Acc Geometry **Transformations:**

Transformations Follow Up CCSS - Reflections over intersecting lines.

Key

1. Composite: $(r_{y=x} \circ r_{y=0})(\Delta ABC)$

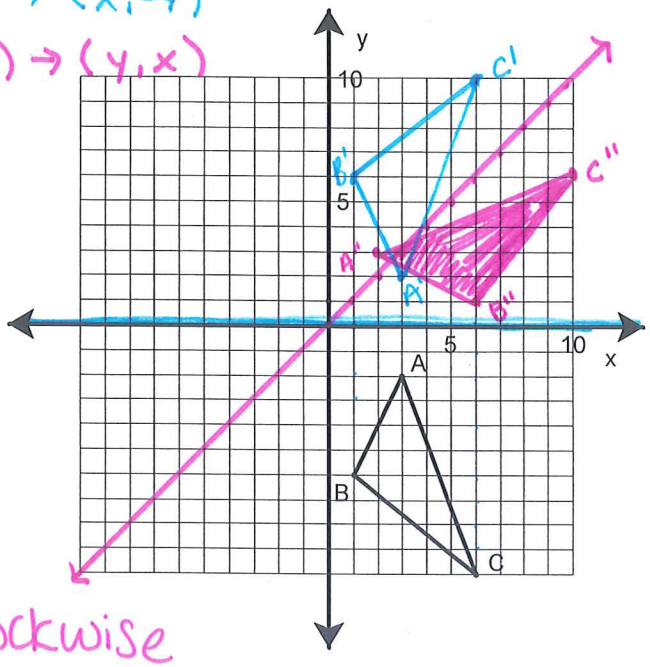
I Equation of the first line of reflection: y = 0 $(x,y) \rightarrow (x,-y)$

II Equation of the second line of reflection: y = x $(x,y) \rightarrow (y,x)$

A	(3,-2)	B	(1,-6)	C	(6,-10)
A'	(3,2)	B'	(1,6)	C'	(6,10)
A"	(2,3)	B"	(6,1)	C"	(10,6)

$(x,-y)$

(y,x)



What transformation occurred from this composite? In other words, what transformation would transform ΔABC to $\Delta A"B"C"$ without using any reflections?

Rotation 90° counterclockwise about the origin

2 Composite: $r_{y=0}(r_{y=x}(\Delta ABC))$

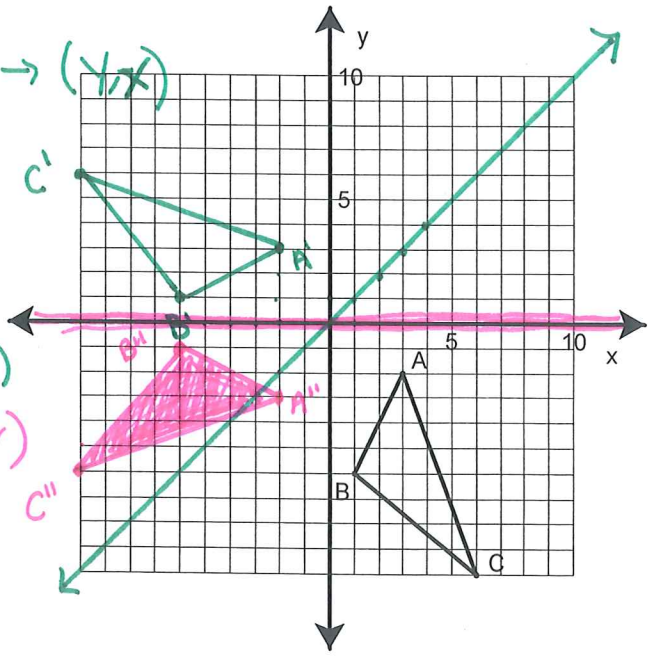
I Equation of the first line of reflection: y = x $(x,y) \rightarrow (y,x)$

II Equation of the second line of reflection: y = 0

A	(3,-2)	B	(1,-6)	C	(6,-10)
A'	(-2,3)	B'	(-6,1)	C'	(-10,6)
A"	(-2,-3)	B"	(-6,-1)	C"	(-10,-6)

(y,x)

$(x,-y)$

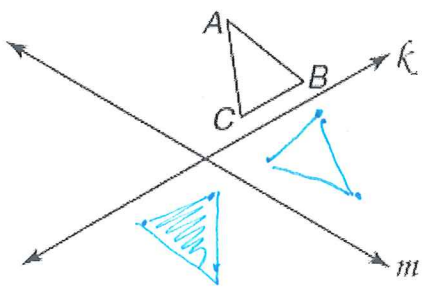


What transformation occurred from this composite? In other words, what transformation would transform ΔABC to $\Delta A"B"C"$ without using any reflections?

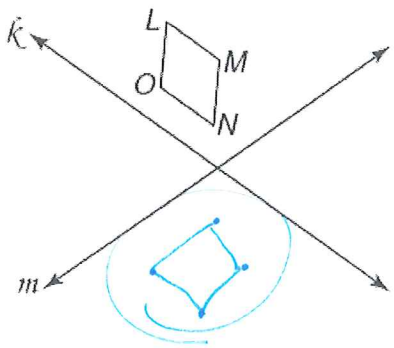
Rotation 90° clockwise about the origin.

Use a composition of reflections to find the rotation image with respect to lines k and m. Then find the angle of rotation for each image.

3.

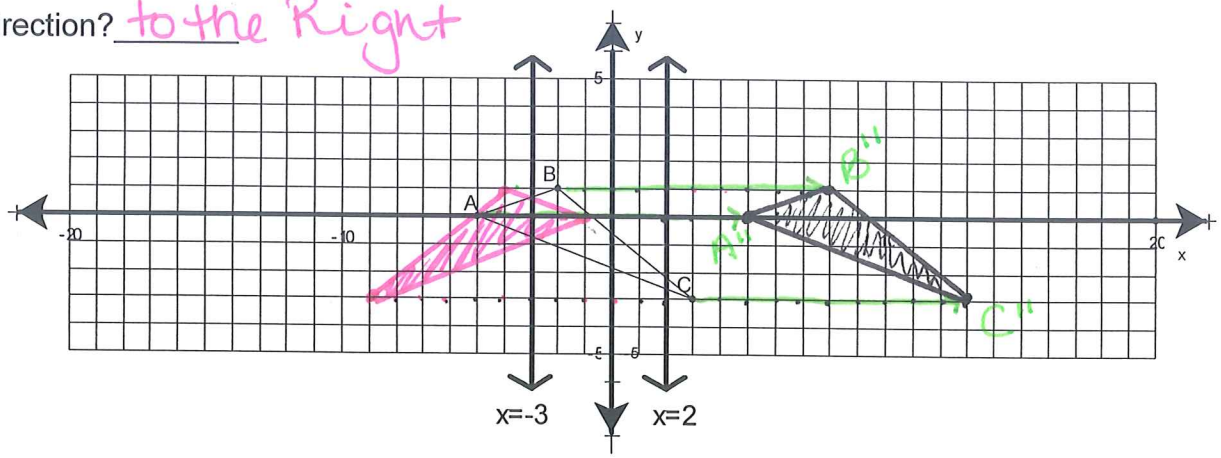


4.



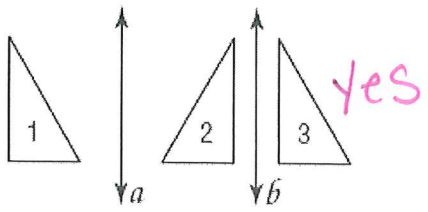
Transformations Follow Up CCSS - Reflections over parallel lines.

5. Using a colored pencil, reflect ΔABC over the x = -3 line and label the points A', B', and C' respectively. Draw ΔA'B'C'.
6. Using a black pencil, reflect ΔA'B'C' over the x = 2 line and label the points A", B", and C" respectively. Draw Δ A"B"C".
7. Draw arrows from A to A", from B to B", from C to C" using a different color.
8. What transformation occurred that would map ΔABC onto Δ A"B"C"? Translation
9. How far did ΔABC move to become Δ A"B"C"? 10units in what direction? to the Right



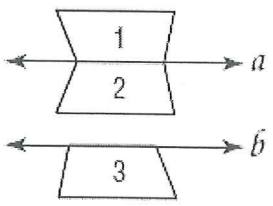
In each figure, a//b. Determine whether Figure 3 is a translation image of Figure 1. Write yes or no and then explain your answer.

10.



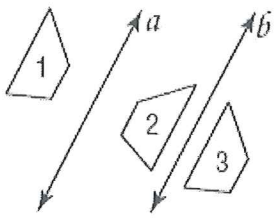
yes

11.



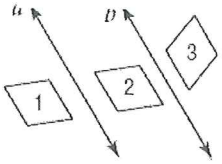
NO

12.



yes

13.



NO