.
Answer: B
Diff: 2
Keywords: scatter, diagram, linear, relationship
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 7

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127) Consider the following chart. Which of the following statements is most correct?



A) The values for the dependent variable are determined by the values for the independent variable.
B) The values in a scatter plot should be connected by a straight line.
C) The variable on the horizontal axis should be the independent variable.
D) A scatter plot like this one shows the trend in the data over time.
Answer: C
Diff: 2
Keywords: scatter, plot, independent
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 7

128) The Fitness Center manager has collected data on the number of visits to the club each week for the past 8 weeks. These data are shown as follows. Which of the following statements is most correct?

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
1415	1623	1934	1879	2102	2156	2511	2499

A) The proper graph for displaying these data is a pie chart.
B) There has been a gradual downward trend in these data.
C) A frequency histogram should be developed to help identify the trend in these data.
D) The data lend themselves to a line chart.
Answer: D
Diff: 2
Keywords: line, chart, trend
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 6

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129) A professor wants to know if the amount of time her students spent working on a statistics assignment relates to the grade the student receives. She surveyed 10 students and recorded the data below. Which of the following statements is most correct?

# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10
5	3	3.5	1	4.5	1	3	4	2	2.5
90	80	80	60	90	70	75	85	70	75

A) A histogram will illustrate whether a linear relationship exists between the number of hours studied and the grade received.
B) A scatter diagram would be useful for displaying a relationship between the number of hours studied and the grade received.
C) A line chart for these data will show a trend between the student number and the grade received.
D) None of the above
Answer: B
Diff: 2
Keywords: line, chart, trend
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 6

130) Assuming you have data for a variable with 2,000 values, using the $2^k \geq n$ guideline, what is the least number of groups that should be used in developing a grouped data frequency distribution?
A) 9
B) 11
C) 13
D) 12
Answer: B
Diff: 1
Keywords: descriptive statistics
Section: 2-1 Frequency Distributions and Histograms
Outcome: 1

131) In creating a frequency distribution for numerical data, describe the steps in choosing the classes.
Answer: The steps are (1) determine the number of classes, (2) determine the class width, (3) determine the class boundaries, and (4) count how many values are in each class.
The number of classes should generally be between 5 and 20, where the more data you have means more classes. To determine the class width, the classes must span the entire range of the data set from the smallest value to the largest value. So an initial estimate of class width is to divide the range by the number of classes.

$$W = \frac{\text{Max} - \text{Min}}{\text{\# Classes}}$$

This width usually needs to be adjusted up to a "round" number. To determine the class boundaries there are several considerations. The classes should be of equal width, have no gaps between classes (all inclusive), and no overlaps (mutually exclusive). Finally the number of observation in each class is tallied.
Diff: 2
Keywords: classes, class width

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Section: 2-1 Frequency Distributions and Histograms
Outcome: 2

132) Explain what information can be conveyed by a frequency histogram.
Answer: A frequency histogram can be used to convey information about three different characteristics of a quantitative variable. First, the histogram can give us an idea of where the center of the data falls. The histogram can show the spread in the variable. Finally, the histogram can show the shape of the distribution.
Diff: 2
Keywords: frequency, histogram, quantitative
Section: 2-1 Frequency Distributions and Histograms
Outcome: 2

133) Explain why it is appropriate to connect the points on a line graph, but the points on a scatter plot should not be connected.
Answer: A line chart is used to display data that are measured in sequence over time. The points are in a defined order. Connecting the points serves to illustrate any trend that may be present in the data. A scatter plot is used to show the relationship between two variables. The XY data points are plotted in a two-dimensional space. The order that the XY points are recorded is of no consequence, so connecting the points would be meaningless.
Diff: 3
Keywords: line, scatter, connect, points
Section: 2-3 Line Charts and Scatter Diagrams
Outcome: 7

134) Why should a histogram contain no gaps between the bars but a bar chart may have gaps?
Answer: A histogram is used to convey the distribution of a quantitative variable. The horizontal axis represents the range of possible values for the variable of interest. The bars are joined together to form the distribution. A bar chart is used to illustrate a qualitative variable. By using gaps between the bars, the differences between the categories are more easily seen.
Diff: 2
Keywords: histogram, bar, chart, gaps
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 4

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135) Discuss the steps that you would use to manually construct a histogram for the salaries of the 1,124 employees in the Ferris Steel Company.
Answer: We might begin by sorting the data from low to high. Since salaries would likely be somewhat continuous, there would likely be lots of different possible salaries represented in the 1,124 data points. Thus, we would need to group the data into classes. We need to determine how many classes we want to use. The rule of thumb is somewhere between 5-20 depending on the data. Once the number of classes is determined, we next compute the class width using the formula:

$$W = \frac{\text{High} - \text{Low}}{\#\text{ Classes}}$$

We can round this class width up to a nice round number for ease of interpretation. Next, we form the classes making sure that they are mutually exclusive and all inclusive. In addition, they should be the same width, if possible. Once the classes are determined, the next step is to form a frequency distribution by counting how many of the salaries fall in each class. A histogram can be formed directly from the frequency distribution by placing the variable (salaries) on the horizontal axis. The vertical axis will represent the frequency in each class. Bars are drawn with width corresponding to the class limits and height corresponding to frequency in each class, no gaps are allowed except in cases where the frequency is equal to zero. Label the histogram appropriately.
Diff: 3
Keywords: histogram, construction, class, width
Section: 2-1 Frequency Distributions and Histograms
Outcome: 2

136) Suppose you are given the following data.

99	107	89	94	119	99	87	116	97	101	111	99
93	121	100	115	88	93	83	112	109	116	99	94
109	104	99	96	97	93	103	89	108	94	93	98

If you wish to have a histogram with five classes, what should the first class limits be?
Answer: The first class limits can be determined by first determining the width for each class. Given that we want 5 classes, the class width is determined by:

$$W = \frac{\text{High} - \text{Low}}{\#\text{ Classes}} = \frac{121 - 83}{5} = 7.60$$

However, we could round the 7.60 up to 8 for ease of interpretation. Then the first class could be set up as 83 and under 91 or 83 to 90.99 or $83 < 91$.
Diff: 2
Keywords: histogram, class, limits, width
Section: 2-1 Frequency Distributions and Histograms
Outcome: 2

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137) Suppose that you have a data set of 512 observations and the data values range from 36 to 187. What classes would you choose for this data set? Explain why you would choose these values.
Answer: For n=512 values, 9 classes would be about the right number of classes based on the $2^k \geq n$ rule. Then the class width should be about (187-36)/9 = 16.8, which should be rounded to 20. So the classes should start at 20 or 30 to be low enough to contain the lowest value. So one way to do the classes is:
20 to < 40
40 to < 60
60 to < 80
80 to < 100
100 to < 120
120 to < 140
140 to < 160
160 to < 180
180 to < 200
This is 9 classes, all inclusive, mutually exclusive, equal width, and contains all the data values.
Diff: 2
Keywords: classes
Section: 2-1 Frequency Distributions and Histograms
Outcome: 1

138) Explain why a relative frequency histogram is sometimes preferable to a regular frequency histogram.
Answer: Relative frequencies are used when we are interested in comparing two or more distributions when the number of data values in the distributions differs. For instance, suppose we have two frequency distributions on salaries, one for college graduates and one for non-college graduates. There are 100 college graduates in the data set and 1,000 non-college graduates. In each distribution, the first class limits are $0 through $15,000. If there are 5 college graduates in the first class and 50 non-college graduates in the first class, it may appear that non-college graduates are much more heavily represented in the low salary bracket. However, if we convert these to relative frequencies, it turns out that the relative frequency is 0.05 for both groups.
Diff: 2
Keywords: relative, frequency, histogram
Section: 2-1 Frequency Distributions and Histograms
Outcome: 2

139) A company has 400 employees. The manager of human resources has recorded the annual salary and wages for each employee. These value range from $17,500 to $67,800. Provide an example of a stem and a leaf that could be developed to describe the distribution of the salary and wage data.
Answer: Given these data, the stems could be the thousands (e.g. 17 and 67) and the leaves could be the hundreds (e.g. 5 and 8).
Diff: 2
Keywords: stem, leaf
Section: 2-2 Bar Charts, Pie Charts and Stem and Leaf Diagrams
Outcome: 5

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