STUDENTS

MOVING FROM

ALGEBRA 2 TO

STATISTICS

5-9 Practice

Measures of Central Tendency

Find the mean, median, and mode for each set of data. If necessary, round to the nearest tenth.
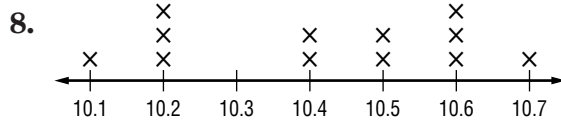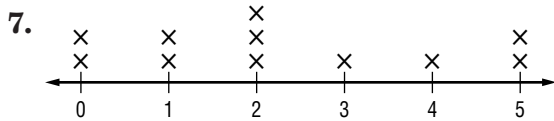
1. 4, 6, 12, 5, 8

2. 16, 18, 15, 16, 21, 16

3. 55, 46, 50, 42, 39

4. 17, 16, 13, 17, 17, 10, 10, 13, 10

5. 25, 25, 25, 20

6. 3.1, 4.5, 4.5, 4.3, 6.0, 3.2

Find the mean, median, and mode for each set of data. If necessary, round to the nearest tenth.

7.

8.

9. TORNADOES The table below shows the number of tornadoes reported in the United States from 1980–1990. Find the mean, median, and mode for the number of tornadoes.

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Number of Tornadoes	866	783	1046	931	907	684	764	656	702	858	1132

Source: *The Universal Almanac*

6-1 Practice

Ratios and Rates

Express each ratio as a fraction in simplest form.

1. 56 pencils out of 64 erasers

2. 25 calculators to 20 students

3. 36 cassettes to 60 CDs

4. 18 minnows to 27 fish

5. 6 pounds to 256 ounces

6. 5 hours to 720 minutes

7. 9 gallons to 48 quarts

8. 24 feet to 30 yards

Express each ratio as a unit rate. Round to the nearest tenth or nearest cent, if necessary.

9. $4.60 for 5 cans of soup

10. $51 for a box of 75 tiles

11. 652 miles in 9 days

12. 116 meters in 12 seconds

13. 176 new employees in 22 years

14. 34 yards for 6 costumes

15. 55 pages in 25 minutes

16. $3015 from 36 people

Convert each rate using dimensional analysis.

17. 18 m/min = _?_ cm/s

18. 5.7 gal/h = _?_ c/min

19. 264 yd/s = _?_ mi/h

20. 2 qt/min = _?_ gal/h

21. 99 in./s = _?_ mi/day (1 day = 24 h)

22. 154 mi/h = _?_ in./s

23. TRACK AND FIELD Rita sprinted 77 feet in 10 seconds. How many miles per hour is this?

6-2 Practice

Proportional and Nonproportional Relationships

Determine whether the set of numbers in each table are proportional.

1.
Cups of Rice	1	2	2.5	3
Cups of Water	1.5	3	3.75	4.5

2.
Miles driven	1	2	6	9
Toll fare	$1.07	$1.14	$1.42	$1.63

For Exercises 3 and 4, write and solve an equation.

3. **JOBS** Sharif started a new job working 15 hours a week. After how many weeks will he have worked a total of 75 hours?

4. **GARDENING** During its first 50 days of growth, a sunflower grows about 4 cm per day. Using this rate, after how many days will a sunflower be 60 cm tall?

For Exercises 5–6, complete each table. Determine whether the pattern forms a proportion.

5. **TEXT MESSAGING** It costs Victoria $0.10 to send a text message.

Number of Messages	4				
Cost					

6. **WATER CONSUMPTION** Water flows out of a kitchen faucet at about 1.5 gallons per minute.

Minutes	0.5				
Gallons of Water					

7. **COOKING** The amount of time it takes to cook a turkey increases with the weight of the turkey. It is recommended that you cook a 10 lb turkey for 3 hours. An extra 12 minutes of cooking time is necessary for each additional pound of turkey. Is the cooking time proportional to the weight of the turkey? Explain your reasoning.

6-3 Practice

Using Proportions

Determine whether each pair of ratios forms a proportion.

1. $\dfrac{5}{8}, \dfrac{20}{32}$

2. $\dfrac{12}{28}, \dfrac{27}{63}$

3. $\dfrac{8}{50}, \dfrac{1}{43}$

4. $\dfrac{40}{48}, \dfrac{56}{42}$

5. $\dfrac{6.4}{16}, \dfrac{32}{80}$

6. $\dfrac{12}{18}, \dfrac{90}{135}$

7. $\dfrac{21}{24}, \dfrac{56}{64}$

8. $\dfrac{9}{16}, \dfrac{3}{4}$

9. $\dfrac{12}{32}, \dfrac{8}{3}$

10. $\dfrac{2.6}{4}, \dfrac{4.6}{8}$

11. $\dfrac{5.1}{1.7}, \dfrac{7.5}{2.5}$

12. $\dfrac{8.5}{25}, \dfrac{17}{50}$

ALGEBRA Solve each proportion.

13. $\dfrac{n}{12} = \dfrac{6}{18}$

14. $\dfrac{8}{v} = \dfrac{56}{105}$

15. $\dfrac{15}{35} = \dfrac{s}{7}$

16. $\dfrac{24}{30} = \dfrac{8}{w}$

17. $\dfrac{c}{28} = \dfrac{5}{7}$

18. $\dfrac{3}{r} = \dfrac{39}{65}$

19. $\dfrac{9}{15} = \dfrac{m}{25}$

20. $\dfrac{7.5}{6.0} = \dfrac{3.6}{x}$

21. $\dfrac{12}{25} = \dfrac{u}{40}$

22. $\dfrac{1}{a} = \dfrac{33}{132}$

23. $\dfrac{f}{5} = \dfrac{16}{40}$

24. $\dfrac{r}{6.5} = \dfrac{0.2}{1.3}$

25. $\dfrac{30}{14} = \dfrac{k}{1.54}$

26. $\dfrac{3.5}{7.2} = \dfrac{k}{57.6}$

27. $\dfrac{2.1}{42} = \dfrac{7}{t}$

28. **FOOD** Gayle is making fruit punch that consists of 2 quarts of juice and 1 quart of soda water. How much soda water does she need if she has 5 quarts of juice?

6-4 Practice

Scale Drawings and Models

On a map, the scale is 5 centimeters = 2 kilometers. Find the missing distances.

	Location	Map Distance	Actual Distance
1.	Town A to Town B	10 cm	
2.	Town A to Town C		10 km
3.	Town A to Town D		5.6 km
4.	Town A to Town E	2 cm	
5.	Town A to Town F	0.5 cm	
6.	Town A to Town G		3.2 km
7.	Town A to Town H	0.25 cm	
8.	Town A to Town I		2.4 km
9.	Town A to Town J		0.04 km
10.	Town A to Town K	1 cm	
11.	Town A to Town L	2.5 cm	
12.	Town A to Town M		0.48 km

13. Refer to Exercises 1–12. What is the scale factor?

14. What is the scale factor if the scale is 15 inches = 1 yard?

15. STRUCTURES A barn is 50 feet wide by 80 feet long. Make a scale drawing of the barn that has a scale of $\frac{1}{2}$ inch = 10 feet.

16. PHOTOGRAPHY A man in a photograph is 1.5 inches in height. If the man is 6 feet tall, what is the scale?

6-5 Practice

Fractions, Decimals, and Percents

Express each percent as a fraction or mixed number in simplest form and as a decimal.

1. 35%

2. $8\frac{5}{6}\%$

3. $10\frac{1}{2}\%$

4. 8.4%

5. 500%

6. 32%

7. 80%

8. $\frac{1}{8}\%$

9. 65%

10. 48.5%

11. 0.15%

12. 0.9%

13. 2.5%

14. $25\frac{1}{3}\%$

15. $\frac{1}{20}\%$

16. 820%

Express each decimal or fraction as a percent. Round to the nearest tenth percent, if necessary.

17. 0.95

18. 0.255

19. 0.7

20. 8.75

21. 0.0048

22. 0.06

23. 19.8

24. 0.54

25. 0.27

26. 0.802

27. 0.0007

28. 71

29. $\frac{33}{40}$

30. $\frac{9}{32}$

31. $\frac{3}{8}$

32. $\frac{11}{4}$

33. $\frac{35}{8}$

34. $\frac{1}{5}$

35. $\frac{14}{25}$

36. $\frac{4}{11}$

37. SURVEYS In a survey, 44% of the people said they voted for Mr. Johnson, while $\frac{2}{5}$ of the people said they voted for Ms. Smith. Which group is larger? Explain.

Lesson 6-5

6-9 Practice

Percent of Change

State whether each change is a *percent of increase* or a *percent of decrease*. Then find the percent of change. Round to the nearest tenth, if necessary.

1. from 4 m to 5 m

2. from 75 minutes to 100 minutes

3. from $9.25 to $6.50

4. from 45 quarts to 8 quarts

5. from 21 mm to 13 mm

6. from $457 to $1000

7. from $39.50 to $40.00

8. from 9 students to 856 students

9. from 24 kittens to 7 kittens

10. from 15 songs to 105 songs

11. from 31 mph to 25 mph

12. from 4 paintings to 13 paintings

13. from 55 teachers to 41 teachers

14. from 9780 birds to 8011 birds

15. from 524 sales to 315 sales

16. from 28 houses to 460 houses

17. from 2 miles to 10 miles

18. from 1000 voters to 840 voters

19. from 3 lizards to 21 lizards

20. from 300 horses to 2100 horses

21. from 25 disks to 22 disks

22. from 250 movies to 220 movies

23. from $34 to $31

24. from $3400 to $3100

25. **COOKIES** On Tuesday, a baker sold 132 cookies. On Wednesday, she sold 108 cookies. Find the percent of change to the nearest tenth of a percent.

Lesson 6-9

6-10 Practice

Using Sampling to Predict

Identify each sample as *biased* or *unbiased* and describe its type. Explain your reasoning.

1. To determine how many people in a town support a new tax levy, 200 people are randomly selected from a phone book and then surveyed over the phone.

2. To determine the number of households in a town that recycle, 40 households from the same street are polled.

3. To determine the usual demand of a Web site, the number of users currently visiting the Web site is recorded every hour.

4. **ANALYZE GRAPHS** The yearbook staff wanted to find out how many students would buy a yearbook. So, the staff surveyed 15 students who were in the school library after school. The results are in the graph. Is this sampling method valid? If so, about how many of the 1287 students in the school will buy yearbooks?

Would You Buy a Yearbook?
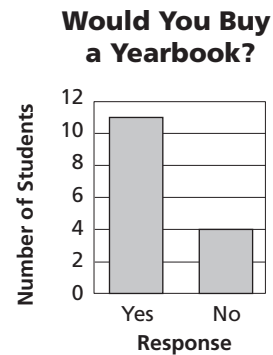
5. **LIBRARIES** A library would like to see how many of its patrons would be interested in regularly checking out books from an enlarged print section. They randomly surveyed 200 patrons and 6 patrons responded that they would regularly check out books from an enlarged print section. If the library has a total of 3200 patrons, how many people can they expect to regularly check out books from an enlarged print section?
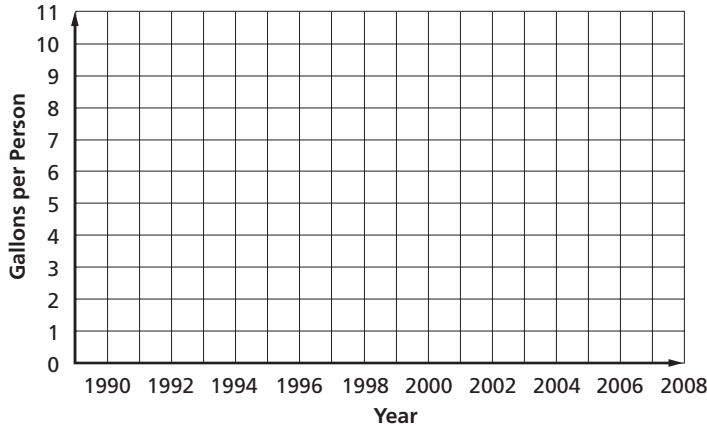
7-8 Practice

Prediction Equations

BEVERAGES For Exercises 1 and 2, use the table that shows the amount of whole milk consumed per person in the United States.

Year	Gallons per Person
1990	10.2
1995	8.3
2000	7.7
2001	7.4
2002	7.3

Source: U.S. Census Bureau

**1.** Make a scatter plot and draw a best-fit line.

2. Use the best-fit line to predict the amount of whole milk consumed per person in 2008.

EDUCATION For Exercises 3 and 4, use the table that shows the number of students graduating from medical school in the United States from 1980 to 2000.

Year	Graduates
1980	15,113
1985	16,318
1990	15,398
1995	15,888
2000	16,112

Source: U.S. Census Bureau

3. Make a scatter plot and draw a best-fit line.
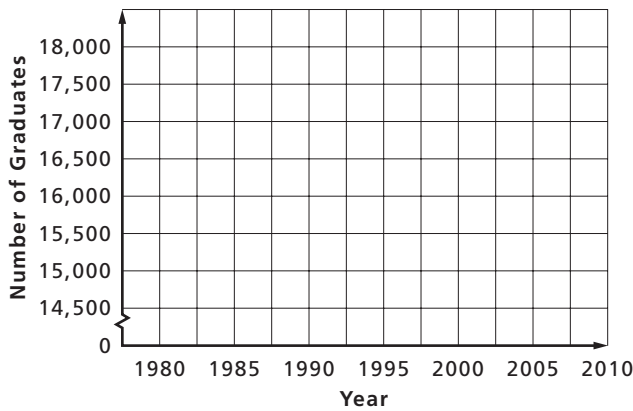
Source: U.S. Census Bureau

4. Write an equation for the best-fit line and use it to predict the number of medical school graduates in 2010.

Lesson 7-8

12-1   Practice

Stem-and-Leaf Plots

Display each set of data in a stem-and-leaf plot.

1. {68, 63, 70, 59,
78, 64, 68, 73,
61, 66, 70}

2. {27, 32, 42, 31, 36,
37, 47, 23, 39,
31, 41, 38, 30,
34, 29, 42, 37}

3.

Major League Baseball Leading Pitchers, 2005	
Player and Team	**Wins**
C. Capuano	18
C. Carpenter	21
B. Colon	21
J. Garland	18
R. Johnson	17
C. Lee	18
J. Lieber	17
R. Oswalt	20
A. Pettitte	17
D. Willis	22

Source: sports.espn.go.com

4.

Average Prices Received by U.S. Farmers, 2004	
Commodity	**Price (dollars per 100 pounds)**
Beef Cattle	86
Hogs	49
Lambs	101
Milk	16
Veal Calves	119

Source: *U. S Department of Agriculture*

RECREATION   For Exercises 5–7, use the information in the back-to-back stem-and-leaf plot shown at the right.

5. The category with the lowest total expenditure in 1992 was motion pictures. What was its total?

6. What is the median total recreational spending for 1992? For 2002?

7. Compare the total spending on recreation in 1992 with that in 2002.

Total U.S. Spending on Personal Recreation (by Category)

1992		2002
7 5 5	0	9
8 7 2 0	1	0 2 8
7 2	2	2
4 0	3	4 5 7
	4	4
	5	6
1	6	0
	7	
	8	4
	9	

7 | 2 = $27 billion   3 | 5 = $35 billion

12-2 Practice

Measures of Variation

Find the range, interquartile range, and any outliers for each set of data.

1. {3, 9, 11, 8, 6, 12, 5, 4}

2. {8, 3, 9, 14, 12, 11, 20, 23, 5, 26}

3. {42, 50, 46, 47, 38, 41}

4. {10.3, 9.8, 10.1, 16.2, 18.0, 11.4, 16.0, 15.8}

5. {107, 82, 93, 112, 120, 95, 98, 56, 109, 110}

6. {106, 103, 112, 109, 115, 118, 113, 108}

7.

Stem	Leaf
1	7 8
2	2 3 5 6 8
3	0

2 | 2 = 22

8.

Stem	Leaf
5	6 7
6	0 1 1 4 8 8 9
7	0 2 3 5 6 7

6 | 1 = 61

9.

Stem	Leaf
4	0 0 0 2 5 7
5	2 6
6	1 8 8
7	0 1 9

5 | 2 = 52

10.

Stem	Leaf
6	4 7 9
7	9
8	1 1 3 3 4 6
9	0 1 2 5

7 | 9 = 79

11.

Stem	Leaf
3	0 1 6 8
4	4
5	2
6	
7	3 3
8	9

5 | 2 = 52

12.

Stem	Leaf
4	3 3 5 7 9
5	0 0 1
6	2
7	4 4 6 8
8	
9	0 1 1 2 2 5

5 | 1 = 51

POPULATION For Exercises 13–15, use the data in the table at the right.

13. What is the range of populations shown?

14. What is the interquartile range for the annual growth rate?

15. Where does the city with the fastest growth rate fall in terms of population? The city with the slowest growth rate?

Populations of the World's Largest Cities 2000		
City	Population (millions)	Annual Growth Rate (%)
Tokyo, Japan	26.4	0.51
Mexico City, Mexico	18.1	1.81
Mumbai, India	18.1	3.54
Sao Paulo, Brazil	17.8	1.43
New York City, U.S.	16.6	0.37
Lagos, Nigeria	13.4	5.33
Los Angeles, U.S.	13.1	1.15
Calcutta, India	12.9	1.60
Shanghai, China	12.9	−0.35
Buenos Aires, Argentina	12.6	1.14

Source: *World Almanac*
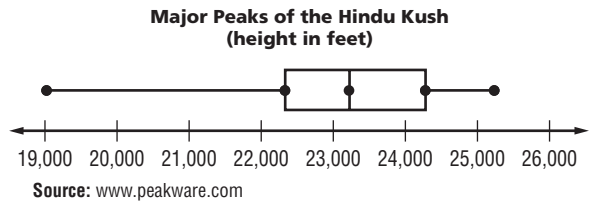
Lesson 12-2

12-3 Practice

Box-and-Whisker Plots

Draw a box-and-whisker plot for each set of data.

1. {14, 30, 35, 8, 29, 28, 31, 42, 20, 36, 32}

2. {$105, $98, $83, $127, $115, $114, $132, $93, $107, $101, $119}

3. {211, 229, 196, 230, 240, 212, 231, 233, 243, 214, 239, 238, 228, 237, 230, 234, 239, 240, 212, 232, 239, 240, 237}

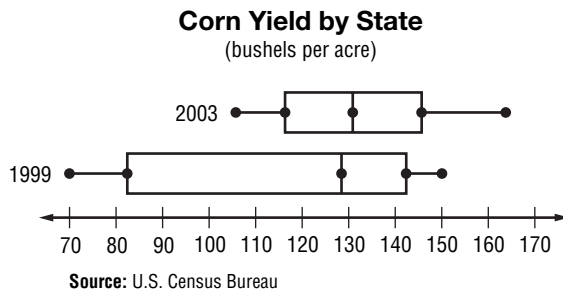**4.** {3.7, 6.2, 4.1, 2.4, 1.0, 1.5, 1.4, 2.1, 2.6, 3.0, 1.3, 1.7}

For Exercises 5–7, use the box-and-whisker plot shown.

5. How tall is the highest peak of the Hindu Kush?

6. What is the median height of the major peaks?

7. Write a sentence describing what the box-and-whisker plot tells about the major peaks of the Hindu Kush.

Major Peaks of the Hindu Kush (height in feet)

19,000 20,000 21,000 22,000 23,000 24,000 25,000 26,000

Source: www.peakware.com

For Exercises 8–10, use the box-and-whisker plot shown.

8. In which year was the corn yield more varied? Explain.

9. How does the median yield in 2003 compare with the median yield in 1999?

Corn Yield by State
(bushels per acre)

2003

1999

70 80 90 100 110 120 130 140 150 160 170

Source: U.S. Census Bureau

10. Write a few sentences that compare the 1999 yields with the 2003 yields.

Lesson 12-3

12-4 Practice

Histograms

Display each set of data in a histogram.

1.

Ages of Zoo Volunteers		
Age	**Tally**	**Frequency**
18–27	III	3
28–37	卌 III	8
38–47	卌 卌 卌 I	16
48–57	卌 II	12
58–67	卌	5
68–77	II	2

2.

Crossword Puzzle Solving Times		
Time (min)	**Tally**	**Frequency**
0–4	III	3
5–9	I	1
10–14	卌 I	6
15–19	卌 卌 IIII	14
20–24		0
25–29	II	2

For Exercises 3–6, use the histogram at the right.

3. What size are the intervals?

4. How many countries have nine or fewer threatened species?

5. Which interval contains the median number of endangered species?

6. Can you tell from the histogram whether any of the countries have zero threatened species? Explain.

Threatened Species of Mammals in Europe
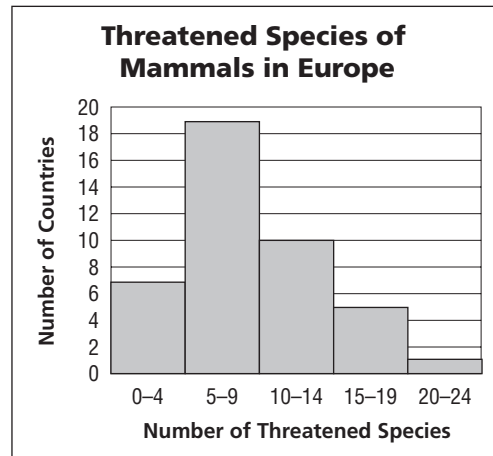
Source: www.redlist.org

Lesson 12-4

12-5 Practice

Choosing an Appropriate Display

Choose an appropriate style of display for each data set. Justify your choice.

1. the monthly price of apples over a two year period.

2. results of a poll of 30 students favorite type of candy

3. the income of the middle 50% of U.S. households

4. the number of terms served by current senators

5. the number of runners who finished a marathon in each ten-minute interval

Choose an appropriate style of display for each data set. Then make a display.

6. Winning times for the 200-Meter backstroke event at the Olympics.

Year	Winning Time
1976	1:59.19
1980	2:01.93
1984	2:00.23
1988	1:59.37
1992	1:58.47
1996	1:58.54
2000	1:56.76
2004	1:54.95

Source: *World Almanac*

7.

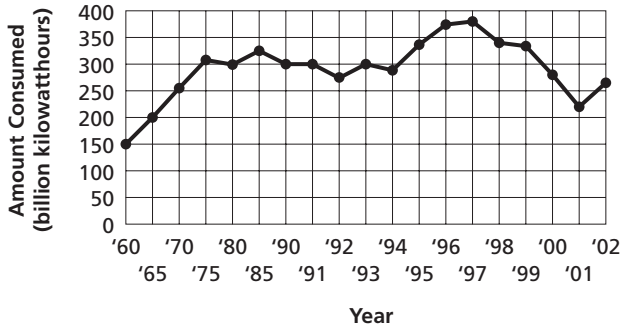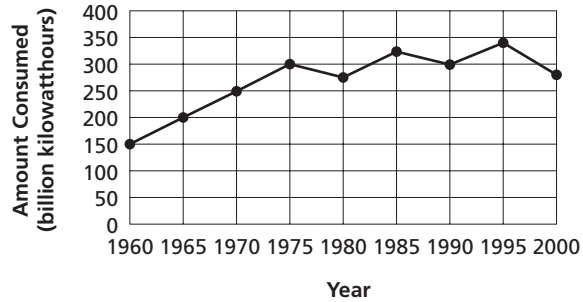| Monthly Park Visitors (in thousands)		
6	7	12
15	25	40
46	46	37
22	19	8

12-6 Practice

Misleading Graphs

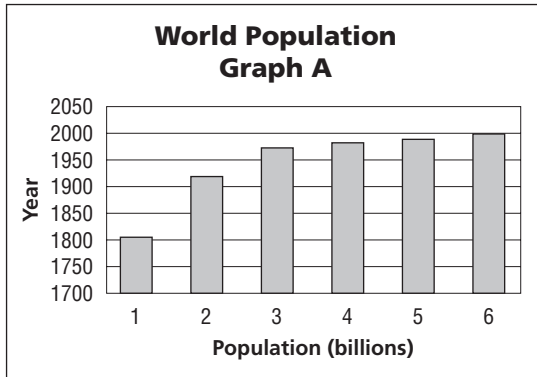**For Exercises 1–3, refer to the graphs below.**

**U.S. Consumption of Hydroelectric Power, 1960–2002 Graph A**

U.S. Consumption of Hydroelectric Power, 1960–2002 Graph B

1. What was the U.S. consumption of hydroelectric power in 1990?

2. Which graph gives the impression that the use of hydroelectric power in the United States has experienced many dips as well as rises between 1975 and 2002?

3. What causes the graphs to differ in their appearance?

World Population Graph A

Source: www.pbs.org

**World Population Graph B**
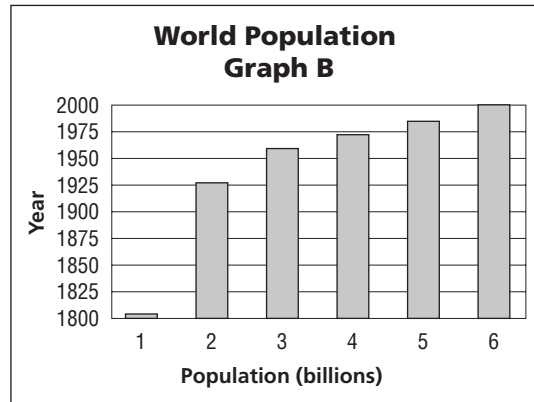
Source: www.pbs.org

For Exercises 4–6, refer to the graphs below.

4. What was the world's population in 1999?

5. Which graph gives the impression that the world's population skyrocketed between 1800 and 1925? Explain.

6. Are the vertical axis and the horizontal axis in either graph misleading? Explain.

12-7 Practice

Simple Probability

A spinner like the one shown is used in a game.
Determine the probability of each outcome if the
spinner is equally likely to land on each section.
Express each probability as a fraction and as
a percent.
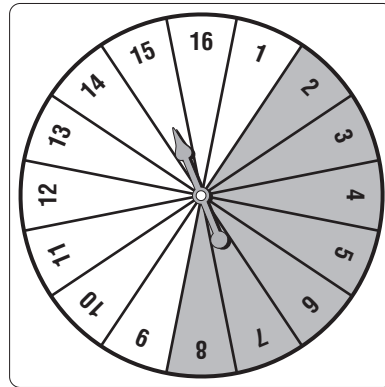
1. $P(15)$

2. $P(\text{even})$

3. $P(\text{greater than } 10)$

4. $P(\text{perfect square})$

5. $P(1 \text{ or } 2)$

6. $P(\text{less than } 9)$

7. $P(\text{not shaded})$

8. $P(\text{shaded})$

There are 8 red marbles, 5 blue marbles, 11 green marbles, and 1 yellow marble in
a bag. Suppose one marble is selected at random. Find the probability of each
outcome. Express each probability as a fraction and as a percent.

9. $P(\text{red})$

10. $P(\text{blue})$

11. $P(\text{yellow})$

12. $P(\text{red or blue})$

13. $P(\text{black})$

14. $P(\text{red, blue, or green})$

Suppose two 1–6 number cubes are rolled. Find the probability of each outcome.
Express each probability as a fraction and as a percent. (*Hint:* Make a table to
show the sample space as in Example 2.) Round to the nearest tenth if necessary.

15. $P(1 \text{ or } 5)$

16. $P(\text{both odd})$

17. $P(\text{even product})$

18. $P(\text{sum more than } 8)$

19. $P(\text{both different})$

20. $P(\text{sum is a square})$

21. To the nearest tenth of a percent, what is the probability that today is a weekday?

12-8 Practice

Counting Outcomes

Find the number of possible outcomes for each situation.

1. Joan randomly dials a seven-digit phone number.

2. First-year students at a school must choose one each of 5 English classes, 4 history classes, 5 math classes, and 3 physical education classes.

3. One card each is drawn from four different standard decks of cards.

4. A store offers running shoes with either extra stability or extra cushioning from four different manufacturers.

5. A winter sweater comes in wool or fleece, with a zipper or a crew neck, and in three colors.

6. One spinner can land on red, green, blue, or yellow and another can land on right foot, left foot, right hand, or left hand. Each spinner is spun once.

Find the probability of each event.

7. A number cube is rolled. What is the probability of rolling a 4 or lower?

8. A number cube is rolled. What is the probability of getting a five or higher?

9. An eight-sided die is rolled and a coin is tossed. What is the probability of landing on an even number and getting heads?

10. A coin is tossed and a card is drawn from a standard deck of cards. What is the probability of landing on heads and choosing a heart?

11. **REFRESHMENTS** How many fruit smoothies are possible from 6 choices of fruit, 4 choices of milk, and 3 sizes?

12. **MONOGRAMS** A school's class rings can include a student's initials in an engraved monogram on the ring. How many different monograms are possible from 2 sizes, 5 type styles, and 3 border styles?

13. **MOBILE PHONES** The table shows the features you can choose for a pay-as-you go phone plan.

   a. How many phone plans have national long distance?

   b. How many customized phone plans include 100 minutes per month talkingtime and paging capabilities?

Phone	Features	Calling Area	Monthly Talk Time
Brand A; Brand B	e-mail only; paging only; deluxe: paging and e-mail	local only; local and regional; national long distance	30 min; 60 min; 100 min

12-9 Practice

Permutations and Combinations

Tell whether each situation is a *permutation* or *combination*. Then solve.

1. How many ways can you make a sandwich by choosing 4 of 10 ingredients?

2. How many ways can 11 photographs be arranged horizontally?

3. How many ways can you buy 2 software titles from a choice of 12?

4. How many ways can a baseball manager make a 9-player batting order from a group of 16 players?

5. How many ways can 30 students be arranged in a 4-student line?

6. How many ways can 3 cookie batches be chosen out of 6 prize-winning batches?

7. **SCHOOL TRIPS**   Students are chosen in groups of 6 to tour a local business. How many ways can 6 students be selected from 3 classes totaling 53 students?

8. **CONTESTS**   In a raffle, 5 winners get to choose from 5 prizes, starting with the first name drawn. If 87 people entered the raffle, how many ways can the winners be arranged?

9. **RESTAURANTS**   A local restaurant specializes in simple and tasty meals.
   a. How many sandwiches are possible if the restaurant lets you build a sandwich by choosing any 4 of 10 sandwich ingredients?
   b. If there are 6 soups to choose from, how many soup-and build-a-sandwich specials are possible?

10. **SPORTS**   An inline skate has 4 wheels. How many ways could 4 replacement wheels be chosen from a pack of 10 wheels and fitted to a skate?

GIFT WRAPPING   For Exercises 11–14, use the following information.

An upscale department offers its customers free gift wrapping on any day that they spend at least $100. The store offers 5 box sizes (XS, S, M, L, XL), 6 wrapping themes (birthday, wedding, baby girl, baby boy, anniversary, and all-occasion), and 3 styles of bow (classic, modern, and jazzy).
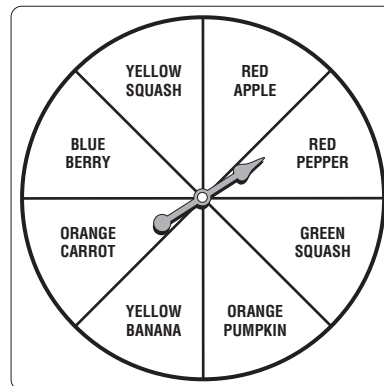
11. How many ways can packages be gift-wrapped at the store?

12. What is the probability that any wrapped package will be in a large box?

13. What is the probability that any wrapped package will *not* have a jazzy bow?

14. What is the probability that a customer will request wrapping for a baby-boy gift?

12-10 Practice

Probability of Composite Events

An eight-sided die is rolled and the spinner is spun. Find each probability.

1. *P*(4 and yellow fruit or vegetable)

2. *P*(an odd number and a pumpkin)

3. *P*(a prime number and a red fruit or vegetable)

4. *P*(a number less than 4 and a blue fruit or vegetable)

Spinner sections: YELLOW SQUASH, RED APPLE, BLUE BERRY, RED PEPPER, ORANGE CARROT, GREEN SQUASH, YELLOW BANANA, ORANGE PUMPKIN

There are 6 orange marbles, 2 red marbles, 3 white marbles, and 4 green marbles in a bag. Once a marble is drawn, it is replaced. Find the probability of each outcome.

5. a red then a white marble

6. a white then a green marble

7. two orange marbles in a row

8. two marbles in a row that are *not* white

9. a green then a *not* green marble

10. a red then an orange then a green marble

There are 2 green marbles, 7 blue marbles, 3 white marbles, and 4 purple marbles in a bag. Once a marble is drawn, it is *not* replaced. Find the probability of each outcome.

11. a green then a white marble

12. a blue then a purple marble

13. two blue marbles in a row

14. two marbles in a row that are *not* purple

15. a white then a purple marble

16. three purple marbles in a row

The chart shows the letter-number combinations for bingo. The balls are randomly drawn one at a time. Balls are *not* replaced after they are drawn. Find the probability of each outcome.

17. a B-1

18. a G

19. an N or a B-2

20. an I or an O

21. *not* a G

22. a B-6, then a G, then

   another G

B	I	N	G	O
1	13	25	37	49
2	14	26	38	50
3	15	27	39	51
4	16	28	40	52
5	17	29	41	53
6	18	30	42	54
7	19	31	43	55
8	20	32	44	56
9	21	33	45	57
10	22	34	46	58
11	23	35	47	59
12	24	36	48	60