Exam
Name_____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

1) True or False: Research on human perception concludes that the bar chart is preferred to the pie chart, because the human eye can more accurately judge length comparisons against a fixed scale (as in a bar chart) than angular measures (as in a pie chart).
A) True
B) False
Diff: 1
Section: 2.1 Tables and Charts for Categorical Data
AACSB: Application of Knowledge

2) True or False: One of the advantages of a pie chart is that it clearly shows that the total of all the categories of the pie adds to 100%.
A) True
B) False
Diff: 1
Section: 2.1 Tables and Charts for Categorical Data
AACSB: Application of Knowledge

3) True or False: A histogram can have gaps between the bars, whereas bar charts cannot have gaps.
A) True
B) False
Diff: 1
Section: 2.1 Tables and Charts for Categorical Data
AACSB: Application of Knowledge

4) True or False: Histograms are used for numerical data while bar charts are suitable for categorical data.
A) True
B) False
Diff: 1
Section: 2.1 Tables and Charts for Categorical Data
AACSB: Application of Knowledge

5) True or False: Apple Computer, Inc. collected information on the age of their customers. The youngest customer was 12 and the oldest was 72. To study the distribution of the age among its customers, it is best to use a pie chart.
A) True
B) False
Diff: 2
Section: 2.1 Tables and Charts for Categorical Data
AACSB: Application of Knowledge

Instruction 2-1
An insurance company evaluates many numerical variables about a person before deciding on an appropriate rate for automobile insurance. A representative from a local insurance agency selected a random sample of insured drivers and recorded, *X*, the number of claims each made in the last 3 years, with the following results.

X	f
1	14
2	18
3	12
4	5
5	1

6) Referring to Instruction 2-1, how many drivers are represented in the sample?
A) 18
B) 50
C) 5
D) 15
Diff: 1
Section: 2.1 Tables and Charts for Categorical Data
AACSB: Analytical Thinking

7) The length of each bar in a bar chart represents the
A) midpoint of observations in each class.
B) average number of observations in each class.
C) proportion, frequency or percentage of observations in each class.
D) variances of observations in each class.
Diff: 1
Section: 2.1 Tables and Charts for Categorical Data
AACSB: Application of Knowledge

Instruction 2-2
At a meeting of information systems officers for regional offices of a national company, a survey was taken to determine the number of employees the officers supervise in the operation of their departments, where X is the number of employees overseen by each information systems officer.

X	f
1	7
2	5
3	11
4	8
5	9

8) Referring to Instruction 2-2, how many regional offices are represented in the survey results?
A) 11
B) 40
C) 15
D) 5
Diff: 1
Section: 2.1 Tables and Charts for Categorical Data
AACSB: Analytical Thinking

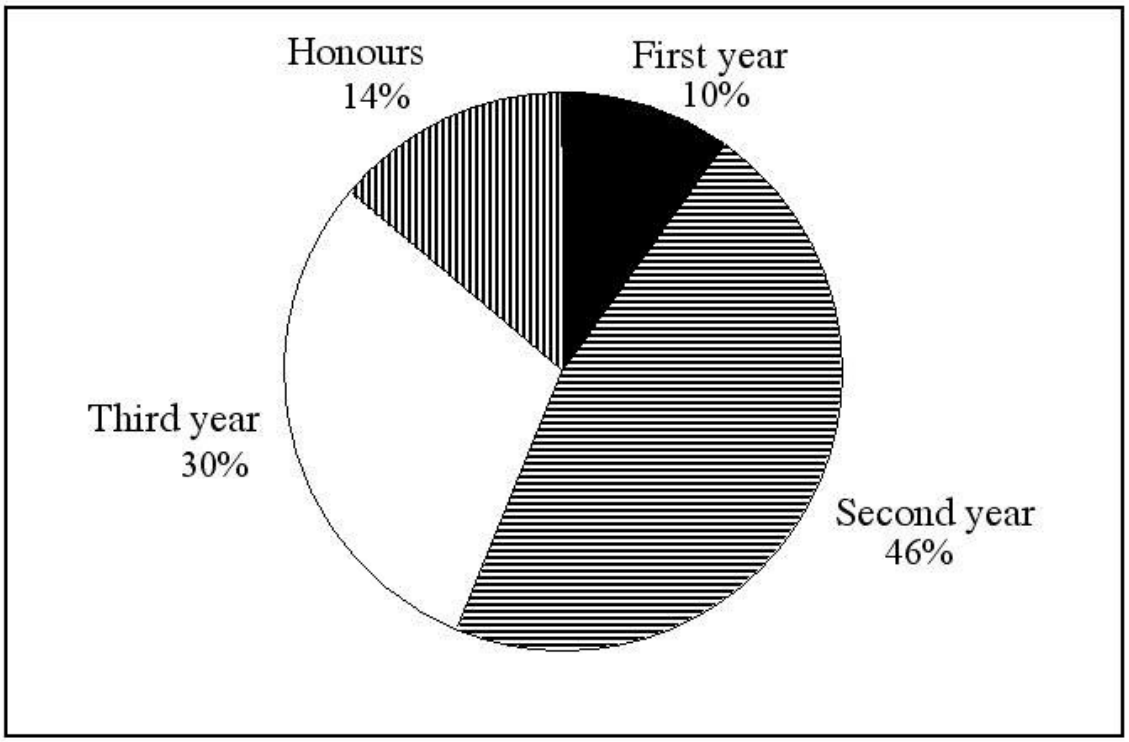
9) Referring to Instruction 2-2, across all of the regional offices, how many total employees were supervised by those surveyed?
A) 40
B) 200
C) 127

D) 15
Diff: 2
Section: 2.1 Tables and Charts for Categorical Data
AACSB: Analytical Thinking

10) Retailers are always interested in determining why a customer selected their store to make a purchase. A clothing retailer conducted a customer survey to determine why its customers shopped at the store. The results are shown in the bar chart below. What proportion of the customers responded that they shopped at the store because of the merchandise or the convenience?

A) 85%
B) 70%
C) 50%
D) 35%
Diff: 1
Section: 2.1 Tables and Charts for Categorical Data
AACSB: Analytical Thinking

11) A professor of economics at a Tasmanian university wanted to determine which students were taking his tough economics course. Shown below is a pie chart of the results. What percentage of the class took the course prior to reaching their honours year?



A) 86%
B) 14%
C) 54%
D) 44%
Diff: 1
Section: 2.1 Tables and Charts for Categorical Data
AACSB: Analytical Thinking

12) In a survey, 150 executives were asked what they think is the most common mistake candidates make during job interviews. Six different mistakes were given. Which of the following is the best for presenting the information?
A) A bar chart.
B) A contingency table.
C) A stem-and-leaf display.
D) A histogram.
Diff: 1
Section: 2.1 Tables and Charts for Categorical Data
AACSB: Application of Knowledge

13) You have collected information on the market share of five different search engines used by Australian Internet users in June 2012. Which of the following is the best for presenting the information?
A) A stem-and-leaf display.
B) A histogram.
C) A contingency table.
D) A pie chart.
Diff: 1
Section: 2.1 Tables and Charts for Categorical Data
AACSB: Application of Knowledge

Instruction 2-4
A survey was conducted to determine how people rated the quality of programming available on television. Respondents were asked to rate the overall quality from 0 (no quality at all) to 100 (extremely good quality). The stem-and-leaf display of the data is shown below.

Stem	Leaves
3	2 4
4	0 3 4 7 8 9 9 9
5	0 1 1 2 3 4 5
6	1 2 5 6 6
7	0 1
8	
9	2

14) Referring to Instruction 2-4, what percentage of the respondents rated overall television quality with a rating of 50 or below?
A) 44
B) 56
C) 11
D) 40
Diff: 2
Section: 2.2 Organising Numerical Data
AACSB: Analytical Thinking

15) Referring to Instruction 2-4, what percentage of the respondents rated overall television quality with a rating of 80 or above?
A) 96
B) 100
C) 0
D) 4
Diff: 1
Section: 2.2 Organising Numerical Data
AACSB: Analytical Thinking

16) Referring to Instruction 2-4, what percentage of the respondents rated overall television quality with a rating between 50 and 75 (inclusive)?
A) 40
B) 44
C) 11
D) 56
Diff: 2
Section: 2.2 Organising Numerical Data
AACSB: Analytical Thinking

Instruction 2-5
The following are the durations in minutes of a sample of long-distance phone calls made within Australia reported by one long-distance carrier.

Time (in Minutes)	Relative Frequency
0 but less than 5	0.37
5 but less than 10	0.22
10 but less than 15	0.15
15 but less than 20	0.10
20 but less than 25	0.07
25 but less than 30	0.07
30 or more	0.02

17) Referring to Instruction 2-5, what is the width of each class?
A) 5 minutes
B) 100%
C) 2%
D) 1 minute
Diff: 1
Section: 2.2 Organising Numerical Data
AACSB: Application of Knowledge

18) Referring to Instruction 2-5, if 1,000 calls were randomly sampled, how many calls lasted under 10 minutes?
A) 590
B) 370
C) 410
D) 220
Diff: 2
Section: 2.2 Organising Numerical Data
AACSB: Analytical Thinking

19) Referring to Instruction 2-5, if 100 calls were randomly sampled, how many calls lasted 15 minutes or longer?
A) 74
B) 14
C) 10
D) 26
Diff: 2
Section: 2.2 Organising Numerical Data
AACSB: Analytical Thinking

20) Referring to Instruction 2-5, if 10 calls lasted 30 minutes or more, how many calls lasted less than 5 minutes?
A) 10
B) 185
C) 500
D) 295
Diff: 2
Section: 2.2 Organising Numerical Data
AACSB: Analytical Thinking

21) Referring to Instruction 2-5, what is the cumulative relative frequency for the percentage of calls that lasted under 20 minutes?
A) 0.59
B) 0.10
C) 0.84

D) 0.76
Diff: 1
Section: 2.2 Organising Numerical Data
AACSB: Analytical Thinking

22) Referring to Instruction 2-5, what is the cumulative relative frequency for the percentage of calls that lasted 10 minutes or more?
A) 0.24
B) 0.41
C) 0.90
D) 0.16
Diff: 2
Section: 2.2 Organising Numerical Data
AACSB: Analytical Thinking

23) Referring to Instruction 2-5, if 100 calls were randomly sampled, _____ of them would have lasted at least 15 minutes but less than 20 minutes.
A) 0.16
B) 10
C) 0.10
D) 16
Diff: 1
Section: 2.2 Organising Numerical Data
AACSB: Analytical Thinking

24) Referring to Instruction 2-5, if 100 calls were sampled, _____ of them would have lasted less than 15 minutes.
A) 10
B) 26
C) 74
D) None of the above.
Diff: 2
Section: 2.2 Organising Numerical Data
AACSB: Analytical Thinking

25) Referring to Instruction 2-5, if 100 calls were sampled, _____ of them would have lasted 20 minutes or more.
A) 26
B) 74
C) 16
D) None of the above.
Diff: 2
Section: 2.2 Organising Numerical Data
AACSB: Analytical Thinking

26) Referring to Instruction 2-5, if 100 calls were sampled, _____ of them would have lasted less than 5 minutes or at least 30 minutes or more.
A) 39
B) 35
C) 37
D) None of the above.
Diff: 3
Section: 2.2 Organising Numerical Data

AACSB: Analytical Thinking

27) Data on the number of credit hours of 20,000 students at a public university enrolled in the first semester were collected. Which of the following is the best for presenting the information?
A) A contingency table.
B) A pie chart.
C) A stem-and-leaf display.
D) A Pareto chart.
Diff: 1
Section: 2.2 Organising Numerical Data
AACSB: Application of Knowledge

Instruction 2-7
The Stem-and-Leaf display below contains data on the number of months between the date a civil suit is filed and when the case is actually adjudicated for 50 cases heard in the Supreme Court of Victoria.

Stem	Leaves
1 L	2 3 4 4 4
1 H	7 8 9 9
2 L	2 2 2 2 3 4 5 5
2 H	6 7 8 8 8 9
3 L	0 0 1 1 1 3
3 H	5 7 7 8
4 L	0 2 3 4
4 H	5 5 7 9
5 L	1 1 2 4
5 H	6 6
6 L	1 5
6 H	8

Note: 1L means the "low teens" — 10, 11, 12, 13, or 14; 1H means the "high teens" — 15, 16, 17, 18, or 19; 2L means the "low twenties" — 20, 21, 22, 23, or 24, etc.

28) True or False: The stem-and-leaf display is often superior to the frequency distribution in that it maintains the original values for further analysis.
A) True
B) False
Diff: 1
Section: 2.2 Organising Numerical Data
AACSB: Application of Knowledge

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.
29) Referring to Instruction 2-7, locate the first leaf, i.e., the lowest valued leaf with the lowest valued stem. This represents a wait of _____ months.
Diff: 1
Section: 2.2 Organising Numerical Data
AACSB: Application of Knowledge

30) Referring to Instruction 2-7, the civil suit with the longest wait between when the suit was filed and when it was adjudicated had a wait of _____ months.
Diff: 1

Section: 2.2 Organising Numerical Data
AACSB: Application of Knowledge

31) Referring to Instruction 2-7, the civil suit with the fourth shortest waiting time between when the suit was filed and when it was adjudicated had a wait of _____ months.
Diff: 2
Section: 2.2 Organising Numerical Data
AACSB: Application of Knowledge

32) Referring to Instruction 2-7, _____ percent of the cases were adjudicated within the first 2 years.
Diff: 2
Section: 2.2 Organising Numerical Data
AACSB: Analytical Thinking

33) Referring to Instruction 2-7, _____ percent of the cases were not adjudicated within the first 4 years.
Diff: 2
Section: 2.2 Organising Numerical Data
AACSB: Analytical Thinking

34) Referring to Instruction 2-7, if a frequency distribution with equal sized classes was made from this data, and the first class was "10 but less than 20", the frequency of that class would be _____.
Diff: 1
Section: 2.2 Organising Numerical Data
AACSB: Analytical Thinking

35) Referring to Instruction 2-7, if a frequency distribution with equal sized classes was made from this data, and the first class was "10 but less than 20", the relative frequency of the third class would be _____.
Diff: 2
Section: 2.2 Organising Numerical Data
AACSB: Analytical Thinking

36) Referring to Instruction 2-7, if a frequency distribution with equal sized classes was made from this data, and the first class was "10 but less than 20", the cumulative percentage of the second class would be _____.
Diff: 2
Section: 2.2 Organising Numerical Data
AACSB: Analytical Thinking

Instruction 2-8
The Stem-and-Leaf display represents the number of times in a year that a random sample of 100 "lifetime" members of a health club actually visited the facility.

Stem	Leaves
0	012222233333344566666667789999
1	1111222234444455669999
2	00011223455556889
3	0000446799
4	011345567
5	0077
6	8
7	67
8	3
9	0247

37) Referring to Instruction 2-8, the person who has the largest leaf associated with the smallest stem visited the facility _____ times.
Diff: 2
Section: 2.2 Organising Numerical Data
AACSB: Application of Knowledge

38) Referring to Instruction 2-8, the person who visited the health club less than anyone else in the sample visited the facility _____ times.
Diff: 1
Section: 2.2 Organising Numerical Data
AACSB: Application of Knowledge

39) Referring to Instruction 2-8, the person who visited the health club more than anyone else in the sample visited the facility _____ times.
Diff: 1
Section: 2.2 Organising Numerical Data
AACSB: Application of Knowledge

40) Referring to Instruction 2-8, _____ of the 100 members visited the health club at least 52 times in a year.
Diff: 2
Section: 2.2 Organising Numerical Data
AACSB: Analytical Thinking

41) Referring to Instruction 2-8, _____ of the 100 members visited the health club no more than 12 times in a year.
Diff: 2
Section: 2.2 Organising Numerical Data
AACSB: Analytical Thinking

42) Referring to Instruction 2-8, if a frequency distribution with equal sized classes was made from this data, and the first class was "0 but less than 10", the frequency of the fifth class would be _____.
Diff: 2
Section: 2.2 Organising Numerical Data
AACSB: Analytical Thinking

43) Referring to Instruction 2-8, if a frequency distribution with equal sized classes was made from this data, and the first class was "0 but less than 10", the relative frequency of the last class would be _____.
Diff: 2
Section: 2.2 Organising Numerical Data
AACSB: Analytical Thinking

44) Referring to Instruction 2-8, if a frequency distribution with equal sized classes was made from this data, and the first class was "0 but less than 10", the cumulative percentage of the next-to-last class would be _____.
Diff: 2
Section: 2.2 Organising Numerical Data
AACSB: Analytical Thinking

45) Referring to Instruction 2-8, if a frequency distribution with equal sized classes was made from this data, and the first class was "0 but less than 10", the class midpoint of the third class would be _____.
Diff: 2
Section: 2.2 Organising Numerical Data
AACSB: Analytical Thinking

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

46) True or False: In general, grouped frequency distributions should have between 5 and 15 class intervals.
A) True
B) False
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

47) True or False: The sum of relative frequencies in a distribution always equals 1.
A) True
B) False
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

48) True or False: When comparing two or more samples with different sample sizes, a relative frequency distribution or a percentage distribution should be used.
A) True
B) False
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

49) True or False: The sum of cumulative frequencies in a distribution always equals 1.
A) True
B) False
Diff: 2
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

50) True or False: When constructing a frequency distribution, classes should be selected in such a way that they are of equal width.
A) True
B) False
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

51) True or False: A research analyst was directed to arrange raw data collected on the yield of wheat, ranging from 1 to 5 tonnes per hectare, in a frequency distribution. He should choose 2 as the class interval width.
A) True
B) False
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

52) True or False: If the values of the seventh and eighth class in a cumulative frequency distribution are the same, we know that there are no observations in the eighth class.
A) True
B) False
Diff: 2

Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

53) True or False: The larger the number of observations in a numerical data set, the larger the number of class intervals needed for a grouped frequency distribution.
A) True
B) False
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

54) True or False: Determining the class boundaries of a frequency distribution is highly subjective.
A) True
B) False
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

55) True or False: The original data values cannot be assessed once they are grouped into a frequency distribution table.
A) True
B) False
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

56) True or False: The percentage distribution cannot be constructed from the frequency distribution directly.
A) True
B) False
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

57) True or False: The relative frequency is the frequency in each class divided by the total number of observations.
A) True
B) False
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

58) True or False: Ogives are plotted at the midpoints of the class groupings.
A) True
B) False
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

59) True or False: Percentage polygons are plotted at the boundaries of the class groupings.
A) True
B) False
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

60) True or False: Apple Computer, Inc. collected information on the age of their customers. The youngest customer was 12 and the oldest was 72. To study the distribution of the age among its customers, it can use a percentage polygon.
A) True
B) False
Diff: 2
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

61) True or False: Apple Computer, Inc. collected information on the age of their customers. The youngest customer was 12 and the oldest was 72. To study the percentage of their customers who are below a certain age, it can use an ogive.
A) True
B) False
Diff: 2
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

62) True or False: If you wish to construct a graph of a relative frequency distribution, you would most likely construct an ogive first.
A) True
B) False
Diff: 2
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

63) True or False: An ogive is a cumulative percentage polygon.
A) True
B) False
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

64) True or False: A good choice for the number of class groups to use in constructing frequency distribution is to have at least 5 but no more than 15 class groups.
A) True
B) False
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

65) True or False: In general, a frequency distribution should have at least 8 class groups but no more than 20.
A) True
B) False
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

66) True of False: To determine the width of class interval, divide the number of class groups by the range of the data.
A) True
B) False
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data

AACSB: Application of Knowledge

67) True or False: The percentage polygon is formed by having the lower boundary of each class represent the data in that class and then connecting the sequence of lower boundaries at their respective class percentages.
A) True
B) False
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

68) True or False: A polygon can be constructed from a bar chart.
A) True
B) False
Diff: 2
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

69) True or False: When constructing polygons or histograms, the horizontal axis must specify the true zero or "origin" point so as not to distort the character of the data.
A) True
B) False
Diff: 2
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

Instruction 2-1
An insurance company evaluates many numerical variables about a person before deciding on an appropriate rate for automobile insurance. A representative from a local insurance agency selected a random sample of insured drivers and recorded, *X*, the number of claims each made in the last 3 years, with the following results.

X	*f*
1	14
2	18
3	12
4	5
5	1

70) Referring to Instruction 2-1, how many total claims are represented in the sample?
A) 15
B) 111
C) 50
D) 250
Diff: 2
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

Instruction 2-2
At a meeting of information systems officers for regional offices of a national company, a survey was taken to determine the number of employees the officers supervise in the operation of their departments, where *X* is the number of employees overseen by each information systems officer.

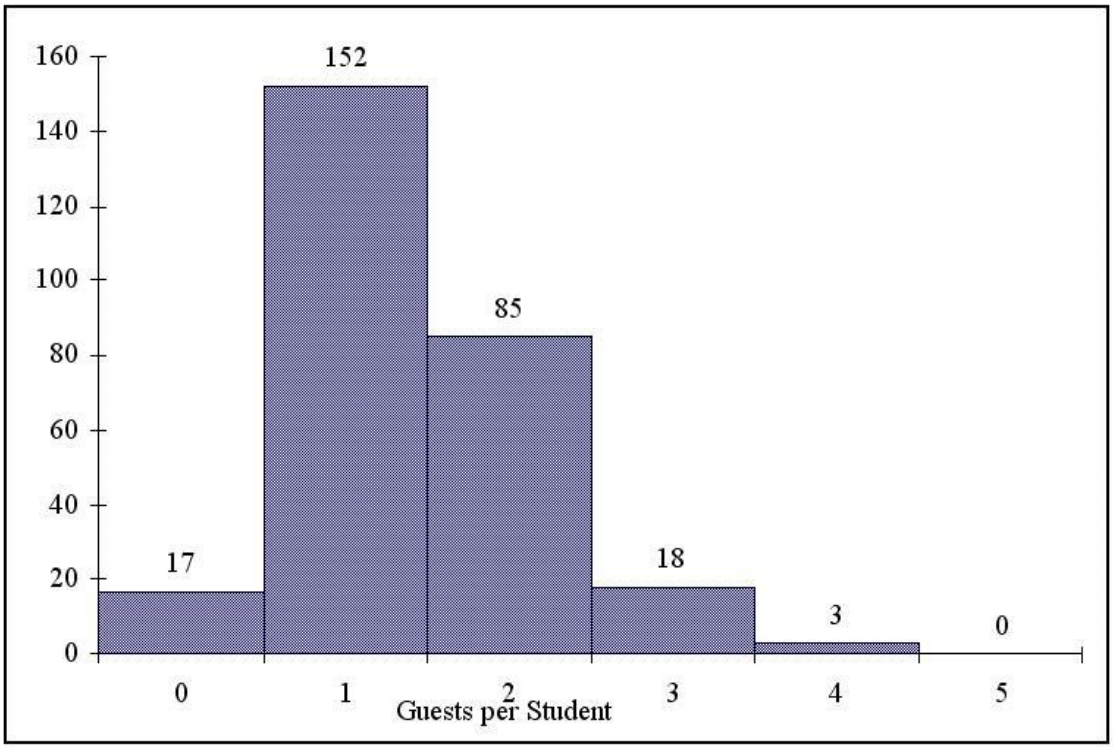
X	f
1	7
2	5
3	11
4	8
5	9

71) Referring to Instruction 2-2, how many regional offices are represented in the survey results?
A) 11
B) 5
C) 15
D) 40
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

72) Referring to Instruction 2-2, across all of the regional offices, how many total employees were supervised by those surveyed?
A) 200
B) 15
C) 127
D) 40
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

73) The width of each bar in a histogram corresponds to the
A) percentage of observations in each class.
B) midpoint of each class.
C) number of observations in each class.
D) differences between the boundaries of the class.
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

Figure 2-1
Every second semester, the School of Business at a large university coordinates with local business leaders at a luncheon for graduating students, their families, and friends. Corporate sponsorship pays for the lunches of each of the graduating students, but students have to purchase tickets to cover the cost of lunches served to guests they bring with them. The following histogram represents the attendance at the luncheon, where X is the number of guests each graduating student invited to the luncheon and f is the number of graduating students in each category.



74) Referring to the histogram from Figure 2-1, if all the tickets purchased were used, how many guests attended the luncheon?
A) 275
B) 4
C) 152
D) 388
Diff: 3
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

75) Referring to the histogram from Figure 2-1, how many graduating students attended the luncheon?
A) 388
B) 275
C) 4
D) 152
Diff: 3
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

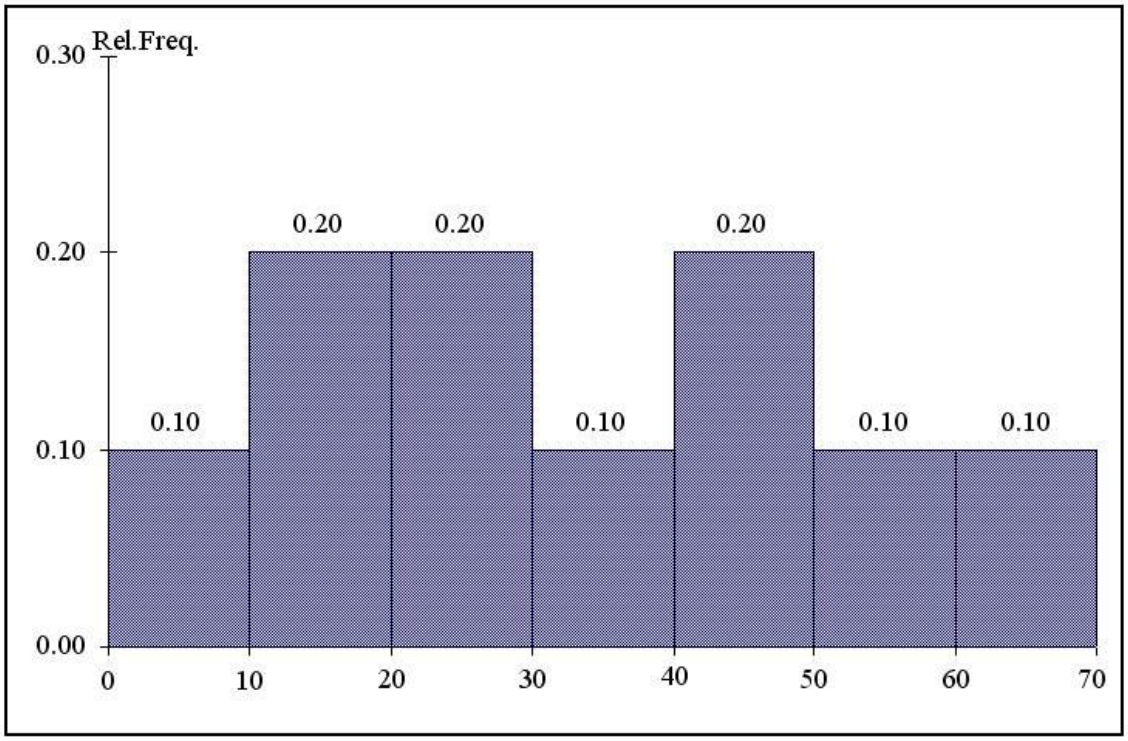
76) When polygons or histograms are constructed, which axis must show the true zero or "origin"?
A) The vertical axis.
B) The horizontal axis.
C) Both the horizontal and vertical axes.
D) Neither the horizontal nor the vertical axis.
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

77) When constructing charts, the following is plotted at the class midpoints
A) percentage polygons.
B) cumulative relative frequency ogives.
C) frequency histograms.
D) All of the above.
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

78) Data on 1,500 students' weight were collected at a university in Melbourne, Victoria. Which of the following is the best chart for presenting the information?
A) A pie chart.
B) A Pareto chart.
C) A histogram.
D) A side-by-side bar chart.
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

79) Data on the number of part-time hours students at a public university worked in a week were collected. Which of the following is the best chart for presenting the information?
A) A percentage table.
B) A percentage polygon.
C) A Pareto chart.
D) A pie chart.
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.
Figure 2-2
The histogram below represents scores achieved by 200 job applicants on a personality profile.



80) Referring to the histogram from Figure 2-2, _____ percent of the job applicants scored between 10 and 20.
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

81) Referring to the histogram from Figure 2-2, _____ percent of the job applicants scored below 50.
Diff: 2
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

82) Referring to the histogram from Figure 2-2, the number of job applicants who scored between 30 and below 60 is _____.
Diff: 2
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

83) Referring to the histogram from Figure 2-2, the number of job applicants who scored 50 or above is _____.
Diff: 2
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

84) Referring to the histogram from Figure 2-2, 90% of the job applicants scored above or equal to _____.
Diff: 2
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

85) Referring to the histogram from Figure 2-2, half of the job applicants scored below _____.
Diff: 2
Section: 2.3 Tables and Graphs for Numerical Data

AACSB: Analytical Thinking

86) Referring to the histogram from Figure 2-2, _____ percent of the applicants scored below 20 or at least 50.
Diff: 2
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

87) Referring to the histogram from Figure 2-2, _____ percent of the applicants scored between 20 and below 50.
Diff: 2
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

Instruction 2-9
The frequency distribution below represents the rents of 250 randomly selected federally subsidised apartments in Sydney.

Rent in $	Frequency
300 but less than 400	113
400 but less than 500	85
500 but less than 600	32
600 but less than 700	16
700 but less than 800	4

88) Referring to Instruction 2-9, _____ apartments rented for at least $400 but less than $600.
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

89) Referring to Instruction 2-9, _____ percent of the apartments rented for no less than $600.
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

90) Referring to Instruction 2-9, _____ percent of the apartments rented for at least $500.
Diff: 2
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

91) Referring to Instruction 2-9, the class midpoint of the second class is _____.
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

92) Referring to Instruction 2-9, the relative frequency of the second class is _____.
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

93) Referring to Instruction 2-9, the percentage of apartments renting for less than $600 is _____.
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

94) The point halfway between the boundaries of each class interval in a grouped frequency distribution is called the _____.
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

95) A _____ is a vertical bar chart in which the rectangular bars are constructed at the boundaries of each class interval.
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

96) It is essential that each class grouping or interval in a frequency distribution be _____.
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

97) In order to compare one large batch of numerical data to another, a _____ distribution must be developed from the frequency distribution.
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

98) When comparing two or more large batches of numerical data, the distributions being developed should use the same _____.
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

99) The width of each class grouping or interval in a frequency distribution should be _____.
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

100) In constructing a polygon, each class grouping is represented by its _____ and then these are consecutively connected to one another.
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

101) A _____ is a summary table in which numerical data are tallied into class intervals or categories.
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Application of Knowledge

Instruction 2-14
The ordered array below resulted from taking a sample of 25 batches of 500 computer chips and determining how many in each batch were defective.

Defects												
1	2	4	4	5	5	6	7	9	9	12	12	15
17	20	21	23	23	25	26	27	27	28	29	29	

102) Referring to Instruction 2-14, if a frequency distribution for the defects data is constructed, using "0 but less than 5" as

the first class, the frequency of the "20 but less than 25" class would be _____.
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

103) Referring to Instruction 2-14, if a frequency distribution for the defects data is constructed, using "0 but less than 5" as the first class, the relative frequency of the "15 but less than 20" class would be _____.
Diff: 2
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

ESSAY. Write your answer in the space provided or on a separate sheet of paper.
104) Referring to Instruction 2-14, construct a frequency distribution for the defects data, using "0 but less than 5" as the first class.
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

105) Referring to Instruction 2-14, construct a relative frequency or percentage distribution for the defects data, using "0 but less than 5" as the first class.
Diff: 2
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

106) Referring to Instruction 2-14, construct a relative frequency or percentage distribution for the defects data, using "0 but less than 5" as the first class.
Diff: 2
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

107) Referring to Instruction 2-14, construct a cumulative percentage distribution for the defects data if the corresponding frequency distribution uses "0 but less than 5" as the first class.
Diff: 2
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

108) Referring to Instruction 2-14, construct a histogram for the defects data, using "0 but less than 5" as the first class.
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

109) Referring to Instruction 2-14, construct a cumulative percentage polygon for the defects data if the corresponding frequency distribution uses "0 but less than 5" as the first class.
Diff: 2
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.
Instruction 2-16
Given below is the stem-and-leaf display representing the amount of detergent used in litres (with leaves in 10ths of litres) in a month by 25 drive-through car wash operations in Auckland.

```
 9 | 147
10 | 02238
11 | 135566777
12 | 223489
13 | 02
```

110) Referring to Instruction 2-16, if a frequency distribution for the amount of detergent used is constructed, using "9.0 but less than 9.9 litres" as the first class, the frequency of the "11.0 but less than 11.9 litres" class would be _____.
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

111) Referring to Instruction 2-16, if a percentage histogram for the detergent data is constructed, using "9.0 but less than 9.9 litres" as the first class, the percentage of drive-through car wash operations that use "12.0 but less than 12.9 litres" of detergent would be _____.
Diff: 2
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

112) Referring to Instruction 2-16, if a percentage histogram for the detergent data is constructed, using "9.0 but less than 9.9 litres" as the first class, _____ percent of drive-through car wash operations use less than 12 litres of detergent in a month.
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

113) Referring to Instruction 2-16, if a relative frequency or percentage distribution for the detergent data is constructed, using "9.0 but less than 9.9 litres" as the first class, _____ percent of drive-through car wash operations use at least 10 litres of detergent in a month.
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

114) Referring to Instruction 2-16 if a relative frequency or percentage distribution for the detergent data is constructed, using "9.0 but less than 9.9 litres" as the first class, _____ percent of drive-through car wash operations use at least 10 litres but no more than 13 litres of detergent in a month.
Diff: 1
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

ESSAY. Write your answer in the space provided or on a separate sheet of paper.
115) Referring to Instruction 2-16, construct a frequency distribution for the detergent data, using "9.0 but less than 9.9 litres" as the first class.
Diff: 2
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

116) Referring to Instruction 2-16, construct a relative frequency or percentage distribution for the detergent data, using "9.0 but less than 9.9" as the first class.
Diff: 2
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

117) Referring to Instruction 2-16, construct a cumulative percentage distribution for the detergent data if the corresponding frequency distribution uses "9.0 but less than 9.9" as the first class.
Diff: 2
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

118) Referring to Instruction 2-16, construct a histogram for the detergent data, using "9.0 but less than 9.9" as the first class.
Diff: 2
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

119) Referring to Instruction 2-16, construct a cumulative percentage polygon for the detergent data if the corresponding frequency distribution uses "9.0 but less than 9.9" as the first class.
Diff: 2
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

120) Referring to Instruction 2-16, construct a percentage polygon for the detergent data if the corresponding frequency distribution uses "9.0 but less than 9.9" as the first class.
Diff: 2
Section: 2.3 Tables and Graphs for Numerical Data
AACSB: Analytical Thinking

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.
121) True or False: In graphing bivariate categorical data, the side-by-side bar chart is best suited when primary interest is in demonstrating differences in magnitude rather than differences in percentages.
A) True
B) False
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Application of Knowledge

122) True or False: A contingency table is also referred to as a cross-classification table.
A) True
B) False
Diff: 1
Section: 2.4 Cross-tabulations
AACSB: Application of Knowledge

123) True or False: A side-by-side chart is two histograms plotted side-by-side.
A) True
B) False
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Application of Knowledge

Instruction 2-6
A sample of 200 students at a large university was taken after the final exam to ask them whether they went out on the weekend before the exam or spent the weekend studying, and whether they did well or poorly on the exam. The following table contains the result.

	Did Well on Exam	Did Poorly on Exam
Studying for Exam	80	20
Went out on the weekend	30	70

124) Referring to Instruction 2-6, of those who went out on the weekend before the exam in the sample, _____ percent of them did well on the exam.
A) 30
B) 15
C) 55
D) 27.27
Diff: 1
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

125) Referring to Instruction 2-6, of those who did well on the exam in the sample, _____ percent of them went out on the weekend before the exam.
A) 30
B) 50
C) 15
D) 27.27
Diff: 1
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

126) Referring to Instruction 2-6, _____ percent of the students in the sample went out on the weekend before the exam and did well on the exam.
A) 30
B) 27.27
C) 50
D) 15
Diff: 1
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

127) Referring to Instruction 2-6, _____ percent of the students in the sample spent the weekend studying and did well on the exam.
A) 40
B) 50
C) 80
D) 72.72
Diff: 1
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

128) Referring to Instruction 2-6, if the sample is a good representation of the population, we can expect _____ percent of the students in the population to spend the weekend studying and do poorly on the exam.
A) 50
B) 20
C) 45
D) 10
Diff: 1

Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

129) Referring to Instruction 2-6, if the sample is a good representation of the population, we can expect _____ percent of those who spent the weekend studying to do poorly on the exam.
A) 20
B) 10
C) 50
D) 45
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

130) Referring to Instruction 2-6, if the sample is a good representation of the population, we can expect _____ percent of those who did poorly on the exam to have spent the weekend studying.
A) 22.22
B) 50
C) 45
D) 10
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

131) In a contingency table, the number of rows and columns
A) must always be 2.
B) must add to 100%.
C) must always be the same.
D) None of the above.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Application of Knowledge

132) When studying the simultaneous responses to two categorical questions, we should set up a
A) contingency table.
B) cumulative percentage distribution table.
C) frequency distribution table.
D) histogram.
Diff: 1
Section: 2.4 Cross-tabulations
AACSB: Application of Knowledge

133) When studying the simultaneous responses to two categorical questions, you should set up a
A) contingency table.
B) histogram.
C) frequency distribution table.
D) cumulative percentage distribution table.
Diff: 1
Section: 2.4 Cross-tabulations
AACSB: Application of Knowledge

134) You have collected data on the monthly seasonally adjusted unemployment rate for Australia from 1998 to 2011.

Which of the following is the best for presenting the data?
A) A contingency table.
B) A time-series plot.
C) A stem-and-leaf display.
D) A side-by-side bar chart.
Diff: 1
Section: 2.4 Cross-tabulations
AACSB: Application of Knowledge

135) You have collected data on the number of complaints for six different brands of automobiles sold in Australia in 2006 and in 2011. Which of the following is the best for presenting the data?
A) A time-series plot.
B) A stem-and-leaf display.
C) A contingency table.
D) A side-by-side bar chart.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Application of Knowledge

136) You have collected data on the responses to two questions asked in a survey of 40 college students majoring in business studies — What is your gender (Male = M; Female = F) and What is your major (Accountancy = A; Computer Information Systems = C; Marketing = M). Which of the following is the best for presenting the data?
A) A polygon.
B) A stem-and-leaf display.
C) A contingency table.
D) A time-series plot.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Application of Knowledge

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.
137) To evaluate two categorical variables at the same time, a _____ should be developed.
Diff: 1
Section: 2.4 Cross-tabulations
AACSB: Application of Knowledge

138) Relationships in a contingency table can be examined more fully if the frequencies are converted into _____.
Diff: 1
Section: 2.4 Cross-tabulations
AACSB: Application of Knowledge

Instruction 2-11
The table below contains the opinions of a sample of 200 people broken down by gender about the latest government plan to eliminate restraint of trade exemptions for professional sporting leagues.

	For	Neutral	Against	Totals
Female	38	54	12	104
Male	12	36	48	96
Totals	50	90	60	200

139) Referring to Instruction 2-11, of those *for* the plan in the sample, _____ percent were females.

Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

140) Referring to Instruction 2-11, of those *neutral* in the sample, _____ percent were males.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

141) Referring to Instruction 2-11, of the males in the sample, _____ percent were *for* the plan.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

142) Referring to Instruction 2-11, of the females in the sample, _____ percent were *against* the plan.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

143) Referring to Instruction 2-11, of the females in the sample, _____ percent were either *neutral* or *against* the plan.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

144) Referring to Instruction 2-11, _____ percent of the 200 were females who were *against* the plan.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

145) Referring to Instruction 2-11, _____ percent of the 200 were males who were *neutral*.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

146) Referring to Instruction 2-11, _____ percent of the 200 were females who were either *neutral* or *against* the plan.
Diff: 3
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

147) Referring to Instruction 2-11, _____ percent of the 200 were males who were not *against* the plan.
Diff: 3
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

148) Referring to Instruction 2-11, _____ percent of the 200 were not *neutral*.
Diff: 3
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

149) Referring to Instruction 2-11, _____ percent of the 200 were *against* the plan.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

150) Referring to Instruction 2-11, _____ percent of the 200 were males.
Diff: 1
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

151) Referring to Instruction 2-11, if the sample is a good representation of the population, we can expect _____ percent of the population will be for the plan.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

152) Referring to Instruction 2-11, if the sample is a good representation of the population, we can expect _____ percent of the population will be males.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

153) Referring to Instruction 2-11, if the sample is a good representation of the population, we can expect _____ percent of those for the plan in the population will be males.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

154) Referring to Instruction 2-11, if the sample is a good representation of the population, we can expect _____ percent of the males in the population will be against the plan.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

155) Referring to Instruction 2-11, if the sample is a good representation of the population, we can expect _____ percent of the females in the population will not be against the plan.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

ESSAY. Write your answer in the space provided or on a separate sheet of paper.
Instruction 2-15
The table below contains the opinions of a sample of 200 people broken down by gender about the latest government plan to eliminate restraint of trade exemptions for professional sporting leagues.

	For	Neutral	Against	Totals
Female	38	54	12	104
Male	12	36	48	96
Totals	50	90	60	200

156) Referring to Instruction 2-15, construct a table of row percentages.
Diff: 1
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

157) Referring to Instruction 2-15, construct a table of column percentages.

Diff: 1
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

158) Referring to Instruction 2-15, construct a table of total percentages.
Diff: 1
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.
Instruction 2-17
The table below contains the number of people who own a portable DVD player in a sample of 600 broken down by gender.

Own a Portable DVD Player	Male	Female
Yes	96	40
No	224	240

159) Referring to Instruction 2-17, of those who owned a portable DVD in the sample, _____ percent were females.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

160) Referring to Instruction 2-17, of those who did not own a portable DVD in the sample, _____ percent were males.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

161) Referring to Instruction 2-17, of the males in the sample, _____ percent owned a portable DVD.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

162) Referring to Instruction 2-17, of the females in the sample, _____ percent did not own a portable DVD.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

163) Referring to Instruction 2-17, of the females in the sample, _____ percent owned a portable DVD.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

164) Referring to Instruction 2-17, _____ percent of the 600 were females who owned a portable DVD.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

165) Referring to Instruction 2-17, _____ percent of the 600 were males who owned a portable DVD.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

166) Referring to Instruction 2-17, _____ percent of the 600 were females who either owned or did not own a portable DVD.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

167) Referring to Instruction 2-17, _____ percent of the 600 were males who did not own a portable DVD.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

168) Referring to Instruction 2-17, _____ percent of the 600 owned a portable DVD.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

169) Referring to Instruction 2-17, _____ percent of the 600 did not own a portable DVD.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

170) Referring to Instruction 2-17, _____ percent of the 600 were females.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

171) Referring to Instruction 2-17, if the sample is a good representation of the population, we can expect _____ percent of the population will own a portable DVD.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

172) Referring to Instruction 2-17, if the sample is a good representation of the population, we can expect _____ percent of the population will be males.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

173) Referring to Instruction 2-17, if the sample is a good representation of the population, we can expect _____ percent of those who own a portable DVD in the population will be males.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

174) Referring to Instruction 2-17, if the sample is a good representation of the population, we can expect _____ percent of the males in the population will own a portable DVD.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

175) Referring to Instruction 2-17, if the sample is a good representation of the population, we can expect _____ percent

of the females in the population will not own a portable DVD.
Diff: 2
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

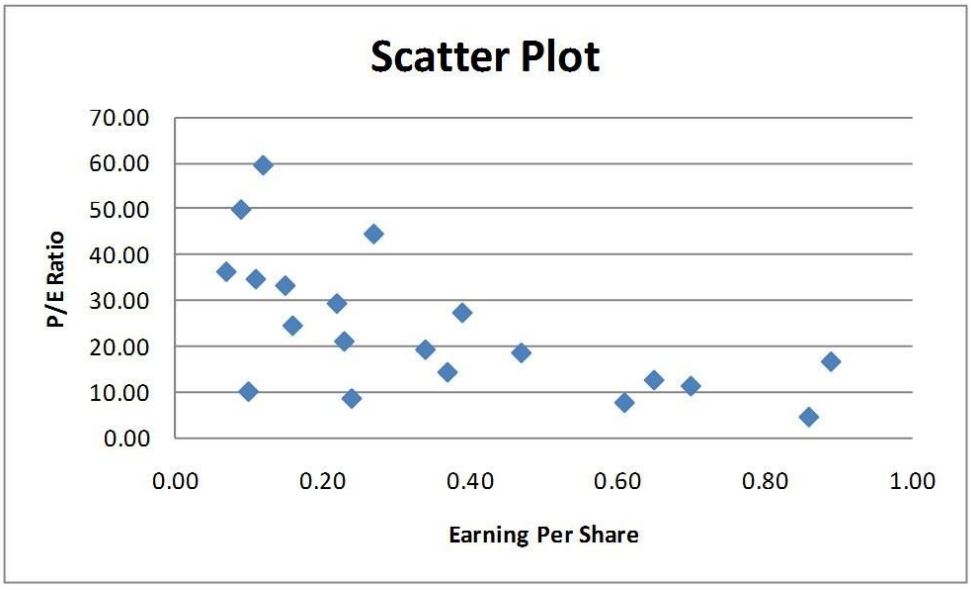
ESSAY. Write your answer in the space provided or on a separate sheet of paper.
176) Referring to Instruction 2-17, construct a table of row percentages.
Diff: 1
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

177) Referring to Instruction 2-17, construct a table of column percentages.
Diff: 1
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

178) Referring to Instruction 2-17, construct a table of total percentages.
Diff: 1
Section: 2.4 Cross-tabulations
AACSB: Analytical Thinking

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.
179) True or False: A scatter diagram can be used to examine the relationship between price (independent variable) and the quantity sold at a market (dependent variable).
A) True
B) False
Diff: 2
Section: 2.5 Scatter Diagrams and Time-series Plots
AACSB: Application of Knowledge

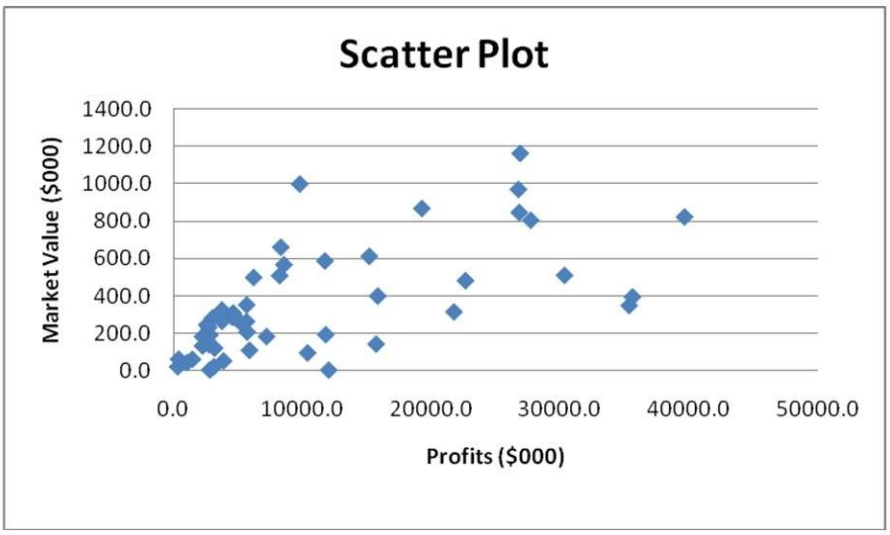
180) True or False: Given below is the scatter plot of the price/earnings ratio versus earnings per share of 20 Australian companies. There appears to be a positive relationship between price/earnings ratio and earnings per share.



A) True
B) False

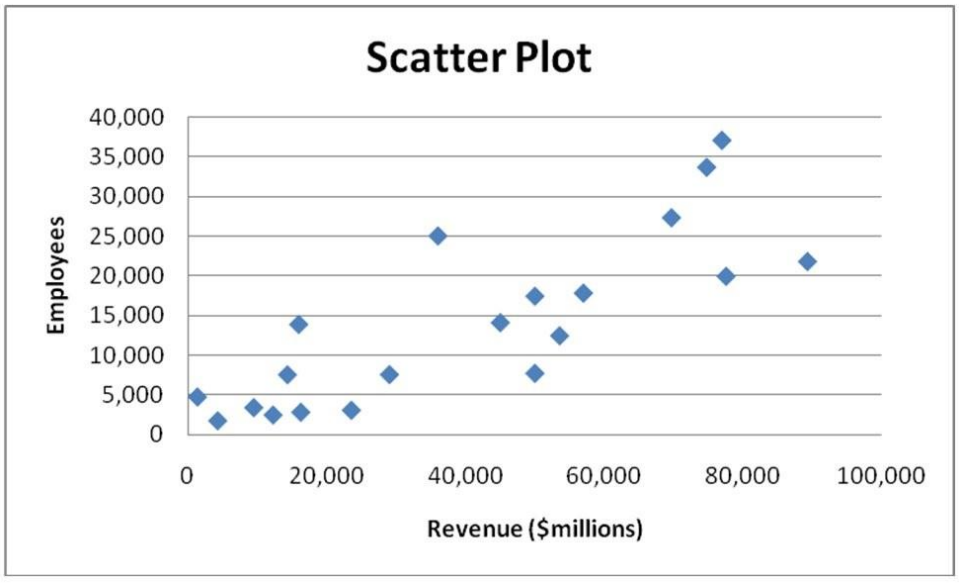
Diff: 2
Section: 2.5 Scatter Diagrams and Time-series Plots
AACSB: Application of Knowledge

181) True or False: Given below is the scatter plot of the market value (thousands$) and profit (thousands$) of 50 Australian companies. Higher market values appear to be associated with higher profits.



A) True
B) False
Diff: 1
Section: 2.5 Scatter Diagrams and Time-series Plots
AACSB: Application of Knowledge

182) True or False: Given below is the scatter plot of the number of employees and the total revenue ($millions) of 20 companies from New Zealand. There appears to be a positive relationship between total revenue and the number of employees.



A) True
B) False

Diff: 2
Section: 2.5 Scatter Diagrams and Time-series Plots
AACSB: Application of Knowledge

183) A marketing analyst is evaluating the effectiveness of advertising by comparing weekly sales volumes and weekly advertising expenditures. Which of the following is the most appropriate for displaying this information?
A) A scatter plot.
B) A pie chart.
C) A histogram.
D) A bar chart.
Diff: 2
Section: 2.5 Scatter Diagrams and Time-series Plots
AACSB: Application of Knowledge

184) One of the developing countries is experiencing a baby boom, with the number of births rising for the fifth year in a row, according to an SBS News report. Which of the following is best for displaying this data?
A) A two-way classification table.
B) A time-series plot.
C) A pie chart.
D) A histogram.
Diff: 1
Section: 2.5 Scatter Diagrams and Time-series Plots
AACSB: Application of Knowledge

185) You have collected data on the approximate retail price (in $) and the energy cost per year (in $) of 15 refrigerators. Which of the following is the best for presenting the data?
A) A contingency table.
B) A scatter plot.
C) A side-by-side bar chart.
D) A pie chart.
Diff: 2
Section: 2.5 Scatter Diagrams and Time-series Plots
AACSB: Application of Knowledge

186) You have collected data on the number of households in Sydney actively using online banking and/or online bill payment from 1995 to 2012. Which of the following is the best for presenting the data?
A) A pie chart.
B) A side-by-side bar chart.
C) A time-series plot.
D) A stem-and-leaf display.
Diff: 1
Section: 2.5 Scatter Diagrams and Time-series Plots
AACSB: Application of Knowledge

187) An economist is evaluating the relationship between the inflation rates for Australia and New Zealand. Which of the following is the best for presenting the data?
A) A contingency table.
B) A time-series plot.
C) A histogram.
D) None of the above.
Diff: 1

Section: 2.5 Scatter Diagrams and Time-series Plots
AACSB: Application of Knowledge

188) True or False: One of the guidelines for presenting good graphs is that the scale on the vertical axis should begin at zero.
A) True
B) False
Diff: 1
Section: 2.6 Misusing Graphs and Ethical Issues
AACSB: Application of Knowledge

189) Which one of the following is not a guideline for presenting good graphs?
A) Graphs should be properly scaled along each axis.
B) The graph should contain a title.
C) The graph should not distort the data.
D) None of the above.
Diff: 1
Section: 2.6 Misusing Graphs and Ethical Issues
AACSB: Analytical Thinking

1) A
2) A
3) B
4) A
5) B
6) B
7) C
8) B
9) C
10) B
11) A
12) A
13) D
14) A
15) D
16) D
17) A
18) A
19) D
20) B
21) C
22) B
23) B
24) C
25) C
26) A
27) C
28) A
29) 12
30) 68
31) 14
32) 30
33) 20
34) 9
35) 0.20 or 20% or 10/50
36) 46% or 0.46 or 23/50
37) 9
38) 0 or no
39) 97
40) 10
41) 38
42) 9
43) 4% or 0.04 or 4/100
44) 96% or 0.96 or 96/100
45) 25 or (20+30)/2
46) A
47) A
48) A
49) B
50) A

51) B
52) A
53) A
54) A
55) A
56) B
57) A
58) B
59) B
60) A
61) A
62) B
63) A
64) A
65) B
66) B
67) B
68) B
69) B
70) B
71) D
72) C
73) D
74) D
75) B
76) A
77) A
78) C
79) B
80) 20
81) 80
82) 80
83) 40
84) 10
85) 30
86) 50
87) 50
88) 117
89) 8% or 20/250
90) 20.8% or 52/250
91) 450
92) 85/250 or 17/50 or 34% or 0.34
93) 230/250 or 23/25 or 92% or 0.92
94) class midpoint
95) histogram
96) non-overlapping
97) relative frequency or percentage
98) class boundaries
99) the same or equal
100) midpoint

101) frequency distribution
102) 4
103) 0.08 or 8% or 2/25
104)

Defects	Frequency
0 but less than 5	4
5 but less than 10	6
10 but less than 15	2
15 but less than 20	2
20 but less than 25	4
25 but less than 30	7

105)

Defects	Percentage
0 but less than 5	16
5 but less than 10	24
10 but less than 15	8
15 but less than 20	8
20 but less than 25	16
25 but less than 30	28

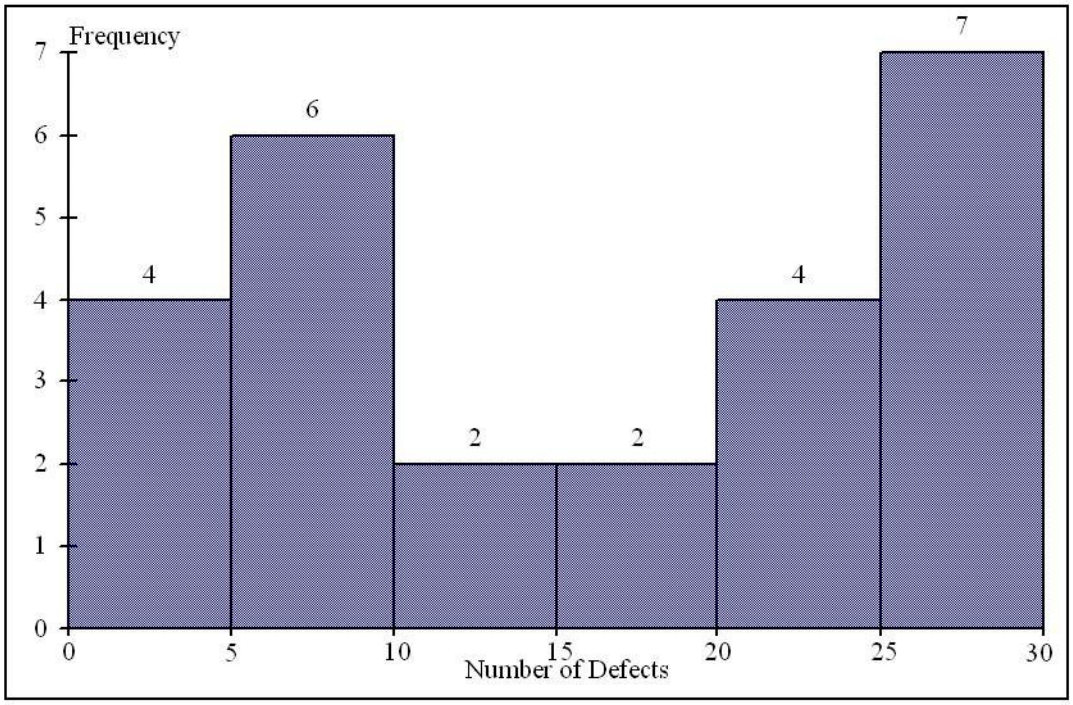
106)

Defects	Percentage
0 but less than 5	16
5 but less than 10	24
10 but less than 15	8
15 but less than 20	8
20 but less than 25	16
25 but less than 30	28

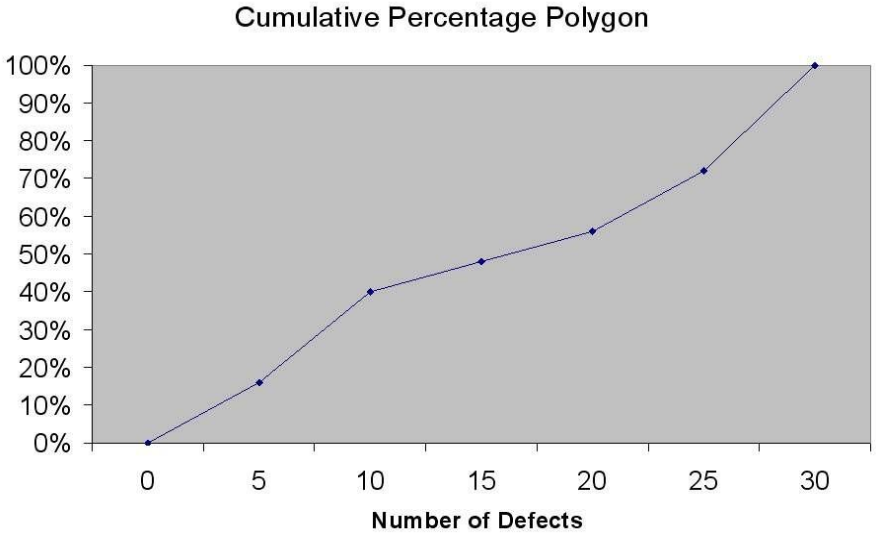
107)

Defects	Cumulative Percentage
0	0
5	16
10	40
15	48
20	56
25	72
30	100

108)



109)



110) 9
111) 24%
112) 68
113) 88
114) 80

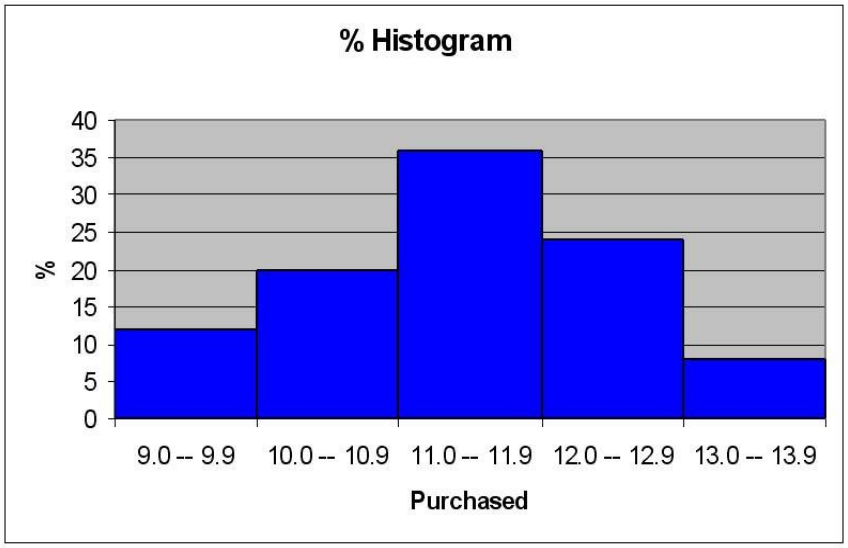
115) Purchases (litres)	Frequency
9.0 but less than 9.9	3
10.0 but less than 10.9	5
11.0 but less than 11.9	9
12.0 but less than 12.9	6
13.0 but less than 13.9	2

116) Purchases (litres)	Percentage (%)
9.0 but less than 9.9	12
10.0 but less than 10.9	20

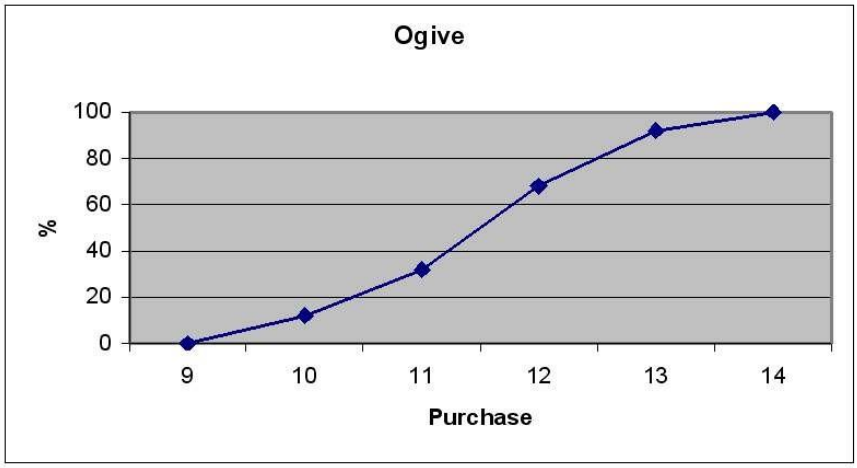
11.0 but less than 11.9	36	
12.0 but less than 12.9	24	
13.0 but less than 13.9	8	

117) Detergent Purchases (litres)	Frequency Less Than	Percentage Less Than
9.0 but less than 9.9	3	12
10.0 but less than 10.9	8	32
11.0 but less than 11.9	17	68
12.0 but less than 12.9	23	92
13.0 but less than 13.9	25	100

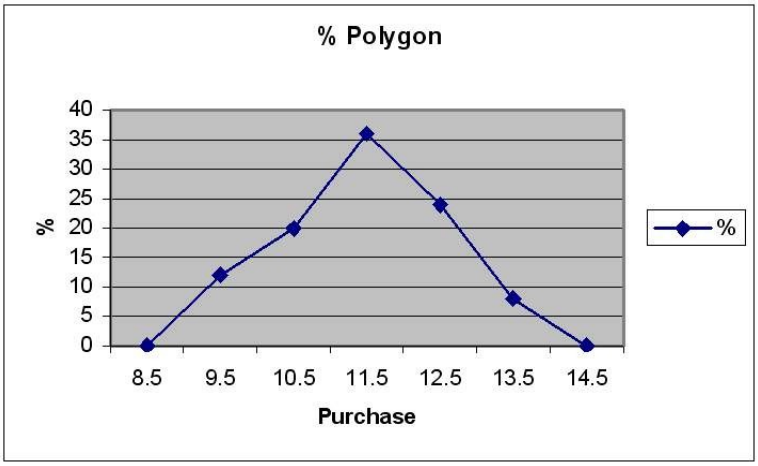
118)



119)



120)



121) A
122) A
123) B
124) A
125) D
126) D
127) A
128) D
129) A
130) A
131) D
132) A
133) A
134) D
135) D
136) C
137) contingency or cross-classification table
138) percentages or proportions
139) 76
140) 40
141) 12.5
142) 11.54
143) 63.46 or (51.92 + 11.54)
144) 6
145) 18
146) 33
147) 24
148) 55
149) 30
150) 48
151) 25
152) 48
153) 24
154) 50
155) 88.46 or (36.54+51.92)
156) **For Neutral Against Totals**

Female	36.54	51.92	11.54	100.00
Male	12.50	37.50	50.00	100.00
Totals	25.00	45.00	30.00	100.00

157)

	For	Neutral	Against	Totals
Female	76.00	60.00	20.00	52.00
Male	24.00	40.00	80.00	48.00
Totals	100.00	100.00	100.00	100.00

158)

	For	Neutral	Against	Totals
Female	19.00	27.00	6.00	52.00
Male	6.00	18.00	24.00	48.00
Totals	25.00	45.00	30.00	100.00

159) 29.41
160) 48.28
161) 30
162) 85.71
163) 14.29
164) 6.67
165) 16
166) 46.67
167) 37.33
168) 22.67
169) 77.33
170) 46.67
171) 22.67
172) 53.33
173) 70.59
174) 30
175) 85.71
176)

Own	Male	Female	Total
Yes	70.59%	29.41%	100.00%
No	48.28%	51.72%	100.00%
Total	53.33%	46.67%	100.00%

177)

Own	Male	Female	Total
Yes	30.00%	14.29%	22.67%
No	70.00%	85.71%	77.33%
Total	100.00%	100.00%	100.00%

178)

Own	Male	Female	Total
Yes	16.00%	6.67%	22.67%
No	37.33%	40.00%	77.33%
Total	53.33%	46.67%	100.00%

179) A
180) B

181) A
182) A
183) A
184) B
185) B
186) C
187) B
188) A
189) D