

Name \_\_\_\_\_

### Chapter 8.3

#### Frequency Tables and Histograms

1. A random sample of 28 department stores was selected and the price of a pair of Bache PX-200 stereo speakers was checked at each store. The results to the nearest dollar were:

\$95 \$122 \$108 \$86 \$103 \$82 \$85 \$77 \$75 \$112 \$118 \$87 \$102 \$70  
\$104 \$116 \$85 \$122 \$87 \$100 \$105 \$109 \$99 \$105 \$99 \$101 \$85 \$89

- Make a frequency table for the preceding data. Use 70-74 as the lowest class.
- Use the frequency table to draw a histogram.
- Describe the distribution shape.

Which of the shapes we have studied is most like the shape of this distribution?

2. Many airline passengers seem weighted down with their carry-on luggage. Just how much weight are they carrying? The carry-on luggage weights for a random sample of 40 passengers returning from a vacation to Bermuda were recorded in pounds.

Weight of Carry-On Luggage in Pounds

30 27 12 42 35 47 38 36 27 35  
22 17 29 13 21 20 38 32 41 33  
26 45 18 43 18 32 31 32 19 21  
33 31 28 29 51 12 32 18 21 26

- Make a frequency table for the preceding data. Use 10-14 as the lowest class.
- Use the frequency table to draw a histogram.
- Describe the distribution shape.

Which of the shapes we have studied is most like the shape of this distribution?

Name \_\_\_\_\_

## Chapter 8.4, 8.5

### Descriptive Statistics and Variation

1. Without actually doing the calculations, decide which of the following two sets of data will have the greater standard deviation:

5, 8, 9, 10, 12, 16 or 8, 9, 9, 10, 10, 11 Explain why.

2. Of the two sets of data, which would you expect to have the larger standard deviation?

Explain. 2, 4, 6, 8, 10 or 102, 104, 106, 108, 110

3. Find the mean, median, range, and standard deviation for the following sets of data.

- a. 6, 6, 10, 12, 3, 5
- b. 4, 0, 3, 6, 9, 12, 2, 3, 4, 7
- c. 6, 6, 6, 6, 6
- d. 47, 45, 24, 56, 76, 12

4. Would you use the mean, median or mode to give a fair representation of the "average" in the following situations?

- a. Builders planning houses are interested in the average size of an American family.
- b. The grade point average for students at Bailey High School.
- c. The average family income in Nebraska.
- d. The average height of a 16-year-old boy.

5. The mean is the most "sensitive" average since it is affected by any change in the data.

- a. Determine the mean, median, and mode for 1, 2, 3, 4, 4, 7, 11.
- b. Now change the 7 to a 10 in the same list. Which averages will be affected by this change?

6. The State of New Mexico decided to give all state employees a \$1000 salary increase for the 2014 budget year. How did this increase affect the mean salary of state employees?

- How did this increase affect the standard deviation of the salaries of state employees in New Mexico?
- If all state employees were given a 3% increase in salary, how would the mean and standard deviation be affected?

7. The average waiting time in line at the drive-through at both Fidelity Bank and First State Bank is three minutes. However the standard deviation at Fidelity is 1.5 minutes while at First State Bank, it is 0.75 minutes. Which bank has better customer service in your opinion? Explain your answer statistically.