

Name: _____

Lesson Guide

This lesson guide accompanies the following video lesson:

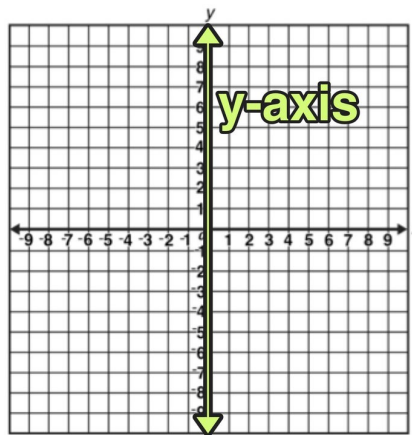
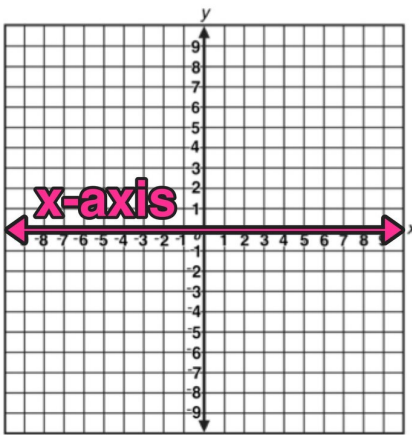


Geometry Transformations: Reflections

In geometry, a reflection is a _____.

A reflection is NOT a change in _____ or _____.

► Common Lines of Reflection



$$x = k$$

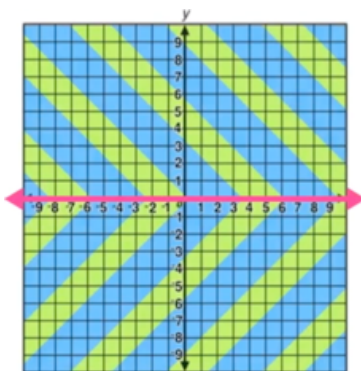
$$y = k$$

$$y = x$$

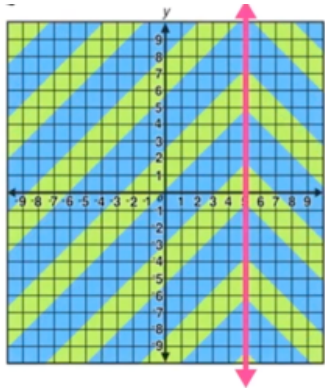
$$y = -x$$

► Notation:

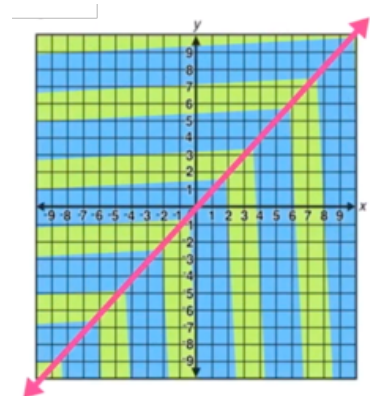
When reflecting a point, line, or figure about a given **line of symmetry**, we use the notation: r_a where **a** equals the line of symmetry. For example:



$$r_{x-axis}$$



$$r_{x=5}$$



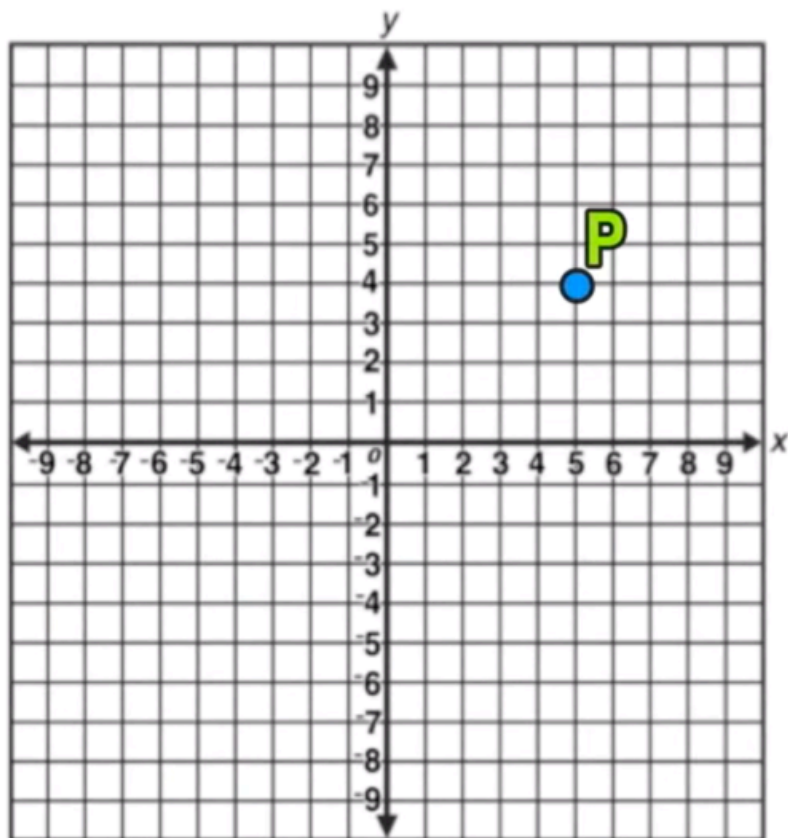
$$r_{y=x}$$

Reflection Over the X-Axis

Example 01:

Construct the image of P' after the following : r_{x-axis}

For this example, the line of symmetry is _____.



P' (_____, _____)

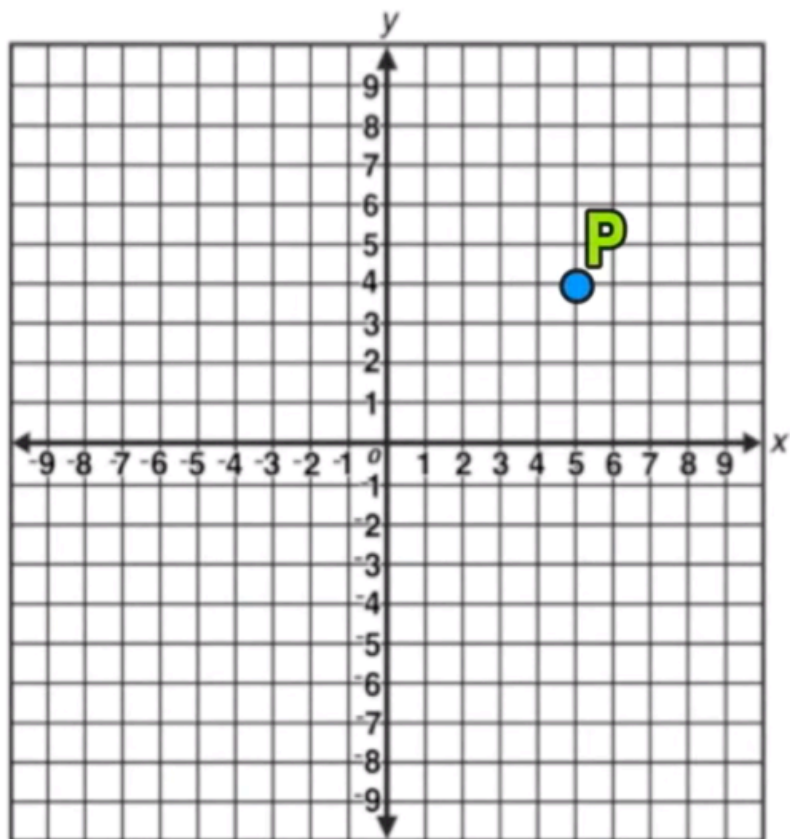
R Reflection Rule
x-axis
 $P(x, y) \rightarrow P'(\square, \square)$

Reflection Over the Y-Axis

Example 01:

Construct the image of P' after the following : r_{y-axis}

For this example, the line of symmetry is _____.



P' (_____, _____)

r Reflection Rule
y-axis

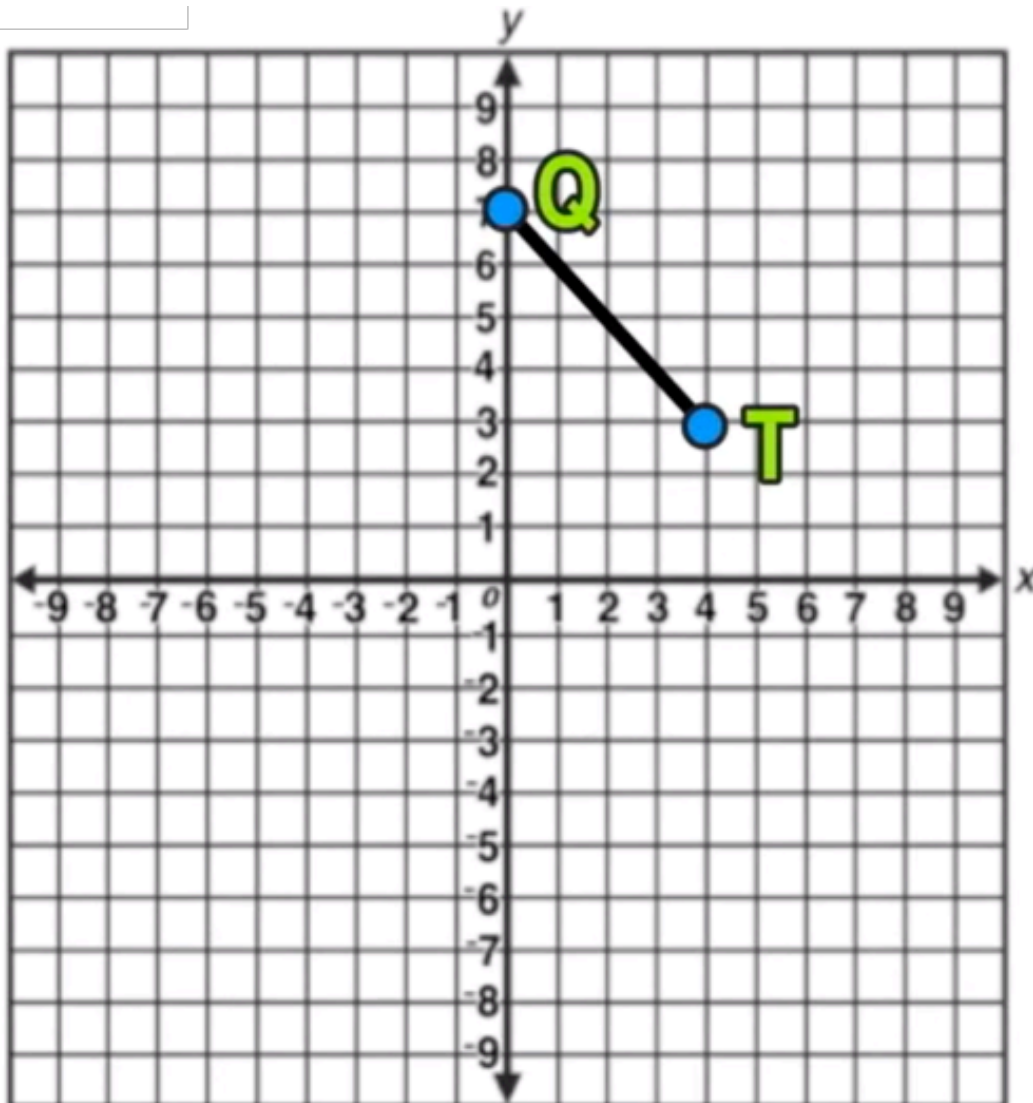
P(x, y) → P'(,)

Reflection Over the $x=k$

Example 01:

Construct the following transformation on $\overline{QT} : r_{x=-2}$

For this example, the line of symmetry is _____.



Q' (_____, _____)

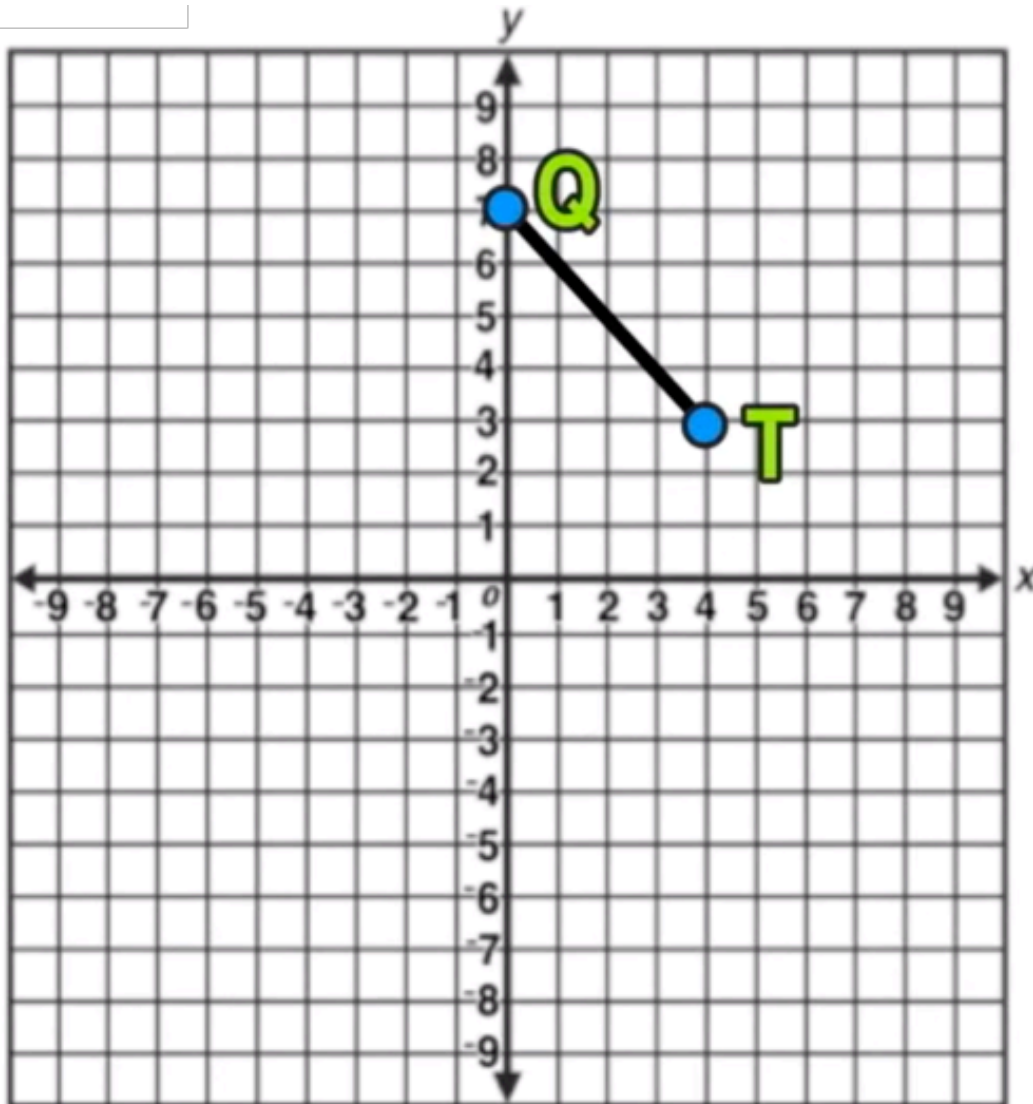
T' (_____, _____)

Reflection Over the $y=k$

Example 01:

Construct the following transformation on $\overline{QT} : r_{y=3}$

For this example, the line of symmetry is _____.



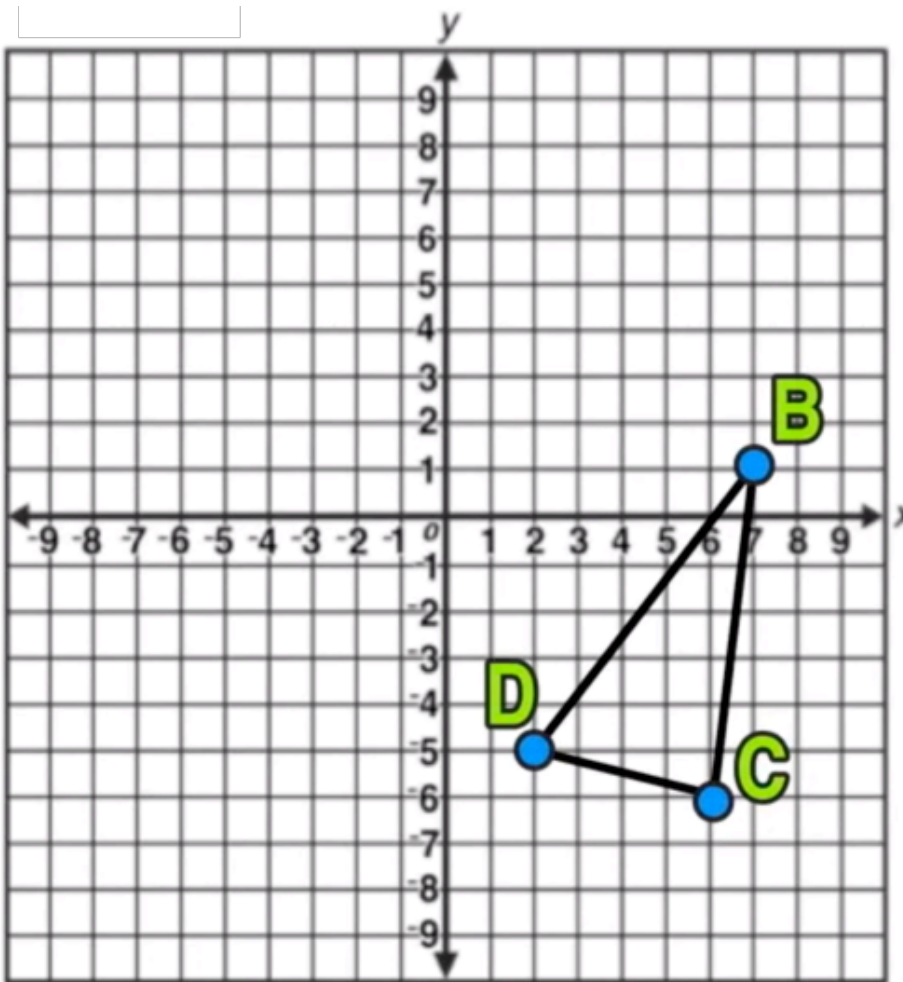
Q' (_____, _____)

T' (_____, _____)

Reflection Over the $y=x$

Example 01:

Construct the image of $\triangle B'C'D'$ after the following: $r_{y=x}$



B' (_____, _____)
C' (_____, _____)
D' (_____, _____)

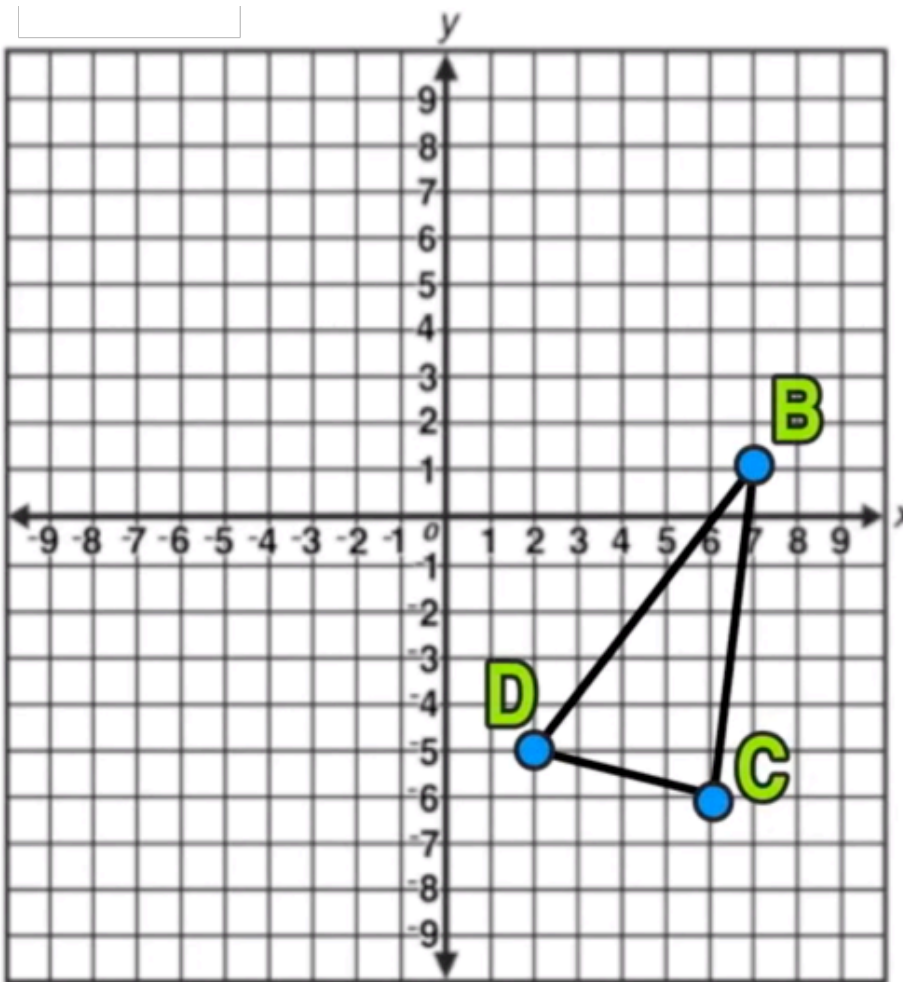
$r_{y=x}$ Reflection Rule

P(**x**, **y**) \rightarrow **P'**(,)

Reflection Over the $y=-x$

Example 01:

Construct the image of $\triangle B'C'D'$ after the following: $r_{y=-x}$



B' (_____ , _____)
C' (_____ , _____)
D' (_____ , _____)

$r_{y=-x}$ Reflection Rule

P(**x**, **y**) \rightarrow **P'**(,)