

MCC8.G.1 Verify experimentally the properties of rotations, reflections, and translations:

- a. Lines are taken to lines, and line segments to line segments of the same length.
- b. Angles are taken to angles of the same measure.
- c. Parallel lines are taken to parallel lines.

MCC8.G.2 Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.

MCC8.G.3 Describe the effect of dilations, translations, rotations and reflections on two-dimensional figures using coordinates.

MCC8.G.4 Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.

Transformations - Rotations on the Coordinate Plane

Directions: Using the *coordinate plane*, plot the following points: A (2, 2), B (2, 5), C (3, 7), D (4, 5), E (4, 2). Then use the table below to *rotate* the figure about the *origin* in the *counterclockwise* direction.

Rotations		
counterclockwise	(x, y)	clockwise
90°	(-y, x)	270°
180°	(-x, -y)	180°
270°	(y, -x)	90°

Original (x, y)	counterclockwise 90° (-y, x)	counterclockwise 180° (-x, -y)	counterclockwise 270° (y, -x)
(2, 2)			
(2, 5)			(5, -2)
(3, 7)			
(4, 5)	(-5, 4)		
(4, 2)			

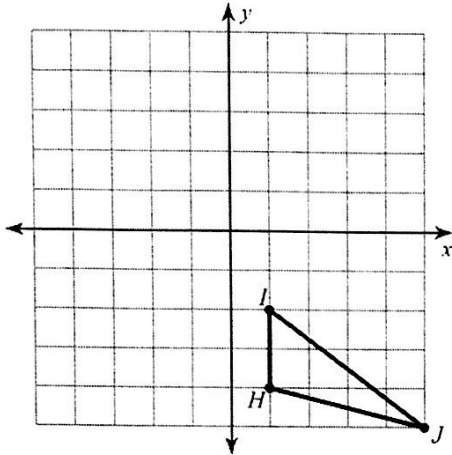
After you have completed the task, use your patty paper to determine if you plotted the points correctly.

Quick Write – What would happen if you were asked to rotate the above figure 360°? Explain your thinking.

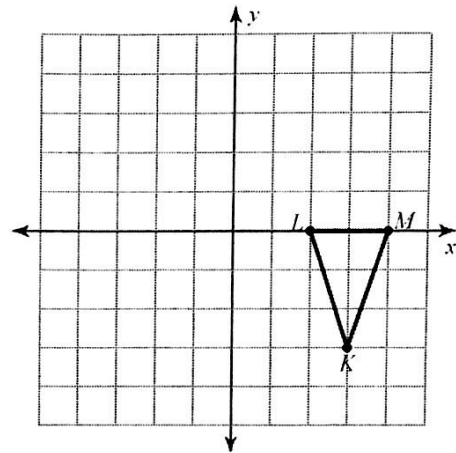
Assignment

Graph the image of the figure using the transformation given.

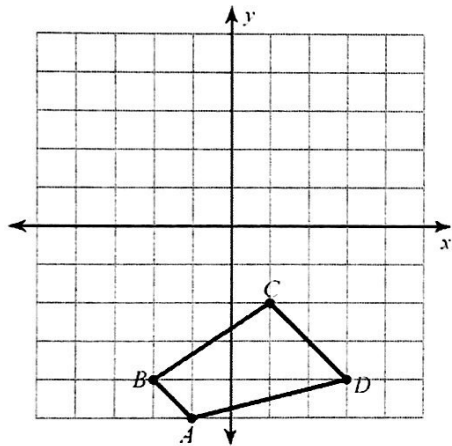
- 1) rotation 90° counterclockwise about the origin



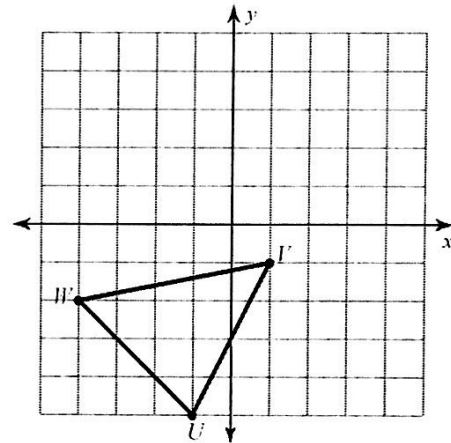
- 2) rotation 90° counterclockwise about the origin



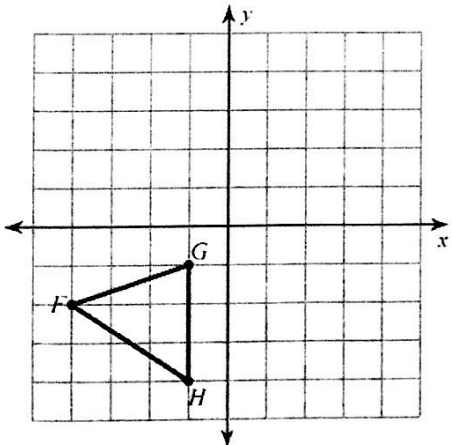
- 3) rotation 180° about the origin



- 4) rotation 90° counterclockwise about the origin



- 5) rotation 90° counterclockwise about the origin



- 6) rotation 180° about the origin

