

CHAPTER 2 FORM B

Name \_\_\_\_\_ Course Number: \_\_\_\_\_ Section Number: \_\_\_\_\_

**Directions:** Answer the questions in the spaces provided, or attach paper. Circle the correct choice for each response set.

**Provide an appropriate response.**

- 1) Suppose that a data set has a minimum value of 24 and a maximum of 79 and that you want 5 classes. Explain how to find the class width for this frequency table. What happens if you mistakenly use a class width of 11 instead of 12?
  
  
  
  
  
  
  
  
  
  
- 2) A college student wants to purchase one of two stocks. She has the average annual high values for each of these stocks over the most recent ten-year period. For comparison, she decides to sketch a time-series graph. How should she prepare her graph, and what should she look for?
  
  
  
  
  
  
  
  
  
  
- 3) The frequency distribution below summarizes the home sale prices in the city of Summerhill for the month of June. Find the class boundaries for class 80.0-110.9.

(Sale price in thousand \$)	Frequency
80.0 - 110.9	2
111.0 - 141.9	5
142.0 - 172.9	7
173.0 - 203.9	10
204.0 - 234.9	3
235.0 - 265.9	1

- A) 80.00, 110.95      B) 79.95, 110.95      C) 79.90, 110.95      D) 79.90, 111.0

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4) The frequency distribution below summarizes employee years of service for Alpha Corporation. Determine the width of each class.

Years of service	Frequency
1-5	5
6-10	20
11-15	25
16-20	10
21-25	5
26-30	3

- A) 5                      B) 6                      C) 4                      D) 10

Construct the cumulative frequency distribution that corresponds to the given frequency distribution.

5)

Speed	Number of cars
0-29	4
30-59	16
60-89	60
90-119	20

A)

Speed	Cumulative Frequency
Less than 30	100
Less than 60	80
Less than 90	82
Less than 120	4

B)

Speed	Cumulative Frequency
0-29	4
30-59	20
60-89	80
90-119	100

C)

Speed	Cumulative Frequency
Less than 30	0.04
Less than 60	0.20
Less than 90	0.80
Less than 120	1.00

D)

Speed	Cumulative Frequency
Less than 30	4
Less than 60	20
Less than 90	80
Less than 120	100

**Provide an appropriate response.**

- 6) The frequency distribution for the weekly incomes of students with part-time jobs is given below.  
 Construct the corresponding relative frequency distribution. Round relative frequencies to the nearest hundredth of a percent if necessary.

Income (\$)	Frequency
200-300	56
301-400	50
401-500	81
501-600	67
More than 600	16

A)

Income (\$)	Relative Frequency
200-300	29.45%
301-400	25.09%
401-500	5.97%
501-600	20.44%
More than 600	29.56%

B)

Income (\$)	Relative Frequency
201-300	15.5%
301-400	22.1%
401-500	31.3%
501-600	16.2%
More than 600	14.9%

C)

Income (\$)	Relative Frequency
200-300	20.74%
301-400	18.52%
401-500	30.00%
501-600	24.81%
More than 600	5.93%

D)

Income (\$)	Relative Frequency
200-300	12.5%
301-400	20.1%
401-500	37.3%
501-600	15.2%
More than 600	14.9%

**Use the given data to construct a frequency distribution.**

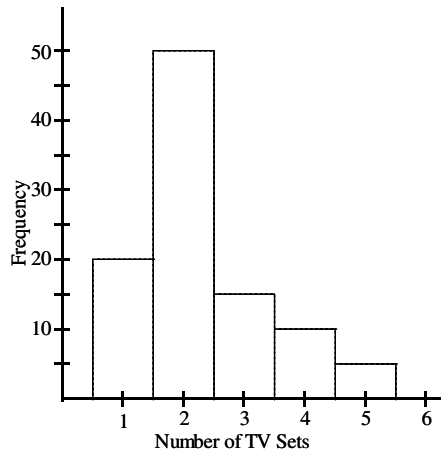
- 7) On a math test, the scores of 24 students were  
 94 72 71 65 71 71 94 89 71 64 85 72  
 72 85 71 72 85 71 72 89 72 85 89 65

Construct a frequency distribution. Use 4 classes beginning with a lower class limit of 60.

Score	Frequency

Provide an appropriate response.

- 8) The histogram below represents the number of television sets per household for a sample of U.S. households. What is the minimum number of households having the same number of television sets?



- A) 1                                      B) 5                                      C) 20                                      D) 100

Use the data to create a stemplot.

- 9) The midterm test scores for the seventh-period typing class are listed below.  
85 77 93 91 74 65 68 97 88 59 74 83 85 72 63 79

- A) 
$$\begin{array}{l|l} 5 & 9 \\ 6 & 3\ 5\ 8 \\ 7 & 3\ 5\ 5\ 8 \\ 8 & 2\ 4\ 4\ 7\ 9 \\ 9 & 1\ 3\ 7 \end{array}$$
- B) 
$$\begin{array}{l|l} 5 & 9 \\ 6 & 3\ 5\ 8 \\ 7 & 2\ 4\ 4\ 7\ 9 \\ 8 & 3\ 5\ 5\ 8 \\ 9 & 1\ 3\ 7 \end{array}$$

- 10) Twenty-four workers were surveyed about how long it takes them to travel to work each day. The data below are given in minutes.

20 35 42 52 65 20 60 49 24 37 23 24  
22 20 41 25 28 27 50 47 58 30 32 48

- A) 
$$\begin{array}{l|l} 2 & 0\ 0\ 0\ 2\ 3\ 4\ 4\ 5\ 7\ 8 \\ 3 & 0\ 2\ 5\ 7 \\ 4 & 1\ 2\ 7\ 8\ 9 \\ 5 & 0\ 2\ 8 \\ 6 & 0\ 5 \end{array}$$
- B) 
$$\begin{array}{l|l} 2 & 0\ 0\ 0\ 2\ 3\ 4\ 4\ 5\ 7 \\ 3 & 0\ 2\ 5\ 7\ 8 \\ 4 & 1\ 2\ 7\ 8\ 9 \\ 5 & 0\ 2\ 8 \\ 6 & 0\ 5 \end{array}$$

Find the original data from the stemplot.

11)

Stem	Leaves
2	6 8
3	1 8
4	6 6

A) 26, 21, 28, 31, 41, 46

B) 26, 28, 31, 31, 46, 46

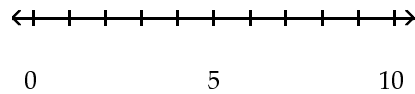
C) 26, 28, 31, 38, 46, 46

D) 21, 26, 21, 38, 48, 46

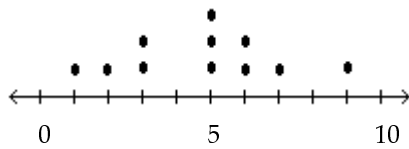
Construct the dotplot for the given data.

12) A store manager counts the number of customers who make a purchase in his store each day. The data are as follows.

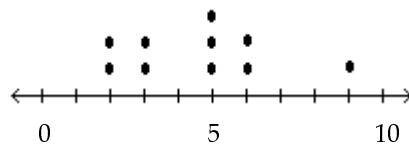
5 6 3 9 2 5 5 6 3 2



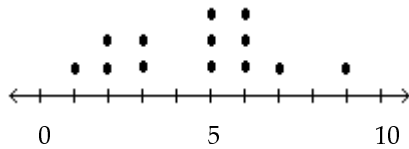
A)



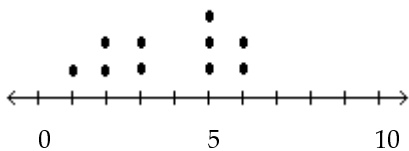
B)



C)



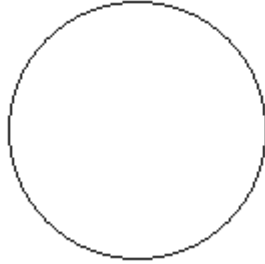
D)



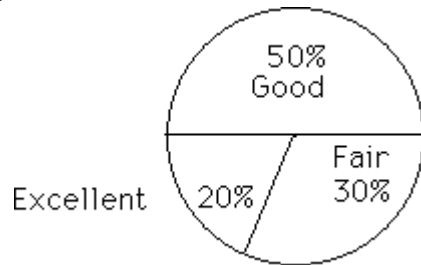
Construct a pie chart representing the given data set.

13) After reviewing a movie, 700 people rated the movie as excellent, good, or fair. The following data give the rating distribution.

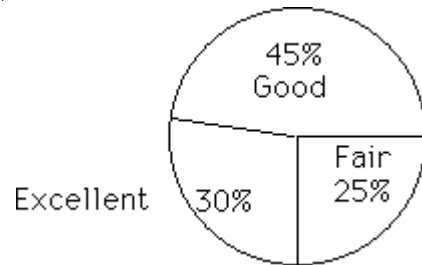
Excellent	Good	Fair
140	350	210



A)



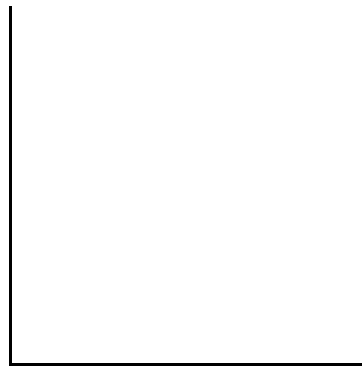
B)



Note: For #14, four-choice response set follows.  
Solve the problem.

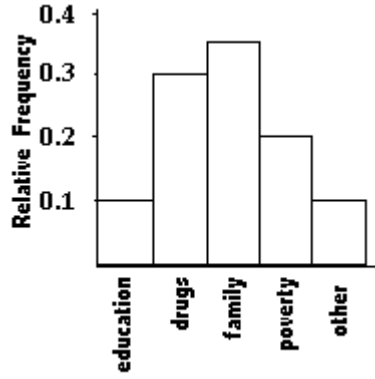
14) At the National Criminologists Association's annual convention, participants filled out a questionnaire asking what they thought was the most important cause for criminal behavior. The tally was as follows.

Cause	Frequency
education	10.3
drugs	30.9
family	20.6
poverty	36.05
other	5.15

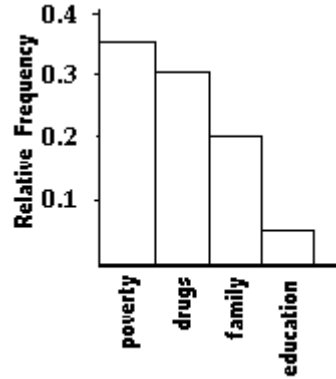


Construct a Pareto chart to display these findings.

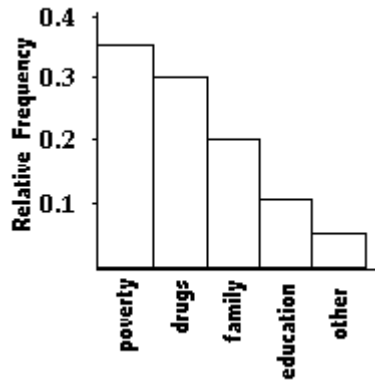
A)



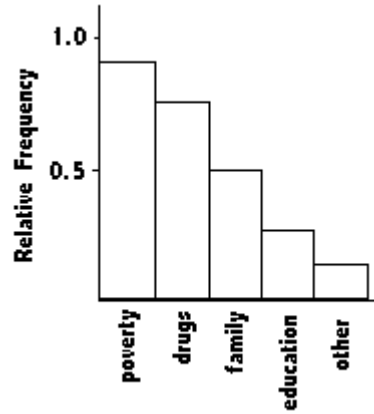
B)



C)



D)

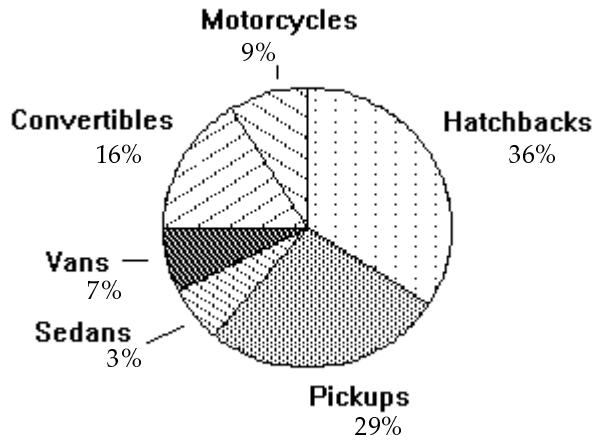


- 15) Using a strict interpretation of the relevant criteria characterizing a normal distribution, does the frequency distribution below appear to have a normal distribution? Does the distribution appear to be normal if the criteria are interpreted very loosely?

Closing Share Price	Frequency
0-5	2
6-10	5
11-15	14
16-20	26

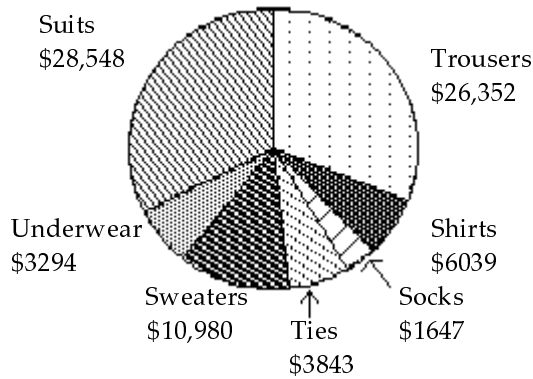
Use the pie chart to solve the problem.

- 16) A survey of the 9854 vehicles on the campus of State University yielded the following pie chart.



Find the number of hatchbacks. Round your result to the nearest whole number.

- A) 3055                      B) 36                      C) 3547                      D) 6307
- 17) The pie chart below gives the inventory of the men's department of a store.



In which item of apparel does the store have the smallest investment?

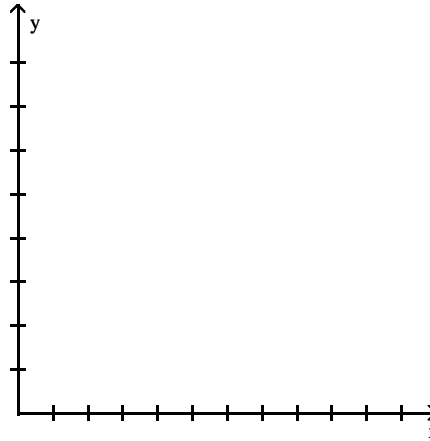
- A) Shirts                      B) Socks                      C) Underwear                      D) Suits



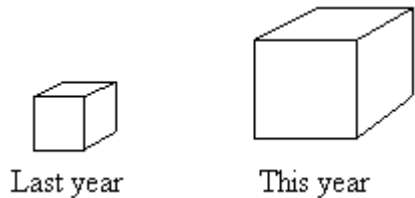
Provide an appropriate response.

- 18) Use the high closing values of Naristar Inc. stock from the years 1992 – 2003 to construct a time-series graph. (Let  $x = 0$  represent 1992 and so on.) Identify a trend.

Year	High	Year	High
1992	48	1998	62
1993	53	1999	60
1994	47	2000	68
1995	55	2001	42
1996	58	2002	51
1997	61	2003	78



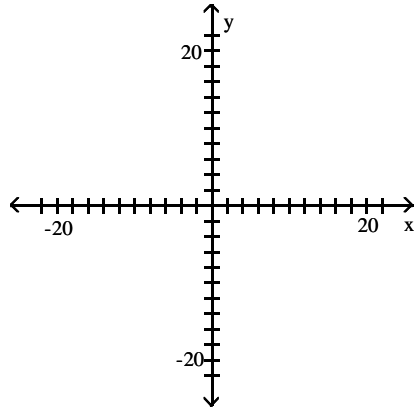
- 19) A parcel delivery service lowered its prices and finds that it has delivered twice as many parcels this year as it did last year. To illustrate this fact, the manager draws a graph as shown below. Each cube depicts a parcel. The side length of the "parcel" on the right is twice the side length of the "parcel" on the left. Why is this graph misleading? What visual impression is created by the graph?



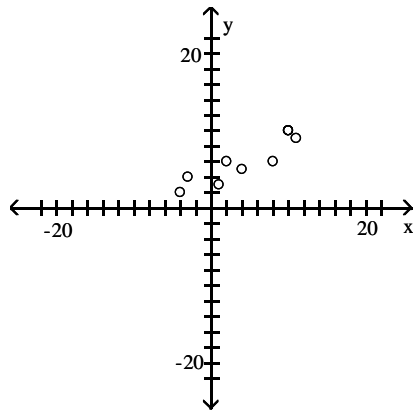
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Use the given paired data to construct a scatterplot.

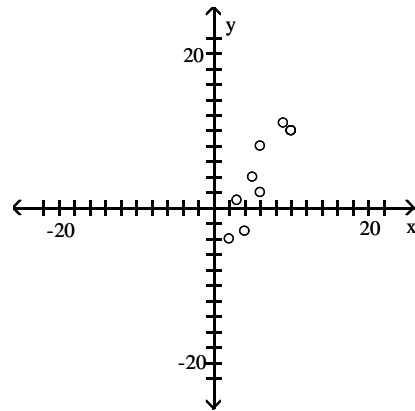
20) x -4 4 8 10 11 10 2 -3 1  
y 2 5 6 10 9 10 6 4 3



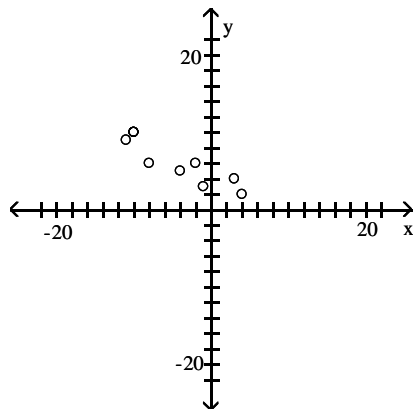
A)



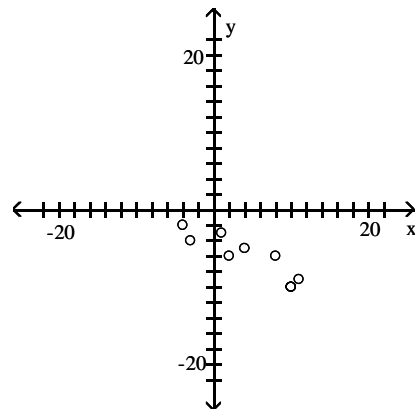
B)



C)



D)



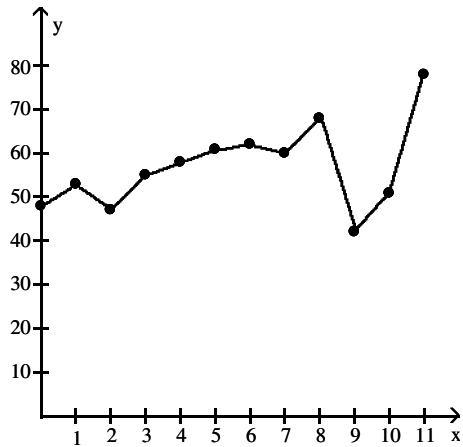
## Answer Key

### Testname: CHAPTER 2 FORM B

- 1) Since the range is  $79 - 24 = 55$ , and 55 divided by 5 equals 11, a whole number, the class width has to be widened from 11 to 12. If the class width were 11, data values equal to 79 would not be included in the frequency distribution.
- 2) The student should plot her data on a baseline marked by year and with vertical axis marked by high values. The stock that shows less volatility and a steady rise would be the better choice.
- 3) B
- 4) A
- 5) D
- 6) C
- 7)

Score	Frequency
60-69	3
70-79	12
80-89	7
90-99	2

- 8) B
- 9) B
- 10) A
- 11) C
- 12) B
- 13) A
- 14) C
- 15) No; no. The frequencies do not increase, reach a maximum, and then decrease.
- 16) C
- 17) B
- 18) Trend: Answers will vary. Possible answer: Except for a drop in high closing value in 1994, there was a steady rise through 2000, after which there was a sharp drop in 2001 followed by increases through 2003.



- 19) The volume of the cube on the right is eight times (not twice) the volume of the cube on the left. The graph gives the visual impression that eight times as many parcels were delivered this year as last year.
- 20) A