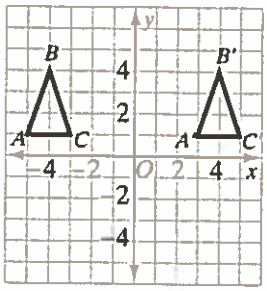
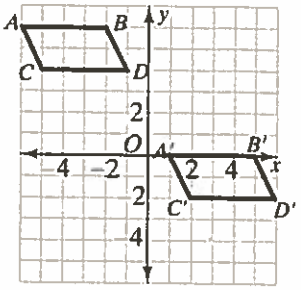
Name _____ Class _____ Date _____

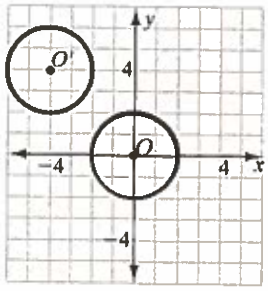
Practice 3-6

Translations

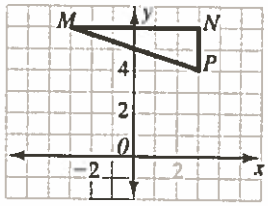
Use arrow notation to write a rule that describes the translation shown on each graph.

1. 

2. 

3. 

Copy $\triangle MNP$. Then graph the image after each translation. List the coordinates of each image's vertices.

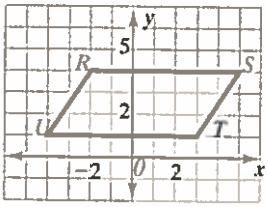


4. left 2 units, down 2 units

5. right 2 units, down 1 unit

6. left 2 units, up 3 units

Copy $\square RSTU$. Then graph the image after each translation. List the coordinates of each image's vertices.

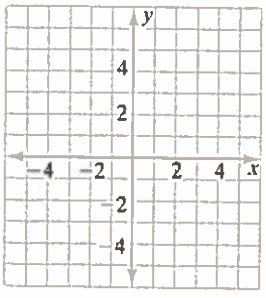


7. right 1 unit, down 2 units

8. left 3 units, up 0 units

9. right 2 units, up 4 units

10. A rectangle has its vertices at $M(1, 1)$, $N(6, 1)$, $O(6, 5)$, and $P(1, 5)$. The rectangle is translated to the left 4 units and down 3 units. What are the coordinates of M', N', O', and P'? Graph the rectangles $MNOP$ and $M'N'O'P'$.



11. Use arrow notation to write a rule that describes the translation of $M'N'O'P'$ to $MNOP$.

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3-6 • Guided Problem Solving

GPS Student Page 139, Exercises 16-18:

Match each rule with the correct translation.

A. $(x, y) \rightarrow (x - 6, y + 2)$ **I.** $P(4, -1) \rightarrow P'(3, -6)$

B. $(x, y) \rightarrow (x + 3, y)$ **II.** $Q(3, 0) \rightarrow Q'(-3, 2)$

C. $(x, y) \rightarrow (x - 1, y - 5)$ **III.** $R(-2, 4) \rightarrow R'(1, 4)$

Understand

1. What are you asked to do?

_____

Plan and Carry Out

2. Use the words *left* or *right* and *up* or *down* to describe the movement between each point and its image. Be sure to give the number of units each coordinate is translated.

   Point $P(4, -1)$ to $P'(3, -6)$ _____

   Point $Q(3, 0)$ to $Q'(-3, 2)$ _____

   Point $R(-2, 4)$ to $R'(1, 4)$ _____

3. Which movements are written as addition? _____

4. Which movements are written as subtraction? _____

5. Match each rule with its translation.

   A = _____ B = _____ C = _____

Check

6. How could you check your answers?

_____

_____

Solve Another Problem

7. Match each rule with the correct translation.

A. $(x, y) \rightarrow (x - 3, y - 4)$ **I.** $P(5, -2) \rightarrow P'(5, -5)$

B. $(x, y) \rightarrow (x + 4, y + 2)$ **II.** $Q(1, 6) \rightarrow Q'(5, 8)$

C. $(x, y) \rightarrow (x, y - 3)$ **III.** $R(-4, 2) \rightarrow R'(-7, -2)$

_____