

CHAPTER 2 TEST

FORM A

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1. The Dean’s Office at Hendrix College gave the following information about numbers of majors in different academic areas: Humanities, 372; Natural Science, 415; Social Science, 511; Business Administration, 619; Philosophy, 196. Make a Pareto chart representing this information.

1.

2. Professor Hill in the Music Department kept a list of the number of students visiting his office each week for two semesters (30 weeks). The results were

15	23	17	13	3	9	7	6	8	11
16	32	27	4	20	3	28	5	6	11
20	12	8	10	25	10	8	15	11	9

- (a) Make a frequency table with five classes, showing class boundaries, class midpoints, frequencies, relative frequencies, and cumulative frequencies.

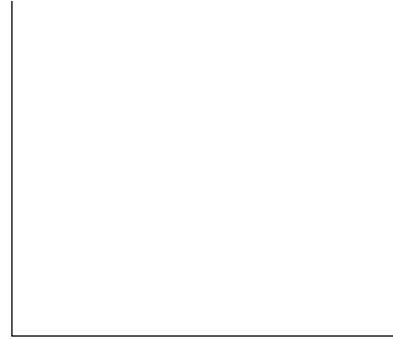
2. (a)

- (b) Draw a frequency histogram from the information in part (a).

(b)


(c) Draw a relative-frequency histogram from the information in part (a).

(c)



(d) Draw an ogive from the information in part (a).

(d)



3. Jim is a taxi driver who keeps a record of his meter readings. The results for the past 20 meter readings (rounded to the nearest dollar) are given below.

15 7 9 21 19 17 8 35 22 33
46 5 24 37 51 49 57 42 12 16

Make a stem-and-leaf display of the data.


3. _____

4. The Air Pollution Index in Denver for each day of the second week of February is shown below.

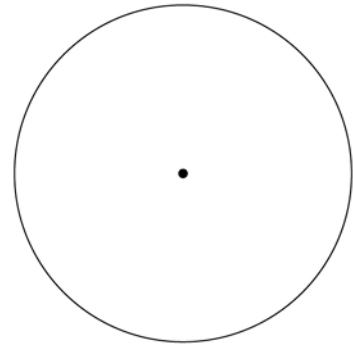
1.7 2.4 5.3 4.1 3.2 2.0 2.5

Make a time-series graph for these data.

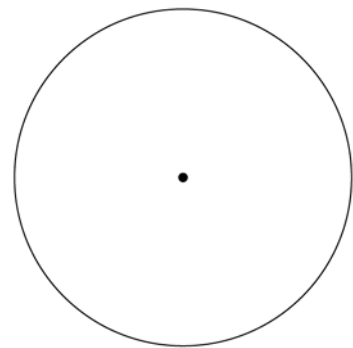
4.



5. A survey of 100 students was taken to see how they preferred to study. The survey showed that 38 students liked it quiet, 20 students liked the television on, 34 students liked the stereo on, and 8 students liked white noise (as in a lunch room). Make a circle graph to display this information.



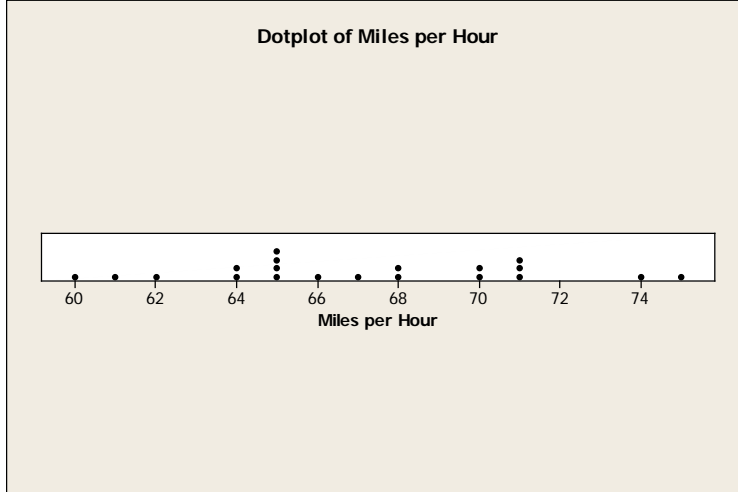
6. Of all the shoppers at a supermarket on a given day, it was determined that 71% were women under age 60, 20% were women 60 years or older, 7% were men under age 60, and 2% were men 60 years or older. Make a pie chart of this information.



7. Make a dotplot for the data in Problem 2 regarding the number of students visiting the office. Compare the dotplot to the histogram in Problem 2.



8. A sample of 20 motorists was taken from a freeway where the speed limit was 65 mph. A dotplot of their speeds is shown below. How many motorists were speeding?



8. _____

9. Following is a list of ages of participants entered in a 5K fun run. Make a stem-and-leaf display for these data, and describe the distribution.

24 31 8 29 36 55 42 40 22 19 24
43 38 18 32 50 10 28 35 25 28 47

9. _____

10. For what type of data is a histogram most appropriate, quantitative or qualitative?

10. _____

1. A book store recorded the following sales last month by genre: Romance, 519; Murder mystery, 732; Biography, 211; Self-help, 819; Travel guide, 143; Children’s books, 643. Make a Pareto chart displaying this information.

1.

2. The College Registrar’s Office recorded the number of students receiving a grade of incomplete. Results for the past 24 quarters are

28	47	19	58	63	77	53	39	93	35
42	81	62	67	71	59	48	56	75	48
63	32	46	57						

- (a) Make a frequency table with five classes, showing class boundaries, class midpoints, frequencies, relative frequencies, and cumulative frequencies.

2. (a)

- (b) Draw a frequency histogram from the information in part (a).

(b)

(c) Draw a relative-frequency histogram from the information in part (a).

(c)

(d) Draw an ogive from the information in part (a).

(d)

3. The Humanities Division recorded the number of students signed up for the Study Abroad Program each quarter. The results are

58 26 21 29 33 47 42 38 44 56
52 64 68 59 63 36 34 45 51 50

Make a stem-and-leaf display of these data.

3. _____

4. The price of gold for 12 consecutive weeks is shown below.

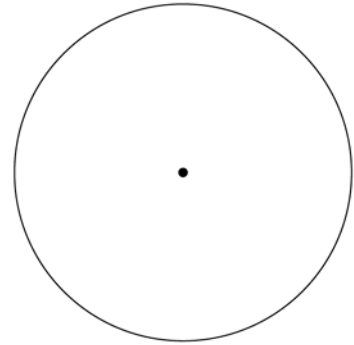
Week	1	2	3	4	5	6
Price (\$)	289	291	298	305	311	322

Week	7	8	9	10	11	12
Price (\$)	316	300	290	299	291	288

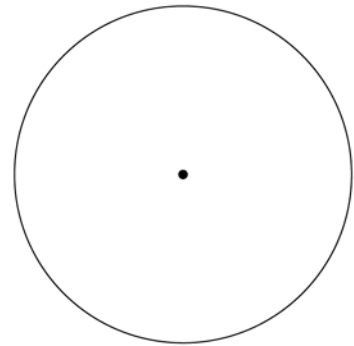
Make a time-series graph for these data.

4. _____

5. A college senior class has 5000 students. Their graduation forms have their chosen major. There are 800 who chose Social Science, 400 who chose Science, 1100 who chose Humanities, 1400 who chose Computer-Related Majors, 900 who chose Engineering, and 400 who have yet to fill in their major. Make a circle graph to display this information.



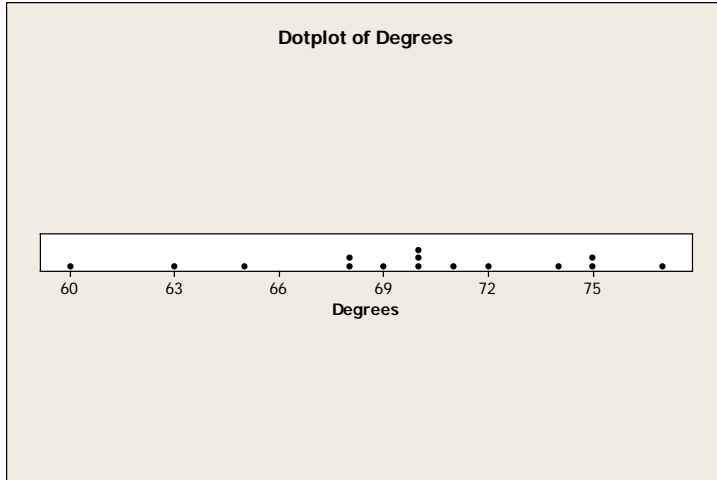
6. The school administration would like to know who is taking the city bus to school. A survey showed that the buses held 61% freshman, 25% sophomores, 12% juniors, and 2% seniors. Make a pie chart of this information.



7. Make a dotplot for the data in Problem 2 regarding the number of students receiving a grade of incomplete. Compare the dotplot to the histogram in Problem 2.



8. A sample of 15 days was selected from the summer season. A dotplot of the daily high temperature is shown here. How many days were colder than 70°F?



8. _____

9. Following is a list of diameters (in millimeters) of holes produced by an assembly-line machine. Make a stem-and-leaf display for these data, and describe the distribution.

2.3	3.7	1.2	3.6	2.4	2.6	3.7	0.9
1.8	2.5	2.5	3.0	2.8	1.7	3.1	4.1

9. _____

10. A histogram and a stem-and-leaf plot show basically the same features of a distribution. What is the one primary advantage of a stem-and-leaf plot?

10. _____

Write the letter of the response that best answers each problem.

1. _____ identify the frequency of events or categories in decreasing order of frequency of occurrence. 1. _____

(a) Time-series graphs (b) Bar graphs
 (c) Pareto charts (d) Ogives (e) Circle graphs

2. _____ are useful for quantitative or qualitative data. With qualitative data, the frequency or percentage of occurrence can be displayed. With quantitative data, the measurement itself can be displayed. 2. _____

(a) Time-series graphs (b) Bar graphs
 (c) Pareto charts (d) Ogives (e) Circle graphs

3. _____ display how a *total* is dispersed into several categories. They are very appropriate for qualitative data or any data where percentage of occurrence makes sense. 3. _____

(a) Time-series graphs (b) Bar graphs
 (c) Pareto charts (d) Ogives (e) Circle graphs

4. _____ display how data change over time. They are best if the units of time are consistent in a given plot. 4. _____

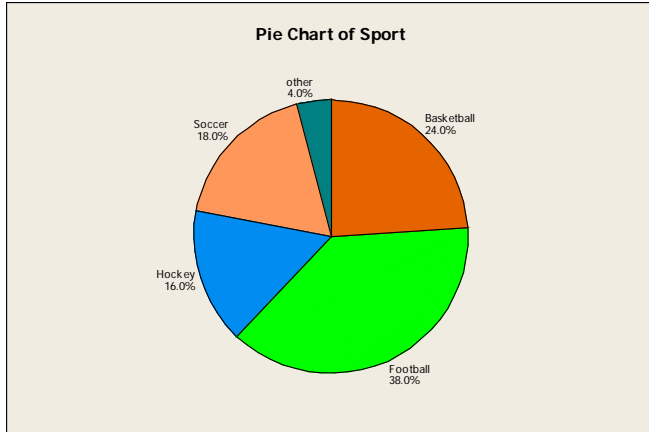
(a) Time-series graphs (b) Bar graphs
 (c) Pareto charts (d) Ogives (e) Circle graphs

5. _____ display cumulative frequencies. They are especially useful for quickly determining the number of data values above or below a specified level. 5. _____

(a) Time-series graphs (b) Bar graphs
 (c) Pareto charts (d) Ogives (e) Circle graphs

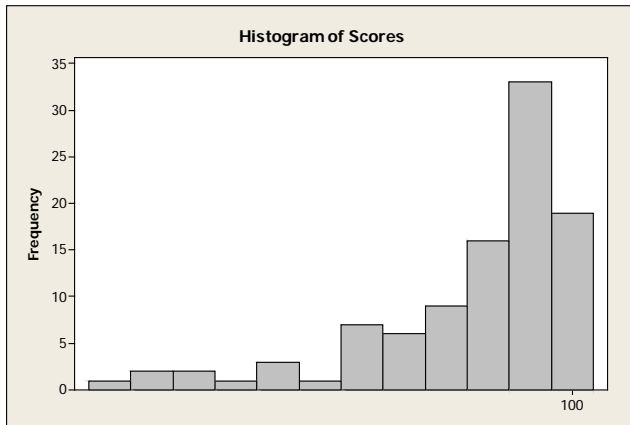
6. A survey of 500 teenagers was taken to see which sport was their favorite to watch on television. The pie chart below displays the results. Choose the correct data (numbers of teenagers) from which the pie chart was constructed.

6. _____



- (a) Basketball, 190; football, 120; hockey, 90; soccer, 80; other, 20
- (b) Basketball, 120; football, 190; hockey, 90; soccer, 80; other, 20
- (c) Basketball, 20; football, 90; hockey, 80; soccer, 190; other, 120
- (d) Basketball, 240; football, 380; hockey, 160; soccer, 180; other, 40
- (e) Basketball, 120; football, 190; hockey, 80; soccer, 90; other, 20

7. Following is a histogram displaying the test scores for students in a statistics class.



The distribution shape is categorized as

7. _____

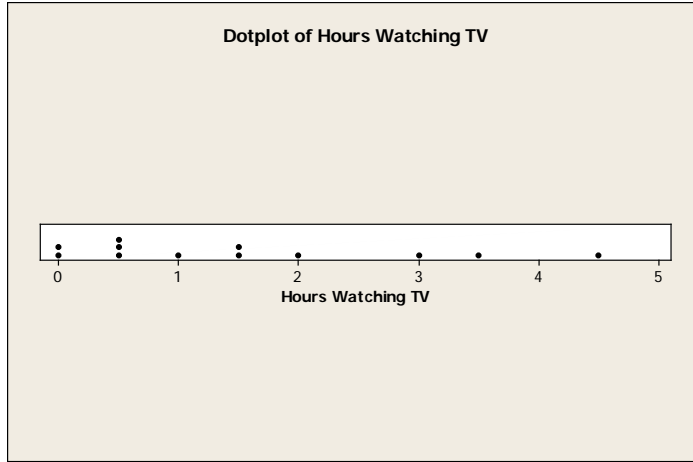
- (a) Uniform (b) Symmetric
- (c) Bimodal (d) Skewed left (e) Skewed right

CHAPTER 2 TEST

FORM C

PAGE 3

8. A sample of 12 children was taken from a day-care center. A dotplot of the average number of hours of daily television viewing is shown here.



How many children watch television more than 3 hours per day?

8. _____

- (a) 2 (b) 3
 (c) 9 (d) 10 (e) Cannot determine

9. Following is a list of prices (to the nearest dollar) for college textbooks. Make a stem-and-leaf display for these data.

9. _____

2.3 3.7 1.2 3.6 2.4 2.6 3.7 0.9
 1.8 2.5 2.5 3.0 2.8 1.7 3.1 4.1

- (a)
$$\begin{array}{c|l} 0 & 2 \ 2 \ 3 \\ 1 & 2 \ 7 \ 8 \\ 2 & 4 \ 4 \ 7 \ 9 \\ 3 & 1 \ 2 \ 5 \ 8 \\ 4 & 2 \ 4 \end{array}$$
- (b)
$$\begin{array}{c|l} 10 & 2 \ 7 \ 8 \\ 20 & 0 \ 0 \ 4 \ 4 \ 7 \ 9 \\ 30 & 0 \ 1 \ 2 \ 5 \ 8 \\ 40 & 2 \ 4 \end{array}$$
- (c)
$$\begin{array}{c|l} 0 & 9 \\ 1 & 2 \ 7 \ 8 \\ 2 & 3 \ 4 \ 5 \ 5 \ 6 \ 8 \\ 3 & 0 \ 1 \ 6 \ 7 \ 7 \\ 4 & 1 \end{array}$$
- (d)
$$\begin{array}{c|l} 1 & 2 \ 7 \ 8 \\ 2 & 0 \ 4 \ 4 \ 7 \ 9 \\ 3 & 0 \ 1 \ 2 \ 5 \ 8 \\ 4 & 2 \ 4 \end{array}$$