



For a complete list of the postulates and theorems in this chapter, see p. PS12.

Vocabulary

center of dilation

composition of transformations

enlargement

frieze pattern

glide reflection

glide reflection symmetry

isometry

line symmetry

line of symmetry

reduction

regular tessellation

rotational symmetry

semiregular tessellation

symmetry

tessellation

translation symmetry

Complete the sentences below with vocabulary words from the list above.

1. A(n) ? is a pattern formed by congruent regular polygons.
2. A pattern that has translation symmetry along a line is called a(n) ?.
3. A transformation that does not change the size or shape of a figure is a(n) ?.
4. One transformation followed by another is called a(n) ?.

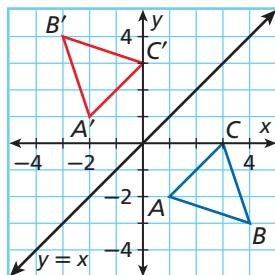
9-1 Reflections

EXAMPLE

- Reflect the figure with the given vertices across the given line.

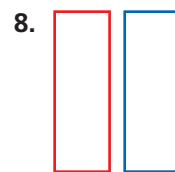
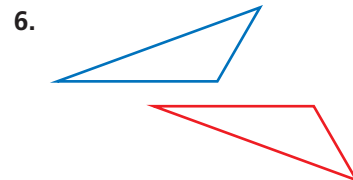
$$A(1, -2), B(4, -3), C(3, 0); y = x$$

To reflect across the line $y = x$, interchange the x - and y -coordinates of each point. The images of the vertices are $A'(-2, 1)$, $B'(-3, 4)$, and $C'(0, 3)$.



EXERCISES

Tell whether each transformation appears to be a reflection.



Reflect the figure with the given vertices across the given line.

9. $E(-3, 2), F(0, 2), G(-2, 5)$; x -axis
10. $J(2, -1), K(4, -2), L(4, -3), M(2, -3)$; y -axis
11. $P(2, -2), Q(4, -2), R(3, -4)$; $y = x$
12. $A(2, 2), B(-2, 2), C(-1, 4)$; $y = x$