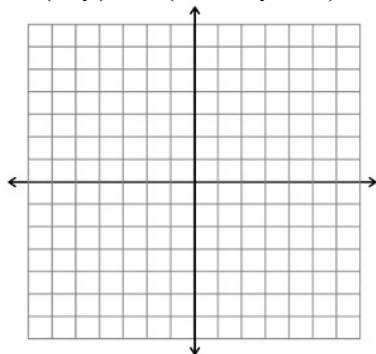


Chapter 4 Study Guide

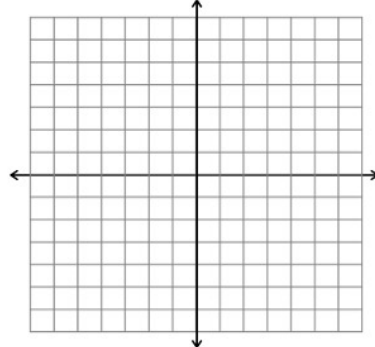
4.1 Translations

Graph $\triangle ABC$ with vertices $A(1, 2)$, $B(3, -1)$, and $C(3, 4)$ and its image after the translation.

1) $(x, y) \rightarrow (x + 5, y - 3)$



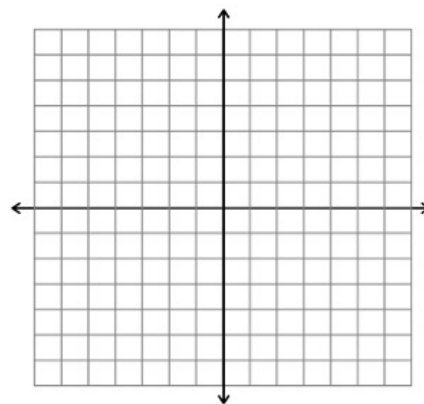
2) $\langle 0, 2 \rangle$



Graph $\triangle ABC$ and its image after the composition.

3) Translation: $(x, y) \rightarrow (x + 4, y + 1)$

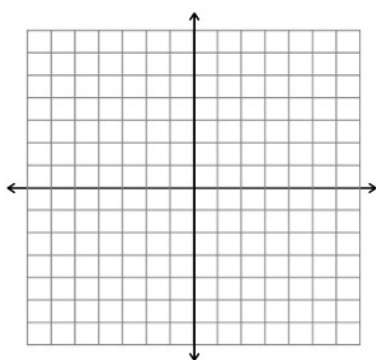
Translation: $(x, y) \rightarrow (x + 2, y - 5)$



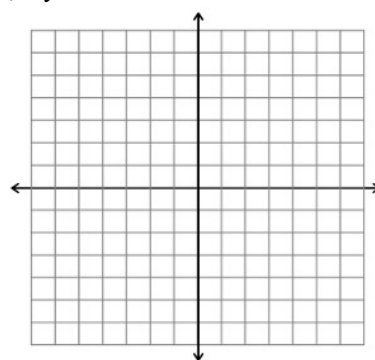
4.2 Reflections

Graph $\triangle ABC$ with vertices $A(1, 2)$, $B(3, -1)$, and $C(3, 4)$ and its image after the reflection over the given line.

1) in the x -axis



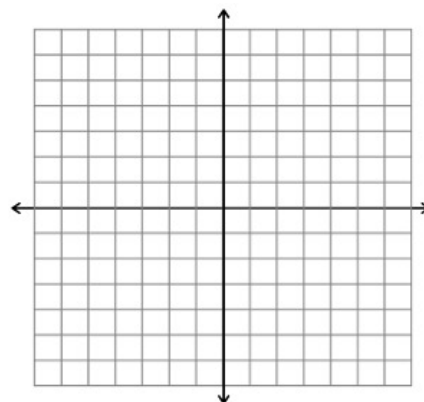
2) $y = -x$



Graph $\triangle ABC$ and its image after the composition.

3. Translation: $(x, y) \rightarrow (x + 3, y)$

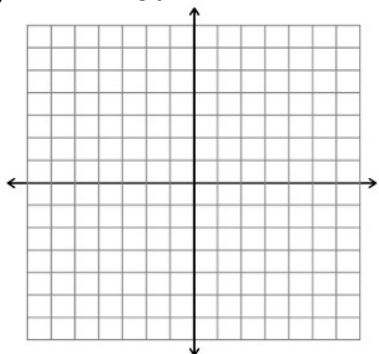
Reflection: in y -axis



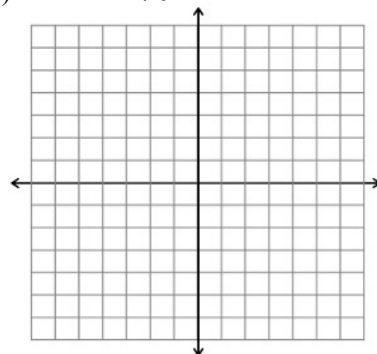
4.3 Rotations

Graph $\triangle ABC$ with vertices $A(1, 2)$, $B(3, -1)$, and $C(3, 4)$ and its image after the rotation.

1) rotation 180°



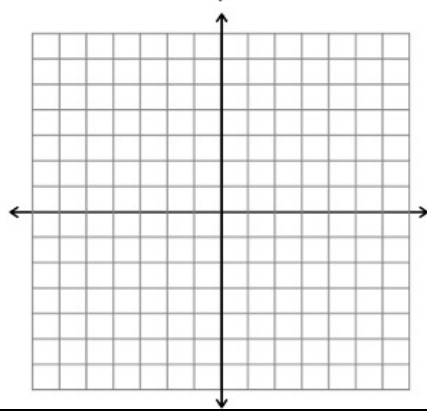
2) rotation 270°



Graph $\triangle ABC$ and its image after the composition.

3) Rotate: 90° about the origin

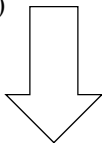
Translation: $(x, y) \rightarrow (x - 1, y + 3)$



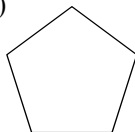
4.2 & 4.3 Symmetry

Determine whether the object has reflectional symmetry and whether it has rotational symmetry. Identify all lines of symmetry and angles of rotation.

1)



2)



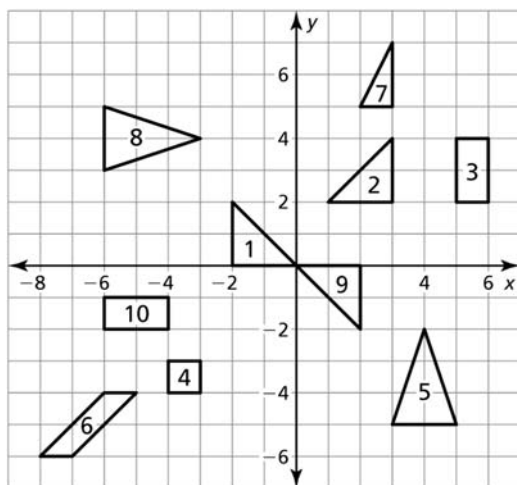
3)



4.4 Congruence & Transformations

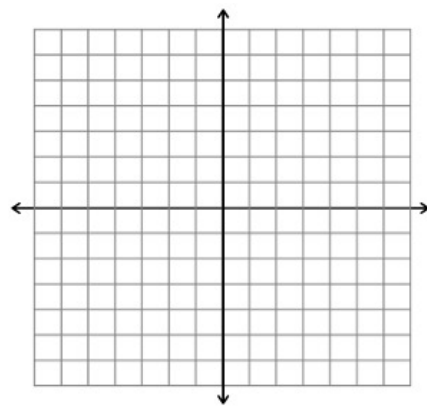
1) Identify all congruent figures in the coordinate plane.

Use transformations to explain your reasoning.



2) Describe a congruence transformation that maps $\triangle ABC$ to $\triangle XYZ$.

$A(5, 2)$, $B(2, 2)$, $C(2, 7)$ and
 $X(-4, -5)$, $Y(-1, -5)$, $Z(-1, 0)$



3) If you perform two reflections over intersecting lines that are 36° apart, what is the angle of rotation for the figure?