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

Name $\qquad$ Period $\qquad$ Date $\qquad$

1. Find the mean, median, and mode for each data set.
a. $\{2,3,5,5,7,7,7,8,9,10\}$
b. $\{8,7,5,6,3,2,9,8\}$
c. $\{210,180,188,162,170\}$
d. $\{4.5,20.7,35.2,28.8,36.5,40.5\}$
e. $\{5.3,8.4,5.3,9.2,10.6,9.2\}$
f. $\{2150,1860,2340,1990\}$
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
b. Below the first quartile
c. Between the first and third quartiles
d. Above the third quartile
e. Below the third quartile
f. Above the first quartile
g. Between the median and the third quartile
4. Give the five-number summary for each data set.
a. $\{10,8,6,4,2\}$
b. $\{0,30,45,50,75,80,95\}$
c. $\{8,6,8,2,9,4,4,3,1\}$
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. $\{48,41,35,12,15,19,26\}$


## Lesson 2.2•Measures of Spread

Name $\qquad$ Period $\qquad$ Date $\qquad$

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 $I Q R$.
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

$\qquad$
$\qquad$ Date $\qquad$

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

$$
\begin{aligned}
& \{9,5,25,29,40,48,63,56,3,32,38,53,79,0,85,87, \\
& 12,14,32,5,54,67,78,75\}
\end{aligned}
$$

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.
a.

b.

c.

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.

