Essentials of Business Statistics 2nd edition Jaggia Test Bank

SKU: 9781260239515-TEST-BANK

Essentials of Business Statistics, 2e **(Jaggia)**
Chapter 2 Tabular and Graphical Methods

1) A frequency distribution for qualitative data groups these data into intervals called classes and records the number of observations that falls into each class.

Answer: FALSE
Explanation: A frequency distribution for qualitative data groups these data into categories and records the number of observations that falls into each category.
Difficulty: 1 Easy
Topic: Summarizing Qualitative Data
Learning Objective: 02-01 Summarize qualitative data by constructing a frequency distribution.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

2) The relative frequency for each category in a frequency distribution is calculated by dividing the category's frequency by the total number of observations (total frequencies).

Answer: TRUE
Explanation: The relative frequency of each category equals the proportion of observations in each category and is calculated by dividing the frequency by the total number of observations.
Difficulty: 1 Easy
Topic: Summarizing Qualitative Data
Learning Objective: 02-01 Summarize qualitative data by constructing a frequency distribution.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

3) The percent frequency for each category in a frequency distribution equals the category's frequency multiplied by 100%.

Answer: FALSE
Explanation: The percent frequency of a category equals the relative frequency of the category multiplied by 100%.
Difficulty: 1 Easy
Topic: Summarizing Qualitative Data
Learning Objective: 02-01 Summarize qualitative data by constructing a frequency distribution.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

4) A pie chart is a segmented circle that portrays the frequencies of the categories of some quantitative variable.

Answer: FALSE
Explanation: A pie chart is a segmented circle whose segments portray the relative (or percent) frequencies of the categories of some qualitative variable.
Difficulty: 1 Easy
Topic: Summarizing Qualitative Data
Learning Objective: 02-02 Construct and interpret a pie chart and a bar chart.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

5) A bar chart depicts the frequency or the relative frequency for each category of the qualitative variable as bars extending vertically from the horizontal axis, or extending horizontally from the vertical axis. The lengths of the bars are proportional to the values that are to be depicted.

Answer: TRUE
Explanation: A bar chart depicts the frequency or the relative frequency for each category as a series of horizontal or vertical bars.
Difficulty: 1 Easy
Topic: Summarizing Qualitative Data
Learning Objective: 02-02 Construct and interpret a pie chart and a bar chart.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

6) A bar chart may be displayed horizontally by placing each category on the vertical axis and marking the horizontal axis with an appropriate range of values for either frequency or relative frequency.

Answer: TRUE
Explanation: A bar chart depicts the frequency or the relative frequency for each category as a series of horizontal or vertical bars.
Difficulty: 2 Medium
Topic: Summarizing Qualitative Data
Learning Objective: 02-02 Construct and interpret a pie chart and a bar chart.
Bloom's: Understand
AACSB: Technology
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

7) To approximate the width of a class in the creation of a bar chart, we may use this formula:

$$\frac{\text{Maximum value - Minimum value}}{\text{Number of classes}}$$

Answer: FALSE
Explanation: This formula is used when we construct a frequency distribution or a histogram for quantitative data. The number of classes typically ranges from 5-20.
Difficulty: 1 Easy
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

8) For quantitative data, a relative frequency distribution identifies the proportion of observations that fall into each class.

Answer: TRUE
Explanation: Class relative frequency = Class frequency / Total number of observations.
Difficulty: 1 Easy
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

9) For quantitative data, a cumulative relative frequency distribution records the proportion (fraction) of values that fall below the upper limit of each class.

Answer: TRUE
Explanation: A cumulative relative frequency distribution represents the proportion of values that fall below the upper limit of each class.
Difficulty: 1 Easy
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

10) A histogram is a series of rectangles where the width and height of each rectangle represent respectively the frequency (or relative frequency) and the class width of the respective class.

Answer: FALSE
Explanation: A histogram is a series of rectangles where the width and height of each rectangle represent respectively the class width and frequency (or relative frequency) of the respective class.
Difficulty: 1 Easy
Topic: Summarizing Quantitative Data
Learning Objective: 02-04 Construct and interpret a histogram, a polygon, and an ogive.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

11) A polygon connects a series of neighboring points where each point represents the midpoint of a particular class and its associated frequency or relative frequency.

Answer: TRUE
Explanation: A polygon is graphical depiction of frequency and relative frequency distributions. It connects a series of neighboring points where each point represents the midpoint of a particular class and its associated frequency or relative frequency.
Difficulty: 1 Easy
Topic: Summarizing Quantitative Data
Learning Objective: 02-04 Construct and interpret a histogram, a polygon, and an ogive.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

12) An ogive is a graph that plots the cumulative frequency (or the cumulative relative frequency) of each class against the lower limit of the corresponding class.

Answer: FALSE
Explanation: An ogive is a graph that plots the cumulative frequency (or the cumulative relative frequency) of each class against the upper limit of the corresponding class.
Difficulty: 1 Easy
Topic: Summarizing Quantitative Data
Learning Objective: 02-04 Construct and interpret a histogram, a polygon, and an ogive.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

13) A stem-and-leaf diagram is useful in that it gives an overall picture of where quantitative data are centered and how the data are dispersed from the center.

Answer: TRUE
Explanation: A stem-and-leaf diagram is a visual method for displaying quantitative data and gives an idea how data are centered and dispersed from the center. It also maintains the original data values in the chart.
Difficulty: 1 Easy
Topic: Stem-and-Leaf Diagrams
Learning Objective: 02-05 Construct and interpret a stem-and-leaf diagram.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

14) A scatterplot is a graphical tool that helps determine whether or not two quantitative variables are related.

Answer: TRUE
Explanation: A scatterplot illustrates whether a relationship exists between two quantitative variables.
Difficulty: 1 Easy
Topic: Scatterplots
Learning Objective: 02-06 Construct and interpret a scatterplot.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

15) When constructing a scatterplot for two quantitative variables, we usually refer to the independent variable as x and the dependent variable as y. Typically, we graph x on the vertical axis and y on the horizontal axis.

Answer: FALSE
Explanation: When constructing a scatterplot for two quantitative variables, we usually refer to the independent variable as x and the dependent variable as y. Typically, we graph x on the horizontal axis and y on the vertical axis.
Difficulty: 1 Easy
Topic: Scatterplots
Learning Objective: 02-06 Construct and interpret a scatterplot.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

16) When summarizing quantitative data, it is always better to have up to 30 classes in a frequency distribution.

Answer: FALSE
Explanation: The total number of classes depends on the size of the data set, and it usually ranges from 5 to 20.
Difficulty: 1 Easy
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

17) Frequency distributions may be used to describe which of the following types of data?
A) Nominal and ordinal data only
B) Nominal and interval data only
C) Nominal, ordinal, and interval data only
D) Nominal, ordinal, interval, and ratio data

Answer: D
Explanation: Frequency distributions may be used to describe all types of data.
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

18) In order to summarize qualitative data, a useful tool to use is a(n) _____.
A) histogram
B) frequency distribution
C) polygon
D) ogive

Answer: B
Explanation: Histogram, ogive, and polygon describe quantitative data.
Difficulty: 2 Medium
Topic: Summarizing Qualitative Data
Learning Objective: 02-01 Summarize qualitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

19) For both qualitative and quantitative data, what is the difference between the relative frequency and the percent frequency?
A) The relative frequency equals the percent frequency multiplied by 100.
B) The percent frequency equals the relative frequency multiplied by 100.
C) As opposed to the relative frequency, the percent frequency is divided by the number of observations in the data set.
D) As opposed to the percent frequency, the relative frequency is divided by the number of observations in the data set.

Answer: B
Explanation: The percent frequency is defined as a relative frequency multiplied by 100.
Difficulty: 2 Medium
Topic: Summarizing Qualitative Data
Learning Objective: 02-01 Summarize qualitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

20) For which of the following data sets will a pie chart be *most* useful?
A) Heights of high school freshmen
B) Ambient temperatures in the U.S. Capitol Building
C) Percentage of net sales by product for Lenovo in 2016
D) Growth rates of firms in a particular industry

Answer: C
Explanation: Only percentage of net sales by product for Lenovo in 2016 looks at multiple categories of a single qualitative variable, in which the percentage of net sales by product may be meaningfully displayed.
Difficulty: 2 Medium
Topic: Summarizing Qualitative Data
Learning Objective: 02-02 Construct and interpret a pie chart and a bar chart.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

21) An auto parts chain asked customers to complete a survey rating the chain's customer service as average, above average, or below average. The results from the survey follow:

Average	Below Average	Average
Above Average	Above Average	Above Average
Below Average	Average	Average
Below Average	Average	Below Average
Below Average	Below Average	Below Average

The proportion of customers who felt the customer service was Average is approximately _____.
A) 0.20
B) 0.33
C) 0.46
D) 0.53

Answer: B
Explanation: Five of the 15 customers responded with a rating of Average. Thus, 5/15 = 0.33.
Difficulty: 2 Medium
Topic: Summarizing Qualitative Data
Learning Objective: 02-01 Summarize qualitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

22) An auto parts chain asked customers to complete a survey rating the chain's customer service as average, above average, or below average. The following table shows the results from the survey.

Average	Below Average	Average
Above Average	Above Average	Above Average
Below Average	Average	Average
Below Average	Average	Below Average
Below Average	Below Average	Below Average

A rating of Average or Above Average accounted for what percentage of responses to the survey?
A) 20%
B) 46.67%
C) 53.33%
D) 66.67%

Answer: C
Explanation: Five of the customers responded with a rating of Average, while three responded with a rating of Above Average. Therefore 8/15 = .5333 and the percentage is 53.33%
Difficulty: 2 Medium
Topic: Summarizing Qualitative Data
Learning Objective: 02-01 Summarize qualitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

23) The following is a list of five of the world's busiest airports by passenger traffic for 2015.

Name	Location	# of Passengers (in millions)
Hartsfield-Jackson	Atlanta, Georgia, United States	89
Capital International	Beijing, China	74
London Heathrow	London, United Kingdom	67
O'Hare	Chicago, Illinois, United States	66
Tokyo	Tokyo, Japan	64

The percentage of passenger traffic in the five busiest airports that occurred in Asia is approximately _____.
A) 18%
B) 21%
C) 25%
D) 38%

Answer: D
Explanation: Seventy-four million passengers flew out of Beijing, 64 million passengers flew out of Tokyo, and there is a total of 360 million passengers: (74 + 64)/360 = 38.33%. Wrong answers include the percent frequencies for Tokyo or Beijing individually.
Difficulty: 2 Medium
Topic: Summarizing Qualitative Data
Learning Objective: 02-01 Summarize qualitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

24) The following is a list of five of the world's busiest airports by passenger traffic for 2015.

Name	Location	# of Passengers (in millions)
Hartsfield-Jackson	Atlanta, Georgia, United States	89
Capital International	Beijing, China	74
London Heathrow	London, United Kingdom	67
O'Hare	Chicago, Illinois, United States	66
Tokyo	Tokyo, Japan	64

How many more millions of passengers flew out of Atlanta than flew out of Chicago?
A) 13
B) 21
C) 23
D) 25

Answer: C
Explanation: Eighty-nine million passengers flew out of Atlanta and 66 million passengers flew out of Chicago: $89 - 66 = 23$ million.
Difficulty: 2 Medium
Topic: Summarizing Qualitative Data
Learning Objective: 02-01 Summarize qualitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

25) A city in California spent $6 million repairing damage to its public buildings in 2017. The following table shows the categories where the money was directed.

Cause	Percent
Termites	22%
Water Damage	6%
Mold	12%
Earthquake	27%
Other	33%

How much did the city spend to fix damage caused by mold?
A) $360,000
B) $720,000
C) $1,440,000
D) $1,800,000

Answer: B
Explanation: Six million dollars was spent in total and 12% of the $6 million was spent on mold: $6,000,000 × 0.12 = $720,000.
Difficulty: 2 Medium
Topic: Summarizing Qualitative Data
Learning Objective: 02-01 Summarize qualitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

26) A city in California spent $6 million repairing damage to its public buildings in 2017. The following table shows the categories where the money was directed.

Cause	Percent
Termites	22%
Water Damage	6%
Mold	12%
Earthquake	27%
Other	33%

How much more did the city spend to fix damage caused by termites compared to the damage caused by water?
A) $360,000
B) $720,000
C) $960,000
D) $1,320,000

Answer: C
Explanation: The city spent 22% on termite damage and 6% on water damage. The difference is 16%. The total dollar value spent on the difference is 16% of $6 million—that is, $6,000,000 × 0.16 = $960,000.
Difficulty: 2 Medium
Topic: Summarizing Qualitative Data
Learning Objective: 02-01 Summarize qualitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

27) Students in Professor Smith's business statistics course have evaluated the overall effectiveness of the professor's instruction on a five-point scale, where a score of 1 indicates very poor performance and a score of 5 indicates outstanding performance. The raw scores are displayed in the accompanying table:

1	4	4	5	5	3	4	3	4	1
5	5	4	4	2	3	3	2	3	3
4	5	5	5	5	3	2	3	3	2

What is the most common score given in the evaluations?
A) 2
B) 3
C) 4
D) 5

Answer: B
Explanation: The score of 3 occurred nine times and the second-most frequent number was the score of 5 with eight occurrences.
Difficulty: 2 Medium
Topic: Summarizing Qualitative Data
Learning Objective: 02-01 Summarize qualitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

28) Students in Professor Smith's business statistics course have evaluated the overall effectiveness of the professor's instruction on a five-point scale, where a score of 1 indicates very poor performance and a score of 5 indicates outstanding performance. The raw scores are displayed in the accompanying table.

1	4	4	5	5	3	4	3	4	1
5	5	4	4	2	3	3	2	3	3
4	5	5	5	5	3	2	3	3	2

What percentage of students gave professor Smith an evaluation higher than 3?
A) 20%
B) 30%
C) 50%
D) 80%

Answer: C
Explanation: Fifteen of the 30 students, or 50%, gave an evaluation of 4 or 5.
Difficulty: 2 Medium
Topic: Summarizing Qualitative Data
Learning Objective: 02-01 Summarize qualitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

29) Students in Professor Smith's business statistics course have evaluated the overall effectiveness of the professor's instruction on a five-point scale, where a score of 1 indicates very poor performance and a score of 5 indicates outstanding performance. The raw scores are displayed in the accompanying table.

1	4	4	5	5	3	4	3	4	1
5	5	4	4	2	3	3	2	3	3
4	5	5	5	5	3	2	3	3	2

What percentage of students gave Professor Smith an evaluation of 2 or less?
A) 6.7%
B) 13.3%
C) 20%
D) 80%

Answer: C
Explanation: Six of the 30 students, or 20%, gave an evaluation of 1 or 2.
Difficulty: 2 Medium
Topic: Summarizing Qualitative Data
Learning Objective: 02-01 Summarize qualitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

30) Students in Professor Smith's business statistics course have evaluated the overall effectiveness of the professor's instruction on a five-point scale, where a score of 1 indicates very poor performance and a score of 5 indicates outstanding performance. The raw scores are displayed in the accompanying table:

1	4	4	5	5	3	4	3	4	1
5	5	4	4	2	3	3	2	3	3
4	5	5	5	5	3	2	3	3	2

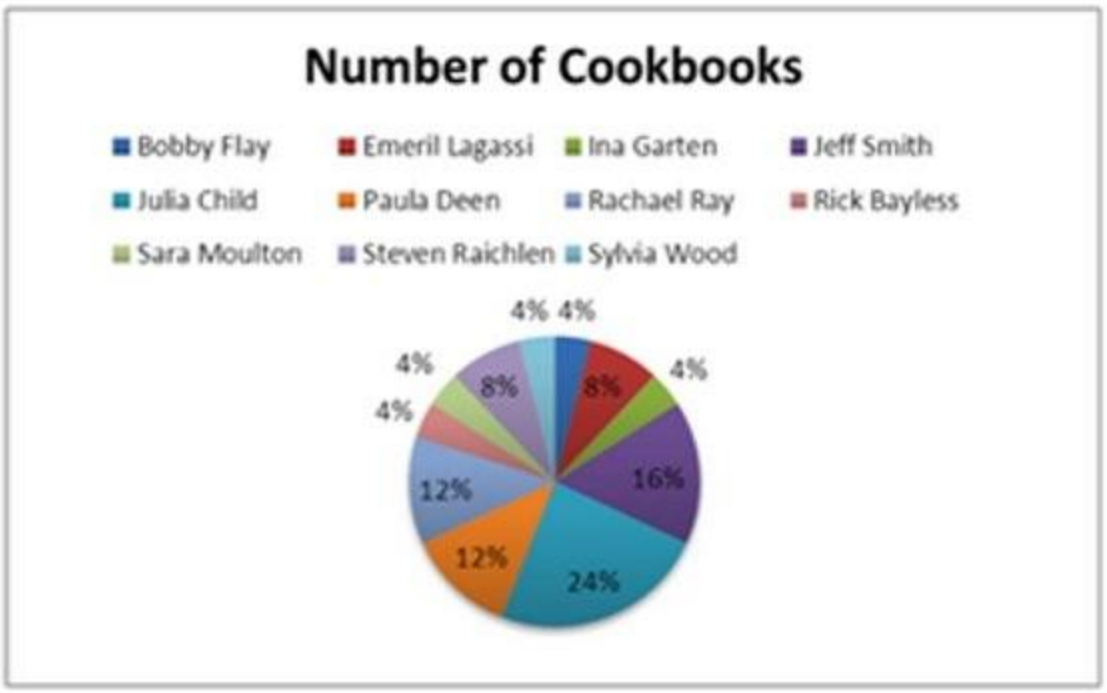
What is the relative frequency of the students who gave Professor Smith an evaluation of 3?
A) 0.3
B) 0.5
C) 9
D) 15

Answer: A
Explanation: Nine of the 30 students gave Professor Smith a 3. The relative frequency is thus 9/30 = 0.3.
Difficulty: 2 Medium
Topic: Summarizing Qualitative Data
Learning Objective: 02-01 Summarize qualitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

31) In the following pie chart representing a collection of cookbooks, which author has more titles?



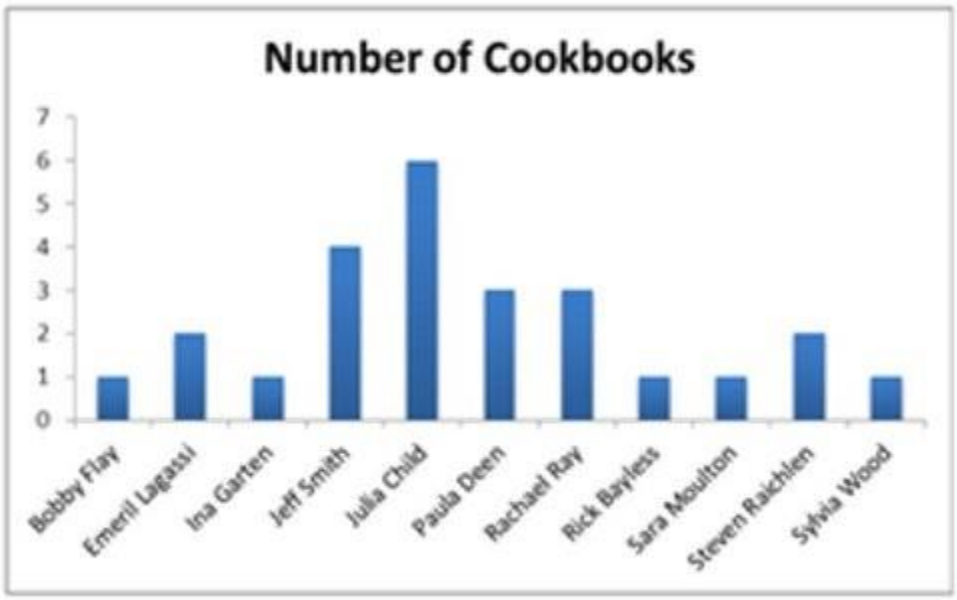
A) Jeff Smith
B) Julia Child
C) Rachael Ray
D) Paula Deen

Answer: B
Explanation: The color corresponding to Julia Child has the largest segment in the pie chart; 24%.
Difficulty: 1 Easy
Topic: Summarizing Qualitative Data
Learning Objective: 02-02 Construct and interpret a pie chart and a bar chart.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

32) The accompanying chart shows the numbers of books written by each author in a collection of cookbooks. What type of chart is this?



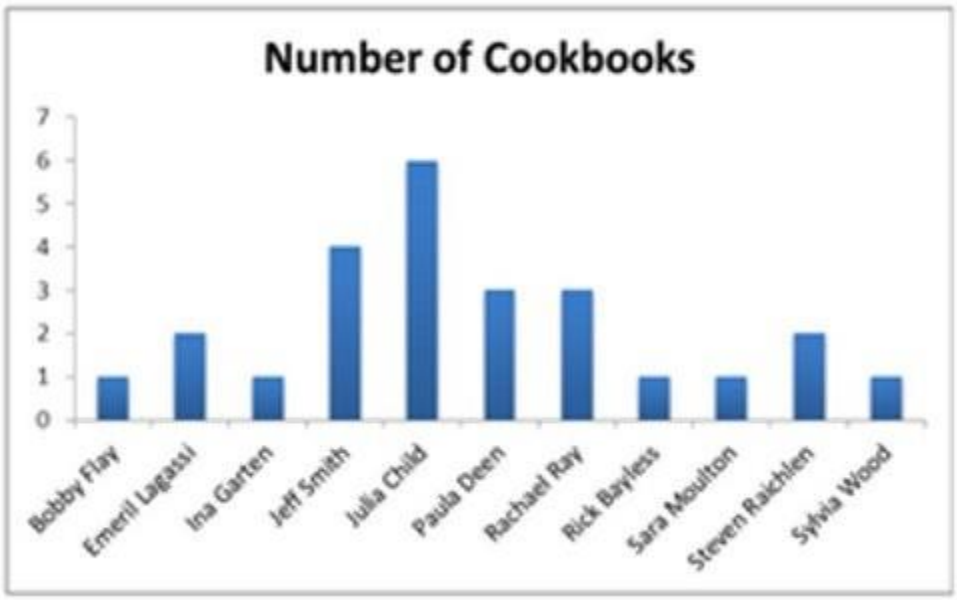
A) Bar chart for qualitative data
B) Bar chart for quantitative data
C) Frequency histogram for qualitative data
D) Frequency histogram for quantitative data

Answer: A
Explanation: The data are qualitative and the chart is a vertical bar chart (sometimes referred to as a column chart).
Difficulty: 1 Easy
Topic: Summarizing Qualitative Data
Learning Objective: 02-02 Construct and interpret a pie chart and a bar chart.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

33) The accompanying chart shows the number of books written by each author in a collection of cookbooks. What type of data is being represented?



A) Quantitative, ordinal
B) Quantitative, ratio
C) Qualitative, nominal
D) Qualitative, ordinal

Answer: C
Explanation: The data are qualitative and nominal (no ordering is present in the categories).
Difficulty: 2 Medium
Topic: Summarizing Qualitative Data
Learning Objective: 02-02 Construct and interpret a pie chart and a bar chart.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

34) Horizontal bar charts are constructed by placing _____
A) each category on the vertical axis and the appropriate range of values on the horizontal axis.
B) each category on the horizontal axis and the appropriate range of values on the vertical axis.
C) each interval of values on the vertical axis and the appropriate range of values on the horizontal axis.
D) each category on the horizontal axis and the number of classes on the horizontal axis.

Answer: A
Explanation: The category is on the vertical axis and the range of values is on the horizontal axis.
Difficulty: 2 Medium
Topic: Summarizing Qualitative Data
Learning Objective: 02-02 Construct and interpret a pie chart and a bar chart.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

35) When constructing a frequency distribution for quantitative data, which of the following is not correct?
A) classes are mutually exclusive
B) classes are collectively exhaustive
C) the total number of classes usually ranges from 5 to 20
D) the width of each class should not be the same for each class interval

Answer: D
Explanation: Check the guidelines for constructing a frequency distribution: classes should be mutually exclusive, exhaustive, and the total number of classes should be between 5 and 20. Generally, the width of each class should be the same for each class interval. If the class width varied, comparisons between the numbers of observations in different intervals would be misleading.
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

36) Which of the following best describes a frequency distribution for qualitative data?
A) It groups data into histograms and records the proportion (fraction) of observations in each histogram.
B) It groups data into categories and records the number of observations in each category.
C) It groups data into intervals called classes and records the proportion (fraction) of observations in each class.
D) It groups data into intervals called classes and records the number of observations in each class.

Answer: B
Explanation: A frequency distribution for qualitative data groups data into categories and records the number of observations in each category.
Difficulty: 2 Medium
Topic: Summarizing Qualitative Data
Learning Objective: 02-01 Summarize qualitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

37) What graphical tool is *best* used to display the relative frequency of grouped quantitative data?
A) Ogive
B) Pie chart
C) Bar chart
D) Histogram

Answer: D
Explanation: Histograms are used to display the frequency or relative frequency of quantitative data. An ogive is used to display the cumulative frequency or cumulative relative frequency, while the bar chart and pie chart display qualitative data.
Difficulty: 1 Easy
Topic: Summarizing Quantitative Data
Learning Objective: 02-04 Construct and interpret a histogram, a polygon, and an ogive.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

38) The following data represent scores on a pop quiz in a business statistics section.

45	66	74	72	62	44	55	70	33	82
56	56	84	16	16	47	32	32	17	37

Suppose the data on quiz scores will be grouped into five classes. The width of the classes for a frequency distribution or histogram is the closest to _____.
A) 10
B) 12
C) 14
D) 16

Answer: C
Explanation: Class width = (Max −Min)/(# of classes) = (84 −16)/5 = 13.6 ≈ 14 (We always round up.)
Difficulty: 1 Easy
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

39) The following data represent scores on a pop quiz in a statistics section:

45	66	74	72	62	44	55	70	33	82
56	56	84	16	16	47	32	32	17	37

Suppose the data are grouped into five classes, and one of them will be "30 up to 44." that is, $\{x; 30 \leq x < 44\}$. The frequency of this class is _____.
A) 2
B) 3
C) 4
D) 5

Answer: C
Explanation: There are four data values that are at least 30 but less than 44. They are 32, 32, 33, and 37.
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

40) The following data represent scores on a pop quiz in a statistics section.

45	66	74	72	62	44	55	70	33	82
56	56	84	16	16	47	32	32	17	37

Suppose the data are grouped into five classes, and one of them will be "30 up to 44" —that is, $\{x; 30 \leq x < 44\}$. The relative frequency of this class is _____.
A) 0.20
B) 0.25
C) 40%
D) 50%

Answer: A
Explanation: There are four data values that are at least 30 but less than 44. They are 32, 32, 33, and 37. So the relative frequency is 4/20 = 0.20.
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

41) The following data represent the recent sales price (in $1,000s) of 24 homes in a Midwestern city.

187	125	165	170	230	139	195	229
239	135	188	210	228	172	127	139
122	181	196	237	115	199	170	239

Suppose the data on house prices will be grouped into five classes. The width of the classes for a frequency distribution or histogram is the closest to _____.
A) 15
B) 20
C) 25
D) 30

Answer: C
Explanation: Width of class = (max value − min value)/(# of classes)
Width = (239 − 115)/5 = 24.8; so round up to 25.
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

42) The following data represent the recent sales price (in $1,000s) of 24 homes in a Midwestern city

187	125	165	170	230	139	195	229
239	135	188	210	228	172	127	139
122	181	196	237	115	199	170	239

Suppose the data are grouped into five classes, and one of them will be "115 up to 140." -that is, $\{x; 115 \leq x < 140\}$. The relative frequency of this class is _____.
A) 6/24
B) 7/24
C) 6
D) 7

Answer: B
Explanation: There are seven data values that are at least 115 but less than 140. They are 115, 122, 125, 127, 135, 139, and 139. So the relative frequency of this class is 7/24.
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

43) The following data represent the recent sales price (in $1,000s) of 24 homes in a Midwestern city.

187	125	165	170	230	139	195	229
239	135	188	210	228	172	127	139
122	181	196	237	115	199	170	239

Suppose the data are grouped into five classes, and one of them will be "165 up to 190." -that is, $\{x; 165 \leq x < 190\}$. The frequency of this class is _____.
A) 6/24
B) 7/24
C) 6
D) 7

Answer: D
Explanation: There are seven data values that are at least 165 but less than 190. They are 165, 170, 170, 172, 181, 187, and 188.
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

44) Thirty students at Eastside High School took the SAT on the same Saturday. Their raw scores are given next.

1,450	1,620	1,800	1,740	1,650	1,710	1,900	1,910	1,950	1,820
1,800	2,010	1,780	1,840	1,490	1,590	2,350	2,260	1,870	1,530
1,620	1,480	2,390	1,640	1,830	1,950	2,000	1,830	1,980	2,100

Consider a frequency distribution of the data that groups the data in classes of 1,400 up to 1,600, 1,600 up to 1,800, 1,800 up to 2,000, and so on. How many students scored at least 1,800 but less than 2,000?
A) 3
B) 7
C) 12
D) 18

Answer: C
Explanation: Twelve students are in the 1,800 up to 2,000 class.
Difficulty: 1 Easy
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

45) Thirty students at Eastside High School took the SAT on the same Saturday. Their raw scores are given next.

1,450	1,620	1,800	1,740	1,650	1,710	1,900	1,910	1,950	1,820
1,800	2,010	1,780	1,840	1,490	1,590	2,350	2,260	1,870	1,530
1,620	1,480	2,390	1,640	1,830	1,950	2,000	1,830	1,980	2,100

Consider a frequency distribution of the data that groups the data in classes of 1,400 up to 1,600, 1,600 up to 1,800, 1,800 up to 2,000, and so on. What percent of students scored less than 2,200?
A) 10%
B) 20%
C) 80%
D) 90%

Answer: D
Explanation: Only three students scored above 2,200; namely 2,010, 2,390, and 2,350. Therefore twenty-seven of the 30 students, or 90%, scored less than 2,200.
Difficulty: 3 Hard
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Apply
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

46) Thirty students at Eastside High School took the SAT on the same Saturday. Their raw scores are given next.

1,450	1,620	1,800	1,740	1,650	1,710	1,900	1,910	1,950	1,820
1,800	2,010	1,780	1,840	1,490	1,590	2,350	2,260	1,870	1,530
1,620	1,480	2,390	1,640	1,830	1,950	2,000	1,830	1,980	2,100

Consider a frequency distribution of the data that groups the data in classes of 1,400 up to 1,600, 1,600 up to 1,800, 1,800 up to 2,000, and so on. What is the approximate relative frequency of students who scored more than 1600 but less than 1800?
A) 0.17
B) 0.23
C) 0.40
D) 0.77

Answer: B
Explanation: Seven of the 30 students, or about 0.23, scored between 1,600 and 1,800.
Difficulty: 3 Hard
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Apply
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

47) Thirty students at Eastside High School took the SAT on the same Saturday. Their raw scores are given next.

1,450	1,620	1,800	1,740	1,650	1,710	1,900	1,910	1,950	1,820
1,800	2,010	1,780	1,840	1,490	1,590	2,350	2,260	1,870	1,530
1,620	1,480	2,390	1,640	1,830	1,950	2,000	1,830	1,980	2,100

Consider a frequency distribution of the data that groups the data in classes of 1,400 up to 1,600, 1,600 up to 1,800, 1,800 up to 2,000, and so on. What graphical tool would you use to display the cumulative relative frequency of the grouped data?
A) Ogive
B) Polygon
C) Pie chart
D) Bar chart

Answer: A
Explanation: Ogives are used to display cumulative frequency or cumulative relative frequency of quantitative data. Polygons are used to display the frequency and relative frequency of quantitative data, while pie charts and bar charts are used to display qualitative data.
Difficulty: 1 Easy
Topic: Summarizing Quantitative Data
Learning Objective: 02-04 Construct and interpret a histogram, a polygon, and an ogive.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

48) Consider the following frequency distribution.

Class	Frequency
12 up to 15	3
15 up to 18	6
18 up to 21	3
21 up to 24	4
24 up to 27	4

The total number of observations in the frequency distribution is _____.
A) 5
B) 6
C) 20
D) 24

Answer: C
Explanation: Sum the frequency column to obtain the total number of observations in the frequency distribution.
Difficulty: 1 Easy
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

49) Consider the following frequency distribution.

Class	Frequency
12 up to 15	3
15 up to 18	6
18 up to 21	3
21 up to 24	4
24 up to 27	4

How many observations are at least 15 but less than 18?
A) 3
B) 4
C) 5
D) 6

Answer: D
Explanation: There are six observations in the class 15 up to 18.
Difficulty: 1 Easy
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

50) Consider the following frequency distribution.

Class	Frequency
12 up to 15	3
15 up to 18	6
18 up to 21	3
21 up to 24	4
24 up to 27	4

How many observations are less than 21?
A) 6
B) 12
C) 18
D) 24

Answer: B
Explanation: We sum the frequencies in the first three rows: 3 + 6 + 3 = 12.
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

51) Consider the following frequency distribution.

Class	Frequency
12 up to 15	3
15 up to 18	6
18 up to 21	3
21 up to 24	4
24 up to 27	4

What proportion of the observations are at least 15 but less than 18?
A) 0.20
B) 0.25
C) 0.30
D) 0.35

Answer: C
Explanation: Six observations of the 20 total observations fall in the class of 15 up to 18, so the proportion is 6/20 = 0.30.
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

52) Consider the following frequency distribution.

Class	Frequency
12 up to 15	3
15 up to 18	6
18 up to 21	3
21 up to 24	4
24 up to 27	4

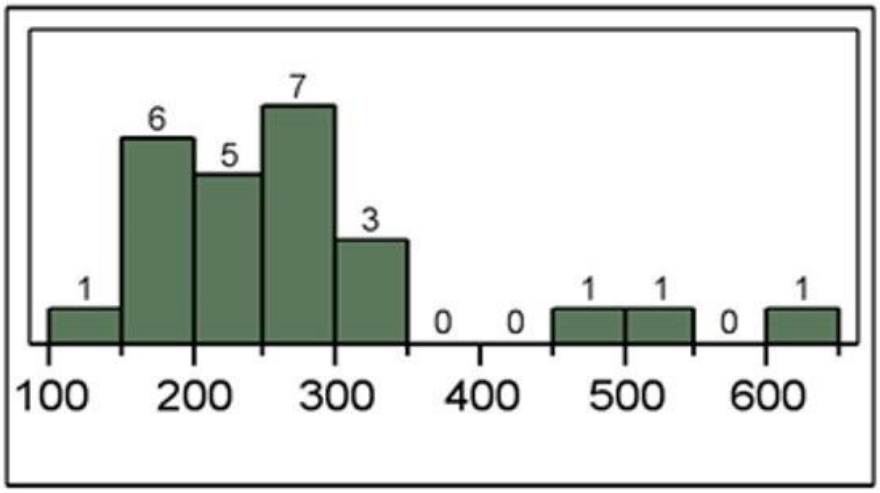
What proportion of the observations are less than 21?
A) 0.30
B) 0.60
C) 0.90
D) 1.00

Answer: B
Explanation: We sum the frequencies in the first three rows and then divide by 20: (3 + 6 + 3)/20.
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

53) The following histogram represents the number of pages in each book within a collection. What is the frequency of books containing at least 250 but fewer than 300 pages?



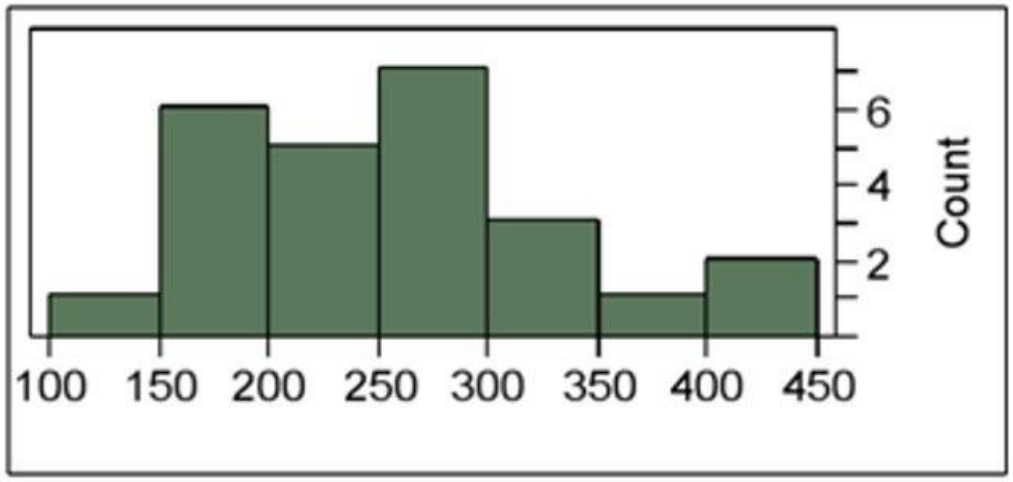
A) 5
B) 6
C) 7
D) 12

Answer: C
Explanation: Use frequencies shown on the histogram for different number of pages in the book.
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

54) The following histogram represents the number of pages in each book within a collection. What is the frequency of books containing at least 200 but fewer than 250 pages?



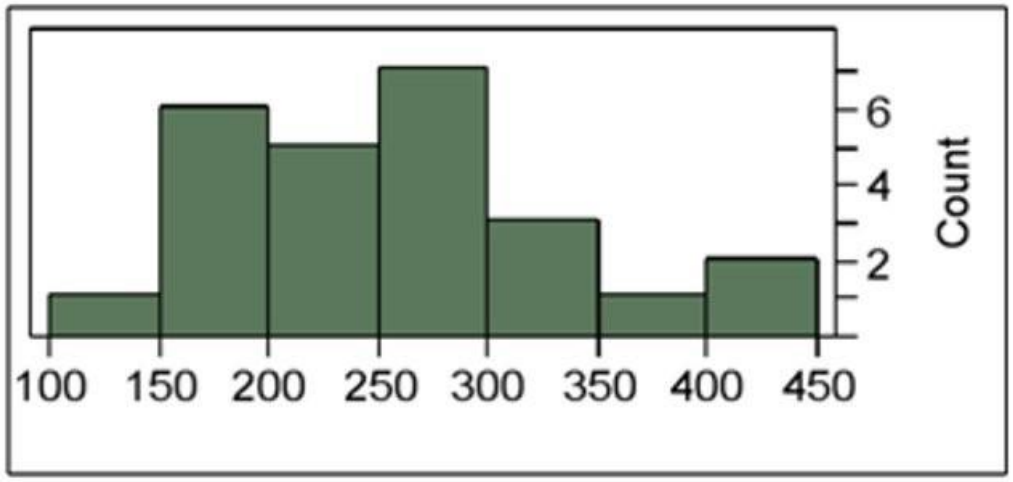
A) 4
B) 5
C) 6
D) 7

Answer: B
Explanation: Check the frequency for 200-250 pages' interval.
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

55) The following histogram represents the number of pages in each book within a collection. What is the frequency of books containing at least 250 but fewer than 400 pages?



A) 7
B) 10
C) 11
D) 12

Answer: C
Explanation: Add the frequencies, 7, 3, and 1, for the classes 250 up to 300, 300 up to 350, and 350 up to 400.
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

56) An analyst constructed the following frequency distribution on the monthly returns for 50 selected stocks.

Class (in percent)	Frequency
–10 up to 0	8
0 up to 10	25
10 up to 20	15
20 up to 30	2

The number of stocks with returns of 0% up to 10% is _____.
A) 2
B) 8
C) 15
D) 25

Answer: D
Explanation: There are 25 stocks in the class interval 0% up to 10%.
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

57) An analyst constructed the following frequency distribution on the monthly returns for 50 selected stocks.

Class (in percent)	Frequency
–10 up to 0	8
0 up to 10	25
10 up to 20	15
20 up to 30	2

The number of stocks with returns of less than 10% is _____.
A) 8
B) 25
C) 33
D) 48

Answer: C
Explanation: Add the frequencies in the first two classes: 8 + 25 = 33.
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

58) An analyst constructed the following frequency distribution on the monthly returns for 50 selected stocks:

Class (in percent)	Frequency
–10 up to 0	8
0 up to 10	25
10 up to 20	15
20 up to 30	2

The proportion of stocks with returns of 0% up to 10% is _____.
A) 0.30
B) 0.50
C) 0.66
D) 0.80

Answer: B
Explanation: There are 25 stocks with returns of 0% up to 10%, therefore the proportion is 25/50 = 0.50.
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

59) An analyst constructed the following frequency distribution on the monthly returns for 50 selected stocks.

Class (in percent)	Frequency
–10 up to 0	8
0 up to 10	25
10 up to 20	15
20 up to 30	2

The proportion of stocks with returns of less than 10% is _____.
A) 0.30
B) 0.50
C) 0.66
D) 0.80

Answer: C
Explanation: There are 33 stocks with returns less than 10%, therefore the proportion is (8 + 25)/50 = 0.66.
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

60) Automobiles traveling on a road with a posted speed limit of 65 miles per hour are checked for speed by a state police radar system. The following table is a frequency distribution of speeds.

Speed (miles per hour)	Frequency
45 up to 55	50
55 up to 65	325
65 up to 75	275
75 up to 85	25

How many of the cars travelled less than 75 miles per hour?
A) 275
B) 325
C) 650
D) 675

Answer: C
Explanation: Sum of the frequencies in the first three classes = 275 + 325 + 50 = 650.
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

61) Automobiles traveling on a road with a posted speed limit of 65 miles per hour are checked for speed by a state police radar system. The following table is a frequency distribution of speeds.

Speed (miles per hour)	Frequency
45 up to 55	50
55 up to 65	325
65 up to 75	275
75 up to 85	25

What proportion of the cars travelled at least 55 but less than 65 miles per hour?
A) 0.33
B) 0.48
C) 0.56
D) 0.80

Answer: B
Explanation: The relative frequency for the second class = 325/675 = 0.48.
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

62) When using a polygon to graph quantitative data, what does each point represent?
A) The lower limit of a particular class and its width
B) The midpoint of a particular class and its associated frequency or relative frequency
C) The midpoint of a particular class and its associated cumulative frequency or cumulative relative frequency
D) The upper limit of a particular class and its associated cumulative frequency or cumulative relative frequency

Answer: B
Explanation: Polygon shows the midpoints of each class and its associated frequency or relative frequency.
Difficulty: 1 Easy
Topic: Summarizing Quantitative Data
Learning Objective: 02-04 Construct and interpret a histogram, a polygon, and an ogive.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

63) The accompanying table shows students' scores for the final exam in a history course.

Scores	Cumulative Frequency
50 up to 60	12
60 up to 70	33
70 up to 80	64
80 up to 90	88
90 up to 100	100

How many of the students scored at least 70 but less than 90?
A) 24
B) 31
C) 55
D) 88

Answer: C
Explanation: Eighty-eight students scored less than 90, and 33 students scored less than 70. The total that scored at least 70 but less than 90 equals the number that scored less than 90 minus the number that scored less than 70: 88 − 33 = 55.
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

64) The following table shows the number of payroll jobs the government added during the years it added jobs (since 1973). The jobs are in thousands.

Jobs Added	Frequency
100 up to 200	5
200 up to 300	8
300 up to 400	7
400 up to 500	5
500 up to 600	1

Approximately what percent of the time did the government add 200,000 or more jobs?
A) 19%
B) 50%
C) 77%
D) 81%

Answer: D
Explanation: Sum the frequencies of the second, third, fourth, and fifth intervals and divide by the total of 26 to get $(8 + 7 + 5 + 1)/26 = 21/26 \approx 0.81$, or 81%.
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

65) The accompanying relative frequency distribution represents the last year car sales for the sales force at Kelly's Mega Used Car Center.

Car Sales	Relative Frequency
35 up to 45	0.07
45 up to 55	0.15
55 up to 65	0.31
65 up to 75	0.22
75 up to 85	0.25

If Kelly's employs 100 salespeople, how many of these salespeople have sold at least 35 but fewer than 45 cars in the last year?
A) 5
B) 7
C) 10
D) 15

Answer: B
Explanation: Frequency of the first class = 0.07(100) = 7 employees.
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

66) The accompanying relative frequency distribution represents the last year car sales for the sales force at Kelly's Mega Used Car Center.

Car Sales	Relative Frequency
35 up to 45	0.07
45 up to 55	0.15
55 up to 65	0.31
65 up to 75	0.22
75 up to 85	0.25

If Kelly's employs 100 salespeople, how many of these salespeople have sold at least 45 but fewer than 65 cars in the last year?
A) 15
B) 31
C) 40
D) 46

Answer: D
Explanation: Sum of the frequencies in the second and third classes = (0.15 + 0.31)100 = 46 employees.
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

67) The accompanying relative frequency distribution represents the last year car sales for the sales force at Kelly's Mega Used Car Center.

Car Sales	Relative Frequency
35 up to 45	0.07
45 up to 55	0.15
55 up to 65	0.31
65 up to 75	0.22
75 up to 85	0.25

If Kelly's employs 100 salespeople, how many of these salespeople have sold at least 65 cars in the last year?
A) 22
B) 25
C) 31
D) 47

Answer: D
Explanation: Sum of the frequencies in the last two classes = (0.22 + 0.25)100 = 47 employees.
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

68) When displaying quantitative data, what is an ogive used to plot?
A) Frequency or relative frequency of each class against the midpoint of the corresponding class
B) Cumulative frequency or cumulative relative frequency of each class against the upper limit of the corresponding class
C) Frequency or relative frequency of each class against the lower limit of the corresponding class
D) Cumulative frequency or cumulative relative frequency of each class against the lower limit of the corresponding class

Answer: B
Explanation: An ogive shows cumulative frequency or cumulative relative frequency.
Difficulty: 1 Easy
Topic: Summarizing Quantitative Data
Learning Objective: 02-04 Construct and interpret a histogram, a polygon, and an ogive.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

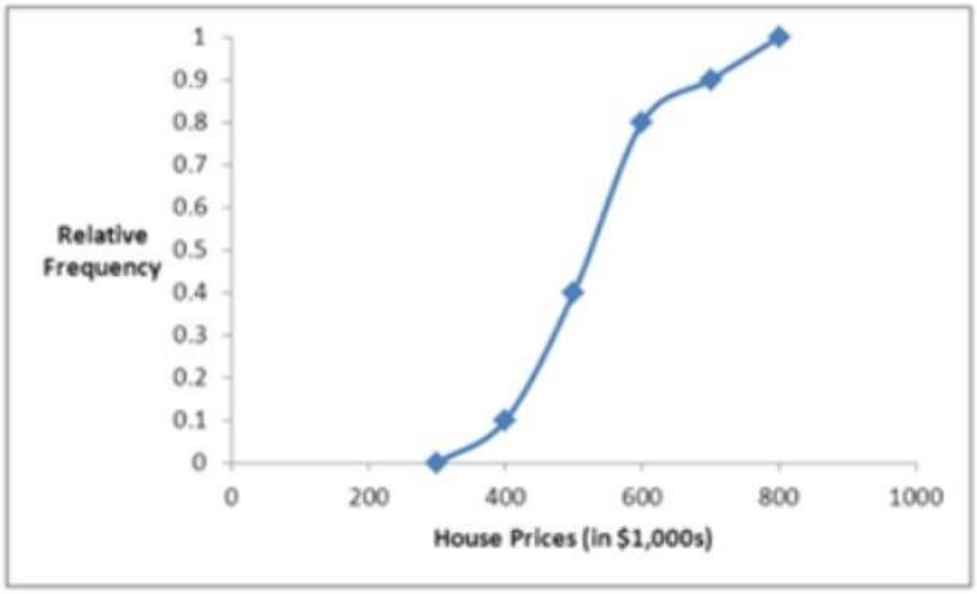
69) How does an ogive differ from a polygon?
A) An ogive is used for qualitative data, while a polygon is used for quantitative data.
B) An ogive is used for quantitative data, while a polygon is used for qualitative data.
C) An ogive is a graphical depiction of a frequency or relative distribution, while a polygon is a graphical depiction of a cumulative frequency or cumulative relative frequency distribution.
D) An ogive is a graphical depiction of a cumulative frequency or cumulative relative frequency distribution, while a polygon is a graphical depiction of a frequency or relative frequency distribution.

Answer: D
Explanation: An ogive is used to show cumulative frequencies or cumulative relative frequencies and polygon is graphical depiction of just a frequency or relative frequency.
Difficulty: 2 Medium
Topic: Summarizing Qualitative Data
Learning Objective: 02-04 Construct and interpret a histogram, a polygon, and an ogive.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

70) Recent home sales in a suburb of Washington, D.C., are shown in the accompanying ogive.



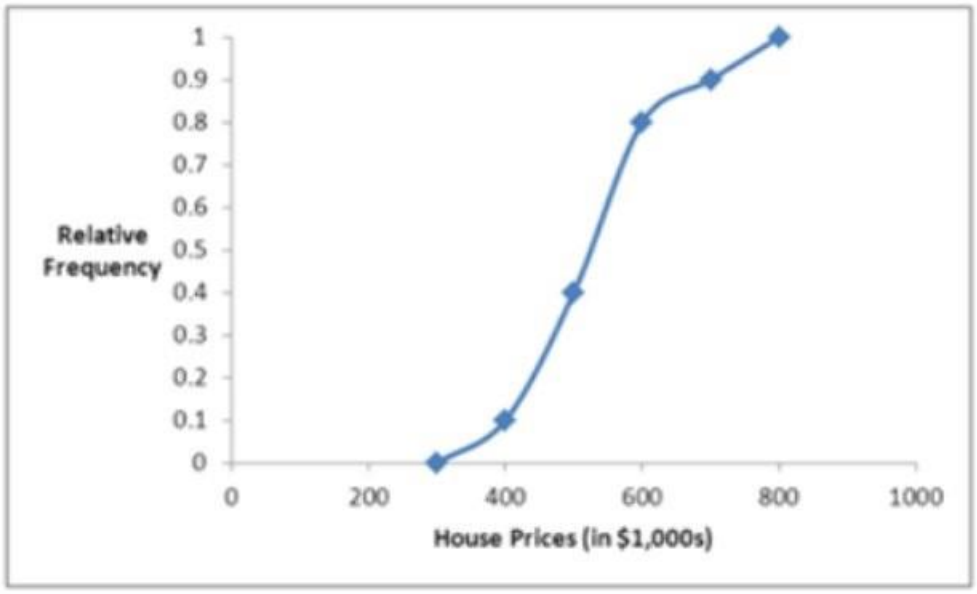
Approximate the percentage of houses that sold for less than $600,000.
A) 60%
B) 70%
C) 80%
D) 90%

Answer: C
Explanation: Draw a vertical line from the tick mark for 600 on the *x* axis; this crosses the ogive at approximately 0.8.
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-04 Construct and interpret a histogram, a polygon, and an ogive.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

71) Recent home sales in a suburb of Washington, D.C., are shown in the accompanying ogive.



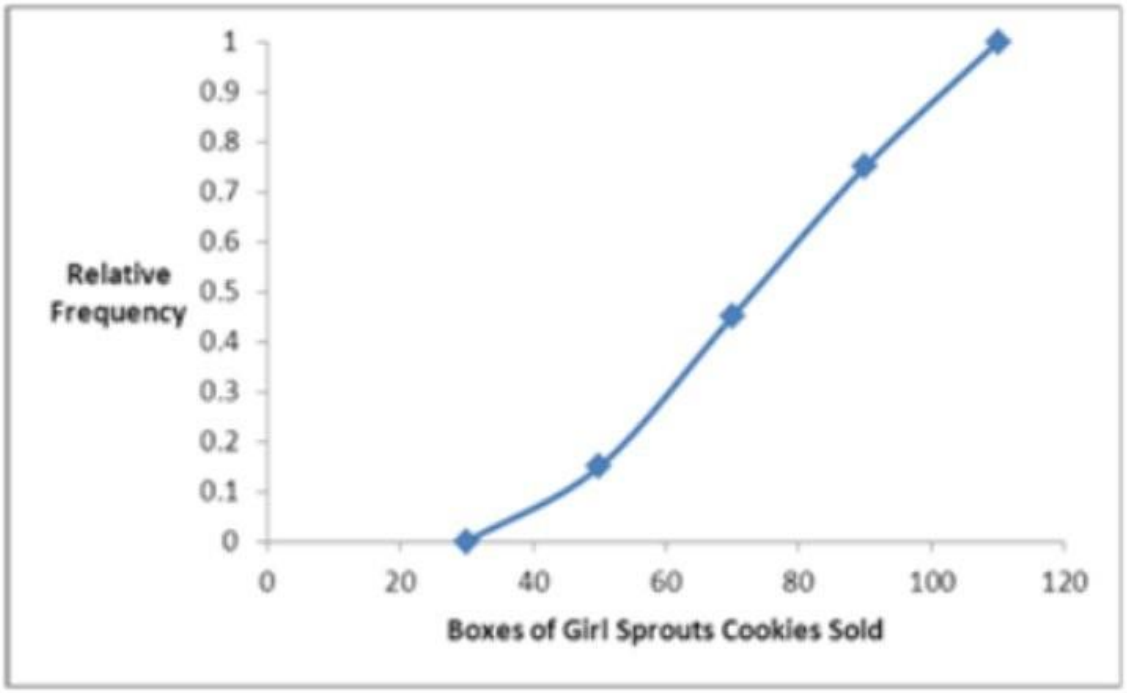
Approximate the percentage of houses that sold for more than $500,000.
A) 40%
B) 50%
C) 60%
D) 70%

Answer: C
Explanation: Draw a vertical line from about 500 on the *x* axis; this crosses the ogive at approximately 0.4. So about 40% of the houses sold for less than $500,000, which implies that about 60% sold for more than $500,000.
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-04 Construct and interpret a histogram, a polygon, and an ogive.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

72) The organization of the Girl Sprouts has completed its annual cookie drive. The sales are reported in the accompanying ogive.



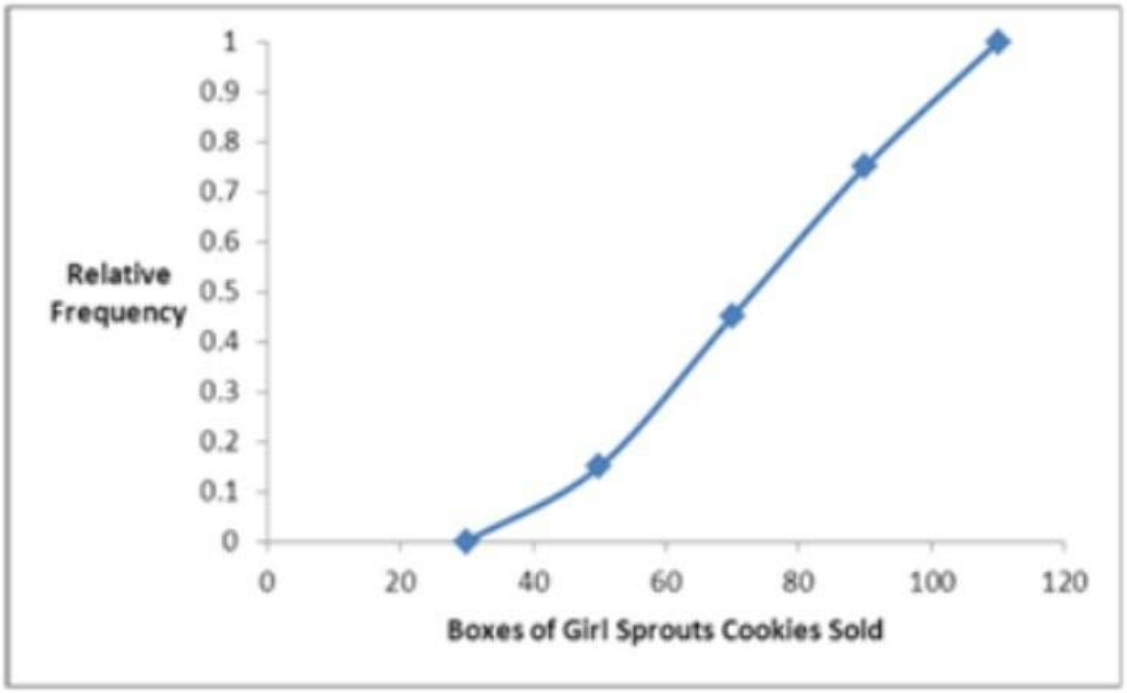
Approximate the percentage of girls who sold less than 90 boxes of cookies.
A) 45%
B) 55%
C) 65%
D) 75%

Answer: D
Explanation: Draw a vertical line from the approximate location for 90 on the x axis; this crosses the ogive at approximately 0.75. Therefore approximately 75% of the Girl Sprouts sold less than 90 boxes of cookies.
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-04 Construct and interpret a histogram, a polygon, and an ogive.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

73) The organization of the Girl Sprouts has completed its annual cookie drive. The sales are reported in the accompanying ogive.



Approximate the percentage of girls who sold more than 70 boxes of cookies.
A) 45%
B) 55%
C) 65%
D) 75%

Answer: B
Explanation: Draw a vertical line from the approximate location for 70 on the *x* axis; this crosses the ogive at approximately 0.45, so about 45% of the Girl Sprouts sold fewer than 70 boxes, which implies that about 55% of the Girl Sprouts sold more than 70 boxes.
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-04 Construct and interpret a histogram, a polygon, and an ogive.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

74) A stem-and-leaf diagram is constructed by separating each value of a data set into two parts. What are these parts?
A) Stem consisting of the last digit and leaf consisting of the leftmost digits
B) Stem consisting of the leftmost digits and leaf consisting of the second digit
C) Stem consisting of the second digit and leaf consisting of the last digit
D) Stem consisting of the leftmost digits and the leaf consists of the remaining digits.

Answer: D
Explanation: In the stem-and-leaf diagram, the stem consists of the leftmost digits, and the leaf consists of the last digit.
Difficulty: 1 Easy
Topic: Stem-and-Leaf Diagrams
Learning Objective: 02-05 Construct and interpret a stem-and-leaf diagram.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

75) In the accompanying stem-and-leaf diagram, the values in the stem and leaf portions represent 10s and 1s digits, respectively.

Stem	Leaf
1	3 5 6 8 8 9
2	0 1 2 2 3 5 6 6 8 8 8 9
3	0 1 2 2 8
4	2 2

Which of the following numbers appears in the stem-and-leaf diagram?
A) 3800
B) 380
C) 38
D) 3.8

Answer: C
Explanation: In the stem-and-leaf diagram, the stem consists of the leftmost digits, and the leaf consists of the last digit.
Difficulty: 1 Easy
Topic: Stem-and-Leaf Diagrams
Learning Objective: 02-05 Construct and interpret a stem-and-leaf diagram.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

76) In the accompanying stem-and-leaf diagram, the values in the stem-and-leaf portions represent 10s and 1s digits, respectively.

Stem	Leaf
1	3 5 6 8 8 9
2	0 1 2 2 3 5 6 6 8 8 8 9
3	0 1 2 2 8
4	2 2

What would be the frequency of the class 35 up to 45, that is $\{x; 35 \leq x < 45\}$?
A) 0
B) 1
C) 2
D) 3

Answer: D
Explanation: The observations in this class would be 38, 42, and 42.
Difficulty: 2 Medium
Topic: Stem-and-Leaf Diagrams
Learning Objective: 02-05 Construct and interpret a stem-and-leaf diagram.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

77) In the accompanying stem-and-leaf diagram, the values in the stem-and-leaf portions represent 10s and 1s digits, respectively.

Stem	Leaf
1	3 5 6 8 8 9
2	0 1 2 2 3 5 6 6 8 8 8 9
3	0 1 2 2 8
4	2 2

How many values are at least 25 but less than 35?
A) 10
B) 11
C) 12
D) 13

Answer: B
Explanation: There are 11 values that are at least 25 but less than 35. These values are 25, 26, 26, 28, 28, 28, 29, 30, 31, 32, and 32.
Difficulty: 2 Medium
Topic: Stem-and-Leaf Diagrams
Learning Objective: 02-05 Construct and interpret a stem-and-leaf diagram.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

78) In the accompanying stem-and-leaf diagram, the values in the stem-and-leaf portions represent 10s and 1s digits, respectively.

Stem	Leaf
1	3 5 6 8 8 9
2	0 1 2 2 3 5 6 6 8 8 8 9
3	0 1 2 2 8
4	2 2

Find the frequency associated with data values that are more than 28.
A) 8
B) 9
C) 10
D) 11

Answer: A
Explanation: There are 8 values that are more than 28. These values are 29, 30, 31, 32, 32, 38, 42, and 42.
Difficulty: 2 Medium
Topic: Stem-and-Leaf Diagrams
Learning Objective: 02-05 Construct and interpret a stem-and-leaf diagram.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

79) In the accompanying stem-and-leaf diagram, the values in the stem-and-leaf portions represent 10s and 1s digits, respectively.

Stem	Leaf
1	3 5 6 8 8 9
2	0 1 2 2 3 5 6 6 8 8 8 9
3	0 1 2 2 8
4	2 2

The stem-and-leaf diagram shows that the distribution is _____.
A) symmetric
B) positively skewed
C) negatively skewed
D) None of the above

Answer: B
Explanation: A stem-and-leaf diagram is similar to a histogram turned on its side with the added benefit of retaining the original values. When turned on its side, it reveals a distribution with a few extreme values to the right. Thus, it is positively skewed.
Difficulty: 2 Medium
Topic: Stem-and-Leaf Diagrams
Learning Objective: 02-05 Construct and interpret a stem-and-leaf diagram.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

80) The following stem-and-leaf diagram shows the speeds in miles per hour (mph) of 14 cars approaching a toll booth on a bridge in Oakland, California.

Stem	Leaf
2	5 6 6 7 9
3	4 7 7 8 9
4	0 0 2 3

How many of the cars were traveling faster than 25 mph but slower than 40 mph?
A) 8
B) 9
C) 10
D) 12

Answer: B
Explanation: There are 9 cars that were traveling faster than 25 mph but slower than 40 mph. These values are 26, 26, 27, 29, 34, 37, 37, 38, and 39.
Difficulty: 2 Medium
Topic: Stem-and-Leaf Diagrams
Learning Objective: 02-05 Construct and interpret a stem-and-leaf diagram.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

81) The following stem-and-leaf diagram shows the last 20 dividend payments (in cents) paid by Procter and Gamble.

Stem	Leaf
3	1 5 5 5 5
4	0 0 0 0 4 4 4 4 4 8 8 8
5	3 3 3

The most common dividend payment is _____.
A) 35 cents
B) 40 cents
C) 44 cents
D) 48 cents

Answer: C
Explanation: The most common dividend payment by Procter and Gamble was 44 cents; occurred five times.
Difficulty: 2 Medium
Topic: Stem-and-Leaf Diagrams
Learning Objective: 02-05 Construct and interpret a stem-and-leaf diagram.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

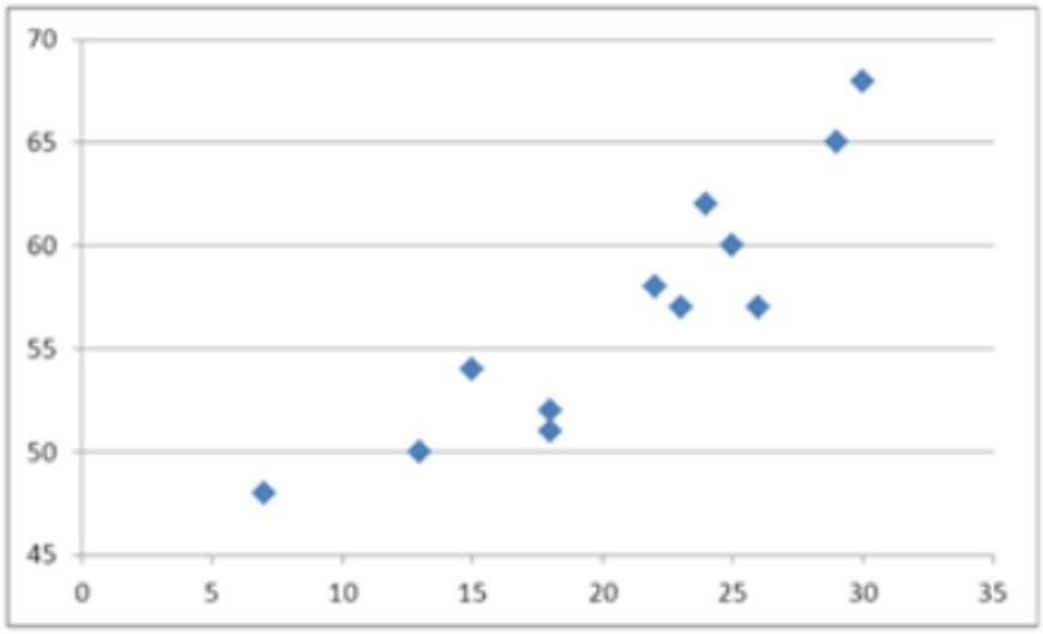
82) What may not be revealed from a scatterplot?
A) No relationship exists between two variables
B) A linear relationship exists between two variables
C) A curvilinear relationship exists between two variables
D) Cause and effect relationship between two variables

Answer: D
Explanation: All of the first three relationships mentioned may be seen in a scatterplot. The relationships can be categorized as positive or negative. However, a scatterplot can't be used to establish a cause and effect relationship between two variables.
Difficulty: 2 Medium
Topic: Scatterplots
Learning Objective: 02-06 Construct and interpret a scatterplot.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

83) What type of relationship is indicated in the scatterplot?



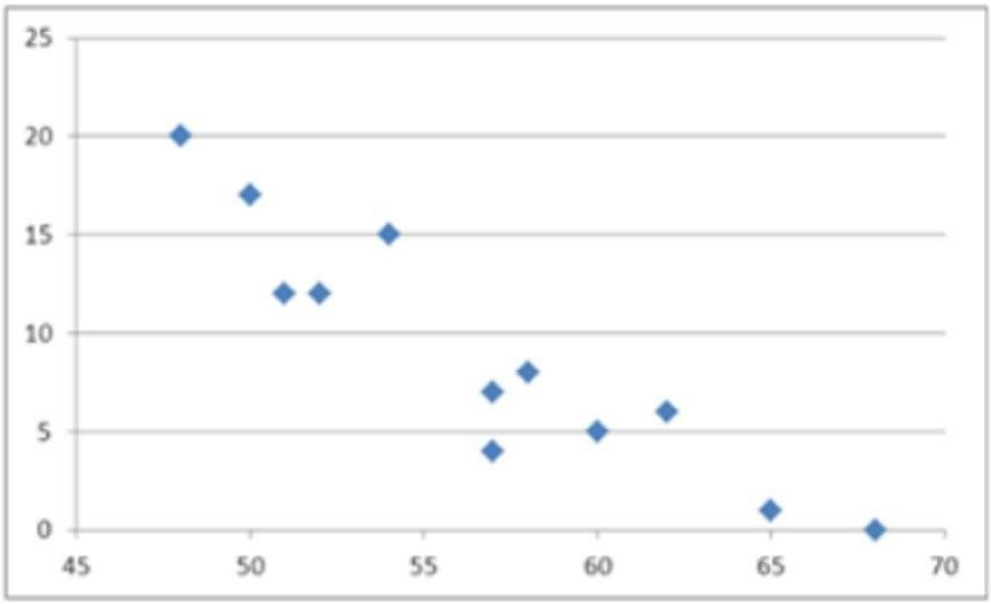
A) No relationship
B) A negative linear relationship
C) A negative curvilinear relationship
D) A positive linear or slightly curvilinear relationship

Answer: D
Explanation: When looking at the plotted points, the variables have a positive relationship (*y* tends to increase as *x* increases), and the relationship appears linear or slightly curvilinear.
Difficulty: 2 Medium
Topic: Scatterplots
Learning Objective: 02-06 Construct and interpret a scatterplot.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

84) What type of relationship is indicated in the scatterplot?



A) No relationship
B) A negative linear relationship
C) A positive linear relationship
D) A positive curvilinear relationship

Answer: B
Explanation: When looking at the plotted points, the variables have a negative relationship (*y* tends to decrease as *x* increases), and the relationship appears linear.
Difficulty: 2 Medium
Topic: Scatterplots
Learning Objective: 02-06 Construct and interpret a scatterplot.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

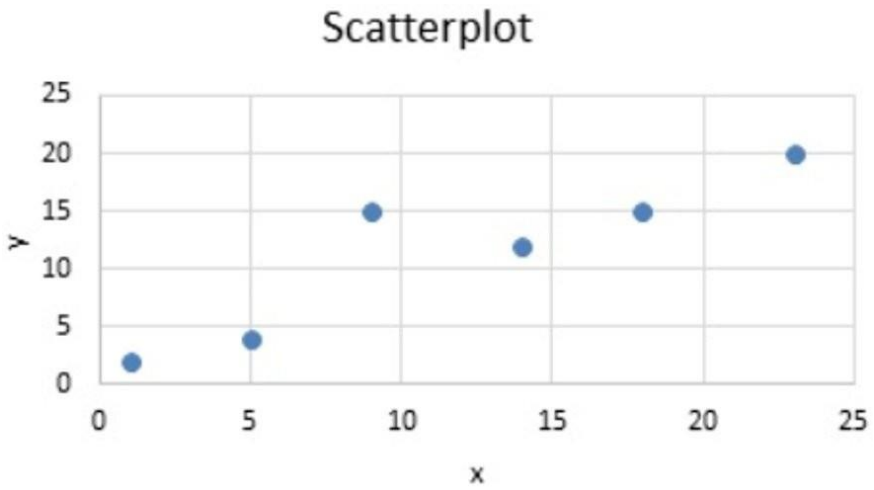
Essentials of Business Statistics 2nd edition Jaggia Test Bank

85) Use the following data to construct a scatterplot. What type of relationship is implied?

x	1	5	9	14	18	23
y	2	4	15	12	15	20

A) No relationship
B) A positive relationship
C) A negative relationship
D) Not enough information to answer

Answer: B
Explanation: As x increases, y in general increases. Therefore, the data have a positive relationship. Even though the point (9,15) is not in line with the rest of the points, overall it shows an increasing positive relationship.

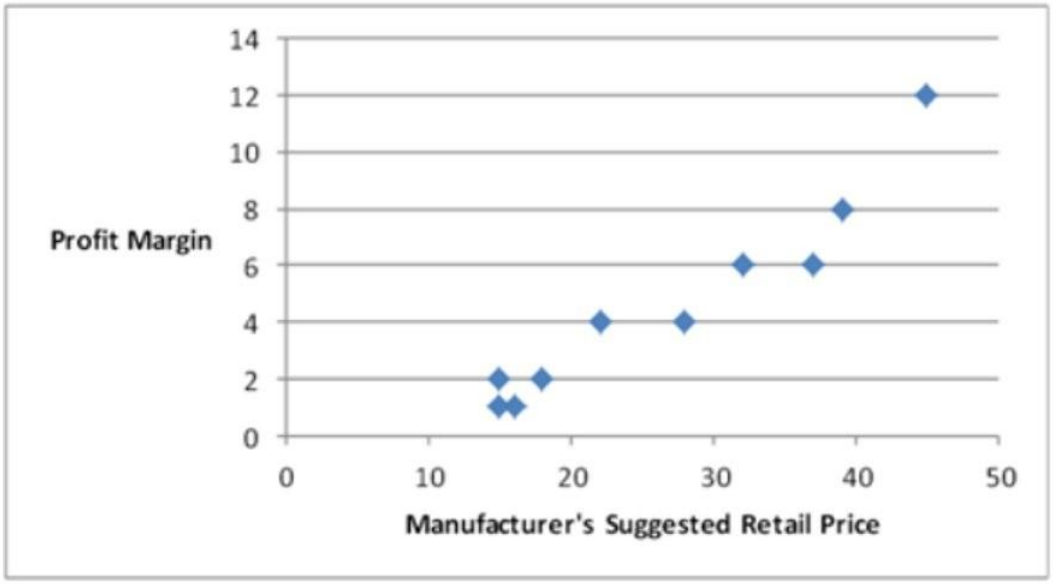


Difficulty: 3 Hard
Topic: Scatterplots
Learning Objective: 02-06 Construct and interpret a scatterplot.
Bloom's: Analyze
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

86) A car dealership created a scatterplot showing the manufacturer's retail price and profit margin for the cars they have on their lot.



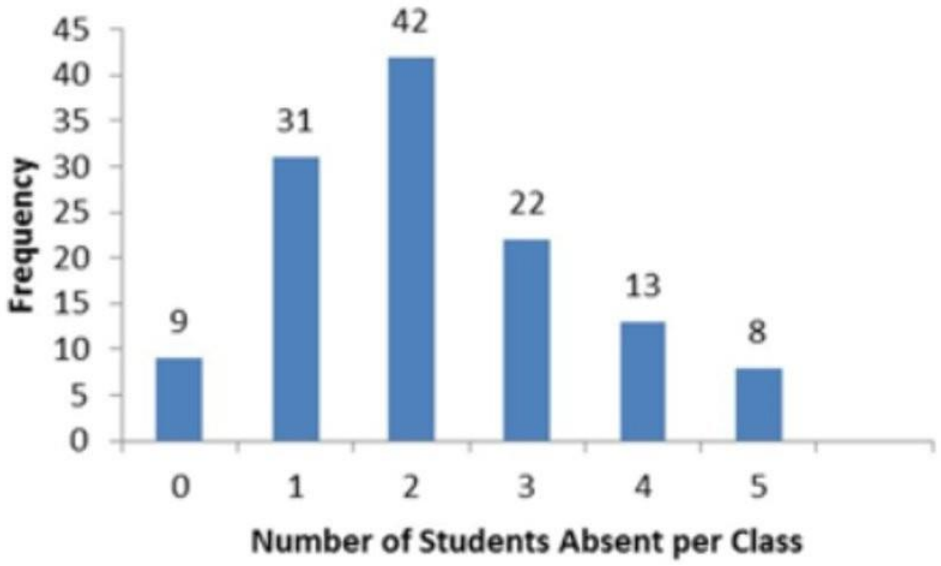
As the manufacturer's suggested retail price increases, the profit margin tends to _____.
A) increase
B) decrease
C) stay the same
D) None of the answer choices are correct

Answer: A
Explanation: The graph shows that the higher the MSRP, the higher the profit margin.
Difficulty: 1 Easy
Topic: Scatterplots
Learning Objective: 02-06 Construct and interpret a scatterplot.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

87) The statistics professor has kept attendance records and recorded the number of absent students per class. The recorded data is displayed in the following bar chart with the frequency of each number of absent students shown above the bars.



How many statistics classes had three or more students absent?
A) 8
B) 13
C) 22
D) 43

Answer: D
Explanation: A frequency distribution for qualitative data groups data into categories and records the number of observations that fall into each category. Bars 3, 4, & 5 gives you 22 + 13 + 8 = 43 statistics classes.
Difficulty: 2 Medium
Topic: Summarizing Qualitative Data
Learning Objective: 02-02 Construct and interpret a pie chart and a bar chart.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

88) The following table shows the percentage of e-mail that is sent each day of the business week according to an Intermedia survey.

Day	Percentage
Monday	15%
Tuesday	23%
Wednesday	22%
Thursday	21%
Friday	19%

Which of the following best displays this data?
A) Horizontal bar chart
B) Vertical bar chart
C) Pie chart
D) Histogram

Answer: C
Explanation: A pie chart is the best to display these data – it shows segments that portray the relative frequencies presented as percentages.
Difficulty: 1 Easy
Topic: Summarizing Qualitative Data
Learning Objective: 02-02 Construct and interpret a pie chart and a bar chart.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

89) The following frequency distribution displays the weekly sales of a certain brand of television at an electronics store.

Number Sold	Frequency
01-05	3
06-10	7
11-15	14
16-20	22
21-25	4

How many weeks of data are included in this frequency distribution?
A) 25
B) 50
C) 75
D) 100

Answer: B
Explanation: If we sum the frequency column, we obtain the sample size of 50.
Difficulty: 1 Easy
Topic: Summarizing Qualitative Data
Learning Objective: 02-01 Summarize qualitative data by constructing a frequency distribution.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

90) The following frequency distribution shows the frequency of the asking price, in thousands of dollars, for current homes on the market in a particular city.

Asking Price	Frequency
$350 up to $400	12
$400 up to $450	9
$450 up to $500	17
$500 up to $550	11
$550 up to $600	6

What percentage of houses has an asking price between $350,000 and under $400,000?
A) 16.4%
B) 21.8%
C) 30.9%
D) 33.3%

Answer: B
Explanation: A class relative frequency is equal to the class frequency divided by total number of observations. Therefore, 12 / (12 + 9 + 17 + 11 + 6) = 12 / 55 = 0.218 which implies that 21.8% of houses has an asking price between $350,000 and under $400,000.
Difficulty: 3 Hard
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Apply
AACSB: Knowledge Application
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

91) The following frequency distribution shows the frequency of the asking price, in thousands of dollars, for current homes on the market in a particular city.

Asking Price	Frequency
$350 up to $400	12
$400 up to $450	9
$450 up to $500	17
$500 up to $550	11
$550 up to $600	6

What percentage of houses has an asking price under $550,000?
A) 50.5%
B) 69.1%
C) 89.1%
D) 95.0%

Answer: C
Explanation: A class relative frequency is equal to the class frequency divided by total number of observations. Therefore, (12 + 9 + 17 + 11) / (12 + 9 + 17 + 11 + 6) = 49 / 55 = 0.891 which implies that 89.1% of houses has an asking price under $550,000.
Difficulty: 3 Hard
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Apply
AACSB: Knowledge Application
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

92) A survey conducted by CBS news asked 1,026 respondents: "What would you do with an unexpected tax refund?" The responses are summarized in the following table.

Category	Percentage
Pay off debts	47%
Put it in the bank	30%
Spend it	11%
I never get a refund	10%
Other	2%

How many people will either put it in the bank or spend it?
A) 421
B) 411
C) 113
D) 482

Answer: A
Explanation: The percent frequency is the percent of observations in a category. To get a frequency, the percent frequency should be multiplied by the number of observations. Therefore, the number of people who will either put the refund in the bank or spend it = (30% + 11%) * 1026 = 421.
Difficulty: 2 Medium
Topic: Summarizing Qualitative Data
Learning Objective: 02-01 Summarize qualitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

93) The manager at a water park constructed the following frequency distribution to summarize attendance in July and August.

Attendance	Frequency
1,000 up to 1,250	5
1,250 up to 1,500	6
1,500 up to 1,750	10
1,750 up to 2,000	20
2,000 up to 2,250	15
2,250 up to 2,500	4

Which of the following is the most likely attendance range?
A) 2,000 up to 2,500
B) 1,000 up to 1,750
C) 1,250 up to 1,750
D) 1,750 up to 2,000

Answer: B
Explanation: The most likely attendance range is 1,000 up to 1,750 with a frequency = 5+6+10 = 21, which is higher than the other ranges in A, C, and D above.
Difficulty: 3 Hard
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Apply
AACSB: Knowledge Application
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

94) The Statistical Abstract of the United States provided the following frequency distribution of the number of people who live below the poverty level by region.

Region	Number of People (in 1000s)
Northeast	6,166
Midwest	7,237
South	15,501
West	8,372

What is the percentage of people who live below the poverty level in the West or Midwest?
A) 35.96%
B) 41.87%
C) 41.58%
D) 31.96%

Answer: B
Explanation: The percent frequency is the percent of observations in a category (or categories), and it equals the frequency divided by the total number of observations and multiplied by 100. Therefore, (7,237 + 8,372) / 37,276 = 0.4187, which implies that 41.87% of people live below the poverty level in the West or Midwest.
Difficulty: 2 Medium
Topic: Summarizing Qualitative Data
Learning Objective: 02-01 Summarize qualitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

95) Consider the following stem-and-leaf diagram.

Stem	Leaf
3	1 1 1 4 5
4	4 6 7
5	0 0 4 5 6 6 8 9
6	1 3 3 6

Which data value occurs most often?
A) 1
B) 56
C) 31
D) 63

Answer: C
Explanation: The value 31 occurred three times; more than any other value.
Difficulty: 2 Medium
Topic: Stem-and-Leaf Diagrams
Learning Objective: 02-05 Construct and interpret a stem-and-leaf diagram.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

96) Consider the following stem-and-leaf diagram.

Stem	Leaf
3	1 1 1 4 5
4	4 6 7
5	0 0 4 5 6 6 8 9
6	1 3 3 6

Which of the following statements is correct?
A) The range 50-59 contains the most values.
B) There are a total of 10 data values in this data set.
C) The data value that occurs most often is 50.
D) The largest data value is 59.

Answer: A
Explanation: The range 50-59 contains 8 values; more values than other ranges in the stem-and-leaf diagram.
Difficulty: 2 Medium
Topic: Stem-and-Leaf Diagrams
Learning Objective: 02-05 Construct and interpret a stem-and-leaf diagram.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

97) For qualitative data, a frequency distribution groups data into _____ and records the number of _____that fall into each category.

Answer: categories; observations
Explanation: For qualitative data, a frequency distribution groups data into categories and records the number of observations that fall into each category.
Difficulty: 1 Easy
Topic: Summarizing Qualitative Data
Learning Objective: 02-01 Summarize qualitative data by constructing a frequency distribution.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

98) A _____ and a _____ are two widely used graphical representations for qualitative data.

Answer: bar chart, pie chart
Explanation: Graphically, we use a pie chart or a bar chart to display qualitative data.
Difficulty: 1 Easy
Topic: Summarizing Qualitative Data
Learning Objective: 02-02 Construct and interpret a pie chart and a bar chart.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

99) When constructing a frequency distribution for quantitative data, classes are mutually exclusive and _____.

Answer: exhaustive
Explanation: Each group for quantitative data may not overlap another group (mutually exclusive) and every observation has to fit into one of the groups (exhaustive).
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

100) A _____ is a table that shows the number of data observations that fall into specific interval.

Answer: frequency distribution
Explanation: Check the guidelines for constructing frequency distribution.
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

101) The shape of most data distributions can be categorized as either _____ or _____.

Answer: symmetric; skewed
Explanation: Data shapes can be symmetric of skewed (positively or negatively).
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-04 Construct and interpret a histogram, a polygon, and an ogive.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

102) A stem-and-leaf diagram most resembles a(n) _____.

Answer: histogram
Explanation: Like histograms, stem-and-leaf diagrams give an overall picture of where the data are centered, how data are dispersed, and the overall shape of the data.
Difficulty: 2 Medium
Topic: Stem-and-Leaf Diagrams
Learning Objective: 02-05 Construct and interpret a stem-and-leaf diagram.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

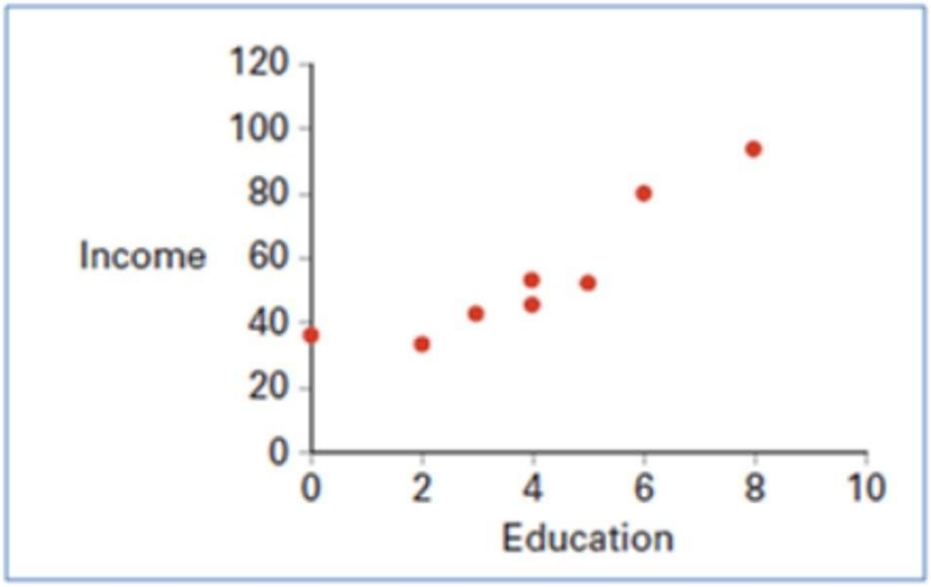
103) A scatterplot depicts a positive _____ relationship, if as x increases, y tends to increase at an increasing rate.

Answer: curvilinear (nonlinear)
Explanation: A positive curvilinear (nonlinear) relationship exists between variables x and y, when y tends to increase in increasing rate as x increases.
Difficulty: 2 Medium
Topic: Scatterplots
Learning Objective: 02-06 Construct and interpret a scatterplot.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

104)



Using the scatterplot above we observe a _____ linear relationship between two variables: Education and Income.

Answer: positive
Explanation: A positive linear relationship exists between variables x and y, when y tends to increase as x increases.
Difficulty: 2 Medium
Topic: Scatterplots
Learning Objective: 02-06 Construct and interpret a scatterplot.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

105) A survey of 400 unemployed people was completed at a job fair. Each person was asked to categorize his or her job interests. The accompanying relative frequency distribution was constructed.

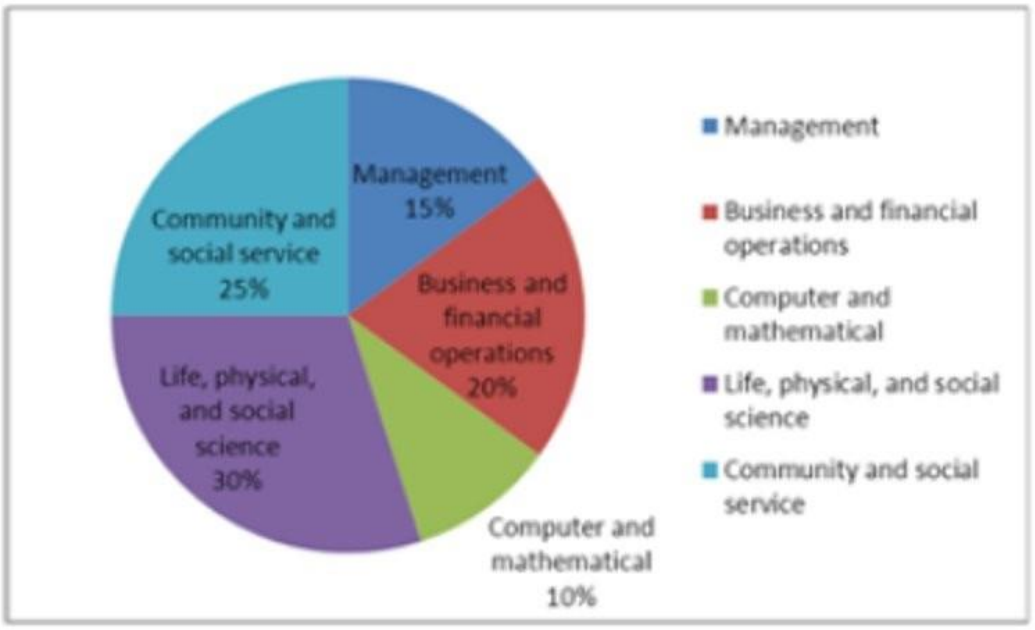
Field	Relative Frequency
Management	0.15
Business and financial operations	0.20
Computer and mathematical	0.10
Life, physical, and social science	0.30
Community and social service	0.25

a. How many of these people designated that computer and mathematical industry was their job interest?
b. What percentage of these people designated community and social services as their job interest?
c. Create a pie chart to display the relative frequency distribution
d. Create a bar chart to the display the frequency distribution.

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

Answer:
a. (400).(.10) = 40
b.(.25).(100)% = 25%
c.



To construct a pie chart in Excel, select both columns of the relative frequency distribution, and then select Insert > Pie > 2-D Pie and choose the graph on the top left. See instructions in text for other formatting options.
d. First, convert the relative frequency distribution into a frequency distribution by multiplying the relative frequencies by the sample size (400). To construct a bar chart in Excel, select both columns of the frequency distribution, and then select Insert > Column > 2-D Column. Choose the option at the top left. See instructions in text for other formatting options.
Explanation: In order to calculate the frequency for a class, multiply the relative frequency of that class by the sample size (400). We convert relative frequencies into percentages by multiplying by 100. For instructions of using Excel to construct a pie chart and a bar chart, see the text.
Difficulty: 1 Easy
Topic: Summarizing Qualitative Data
Learning Objective: 02-01 Summarize qualitative data by constructing a frequency distribution.; 02-02 Construct and interpret a pie chart and a bar chart.
Bloom's: Remember
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

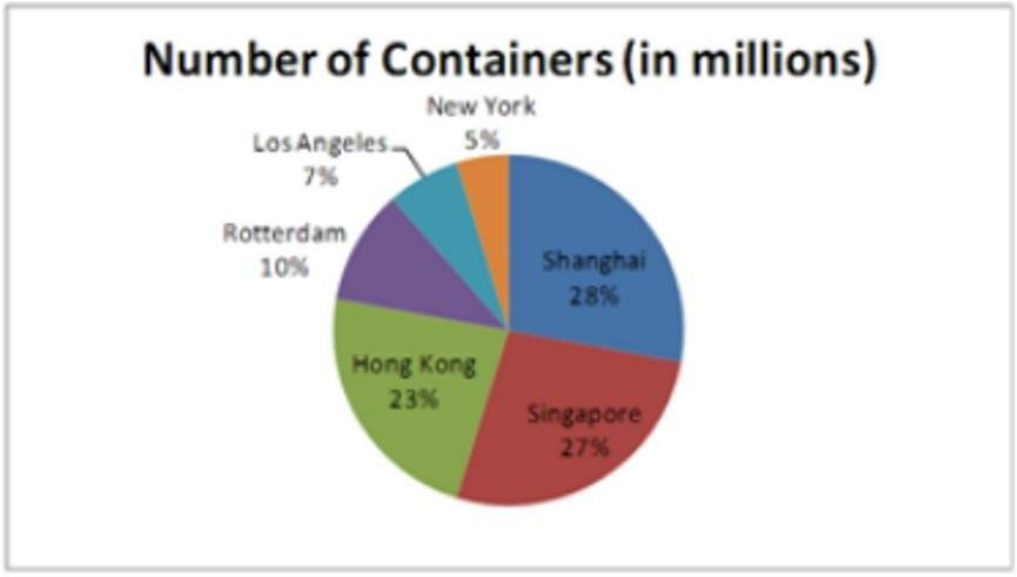
Essentials of Business Statistics 2nd edition Jaggia Test Bank

106) The following table lists some of the busiest ports in the world based on the number of containers in Year 1.

Location of Port	Number of Containers (in millions)
Shanghai	29
Singapore	28
Hong Kong	24
Rotterdam	11
Los Angeles	7
New York	5

Construct a pie chart to summarize the data. Approximately what percent of the total number of containers go through Hong Kong?

Answer: Twenty-three percent of the containers traveled through Hong Kong.

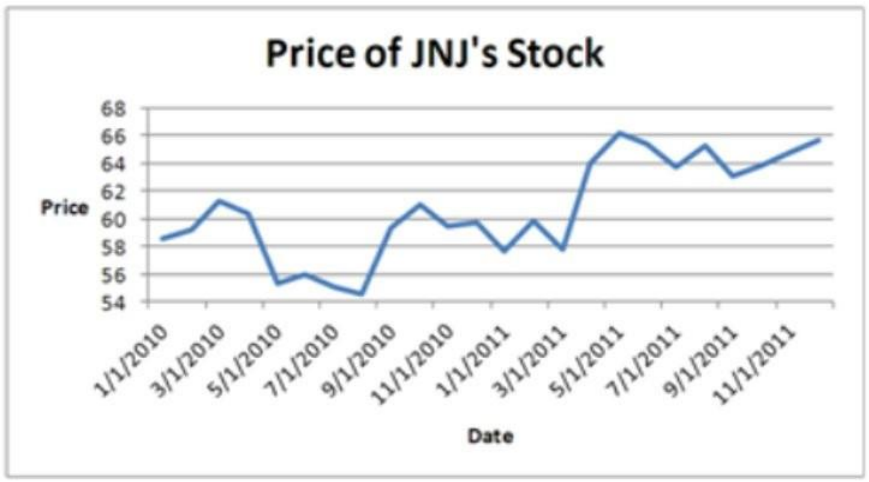


Explanation: First, convert the frequency distribution into a relative frequency distribution by dividing the frequencies by the sample size (104), then convert the relative frequency distribution in a percent distribution by multiplying the relative frequencies by 100. Then, to construct a pie chart in Excel, select both columns of the percent distribution, and then select Insert > Pie > 2-D Pie. Choose the option at the top left. See instructions in the text for other formatting options. Twenty-four million out of 104 million containers went through Hong Kong: 24/104 = 0.23 or 23%.
Difficulty: 2 Medium
Topic: Summarizing Qualitative Data
Learning Objective: 02-02 Construct and interpret a pie chart and a bar chart.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

107) Johnson and Johnson (JNJ) is a consumer staples company. Consumer staples are products people need and buy even during times of financial hardship. Do you think JNJ will have a volatile stock price? Does the accompanying graph accurately depict the volatility of JNJ stock? Explain.



Answer: Consumer staples companies tend to have stable stocks. No, the graph does not accurately depict the volatility of JNJ stock. The vertical axis starts at 54 and should start at zero.
Explanation: The scale on the vertical axis should begin at zero. Refer to Figure 2.4, where graphs with misleading scales (vertical axis with high upper limit or stretched vertical axis) are shown.
Difficulty: 2 Medium
Topic: Summarizing Qualitative Data
Learning Objective: 02-02 Construct and interpret a pie chart and a bar chart.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

108) Each month the Bureau of Labor Statistics reports the number of people (in thousands) employed in the United States by age. The accompanying frequency distribution shows the results for August.

Age	Frequency
16 to 19	4,794
20 to 24	13,273
25 to 34	30,789
35 to 44	30,021
45 to 54	32,798
55 and over	28,660

a. Construct a relative frequency distribution. What proportion of workers is between 20 and 24 years old?
b. Construct a cumulative relative frequency distribution. What proportion of workers is younger than 35 years old?

Answer: a. 0.095. b. 0.348.

Age	Frequency	Relative Frequency	Cumulative Relative Frequency
16 to 19	4,794	0.034	0.034
20 to 24	13,273	0.095	0.129
25 to 34	30,789	0.219	0.348
35 to 44	30,021	0.214	0.562
45 to 54	32,798	0.234	0.796
55 and over	28,660	0.204	1.000

Explanation: First find the total number of people surveyed by summing the frequency column (n = 140,335).

a. To find the relative frequency for each class, divide each class's frequency by n; so the proportion of workers that are between 20 and 24 years old is 13,273/140,335 = 0.095.
b. To find the cumulative relative frequency for each class, take each class's relative frequency and add it to the preceding relative frequencies. So the proportion of workers that are younger than 35 years old is 0.034 + 0.095 + 0.219 = 0.348.
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.; 02-04 Construct and interpret a histogram, a polygon, and an ogive.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

109) The following table shows analyst sentiment ratings for the 30 stocks listed in the Dow Jones Industrial Average.

7	4	6	8	4	9	4	2	2	4
6	4	5	6	5	3	8	4	9	6
2	9	7	8	4	3	9	4	6	7

a. Construct a frequency distribution, relative frequency distribution, cumulative frequency distribution and relative cumulative frequency distribution using classes of 2 up to 4, 4 up to 6, 6 up to 8, and 8 up to 10.
b. Construct a histogram that summarizes the data.
c. What percentage of the stocks in the Dow Jones Industrial Average received a sentiment rating less than 8?
d. What percentage of the stocks in the Dow Jones Industrial Average received a sentiment rating of 6 or more?

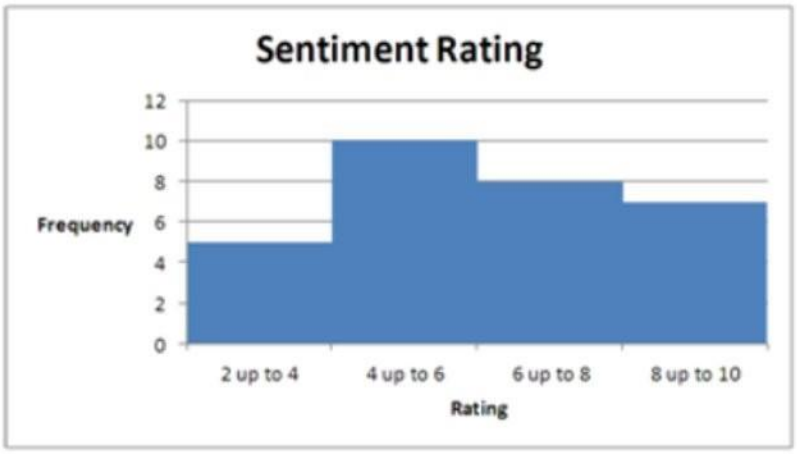
Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

Answer:
a.

Sentiment Rating	Frequency	Relative Frequency	Cumulative Frequency	Cumulative Relative Frequency
2 up to 4	5	0.1667	5	0.1667
4 up to 6	10	0.3333	15	0.5000
6 up to 8	8	0.2667	23	0.7667
8 up to 10	7	0.2333	30	1.0000
Total	30	1		

b.



c. Using the cumulative relative frequency, the percentage of the stocks that received a sentiment rating less than 8 is 76.67%.
d. Using the relative frequency, the percentage of the stocks that received a sentiment rating of 6 or more is (0.2667+.2333).(100) = 50%.
Difficulty: 3 Hard
Topic: Summarizing Quantitative Data
Learning Objective: 02-03 Summarize quantitative data by constructing a frequency distribution.; 02-04 Construct and interpret a histogram, a polygon, and an ogive.
Bloom's: Apply
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

110) The accompanying cumulative relative frequency distribution shows a summary of the scores from an Algebra II exam at a local high school. Twenty students took the exam.

Class	Cumulative Relative Frequency
51 - 60	0.05
61 - 70	0.20
71 - 80	0.45
81 - 90	0.80
91 - 100	1.00

a. Construct the relative frequency distribution. What proportion of students scored between 81 and 90?
b. Construct the frequency distribution. How many students scored between 71 and 80?

Answer:
a. To find the relative frequency for each class, subtract each class's cumulative relative frequency from the preceding cumulative relative frequency; so the proportion of students that scored between 81 and 90 is $0.80 - 0.45 = 0.35$.
b. To find the frequency for each class, multiply each class's relative frequency by 20 Thus, the number of students that scored between 71 and 80 is 5.

Class	Cumulative Relative Frequency	Relative Frequency	Frequency
51 - 60	0.05	0.05	1
61 - 70	0.20	0.15	3
71 - 80	0.45	0.25	5
81 - 90	0.80	0.35	7
91 - 100	1.00	0.20	4

Difficulty: 3 Hard
Topic: Summarizing Quantitative Data
Learning Objective: 02-04 Construct and interpret a histogram, a polygon, and an ogive.
Bloom's: Apply
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

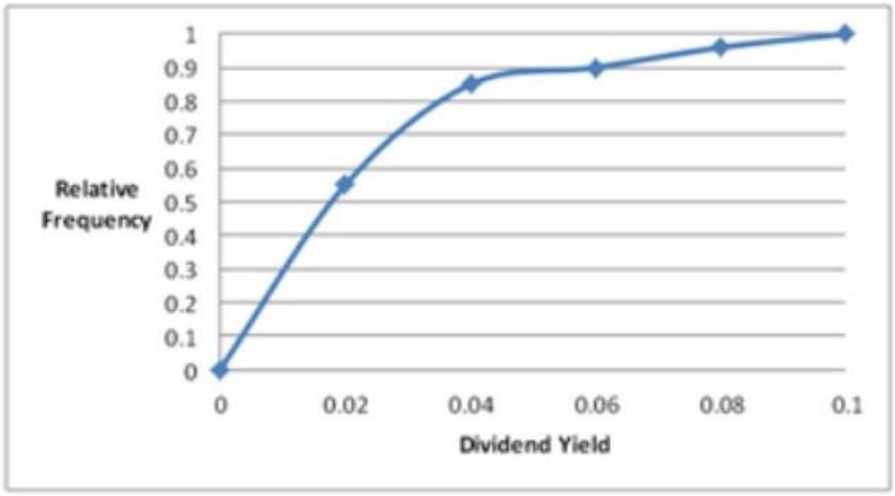
Essentials of Business Statistics 2nd edition Jaggia Test Bank

111) The dividend yields of the stocks in an investor's portfolio are shown in the following cumulative relative frequency distribution.

Dividend Yields	Cumulative Relative Frequency
0% up to 2%	0.55
2% up to 4%	0.85
4% up to 6%	0.90
6% up to 8%	0.96
8% up to 10%	1.00

a. Construct an ogive.
b. Approximately what percent of the stocks had a dividend yield of 3% or larger?

Answer:
a. To construct an ogive, we plot the five points corresponding to the upper class limits and their cumulative relative frequencies. In addition, we add one point being the first class lower limit with a zero value.



b. Draw a vertical line at the score .03 (the middle value between .02 and .04) until it intersects the curve. At the intersection, draw a horizontal line to the y axis—it intersects at approximately 0.70. Then, the approximate proportion with dividend yields of 3% or more = 1 − 0.70 = 0.30. Therefore, the percent of the stocks that had a dividend yield of 3% or larger is approximately 30%.
Difficulty: 2 Medium
Topic: Summarizing Quantitative Data
Learning Objective: 02-04 Construct and interpret a histogram, a polygon, and an ogive.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

112) Construct a stem-and-leaf diagram with the following data set.

3.2	1.3	2.1	2.4	4.3	3.1	3.2	1.1	1.4	2.5
2.4	2.9	3.8	1.7	2.3	1.2	3.2	1.4	1.5	2.6

Is the distribution symmetric or skewed?

Stem	Leaf
1	1 2 3 4 4 5 7
2	1 3 4 4 5 6 9
3	1 2 2 2 8
4	3

Answer: It is obvious that the distribution has a tail toward the right, therefore it is positively skewed.
Difficulty: 2 Medium
Topic: Stem-and-Leaf Diagrams
Learning Objective: 02-05 Construct and interpret a stem-and-leaf diagram.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

113) Construct a stem-and-leaf diagram for the following data set.

74	75	63	62	56	79	58	79	53	49
78	69	74	72	53	72	64	65	67	77

Is the distribution symmetric or skewed?

Stem	Leaf
4	9
5	3 3 6 8
6	2 3 4 5 7 9
7	2 2 4 4 5 7 8 9 9

Answer: It is obvious that the distribution has a tail toward the left, therefore it is negatively skewed.
Difficulty: 2 Medium
Topic: Stem-and-Leaf Diagrams
Learning Objective: 02-05 Construct and interpret a stem-and-leaf diagram.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

114) The following table shows the prices (in $1,000s) of the last 15 trucks sold at a Toyota dealership.

32	21	26	33	23	24	31	22	17	25	18	23	22	19	35

Construct a stem-and-leaf diagram, and estimate the price that a potential buyer would likely pay for a Toyota truck.

Answer:

Stem	Leaf
1	7 8 9
	1 2 2 3 3 4 5 6
3	1 2 3 5

A potential buyer would likely pay $22,000 or $23,000 for a Toyota truck.
Explanation: Sort data, then group according to the 10s digit.

10s	17, 18, 19
20s	21, 22, 22, 23, 23, 24, 25, 26
30s	31, 32, 33, 34

Write the 10s digits in the left-hand column (stems).
On the right-hand column, write the 1s digit for each number (leaves).
Difficulty: 2 Medium
Topic: Stem-and-Leaf Diagrams
Learning Objective: 02-05 Construct and interpret a stem-and-leaf diagram.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank

115) The following data represent the ages of patients in the cardiac section of the local hospital. Construct a stem-and-leaf diagram. Comment on whether or not the distribution is symmetric.

48	53	60	61	62	63	70	70	72	77	78	79	80	82	87	88	90

Answer:

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

The distribution is not symmetric; it is slightly negatively skewed.
Explanation: Because the numbers are already sorted, we can directly construct the stem-and-leaf diagram as shown below. It is obvious that the distribution has a tail toward the left, therefore it is negatively skewed.
Difficulty: 2 Medium
Topic: Stem-and-Leaf Diagrams
Learning Objective: 02-05 Construct and interpret a stem-and-leaf diagram.
Bloom's: Understand
AACSB: Reflective Thinking
Accessibility: Keyboard Navigation

Copyright © 2020 McGraw-Hill Education. All rights reserved.
No reproduction or distribution without the prior written onsent of McGraw-Hill Education.

Essentials of Business Statistics 2nd edition Jaggia Test Bank