1.3 Representing and Describing Transformations

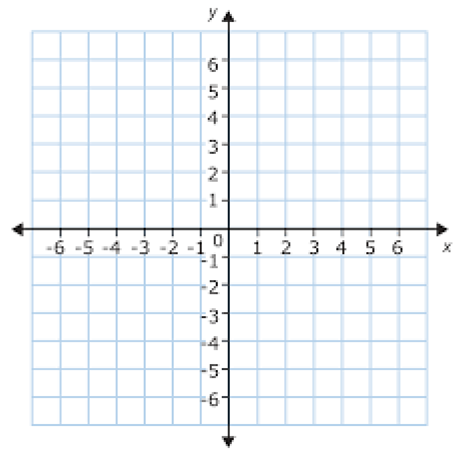
Transformation: is a function that changes the _____________, __________________, and/or _________ of a figure

Preimage:

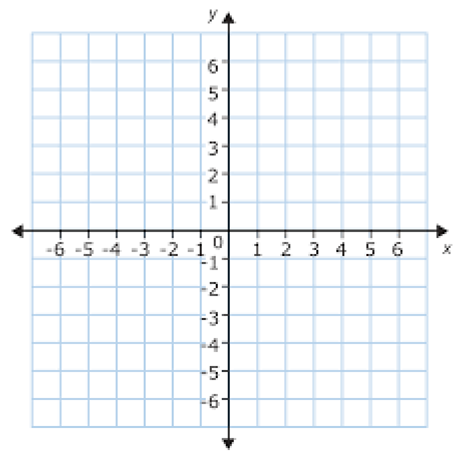
Image:

Triangle ABC: A(0,0) B(2,3) C(3,1)

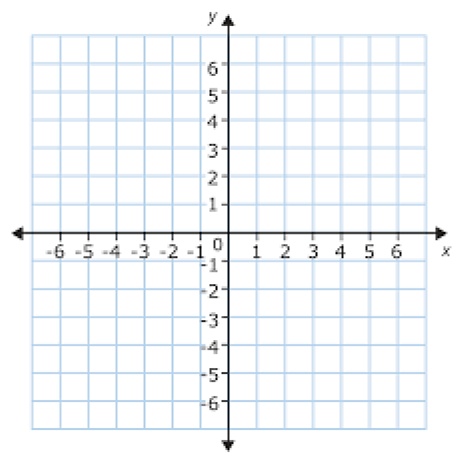
A) (x , y) → (x – 4 , y – 3)



B) (x , y) → (-x , y)

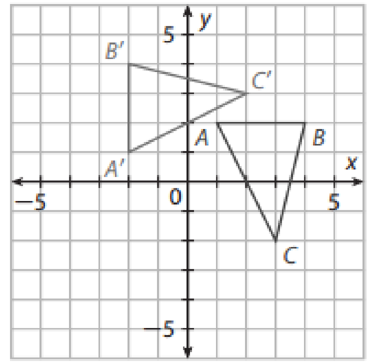


C) (x , y) → (2x , y)



Rigid Motion: (or ____________) is a transformation that changes the ___________ of a figure without changing the ___________ or __________ of the figure

Example 1 **Use coordinate notation to write the rule that maps each preimage to its image. Then identify the transformation and confirm that it preserves length and angle measure.**



Ⓐ

Preimage		Image
$A(1, 2)$	→	$A'(-2, 1)$
$B(4, 2)$	→	$B'(-2, 4)$
$C(3, -2)$	→	$C'(2, 3)$

Look for a pattern in the coordinates.

The x-coordinate of each image point is the opposite of the y-coordinate of its preimage.

The y-coordinate of each image point equals the x-coordinate of its preimage.

Try Your Turn #5 and 6

Example 2 **Use coordinate notation to write the rule that maps each preimage to its image. Then confirm that the transformation is not a rigid motion.**

Ⓐ $\triangle JKL$ maps to triangle $\triangle J'K'L'$.

Preimage		Image
$J(4, 1)$	→	$J'(4, 3)$
$K(-2, -1)$	→	$K'(-2, -3)$
$L(0, -3)$	→	$L'(0, -9)$

Try Your Turn # 8 and 9