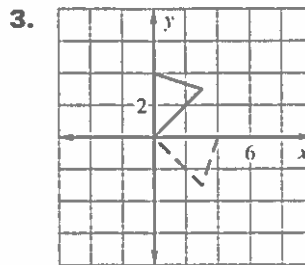
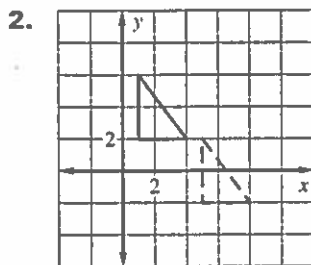
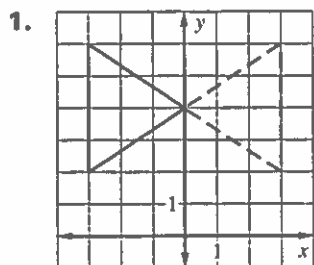


**LESSON**  
**4.8**

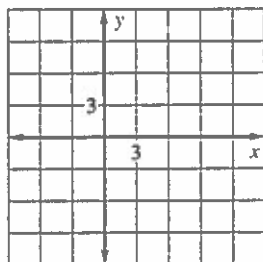
**Practice**

For use with pages 271–279

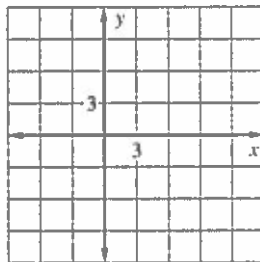
Name the type of transformation shown.



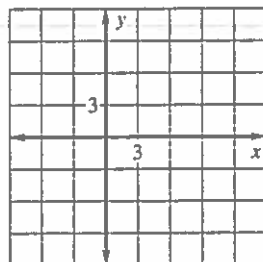
4. Figure  $ABCD$  has vertices  $A(1, 2)$ ,  $B(4, -3)$ ,  $C(5, 5)$ , and  $D(4, 7)$ . Sketch  $ABCD$  and draw its image after the translation  $(x, y) \rightarrow (x + 5, y + 3)$ .



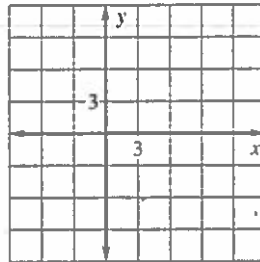
5. Figure  $ABCD$  has vertices  $A(-2, 3)$ ,  $B(1, 7)$ ,  $C(6, 2)$ , and  $D(-1, -2)$ . Sketch  $ABCD$  and draw its image after the translation  $(x, y) \rightarrow (x - 2, y - 4)$ .



6. Figure  $ABCD$  has vertices  $A(3, -1)$ ,  $B(6, -2)$ ,  $C(5, 3)$ , and  $D(0, 4)$ . Sketch  $ABCD$  and draw its image after the translation  $(x, y) \rightarrow (x - 3, y + 2)$ .



7. Figure  $ABCD$  has vertices  $A(-1, 3)$ ,  $B(4, -1)$ ,  $C(6, 4)$ , and  $D(1, 5)$ . Sketch  $ABCD$  and draw its image after the translation  $(x, y) \rightarrow (x + 4, y - 5)$ .



**LESSON**  
**4.8**

**Practice** *continued*  
For use with pages 271–279

**Use coordinate notation to describe the translation.**

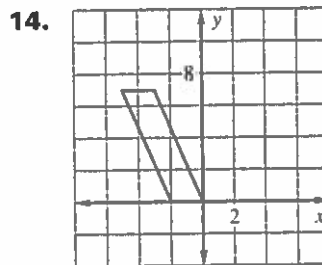
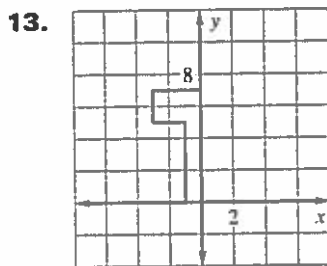
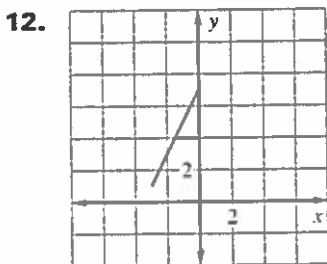
8. 3 units to the right, 5 units down

9. 7 units to the left, 2 units down

10. 4 units to the left, 6 units up

11. 1 unit to the right, 8 units up

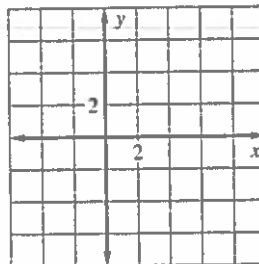
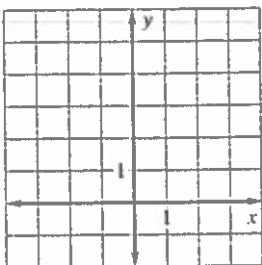
**Use a reflection in the  $y$ -axis to draw the other half of the figure.**



**Use the coordinates to graph  $\overline{AB}$  and  $\overline{CD}$ . Tell whether  $\overline{CD}$  is a rotation of  $\overline{AB}$  about the origin. If so, give the angle and direction of rotation.**

15.  $A(-2, 5), B(-2, 0), C(0, 1), D(3, 1)$

16.  $A(1, 4), B(4, 1), C(1, -4), D(4, -1)$



**LESSON**  
**4.8**
**Practice** *continued*  
 For use with pages 271–279

Complete the statement using the description of the translation. In the description, points  $(2, 0)$  and  $(3, 4)$  are two vertices of a triangle.

17. If  $(2, 0)$  translates to  $(4, 1)$ , then  $(3, 4)$  translates to   ?  .

18. If  $(2, 0)$  translates to  $(-2, -1)$ , then  $(3, 4)$  translates to   ?  .

A point on an image and the translation are given. Find the corresponding point on the original figure.

19. Point on image:  $(2, -4)$ ; translation:  $(x, y) \rightarrow (x - 4, y + 3)$

20. Point on image:  $(-5, -7)$ ; translation:  $(x, y) \rightarrow (x, -y)$

21. **Verifying Congruence** Verify that  $\triangle DEF$  is a congruence transformation of  $\triangle ABC$ . Explain your reasoning.

