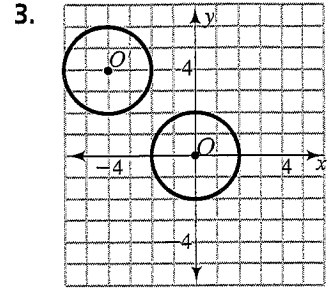
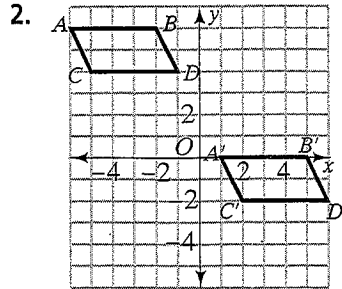
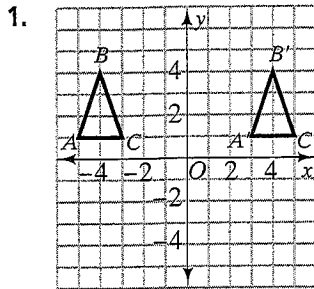


Practice 3-6

Translations

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

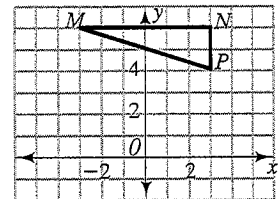


Copy $\triangle MNP$. Then graph the image after each translation. List the coordinates of each image's vertices.

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.

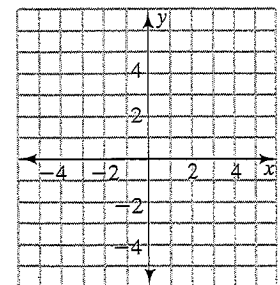
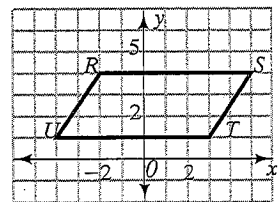
7. right 1 unit, down 2 units

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 $MNOP$.



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. $R(-4, 2) \rightarrow R'(-7, -2)$ |
