

Math 9

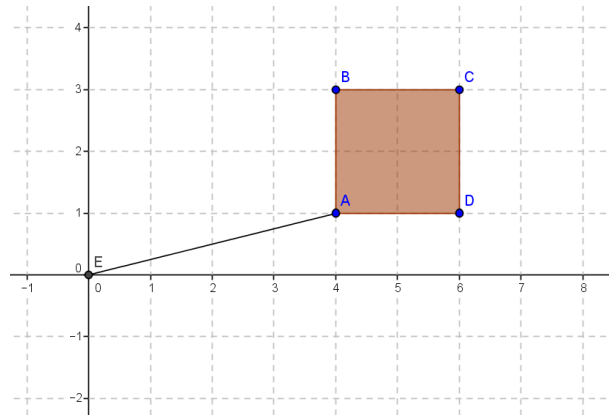
7.6 – Rotation of Objects About the Origin

Name: _____

Date: _____

The square $ABCD$ is to be **rotated about the origin** through the rotations given below.

Determine the coordinates of the vertices of the original square and the image after the rotation.



When a point is rotated 90° CW, the coordinates change as follows:

90° CW Rotation	
Original	Image
A :	A' :
B :	B' :
C :	C' :
D :	D' :

When a point is rotated 90° CCW, the coordinates change as follows:

90° CCW Rotation	
Original	Image
A :	A' :
B :	B' :
C :	C' :
D :	D' :

When a point is rotated 180° , the coordinates change as follows:

180° Rotation	
Original	Image
A :	A' :
B :	B' :
C :	C' :
D :	D' :

NOTE: 270° CW is the same as: _____

270° CCW is the same as: _____

Ex. 1: Determine the coordinates of the image point when the following points are rotated.

$(3, 5)$; 90° *CW*

$(4, -9)$; 90° *CCW*

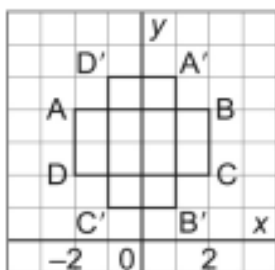
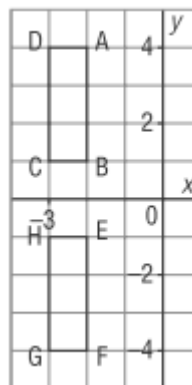
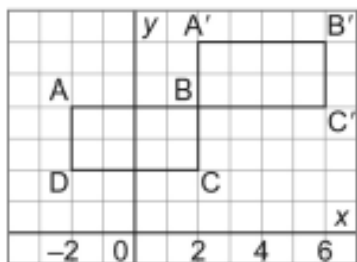
$(-5, -10)$; 180°

$(7, -4)$; 270° *CCW*

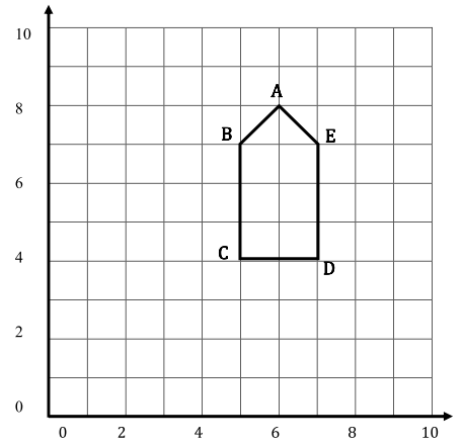
$(7, -4)$; 270° *CW*

Identifying Types of Symmetry.

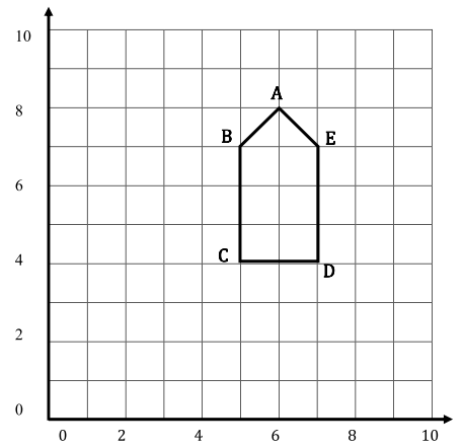
For each of the diagrams below, determine if the objects are related by any kind of symmetry.



Ex. 2: Rotate the Pentagon 180° about the point, $P(6, 5)$.



Ex. 3: Translate the Pentagon **3 units left** and **2 units up**.



Ex. 4: Translate the Pentagon **2 units right** and **4 units down**.

Ex. 5: Rotate the Pentagon 270° *CCW* and determine the coordinates of the vertices after the rotation.