

Rotation Activity

Key

NOTE: Each tick mark is equivalent to one unit.

1) Draw $\triangle ABC$ on both the grids provided.
 $A(2, 7), B(2, 1), C(6, 1)$

2) Cut out the grid that does NOT have the labeled axis'.

3) Poke a tiny hole through the origin of the coordinate graph that you just cut out.

4) Put this coordinate graph directly on top of the one that has the x-axis and y-axis labeled.

5) Rotate the graph 90° counter clockwise.
 Your new triangle, $\triangle A'B'C'$, should be in Quadrant II. Identify the coordinates of
 $A'(-7, 2), B'(-1, 2), C'(-1, 6)$

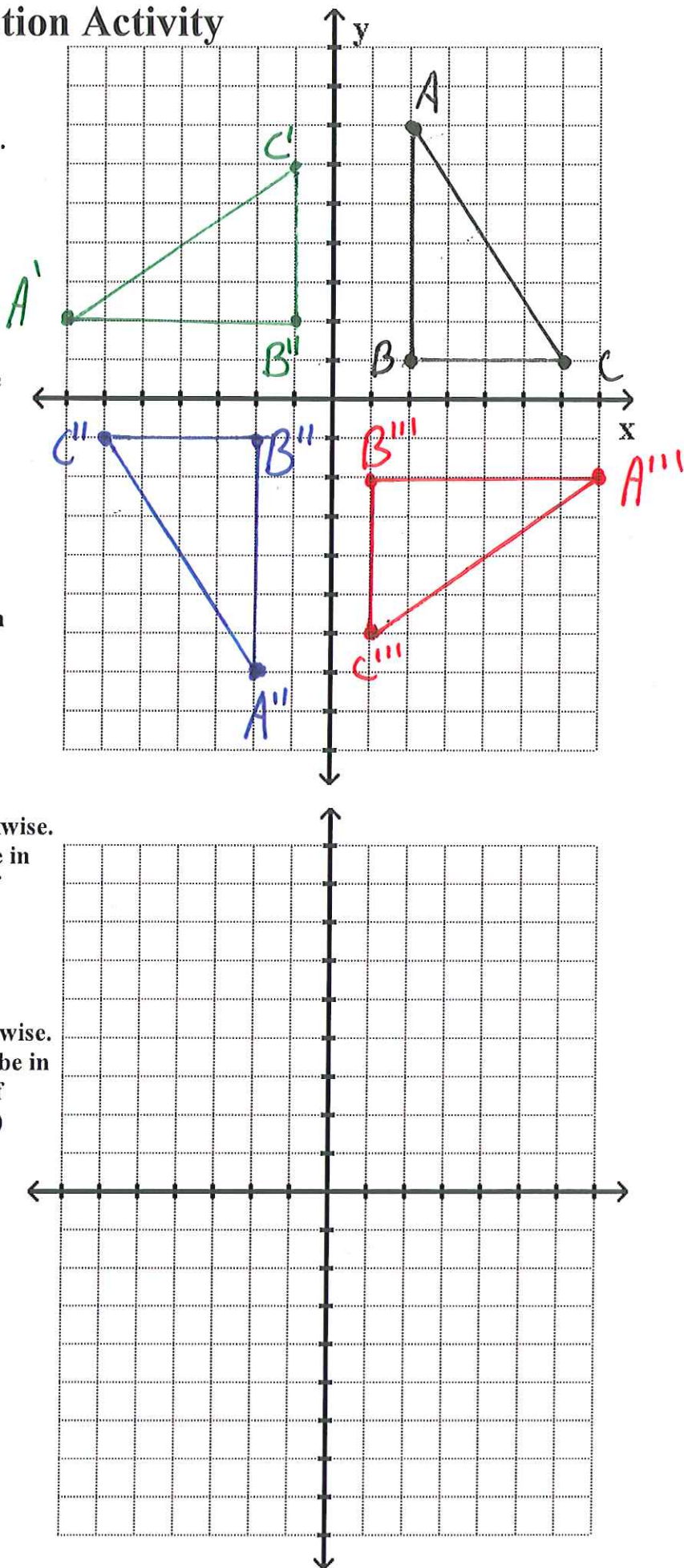
6) Draw $\triangle A'B'C'$ on the top grid.

7) Using $\triangle ABC$, rotate it 180° counter clockwise.
 Your new triangle, $\triangle A''B''C''$, should be in Quadrant III. Identify the coordinates of
 $A''(-2, -7), B''(-2, -1), C''(-6, -1)$

8) Draw $\triangle A''B''C''$ on the top grid.

9) Using $\triangle ABC$, rotate it 270° counter clockwise.
 Your new triangle, $\triangle A'''B'''C'''$, should be in Quadrant IV. Identify the coordinates of
 $A'''(7, -2), B'''(1, -2), C'''(1, -6)$

10) Draw $\triangle A'''B'''C'''$ on the top grid.



11. Record the results from the activity into the table below.

	Pre-Image	Image	Rule
90° rotation CC	A(2, 7) B(2, 1) C(6, 1)	A'(-7, 2) B'(-1, 2) C'(-1, 6)	$(x, y) \rightarrow (-y, x)$
180° rotation	A(2, 7) B(2, 1) C(6, 1)	A''(-2, -7) B''(-2, -1) C''(-6, -1)	$(x, y) \rightarrow (-x, -y)$
270° rotation CC	A(2, 7) B(2, 1) C(6, 1)	A'''(7, -2) B'''(1, -2) C'''(1, -6)	$(x, y) \rightarrow (y, -x)$

Class Rules:

90° rotation CC

Words: Switch the coordinates from the Pre-image.
AND switch the sign of the y-coordinate.

Using Math Symbols:

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

180° rotation

Words: Switch the signs of both coordinates of the Pre-image.

Using Math Symbols:

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

270° rotation CC

Words: Switch the coordinates from the Pre-image.
AND switch the sign of the x-coordinate.

Using Math Symbols:

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