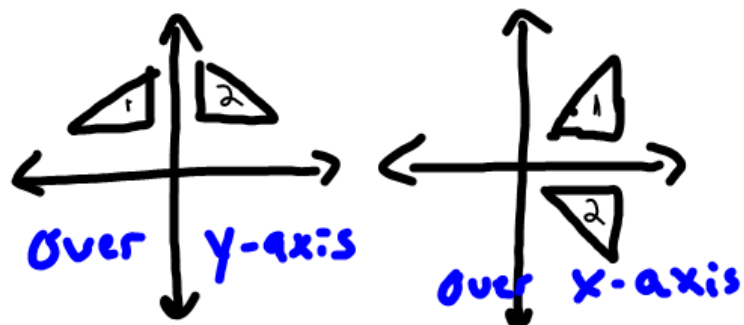
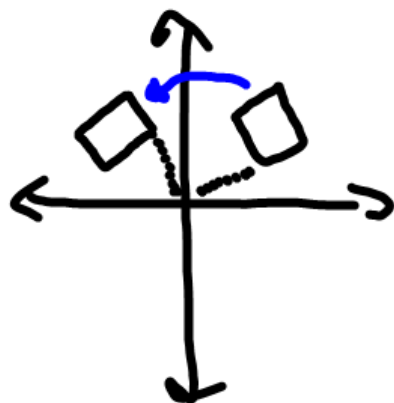


4.8 Congruent Transformations

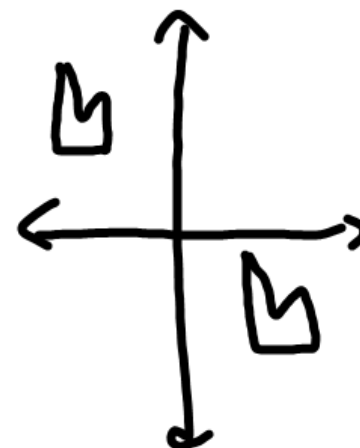
Moving shapes to another place



Reflection



Rotation
(around origin)



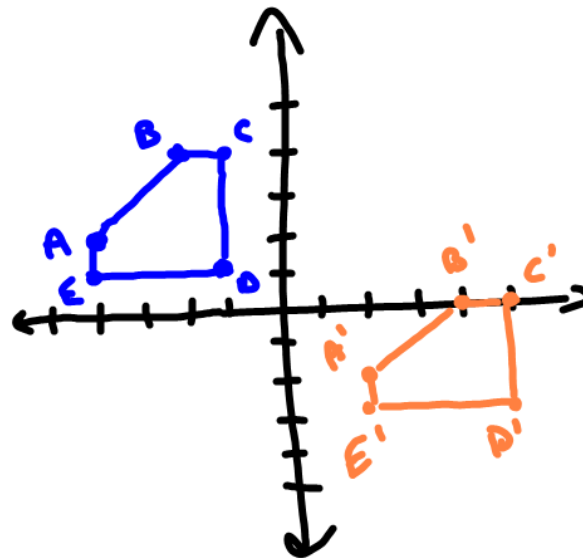
Translation
(move up/down,
left/right or
both)

* All shapes stay same size *

Translate Me!

$$(x, y) \rightarrow (x + _, y + _)$$

<u>ABCDE</u>	<u>A'B'C'D'E'</u>	
A (-4, 2)	A' (2, -2)	are +6 to the x
B (-2, 4)	B' (4, 0)	
C (-1, 4)	C' (5, 0)	-4 from all y's
D (-1, 1)	D' (5, -3)	
E (-4, 1)	E' (2, -3)	



$$(x, y) \rightarrow (x + 6, y - 4)$$

Reflections !

ABC	$A'B'C'$	$A''B''C''$
$A(-4,1)$	$A'(-4,-1)$	$A''(4,1)$
$B(-1,5)$	$B'(-1,-5)$	$B''(1,5)$
$C(-1,1)$	$C'(-1,-1)$	$C''(1,1)$

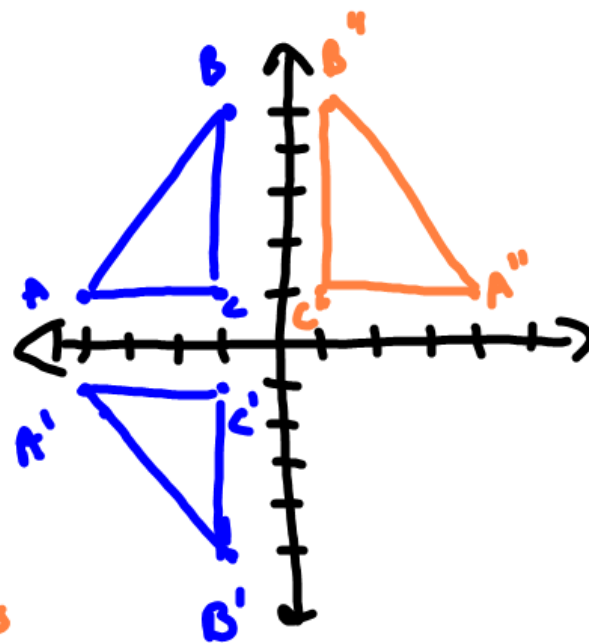
Reflect
over x-axis

Reflect
over y-axis

$$(x, y) \rightarrow (x, -y)$$

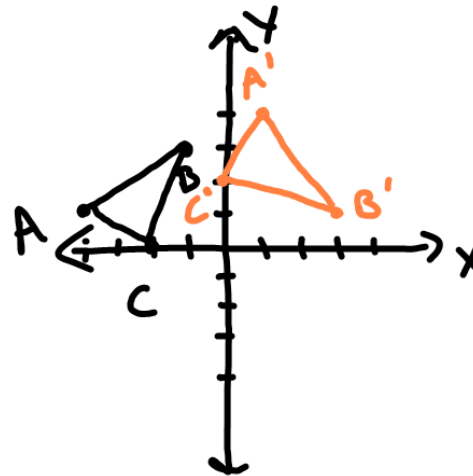
\uparrow
 $-1y$

$$(x, y) \rightarrow (-x, y)$$



Rotations!

ABC	A'B'C'
A(-4,1)	A'(1,4)
B(-1,3)	B'(3,1)
C(-2,0)	C'(0,2)
D(1,5)	D'(-5,1)



$$(x, y) \rightarrow (y, -x)$$

Write the transformation for.

A(1,2)	A'(6,-1)
B(4,-3)	B'(9,-6)
C(5,5)	C'(10,2)
D(4,7)	D'(9,4)

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