1 Chapter Test

Check It Out
Test Practice
BigIdeasMath.com

Solve the equation. Check your solution, if possible.

1. $4 + y = 9.5$

2. $-\frac{x}{9} = -8$

3. $z - \frac{2}{3} = \frac{1}{8}$

4. $3.8n - 13 = 1.4n + 5$

5. $9(8d - 5) + 13 = 12d - 2$

6. $9j - 8 = 8 + 9j$

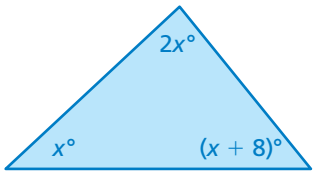
7. $2.5(2p + 5) = 5p + 12.5$

8. $\frac{3}{4}t + \frac{1}{8} = \frac{3}{4}(t + 8)$

9. $\frac{1}{7}(14r + 28) = 2(r + 2)$

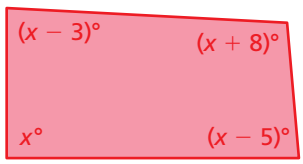
Find the value of x. Then find the angle measures of the polygon.

10.



Sum of angle measures: 180°

11.



Sum of angle measures: 360°

Solve the equation for y.

12. $1.2x - 4y = 28$

13. $0.5 = 0.4y - 0.25x$

Solve the formula for the red variable.

14. Perimeter of a rectangle: $P = 2\ell + 2w$

15. Distance formula: $d = rt$

16. BASKETBALL Your basketball team wins a game by 13 points. The opposing team scores 72 points. Explain how to find your team's score.

17. CYCLING You are biking at a speed of 18 miles per hour. You are 3 miles behind your friend, who is biking at a speed of 12 miles per hour. Write and solve an equation to find the amount of time it takes for you to catch up to your friend.

18. VOLCANOES Two scientists are measuring lava temperatures. One scientist records a temperature of 1725°F. The other scientist records a temperature of 950°C. Which is the greater temperature? $\left(\text{Use } C = \frac{5}{9}(F - 32).\right)$

19. JOBS Your profit for mowing lawns this week is \$24. You are paid \$8 per hour and you paid \$40 for gas for the lawn mower. How many hours did you work this week?

10 Chapter Test

Check It Out
Test Practice
BigIdeasMath.com

Write the product using exponents.

1. $(-15) \cdot (-15) \cdot (-15)$

2. $\left(\frac{1}{12}\right) \cdot \left(\frac{1}{12}\right) \cdot \left(\frac{1}{12}\right) \cdot \left(\frac{1}{12}\right) \cdot \left(\frac{1}{12}\right)$

Evaluate the expression.

3. -2^3

4. $10 + 3^3 \div 9$

Simplify the expression. Write your answer as a power.

5. $9^{10} \cdot 9$

6. $(6^6)^5$

7. $(2 \cdot 10)^7$

8. $\frac{(-3.5)^{13}}{(-3.5)^9}$

Evaluate the expression.

9. $5^{-2} \cdot 5^2$

10. $\frac{-8}{(-8)^3}$

Write the number in standard form.

11. 3×10^7

12. 9.05×10^{-3}

Evaluate the expression. Write your answer in scientific notation.

13. $(7.8 \times 10^7) + (9.9 \times 10^7)$

14. $(6.4 \times 10^5) - (5.4 \times 10^4)$

15. $(3.1 \times 10^6) \times (2.7 \times 10^{-2})$

16. $(9.6 \times 10^7) \div (1.2 \times 10^{-4})$

17. **CRITICAL THINKING** Is $(xy^2)^3$ the same as $(xy^3)^2$? Explain.

18. **RICE** A grain of rice weighs about 3^3 milligrams. About how many grains of rice are in one scoop?

One scoop of rice weighs about 3^9 milligrams.

19. **TASTE BUDS** There are about 10,000 taste buds on a human tongue. Write this number in scientific notation.

20. **LEAD** From 1978 to 2008, the amount of lead allowed in the air in the United States was 1.5×10^{-6} gram per cubic meter. In 2008, the amount allowed was reduced by 90%. What is the new amount of lead allowed in the air?

7 Chapter Test

Check It Out
Test Practice
BigIdeasMath.com

Find the square root(s).

1. $-\sqrt{1600}$

2. $\sqrt{\frac{25}{49}}$

3. $\pm\sqrt{\frac{100}{9}}$

Find the cube root.

4. $\sqrt[3]{-27}$

5. $\sqrt[3]{\frac{8}{125}}$

6. $\sqrt[3]{-\frac{729}{64}}$

Evaluate the expression.

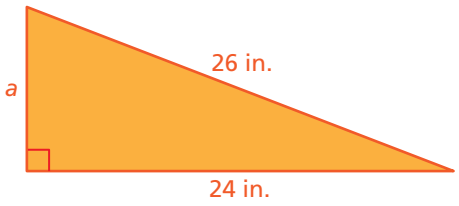
7. $12 + 8\sqrt{16}$

8. $\frac{1}{2} + \sqrt{\frac{72}{2}}$

9. $\left(\sqrt[3]{-125}\right)^3 + 75$

10. $50\sqrt[3]{\frac{512}{1000}} + 14$

11. Find the missing length of the triangle.



Classify the real number.

12. 16π

13. $-\sqrt{49}$

Estimate the square root to the nearest (a) integer and (b) tenth.

14. $\sqrt{58}$

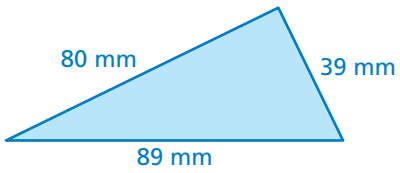
15. $\sqrt{83}$

Write the decimal as a fraction or a mixed number.

16. $-0.\overline{3}$

17. $1.\overline{24}$

18. Tell whether the triangle is a right triangle.

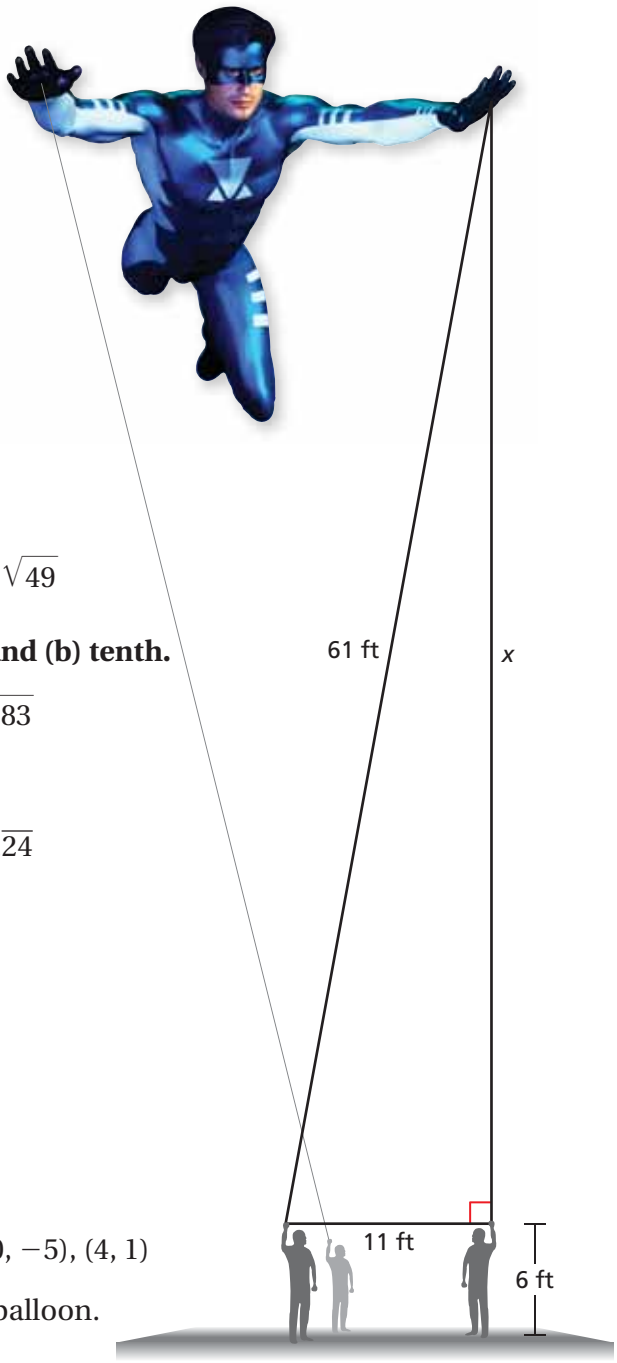


Find the distance between the two points.

19. $(-2, 3), (6, 9)$

20. $(0, -5), (4, 1)$

21. **SUPERHERO** Find the altitude of the superhero balloon.



4 Chapter Test

Check It Out
Test Practice
BigIdeasMath.com

Find the slope and the *y*-intercept of the graph of the linear equation.

1. $y = 6x - 5$

2. $y = 20x + 15$

3. $y = -5x - 16$

4. $y - 1 = 3x + 8.4$

5. $y + 4.3 = 0.1x$

6. $-\frac{1}{2}x + 2y = 7$

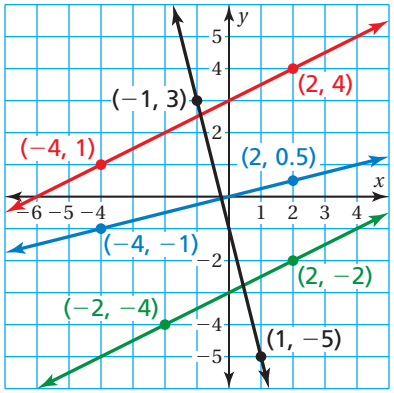
Graph the linear equation.

7. $y = 2x + 4$

8. $y = -\frac{1}{2}x - 5$

9. $-3x + 6y = 12$

10. Which lines are parallel? Which lines are perpendicular? Explain.

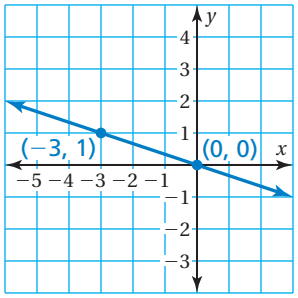


11. The points in the table lie on a line. Find the slope of the line.

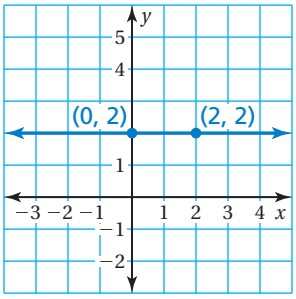
x	*y*
−1	−4
0	−1
1	2
2	5

Write an equation of the line in slope-intercept form.

12.



13.



Write in slope-intercept form an equation of the line that passes through the given points.

14. $(-1, 5), (3, -3)$

15. $(-4, 1), (4, 3)$

16. $(-2, 5), (-1, 1)$

17. **VOCABULARY** The number y of new vocabulary words that you learn after x weeks is represented by the equation $y = 15x$.

a. Graph the equation and interpret the slope.

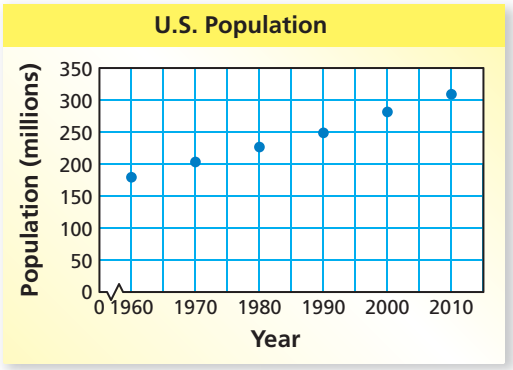
b. How many new vocabulary words do you learn after 5 weeks?

c. How many more vocabulary words do you learn after 6 weeks than after 4 weeks?

9 Chapter Test

Check It Out
Test Practice
BigIdeasMath.com

1. POPULATION The graph shows the population (in millions) of the United States from 1960 to 2010.



a. In what year was the population of the United States about 180 million?

b. What was the approximate population of the United States in 1990?

c. Describe the trend shown by the data.

2. WEIGHT The table shows the weight of a baby over several months.

Age (months)	Weight (pounds)
1	8
2	9.25
3	11.75
4	13
5	14.5
6	16

a. Make a scatter plot of the data and draw a line of fit.

b. Write an equation of the line of fit.

c. Interpret the slope and the y-intercept of the line of fit.

d. Predict how much the baby will weigh at 7 months.

		Nonfiction	
		Likes	Dislikes
Fiction	Likes	26	20
	Dislikes	22	2

3. READING You randomly survey students at your school about what type of books they like to read. The two-way table shows your results. Find and interpret the marginal frequencies.

Choose an appropriate data display for the situation. Explain your reasoning.

4. magazine sales grouped by price

5. the distance a person hikes each week

6. SAT The table shows the numbers y of students (in thousands) who took the SAT from 2006 to 2010, where $x = 6$ represents the year 2006. Use a graphing calculator to find an equation of the line of best fit. Identify and interpret the correlation coefficient.

Year, x	6	7	8	9	10
Number of Students, y	1466	1495	1519	1530	1548

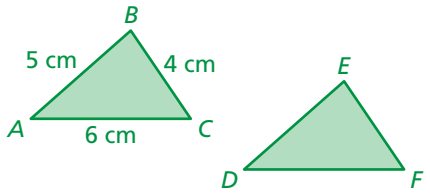
7. RECYCLING You randomly survey shoppers at a supermarket about whether they use reusable bags. Of 60 male shoppers, 15 use reusable bags. Of 110 female shoppers, 60 use reusable bags. Organize your results in a two-way table. Include the marginal frequencies.

2 Chapter Test

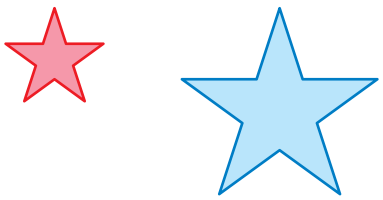
Check It Out
Test Practice
BigIdeasMath.com

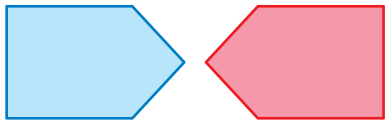
Triangles *ABC* and *DEF* are congruent.

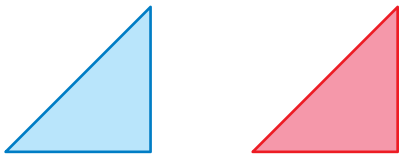
1. Which angle of *DEF* corresponds to $\angle C$?
2. What is the perimeter of *DEF*?



Tell whether the blue figure is a *translation*, *reflection*, *rotation*, or *dilation* of the red figure.

3. 

4. 

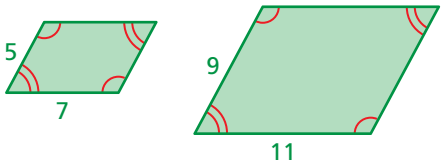
5. 

6. 

7. The vertices of a triangle are $A(2, 5)$, $B(1, 2)$, and $C(3, 1)$. Reflect the triangle in the x-axis, and then rotate the triangle 90° counterclockwise about the origin. What are the coordinates of the image?

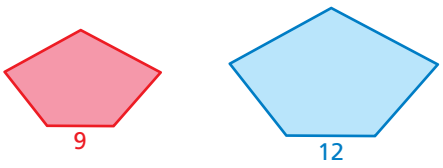
8. The vertices of a triangle are $A(2, 4)$, $B(2, 1)$, and $C(5, 1)$. Dilate the triangle with respect to the origin using a scale factor of 2. Then translate the triangle 2 units left and 1 unit up. What are the coordinates of the image?

9. Tell whether the parallelograms are similar. Explain your reasoning.



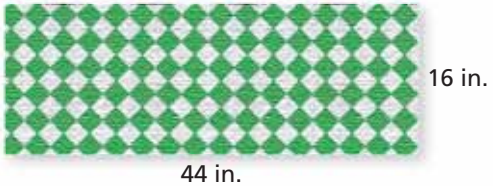
The two figures are similar. Find the ratios (red to blue) of the perimeters and of the areas.

10. 

11. 

12. **SCREENS** A wide-screen television measures 36 inches by 54 inches. A movie theater screen measures 42 feet by 63 feet. Are the screens similar? Explain.

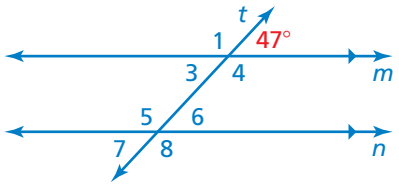
13. **CURTAINS** You want to use the rectangular piece of fabric shown to make a set of curtains for your window. Name the types of congruent shapes you can make with one straight cut. Draw an example of each type.



3 Chapter Test

Check It Out
Test Practice
BigIdeasMath.com

Use the figure to find the measure of the angle. Explain your reasoning.

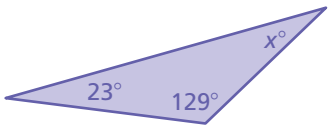


1. $\angle 1$ **2.** $\angle 8$

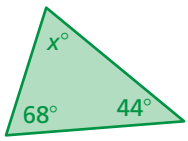
3. $\angle 4$ **4.** $\angle 5$

Find the measures of the interior angles.

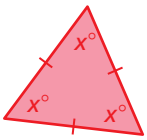
5.



6.

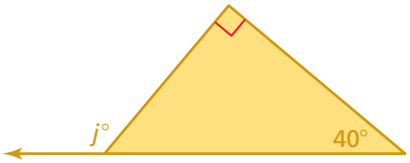


7.

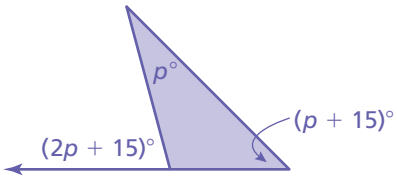


Find the measure of the exterior angle.

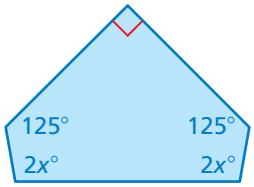
8.



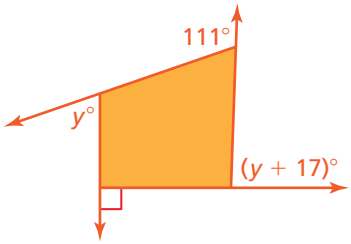
9.



10. Find the measures of the interior angles of the polygon.

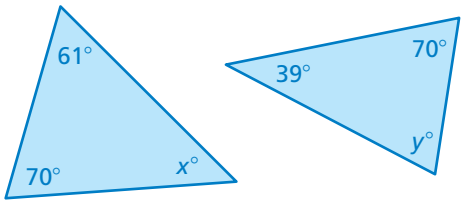


11. Find the measures of the exterior angles of the polygon.

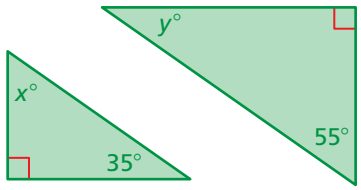


Tell whether the triangles are similar. Explain.

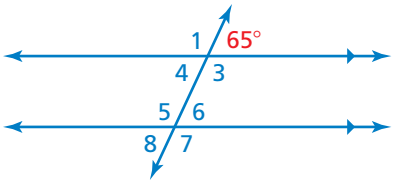
12.

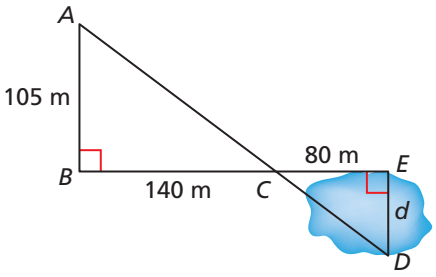


13.



14. WRITING Describe two ways you can find the measure of $\angle 5$.





15. POND Use the given measurements to find the distance d across the pond.