

4.2 Notetaking with Vocabulary (continued)

Core Concepts

Coordinate Rules for Reflections

- If (a, b) is reflected in the x -axis, then its image is the point $(a, -b)$.
- If (a, b) is reflected in the y -axis, then its image is the point $(-a, b)$.
- If (a, b) is reflected in the line $y = x$, then its image is the point (b, a) .
- If (a, b) is reflected in the line $y = -x$, then its image is the point $(-b, -a)$.

Notes:

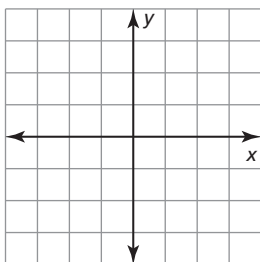
Postulate 4.2 Reflection Postulate

A reflection is a rigid motion.

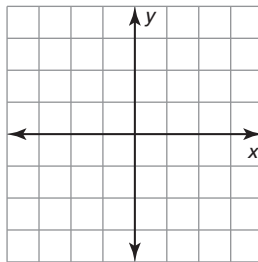
Extra Practice

In Exercises 1–4, graph $\triangle ABC$ and its image after a reflection in the given line.

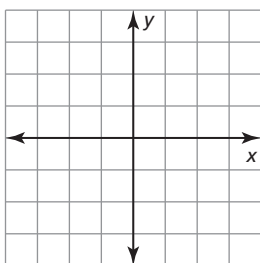
1. $A(-1, 5), B(-4, 4), C(-3, 1)$; y -axis



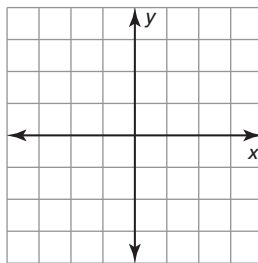
2. $A(0, 2), B(4, 5), C(5, 2)$; x -axis



3. $A(2, -1), B(-4, -2), C(-1, -3)$; $y = 1$



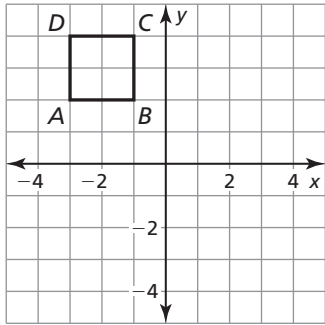
4. $A(-2, 3), B(-2, -2), C(0, -2)$; $x = -3$



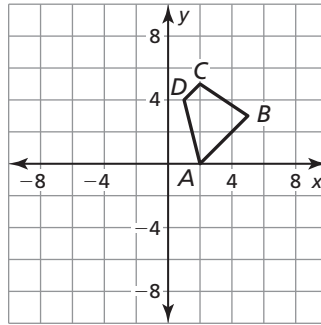
4.2 Notetaking with Vocabulary (continued)

In Exercises 5 and 6, graph the polygon's image after a reflection in the given line.

5. $y = x$



6. $y = -x$



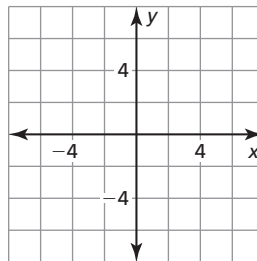
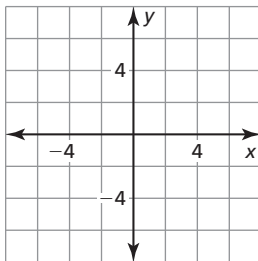
In Exercises 7 and 8, graph $\triangle JKL$ with vertices $J(3, 1)$, $K(4, 2)$, and $L(1, 3)$ and its image after the glide reflection.

7. Translation: $(x, y) \rightarrow (x - 6, y - 1)$

8. Translation: $(x, y) \rightarrow (x, y - 4)$

Reflection: in the line $y = -x$

Reflection: in the line $x = 1$



In Exercises 9–12, identify the line symmetry (if any) of the word.

9. MOON

10. WOW

11. KID

12. DOCK

13. You are placing a power strip along wall w that connects to two computers. Where should you place the power strip to minimize the length of the connecting cables?

