

**Chapter
1****Fair Game Review****Add or subtract.**

1. $-1 + (-3)$

2. $0 + (-12)$

3. $-5 + (-3)$

4. $-4 + (-4)$

5. $5 - (-2)$

6. $-5 - 2$

7. $0 - (-6)$

8. $-9 - 3$

9. In a city, the record monthly high temperature for July is 88°F . The record monthly low temperature is 30°F . What is the range of temperatures for July?

10. An elevator ascends five floors from the ground floor and then descends three floors. How many floors above the ground floor is the elevator?

Chapter**1****Fair Game Review** (continued)**Multiply or divide.**

11. $-2(5)$

12. $-3(5)$

13. $-5 \cdot (-6)$

14. $-4 \cdot (-4)$

15. $-18 \div (-3)$

16. $-64 \div (-8)$

17. $-15 \div 5$

18. $-48 \div 6$

19. In a class of 30 students, each student pays \$2 to go on a field trip. How much money is collected for the field trip?

20. A class of 28 students breaks up into groups of four to work on an activity. How many groups are there?

1.1

Solving Simple Equations

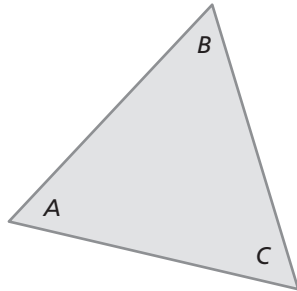
For use with Activity 1.1

Essential Question How can you use inductive reasoning to discover rules in mathematics? How can you test a rule?

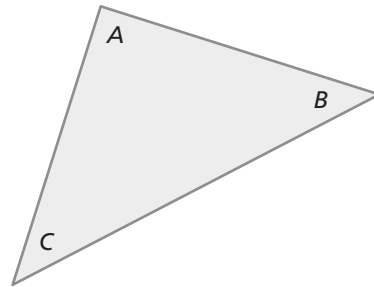
1 ACTIVITY: Sum of the Angles of a Triangle

Work with a partner. Use a protractor to measure the angles of each triangle. Complete the table to organize your results.

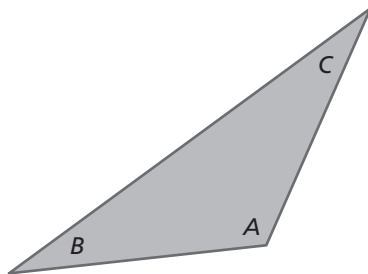
a.



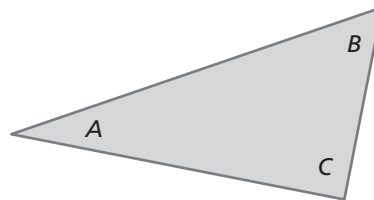
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c.



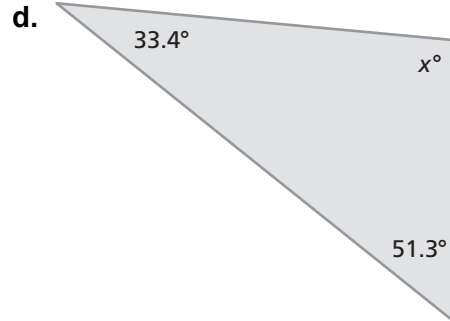
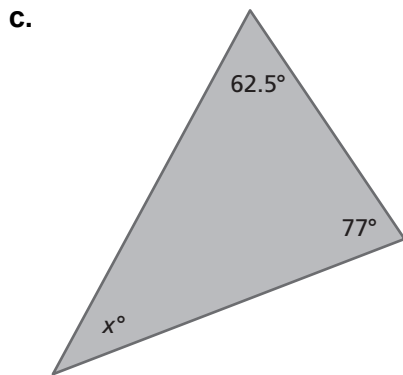
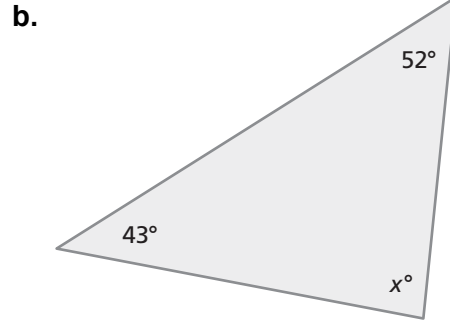
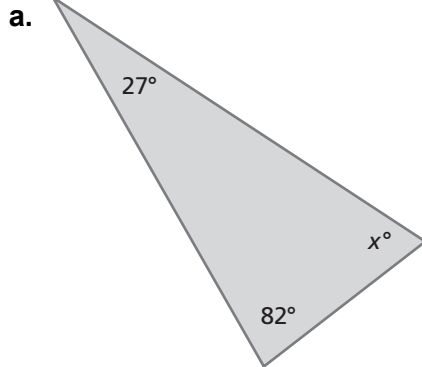
d.



Triangle	Angle A (degrees)	Angle B (degrees)	Angle C (degrees)	$A + B + C$
a.				
b.				
c.				
d.				

1.1 Solving Simple Equations (continued)**3 ACTIVITY:** Applying Your Rule

Work with a partner. Use the rule you wrote in Activity 2 to write an equation for each triangle. Then, solve the equation to find the value of x . Use a protractor to check the reasonableness of your answer.

**What Is Your Answer?**

4. **IN YOUR OWN WORDS** How can you use inductive reasoning to discover rules in mathematics? How can you test a rule? How can you use a rule to solve problems in mathematics?

1.1**Practice**

For use after Lesson 1.1

Solve the equation. Check your solution.

1. $x + 5 = 16$

2. $11 = w - 12$

3. $\frac{3}{4} + z = \frac{5}{6}$

4. $3y = 18$

5. $\frac{k}{7} = 10$

6. $\frac{4}{5}n = \frac{9}{10}$

7. $x - 12 \div 6 = 9$

8. $h + |-8| = 15$

9. $1.3(2) + p = 7.9$

10. A coupon subtracts \$5.16 from the price p of a shirt. You pay \$15.48 for the shirt after using the coupon. Write and solve an equation to find the original price of the shirt.

11. After a party, you have $\frac{1}{6}$ of the cookies you made left over. There are a dozen cookies left. How many cookies did you make for the party?

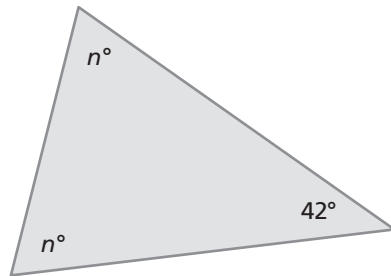
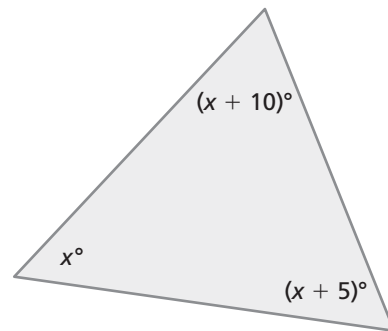
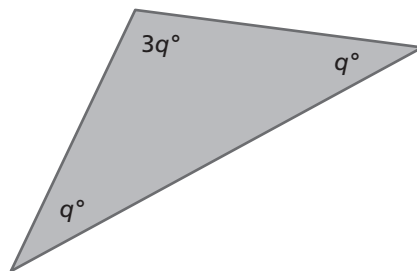
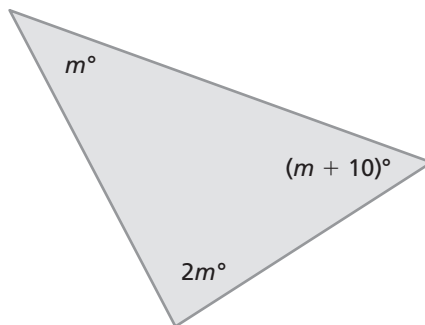
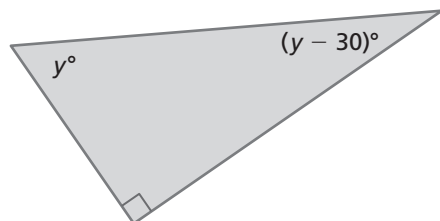
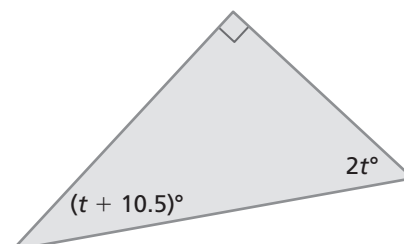
1.2**Solving Multi-Step Equations**

For use with Activity 1.2

Essential Question How can you solve a multi-step equation? How can you check the reasonableness of your solution?

1 ACTIVITY: Solving for the Angles of a Triangle

Work with a partner. Write an equation for each triangle. Solve the equation to find the value of the variable. Then find the angle measures of each triangle. Use a protractor to check the reasonableness of your answer.

a.**b.****c.****d.****e.****f.**

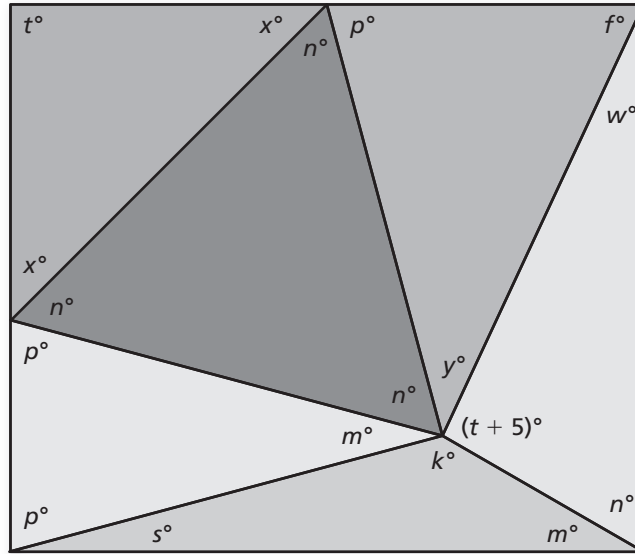
1.2 Solving Multi-Step Equations (continued)

2 ACTIVITY: Problem Solving Strategy

Work with a partner.

The six triangles form a rectangle.

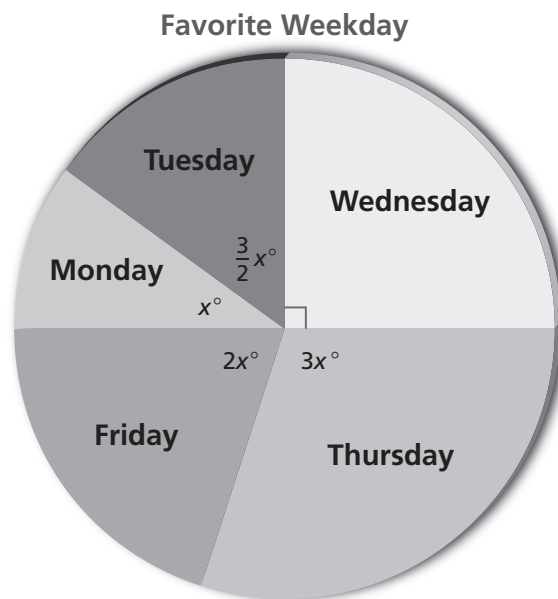
Find the angle measures of each triangle. Use a protractor to check the reasonableness of your answers.



3 ACTIVITY: Puzzle

Work with a partner. A survey asked 200 people to name their favorite weekday. The results are shown in the circle graph.

- How many degrees are in each part of the circle graph?
- What percent of the people chose each day?
- How many people chose each day?



1.2 Solving Multi-Step Equations (continued)

- d. Organize your results in a table.

What Is Your Answer?

4. **IN YOUR OWN WORDS** How can you solve a multi-step equation?
How can you check the reasonableness of your solution?

1.2**Practice**

For use after Lesson 1.2

Solve the equation. Check your solution.

1. $3x - 11 = 22$

2. $24 - 10b = 9$

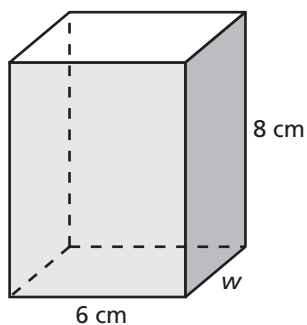
3. $2.4z + 1.2z - 6.5 = 0.7$

4. $\frac{3}{4}w - \frac{1}{2}w - 4 = 12$

5. $2(a + 7) - 7 = 9$

6. $20 + 8(q - 11) = -12$

7. Find the width of the rectangular prism when the surface area is 208 square centimeters.



8. The amount of money in your savings account after m months is represented by $A = 135m + 225$. After how many months do you have \$765 in your savings account?

1.3**Solving Equations with Variables on Both Sides**

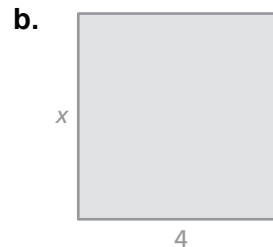
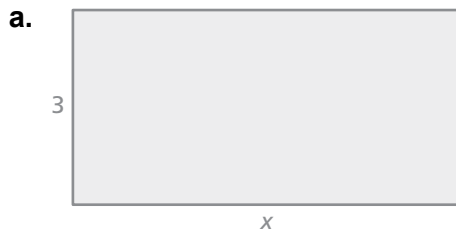
For use with Activity 1.3

Essential Question How can you solve an equation that has variables on both sides?

1 ACTIVITY: Perimeter and Area

Work with a partner. Each figure has the unusual property that the value of its perimeter (in feet) is equal to the value of its area (in square feet).

- Write an equation (value of perimeter = value of area) for each figure.
- Solve each equation for x .
- Use the value of x to find the perimeter and area of each figure.
- Check your solution by comparing the value of the perimeter and the value of the area of each figure.

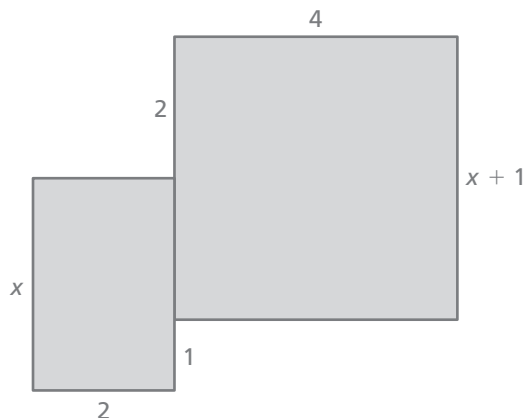


1.3 Solving Equations with Variables on Both Sides (continued)

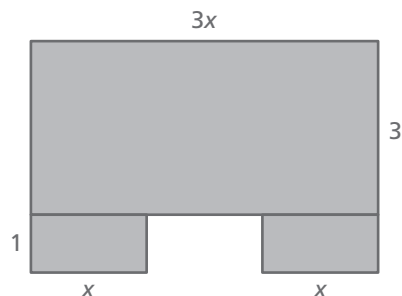
e.



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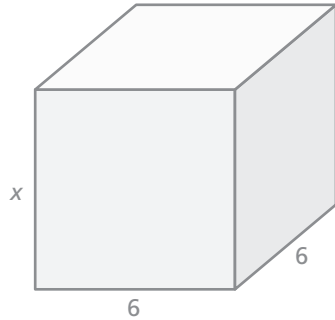
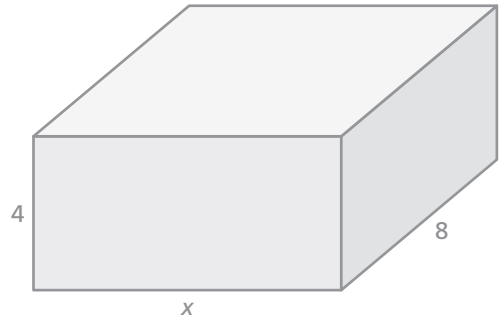


g.

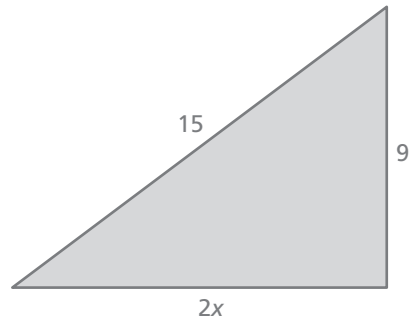
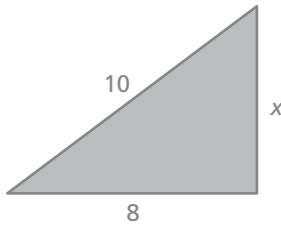
**2 ACTIVITY: Surface Area and Volume**

Work with a partner. Each solid on the next page has the unusual property that the value of its surface area (in square inches) is equal to the value of its volume (in cubic inches).

- Write an equation (value of surface area = value of volume) for each solid.
- Solve each equation for x .
- Use the value of x to find the surface area and volume of each solid.
- Check your solution by comparing the value of the surface area and the value of the volume of each solid.

1.3 Solving Equations with Variables on Both Sides (continued)**a.****b.****3 ACTIVITY:** Puzzle

Work with a partner. The two triangles are similar. The perimeter of the larger triangle is 150% of the perimeter of the smaller triangle. Find the dimensions of each triangle.

**What Is Your Answer?**

- 4. IN YOUR OWN WORDS** How can you solve an equation that has variables on both sides? Write an equation that has variables on both sides. Solve the equation.

1.3**Practice**

For use after Lesson 1.3

Solve the equation. Check your solution.

1. $x + 16 = 9x$

2. $4y - 70 = 12y + 2$

3. $5(p + 6) = 8p$

4. $3(g - 7) = 2(10 + g)$

5. $1.8 + 7n = 9.5 - 4n$

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

7. One movie club charges a \$100 membership fee and \$10 for each movie. Another club charges no membership fee but movies cost \$15 each. Write and solve an equation to find the number of movies you need to buy for the cost of each movie club to be the same.

8. Thirty percent of all the students in a school are in a play. All students except for 140 are in the play. How many students are in the school?

Extension
1.3**Practice**

For use after Extension 1.3

Solve the equation. Graph the solutions, if possible.

1. $|x| = 3$

2. $|x - 4| = 1$

3. $|x| = 0$

4. $|2x + 1| = 7$

5. $|3x - 2| = 10$

6. $|5x - 2| = -10$

**Extension
1.3****Practice (continued)**

7. $|2x + 5| - 5 = -2$

8. $3|4x + 6| = 24$

9. $-|2x - 8| - 6 = -12$

10. $-5|x + 3| + 3 = -17$

11. In a songwriting competition, the minimum length of a song is 2.5 minutes. The maximum length of a song is 5.5 minutes. Write an absolute value equation that has these minimum and maximum lengths as its solutions.

1.4**Rewriting Equations and Formulas**

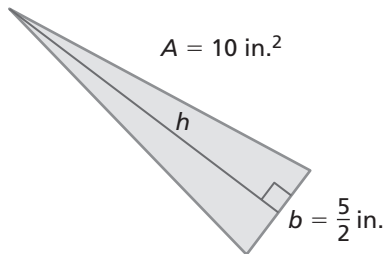
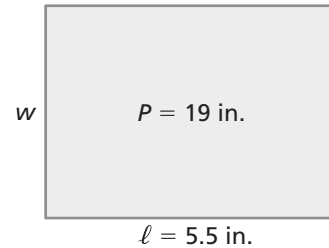
For use with Activity 1.4

Essential Question How can you use a formula for one measurement to write a formula for a different measurement?

1 ACTIVITY: Using Perimeter and Area Formulas

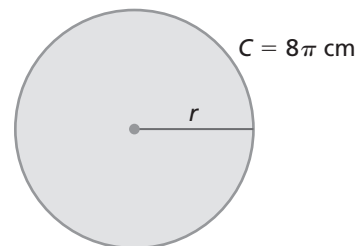
Work with a partner.

- a.
- Write a formula for the perimeter P of a rectangle.
 - Solve the formula for w .
 - Use the new formula to find the width of the rectangle.



- b.
- Write a formula for the area A of a triangle.
 - Solve the formula for h .
 - Use the new formula to find the height of the triangle.

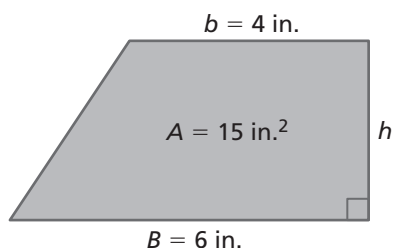
- c.
- Write a formula for the circumference C of a circle.
 - Solve the formula for r .
 - Use the new formula to find the radius of the circle.



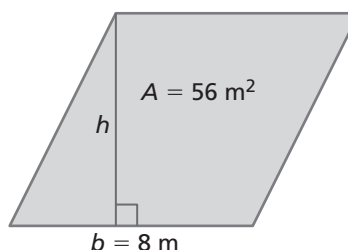
1.4 Rewriting Equations and Formulas (continued)

- Write a formula for the area A .
- Solve the formula for h .
- Use the new formula to find the height.

d.



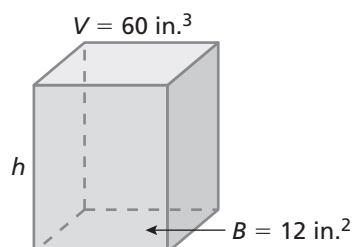
e.



2 ACTIVITY: Using Volume Formulas

Work with a partner.

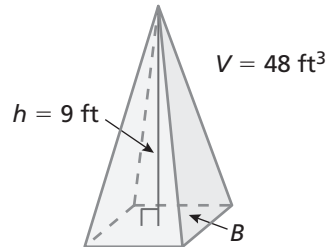
- a.
- Write a formula for the volume V of a prism.
 - Solve the formula for h .
 - Use the new formula to find the height of the prism.



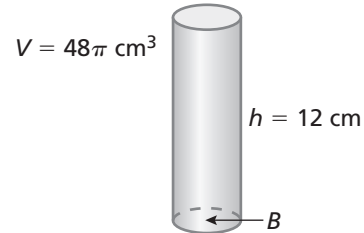
1.4 Rewriting Equations and Formulas (continued)

- Write a formula for the volume V .
- Solve the formula for B .
- Use the new formula to find the area of the base.

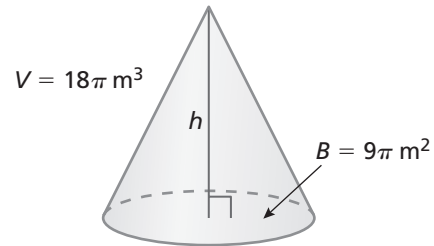
b.



c.



- d. • Write a formula for the volume V of a cone.
- Solve the formula for h .
 - Use the new formula to find the height of the cone.

**What Is Your Answer?**

3. **IN YOUR OWN WORDS** How can you use a formula for one measurement to write a formula for a different measurement? Give an example that is different from the examples on these three pages.

1.4**Practice**

For use after Lesson 1.4

Solve the equation for y .

1. $2x + y = -9$

2. $4x - 10y = 12$

3. $13 = \frac{1}{6}y + 2x$

Solve the equation for the bold variable.

4. $V = \ell \boldsymbol{w} h$

5. $f = \frac{1}{2}(\boldsymbol{r} + 6.5)$

6. $S = 2\pi r^2 + 2\pi r \boldsymbol{h}$

7. The formula for the area of a triangle is $A = \frac{1}{2}bh$.

a. Solve the formula for h .b. Use the new formula to find the value of h .