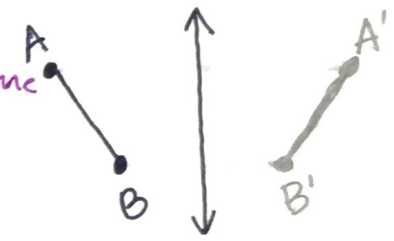
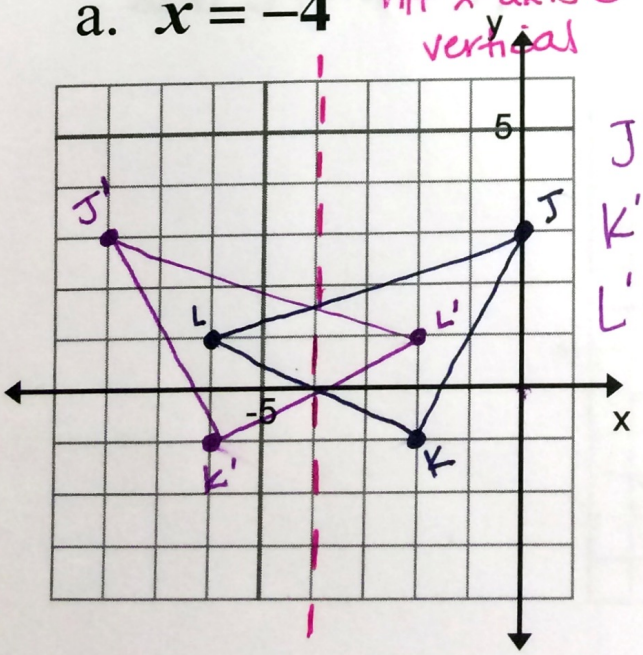
Sec1	Notes 8-1 Reflections & Symmetry	Unit 8

Vocabulary	Picture
Image: the object after we do something A′ → A prime **Pre-Image:** the object we start with A or the before object	
Reflection: flip preserves congruence the image & pre-image are same **Line of Reflection:** the line that we flip across	
Translation: slide	

Ex. 1: $\triangle JKL$ has vertices $J(0, 3)$, $K(-2, -1)$, and $L(-6, 1)$. Graph $\triangle JKL$ and its image in the given line and state the new vertices.

$x = \#$ vertical

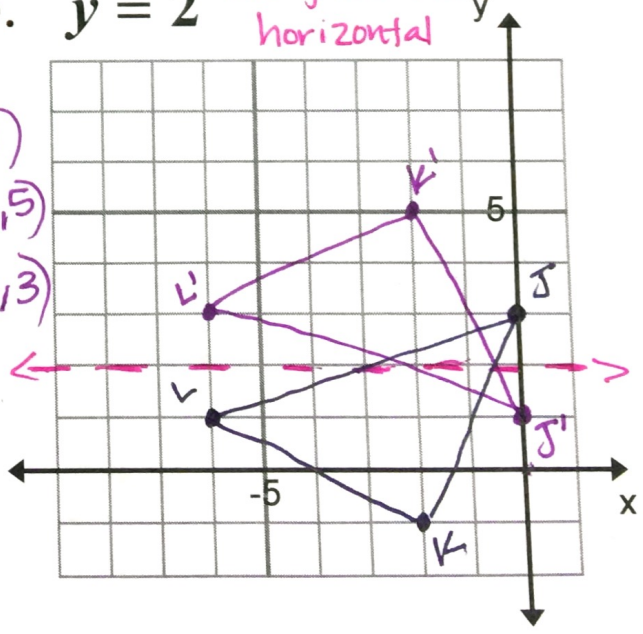
a. $x = -4$ hit x-axis @ -4 vertical



$J'(-8,3)$ $J(0,1)$
$K'(-6,-1)$ $K'(-2,5)$
$L'(-2,1)$ $L'(-6,3)$

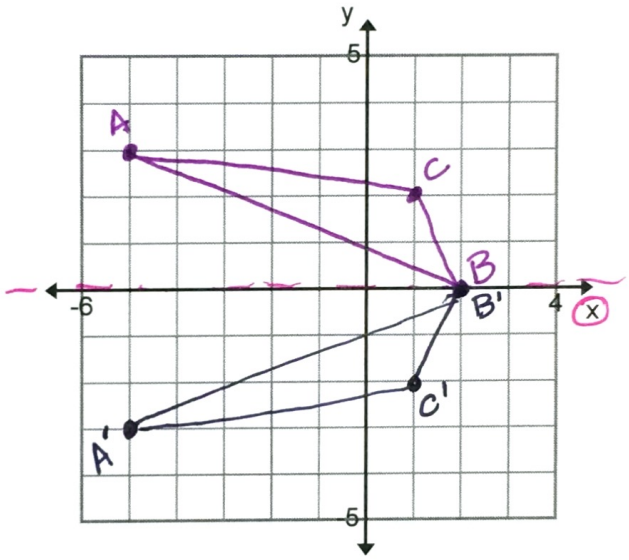
$y = \#$ horizontal

b. $y = 2$ hit y-axis @ 2 horizontal

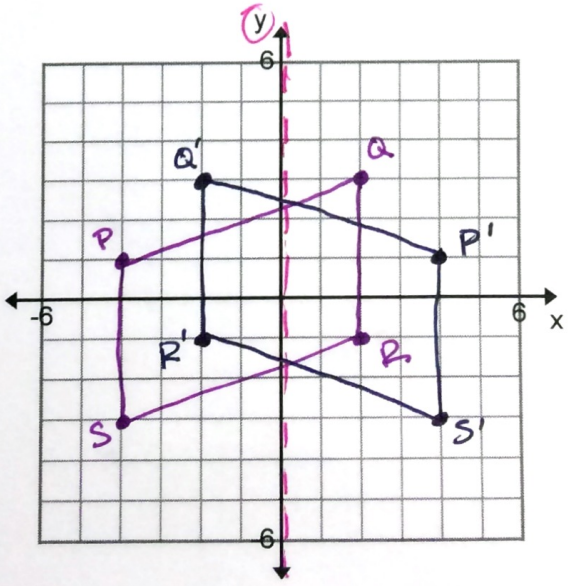


Ex. 2: Graph each figure and its image under the given reflection then state the new vertices.

a. $\triangle ABC$ with vertices $A(-5, 3)$, $B(2, 0)$, $C(1, 2)$ in the x-axis.



b. $PQRS$ with vertices $P(-4,1)$, $Q(2,3)$, $R(2,-1)$, and $S(-4,-3)$ in the y- axis.

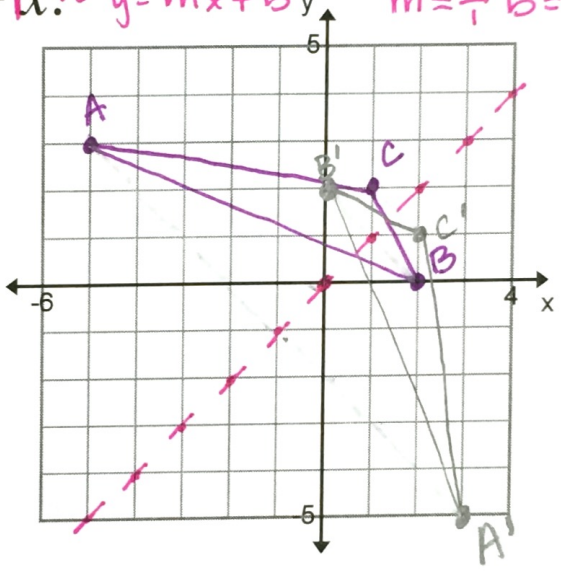


Ex. 3: Graph each figure and its image under the given reflection then state the new vertices.

a. $\triangle ABC$ with vertices $A(-5, 3)$, $B(2, 0)$, $C(1, 2)$ over the line $y = x$

y=mx+b m=1/1 b=0

A'(3, -5)
B'(0, 2)
C'(2, 1)

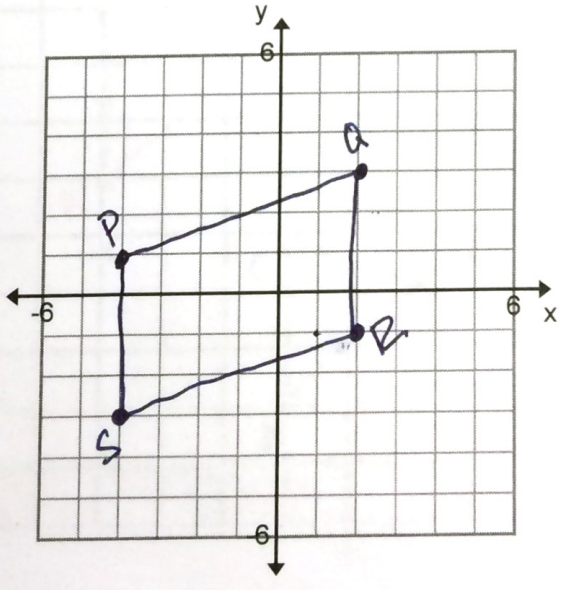


y=x flip the x & y's

b. $PQRS$ with vertices $P(-4,1)$, $Q(2,3)$, $R(2,-1)$, and $S(-4,-3)$ over the line y = x.

y=x

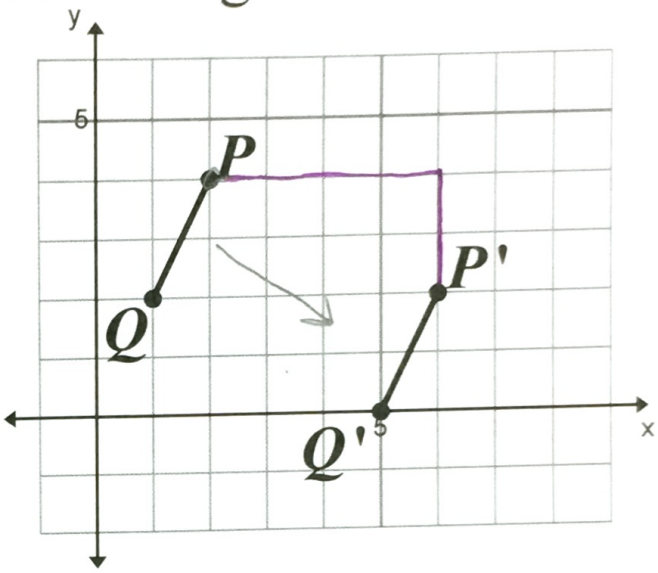
P'(1, -4)
Q'(3, 2)
R'(-1, 2)
S'(-3, -4)



y = -x

flip the x & y then change the sign on both

Ex. 4: Describe the translation using coordinate notation.



Pre-image → Image

$(x, y) \rightarrow (x+4, y-2)$

$Q(1,2) \rightarrow Q'(1+4, 2-2)$

$Q'(5, 0)$

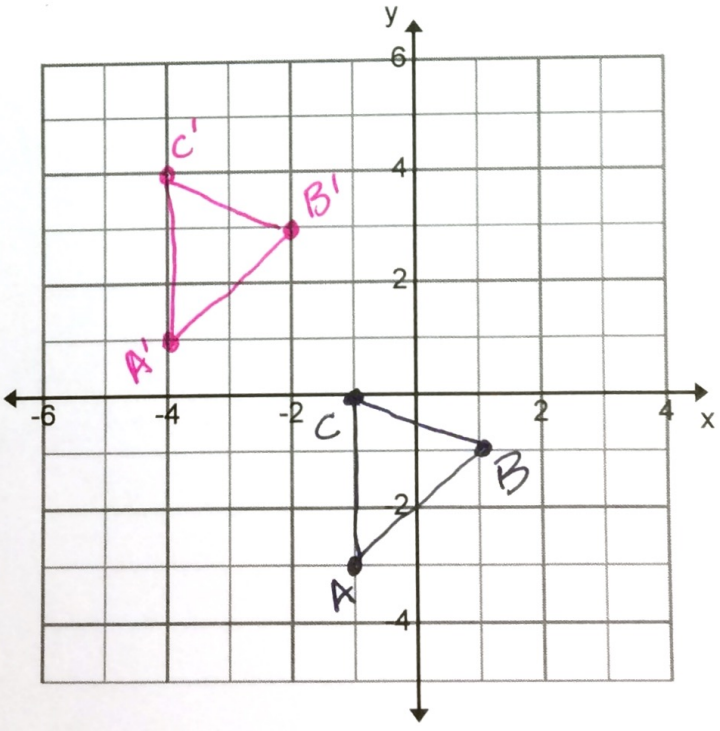
Ex. 5: A triangle with vertices $A(-1,-3)$, $B(1,-1)$, $C(-1,0)$. is shown. Sketch the image of the triangle after the translation $(x, y) \rightarrow (x-3,\ y+4)$.

$(x-3, y+4)$

$A'(-4, 1)$

$B'(-2, 3)$

$C'(-4, 4)$



Ex. 6: Consider the translation that is defined by the coordinate notation $(x, y) \rightarrow (x-5,\ y+8)$

Pre Image Image

a. What is the image of $X(4,2)$? $X'(-1, 10)$

b. What is the pre-image of $Y'(-3,-4)$?

$y(2, -12)$

c. What is the image of $Z(0,2)$?

$Z'(-5, 10)$