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CH 02 - Descriptive Statistics: Tabular/Graphical

1. A frequency distribution is a tabular summary of data showing the
   a. fraction of items in several classes.
   b. percentage of items in several classes.
   c. relative percentage of items in several classes.
   d. number of items in several classes.

ANSWER: d
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.01 - Summarizing data for a categorical variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Remember

2. A frequency distribution is
   a. a tabular summary of a set of data showing the relative frequency.
   b. a graphical form of representing data.
   c. a tabular summary of a set of data showing the frequency of items in each of several nonoverlapping classes.
   d. a graphical device for presenting categorical data.

ANSWER: c
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.01 - Summarizing data for a categorical variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Remember

3. A tabular summary of a set of data showing the fraction of the total number of items in several classes is a
   a. frequency distribution.
   b. relative frequency distribution.
   c. cumulative relative frequency distribution.
   d. cumulative frequency distribution.

ANSWER: b
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.01 - Summarizing data for a categorical variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Understand

4. The percent frequency of a class is computed by
   a. multiplying the relative frequency by 10.
   b. dividing the relative frequency by 100.
   c. multiplying the relative frequency by 100.
   d. adding 100 to the relative frequency.

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ANSWER: c
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.01 - Summarizing data for a categorical variable
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KEYWORDS: Bloom's: Remember

5. The relative frequency of a class is computed by
   a. dividing the midpoint of the class by the sample size.
   b. dividing the frequency of the class by the midpoint.
   c. dividing the sample size by the frequency of the class.
   d. dividing the frequency of the class by the sample size.

ANSWER: d
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.01 - Summarizing data for a categorical variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Remember

6. The sum of frequencies for all classes will always equal
   a. 1.
   b. the number of elements in a data set.
   c. the number of classes.
   d. a value between 0 and 1.

ANSWER: b
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.01 - Summarizing data for a categorical variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Remember

7. Fifteen percent of the students in a school of Business Administration are majoring in Economics, 20% in Finance, 35% in Management, and 30% in Accounting. The graphical device(s) which can be used to present these data is (are)
   a. a line chart.
   b. only a bar chart.
   c. only a pie chart.
   d. both a bar chart and a pie chart.

ANSWER: d
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.01 - Summarizing data for a categorical variable

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NATIONAL STANDARDS: United States - BUSPROG: Analytic
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KEYWORDS: Bloom's: Understand

8. A cumulative relative frequency distribution shows
   a. the proportion of data items with values less than or equal to the upper limit of each class.
   b. the proportion of data items with values less than or equal to the lower limit of each class.
   c. the percentage of data items with values less than or equal to the upper limit of each class.
   d. the percentage of data items with values less than or equal to the lower limit of each class.

ANSWER: a
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Remember

9. The sum of the relative frequencies for all classes will always equal
   a. the sample size.
   b. the number of classes.
   c. one.
   d. any value larger than one.

ANSWER: c
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.01 - Summarizing data for a categorical variable
BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Remember

10. The sum of the percent frequencies for all classes will always equal
   a. one.
   b. the number of classes.
   c. the number of items in the study.
   d. 100.

ANSWER: d
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.01 - Summarizing data for a categorical variable
BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
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KEYWORDS: Bloom's: Remember

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11. The most common graphical presentation of quantitative data is a
    a. histogram.
    b. bar chart.
    c. stem and leaf display.
    d. pie chart.

ANSWER: a
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Remember

12. The total number of data items with a value less than the upper limit for the class is given by the
    a. frequency distribution.
    b. relative frequency distribution.
    c. cumulative frequency distribution.
    d. cumulative relative frequency distribution.

ANSWER: c
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Understand

13. The relative frequency of a class is computed by
    a. dividing the cumulative frequency of the class by n.
    b. dividing n by cumulative frequency of the class.
    c. dividing the frequency of the class by n.
    d. dividing the frequency of the class by the number of classes.

ANSWER: c
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.01 - Summarizing data for a categorical variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Remember

14. The difference between the lower class limits of adjacent classes provides the
    a. number of classes.
    b. class limits.
    c. class midpoint.
    d. class width.

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ANSWER: d
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Remember

15. In a cumulative frequency distribution, the last class will always have a cumulative frequency equal to
    a. one.
    b. 100%.
    c. the total number of elements in the data set.
    d. 10.

ANSWER: c
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Remember

16. In a cumulative relative frequency distribution, the last class will have a cumulative relative frequency equal to
    a. one.
    b. zero.
    c. the total number of elements in the data set.
    d. the total of classes in the data set.

ANSWER: a
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Remember

17. In a cumulative percent frequency distribution, the last class will have a cumulative percent frequency equal to
    a. one.
    b. 100.
    c. the total number of elements in the data set.
    d. None of these alternatives is correct.

ANSWER: b
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic

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STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Remember

18. Data that provide labels or names for categories of like items are known as
    a. categorical data.
    b. quantitative data.
    c. label data.
    d. category data.

ANSWER: a
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.01 - Summarizing data for a categorical variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Remember

19. In a scatter diagram, a line that provides an approximation of the relationship between the variables is known as a
    a. determination line.
    b. trend line.
    c. correlation axis.
    d. zero-bias line.

ANSWER: b
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.04 - Summarizing data for two variables using graphical displays
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Remember

20. A histogram is
    a. a graphical presentation of a frequency or relative frequency distribution.
    b. a graphical method of presenting a cumulative frequency or a cumulative relative frequency distribution.
    c. the history of data elements.
    d. the same as a pie chart.

ANSWER: a
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Remember

21. Which of the following is a graphical summary of a set of data in which each data value is represented by a dot above the axis?

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a. Histogram
b. Box plot
c. Dot plot
d. Crosstabulation

ANSWER: c
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Understand

22. Which of the following graphical methods shows the relationship between two variables?
a. Pie chart
b. Histogram
c. Crosstabulation
d. Dot plot

ANSWER: c
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.03 - Summarizing data for two variables using tables
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Understand

23. A sample of 15 children shows their favorite restaurants:

McDonalds	Luppi's	Mellow Mushroom
Friday's	McDonalds	McDonalds
Pizza Hut	Taco Bell	McDonalds
Mellow Mushroom	Luppi's	Pizza Hut
McDonalds	Friday's	McDonalds

Which of the following is the correct frequency distribution?

a. McDonalds 4, Friday’s 3, Pizza Hut 1, Mellow Mushroom 4, Luppi’s 3, Taco Bell 1
b. McDonalds 6, Friday’s 2, Pizza Hut 2, Mellow Mushroom 2, Luppi’s 2, Taco Bell 1
c. McDonalds 6, Friday’s 1, Pizza Hut 3, Mellow Mushroom 1, Luppi’s 2, Taco Bell 2
d. None of these alternatives is correct.

ANSWER: b
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.01 - Summarizing data for a categorical variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
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KEYWORDS: Bloom's: Apply

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24. A sample of 15 children shows their favorite restaurants:

McDonalds	Luppi's	Mellow Mushroom
Friday's	McDonalds	McDonalds
Pizza Hut	Taco Bell	McDonalds
Mellow Mushroom	Luppi's	Pizza Hut
McDonalds	Friday's	McDonalds

Which of the following is the correct relative frequency for McDonalds?

a. .27
b. .5
c. .4
d. .6

ANSWER: c
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.01 - Summarizing data for a categorical variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply

25. A sample of 15 children shows their favorite restaurants:

McDonalds	Luppi's	Mellow Mushroom
Friday's	McDonalds	McDonalds
Pizza Hut	Taco Bell	McDonalds
Mellow Mushroom	Luppi's	Pizza Hut
McDonalds	Friday's	McDonalds

Which of the following is the correct percent frequency for McDonalds?

a. 10%
b. 27%
c. 2%
d. 40%

ANSWER: d
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.01 - Summarizing data for a categorical variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply

26. The numbers of hours worked (per week) by 400 statistics students are shown below.

Number of hours	**Frequency**
0 -9	20
10 - 19	80
20 - 29	200

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30 - 39	100

The relative frequency of students working 10 - 19 hours per week is

a. .20
b. .25
c. .40
d. .80

ANSWER: a
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply

27. The numbers of hours worked (per week) by 400 statistics students are shown below.

Number of hours	**Frequency**
0 -9	20
10 - 19	80
20 - 29	200
30 - 39	100

The cumulative percent frequency for students working less than 20 hours per week is

a. 20%.
b. 25%.
c. 80%.
d. 100%.

ANSWER: b
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply

28. The numbers of hours worked (per week) by 400 statistics students are shown below.

Number of hours	**Frequency**
0 - 9	20
10 - 19	80
20 - 29	200
30 - 39	100

The percentage of students who work at least 10 hours per week is

a. 50%.
b. 5%.
c. 95%.

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d. 100%.

ANSWER: c
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply

29. The numbers of hours worked (per week) by 400 statistics students are shown below.

Number of hours	**Frequency**
0 - 9	20
10 - 19	80
20 - 29	200
30 - 39	100

The class width used in this frequency distribution is

a. 4.5.
b. 9.
c. 10.
d. 39.

ANSWER: c
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply

30. The numbers of hours worked (per week) by 400 statistics students are shown below.

Number of hours	**Frequency**
0 - 9	20
10 - 19	80
20 - 29	200
30 - 39	100

The midpoint of the last class is

a. 35.5
b. 34.
c. 35.
d. 34.5.

ANSWER: d
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable

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NATIONAL STANDARDS: United States - BUSPROG: Analytic
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KEYWORDS: Bloom's: Apply

31. A survey of 800 college seniors resulted in the following crosstabulation regarding their undergraduate major and whether or not they plan to go to graduate school.

	Undergraduate Major			
Graduate School	**Business**	**Engineering**	**Others**	**Total**
Yes	70	84	126	280
No	182	208	130	520
Total	252	292	256	800

Of those students who are majoring in business, what percentage plans to go to graduate school?

a. 27.78
b. 8.75
c. 70.00
d. 72.22

ANSWER: a
POINTS: 1
DIFFICULTY: Moderate
LEARNING OBJECTIVES: BSST.ASWC.17.02.03 - Summarizing data for two variables using tables
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply

32. Thirty students in the School of Business were asked what their majors were. The following represents their responses (M = Management; A = Accounting; E = Economics; O = Others).

A	M	M	A	M	M	E	M	O	A
E	E	M	A	O	E	M	A	M	A
M	A	O	A	M	E	E	M	A	M

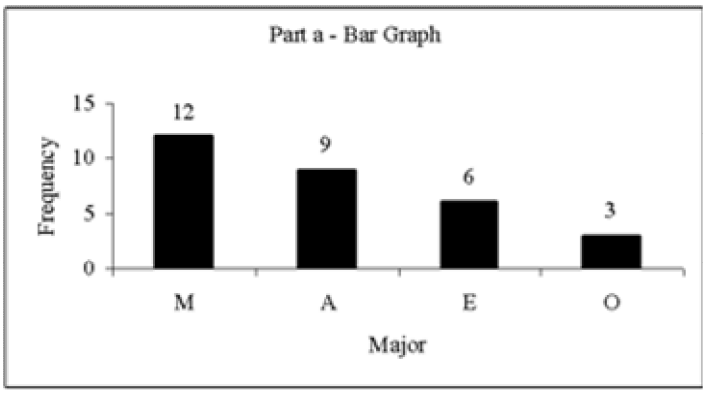
a. Construct a frequency distribution and a bar chart.
b. Construct a relative frequency distribution and a pie chart.

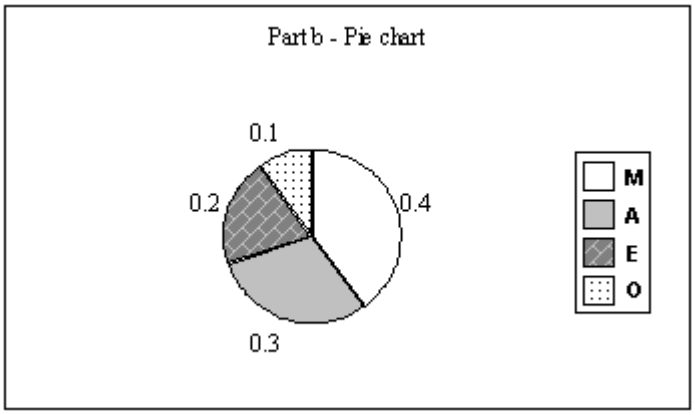
ANSWER:

	(a)	(b)
Major	**Frequency**	**Relative Frequency**
M	12	0.4
A	9	0.3
E	6	0.2
O	3	0.1
Total	30	1.0

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POINTS: 1
DIFFICULTY: Challenging
LEARNING OBJECTIVES: BSST.ASWC.17.02.01 - Summarizing data for a categorical variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply

33. Twenty employees of the Ahmadi Corporation were asked if they liked or disliked the new district manager. Below you are given their responses. Let L represent liked and D represent disliked.

L	L	D	L	D
D	D	L	L	D
D	L	D	D	L
D	D	L	D	L

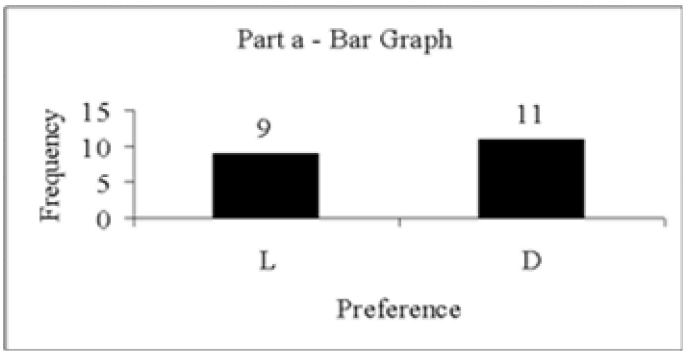
a. Construct a frequency distribution and a bar chart.
b. Construct a relative frequency distribution and a pie chart.

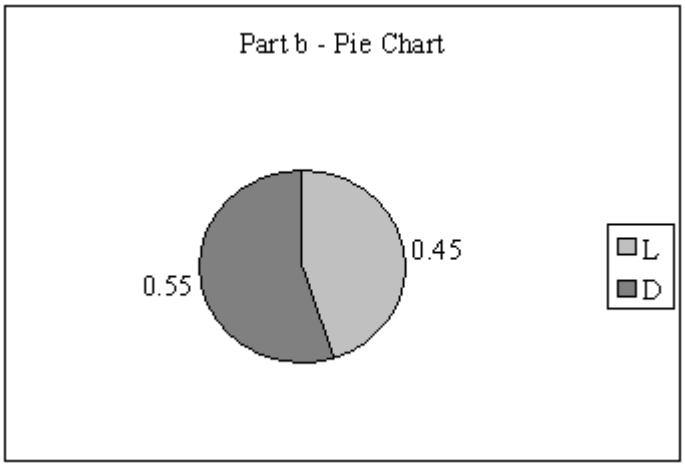
ANSWER: a and b

Preferences	**Frequency**	**Relative Frequency**
L	9	0.45
D	11	0.55
Total	20	1.00

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POINTS: 1
DIFFICULTY: Challenging
LEARNING OBJECTIVES: BSST.ASWC.17.02.01 - Summarizing data for a categorical variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply

34. Forty shoppers were asked if they preferred the weight of a can of soup to be 6 ounces, 8 ounces, or 10 ounces. Below you are given their responses.

6	6	6	10	8	8	8	10	6	6
10	10	8	8	6	6	6	8	6	6
8	8	8	10	8	8	6	10	8	6
6	8	8	8	10	10	8	10	8	6

a. Construct a frequency distribution and graphically represent the frequency distribution.
b. Construct a relative frequency distribution and graphically represent the relative frequency distribution.

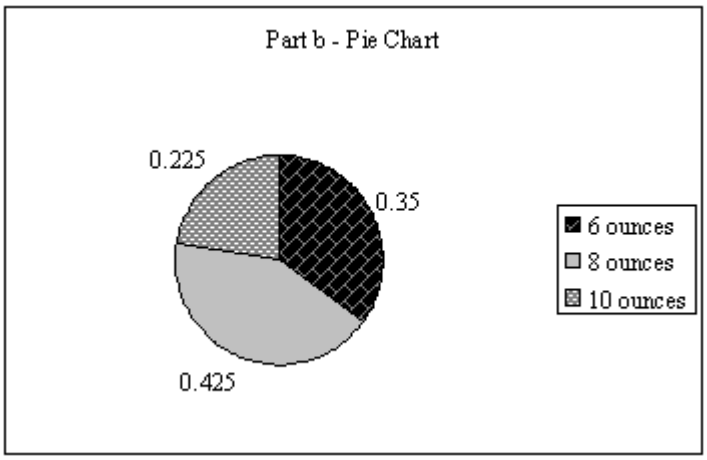
ANSWER: a and b

Preferences	**Frequency**	**Relative Frequency**
6 ounces	14	0.350
8 ounces	17	0.425
10 ounces	9	0.225
Total	40	1.000

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POINTS: 1
DIFFICULTY: Challenging
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STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply

35. A student has completed 20 courses in the School of Arts and Sciences. Her grades in the 20 courses are shown below.

A	B	A	B	C
C	C	B	B	B
B	A	B	B	B
C	B	C	B	A

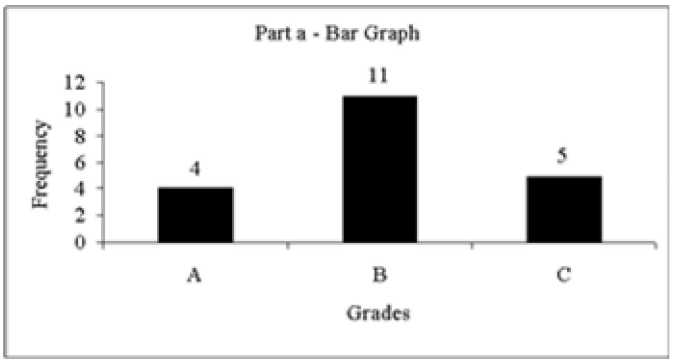
a. Develop a frequency distribution and a bar chart for her grades.
b. Develop a relative frequency distribution for her grades and construct a pie chart.

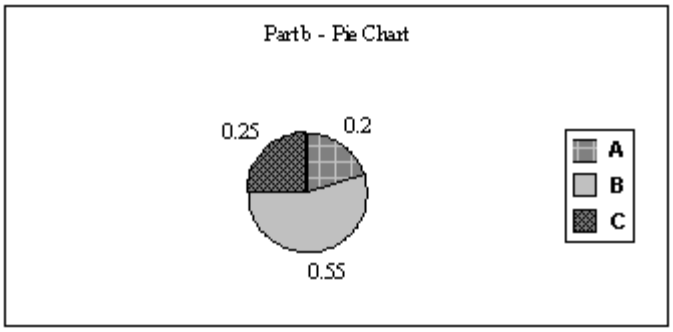
ANSWER: a and b

Grade	**Frequency**	**Relative Frequency**
A	4	0.20
B	11	0.55
C	5	0.25
Total	20	1.00

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POINTS: 1
DIFFICULTY: Challenging
LEARNING OBJECTIVES: BSST.ASWC.17.02.01 - Summarizing data for a categorical variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply

36. A sample of 50 TV viewers were asked, "Should TV sponsors pull their sponsorship from programs that draw numerous viewer complaints?" Below are the results of the survey. (Y = Yes; N = No; W = Without Opinion)

N	W	N	N	Y	N	N	N	Y	N
N	Y	N	N	N	N	N	Y	N	N
Y	N	Y	W	N	Y	W	W	N	Y
W	W	N	W	Y	W	N	W	Y	W
N	Y	N	Y	N	W	Y	Y	N	Y

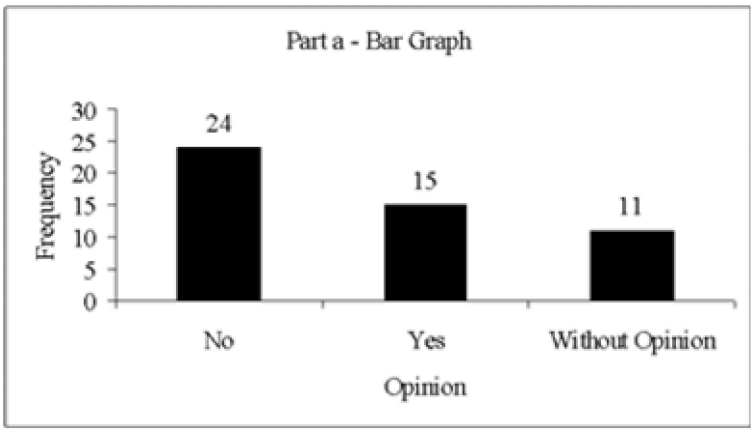
a. Construct a frequency distribution and a bar chart.
b. Construct a relative frequency distribution and a pie chart.

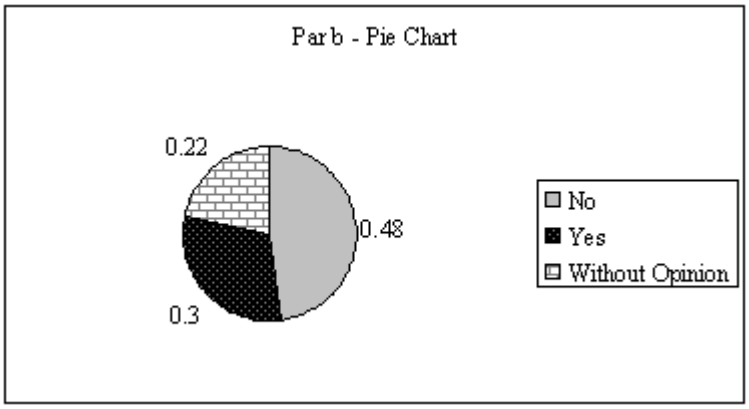
ANSWER: a and b

	Frequency	**Relative Frequency**
No	24	0.48
Yes	15	0.30
Without Opinion	11	0.22
Total	50	1.00

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POINTS: 1
DIFFICULTY: Challenging
LEARNING OBJECTIVES: BSST.ASWC.17.02.01 - Summarizing data for a categorical variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply

37. The following data shows the price of PAO, Inc. stock over the last 8 months.

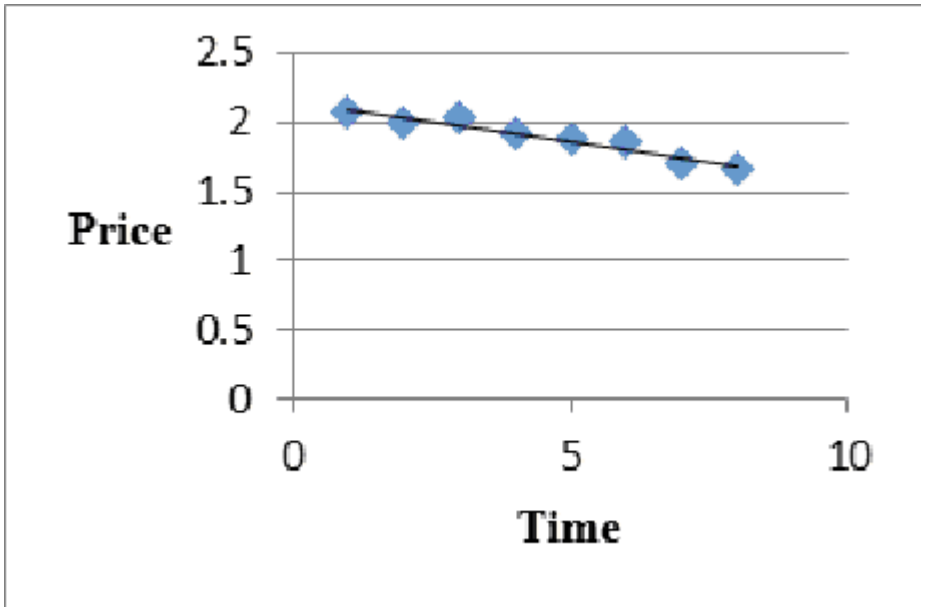
Month	Price
1	2.08
2	2.00
3	2.03
4	1.91
5	1.88
6	1.87
7	1.70
8	1.67

a. Develop a scatter diagram and draw a trend line through the points.
b. What kind of relationship exists between stock price and time (negative, positive, or no relation)?

ANSWER: a.

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b. Negative

POINTS: 1
DIFFICULTY: Moderate
LEARNING OBJECTIVES: BSST.ASWC.17.02.04 - Summarizing data for two variables using graphical displays
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply | Bloom's: Understand

38. Below you are given the examination scores of 20 students.

52	99	92	86	84
63	72	76	95	88
92	58	65	79	80
90	75	74	56	99

a. Construct a frequency distribution for this data. Let the first class be 50 - 59.
b. Construct a cumulative frequency distribution.
c. Construct a relative frequency distribution.
d. Construct a cumulative relative frequency distribution.

ANSWER:

	a.	b.	c.	d.
Score	**Frequency**	**Cumulative Frequency**	**Relative Frequency**	**Cumulative Relative Frequency**
50 - 59	3	3	0.15	0.15
60 - 69	2	5	0.10	0.25
70 - 79	5	10	0.25	0.50
80 - 89	4	14	0.20	0.70
90 - 99	6	20	0.30	1.00
Total	20		1.00	

POINTS: 1
DIFFICULTY: Challenging
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable

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NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply

39. The frequency distribution below was constructed from data collected from a group of 25 students.

Height (in Inches)	**Frequency**
58 - 63	3
64 - 69	5
70 - 75	2
76 - 81	6
82 - 87	4
88 - 93	3
94 - 99	2

a. Construct a relative frequency distribution.
b. Construct a cumulative frequency distribution.
c. Construct a cumulative relative frequency distribution.

ANSWER:

		a.	b.	c.
Height (In Inches)	**Frequency**	**Relative Frequency**	**Cumulative Frequency**	**Cumulative Relative Frequency**
58 - 63	3	0.12	3	0.12
64 - 69	5	0.20	8	0.32
70 - 75	2	0.08	10	0.40
76 - 81	6	0.24	16	0.64
82 - 87	4	0.16	20	0.80
88 - 93	3	0.12	23	0.92
94 - 99	2	0.08	25	1.00
		1.00		

POINTS: 1
DIFFICULTY: Moderate
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply

40. The frequency distribution below was constructed from data collected on the quarts of soft drinks consumed per week by 20 students.

Quarts of Soft Drink	**Frequency**
0 - 3	4
4 - 7	5
8 - 11	6
12 - 15	3
16 - 19	2

a. Construct a relative frequency distribution.
b. Construct a cumulative frequency distribution.

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c. Construct a cumulative relative frequency distribution.

ANSWER:

		a.	b.	c.
Quarts of Soft Drinks	**Frequency**	**Relative Frequency**	**Cumulative Frequency**	**Cumulative Relative Frequency**
0 - 4	4	0.20	4	0.20
4 - 8	5	0.25	9	0.45
8 - 12	6	0.30	15	0.75
12 - 16	3	0.15	18	0.90
16 - 20	2	0.10	20	1.00
Total	20	1.00		

POINTS: 1
DIFFICULTY: Moderate
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply

41. The grades of 10 students in their first management test are shown below.

94	61	96	66	92
68	75	85	84	78

a. Construct a frequency distribution. Let the first class be 60 - 69.
b. Construct a cumulative frequency distribution.
c. Construct a relative frequency distribution.

ANSWER:

	a.	b.	c.
Class	**Frequency**	**Cumulative Frequency**	**Relative Frequency**
60 - 69	3	3	0.3
70 - 79	2	5	0.2
80 - 89	2	7	0.2
90 - 99	3	10	0.3
Total	10		1.0

POINTS: 1
DIFFICULTY: Moderate
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply

42. There are 800 students in the School of Business Administration. There are four majors in the School: Accounting, Finance, Management, and Marketing. The following shows the number of students in each major.

Major	**Number of Students**
Accounting	240
Finance	160
Management	320
Marketing	80

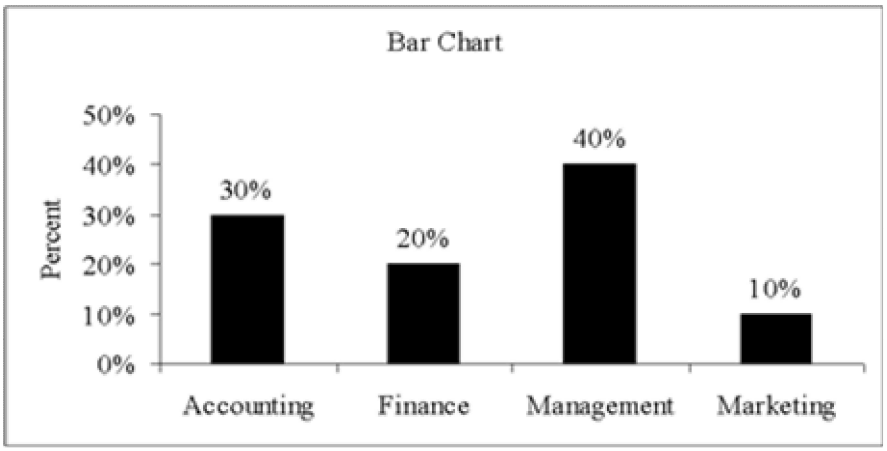
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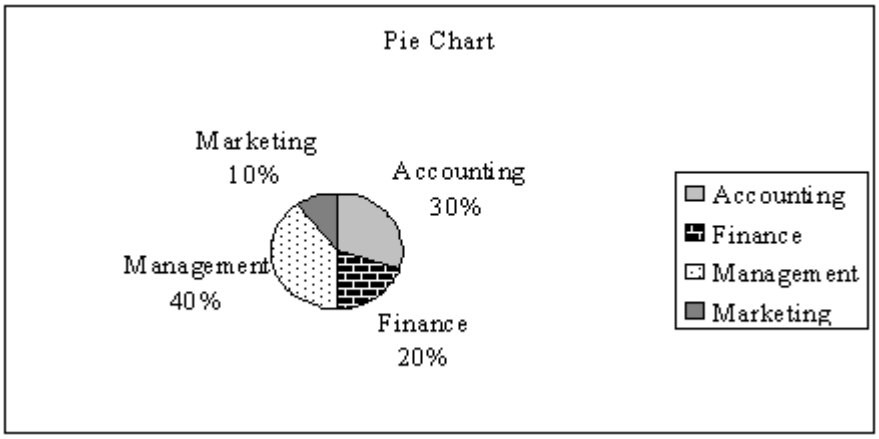
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Develop a percent frequency distribution and construct a bar chart and a pie chart.

ANSWER:

Major	**Percent Frequency**
Accounting	30%
Finance	20%
Management	40%
Marketing	10%





POINTS: 1
DIFFICULTY: Challenging
LEARNING OBJECTIVES: BSST.ASWC.17.02.01 - Summarizing data for a categorical variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply

43. You are given the following data on the age of employees at a company. Construct a stem-and-leaf display.

26	32	28	45	58
52	44	36	42	27
41	53	55	48	32
42	44	40	36	37

ANSWER:

2 | 6	7	8						
3 | 2	2	6	6	7				
4 | 0	1	2	2	4	4	5	8	

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5 | 2 3 5 8

POINTS: 1
DIFFICULTY: Moderate
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply

44. Construct a stem-and-leaf display for the following data.

12	52	51	37	47	40	38	26	57	31
49	43	45	19	36	32	44	48	22	18

ANSWER:

1 | 2 8 9
2 | 2 6
3 | 1 2 6 7 8
4 | 0 3 4 5 7 8 9
5 | 1 2 7

POINTS: 1
DIFFICULTY: Moderate
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply

45. The ACT scores of a sample of business school students and their genders are shown below.

		ACT Scores		
Gender	**Less than 20**	**20 up to 25**	**25 and more**	**Total**
Female	24	168	48	240
Male	40	96	24	160
Total	64	264	72	400

a. How many students scored less than 20?
b. How many students were female?
c. Of the male students, how many scored 25 or more?
d. Compute row percentages and comment on any relationship that may exist between ACT scores and gender of the individuals.
e. Compute column percentages.

ANSWER:

a. 64
b. 240
c. 24

d.

	ACT Scores			
Gender	**Less than 20**	**20 up to 25**	**25 and more**	**Total**
Female	10%	70%	20%	100%
Male	25%	60%	15%	100%

From the above percentages it can be noted that the largest percentages of both genders' ACT scores are in the 20 to 25

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range. However, 70% of females and only 60% of males have ACT scores in this range. Also it can be noted that 10% of females' ACT scores are under 20, whereas, 25% of males' ACT scores fall in this category.

e.

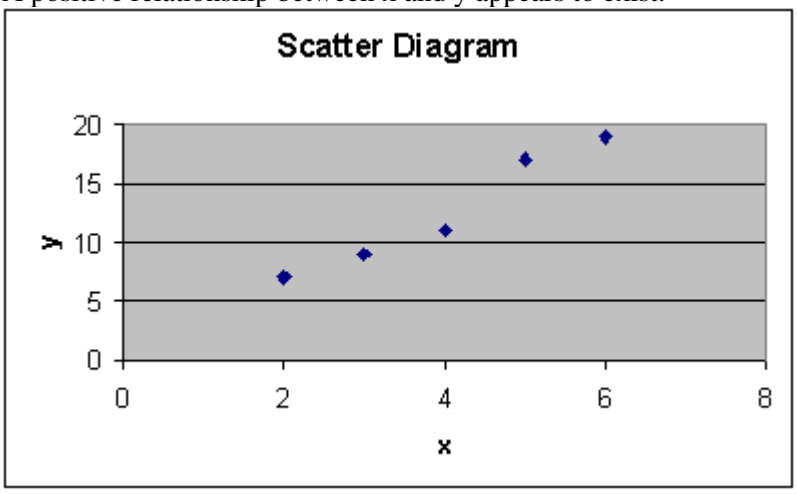
	SAT Scores		
Gender	**Less than 20**	**20 up to 25**	**25 and more**
Female	37.5%	63.6%	66.7%
Male	62.5%	36.4%	33.3%
Total	100%	100%	100%

POINTS: 1
DIFFICULTY: Challenging
LEARNING OBJECTIVES: BSST.ASWC.17.02.03 - Summarizing data for two variables using tables
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply | Bloom's: Understand

46. For the following observations, plot a scatter diagram and indicate what kind of relationship (if any) exists between x and y.

x	**y**
2	7
6	19
3	9
5	17
4	11

ANSWER: A positive relationship between x and y appears to exist.



POINTS: 1
DIFFICULTY: Moderate
LEARNING OBJECTIVES: BSST.ASWC.17.02.04 - Summarizing data for two variables using graphical displays
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply | Bloom's: Understand

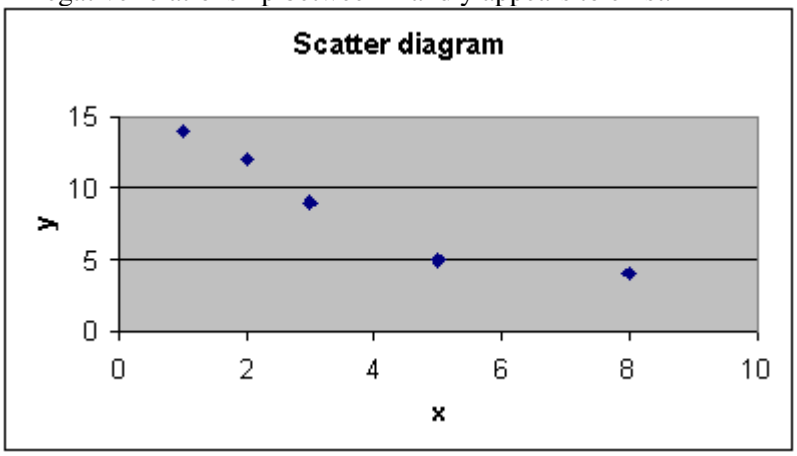
47. For the following observations, plot a scatter diagram and indicate what kind of relationship (if any) exists between x and y.

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x	y
8	4
5	5
3	9
2	12
1	14

ANSWER: A negative relationship between x and y appears to exist.



POINTS: 1
DIFFICULTY: Moderate
LEARNING OBJECTIVES: BSST.ASWC.17.02.04 - Summarizing data for two variables using graphical displays
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply | Bloom's: Understand

48. Five hundred recent graduates indicated their majors as follows:

Major	**Frequency**
Accounting	60
Finance	100
Economics	40
Management	120
Marketing	80
Engineering	60
Computer Science	40
Total	500

a. Construct a relative frequency distribution.
b. Construct a percent frequency distribution.

ANSWER:

Major	**Frequency**	a. **Relative Frequency**	b. **Percent Frequency**
Accounting	60	0.12	12
Finance	100	0.20	20
Economics	40	0.08	8
Management	120	0.24	24
Marketing	80	0.16	16
Engineering	60	0.12	12

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	Computer Science	40	0.08	8
	Total	500	1.00	100

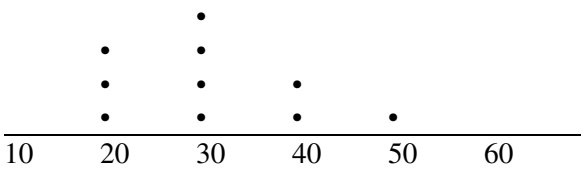
POINTS: 1
DIFFICULTY: Moderate
LEARNING OBJECTIVES: BSST.ASWC.17.02.01 - Summarizing data for a categorical variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply

49. A sample of the ages of 10 employees of a company is shown below.

20	30	40	30	50
30	20	30	20	40

Construct a dot plot for the above data.

ANSWER:



POINTS: 1
DIFFICULTY: Moderate
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply

50. The following data set shows the number of hours of sick leave that some of the employees of Bastien's, Inc. have taken during the first quarter of the year (rounded to the nearest hour).

19	22	27	24	28	12
23	47	11	55	25	42
36	25	34	16	45	49
12	20	28	29	21	10
59	39	48	32	40	31

a. Develop a frequency distribution for the above data. (Let the width of your classes be 10 units and start your first class as 10 - 19.)
b. Develop a relative frequency distribution and a percent frequency distribution for the data.
c. Develop a cumulative frequency distribution.
d. How many employees have taken less than 40 hours of sick leave?

ANSWER:

	a.	b.	b.	c.
Hours of Sick Leave Taken	**Freq.**	**Relative Freq.**	**Percent Freq.**	**Cum. Freq.**
10 - 19	6	0.20	20	6
20 - 29	11	0.37	37	17
30 - 39	5	0.16	16	22
40 - 49	6	0.20	20	28
50 - 59	2	0.07	7	30

d. 22

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POINTS: 1
DIFFICULTY: Challenging
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply

51. The sales records of a real estate company for the month of May shows the following house prices (rounded to the nearest $1,000). Values are in thousands of dollars.

105	55	45	85	75
30	60	75	79	95

a. Develop a frequency distribution and a percent frequency distribution for the house prices. (Use 5 classes and have your first class be 20 - 39.)
b. Develop a cumulative frequency and a cumulative percent frequency distribution for the above data.
c. What percentage of the houses are sold at a price below $80,000?

ANSWER:

	a.	a.	b.	b.
Sales Price (In Thousands of Dollars)	**Freq.**	**Percent Freq.**	**Cum. Freq.**	**Cum. Percent Freq.**
20 - 39	1	10	1	10
40 - 59	2	20	3	30
60 - 79	4	40	7	70
80 - 99	2	20	9	90
100 - 119	1	10	10	100

c. 70%

POINTS: 1
DIFFICULTY: Challenging
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply

52. The test scores of 14 individuals on their first statistics examination are shown below.

95	87	52	43	77	84	78
75	63	92	81	83	91	88

Construct a stem-and-leaf display for these data.

ANSWER:

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

POINTS: 1
DIFFICULTY: Moderate
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable

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NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply

53. A survey of 400 college seniors resulted in the following crosstabulation regarding their undergraduate major and whether or not they plan to go to graduate school.

	Undergraduate Major			
Graduate School	Business	Engineering	Others	Total
Yes	35	42	63	140
No	91	104	65	260
Total	126	146	128	400

a. Are a majority of the seniors in the survey planning to attend graduate school?
b. Which discipline constitutes the majority of the individuals in the survey?
c. Compute row percentages and comment on the relationship between the students' undergraduate major and their intention of attending graduate school.
d. Compute the column percentages and comment on the relationship between the students' intention of going to graduate school and their undergraduate major.

ANSWER:

a. No, majority (260) will not attend graduate school
b. Majority (146) are engineering majors
c.

	Undergraduate Major			
Graduate School	Business	Engineering	Others	Total
Yes	25%	30%	45%	100%
No	35%	40%	25%	100%

Majority who plan to go to graduate school are from "Other" majors. Majority of those who will not go to graduate school are engineering majors.
d.

	Undergraduate Major		
Graduate School	Business	Engineering	Others
Yes	27.8%	28.8%	49.2%
No	72.2%	71.2%	50.8%
Total	100%	100%	100%

Approximately the same percentages of Business and engineering majors plan to attend graduate school (27.8% and 28.8% respectively). Of the "Other" majors approximately half (49.2%) plan to go to graduate school.

POINTS: 1
DIFFICULTY: Challenging
LEARNING OBJECTIVES: BSST.ASWC.17.02.03 - Summarizing data for two variables using tables
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply | Bloom's: Understand

54. The proper way to construct a stem-and-leaf display for the data set {62, 67, 68, 73, 73, 79, 91, 94, 95, 97} is to
a. exclude a stem labeled ‘8.
b. include a stem labeled ‘8’ and enter no leaves on the stem.
c. include a stem labeled ‘(8)’ and enter no leaves on the stem.

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d. include a stem labeled ‘8’ and enter one leaf value of ‘0’ on the stem.

ANSWER: b
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG:Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Understand

55. Data that indicate how much or how many are known as

a. categorical data.
b. quantitative data.
c. relative data.
d. cumulative data.

ANSWER: b
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.01 - Summarizing data for a categorical variable
NATIONAL STANDARDS: United States - BUSPROG:Analytic
STATE STANDARDS: United States - AK - DISC:
KEYWORDS: Bloom's: Remember

56. In a stem-and-leaf display,

a. a single digit is used to define each stem, and a single digit is used to define each leaf.
b. a single digit is used to define each stem, and one or more digits are used to define each leaf.
c. one or more digits are used to define each stem, and a single digit is used to define each leaf.
d. one or more digits are used to define each stem, and one or more digits are used to define each leaf.

ANSWER: c
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG:Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Remember

57. A graphical method that can be used to show both the rank order and shape of a distribution of data simultaneously is a

a. relative frequency distribution.
b. pie chart.
c. stem-and-leaf display.
d. dot plot.

ANSWER: c
POINTS: 1
DIFFICULTY: Easy

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LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG:Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Remember

58. A researcher is gathering data from four geographical areas designated: South = 1; North = 2; East = 3; West = 4. The designated geographical regions represent
    a. categorical data.
    b. quantitative data.
    c. crosstabular data.
    d. either categorical or quantitative data.

ANSWER: a
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.01 - Summarizing data for a categorical variable
NATIONAL STANDARDS: United States - BUSPROG:Analytic
STATE STANDARDS: United States - AK - DISC:
KEYWORDS: Bloom's: Understand

59. A graphical device for depicting categorical data that have been summarized in a frequency distribution, relative frequency distribution, or percent frequency distribution is a
    a. histogram.
    b. stem-and-leaf display.
    c. dot plot.
    d. bar chart.

ANSWER: d
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG:Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's : Understand

60. If several frequency distributions are constructed from the same data set, the distribution with the widest class width will have the
    a. fewest classes.
    b. most classes.
    c. smallest total frequency.
    d. largest total frequency.

ANSWER: a
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG:Analytic

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STATE STANDARDS: United States - AK - DISC:
KEYWORDS: Bloom's : Remember

61. In a crosstabulation
a. both variables must be categorical.
b. both variables must be quantitative.
c. one variable must be categorical and the other must be quantitative.
d. either or both variables can be categorical or quantitative.

ANSWER: d
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.03 - Summarizing data for two variables using tables
NATIONAL STANDARDS: United States - BUSPROG:Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Remember

62. A graphical presentation of the relationship between two quantitative variables is
a. dot plot.
b. histogram.
c. stem-and-leaf display.
d. scatter diagram.

ANSWER: d
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.04 - Summarizing data for two variables using graphical displays
NATIONAL STANDARDS: United States - BUSPROG:Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Remember

63. Before drawing any conclusions about the relationship between two variables shown in a crosstabulation, you should
a. investigate whether any hidden variables could affect the conclusions.
b. construct a scatter diagram and find the trendline.
c. develop a relative frequency distribution.
d. construct a dot plot and look for significant gaps.

ANSWER: a
POINTS: 1
LEARNING OBJECTIVES: BSST.ASWC.17.02.03 - Summarizing data for two variables using tables
NATIONAL STANDARDS: United States - BUSPROG:Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Understand

64. When the conclusions based upon the unaggregated data can be completely reversed if we look at the aggregated crosstabulation, the occurrence is known as

a. Reverse correlation.

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b. Negative correlation.
c. Simpson's paradox.
d. Pareto's rule.

ANSWER: c
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.03 - Summarizing data for two variables using tables
NATIONAL STANDARDS: United States - BUSPROG:Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's : Understand

65. Which of the following types of data cannot be appropriately displayed by a histogram?

a. Frequency
b. Relative frequency
c. Cumulative frequency
d. Percent frequency

ANSWER: c
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Understand

66. For stem-and-leaf displays where the leaf unit is not stated, the leaf unit is assumed to equal
a. 0.
b. -1.
c. 1.
d. 10.

ANSWER: c
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Remember

67. Which of the following is least useful in making comparisons or showing the relationships of two variables?
a. Stacked bar chart
b. Stem-and-leaf display
c. Crosstabulation
d. Scatter diagram

ANSWER: b

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POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Understand

68. Which of the following is not a recommended guideline for creating an effective graphical display?
    a. Give the display a clear and concise title
    b. Use three dimensions whenever possible, to give the display depth
    c. If colors are used to distinguish categories, use a legend to define them
    d. Label each axis and show the units of measure

ANSWER: b
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.05 - Data Visualisation
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Understand

69. The approximate class width for a frequency distribution involving quantitative data can be determined using the expression
    a. mean frequency/total frequency.
    b. total frequency/class midpoint.
    c. range/desired number of classes.
    d. desired number of classes/class midpoint.

ANSWER: c
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Remember

70. In quality control applications, bar charts are used to identify the most important causes of problems. When the bars are arranged in descending order of height from left to right with the most frequently occurring cause appearing first, the bar chart is called a
    a. Cause-and-effect diagram.
    b. Simpson,s chart.
    c. Pareto diagram.
    d. Stacked bar chart.

ANSWER: c
POINTS: 1
DIFFICULTY: Easy

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LEARNING OBJECTIVES: BSST.ASWC.17.02.01 - Summarizing data for a categorical variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Remember

71. A graphical tool typically associated with the display of key performance indicators is a
    a. side-by-side bar chart.
    b. stem-and-leaf display.
    c. stacked bar chart.
    d. data dashboard.

ANSWER: d
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.05 - Data Visualisation
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Remember

72. A display used to compare the frequency, relative frequency or percent frequency of two categorical variables is a
    a. scatter diagram.
    b. stacked bar chart.
    c. pie chart.
    d. stem-and-leaf display.

ANSWER: b
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.04 - Summarizing data for two variables using graphical displays
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Remember

73. A sample of 15 children shows their favorite restaurants:

McDonalds	Luppi's	Mellow Mushroom
Friday's	McDonalds	McDonalds
Pizza Hut	Taco Bell	McDonalds
Mellow Mushroom	Luppi's	Pizza Hut
McDonalds	Friday's	McDonalds

Which of the following distributions would be inappropriate for this data?
    a. Frequency
    b. Relative frequency
    c. Cumulative frequency
    d. Percent frequency

ANSWER: c
POINTS: 1

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DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.01 - Summarizing data for a categorical variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply

74. A survey of 800 college seniors resulted in the following crosstabulation regarding their undergraduate major and whether or not they plan to go to graduate school.

	Undergraduate Major			
Graduate School	**Business**	**Engineering**	**Others**	**Total**
Yes	70	84	126	280
No	182	208	130	520
Total	252	292	256	800

Of those students who are planning on going to graduate school, what percentage are majoring in engineering?

a. 10.5
b. 28.8
c. 30.0
d. 40.4

ANSWER: c
POINTS: 1
DIFFICULTY: Moderate
LEARNING OBJECTIVES: BSST.ASWC.17.02.03 - Summarizing data for two variables using tables
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply

75. Histograms based on data on housing prices and salaries typically are

a. skewed to the left.
b. skewed to the right.
c. stacked.
d. symmetric.

ANSWER: b
POINTS: 1
DIFFICULTY: Moderate
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Understand

76. A sample of 15 children shows their favorite restaurants:

McDonalds	Luppi's	Mellow Mushroom
Friday's	McDonalds	McDonalds
Pizza Hut	Taco Bell	McDonalds
Mellow Mushroom	Luppi's	Pizza Hut

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McDonalds Friday's McDonalds

Which of the following displays is most appropriate for this data?

a. Side-by-side bar chart
b. Histogram
c. Stacked bar chart
d. Pie chart

ANSWER: d
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.01 - Summarizing data for a categorical variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply

77. A survey of 800 college seniors resulted in the following crosstabulation regarding their undergraduate major and whether or not they plan to go to graduate school.

	Undergraduate Major			
Graduate School	**Business**	**Engineering**	**Others**	**Total**
Yes	70	84	126	280
No	182	208	130	520
Total	252	292	256	800

The above crosstabulation shows

a. frequencies.
b. row percentages.
c. column percentages.
d. overall percentages.

ANSWER: a
POINTS: 1
DIFFICULTY: Moderate
LEARNING OBJECTIVES: BSST.ASWC.17.02.03 - Summarizing data for two variables using tables
NATIONAL STANDARDS: United States - BUSPROG: Analytic
STATE STANDARDS: United States - AK - DISC: Descriptive Statistics
KEYWORDS: Bloom's: Apply

78. The numbers of hours worked (per week) by 400 statistics students are shown below.

Number of hours	**Frequency**
0 - 9	20
10 - 19	80
20 - 29	200
30 - 39	100

The cumulative percent frequency for $\leq$ 29 hours is

a. 50.
b. 75.

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c. 200.

d. 300.

ANSWER: b
POINTS: 1
DIFFICULTY: Easy
LEARNING OBJECTIVES: BSST.ASWC.17.02.02 - Summarizing data for a quantitative variable
NATIONAL STANDARDS: United States - BUSPROG: Analytic
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KEYWORDS: Bloom's: Apply

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