## **Lesson 2.1 • Measures of Central Tendency and Box Plots**

Period Name Date

1. Find the mean, median, and mode for each data set.

**2.** Invent a data set that matches each description.

a. Five values, 
$$mean = 15$$
,  $median = 13$ , no mode

**b.** Six values, 
$$mean = 24$$
,  $median = 25$ ,  $mode = 28$ 

- 3. Suppose that you have a data set containing 1000 test scores. How many scores would you expect to find matching each description?
  - **a.** Above the median
  - **c.** Between the first and third quartiles
  - **e.** Below the third quartile

  - g. Between the median and the third quartile
- **4.** Give the five-number summary for each data set.

**b.** {0, 30, 45, 50, 75, 80, 95}

**b.** Below the first quartile

**d.** Above the third quartile

**f.** Above the first quartile

- **d.** {32, 55, 16, 70, 65, 55, 40, 49}
- **e.** {19.3, 32.4, 20.5, 18.0, 26.6, 21.4, 16.7, 33.9}
- **f.** {0.52, 3.91, 4.67, 2.20, 8.15, 5.91, 7.94, 1.11, 6.55, 4.03}
- **5.** Match each box plot to one of the data sets below.

- **A.** {29, 16, 20, 28, 5, 50, 15}
- **C.** {21, 12, 33, 44, 26, 15, 36}

- **B.** {30, 18, 22, 28, 31, 15, 50}
- **D.** {48, 41, 35, 12, 15, 19, 26}

9

## **Lesson 2.2 • Measures of Spread**

Name Period Date
------------------

- **1.** For each data set, find the mean, the deviation from the mean for each value, and the standard deviation of the data set. (Round to the nearest tenth.)
  - **a.** {12.4, 26.3, 9.8, 33.9, 7.6}

**b.** {235, 413, 505, 111, 700, 626, 357}

- **c.** {0.5, 2.6, 1.8, 4.7, 0.9}
- **2.** For each data set, give the mean and the standard deviation. Include appropriate units in your answers.
  - **a.** The heights in inches of eight children are 32, 45, 39, 51, 28, 54, 37, and 42.
  - **b.** The lengths in centimeters of six pencils are 8.5, 19.0, 11.8, 13.2, 16.4, and 6.1.
  - **c.** The prices of seven music CDs are \$13.50, \$10.95, \$9.95, \$16.00, \$12.50, \$15.95, and \$17.75.
- **3.** For each data set, find the median, the range, and the IQR.
  - **a.** {18, 13, 15, 24, 20}

- **b.** {4, 9, 7, 6, 0, 11, 7}
- **c.** {356, 211, 867, 779, 101, 543}
- 4. Identify all outliers in each data set.
  - **a.** {20, 8, 32, 18, 105, 4, 45}

- **b.** {3.2, 4.9, 1.6, 2.8, 5.5}
- **c.** {35, 38, 5, 46, 49, 41, 52, 95}

## **Lesson 2.3 • Histograms and Percentile Ranks**

**Period** Date Name

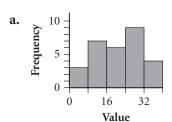
1. The following data represent the ages of family members attending a family reunion.

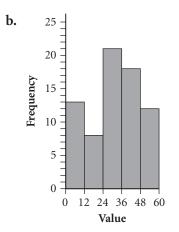
Draw a histogram for these data with the given number of bins.

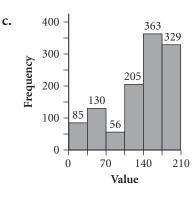
**a.** 9

**b.** 6

**2.** For each of the following histograms, give the bin width and the number of values in the data set. Then identify the bin that contains the median of the data.







- **3.** Find each percentile rank.
  - a. 73 out of 100 employees in a company earn less than \$45,000 a year. Find the percentile rank of an employee who earns \$45,000 a year.
  - **b.** 460 out of 1000 students scored at least 30 points out of 50 on a standardized test. Find the percentile rank of a student who scored 30 points on the test.
  - c. 220 out of 500 families spend less than \$50 per month on longdistance telephone calls. Find the percentile rank of a family that spends \$50 per month on long-distance calls.
  - **d.** 76 out of 200 people living alone spend \$650 a month or more on rent. Find the percentile rank of a person who spends \$650 a month on rent.

11