

Name: \_\_\_\_\_

Use the tables below to record the coordinates of the vertices of your triangle before and after performing a transformation. Try doing several transformations to see if you can find a pattern among the coordinates. Then write the rule.

**Translation:** If you decide to do multiple translation trials always start from the same initial location, write down the translation you plan to do, and then record the new coordinates.

Vertices →	A	B	C
Initial Location			
Translation 1 3 right, 2 up			
Translation 2 _____, _____			
Translation 3 _____, _____			
Rule			

**Rotation:** If you decide to do multiple rotation trials you will need to select a new initial location for each trial. Record the coordinates for the initial location for each trial and the coordinates of the final location after the rotation. Be sure to rotate the same way, clockwise, for each trial.

Vertices →	A	B	C
Initial Location 1			
90° Clockwise			
Initial Location 2			
90° Clockwise			
Initial Location 3			
90° Clockwise			
Rule			

**Reflection:** If you decide to do multiple reflections you will need to select a new initial location for each trial. Record the coordinates for initial location for each trial and the coordinates of the final location after the rotation.

Vertices →	A	B	C
Initial Location 1			
Reflection over $y$ -axis			
Initial Location 2			
Reflection over $y$ -axis			
Initial Location 3			
Reflection over $y$ -axis			
Rule			

Challenge Questions:

What do you think would happen to the coordinates if your **reflection** were over the  $x$ -axis?

Would your **rotation** rule work if your initial location were in any other quadrant than the first quadrant? Why or why not?

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**Summary Questions** Consider all of the transformations and summarize what you have learned during this activity.

Describe what changed for  $\triangle ABC$  during this activity.

Describe what stayed the same for  $\triangle ABC$  during this activity.

Describe what you learned from this activity.