

Holt Mathematics

Course 1 Homework and Practice Workbook



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LESSON
1-1 Practice
Comparing and Ordering Whole NumbersCompare. Write $<$, $>$, or $=$.

1. $69 \square 96$

2. $117 \square 107$

3. $958 \square 9,124$

4. $3,567 \square 3,567$

5. $18,443 \square 1,844$

6. $64,209 \square 64,290$

Order the numbers from least to greatest.

7. 58; 166; 85

8. 115; 151; 111

9. 269; 29; 96

10. 308; 3,800; 3,080

11. 1,864; 824; 1,648

12. 4,663; 4,336; 43,666

Order the numbers from greatest to least.

13. 35; 53; 13

14. 807; 800; 708

15. 249; 392; 248

16. 555; 600; 535

17. 7,320; 6,000; 6,305

18. 999; 9,559; 5,995

19. Delaware and Rhode Island are the two smallest states. Delaware covers 1,955 square miles, and Rhode Island covers 1,045 square miles. What is the smallest state in the United States?

20. Vermont and Wyoming have the smallest populations in the United States. The population of Vermont is 608,827. The population of Wyoming is 493,782. Which state has the smallest population?

LESSON **Practice**
1-2 *Estimating with Whole Numbers***Estimate each sum or difference.**

1. $67 + 14$

2. $583 - 329$

3. $94 - 36$

4. $2,856 + 2,207$

5. $276 + 316$

6. $6,020 - 3,688$

7. $34,465 + 19,002$

8. $78,135 - 19,431$

9. $216,135 + 165,800$

Estimate each product or quotient.

10. $59 \div 6$

11. 51×8

12. $83 \div 4$

13. 9×27

14. $49 \div 6$

15. 53×8

16. $147 \div 5$

17. $118 \div 6$

18. 79×5

19. Sailfish are the fastest fish in the world. They can swim 68 miles an hour. About how far can a sailfish swim in 3 hours?

20. At a height of 3,281 feet, Angel Falls in Venezuela is the tallest waterfall in the world. Niagara Falls in the United States is only 190 feet tall. About how much taller is Angel Falls?

21. Ali, a gardener, is preparing to fertilize a lawn. The lawn is 30 yards by 25 yards. One bag of fertilizer will cover an area of 100 square yards. How many bags of fertilizer does Ali need to buy?

LESSON
1-3 Practice
Exponents

Write each expression in exponential form.

1. 9×9

2. $7 \times 7 \times 7$

3. $1 \times 1 \times 1 \times 1 \times 1$

4. $5 \times 5 \times 5 \times 5$

5. $2 \times 2 \times 2 \times 2 \times 2 \times 2$

6. $10 \times 10 \times 10 \times 10$

Find each value.

7. 6^2

8. 5^3

9. 10^3

10. 7^2

11. 2^5

12. 3^4

13. 25^1

14. 16^0

Compare. Write $<$, $>$, or $=$.

15. 8^0 7^1

16. 10^2 11^2

17. 8^2 4^3

18. 3^4 5^2

19. 2^5 9^2

20. 6^2 3^3

21. What whole number equals 25 when it is squared and 125 when it is cubed?

22. Use exponents to write the number 81 three different ways.

LESSON
1-4 **Practice**
Order of Operations

Evaluate each expression.

1. $10 + 6 \times 2$

2. $(15 + 39) \div 6$

3. $(20 - 15) \times 2 + 1$

4. $(4^2 + 6) \div 11$

5. $9 + (7 - 1) \times 2$

6. $(2 \times 4) + 8 - (5 \times 3)$

7. $5 + 18 \div 3^2 - 1$

8. $8 + 5 \times 10 - 12$

9. $14 + (50 - 7^2) \times 3$

Add parentheses so that each equation is correct.

10. $7 + 9 \times 3 - 1 = 25$

11. $2^3 - 7 \times 4 = 4$

12. $5 + 6 \times 9 \div 3 = 23$

13. $12 \div 3 \times 2 = 2$

14. $8 + 3 \times 6 - 4 - 1 = 13$

15. $4 \times 3^2 + 1 = 40$

16. $9 \times 0 + 5 - 3 = 42$

17. $15 \times 3^2 - 2^3 = 15$

18. $14 \div 2 + 5 \times 5 = 10$

19. Tyler walked 2 miles a day for the first week of his exercise plan. Then he walked 3 miles a day for the next 9 days. How many miles did Tyler walk in all?

20. Paulo's father bought 8 pizzas and 12 bottles of juice for the class party. Each pizza cost \$9 and each bottle of juice cost \$2. Paulo's father paid with a \$100-bill. How much change did he get back?

LESSON
1-5 **Practice**
Mental Math**Evaluate.**

1. $17 + 4 \times 5$

2. $25 \times 3 \times 4$

3. $28 + 39 + 11 + 22$

4. $12 + 7 + 8 + 13$

5. $10 + 3 \times 2$

6. $9 \times 8 \times 5$

7. $97 + 4 + 3 + 26$

8. $2 \times 6 \times 5$

9. $28 + 2 \times 6$

Use the Distributive Property to find each product.

10. 4×16

11. 8×31

12. 3×62

13. 2×46

14. 5×29

15. 7×22

16. 9×21

17. 6×15

18. 8×44

19. 4×29

20. 7×31

21. 5×57

22. Each ticket to a play costs \$27. How much will it cost to buy 4 tickets? Which property did you use to solve this problem with mental math?

23. Mr. Stanley bought two cases of pencils. Each case has 20 boxes. In each box there is 10 pencils. Use mental math to find how many pencils Mr. Stanley bought.

24. When you consider that cows eat grass and the water needed to grow the grass that cows eat, it takes 65 gallons of water to produce one serving of milk! Use mental math to find how many gallons of water are needed to produce 5 servings of milk.

LESSON
1-6 **Practice**
Choose the Method of Computation

1. Athletes from 197 countries competed at the 1996 Summer Olympic Games held in Atlanta, Georgia. That is 25 more countries that competed at the 1992 games held in Barcelona, Spain. How many different countries competed in Barcelona?

2. At the 1996 Summer Olympic Games held in Atlanta, Georgia, 10,310 athletes competed. At the 1992 Summer Olympic Games held in Barcelona, Spain, 9,364 athletes competed. How many more athletes competed in Atlanta than in Barcelona?

3. The marathon race is one of the oldest events in the Summer Olympic Games. Marathon competitors run a total of 26 miles 385 yards. There are 5,280 feet in a mile and 3 feet in a yard. How many yards long is the entire marathon race?

4. The world record for the fastest men's marathon race is 2 hours, 5 minutes, 42 seconds. The world record for the fastest women's marathon race is 2 hours, 20 minutes, 43 seconds. How much faster is the men's record marathon time?

5. The men's outdoor world record in the high jump is 2.45 meters or 8 feet 0.5 inches. The women's outdoor world record in the high jump is 2.09 meters or 6 feet 10.25 inches. How much higher is the men's high jump record? Write the answer in meters and feet.

6. The men's world record in the 400-meter relay is 37.40 seconds, held by the U.S. If each of the four runners each ran 100 meters in the same time, how long did each runner run?

7. Athletes from 13 nations competed in the first modern Olympics in 1896. Today, athletes from nearly 200 nations compete in the Summer Olympics. About how many more nations participate in the Olympics today than in 1896?

LESSON **Practice**
1-7 *Patterns and Sequences*

Identify a pattern in each arithmetic sequence and then find the missing terms.

1. 4, 8, 16, 32, □, □, □, ...

2. 100, 95, 90, 85, □, □, □, ...

3. 8, 20, 32, 44, □, □, □, ...

4. 6, 12, 18, 24, □, □, □, ...

5. 9, 18, 27, 36, □, □, □, ...

6. 3, 6, 12, 24, □, □, □, ...

7.

Position	1	2	3	4	5	6	7
Value of Term	5	10	20	40			

8. 300, 250, □, □, 100, □, 0, ...

9. 1, 15, □, 43, 57, □, 85, 99, ...

10. 7, □, 21, 28, □, □, □, 56, ...

11. 9, □, 13, □, □, □, 21, 23, ...

12.

Position	1	2	3	4	5	6	7
Value of Term	3	12	21	30			

13. A forest ranger in Australia took measurements of a eucalyptus tree for the past 3 weeks. The tree was 12 inches tall the first week, 19 inches the second week, and 26 inches the third week. If this growth pattern continues, how tall will the tree be next week?

14. Maria puts the same amount of money in her savings account each month. She had \$450 in the account in April, \$600 in May, and \$750 in June. If she continues her savings pattern, how much money will she have in the account in July?

LESSON **Practice**
2-1 *Variables and Expressions*

Evaluate each expression to find the missing values in the tables.

1.

n	$n + 8^2$
7	71
9	
22	
35	

2.

n	$25 - n$
20	5
5	
18	
9	

3.

n	$n \cdot 7$
8	56
9	
11	
12	

4.

n	$24 \div n$
2	12
6	
4	
8	

5.

n	$n + 15$
35	
5	
20	
85	

6.

n	$n \cdot 2^3$
7	
4	
10	
13	

7. A car is traveling at a speed of 55 miles per hour. You want to write an algebraic expression to show how far the car will travel in a certain number of hours. What will be your constant? your variable?

8. Shawn evaluated the algebraic expression $x \div 4$ for $x = 12$ and gave an answer of 8. What was his error? What is the correct answer?

LESSON **Practice**
2-2 *Translate Between Words and Math*

Write an expression.

1. Terry's essay has 9 more pages than Stacey's essay. If s represents the number of pages in Stacey's essay, write an expression for the number of pages in Terry's essay.

2. Let z represent the number of students in a class. Write an expression for the number of students in 3 equal groups.

Write each phrase as a numerical or algebraic expression.

3. 24 multiplied by 3

4. n multiplied by 14

5. w added to 64

6. the difference of 58 and 6

7. m subtracted from 100

8. the sum of 180 and 25

9. the product of 35 and x

10. the quotient of 63 and 9

11. 28 divided by p

Write two phrases for each expression.

12. $n + 91$ _____

13. $35 \div r$ _____

14. $20 - s$ _____

15. Charles is 3 years older than Paul. If y represents Paul's age, what expression represents Charles's age?

16. Maya bought some pizzas for \$12 each. If p represents the number of pizzas she bought, what expression shows the total amount she spent?

LESSON **Practice**
2-3 *Translating Between Tables and Expressions*

Write an expression for the missing value in each table.

1.

Bicycles	Wheels
1	2
2	4
3	6
b	

2.

Ryan's Age	Mia's Age
14	7
16	9
18	11
r	

3.

Minutes	Hours
60	1
120	2
180	3
m	

4.

Bags	Potatoes
3	21
4	28
5	35
b	

Write an expression for the sequence in each table.

5.

Position	1	2	3	4	5	n
Value of Term	3	4	5	6	7	

6.

Position	1	2	3	4	5	n
Value of Term	5	9	13	17	21	

7. A rectangle has a width of 6 inches. The table shows the area of the rectangle for different widths. Write an expression that can be used to find the area of the rectangle when its length is l inches.

Width (in.)	Length (in.)	Area (in. ²)
6	8	48
6	10	60
6	12	72
6	l	

LESSON
2-4 **Practice**
Equations and Their Solutions

Determine whether the given value of the variable is a solution.

1. $9 + x = 21$ for $x = 11$ _____
2. $n - 12 = 5$ for $n = 17$ _____
3. $25 \cdot r = 75$ for $r = 3$ _____
4. $72 \div q = 8$ for $q = 9$ _____
5. $28 + c = 43$ for $c = 15$ _____
6. $u \div 11 = 10$ for $u = 111$ _____
7. $\frac{k}{8} = 4$ for $k = 24$ _____
8. $16x = 48$ for $x = 3$ _____
9. $73 - f = 29$ for $f = 54$ _____
10. $67 - j = 25$ for $j = 42$ _____
11. $39 \div v = 13$ for $v = 3$ _____
12. $88 + d = 100$ for $d = 2$ _____
13. $14p = 20$ for $p = 5$ _____
14. $6w = 30$ for $w = 5$ _____
15. $7 + x = 70$ for $x = 10$ _____
16. $6 \cdot n = 174$ for $n = 29$ _____

Replace each \square with a number that makes the equation correct.

17. $5 + 1 = 2 + \square$ _____
18. $10 - \square = 12 - 7$ _____
19. $\square \cdot 3 = 2 \cdot 9$ _____
20. $28 \div 4 = 14 \div \square$ _____
21. $\square + 8 = 6 + 3$ _____
22. $12 \cdot 0 = \square \cdot 15$ _____
23. Carla had \$15. After she bought lunch, she had \$8 left. Write an equation using the variable x to model this situation. What does your variable represent?

24. Seventy-two people signed up for the soccer league. After the players were evenly divided into teams, there were 6 teams in the league. Write an equation to model this situation using the variable x .

LESSON **Practice**
2-5 *Addition Equations***Solve each equation. Check your answers.**

1. $s + 3 = 23$

2. $v + 10 = 49$

3. $q + 9 = 16$

4. $81 + m = 90$

5. $38 + x = 44$

6. $28 + n = 65$

7. $t + 31 = 50$

8. $25 + p = 39$

9. $19 + v = 24$

Solve each equation.

10. $m + 8 = 17$

11. $r + 14 = 20$

12. $25 + x = 32$

13. $47 + p = 55$

14. $19 + d = 27$

15. $13 + n = 26$

16. $q + 12 = 19$

17. $34 + f = 43$

18. $52 + w = 68$

19. Kenya bought 28 beads, and Nancy bought 25 beads. It takes 35 beads to make a necklace. Write and solve two addition equations to find how many more beads they each need to make a necklace.

20. During a sales trip, Mr. Jones drove 15 miles east from Brownsville to Carlton. Then he drove several more miles east from Carlton to Sun City. The distance from Brownsville to Sun City is 35 miles. Write and solve an addition equation to find how many miles it is from Carlton to Sun City.

LESSON
2-6 **Practice**
Subtraction Equations**Solve each equation. Check your answers.**

1. $s - 8 = 12$

2. $v - 11 = 7$

3. $9 = q - 5$

4. $m - 21 = 5$

5. $34 = x - 12$

6. $n - 45 = 45$

7. $t - 19 = 9$

8. $p - 6 = 27$

9. $15 = v - 68$

Solve each equation.

10. $7 = m - 5$

11. $r - 10 = 22$

12. $16 = x - 4$

13. $40 = p - 11$

14. $28 = d - 6$

15. $n - 9 = 42$

16. $q - 85 = 8$

17. $f - 13 = 18$

18. $47 = w - 38$

19. Ted took 17 pictures at the aquarium. He now has 7 pictures left on the roll. Write and solve a subtraction equation to find out how many photos Ted had when he went to the aquarium.

20. Ted bought a dolphin poster for \$12. He now has \$5. Write and solve a subtraction equation to find out how much money Ted took to the aquarium.

LESSON
2-7 **Practice**
Multiplication Equations**Solve each equation. Check your answers.**

1. $8s = 72$

2. $4v = 28$

3. $27 = 9q$

4. $12m = 60$

5. $48 = 6x$

6. $7n = 63$

7. $10t = 130$

8. $15p = 450$

9. $84 = 6v$

Solve each equation.

10. $49 = 7m$

11. $20r = 80$

12. $64 = 8x$

13. $36 = 4p$

14. $147 = 7d$

15. $11n = 110$

16. $12q = 144$

17. $25f = 125$

18. $128 = 16w$

19. A hot-air balloon flew at 10 miles per hour. Using the variable h , write and solve a multiplication equation to find how many hours the balloon traveled if it covered a distance of 70 miles.

20. A passenger helicopter can travel 300 miles in the same time it takes a hot-air balloon to travel 20 miles. Using the variable s , write and solve a multiplication equation to find how many times faster the helicopter can travel than the hot air balloon.

LESSON
2-8 **Practice**
Division Equations

Solve each equation. Check your answers.

1. $\frac{s}{6} = 7$

2. $\frac{v}{5} = 9$

3. $12 = \frac{q}{7}$

4. $\frac{m}{2} = 16$

5. $26 = \frac{x}{3}$

6. $\frac{n}{8} = 4$

7. $\frac{t}{11} = 11$

8. $\frac{p}{7} = 10$

9. $7 = \frac{v}{8}$

Solve each equation.

10. $10 = \frac{m}{9}$

11. $\frac{r}{5} = 8$

12. $11 = \frac{x}{7}$

13. $9 = \frac{p}{12}$

14. $15 = \frac{d}{5}$

15. $\frac{n}{4} = 28$

16. $\frac{q}{2} = 134$

17. $\frac{u}{16} = 1$

18. $2 = \frac{w}{25}$

19. All the seats in the theater are divided into 6 groups. There are 35 seats in each group. Using the variable s , write and solve a division equation to find how many seats there are in the theater.

20. There are 16 ounces in one pound. A box of nails weighs 4 pounds. Using the variable w , write and solve a division equation to find how many ounces the box weighs.

LESSON **Practice****3-1** *Representing, Comparing, and Ordering Decimals*

Write each decimal in standard form, expanded form, and words.

1. 2.07 _____

2. $5 + 0.007$ _____

3. four and six tenths _____

4. sixteen and five tenths _____

5. $9 + 0.6 + 0.08$ _____

6. 1.037 _____

7. $2 + 0.1 + 0.003$ _____

8. eighteen hundredths _____

9. 6.11 _____

Order the decimals from least to greatest.

10. 3.578, 3.758, 3.875

11. 0.0943, 0.9403, 0.9043

12. 12.97, 12.957, 12.75

13. 1.09, 1.901, 1.9, 1.19

14. Your seventh and eighth ribs are two of the longest bones in your body. The average seventh rib is nine and forty-five hundredths inches long, and the average eighth rib is 9.06 inches long. Which bone is longer?

15. The average female human heart weighs nine and three tenths ounces, while the average male heart weighs eleven and one tenth ounces. Which human heart weighs less, the male or the female?

16. The state has \$42.3 million for a new theater. The theater that an architect designed would cost \$42.25 million. Can the theater be built for the amount the state can pay?

17. Lyn traveled 79.47 miles on Saturday, 54.28 miles on Sunday, 65.5 miles on Monday, and 98.43 miles on Tuesday. Which day did she travel the greatest number of miles?

LESSON
3-2 Practice
Estimating Decimals**Estimate by rounding to the indicated place value.**

1. $7.462 + 1.809$; tenths

2. $15.3614 - 2.0573$; hundredths

3. $56.4059 - 4.837$; ones

4. $0.60871 + 1.2103$; hundredths

Estimate each product or quotient.

5. $42.1 \div 5.97$

6. $11.8 \cdot 6.125$

7. $63.78 \div 8.204$

8. $7.539 \cdot 3.0642$

9. $80.794 \div 8.61$

10. $19.801 \cdot 2.78$

Estimate a range for each sum.

11. $6.8 + 4.3 + 5.6$

12. $12.63 + 9.86 + 20.30$

13. Two sixth-grade classes are collecting money to buy a present for one of their teachers. One class collected \$24.68 and the other class collected \$30.25. About how much money did they collect in all? The gift they want to buy costs \$69.75. About how much more money do they need?
- _____

14. On the highway, Anita drove an average speed of 60.2 miles per hour. At that speed, about how far can she travel in three and a half hours? At that same speed, about how many hours will it take Anita to drive 400 miles?
- _____

LESSON **Practice**
3-3 **Adding and Subtracting Decimals**

Find each sum or difference.

1. $8.9 + 2.4$

2. $12.7 - 9.6$

3. $18.35 - 4.16$

4. $7.21 + 11.6$

5. $0.975 + 3.8$

6. $20.66 - 9.1$

7. Tiffany's job requires a lot of driving. How many miles did she travel during the month of February? _____

Miles Tiffany Traveled

Week	1	2	3	4
Miles	210.05	195.18	150.25	165.30

8. Shelly babysits after school and on the weekends. How much did she earn in all for the month of April? _____

Shelly's Earnings for April

Week	1	2	3	4
Earnings	\$120.50	\$180.75	\$205.25	\$215.50

Evaluate $5.6 - a$ for each value of a .

9. $a = 3.7$

10. $a = 0.5$

11. $a = 2.8$

12. $a = 1.42$

13. $a = 0.16$

14. $a = 3.75$

15. Allen bought a box of envelopes for \$2.79 and a pack of paper for \$4.50. He paid with a \$10 bill. How much change should he receive?
- _____

16. From a bolt of cloth measuring 25.60 yards, Tina cut a 6.8-yard piece and an 11.9-yard piece. How much material is left on the bolt?
- _____

LESSON
3-4 **Practice**
Scientific Notation

Find each product.

1. $345 \cdot 100$

2. $65.2 \cdot 100$

3. $1.84 \cdot 1,000$

Write each number in scientific notation.

4. 16,700

5. 4,680

6. 58,340,000

Write each number in standard form.

7. $3.25 \cdot 10^4$

8. $7.08 \cdot 10^6$

9. $1.209 \cdot 10^7$

10. $6.8 \cdot 10^8$

11. $0.51 \cdot 10^5$

12. $0.006 \cdot 10^3$

Identify the answer choice that is *not* equal to the given number.

13. 356,000

A $300,000 + 56,000$

B $3.56 \cdot 10^5$

C $3.56 \cdot 10^4$

14. $1.28 \cdot 10^6$

A $100,000 + 28,000$

B 1,280,000

C $12.8 \cdot 10^5$

15. 1,659,000

A $1,600,000 + 59,000$

B $1.659 \cdot 10^6$

C $16.59 \cdot 10^6$

16. $0.074 \cdot 10^3$

A $70.0 + 4.0$

B $7.4 \cdot 10^5$

C $7.4 \cdot 10^1$

17. In 2000, the population of Pennsylvania was 12,281,054. Round this figure to the nearest hundred thousand. Then write that number in scientific notation.

18. In 2000, the population of North Carolina was about $8.05 \cdot 10^6$, and the population of South Carolina was about $4.01 \cdot 10^6$. Write the combined populations of these two states in standard form.

LESSON **Practice**
3-5 *Multiplying Decimals*

Find each product.

1.
$$\begin{array}{r} 0.7 \\ \times 0.3 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 0.05 \\ \times 0.4 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 8.0 \\ \times 0.02 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 3.5 \\ \times 0.2 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 12.1 \\ \times 0.01 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 9.0 \\ \times 0.9 \\ \hline \end{array}$$

7. $0.04 \cdot 0.58$

8. $2.15 \cdot 1.5$

9. $1.73 \cdot 0.8$

10. $6.017 \cdot 2.0$

11. $3.96 \cdot 0.4$

12. $0.7 \cdot 0.009$

Evaluate $8x$ for each value of x .

13. $x = 0.5$

14. $x = 2.3$

15. $x = 0.74$

16. $x = 3.12$

17. $x = 0.587$

18. $x = 14.08$

19. The average mail carrier walks 4.8 kilometers in a workday. How far do most mail carriers walk in a 6-day week? There are 27 working days in July, so how far will a mail carrier walk in July?

20. A deli charges \$3.45 for a pound of turkey. If Tim wants to purchase 2.4 pounds, how much will it cost?

LESSON
3-6 **Practice**
Dividing Decimals by Whole Numbers

Find each quotient.

1. $0.81 \div 9$

2. $1.84 \div 4$

3. $7.2 \div 6$

4. $13.6 \div 8$

5. $4.55 \div 5$

6. $29.6 \div 8$

7. $15.57 \div 9$

8. $0.144 \div 12$

9. $97.5 \div 3$

10. $0.0025 \div 5$

11. $2.84 \div 8$

12. $18.9 \div 3$

Evaluate $2.094 \div x$ for each given value of x .

13. $x = 2$

14. $x = 4$

15. $x = 12$

16. $x = 20$

17. $x = 15$

18. $x = 30$

19. There are three grizzly bears in the city zoo. Yogi weighs 400.5 pounds, Winnie weighs 560.35 pounds, and Nyla weighs 618.29 pounds. What is the average weight of the three bears?

20. The bill for dinner came to \$75.48. The four friends decided to leave a \$15.00 tip. If they shared the bill equally, how much will they each pay?

LESSON
3-7 **Practice**
Dividing by Decimals

Find each quotient.

1. $9.0 \div 0.9$

2. $29.6 \div 3.7$

3. $10.81 \div 2.3$

4. $10.5 \div 1.5$

5. $15.36 \div 4.8$

6. $9.75 \div 1.3$

7. $20.4 \div 5.1$

8. $37.5 \div 2.5$

9. $9.24 \div 1.1$

10. $16.56 \div 6.9$

11. $28.9 \div 8.5$

12. $14.35 \div 0.7$

Evaluate $x \div 1.2$ for each value of x .

13. $x = 40.8$

14. $x = 1.8$

15. $x = 10.8$

16. $x = 14.4$

17. $x = 4.32$

18. $x = 0.06$

19. Anna is saving \$6.35 a week to buy a computer game that costs \$57.15. How many weeks will she have to save to buy the game?

20. Ben ran a 19.5-mile race last Saturday. His average speed during the race was 7.8 miles per hour. How long did it take Ben to finish the race?

LESSON
3-8 **Practice**
Interpret the Quotient

Circle the letter of the correct answer.

- You spent a total of \$6.75 for 15 yards of ribbon. How much did the ribbon cost per yard?
A \$0.50
B \$0.45
C \$1.35
D \$1.45
- Buttons come in packs of 12. How many packs should you buy if you need 100 buttons?
F 10
G 8
H 9
J 12
- Your sewing cabinet has compartments that hold 8 spools of thread each. You have 50 spools of thread. How many compartments can you fill?
A 6
B 7
C 5
D 8
- You spent a total of \$35.75 for velvet cloth. Each yard of the velvet costs \$3.25. How many yards did you buy?
F 10
G 10.5
H 11
J 11.5

Write the correct answer.

- You used a total of 67.5 yards of cotton material to make costumes for the play. Each costume used 11.25 yards of cloth. How many costumes did you make?

- Sequins come in packs of 75. You use 12 sequins on each costume. If you have one pack of sequins, how many costumes can you make?

- You are saving \$17.00 each week to buy a new sewing machine that costs \$175.50. How many weeks will you have to save to have enough money to buy the sewing machine?

- You pay \$26.28 for a subscription to *Sewing Magazine*. You get an issue every month for a year. How much does each issue cost?

LESSON **Practice**
3-9 *Solving Decimal Equations*

Solve each equation. Check your answer.

1. $a - 2.7 = 4.8$

2. $b \div 7 = 1.9$

3. $w - 6.5 = 3.8$

4. $p \div 0.4 = 1.7$

5. $4.5 + x = 8$

6. $b \div 3 = 2.5$

7. $7.8 + s = 15.2$

8. $1.63q = 9.78$

9. $0.05 + x = 2.06$

10. $1.7n = 2.38$

11. $t - 6.08 = 12.59$

12. $9q = 16.2$

13. $w - 8.9 = 10.3$

14. $1.4n = 3.22$

15. $t - 12.7 = 0.8$

16. $3.8 + a = 6.5$

17. The distance around a square photograph is 12.8 centimeters. What is the length of each side of the photograph?

18. You buy two rolls of film for \$3.75 each. You pay with a \$10 bill. How much change should you get back?

LESSON
4-1 **Practice**
Divisibility

Tell whether each number is divisible by 2, 3, 4, 5, 6, 9, and 10.

1. 90

2. 416

3. 308

4. 540

5. 804

6. 225

7. 663

8. 972

9. 836

Tell whether each number is prime or composite.

10. 33

11. 69

12. 41

13. 45

14. 58

15. 87

16. 61

17. 53

18. 99

19. Dan counted all the coins in his bank, and he had 72 quarters. Can he exchange the quarters for an even amount of dollar bills? How do you know?

20. A small town purchased 196 American flags for its Memorial Day parade. Eight locations were selected to display the flags. Can each location have the same number of flags? If no, explain why not. If yes, how many flags will be displayed at each location?

LESSON **Practice**
4-2 **Factors and Prime Factorization**

List all of the factors of each number.

1. 15

2. 24

3. 33

4. 72

5. 48

6. 95

7. 66

8. 87

9. 36

Write the prime factorization of each number.

10. 44

11. 56

12. 42

13. 39

14. 36

15. 125

16. 85

17. 100

18. 32

19. James has an assigned seat for his flight to Denver. The seats on the plane are numbered 1–49. James's seat number is an odd number greater than 10 that is factor of 100. What is his seat number for the flight?

20. Linda writes the prime factorization of 40 as $2 \cdot 2 \cdot 2 \cdot 5$ on the board. Phil writes the prime factorization of 40 as $2^3 \cdot 5$. Who is correct?

LESSON
4-3 Practice
Greatest Common Factor

Find the GCF of each set of numbers.

1. 12 and 15

2. 18 and 24

3. 15 and 25

4. 16 and 24

5. 36 and 45

6. 24 and 54

7. 48 and 64

8. 27 and 72

9. 55 and 77

10. 16, 28, and 48

11. 15, 35, and 95

12. 20, 30, and 80

13. 18, 36, and 54

14. 27, 36, and 45

15. 21, 49, and 63

16. 25, 35, and 45

17. 28, 42, and 63

18. 25, 75, and 115

19. Mr. Thompson's sixth-grade class is competing in the school field day. There are 16 boys and 12 girls in his class. He divided the class into the greatest number of teams possible with the same number of boys on each team and the same number of girls on each team. How many teams were made if each person was on a team? How many girls were on each team? How many boys?

20. Barbara is making candy bags for her birthday party. She has 24 lollipops, 12 candy bars, and 42 pieces of gum. She wants each bag to have the same number of each kind of candy. What is the greatest number of bags she can make if all the candy is used? How many pieces of each kind of candy will be in each bag?

LESSON **Practice**
4-4 **Decimals and Fractions**

Write each decimal as a fraction or mixed number.

1. 0.23

2. 0.1

3. 3.25

4. $1.\overline{3}$

5. 5.5

6. 3.7

Write each fraction or mixed number as a decimal.

7. $\frac{4}{5}$

8. $\frac{1}{9}$

9. $1\frac{2}{3}$

10. $3\frac{3}{5}$

11. $2\frac{1}{3}$

12. $\frac{8}{9}$

Order the fractions and decimals from least to greatest.

13. $\frac{1}{4}$, 0.7, $\frac{3}{5}$

14. 0.25, $\frac{1}{8}$, 0.3

15. $\frac{9}{10}$, 0.49, $\frac{1}{2}$

Order the fractions and decimals from greatest to least.

16. 0.13, $\frac{1}{10}$, 0.9

17. $\frac{2}{5}$, 0.7, $\frac{2}{3}$

18. 0.65, $\frac{4}{5}$, $\frac{3}{4}$

19. Derrick has a dollar bill and three dimes, Jane has a dollar bill and one quarter, and Kelly has a dollar bill and ten nickels. Who has the most money? the least?

20. It rained three and one half inches in April. In May it rained $3\frac{3}{4}$ inches, and in June it rained 3.6 inches. Write the months in order from the greatest to the least amount of rain.

LESSON
4-5 **Practice**
Equivalent Fractions

Find two equivalent fractions for each fraction.

1. $\frac{3}{6}$

2. $\frac{4}{7}$

3. $\frac{11}{13}$

4. $\frac{2}{15}$

5. $\frac{5}{14}$

6. $\frac{8}{9}$

7. $\frac{2}{21}$

8. $\frac{24}{48}$

9. $\frac{25}{100}$

Find the missing numbers that make the fractions equivalent.

10. $\frac{4}{7} = \frac{?}{28}$

11. $\frac{2}{9} = \frac{?}{54}$

12. $\frac{36}{4} = \frac{?}{1}$

13. $\frac{56}{8} = \frac{?}{2}$

14. $1\frac{3}{5} = \frac{?}{25}$

15. $1\frac{4}{7} = \frac{?}{42}$

Write each fraction in simplest form.

16. $\frac{15}{25}$

17. $\frac{8}{36}$

18. $\frac{12}{18}$

19. $\frac{10}{24}$

20. Billy had 24 trading cards. He gave 7 of his cards to Miko and 9 of his cards to Teri. What fraction of his original 24 cards does Billy have left? Write two equivalent fractions for that amount.

21. Beth and Kristine ride their bikes to school in the morning. Beth has to ride $1\frac{7}{32}$ miles. Kristine has to ride $\frac{39}{32}$ miles. Who rides the farthest to reach school? Explain.

LESSON **Practice**
4-6 *Mixed Numbers and Improper Fractions*

Write each mixed number as an improper fraction.

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

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

3. $5\frac{1}{4}$

4. $1\frac{3}{7}$

5. $3\frac{3}{4}$

6. $4\frac{1}{3}$

7. $2\frac{3}{5}$

8. $3\frac{5}{6}$

9. $7\frac{1}{3}$

Write each improper fraction as a mixed number or whole number. Tell whether your answer is a mixed number or whole number.

10. $\frac{17}{3}$

11. $\frac{40}{8}$

12. $\frac{48}{7}$

13. $\frac{33}{10}$

14. $\frac{50}{8}$

15. $\frac{83}{9}$

16. $\frac{104}{8}$

17. $\frac{121}{6}$

18. $\frac{78}{11}$

19. The hotel ordered an extra-long rug for a hallway that is $\frac{123}{2}$ feet long. What is the rug's length in feet and inches? Remember, 1 foot = 12 inches.

20. During this year's football-throwing contest, John threw the ball $49\frac{2}{3}$ feet. Sharon threw the ball 51 feet. Who threw the ball $\frac{153}{3}$ feet?

LESSON **Practice**
4-7 **Comparing and Ordering Fractions**

Compare. Write $<$, $>$, or $=$.

1. $\frac{4}{7} \square \frac{3}{5}$

2. $\frac{1}{8} \square \frac{2}{3}$

3. $\frac{1}{4} \square \frac{2}{5}$

4. $\frac{7}{8} \square \frac{5}{6}$

5. $\frac{18}{24} \square \frac{3}{4}$

6. $\frac{4}{5} \square \frac{8}{12}$

Order the fractions from least to greatest.

7. $\frac{1}{2}, \frac{2}{5}, \frac{1}{3}$

8. $\frac{2}{5}, \frac{3}{4}, \frac{2}{3}$

9. $\frac{3}{7}, \frac{5}{6}, \frac{4}{5}$

10. $\frac{5}{9}, \frac{3}{7}, \frac{2}{3}$

11. $\frac{3}{8}, \frac{2}{7}, \frac{3}{5}$

12. $\frac{2}{7}, \frac{1}{8}, \frac{2}{5}$

Order the fractions from greatest to least.

13. $\frac{1}{6}, \frac{2}{7}, \frac{1}{5}$

14. $\frac{3}{7}, \frac{4}{9}, \frac{2}{3}$

15. $\frac{2}{5}, \frac{3}{10}, \frac{2}{3}$

16. $\frac{4}{5}, \frac{7}{10}, \frac{1}{12}$

17. $\frac{3}{8}, \frac{3}{4}, \frac{4}{9}$

18. $\frac{4}{7}, \frac{3}{5}, \frac{5}{6}$

19. David ran $4\frac{1}{4}$ miles, Shane ran $4\frac{1}{2}$ miles, and Matt ran $4\frac{5}{8}$ miles.
Who ran the farthest?

20. Darius and Anita both took the same test. Darius answered $\frac{5}{6}$ of the questions correctly, and Anita answered $\frac{6}{7}$ correctly. Who got the higher score on the test?

LESSON **Practice**
4-8 **Adding and Subtracting with Like Denominators**

Subtract. Write each answer in simplest form.

1. $1 - \frac{4}{7}$

2. $\frac{18}{24} - \frac{10}{24}$

3. $2\frac{2}{3} - 1\frac{1}{3}$

4. $8\frac{11}{13} - 5\frac{2}{13}$

5. $5 - 3\frac{1}{4}$

6. $2 - 1\frac{2}{7}$

7. $6\frac{8}{9} - 4\frac{6}{9}$

8. $7\frac{4}{11} - 6\frac{3}{11}$

9. $10 - 5\frac{3}{5}$

Evaluate each expression for $x = \frac{2}{15}$. Write each answer in simplest form.

10. $x + \frac{14}{15}$

11. $x - \frac{1}{15}$

12. $\frac{13}{15} - x$

13. $x + \frac{7}{15}$

Write each sum or difference in simplest form.

14. $\frac{17}{21} - \frac{2}{21}$

15. $\frac{13}{32} + \frac{9}{32}$

16. $\frac{2}{15} + \frac{8}{15}$

17. $27\frac{76}{100} - 14\frac{26}{100}$

18. $\frac{1}{15} + \frac{4}{15} + \frac{5}{15}$

19. $\frac{9}{26} + \frac{2}{26} + \frac{5}{26}$

20. Maria has 8 gallons of paint she wants to use in three rooms of her house. She will use $2\frac{1}{4}$ gallons in the bedroom and $1\frac{1}{4}$ gallons in the bathroom. Use pictures to model how many gallons she will have left to paint the playroom, and then write your answer in simplest form.

LESSON **Practice**
4-9 *Estimating Fraction Sums and Differences*

Estimate each sum or difference by rounding to 0, $\frac{1}{2}$, or 1.

1. $\frac{5}{6} + \frac{3}{10}$

2. $\frac{7}{9} - \frac{4}{5}$

3. $\frac{9}{10} - \frac{3}{7}$

4. $\frac{4}{9} + \frac{1}{4}$

5. $\frac{1}{8} + \frac{1}{6}$

6. $\frac{7}{8} - \frac{4}{5}$

7. $\frac{5}{8} + \frac{2}{7}$

8. $\frac{7}{10} + \frac{11}{12}$

9. $\frac{8}{9} + \frac{4}{7}$

10. $\frac{5}{11} + 1\frac{2}{7}$

11. $1\frac{6}{11} - \frac{2}{5}$

12. $4\frac{2}{7} - 1\frac{7}{9}$

Use the table for Exercises 13–15.

13. About how much more orange juice than ginger ale is used in the punch?

14. About how much juice is used in the punch?

15. About how many cups of fruit punch does this recipe make?

Fruit Punch

Ingredient	Amount (cups)
Orange juice	$4\frac{3}{5}$
Cranberry juice	$2\frac{1}{4}$
Ginger ale	$\frac{7}{8}$

16. Damonte rolled the medicine ball $9\frac{3}{4}$ feet. Zachary rolled it $9\frac{7}{12}$ feet. Who rolled the medicine ball the farthest? About how much farther?

17. Sara ran $5\frac{6}{7}$ miles on Monday and $4\frac{1}{4}$ miles on Tuesday. About how many miles did she run in all during those two days?

LESSON Practice**5-1 Least Common Multiple****Find the least common multiple (LCM).**1. 2 and 5
_____2. 4 and 3
_____3. 6 and 4
_____4. 6 and 8
_____5. 5 and 9
_____6. 4 and 5
_____7. 10 and 15
_____8. 8 and 12
_____9. 6 and 10
_____10. 3, 6, and 9
_____11. 2, 5, and 10
_____12. 4, 7, and 14
_____13. 3, 5, and 9
_____14. 2, 5, and 8
_____15. 3, 9, and 12

16. Mr. Stevenson is ordering shirts and hats for his Boy Scout troop. There are 45 scouts in the troop. Hats come in packs of 3, and shirts come in packs of 5. What is the least number of packs of each he should order to so that each scout will have 1 hat and 1 shirt, and none will be left over?

17. Tony wants to make 36 party bags. Glitter pens come in packs of 6. Stickers come in sheets of 4, and balls come in packs of 3. What is the least number of each package he should buy to have 1 of each item in every party bag, and no supplies left over?

18. Glenda is making 30 school supply baskets. Notepads come in packs of 5. Erasers come in packs of 15, and markers come in packs of 3. What is the least number of each package she should buy to have 1 of each item in every basket, and no supplies left over?

LESSON **Practice**
5-2 *Adding and Subtracting with Unlike Denominators***Add or subtract. Write each answer in simplest form.**

1. $\frac{6}{7} + \frac{1}{3}$

2. $\frac{3}{7} - \frac{2}{5}$

3. $\frac{1}{4} + \frac{3}{8}$

4. $\frac{7}{8} - \frac{2}{3}$

5. $\frac{1}{6} + \frac{3}{5}$

6. $\frac{5}{6} - \frac{2}{3}$

7. $\frac{5}{9} - \frac{1}{3}$

8. $\frac{7}{8} + \frac{3}{4}$

9. $\frac{5}{12} - \frac{1}{6}$

10. $\frac{4}{5} - \frac{7}{11}$

11. $\frac{4}{9} + \frac{5}{6}$

12. $\frac{5}{8} + \frac{2}{3}$

Evaluate each expression for $b = \frac{1}{3}$. Write your answer in simplest form.

13. $b + \frac{5}{8}$

14. $\frac{7}{9} - b$

15. $\frac{2}{7} + b$

16. $b + b$

17. $\frac{11}{12} - b$

18. $\frac{3}{4} - b$

19. There are three grades in Kyle's middle school—sixth, seventh, and eighth. One-third of the students are in sixth grade and $\frac{1}{4}$ are in seventh grade. What fraction of the schools' students are in eighth grade?

20. Sarah is making a dessert that calls for $\frac{4}{5}$ cup of crushed cookies. If she has already crushed $\frac{7}{10}$ cup, how much more does she need?

LESSON **Practice**
5-3 **Adding and Subtracting Mixed Numbers**

Find each sum or difference. Write the answer in simplest form.

1. $4\frac{3}{8} + 5\frac{1}{4}$

2. $11\frac{2}{5} - 8\frac{1}{3}$

3. $7\frac{1}{3} + 3\frac{2}{9}$

4. $22\frac{5}{6} - 17\frac{1}{4}$

5. $32\frac{4}{7} - 14\frac{1}{3}$

6. $12\frac{1}{4} + 5\frac{1}{12}$

7. $29\frac{1}{3} - 14\frac{1}{6}$

8. $5\frac{3}{4} - 1\frac{7}{11}$

9. $21\frac{1}{6} + 1\frac{3}{8}$

10. $15\frac{7}{12} - 14\frac{3}{8}$

11. $5\frac{6}{15} + 4\frac{3}{10}$

12. $25\frac{1}{7} + 25\frac{2}{5}$

13. $3\frac{2}{5} + 1\frac{1}{3}$

14. $1\frac{2}{5} - 1\frac{2}{10}$

15. $3\frac{3}{5} - 2\frac{1}{2}$

16. $6\frac{3}{4} - 3\frac{3}{10}$

17. $4\frac{4}{5} + 2\frac{1}{10}$

18. $32\frac{1}{2} + 5\frac{1}{3}$

19. Donald is making a party mix. He bought $2\frac{1}{4}$ pounds of pecans and $3\frac{1}{5}$ pounds of walnuts. How many pounds of nuts did Donald buy in all? _____

20. Mrs. Watson's cookie recipe calls for $3\frac{4}{7}$ cups of sugar. Mr. Clark's cookie recipe calls for $4\frac{2}{3}$ cups of sugar. How much more sugar does Mr. Clark's recipe use? _____

21. Tasha's cat weighs $15\frac{5}{12}$ lb. Naomi's cat weighs $11\frac{1}{3}$ lb. Can they bring both of their cats to the vet in a carrier that can hold up to 27 pounds? Explain.

LESSON **Practice**
5-4 *Regrouping to Subtract Mixed Numbers*

Subtract. Write each answer in simplest form.

1. $4 - 2\frac{3}{8}$

2. $5\frac{1}{6} - 2\frac{2}{3}$

3. $14 - 8\frac{2}{9}$

4. $19\frac{1}{7} - 5\frac{1}{3}$

5. $7\frac{1}{4} - 3\frac{5}{8}$

6. $10\frac{1}{5} - 5\frac{7}{10}$

7. $1\frac{1}{6} - \frac{7}{9}$

8. $9\frac{1}{4} - 1\frac{7}{16}$

9. $6\frac{1}{5} - 3\frac{1}{4}$

Evaluate each expression for $a = 1\frac{1}{2}$, $b = 2\frac{1}{3}$, $c = \frac{1}{4}$, and $d = 3$. Write the answer in simplest form.

10. $b - a$

11. $a - c$

12. $b - c$

13. $d - a$

14. $d - b$

15. $d - c$

16. Tim had 6 feet of wrapping paper for Kylie's birthday present. He used $3\frac{3}{8}$ feet of the paper to wrap her gift. How much paper did Tim have left?

17. At his last doctor's visit, Pablo was $60\frac{1}{2}$ inches tall. At today's visit, he measured $61\frac{1}{6}$ inches. How much did Pablo grow between visits?

18. Yesterday, Danielle rode her bike for $5\frac{1}{2}$ miles. Today, she rode her bike for $6\frac{1}{4}$ miles. How much farther did Danielle ride her bike today?

LESSON **Practice****5-5 Solving Fraction Equations: Addition and Subtraction**

Solve each equation. Write the solution in simplest form. Check your answers.

1. $k + 3\frac{3}{4} = 5\frac{2}{3} - 1\frac{1}{3}$

2. $a - 2\frac{2}{11} = 2\frac{5}{22} - 1\frac{2}{11}$

3. $2\frac{2}{7} = n - 4\frac{2}{3} - 1\frac{1}{3}$

4. $6\frac{1}{4} = z + 1\frac{5}{8}$

5. $5\frac{1}{4} = x + \frac{7}{16}$

6. $r + 6 = 9\frac{2}{5} - 2\frac{1}{2}$

7. $11\frac{2}{5} = q - 4\frac{2}{7} + 2\frac{1}{7}$

8. $4\frac{2}{5} - 2\frac{1}{2} = p + \frac{3}{10}$

9. $\frac{3}{8} + \frac{1}{6} = c - 4\frac{5}{6}$

10. $2\frac{1}{4} + c = 2\frac{1}{3} + 1\frac{1}{6}$

11. A seamstress raised the hem on Helen's skirt by $1\frac{1}{3}$ inches. The skirt's original length was 16 inches. What is the new length?

12. The bike trail is $5\frac{1}{4}$ miles long. Jessie has already cycled $2\frac{5}{8}$ miles of the trail. How much farther does she need to go to finish the trail?

LESSON

Practice**5-6*****Multiplying Fractions by Whole Numbers*****Multiply.** Write each answer in simplest form.

1. $5 \cdot \frac{1}{10}$

2. $6 \cdot \frac{1}{18}$

3. $4 \cdot \frac{1}{14}$

4. $3 \cdot \frac{1}{12}$

5. $2 \cdot \frac{1}{8}$

6. $6 \cdot \frac{1}{10}$

7. $3 \cdot \frac{1}{6}$

8. $3 \cdot \frac{5}{12}$

9. $3 \cdot \frac{2}{7}$

10. $2 \cdot \frac{3}{8}$

11. $10 \cdot \frac{3}{15}$

12. $8 \cdot \frac{2}{14}$

13. $5 \cdot \frac{2}{10}$

14. $4 \cdot \frac{4}{12}$

15. $2 \cdot \frac{13}{20}$

Evaluate $6x$ for each value of x . Write the answer in simplest form.

16. $x = \frac{2}{3}$

17. $x = \frac{2}{8}$

18. $x = \frac{1}{4}$

19. $x = \frac{2}{6}$

20. $x = \frac{2}{7}$

21. $x = \frac{2}{5}$

22. $x = \frac{3}{11}$

23. $x = \frac{5}{12}$

24. Thomas spends 60 minutes exercising. For $\frac{1}{4}$ of that time, he jumps rope. How many minutes does he spend jumping rope?

25. Kylie made a 4-ounce milk shake. Two-thirds of the milk shake was ice cream. How many ounces of ice cream did Kylie use in the shake?

LESSON
5-7 **Practice**
Multiplying Fractions

Multiply. Write each answer in simplest form.

1. $\frac{1}{2} \cdot \frac{2}{5}$

2. $\frac{1}{3} \cdot \frac{7}{8}$

3. $\frac{2}{3} \cdot \frac{4}{6}$

4. $\frac{1}{4} \cdot \frac{10}{11}$

5. $\frac{3}{5} \cdot \frac{2}{3}$

6. $\frac{8}{9} \cdot \frac{3}{4}$

7. $\frac{3}{8} \cdot \frac{4}{5}$

8. $\frac{2}{7} \cdot \frac{3}{4}$

9. $\frac{1}{6} \cdot \frac{2}{3}$

Evaluate the expression $x \cdot \frac{1}{5}$ for each value of x . Write the answer in simplest form.

10. $x = \frac{3}{7}$

11. $x = \frac{5}{6}$

12. $x = \frac{2}{3}$

13. $x = \frac{10}{11}$

14. $x = \frac{5}{8}$

15. $x = \frac{4}{5}$

16. A cookie recipe calls for $\frac{2}{3}$ cup of brown sugar. Sarah is making $\frac{1}{4}$ of the recipe. How much brown sugar will she need?

17. Nancy spent $\frac{7}{8}$ hour working out at the gym. She spent $\frac{5}{7}$ of that time lifting weights. What fraction of an hour did she spend lifting weights?

LESSON
5-8 Practice
Multiplying Mixed Numbers

Multiply. Write each answer in simplest form.

1. $1\frac{2}{3} \cdot \frac{4}{5}$

2. $1\frac{7}{8} \cdot \frac{4}{5}$

3. $2\frac{3}{4} \cdot \frac{1}{5}$

4. $2\frac{1}{6} \cdot \frac{2}{3}$

5. $2\frac{2}{5} \cdot \frac{3}{8}$

6. $1\frac{3}{4} \cdot \frac{5}{6}$

7. $1\frac{1}{6} \cdot \frac{3}{5}$

8. $\frac{2}{9} \cdot 2\frac{1}{7}$

9. $2\frac{3}{11} \cdot \frac{7}{10}$

Find each product. Write the answer in simplest form.

10. $\frac{6}{7} \cdot 1\frac{1}{4}$

11. $\frac{5}{8} \cdot 1\frac{3}{5}$

12. $2\frac{4}{9} \cdot \frac{1}{6}$

13. $1\frac{3}{10} \cdot 1\frac{1}{3}$

14. $2\frac{1}{2} \cdot 2\frac{1}{2}$

15. $1\frac{2}{3} \cdot 3\frac{1}{2}$

16. Dominick lives $1\frac{3}{4}$ miles from his school. If his mother drives him half the way, how far will Dominick have to walk to get to school?

17. Katoni bought $2\frac{1}{2}$ dozen donuts to bring to the office. Since there are 12 donuts in a dozen, how many donuts did Katoni buy?

LESSON **Practice**
5-9 *Dividing Fractions and Mixed Numbers*

Find the reciprocal.

1. $\frac{5}{7}$

2. $\frac{9}{8}$

3. $\frac{3}{5}$

4. $\frac{1}{10}$

5. $\frac{4}{9}$

6. $\frac{13}{14}$

7. $1\frac{1}{3}$

8. $2\frac{4}{5}$

9. $3\frac{1}{6}$

Divide. Write each answer in simplest form.

10. $\frac{5}{6} \div 5$

11. $2\frac{3}{4} \div 1\frac{4}{7}$

12. $\frac{7}{8} \div \frac{2}{3}$

13. $3\frac{1}{4} \div 2\frac{3}{4}$

14. $\frac{9}{10} \div 3$

15. $\frac{3}{4} \div 9$

16. $2\frac{6}{9} \div \frac{6}{7}$

17. $\frac{5}{6} \div 2\frac{3}{10}$

18. $2\frac{1}{8} \div 3\frac{1}{4}$

19. The rope in the school gymnasium is $10\frac{1}{2}$ feet long. To make it easier to climb, the gym teacher tied a knot in the rope every $\frac{3}{4}$ foot. How many knots are in the rope? _____

20. Mr. Fulton bought $12\frac{1}{2}$ pounds of ground beef for the cookout. He plans on using $\frac{1}{4}$ pound of beef for each hamburger. How many hamburgers can he make? _____

21. Mrs. Marks has $9\frac{1}{4}$ ounces of fertilizer for her plants. She plans on using $\frac{3}{4}$ ounce of fertilizer for each plant. How many plants can she fertilize? _____

LESSON Practice**5-10** Solving Fraction Equations: Multiplication and Division

Solve each equation. Write the answer in simplest form. Check your answers.

1. $\frac{1}{4}x = 6$

2. $2t = \frac{4}{7}$

3. $\frac{3}{5}a = 3$

4. $\frac{r}{6} = 8$

5. $\frac{2b}{9} = 4$

6. $3y = \frac{4}{5}$

7. $\frac{2}{3}d = 5$

8. $2f = \frac{1}{6}$

9. $4q = \frac{2}{9}$

10. $\frac{1}{2}s = 2$

11. $\frac{h}{7} = 5$

12. $\frac{1}{4}c = 9$

13. $5g = \frac{5}{6}$

14. $3k = \frac{1}{9}$

15. $\frac{3x}{5} = 6$

_____16. It takes 3 buckets of water to fill $\frac{1}{3}$ of a fish tank. How many buckets are needed to fill the whole tank? _____17. Jenna got 12, or $\frac{3}{5}$, of her answers on the test right. How many questions were on the test? _____18. It takes Charles 2 minutes to run $\frac{1}{4}$ of a mile. How long will it take Charles to run a mile? _____

LESSON

Practice

6-1 Make a Table

Complete each activity and answer each question.

1. Pizza Express sells different-sized pizzas. The jumbo pizza has 20 slices. The extra large has 16 slices. The large has 12 slices. There are 8 slices in a medium, and 6 slices in a small. A personal-sized pizza has 4 slices. Use this data to complete the table at right, from largest to smallest pizza.

2. What pattern do you see in the table's data?

3. A plain large pizza at Pizza Express costs \$13.75. A large pizza with one topping costs \$14.20. A 2-topping large pizza costs \$14.65, and a 3-topping large pizza costs \$15.10. If you want 4 toppings on your large pizza, it will cost you \$15.55. Use this data to complete the table at right.

4. What pattern do you see in the table's data?

5. How much does each slice of a 1-topping large pizza from Pizza Express cost? Round your answer to the nearest hundredth of a dollar.

6. You and three friends buy two large pizzas from Pizza Express. One pizza has pepperoni and onions, and one pizza is plain. If you equally share the total price, how much will you each pay? How many slices will you each get?

LESSON
6-2 Practice
Mean, Median, Mode, and Range

Find the mean of each data set.

1.

Brian's Math Test Scores	86	90	93	85	79	92
---------------------------------	----	----	----	----	----	----

2.

Heights of Basketball Players (in.)	72	75	78	72	73
--	----	----	----	----	----

Find the mean, median, mode, and range of each data set.

3.

School Sit-Up Records (sit-ups per minute)	31	28	30	31	30
---	----	----	----	----	----

4.

Team Heart Rates (beats per min)	70	68	70	72	68	66
---	----	----	----	----	----	----

5.

Daily Winter Temperatures (°F)	45	50	47	52	53	45	51
---------------------------------------	----	----	----	----	----	----	----

6. Anita has two sisters and three brothers. The mean of all their ages is 6 years. What will their mean age be 10 years from now? Twenty years from now?

7. In a class of 28 sixth graders, all but one of the students are 12 years old. Which two data measurements are the same for the student's ages? What are those measurements?

LESSON

Practice

6-3 Additional Data and Outliers

Use the table to answer Exercises 1–2.

- The table shows population data for some of the least-crowded states. Find the mean, median, and mode of the data.

- Alaska has the lowest population density of any state. Only about 1 person per square mile lives there. Add this number to the data in the table and find the mean, median, and mode.

Population Densities

State	People (per mi ²)
Idaho	16
Nevada	18
New Mexico	15
North Dakota	9
South Dakota	10

Use the table to answer Exercises 3–4.

- The table shows some of the states with the most counties. Find the mean, median, and mode of the data.

- With 254 counties, Texas has more counties than any other state. Add this number to the data in the table and find the mean, median, and mode.

- In Exercise 1, which measurement best describes the data? Why is Alaska’s population density an outlier for that data set?

State Counties

State	Number of Counties
Illinois	102
Iowa	99
North Carolina	100
Tennessee	95
Virginia	95

- In Exercise 4, why is the number of counties in Texas an outlier for the data set? Which measurement best describes the data set with Texas included?

LESSON

6-4

Practice

Bar Graphs

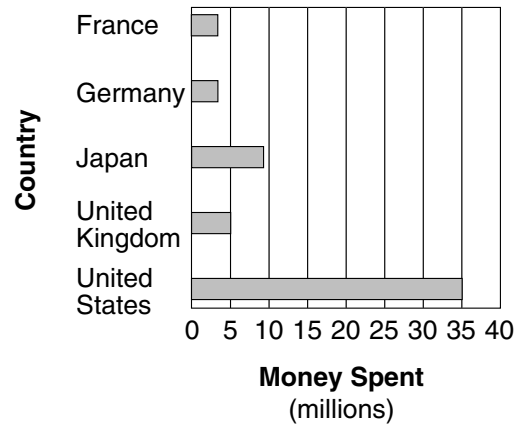
Use the bar graph to answer each question.

1. In which country did people spend the most money on toys in 2000?

2. In which two countries did people spend the same amount of money on toys in 2000? How much did they each spend?

3. In which country did people spend \$9 million on toys in 2000?

Top Toy-Buying Countries, 2000



Make a bar graph to compare the data in the table.

Female Groups with the Most Top 10 and Top 20 Hits

Top 10		Top 20	
The Supremes	20	The Supremes	24
The Pointer Sisters	7	The Pointer Sisters	13
TLC	9	TLC	11
En Vogue	5	En Vogue	7
Spice Girls	4	Spice Girls	7

Female Groups with the Most Top 10 and Top 20 Hits



Artist

Key: Top 10 Top 20

LESSON

Practice

6-5

Line Plots, Frequency Tables, and Histograms

1. Students voted for a day not to have homework. The results are shown in the box. Make a tally table. Which day got the most votes?

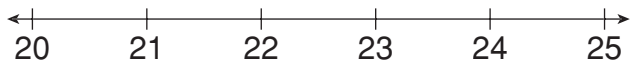
Monday	Friday	Thursday	Friday	Tuesday	Friday
Friday	Thursday	Wednesday	Monday	Friday	Monday

Tally Table for Homework Votes

Mon	
Tues	
Wed	
Thurs	
Fri	

2. Make a line plot of the data.

Average Time Spent on Homework Per Day (min)									
20	21	24	20	21	20	20	22	25	20
22	20	24	25	24	25	25	21	25	24



Average Time Spent on Homework Per Day (min)

3. Use the data in the box below to make a frequency table with intervals.

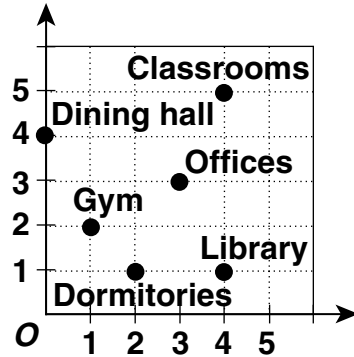
Class Social Studies Test Scores									
78	95	81	83	75	68	100	73	92	85
59	70	88	92	99	87	75	67	89	84

Class Social Studies Test Scores					
Scores					
Frequency					

LESSON **Practice**
6-6 **Ordered Pairs**

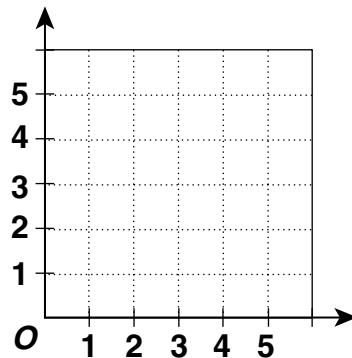
Name the ordered pair for each location on the grid.

1. gym _____
2. dining hall _____
3. offices _____
4. library _____
5. classrooms _____
6. dormitories _____



Graph and label each point on the coordinate grid.

7. A $(5, 1\frac{1}{2})$
8. B (2, 2)
9. C (1, 3)
10. D (4, 3)
11. E (5, 5)
12. F (2, 4)



13. On a map of his neighborhood, Mark's house is located at point (7, 3). His best friend, Cheryl, lives 2 units west and 1 unit south of him. What ordered pair describes the location of Cheryl's house on their neighborhood map?

14. Quan used a coordinate grid map of the zoo during his visit. Starting at (0, 0), he walked 3 units up and 4 units to the right to reach the tiger cages. Then he walked 1 unit down and 1 unit left to see the pandas. Describe the directions Quan should walk to get back to his starting point.

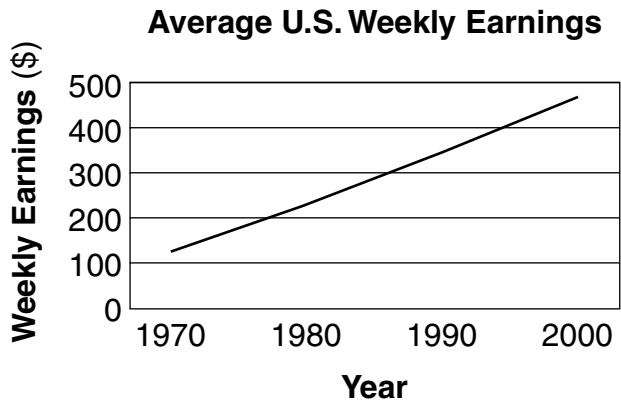
LESSON **Practice**
6-7 **Line Graphs**

Use the line graph to answer each question.

1. In which year were the average weekly earnings in the United States the highest?

2. In general, how did average weekly earnings in the United States change between 1970 and 2000?

3. In which year did the average United States worker earn about \$350 a week?



4. Use the given data to make a line graph.

U.S. Minimum Wage

Year	Hourly Rate
1970	\$1.60
1980	\$3.10
1990	\$3.80
2000	\$5.15



5. Between which two years shown on the graph did the U.S. minimum wage change the least?

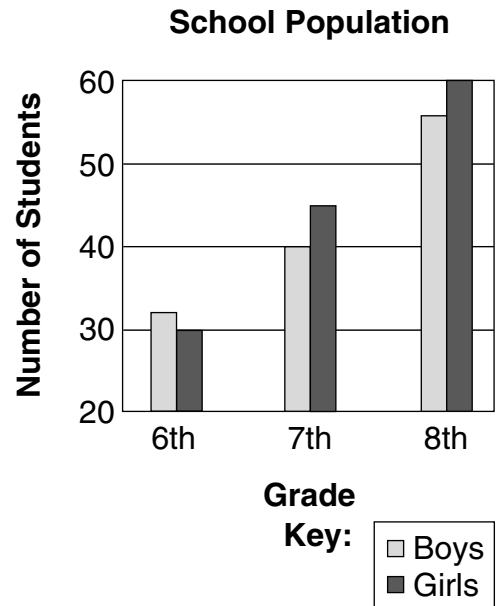
6. How has the hourly minimum wage changed in the U.S. since 1970?

LESSON **Practice**
6-8 **Misleading Graphs**

Use the graph to answer each question.

1. Why is this bar graph misleading?

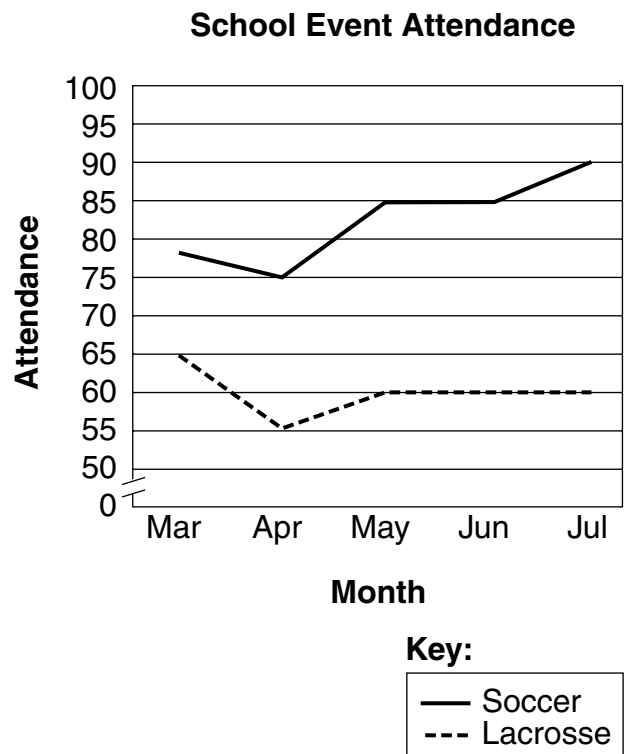
2. What might people believe from the misleading graph?



Use the graph to answer each question.

3. Why is this line graph misleading?

4. What might people believe from the misleading graph?



LESSON **Practice**
6-9 **Stem-and-Leaf Plots**

Complete each activity and answer the questions.

1. Use the data in the table to complete the stem-and-leaf plot below.

Richmond, Virginia, Monthly Normal Temperatures (°F)											
Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
37	39	48	57	74	78	77	76	70	59	50	40

Stem	Leaves

Key: 1 | 2 = _____

Find each value of the data.

- least value _____
- greatest value _____
- mean _____
- median _____
- mode _____
- range _____
- Look at the stem-and-leaf plot you made for Exercise 1. How many months in Richmond have a normal temperature above 70°F?

Stem	Leaves
6	1 4
7	1 6
8	2 2
9	0 1 8

Key: 6 | 5 = 65

- How would you display a data value of 100 on the stem-and-leaf plot above?

LESSON **Practice**

6-10 *Choosing an Appropriate Display*

1. The table shows the heights of the 6 tallest buildings in the world. Which graph would be more appropriate to show the data—a line graph or a bar graph? Draw the more appropriate graph.

Building	Sears Tower	CITIC Plaza	Petronas Tower I	Petronas Tower II	Jin Mao Building	Two Finance Center
Height (ft)	1,450	1,283	1,483	1,483	1,381	1,352

2. The table shows the test scores of some sixth-grade students. Which graph would be more appropriate to show the data—a stem-and-leaf plot or a line graph? Draw the more appropriate graph.

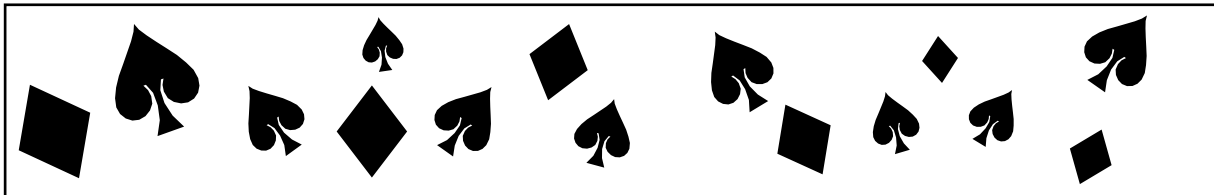
Test Scores												
62	78	81	66	96	88	81	77	90	88	60	99	90

LESSON **Practice**
7-1 Ratios and Rates

Use the table to write each ratio.

1. lions to elephants _____
2. giraffes to otters _____
3. lions to seals _____
4. seals to elephants _____
5. elephants to lions _____
6. Write three equivalent ratios to compare the number of diamonds with the number of spades in the box. _____

Animals in the Zoo	
Elephants	12
Giraffes	8
Lions	9
Seals	10
Otters	16



Use the table to write each ratio as a fraction.

7. Titans wins to Titans losses _____
8. Orioles losses to Orioles wins _____
9. Titans losses to Orioles losses _____
10. Orioles wins to Titans wins _____

Baseball Team Stats		
	Titans	Orioles
Wins	12	9
Losses	14	15

11. A 6-ounce bag of raisins costs \$2.46. An 8-ounce bag of raisins costs \$3.20. Which is the better deal? _____
12. Barry earns \$36.00 for 6 hours of yard work. Henry earns \$24.00 for 3 hours of yard work. Who has the better hourly rate of pay? _____

LESSON **Practice**
7-2 *Using Tables to Explore Equivalent Ratios and Rates*

Use a table to find three equivalent ratios.

1. 4 to 7

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

3. 2:5

4. 8 to 9

5. 3 to 15

6. $\frac{30}{90}$

7. 1:3

8. $\frac{7}{2}$

9. Britney does sit-ups every day. The table shows how long it takes her to do different numbers of sit-ups.

Number of Sit-Ups	10	30	50	200	220
Time (min)	2	6	10	40	44

How long do you predict it will take Britney to do 120 sit-ups?

10. The School Supply Store has markers on sale. The table shows some sale prices.

Number of Markers	12	8	6	4	2
Cost (\$)	9.00	6.00	4.50	3.00	1.50

How much do you predict you would pay for 10 markers?

LESSON **Practice**
7-3 *Proportions*

Find the missing value in each proportion.

1. $\frac{24}{8} = \frac{n}{2}$

2. $\frac{4}{9} = \frac{20}{n}$

3. $\frac{n}{36} = \frac{5}{6}$

4. $\frac{n}{5} = \frac{4}{10}$

5. $\frac{3}{9} = \frac{2}{n}$

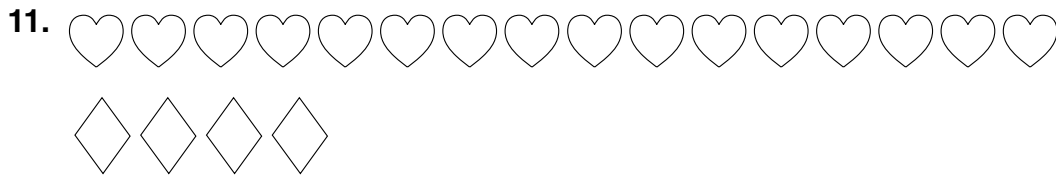
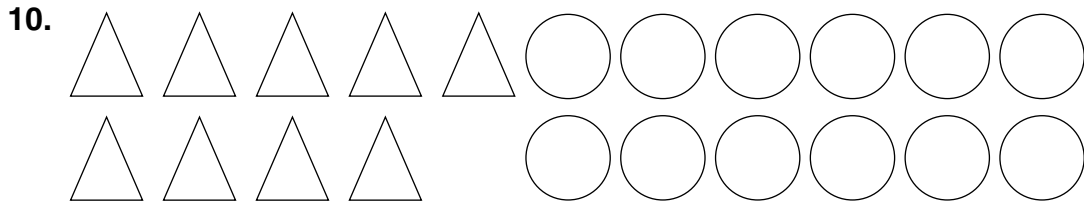
6. $\frac{6}{n} = \frac{3}{7}$

7. $\frac{5}{3} = \frac{n}{6}$

8. $\frac{9}{6} = \frac{6}{n}$

9. $\frac{2}{130} = \frac{1}{n}$

Write a proportion for each model.



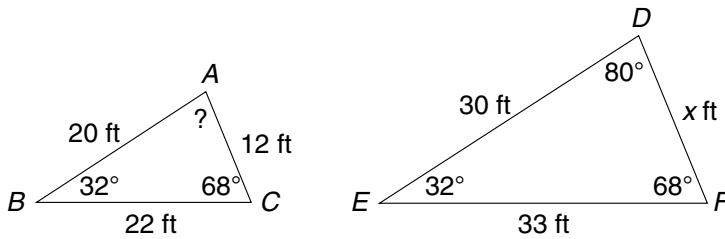
12. Shane's neighbor pledged \$1.25 for every 0.5 miles that Shane swims in the charity swim-a-thon. If Shane swims 3 miles, how much money will his neighbor donate?

13. Barbara's goal is to practice piano 20 minutes for every 5 minutes of lessons she takes. If she takes a 20 minute piano lesson this week, how many minutes should she practice this week?

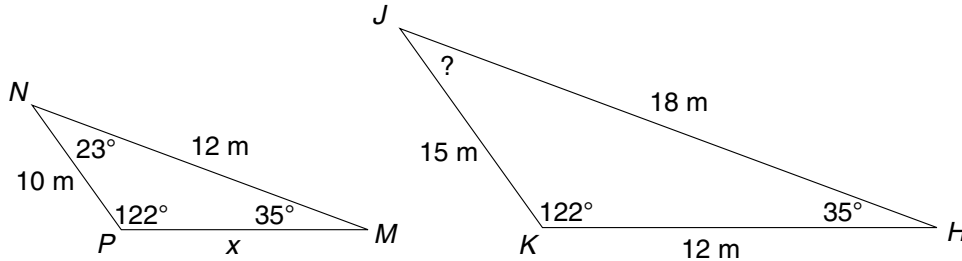
LESSON
7-4 **Practice**
Similar Figures

Write the correct answers.

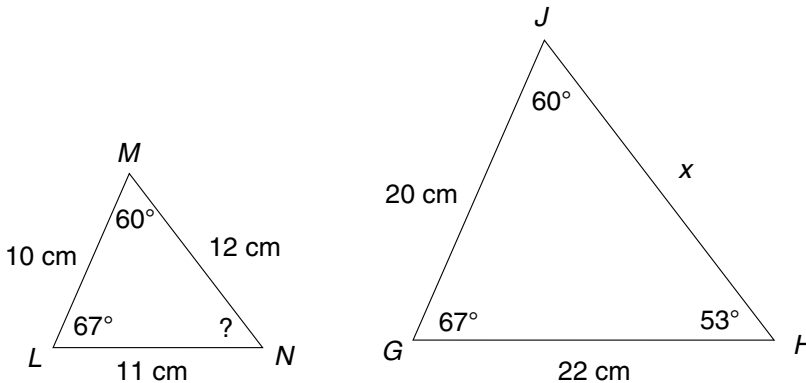
1. The two triangles are similar. Find the missing length x and the measure of $\angle A$.



2. The two triangles are similar. Find the missing length x and the measure of $\angle J$.



3. The two triangles are similar. Find the missing length x and the measure of $\angle N$.

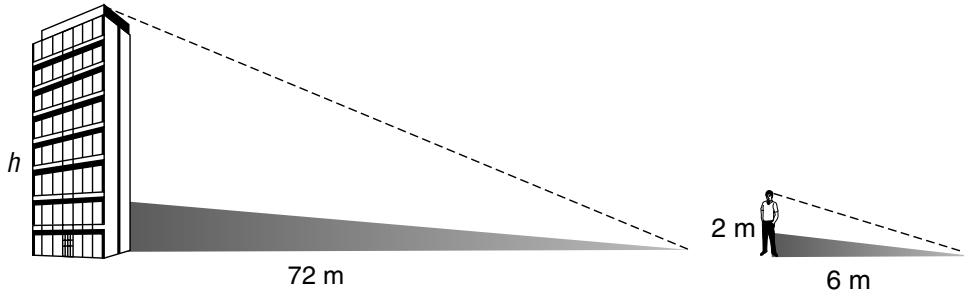


4. Juanita planted two flower gardens in similar square shapes. What are the measures of all the angles in each garden? Explain how you know.

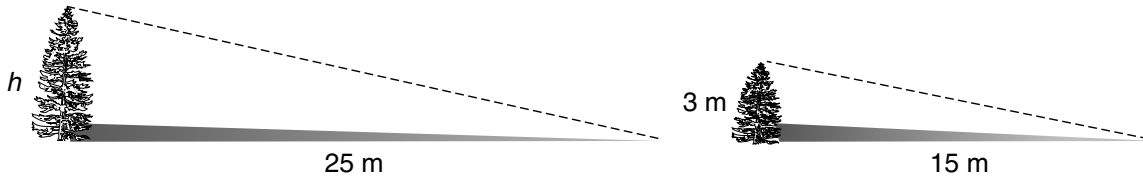
LESSON **Practice**
7-5 *Indirect Measurement*

Write the correct answer.

1. Use similar triangles to find the height of the building. _____



2. Use similar triangles to find the height of the taller tree. _____



3. A lamppost casts a shadow that is 35 yards long. A 3-foot-tall mailbox casts a shadow that is 5 yards long. How tall is the lamppost?
4. A 6-foot-tall scarecrow in a farmer's field casts a shadow that is 21 feet long. A dog standing next to the scarecrow is 2 feet tall. How long is the dog's shadow?

5. A building casts a shadow that is 348 meters long. At the same time, a person who is 2 meters tall casts a shadow that is 6 meters long. How tall is the building?
6. On a sunny day, a tree casts a shadow that is 146 feet long. At the same time, a person who is 5.6 feet tall standing beside the tree casts a shadow that is 11.2 feet long. How tall is the tree?

7. In the early afternoon, a tree casts a shadow that is 2 feet long. A 4.2-foot-tall boy standing next to the tree casts a shadow that is 0.7 feet long. How tall is the tree?
8. Steve's pet parakeet is 100 mm tall. It casts a shadow that is 250 mm long. A cockatiel sitting next to the parakeet casts a shadow that is 450 mm long. How tall is the cockatiel?

LESSON

7-6

Practice

Scale Drawings and Maps

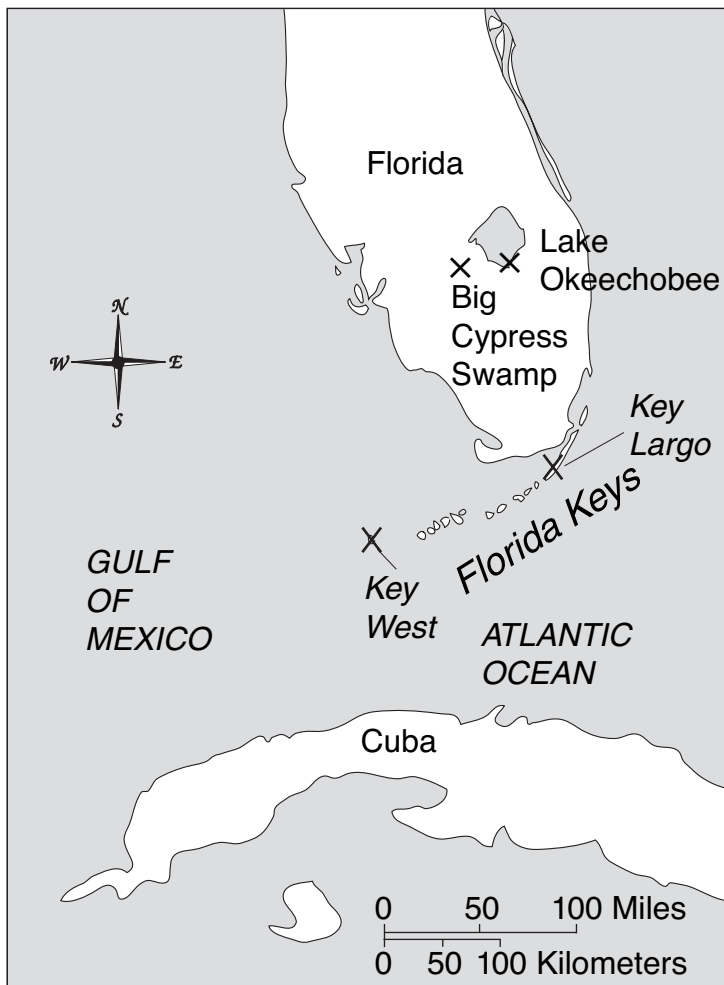
Use the map to answer the questions.

- On the map, the distance between Big Cypress Swamp and Lake Okeechobee is $\frac{1}{4}$ inch. What is the actual distance?

- On the map, the distance between Key West and Cuba is $\frac{9}{10}$ inch. What is the actual distance?

- Use a ruler to measure the distance between Key West and Key Largo on the map. What is the actual distance?

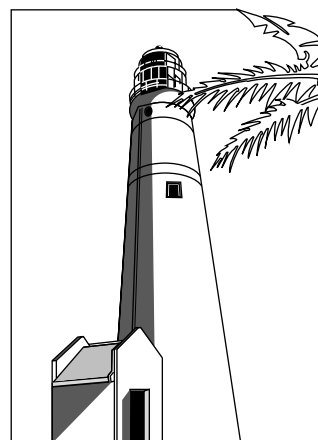
- The Overseas Highway connects Key West to mainland Florida. It is 110 miles long. If it were shown on this map, how many inches long would it be?



Use the scale drawing to answer each question.

- This scale drawing is of the lighthouse on Key West, originally built in 1825. What is the actual height of the lighthouse?

- The original lighthouse was 66 feet tall. It was rebuilt at its present height after a hurricane destroyed it in 1846. How tall would the original lighthouse be in this scale drawing?



1 inch = 40 feet

LESSON **Practice**
7-7 **Percents**

Write each percent as a fraction in simplest form.

1. 30%

2. 42%

3. 18%

4. 35%

5. 100%

6. 29%

7. 56%

8. 70%

9. 25%

Write each percent as a decimal.

10. 19%

11. 45%

12. 3%

13. 80%

14. 24%

15. 6%

Order the percents from least to greatest.

16. 89%, 42%, 91%, 27%

17. 2%, 55%, 63%, 31%

18. Sarah correctly answered 84% of the questions on her math test. What fraction of the test questions did she answer correctly? Write your answer in simplest form.

19. Chloe swam 40 laps in the pool, but this was only 50% of her total swimming workout. How many more laps does she still need to swim?

LESSON
7-8 Practice
Percents, Decimals, and Fractions

Write each decimal as a percent.

1. 0.03

2. 0.92

3. 0.18

4. 0.49

5. 0.7

6. 0.09

7. 0.26

8. 0.11

9. 1.0

Write each fraction as a percent.

10. $\frac{2}{5}$

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

12. $\frac{7}{10}$

13. $\frac{1}{20}$

14. $\frac{1}{50}$

15. $\frac{4}{50}$

Compare. Write $<$, $>$, or $=$.

16. 60% $\frac{2}{3}$

17. 0.4 $\frac{2}{5}$

18. 0.5 5%

19. $\frac{1}{100}$ 0.03

20. $\frac{7}{9}$ 72%

21. $\frac{3}{10}$ 35%

22. Bradley completed $\frac{3}{5}$ of his homework. What percent of his homework does he still need to complete?

23. After reading a book for English class, 100 students were asked whether or not they enjoyed it. Nine twenty-fifths of the students did not like the book. How many students liked the book?

LESSON
7-9 **Practice**
Percent Problems

Find the percent of each number.

1. 8% of 40 _____
2. 105% of 80 _____
3. 35% of 300 _____
4. 13% of 66 _____
5. 64% of 50 _____
6. 51% of 445 _____
7. 14% of 56 _____
8. 98% of 72 _____
9. 24% of 230 _____
10. 35% of 225 _____
11. 44% of 89 _____
12. 3% of 114 _____
13. 70% of 68 _____
14. 1.5% of 300 _____
15. 85% of 240 _____
16. 47% of 13 _____
17. 20% of 522 _____
18. 2.5% of 400 _____

19. Jenna ordered 28 shirts for her soccer team. Seventy-five percent of those shirts were size large. How many large shirts did Jenna order?

20. Douglas sold 125 sandwiches to raise money for his boy scout troop. Eighty percent of those sandwiches were sold in his neighborhood. How many sandwiches did Douglas sell in his neighborhood?

21. Samuel has run for 45 minutes. If he has completed 60% of his run, how many minutes will Samuel run in all?

LESSON
7-10**Practice**
Using Percents

Write the correct answer.

- Carl and Rita ate breakfast at the local diner. Their bill came to \$11.48. They gave their waitress a tip that was 25% of the bill. How much money did they give the waitress for her tip?

- Rob had a 15% off coupon for the sporting goods store. He bought a tennis racket that had a regular ticket price of \$94.00. How much did Rob spend on the racket after using his coupon?

- A portable CD player costs \$118.26. The sales tax rate is 7%. About how much will it cost to buy the CD player?

- Tom bought \$65.86 worth of books at the book fair. He got a 12% discount since he volunteered at the fair. About how much did Tom's books cost after the discount?

- Melody buys a skateboard that costs \$79.81 and a helmet that costs \$26.41. She uses a 45% off coupon on the purchase. If Melody pays with a \$100 bill, about how much change should she get back?

- The school's goal for the charity fundraiser was \$3,000. They exceeded the goal by 22%. How much money for charity did the school raise at the event?

- Lisa's family ordered sandwiches to be delivered. The total bill was \$21.85. They gave the delivery person a tip that was 20% of the bill. How much did they tip the delivery person?

- Kathy bought two CDs that each cost \$14.95. The sales tax rate was 5%. About how much did Kathy pay in all?

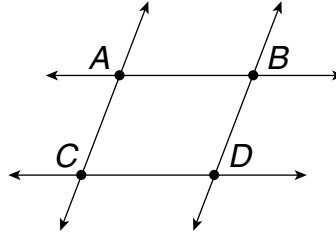
- Sawyer bought a T-shirt for \$12.78 and shorts for \$17.97. The sales tax rate was 6%. About how much money did Sawyer spend altogether?

- Bruce saved \$35.00 to buy a new video game. The game's original price was \$42.00, but it was on sale for 30% off. The sales tax rate was 5%. Did Bruce have enough money to buy the game? Explain.

LESSON **Practice**
8-1 **Building Blocks of Geometry**

Use the diagram to name each geometric figure.

1. two points _____
2. a plane _____
3. a line segment _____
4. a point shared by two lines _____
5. a line _____

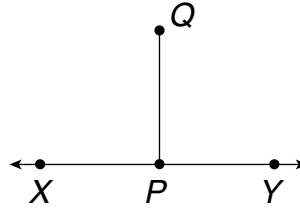


Use the diagram to give a possible name to each figure.

6. two different ways to name the line

7. four different names for rays

8. another name for \overline{QP}



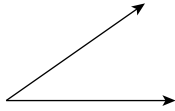
9. Is the following statement always true, sometimes true, or never true? Explain your reasoning. A line is longer than a line segment.

10. Using endpoints as your basis, explain how a line, a line segment, and a ray are different.

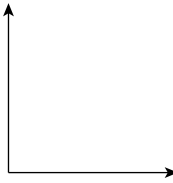
LESSON **Practice**
8-2 *Measuring and Classifying Angles*

Use a protractor to measure each angle.

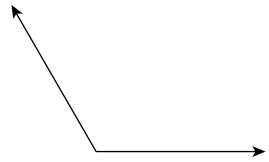
1.



2.



3.



Use a protractor to draw an angle with each given measure.

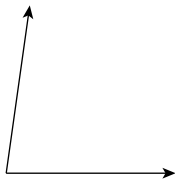
4. 70°

5. 115°

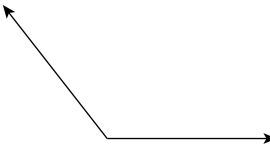
6. 45°

Classify each angle as acute, right, obtuse, or straight.

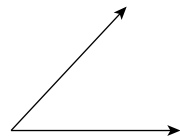
7.



8.



9.

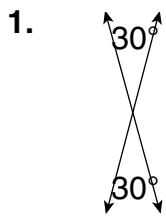


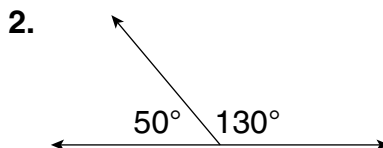
10. The frame for a kite has two angles that together form a right angle. What type of angle is each of those angles? Explain.

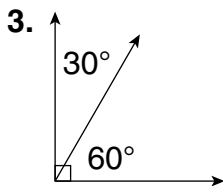
11. What kinds of angles are in each of the letters in this word? **TAXI**

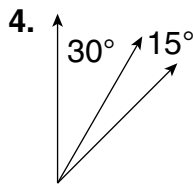
LESSON
8-3 **Practice**
Angle Relationships

Identify the type of each angle pair shown.



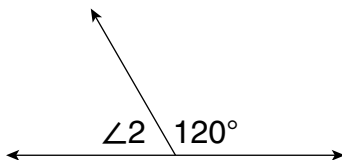




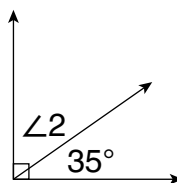


Find each unknown angle measure.

5. The angles are supplementary.



6. The angles are complementary.

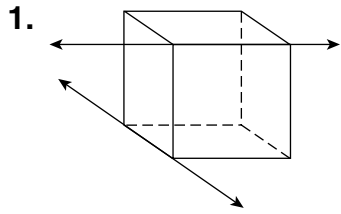


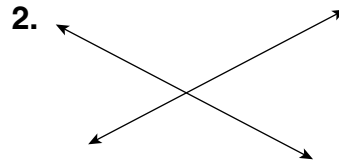
7. Anita says the plus sign + forms 2 pairs of vertical angles. Charles says it forms 2 pairs of congruent angles. Who is correct? Explain.

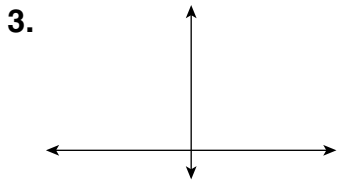
8. Is the following statement always true, sometimes true, or never true? Explain your reasoning. Two congruent angles that are complementary both measure 45° .

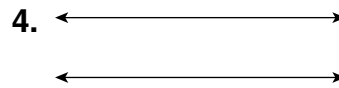
LESSON **Practice**
8-4 **Classifying Lines**

Classify each pair of lines.









Match each description with its correct classification.

- 5. \overleftrightarrow{AB} and \overleftrightarrow{EF} lie on the same plane and never intersect. _____
- 6. \overleftrightarrow{AB} and \overleftrightarrow{EF} cross each other at one common point. _____
- 7. \overleftrightarrow{AB} and \overleftrightarrow{EF} lie on different planes and are neither parallel nor intersecting. _____
- 8. \overleftrightarrow{AB} and \overleftrightarrow{EF} intersect to form right angles. _____

- A. \overleftrightarrow{AB} intersects \overleftrightarrow{EF} .
- B. $\overleftrightarrow{AB} \parallel \overleftrightarrow{EF}$
- C. \overleftrightarrow{AB} and \overleftrightarrow{EF} are skew.
- D. $\overleftrightarrow{AB} \perp \overleftrightarrow{EF}$

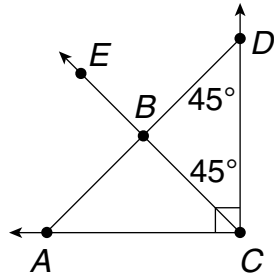
- 9. Oak Street runs parallel to Elm Street in a flat section of town. Tom tells you to meet him at the intersection of Oak and Elm. Explain why these instructions are impossible to follow.

- 10. Look around your classroom. Name a pair of parallel lines and a pair of perpendicular lines that you see.

LESSON **Practice**
8-5 **Triangles**

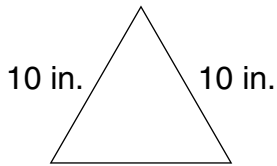
Use the diagram to find the measure of each indicated angle.

1. $\angle CBD$ _____
2. $\angle DAC$ _____
3. $\angle ABC$ _____
4. $\angle EBA$ _____
5. $\angle ACB$ _____

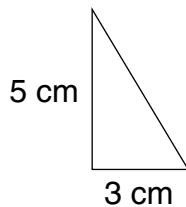


Classify each triangle using the given information.

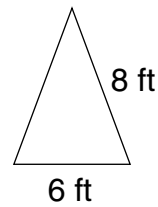
6. The perimeter of the triangle is 30 in.



7. The perimeter of the triangle is 15 cm.



8. The perimeter of the triangle is 22 ft.

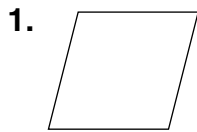


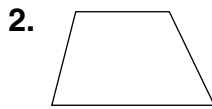
9. The angles of a triangular sail measure 90° , 30° , and 60° . Its sides measure approximately 2 feet, 3.5 feet, and 4 feet. Classify the triangular shape of the sail in two different ways.

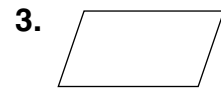
10. Two angles in one triangle are congruent to two angles in another triangle. What can you conclude about the third angle in both triangles?

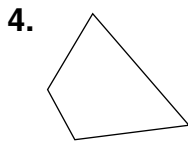
LESSON **Practice**
8-6 **Quadrilaterals**

Give the most descriptive name for each figure.













Complete each statement.

7. All rectangles are also _____.
8. A rhombus is sometimes a _____.
9. All trapezoids are also _____.
10. A _____ is any plane figure with four straight sides and four angles.
11. A quadrilateral with two sets of parallel lines, but does not have 90° angles is called a _____.
12. Devon made a table top in the shape of a quadrilateral. All of its angles measure 90° . What could the shape of Devon's table top be?

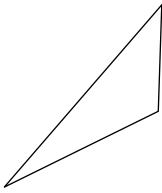
13. The perimeter of a rhombus is 64 inches. What is the length of each side of the rhombus? Explain.

14. Explain why a trapezoid is a quadrilateral, but a quadrilateral is not always a trapezoid.

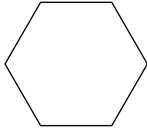
LESSON **Practice**
8-7 **Polygons**

Name each polygon and tell whether it appears to be *regular* or *not regular*.

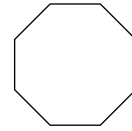
1.



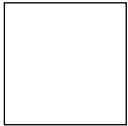
2.



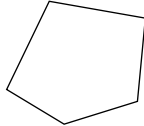
3.



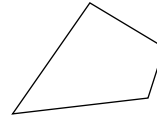
4.



5.



6.



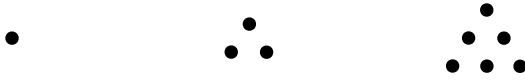
7. The public swimming pool is in the shape of a regular hexagon. Each side of the pool measures 5 feet. What is the distance around the entire pool?

8. In the space below, draw a regular quadrilateral. Now draw one diagonal of that quadrilateral. Describe the two polygons that are formed.

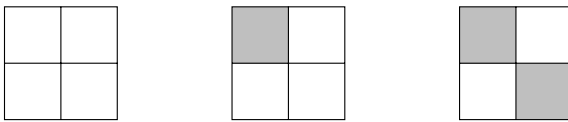
LESSON **Practice**
8-8 *Geometric Patterns*

Identify a possible pattern. Use the pattern to draw the next figure.

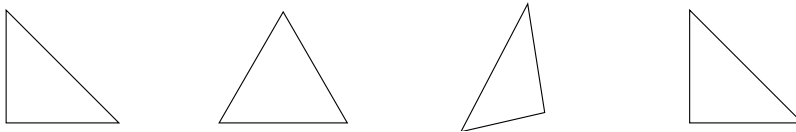
1.



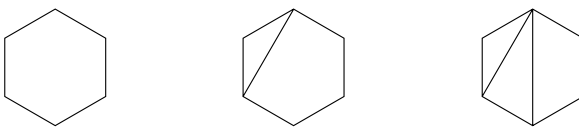
2.



3.



4.



5. Use triangles to create a geometric pattern. Describe your pattern.

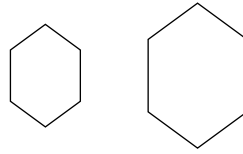
LESSON **Practice**
8-9 **Congruence**

Decide whether the figures in each pair are congruent.
 If not, explain.

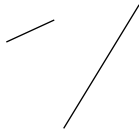
1.



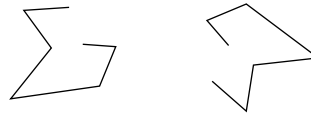
2.



3.



4.



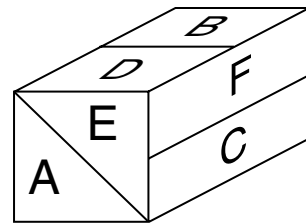
Use the diagram for Exercises 5–7.

5. Which part of the figure is congruent to A? _____

6. Which part of the figure is congruent to D? _____

7. Which part of the figure is congruent to F? _____

8. Name two parts of your body that appear to be congruent.

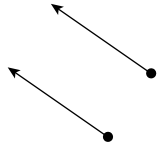


9. Square $ABCD$ is congruent to square $FGHJ$. The total length of the sides of square $ABCD$ is 12 meters. What is the length of each side of square $FGHJ$?

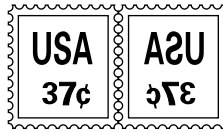
LESSON
8-10 **Practice**
Transformations

Tell whether each is a translation, rotation, or reflection.

1.



2.

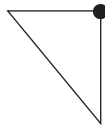


3.

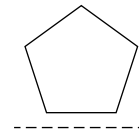


Draw each transformation.

4. Draw a 180° clockwise rotation about the point.



5. Draw a vertical reflection across the dotted line.



6. Without using reflections, how can you get this \triangle to look like this ∇ ?

7. Describe a horizontal reflection of the word **MOM**. Can you think of any other words that would have a similar horizontal reflection?

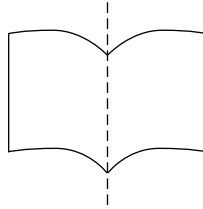
LESSON **Practice**
8-11 **Line Symmetry**

Determine whether each dashed line appears to be a line of symmetry.

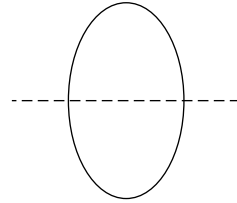
1.



2.

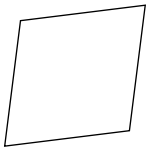


3.

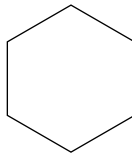


Find all of the lines of symmetry in each regular polygon.

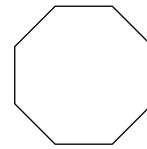
4.



5.

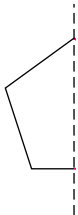


6.

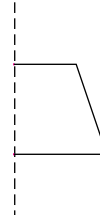


Draw each cut-out figure as it would look unfolded.

7.



8.



9. Which has more lines of symmetry, a square or a rectangle?

10. Of the numbers 1 through 9, which numbers can have lines of symmetry?

LESSON
9-1 **Practice**
Understanding Customary Units of Measure

What unit of measure provides the best estimate? Justify your answer.

1. A pair of eyeglasses is about 5 _____ long because

2. A chalkboard is about 4 _____ long because

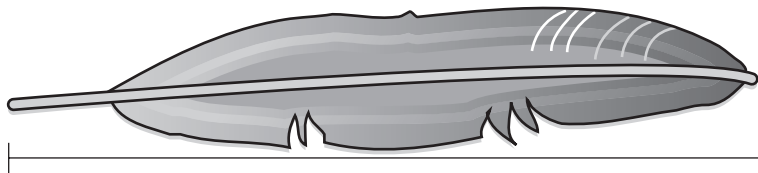
3. A bottle of shampoo weighs about 12 _____ because

4. A cat weighs about 8 _____ because

5. An eyedropper holds about 2 _____ because

6. Ramon filled a watering can with water. What benchmark should he use for the capacity of the watering can?

7. Estimate the length of the feather to the nearest half, fourth, or eighth inch.



LESSON **Practice**
9-2 **Understanding Metric Units of Measure**

What unit of measure provides the best estimate? Justify your answer.

1. A quarter is about 2 _____ thick because

_____.

2. A pen is about 12 _____ long because

_____.

3. A tissue has a mass of about 10 _____ because

_____.

4. A brick has a mass of about 1 _____ because

_____.

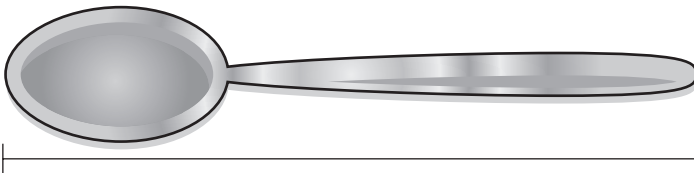
5. A cereal bowl has a capacity of about 500 _____ because

_____.

6. Mia filled a pail with water. What benchmark should she use for the capacity of the pail?

_____.

7. Estimate the length of the spoon to the nearest centimeter.



_____.

LESSON

9-3

Practice**Converting Customary Units**

Convert.

1. 3 yards = _____ inches
2. _____ yards = 87 feet
3. _____ cups = 104 fluid ounces
4. 4 quarts = _____ pints
5. 4 pounds = _____ ounces
6. 80 ounces = _____ pounds
7. 5 miles = _____ yards
8. _____ gallons = 48 cups
9. _____ cups = 4 pints
10. 36 inches = _____ yards

Compare. Write $<$, $>$, or $=$.

11. 4 quarts 24 cups
12. 2.5 feet 32 inches
13. 8 ounces $\frac{1}{4}$ pound
14. 5 cups 40 fluid ounces
15. 56 ounces 3.5 pounds
16. 2 yards 5 feet
17. 1.5 miles 2,500 yards
18. $3\frac{1}{2}$ tons 6,000 pounds

19. Cassandra drank $8\frac{1}{2}$ cups of water during the mountain hike.
How many fluid ounces of water did she drink?
-

20. Stan cut a wooden plank into 4 pieces. Each piece was
18 inches long. How long was the plank before Stan cut it?
-

LESSON

9-4

Practice

Converting Metric Units

Convert.

1. A large thermos holds about 1.5 liters. 1.5 L = _____ mL
2. A computer screen is about 30.75 cm wide. 30.75 cm = _____ mm
3. A beetle weighs about 0.68 g. 0.68 g = _____ mg
4. The distance from Dallas to Denver is 1,260 km. 1,260 km = _____ m
5. 50 cm = _____ mm
6. 3.6 L = _____ mL
7. 6.5 kg = _____ g
8. 0.9 km = _____ m
9. 1.42 m = _____ cm
10. 12.85 mL = _____ L

Compare. Write <, >, or =.

11. 500 millimeters 50 centimeters
12. 6.2 liters 620 milliliters
13. 8.3 kilograms 8,300 grams
14. 2.6 meters 26,000 centimeters
15. An official hockey puck can weigh no more than 170 grams. What is the puck's maximum weight in kilograms?

16. An official hockey puck is 2.54 centimeters thick. What is the official thickness of a hockey puck in millimeters?

17. An official hockey goal is 46.45 meters tall. What is the height of a hockey goal in centimeters?

18. Hockey pucks can be hit at speeds of up to 190 kilometers per hour! How many meters per hour is that?

LESSON
9-5 **Practice**
Time and Temperature**Convert.**

1. 3 hours 10 minutes = _____ minutes 2. $2\frac{1}{2}$ days = _____ hours
3. 2 years 1 month = _____ months 4. 360 seconds = _____ minutes
5. 150 seconds = _____ minutes 6. 336 hours = _____ weeks
7. 5 years 6 months = _____ months 8. 86,400 seconds = _____ days
9. 2 minutes 10 seconds = _____ seconds 10. $1\frac{1}{2}$ days _____ minutes

Estimate the temperature.

11. 15°C is about $^{\circ}\text{F}$. 12. 4°C is about $^{\circ}\text{F}$.
13. 44°F is about $^{\circ}\text{C}$. 14. 86°F is about $^{\circ}\text{C}$.

Compare. Write $<$, $>$, or $=$.

15. 32 hours $1\frac{1}{4}$ days 16. 5 weeks 840 hours
17. 3,000 seconds 1 hour 18. 3 years 150 weeks

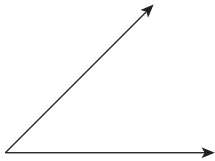
19. Jackson started raking leaves at 10:20 A.M. and raked for 1 hour 55 minutes. At what time did Jackson finish raking the leaves?
- _____

20. Mia rented a movie that lasts 2 hours 5 minutes. She took a 10-minute break after watching half of the movie. Mia started to watch the movie at 11:45 A.M. When did the movie end?
- _____

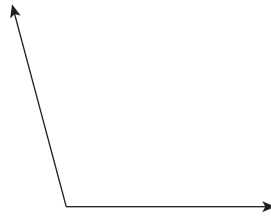
LESSON **Practice**
9-6 *Finding Angle Measures in Polygons*

Use a protractor to find the measure of each angle. Then classify the angle.

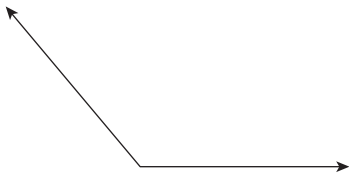
1.



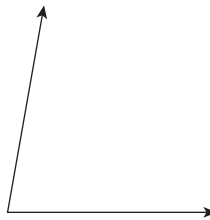
2.



3.

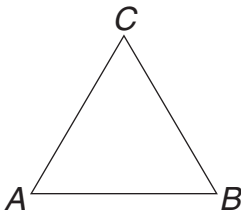


4.



Estimate the measure of $\angle A$ in each figure. Then use a protractor to check the reasonableness of your answer.

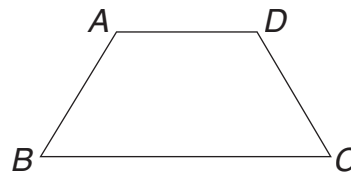
5.



Estimate: _____

Actual: _____

6.

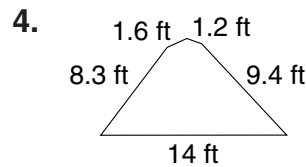
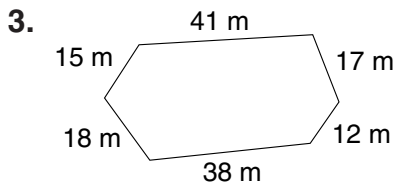
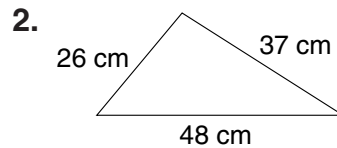
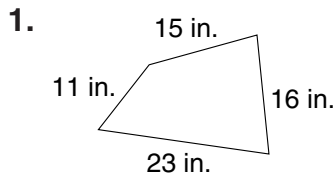


Estimate: _____

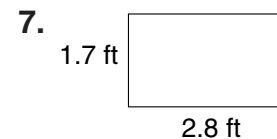
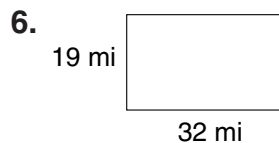
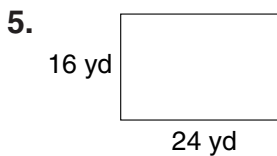
Actual: _____

LESSON **Practice**
9-7 **Perimeter**

Find the perimeter of each figure.

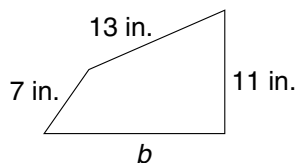


Find the perimeter P of each rectangle.

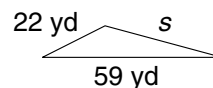


Find each unknown measure.

8. What is the length of side b if the perimeter equals 47 in.?



9. What is the length of side s if the perimeter equals 119 yd?



10. Benjamin is putting a fence around his rectangular-shaped yard. The yard is 38 feet long and 27 feet wide. How many feet of fencing does Benjamin need to surround his entire yard?

11. If you drove from Bakersville to Salem and then to San Mateo, your entire 81-mile journey would form a triangle. The distance from Salem to San Mateo is 24 miles. The distance from Bakersville to San Mateo is 40 miles. How many miles is it from Salem to Baskerville?

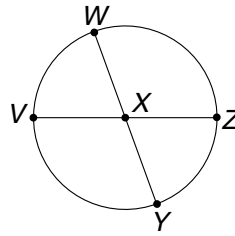
LESSON **Practice**
9-8 **Circles and Circumference**

Use the circle to answer each question.

1. Name the circle. _____

2. Name two diameters.

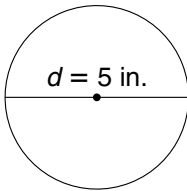
3. Name four radii.



Find each missing value to the nearest hundredth.

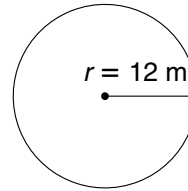
Use 3.14 for π .

4.



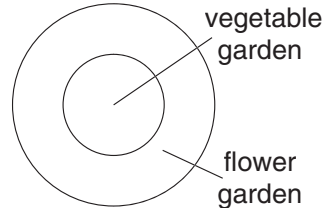
$C =$ _____

5.



$C =$ _____

A gardener is putting in a circular garden. The inner circle is a vegetable garden, and the outer circle is a flower garden. Find the circumference by rounding π to 3.



6. If the diameter of the vegetable garden is 6 feet, what is its circumference?

$C \approx$ _____

7. If the radius of the flower garden is 8 feet, what is its circumference?

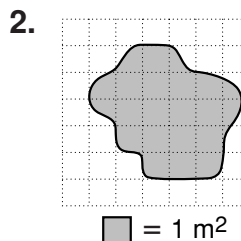
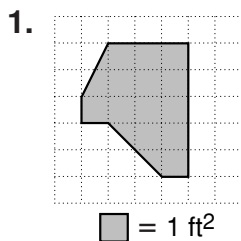
$C \approx$ _____

8. The first Ferris wheel was built in 1893 in Chicago. Its diameter was 250 feet. How many feet did the Ferris wheel rotate with each complete turn? Use 3.14 for π .

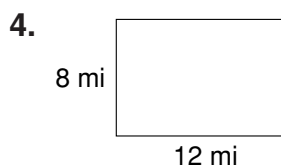
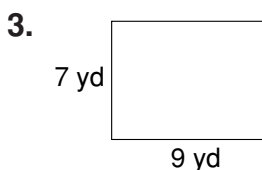
9. Stonehenge, a circle of large carved stones in England, was built more than 1,000 years ago. The circle of stones has a diameter of 108 feet. What is the circumference of Stonehenge?

LESSON **Practice**
10-1 *Estimating and Finding Area*

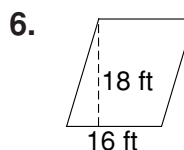
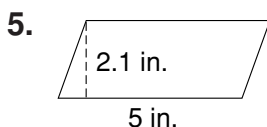
Estimate the area of each figure.



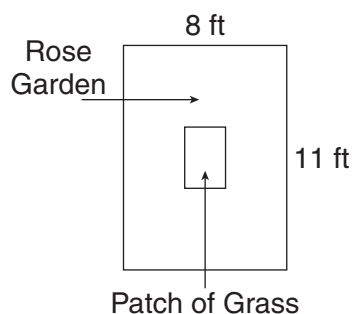
Find the area of each rectangle.



Find the area of each parallelogram.



7. Mariah is planting a rectangular rose garden. In the center of the garden, she puts a smaller rectangular patch of grass. The grass is 2 ft by 3 ft. What is the area of the rose garden?



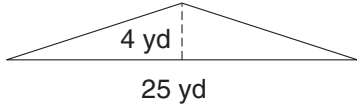
8. A section of a stained-glass window is shaped like a parallelogram. Its base is 6.5 inches, and its height is 4 inches. How much glass is needed to cover the section completely?

9. Your rectangular yard is 10 feet wide and 26 feet long. How many square feet of grass do you need to plant if you want to cover the entire yard?

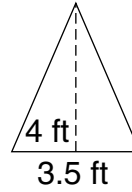
LESSON **Practice**
10-2 *Area of Triangles and Trapezoids*

Find the area of each triangle.

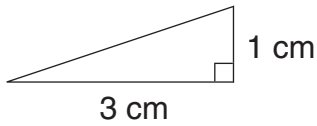
1.



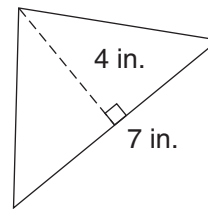
2.



3.

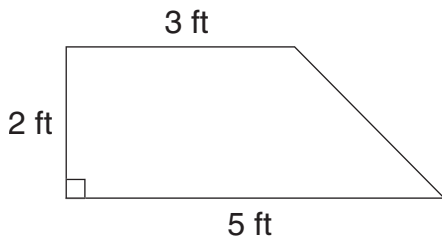


4.

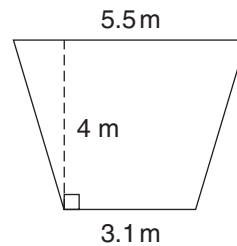


Find the area of each trapezoid.

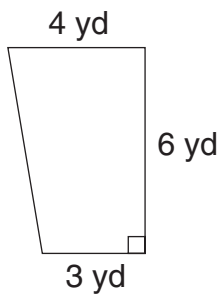
5.



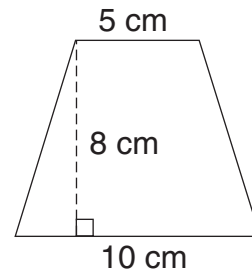
6.



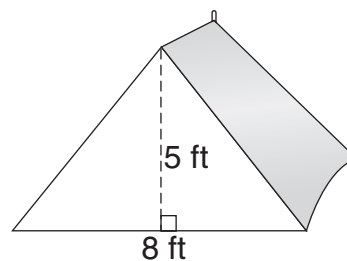
7.



8.

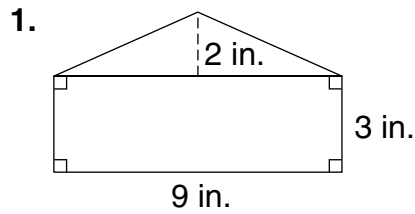


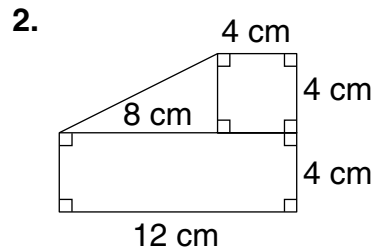
9. The front part of a tent is 8 feet long and 5 feet tall. What is the area of the front part of the tent?

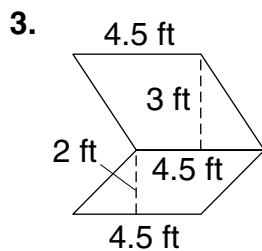


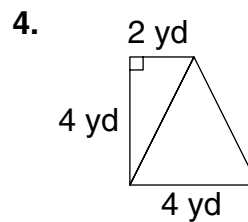
LESSON **Practice**
10-3 *Area of Composite Figures*

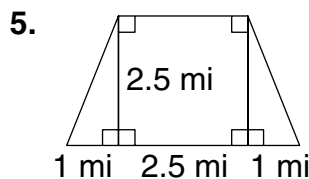
Find the area of each polygon.

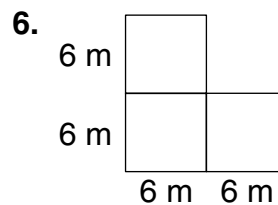










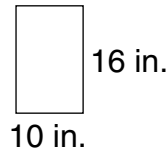
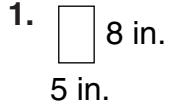


7. Three paintings are shaped like an 8-foot square, a 7-foot by 4-foot rectangle, and a triangle with a 6-foot base and a height of 7 feet. If those paintings are hung together on the outside of a building, how much of the building's wall will they cover altogether?

8. Two diagonals divide a square carpet into 4 congruent triangles. The base of each triangle is 5 feet and the height is 2.5 feet. What is the area of the entire carpet?

LESSON **Practice**
10-4 *Comparing Perimeter and Area*

Write how the perimeter and the area of the figure change when its dimensions change.



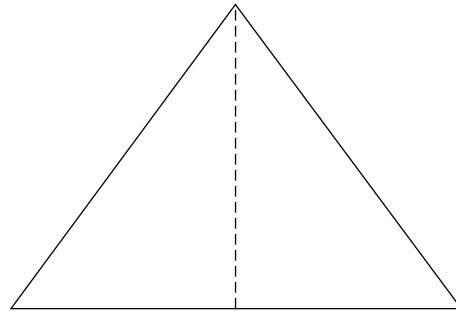
$P =$ _____

$P =$ _____

$A =$ _____

$A =$ _____

2. Use a centimeter ruler to measure the triangle. Then draw another triangle with dimensions that are half as great as the given triangle. How do the perimeter and the area change when the dimensions change?



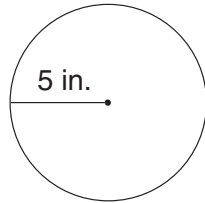
3. Nina wants to make a smaller version of a painting she saw in a museum. The museum painting was a square with each side measuring 6.4 feet. If Nina makes her copy half the size of the original painting, how much space will it cover on her wall?

4. How many feet of wood will Nina need to make a frame for her painting from Exercise 3?

LESSON **Practice**
10-5 **Area of Circles**

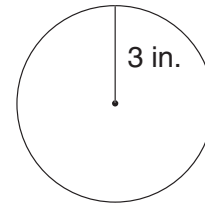
Estimate the area of each circle.

1.



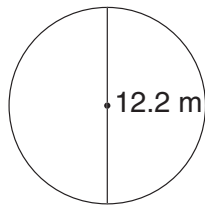
$A \approx$ _____

2.



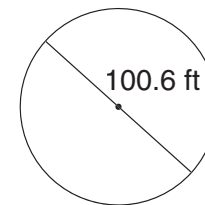
$A \approx$ _____

3.



$A \approx$ _____

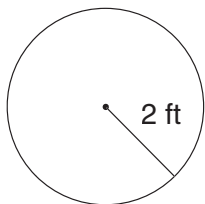
4.



$A \approx$ _____

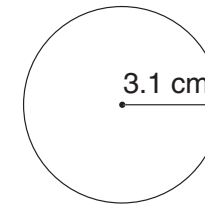
Find the area of each circle. Use $\frac{22}{7}$ for π .

5.



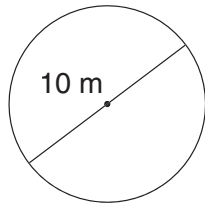
$A \approx$ _____

6.



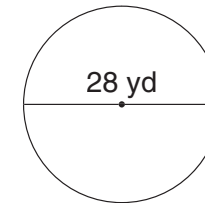
$A \approx$ _____

7.



$A \approx$ _____

8.



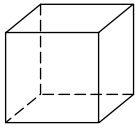
$A \approx$ _____

9. Stonehenge, a circle of large carved stones in England, was built more than 1,000 years ago. The circle of stones has a diameter of 108 feet. About how many square feet of land does Stonehenge cover? Use $\frac{22}{7}$ for π .

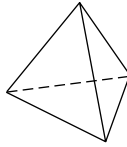
LESSON **Practice**
10-6 *Three-Dimensional Figures*

Identify the number of faces, edges, and vertices in each three-dimensional figure.

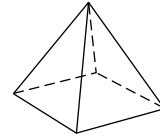
1.



2.

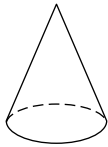


3.

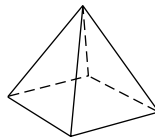


Tell whether each figure is a polyhedron and name the three-dimensional figure.

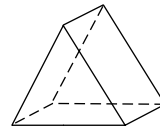
4.



5.



6.



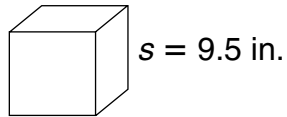
7. Kelly wants to make a box in the shape of a cube. How many pieces of wood does she need? In what shape should she cut them? Explain.

8. Kwan made a sculpture in the shape of a polyhedron. It only has one base that is a triangle. What three-dimensional figure is her sculpture? Explain your reasoning.

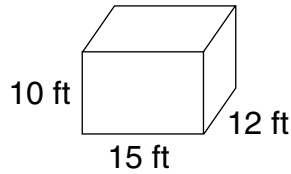
LESSON **Practice**
10-7 *Volume of Prisms*

Find the volume of each rectangular prism.

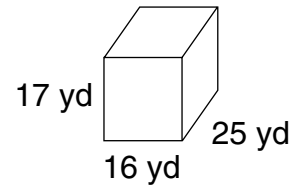
1.



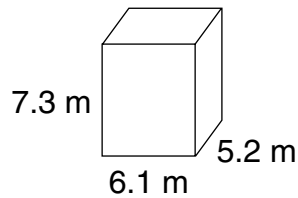
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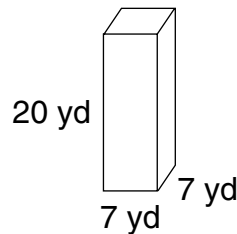
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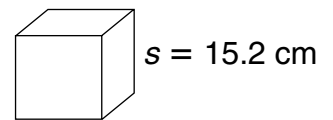
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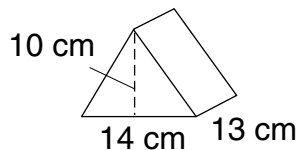


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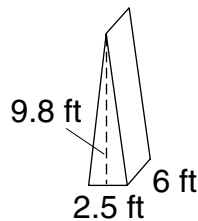


Find the volume of each triangular prism.

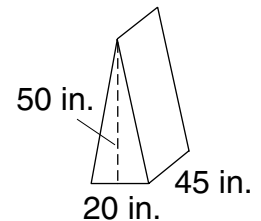
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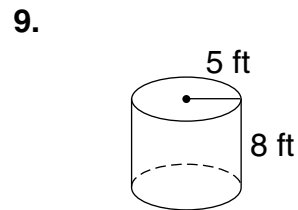
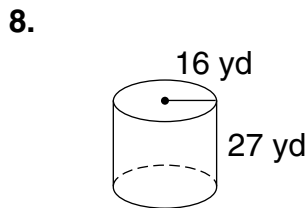
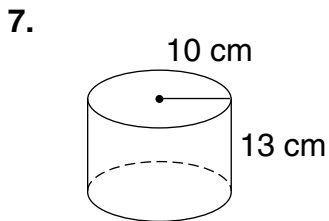
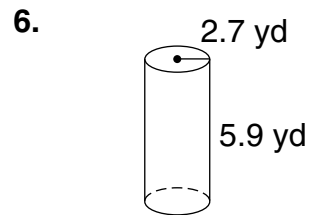
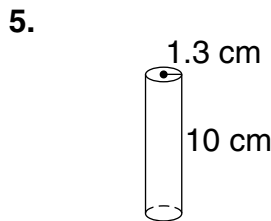
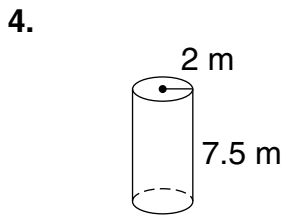
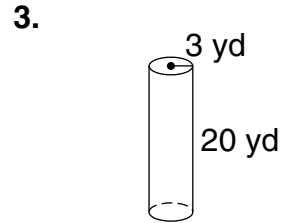
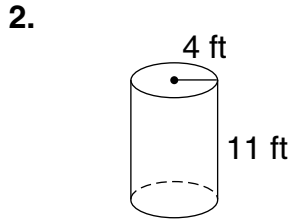
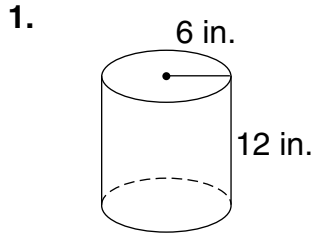


10. Fawn built a sandbox that is 6 feet long, 5 feet wide, and $\frac{1}{2}$ foot tall. How many cubic feet of sand does she need to fill the box?

11. Unfinished lumber is sold in units called board feet. A board foot is the volume of lumber contained in a board 1 inch thick, 1 foot wide, and 1 foot long. How many cubic inches of wood are in 1 board foot?

LESSON **Practice**
10-8 *Volume of Cylinders*

Find the volume V of each cylinder to the nearest cubic unit.



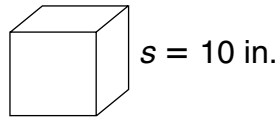
10. A cylindrical package of oatmeal is 20 centimeters tall. The diameter of its base is 10 centimeters. About how much oatmeal does the package hold?

11. The volume of a can is about 50.24 in^3 . The radius of its base is 2 inches. How tall is the can?

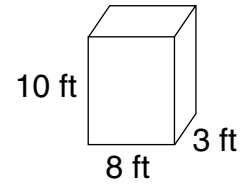
LESSON
10-9 **Practice**
Surface Area

Find the surface area S of each prism.

1.

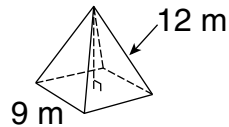


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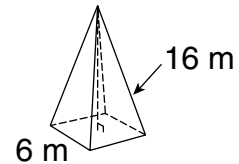


Find the surface area S of each pyramid.

3.

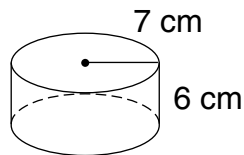


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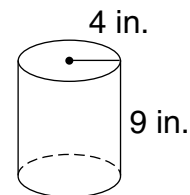


Find the surface area S of each cylinder. Use 3.14 for π .

5.



6.



7. Why can you find an exact surface area measurement for a prism and pyramid but not for a cylinder?

8. The surface area of a rectangular prism is 48 square feet. The area of its front is 4 square feet, and the area of one side is 10 square feet. What is the area of the top of the prism?

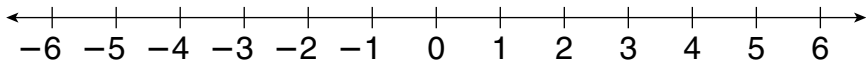
LESSON **Practice**
11-1 *Integers in Real-World Situations*

Name a positive or negative number to represent each situation.

1. depositing \$85 in a bank account 2. riding an elevator down 3 floors

3. the foundation of a house sinking 5 inches 4. a temperature of 98° above zero

Graph each integer and its opposite on the number line.



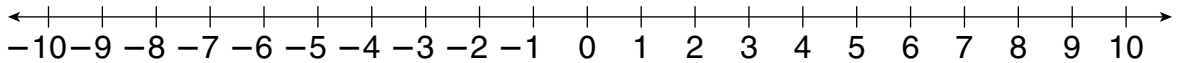
5. -2 6. +3 7. -5 8. +1

9. Felix is a superintendent for an apartment building. Using the elevator, he goes from the ground floor down 1 floor to the basement to get his tools, then goes up 5 floors to fix the heater in one of the apartments, and then down 2 floors to fix the stove in another of the apartments. Write an expression to represent this situation.

10. The highest point in the state of Louisiana is Driskall Mountain. It rises 535 feet above sea level. Write the elevation of Driskall Mountain as an integer.
11. The lowest point in the state of Louisiana is New Orleans. This city's elevation is 8 feet below sea level. Write the elevation of New Orleans as an integer.

LESSON **Practice**
11-2 *Comparing and Ordering Integers*

Use the number line to compare each pair of integers.
 Write $<$ or $>$.



1. $10 \square -2$

2. $0 \square 3$

3. $-5 \square 0$

4. $-7 \square 6$

5. $-6 \square -9$

6. $-8 \square -10$

Order the integers in each set from least to greatest.

7. 5, -2, 6

8. 0, 9, -3

9. -1, 6, 1

10. -8, -9, 9

11. 15, 1, -5

12. -4, -7, -2

Order the integers in each set from greatest to least.

13. 8, -6, 4

14. -2, 1, 2

15. 0, 7, -8

16. -1, 1, 0

17. -12, 2, 1

18. -10, -12, -11

19. The lowest point in the Potomac River is 1 foot above sea level. The lowest point in the Colorado River is 70 feet above sea level. The lowest point in the Delaware River is sea level. Write the names of these three rivers in order from the lowest to the highest elevation.

20. The lowest recorded temperature in Alabama was 27°F below zero. In Florida, the lowest recorded temperature was 2°F below zero. The lowest temperature ever recorded in Hawaii was 12°F above zero. Write the names of these three states in order from the highest to the lowest recorded temperatures.

LESSON **Practice**
11-3 *The Coordinate Plane*

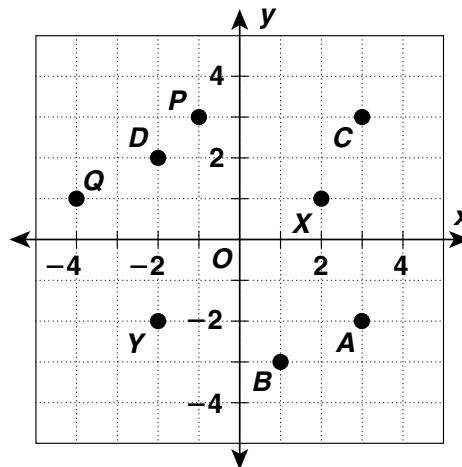
Use the coordinate plane for Exercises 1–12.

Name the quadrant where each point is located.

1. *D* _____ 2. *P* _____

3. *Y* _____ 4. *B* _____

5. *C* _____ 6. *X* _____



Give the coordinates of each point.

7. *X* _____ 8. *A* _____

9. *P* _____ 10. *Q* _____

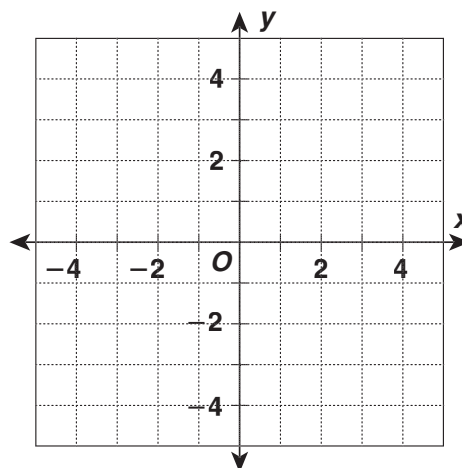
11. *Y* _____ 12. *D* _____

Graph each point on the coordinate plane at right.

13. *X* (3, 1) 14. *T* (-2, -2)

15. *C* (1, -2) 16. *U* (0, -3)

17. *P* (2, 0) 18. *A* (-4, -1)

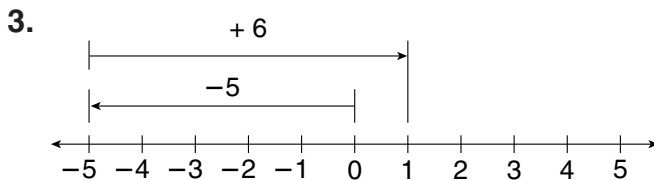
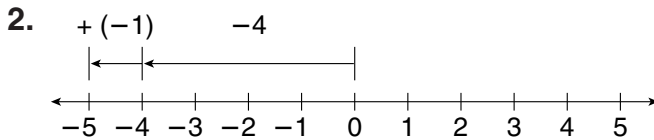
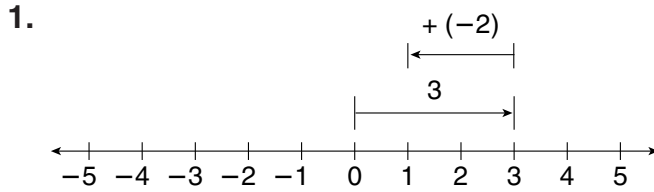


19. Does every point lie in a quadrant? Explain.

20. When a point lies on the *x*-axis, what do you know about its *y*-coordinate? When a point lies on the *y*-axis, what do you know about its *x*-coordinate?

LESSON **Practice**
11-4 **Adding Integers**

Write the addition modeled on each number line.



Find each sum.

4. $5 + (-1)$ _____

5. $-3 + 2$ _____

6. $-8 + (-4)$ _____

7. $-2 + (-1)$ _____

8. $9 + (-6)$ _____

9. $-10 + 5$ _____

10. $12 + (-3)$ _____

11. $0 + (-7)$ _____

12. $17 + (-9)$ _____

Evaluate $n + (-1)$ for each value of n .

13. $n = 2$ _____

14. $n = -4$ _____

15. $n = 5$ _____

16. $n = -3$ _____

17. $n = 1$ _____

18. $n = 0$ _____

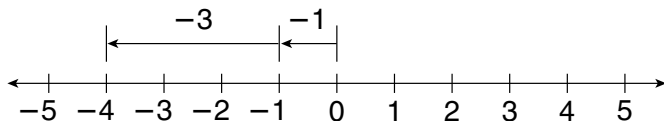
19. When Calvin played golf today, he scored a $+1$ on the first hole, a -2 on the second hole, a -1 on the third, and a $+4$ on the fourth. What was Calvin's total score for the first four holes?

20. The average temperature for February was 4°F below zero. By March, the average temperature had increased 11 degrees. What was the average temperature in March?

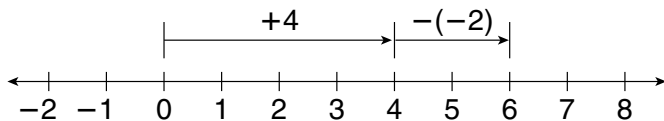
LESSON **Practice**
11-5 **Subtracting Integers**

Write the subtraction modeled on each number line.

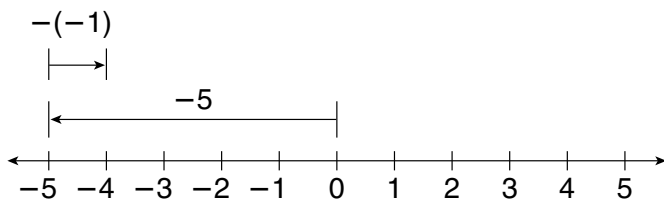
1.



2.



3.



Find each difference.

4. $8 - (-1)$ _____

5. $-5 - 2$ _____

6. $-10 - (-3)$ _____

7. $-2 - (-1)$ _____

8. $4 - (-6)$ _____

9. $-9 - (-5)$ _____

10. $15 - (-8)$ _____

11. $0 - (-6)$ _____

12. $-20 - (-9)$ _____

Evaluate $n - (-2)$ for each value of n .

13. $n = 2$ _____

14. $n = -4$ _____

15. $n = 5$ _____

16. $n = -3$ _____

17. $n = 1$ _____

18. $n = 0$ _____

19. In a golf tournament, Sarah scored a +2 on the first round and a -4 on the second round. What was the difference between her scores on the first two rounds?

20. Washington, D.C., has an elevation of 1 foot above sea level. The elevation of New Orleans is 8 feet below sea level. What is the difference in the two cities' elevations?

LESSON
11-6 Practice
Multiplying Integers**Write the sign of each product.**

1. $7 \cdot 8$

2. $5 \cdot (-9)$

3. $-4 \cdot 12$

4. $-6 \cdot (-11)$

5. $-3 \cdot 8$

6. $-12 \cdot (-18)$

Find each product.

7. $5 \cdot (-7)$ _____

8. $-4 \cdot 3$ _____

9. $-8 \cdot (-2)$ _____

10. $-9 \cdot (-1)$ _____

11. $5 \cdot (-6)$ _____

12. $-10 \cdot (-4)$ _____

13. $6 \cdot (-8)$ _____

14. $0 \cdot (-3)$ _____

15. $7 \cdot (-9)$ _____

Evaluate $4n$ for each value of n .

16. $n = 2$ _____

17. $n = -4$ _____

18. $n = -7$ _____

19. $n = -3$ _____

20. $n = 11$ _____

21. $n = 0$ _____

Evaluate $-3n$ for each value of n .

22. $n = -5$ _____

23. $n = 0$ _____

24. $n = 6$ _____

25. $n = -8$ _____

26. $n = 7$ _____

27. $n = -1$ _____

28. Last month, Tyler made five withdrawals of \$25 each from his bank account and no deposits. What multiplication expression models Tyler's bank transactions last month?

29. The Atlantic Ocean is sinking 4 inches every 100 years. Write a multiplication expression that models how much the Atlantic Ocean will sink in 300 years. How many inches will it sink in that time?

LESSON
11-7 **Practice**
Dividing Integers**Write the sign of each quotient.**

1. $56 \div 8$

2. $-45 \div (-9)$

3. $36 \div (-12)$

4. $54 \div (-6)$

5. $-84 \div 7$

6. $-225 \div (-15)$

Find each quotient.

7. $-45 \div 9$ _____

8. $15 \div (-3)$ _____

9. $-56 \div 8$ _____

10. $-10 \div (-5)$ _____

11. $28 \div (-7)$ _____

12. $-36 \div (-6)$ _____

13. $81 \div 9$ _____

14. $-72 \div 9$ _____

15. $-121 \div (-11)$ _____

Evaluate $\frac{n}{-3}$ for each value of n .

16. $n = 6$ _____

17. $n = -18$ _____

18. $n = -24$ _____

19. $n = -36$ _____

20. $n = 30$ _____

21. $n = -21$ _____

Evaluate $n \div 2$ for each value of n .

22. $n = -14$ _____

23. $n = 20$ _____

24. $n = -24$ _____

25. $n = 8$ _____

26. $n = -18$ _____

27. $n = -22$ _____

28. What two division equations can you use to check the answer to the problem $6 \cdot (-4) = -24$?

29. Why are the rules for dividing integers similar to the rules for multiplying integers?

30. What two multiplication equations can you use to check the answer to the problem $-32 \div 8 = -4$?

31. Name two integers whose product is -18 and whose quotient is -2 .

LESSON **Practice**
11-8 Solving Integer Equations

Write what you should do to solve each equation.

1. $x - 4 = -10$

2. $-2x = 8$

3. $-3 + x = 12$

4. $x \div 6 = -9$

5. $-7 + x = -15$

6. $35 = -5x$

Solve each equation. Check your answers.

7. $-45 \div x = -5$

8. $x - 9 = -1$

9. $36 \div x = -6$

10. $x - 10 = -12$

11. $-8x = 56$

12. $x \div 7 = -9$

13. $3x = -36$

14. $15 + x = 21$

15. $-4x = 64$

16. $x \div (-3) = -5$

17. $x \div -12 = -5$

18. $x - 13 = -9$

19. $-7 + x = 4$

20. $-9x = 54$

21. $49 \div x = -7$

22. If you multiply a value x by -2 and the product is -14 , what sign is the value of x ? Explain.

23. You separate an amount into 3 equal groups of -6 . Write and solve an division equation to model this situation.

LESSON
11-9 **Practice**
Tables and Functions

Write an equation for a function that gives the values in each table. Use the equation to find the value of y for the indicated value of x .

1.

x	1	2	3	4	5
y	7	14	21	28	◆

2.

x	2	3	4	5	6
y	-3	-2	-1	0	◆

3.

x	20	16	12	8	4
y	10	8	6	4	◆

4.

x	7	8	9	10	11
y	11	12	13	14	◆

Write an equation for the function. Tell what each variable you use represents.

5. Amanda is 7 years younger than her cousin.

6. The population of North Carolina is twice as large as the population of South Carolina.

7. An Internet book company charges \$7 for each paperback book, plus \$2.75 for shipping and handling per order.

8. Henry records how many days he rides his bike and how far he rides each week. He rides the same distance each time. He rode 18 miles in 3 days, 24 miles in 4 days, and 42 miles in 7 days. Write an equation for the function.

LESSON
11-10 **Practice**
Graphing Functions

Use the given x -values to write solutions of each equation as ordered pairs.

1. $y = 5x + 3$ for $x = 1, 2, 3$

2. $y = -4x$ for $x = 3, 5, 7$

Determine whether each ordered pair is a solution of the given equation.

3. $(6, 4)$; $y = 2x - 8$ _____

4. $(8, 72)$; $y = x \div 9$ _____

5. $(-3, -18)$; $y = -6x$ _____

6. $(5, 64)$; $y = 12x + 4$ _____

Use the graph of the linear function to find the value of y for each given value of x .

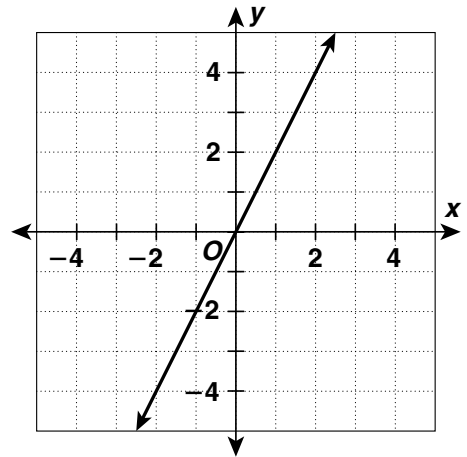
7. $x = 2$ _____

8. $x = 1$ _____

9. $x = 0$ _____

10. $x = -1$ _____

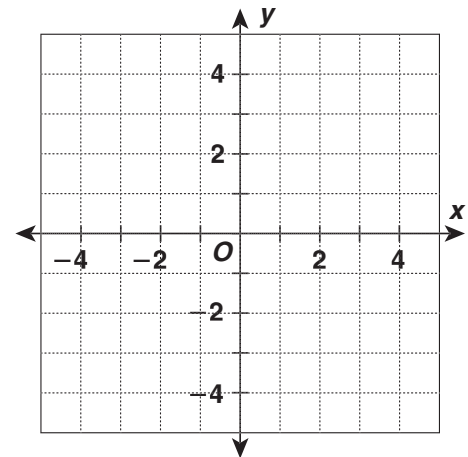
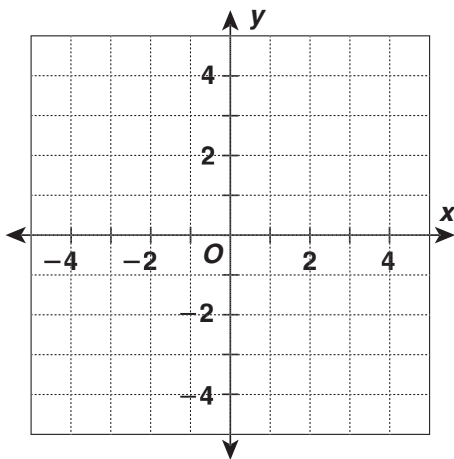
11. $x = -2$ _____



Graph the function described by each equation.

12. $y = x + 1$

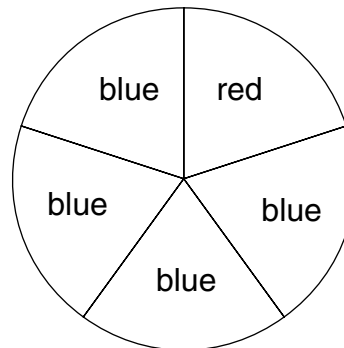
13. $y = 3 - x$



LESSON **Practice**
12-1 **Introduction to Probability**

Write *impossible, unlikely, as likely as not, likely, or certain* to describe each event.

1. landing on blue _____
2. landing on green _____
3. landing on red _____
4. landing on blue or red _____
5. You will spin the spinner clockwise.



Write each probability as a decimal and as a fraction.

6. There is a 10% chance of rain tomorrow. _____
7. There is a 75% chance of snow tomorrow. _____
8. There is a 25% chance of hail tomorrow. _____

Compare probabilities.

9. Are you more likely to win a color TV or a watch?

10. Are you more likely to win a DVD player or a stereo?

Prize Winning Probabilities	
Color TV	17%
DVD player	22%
Watch	13%
Stereo	21%
Diamond ring	27%

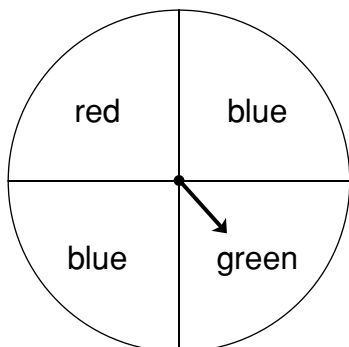
11. Are you more likely to win a diamond ring, a DVD player, or a stereo?

12. A bag has 4 red marbles, 3 blue marbles, 4 green marbles, and 1 black marble. Which term best describes the probability of picking a black marble from the bag: impossible, likely, as likely as not, unlikely, or impossible?

LESSON **Practice**
12-2 **Experimental Probability**

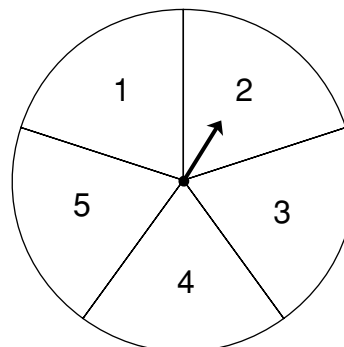
For each experiment, identify the outcome shown.

1.



outcome: _____

2.



outcome: _____

Amanda has a standard deck of playing cards. She picked one card, recorded the suit, and placed it back in the deck. She repeated this process several times and recorded her results in the table.

3. Find the experimental probability that a card selected from the deck will be a spade.

Heart	
Diamond	
Spade	
Club	

4. Find the experimental probability that a card selected from the deck will be a diamond.

5. Based on Amanda's experiment, which card suit is she most likely to select from the deck?

6. Based on Amanda's experiment, which card suit is she least likely to select from the deck?

7. In 28 coin tosses, John got tails up 14 times. What is the experimental probability that John will get tails up on his next toss?

LESSON **Practice**
12-3 *Counting Methods and Sample Spaces*

Answer each question.

1. Brian wants to buy a new bicycle. He can choose a 10-speed or 3-speed bike. The bikes come in red, blue, black, and purple. How many different bikes can Brian choose from?
2. Mr. Simon can leave for Miami on Monday, Tuesday, or Wednesday. He can fly, drive, or take a train. How many different travelling options does Mr. Simon have?

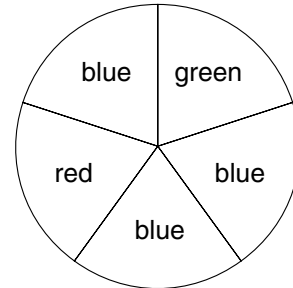
3. The marching band is choosing new uniforms. They can select black or white pants. They can choose a blue, red, green, or black shirt. From how many different uniforms can the band choose?

4. Sara, Jimmy, and Chantall are sitting beside one another on a bench. In how many different orders could they possibly be sitting from left to right?

LESSON **Practice**
12-4 **Theoretical Probability**

Find the probability of each event using the spinner.

1. landing on blue _____
2. landing on red _____
3. landing on green _____
4. NOT landing on blue _____



Find the probability of each event using the bag of marbles.

5. picking a black marble _____
6. picking a striped marble _____
7. picking a white marble _____
8. NOT picking a white marble _____



A standard number cube is rolled. Find each probability.

9. $P(2)$ _____
10. $P(\text{even number})$ _____
11. $P(4 \text{ or } 5)$ _____
12. $P(\text{odd number})$ _____
13. Out of 10 fair coin tosses, a coin landed tails up 4 times. How does this experimental probability of a fair coin landing tails up compare to the theoretical probability of the same event?

14. The probability of a spinner landing on blue is $\frac{3}{4}$. What is the probability of it NOT landing on blue written as a percent?

LESSON **Practice**
12-5 **Compound Events**

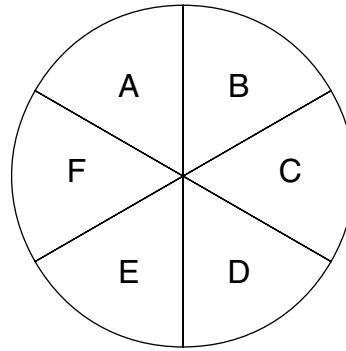
This spinner is spun twice.

1. What is the probability of the spinner landing on *B* both times?

2. What is the probability of the spinner landing on *B*, then *C*?

3. What is the probability of the spinner landing on a vowel and then a consonant?

4. What is the probability of NOT spinning *D* either time?



A coin is tossed three times.

5. How many possible outcomes are there?

6. What is the probability of the coin landing heads up three times?

7. What is the probability of the coin landing heads up twice and tails up once?

There are five cards numbered 1, 2, 3, 4, and 5 in a bag. Each time a card is drawn, it is replaced. Find each probability.

8. $P(1, \text{ then } 2)$ _____

9. $P(4, \text{ then } 4)$ _____

10. $P(\text{even, then odd})$ _____

11. $P(\text{odd, then odd})$ _____

12. What is the probability of a coin landing on heads and a number cube landing on an even number?

LESSON
12-6 **Practice**
Making Predictions

Use the sample survey to make predictions.

1. If you randomly selected a person, what is the probability that his or her favorite sport is basketball?
- _____

2. In a group of 200 people, how many do you predict would choose baseball as their favorite sport?
- _____

3. In a class of 45 students, how many students do you predict would choose soccer as their favorite sport?
- _____

4. In a group of 100 people, how many do you predict would choose hockey as their favorite sport?
- _____

5. Based on a sample survey, a local newspaper states that 75% of all the city's voters turned out for the city council elections. If you randomly selected 200 people in that city, how many do you predict would have voted in the election?
- _____

6. If you roll a fair number cube 30 times, how many times would you expect to roll an odd number?
- _____

7. Based on a sample survey, a company claims that 8% of its customers were unhappy with the DVD players they bought. If the company sold DVD players to 2,000 people last year, how many of those customers do you predict were unhappy with their DVDs?
- _____

8. If you toss a fair coin 48 times, how many times do you predict it will land tails up?
- _____

Favorite Sports

Sport	Number of Students
Football	28
Basketball	35
Soccer	20
Baseball	45
Hockey	15
Other	7