

# EXERCISES

For more practice, see *Extra Practice*.

## Practice and Problem Solving

### A Practice by Example

**Example 1**  
(page 119)

**Find the mean, median, and mode. Which measure of central tendency best describes the data?**

- weights of textbooks in ounces  
12 10 9 15 16 10
- ages of students on math team  
14 14 15 15 16 15 15 16
- time spent on Internet in min/day  
75 38 43 120 65 48 52
- weights of channel catfish in pounds  
4.8 5 2.3 4.5 4.8 5.2

**Example 2**  
(page 119)

**Write and solve an equation to find the value of  $x$ .**

- 3.8, 4.2, 5.3,  $x$ , mean 4.8
- 99, 86, 76, 95,  $x$ , mean 91
- 100, 121, 105, 113, 108,  $x$ , mean 112
- 31.7, 42.8, 26.4,  $x$ , mean 35

**Example 3**  
(page 120)

**Find the range.**

- 12 15 17 28 30
- 5.3 6.2 3.1 4.8 7.3
- $-12$   $-15$   $5$   $3$   $-2$   $0$   $-7$
- $2\frac{1}{2}$   $3\frac{1}{3}$   $-5\frac{3}{4}$   $\frac{3}{8}$   $3\frac{5}{8}$

**13.** For each list of data, find the range and the mean. Use the range to compare the spread of the data.

**List 1**

64 43 55 28 71

**List 2**

48 53 61 47 52

**Example 4**  
(page 120)

**Make a stem-and-leaf plot for each set of data.**

- 18 35 28 15 36 10 25 22 15
- 18.6 18.4 17.6 15.7 15.3 17.5
- 785 776 788 761 768 768 785
- 0.8 0.2 1.4 3.5 4.3 4.5 2.6 2.2

**Example 5**  
(page 121)

**Find the mean, median, mode, and range of each side of the stem-and-leaf plot.**

**18.**

Time Spent on  
Homework  
(minutes/day)

Class A	Class B
6 6 4 3	4   1 1 4 5 7
9 8 6 4 4 4	5   0 2 2 2 4
5 2 1 0	6   4 5 8 9
8 7 6 6 4 2	7   3 6 7 9 9 9
means 43 ← 3	4   1 → means 41

**19.**

Growth of Two Varieties  
of Tulip Plants  
(inches/day)

Type A	Type B
5 3 3	2
3 2 1 1	3   0 1 1
1	4   3 5 8
	5   2 4
means 0.33 ← 3	3   1 → means 0.31

### B Apply Your Skills

**Find the mean, median, mode, and range.**

- 9.8 7.2 6.3 8.7 5.8 9.4 5.1 6.2
- 3 -12 -1 -7 -2 0 -5 -1 -4 -2
- 42.1 46.4 58.2 67.3 49.1 40.2 22.3 46.6

**23. Critical Thinking** The mean of a set of data is 7.8, the mode is 6.6, and the median is 6.8. Which number is more likely to be the range, 5 or 30? Explain.

**24. Wildlife Management** A wildlife manager working at the Everglades National Park in Florida measured and tagged adult male crocodiles. The data he collected are at the right.

2.4	2.5	2.5	2.3
2.8	2.4	2.3	2.4
2.1	2.2	2.5	2.7

- What are the mean and median lengths of the crocodiles?
- The wildlife manager captured another crocodile. Its length was 3.3 m. What is the mean with this new piece of data? What is the median? Round to the nearest tenth.

**25. Manufacturing** Two manufacturing plants create sheets of steel for medical instruments. The back-to-back stem-and-leaf plot at the right shows data collected from the two plants.

Manufacturing Plant A	Manufacturing Plant B
	4   3 5 9
8 7 4 4 2	5   2 7
4 3 1	6   3 4
	7   2
means 6.1 ← 1	6   3 → means 6.3

- Find the mean, median, mode, and range of each set of data.
- Which measure of central tendency best describes each set of data? Explain.
- Reasoning** Which plant has the better quality control? Explain.

**26. Open-Ended** Give an example of a set of data for which the mode best represents the data. Explain.

**27. Sports** The median height of the 21 players on a girls' soccer team is 5 ft 7 in. What is the greatest possible number of girls who are less than 5 ft 7 in. tall?

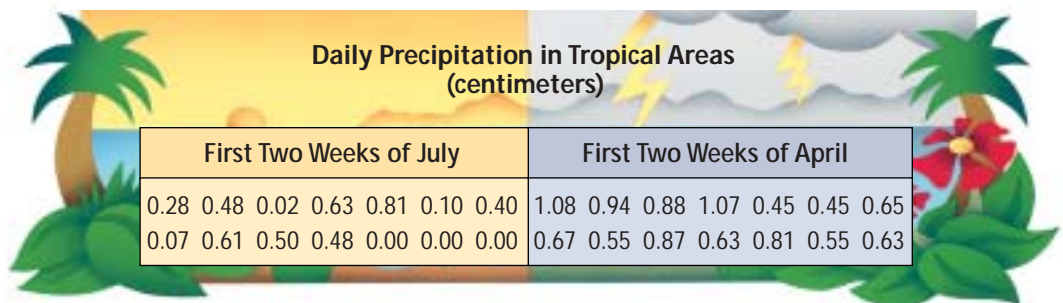
**28. Writing** How does an outlier affect the mean of a set of data?

### Real-World Connection

**Careers** A wildlife manager collects data about the animal and plant life of an area. Using statistical measures, the wildlife manager can make predictions about the growth of plants and animals and the ecological health of the area.

### Challenge

**29.** Make a back-to-back stem-and-leaf plot of the data below



**30.** You have these scores on six exams: 97, 92, 88, 85, 91, and 90. There are two more exams. You hope to have an exam average of 92. What are two possible scores you could make to achieve that average?

**31.** During the first 6 hours of a trip, you average 44 mi/h. During the last 4 hours of your trip, you average 50 mi/h. What is your average speed for the whole trip? (*Hint:* First find the total number of miles traveled.)



## Standardized Test Prep

### Gridded Response

32. You have a mean score of 84 after taking five 100-point tests. What do you need to score on the sixth 100-point test to have a mean score of 85?
33. Five runners on the track team have the following times in seconds for the 100-meter dash. What is the difference between the mean and the median of the following times?
- 10.2                  10.6                  11.9                  9.9                  10.6

34. The average speeds of the winners of the Daytona 500 from 1995 to 2000 are listed at the right. What is the mean in miles per hour of the given speeds rounded to the nearest tenth?
35. Find the sum of the mean, the median, and the mode of the following data: 22, 18, 17, 18, 25, 24, 24, 18.
36. The average low temperature for a 4-day period in January for the city of Orlando, Florida, was 58°F. After the fifth day, the 5-day average was 59°F. What was the low temperature on the fifth day?

Daytona 500

Year	Average Speed
1995	141.7 mi/h
1996	154.3 mi/h
1997	148.3 mi/h
1998	172.7 mi/h
1999	161.6 mi/h
2000	155.7 mi/h

SOURCE: 2001 Sports Almanac



### Take It to the NET

Online lesson quiz at [www.PHSchool.com](http://www.PHSchool.com)

## Mixed Review

### Lesson 2-6

Solve each equation for  $x$ .

37.  $y = x + 4$

38.  $y = -x + 3$

39.  $y = 10x + 4$

40.  $y = 2x + 9$

### Lesson 2-1

Solve each equation.

41.  $\frac{x}{8} = -18$

42.  $-15n = 210$

43.  $-a = \frac{2}{3}$

44.  $-\frac{y}{5} = -22$