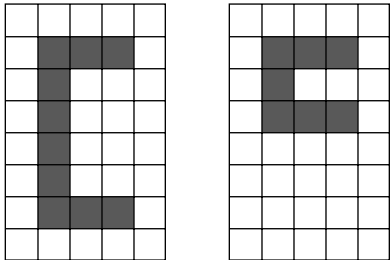
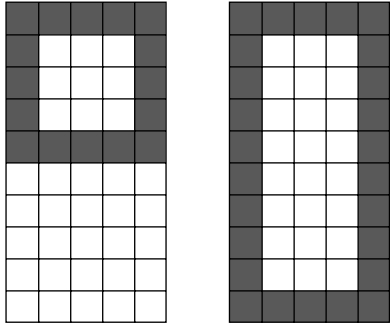
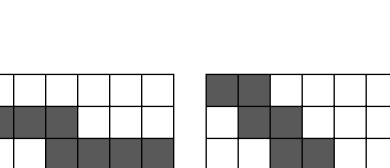
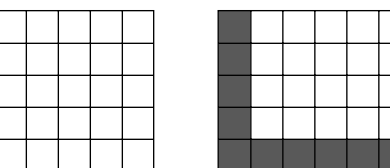
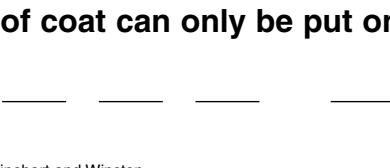
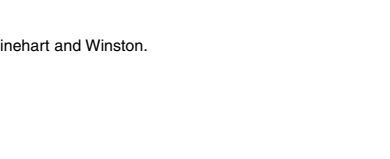



**LESSON** **Puzzles, Twisters & Teasers**  
**12-6** *Which Way?*

Look at the pairs of figures below. The first figure in each pair is the original design. The second figure is the adjusted figure. Cross out the boxes of information that are false about the changes. Use the letters in the remaining boxes to solve the riddle.

	<p><b>L</b> stretch</p>	<p><b>O</b> shrink</p>
	<p><b>A</b> vertical</p>	<p><b>G</b> horizontal</p>
	<p><b>H</b> factor of <math>\frac{1}{3}</math></p>	<p><b>N</b> factor of <math>\frac{1}{2}</math></p>
	<p><b>O</b> stretch</p>	<p><b>J</b> shrink</p>
	<p><b>C</b> vertical</p>	<p><b>B</b> horizontal</p>
	<p><b>K</b> factor of 3</p>	<p><b>R</b> factor of 5</p>
	<p><b>Y</b> stretch</p>	<p><b>A</b> shrink</p>
	<p><b>B</b> vertical</p>	<p><b>F</b> horizontal</p>
	<p><b>I</b> factor of <math>\frac{1}{2}</math></p>	<p><b>U</b> factor of 2</p>
	<p><b>T</b> stretch</p>	<p><b>X</b> shrink</p>
	<p><b>S</b> vertical</p>	<p><b>T</b> horizontal</p>
	<p><b>E</b> factor of 4</p>	<p><b>P</b> factor of 3</p>

What kind of coat can only be put on wet?

A \_\_\_\_\_

**LESSON** **Problem Solving**  
**12-6** **Stretching and Shrinking**

Write the correct answer.

- An NBA basketball court is 94 feet long and 50 feet wide. When there are not enough players, people sometimes play half-court basketball, using only one basket. How do they change the dimensions of the playing court? What are its new dimensions?
- Gold is one of the most malleable, or changeable, elements on Earth. A one-ounce square of gold can be pounded into a thin wire that stretches 60 miles! To accomplish this stretch, how do the dimensions of the gold square have to change? Explain.

**Its length is decreased by multiplying by  $\frac{1}{2}$ ; It is 47 feet long and 50 feet wide.**

- Photo researchers review thumbnail, or reduced, photos to choose which ones to buy. One thumbnail photo is 2 inches tall and  $1\frac{1}{3}$  inches wide. The actual photo is similar to the thumbnail, but its dimensions are increased by a factor of 3. What are the dimensions of the actual photo?

**6 inches tall and 4 inches wide**

Circle the letter of the correct answer.

- A billboard is 20 feet wide and 5 feet tall. Which of the following would give the billboard an area of 300 square feet?  
**A** Horizontal increase by a factor of 10.  
**B** Vertical increase by a factor of 3.  
**C** Horizontal increase by a factor of 2.  
**D** Vertical increase by a factor of 6.
- The perimeter of a rectangle is 14 feet. After one of its dimensions is decreased by multiplying it by  $\frac{1}{2}$ , its perimeter is 10 feet. Which of the following could be the original dimensions of the rectangle?  
**F**  $\ell = 6$  feet,  $w = 1$  foot  
**G**  $\ell = 3.5$  feet,  $w = 3.5$  feet  
**H**  $\ell = 5$  feet,  $w = 2$  feet  
**J**  $\ell = 4$  feet,  $w = 3$  feet

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**LESSON** **Puzzles, Twisters & Teasers**  
**12-6** **Which Way?**

Look at the pairs of figures below. The first figure in each pair is the original design. The second figure is the adjusted figure. Cross out the boxes of information that are false about the changes. Use the letters in the remaining boxes to solve the riddle.

		<b>L</b> stretch	<b>O</b> shrink
		<b>A</b> vertical	<b>G</b> horizontal
		<b>H</b> factor of $\frac{1}{3}$	<b>N</b> factor of $\frac{1}{2}$
		<b>O</b> stretch	<b>J</b> shrink
		<b>C</b> vertical	<b>B</b> horizontal
		<b>K</b> factor of 3	<b>R</b> factor of 5
		<b>Y</b> stretch	<b>A</b> shrink
		<b>B</b> vertical	<b>F</b> horizontal
		<b>I</b> factor of $\frac{1}{2}$	<b>U</b> factor of 2
		<b>T</b> stretch	<b>X</b> shrink
		<b>S</b> vertical	<b>T</b> horizontal
		<b>E</b> factor of 4	<b>P</b> factor of 3

What kind of coat can only be put on wet?

**A C O A T O F P A I N T**

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**CHAPTER** **Review**  
**12** **Functions and Coordinate Geometry**

**12-1 Tables and Functions** (pp. 598–601)

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

$x$	2	3	4	5	6	7
$y$	3	5	7	9	11	■

**$y = 2x - 1; 13$**

$x$	-2	-1	0	1	2	3
$y$	-4	-1	■	5	8	11

**$y = 3x + 2; 2$**

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

- The number of swings is 4 more than 2 times the number of slides.  
 **$s =$  number of swings;  $d =$  number of slides;  $s = 4 + 2d$**

- A boutique manager tracked specialty candle sales. The boutique charges the same price for each candle. On Thursday, 4 candles were sold for a total of \$60. On Friday, 9 candles were sold for a total of \$135. On Saturday, 7 candles were sold for a total of \$105. Write an equation for the function.  
 **$x =$  number candles;  $y =$  amount of money;  $y = 15x$**

**12-2 Graphing Functions** (pp. 604–608)

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

- $y = 7x + 3$  for  $x = 0, 1, 2, 3$   
 **$(0, 3), (1, 10), (2, 17), (3, 24)$**
- $y = 9x - 3$  for  $x = 3, 4, 5, 6$   
 **$(3, 24), (4, 33), (5, 42), (6, 51)$**

Determine whether each ordered pair is a solution of the given equation.

- $(2, 4); y = 4x - 3$  **no**
- $(10, 5); y = \frac{1}{2}x$  **yes**
- $(0, 2); y = 3x + 2$  **yes**
- $(-5, 0); y = \frac{1}{2}x - 5$  **no**
- $(2, 1); y = 2x$  **no**
- $(1, 1); y = -2x + 3$  **yes**

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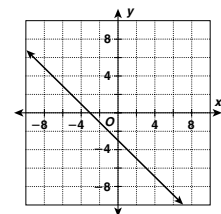
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**CHAPTER** **Review**  
**12** **Functions and Coordinate Geometry, continued**

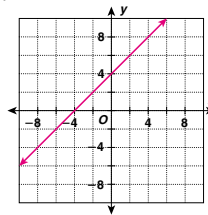
Use the graph of the linear function to find the value of  $y$  for each given value of  $x$ .

- $x = 2$  **-5**
- $x = -2$  **-1**
- $x = 0$  **-3**
- $x = -4$  **1**

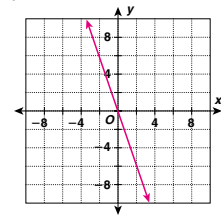


Graph the function described by each equation.

- $y = x + 4$



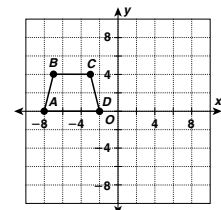
- $y = -3x$



**12-3 Graphing Translations** (pp. 610–612)

Give the coordinates of the vertices of the figure after the given translation.

- Translate trapezoid  $ABCD$  2 units down and 1 unit left.  
 **$A'(-9, -2), B'(-8, 2),$**   
 **$C'(-4, 2), D'(-3, -2)$**



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