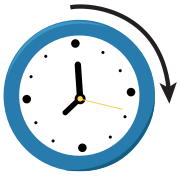
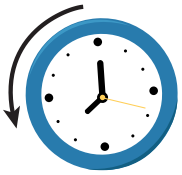
ROTATIONS: GUIDED NOTES

Vocabulary

- _____: a type of transformation where a preimage is spun by a certain angle measure around a fixed point that is the center of rotation.
- _____: the number of degrees by which the preimage is rotated.



- **Clockwise (CW):** the direction in which the hands on a clock move



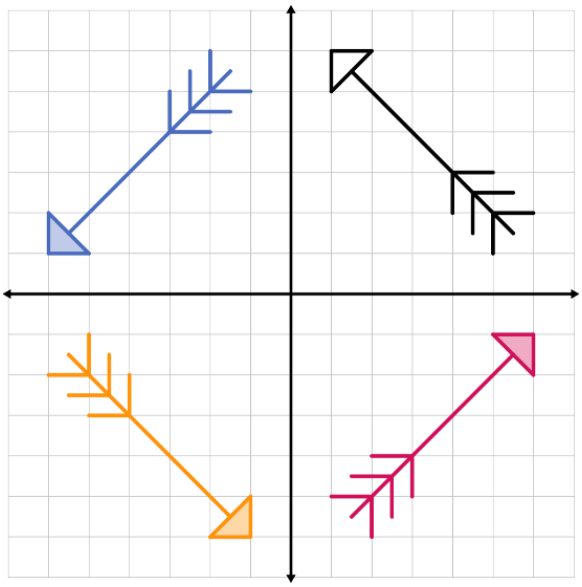
- **counterclockwise (CCW):** the opposite direction in which the hands on a clock move

Assume rotations to be counterclockwise unless stated otherwise.

Is a rotation an example of rigid motion? Write your answer below.

Special Rotations: Algebraic Rules

Fill in the blanks below.

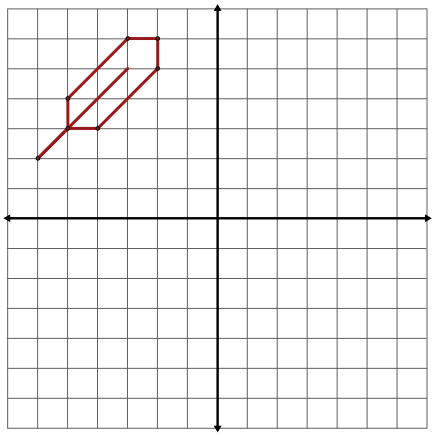


Rotate about the origin …	Algebraic Rule
… 90° CCW	$(a, b) \rightarrow$ _____
… 180° CCW	$(a, b) \rightarrow$ _____
… 270° CCW	$(a, b) \rightarrow$ _____

- Rotating a figure 90° CCW is the same as rotating that figure ____ CW.
- Rotating a figure 180° CCW is the same as rotating that figure ____ CW.
- Rotating a figure 90° CW is the same as rotating that figure ____ CCW.

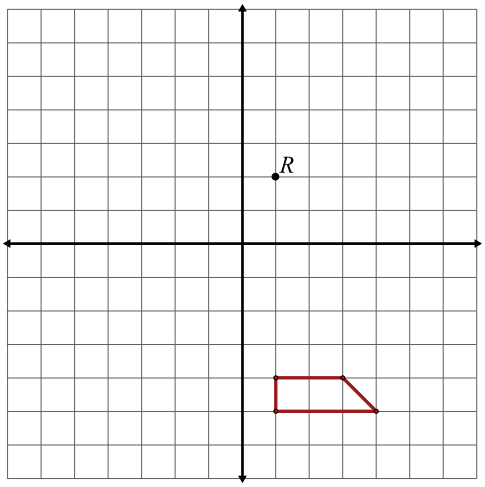
Applying Algebraic Rules

1) On the table below, draw the rotated image on the graph based on the provided preimage. Then, write a verbal description of the transformation.

Graph	Verbal Description	Algebraic Rule
		$(x, y) \rightarrow (-x, -y)$

Other Rotations

2) What if we rotate a figure around a point that is not the origin? Rotate the following preimage 270° about the point $R(1, 2)$.



3) How should we transform a preimage that is not on a coordinate plane? Rotate the primage below 120° about the given center of rotation, R. Draw the rotated image and mark its vertices.