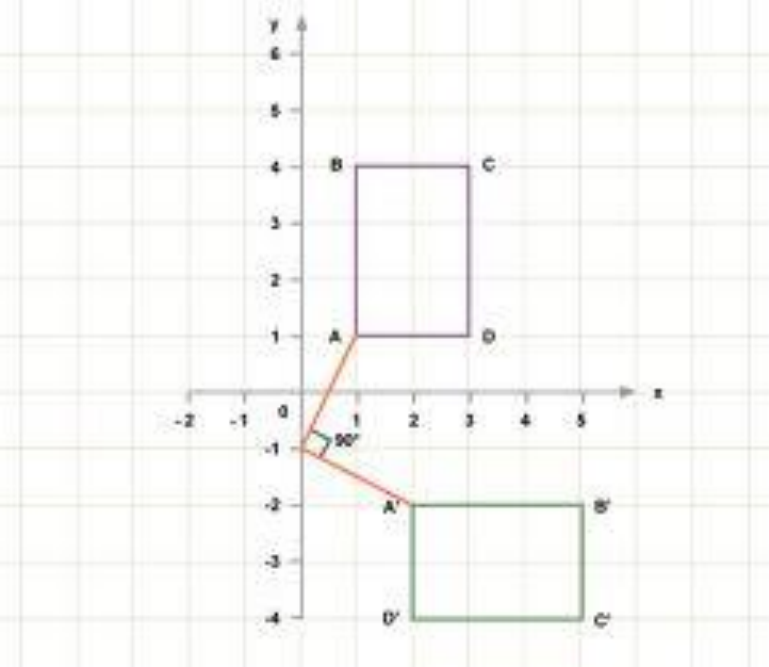
ROTATIONS

Objectives

- Can you draw a rotation?
- Can you draw a rotation in a coordinate plane?

Rotation

- Movement about a point (called center of rotation)
- Angle of rotation: the measure formed from the pre-image to the image about the center of rotation.

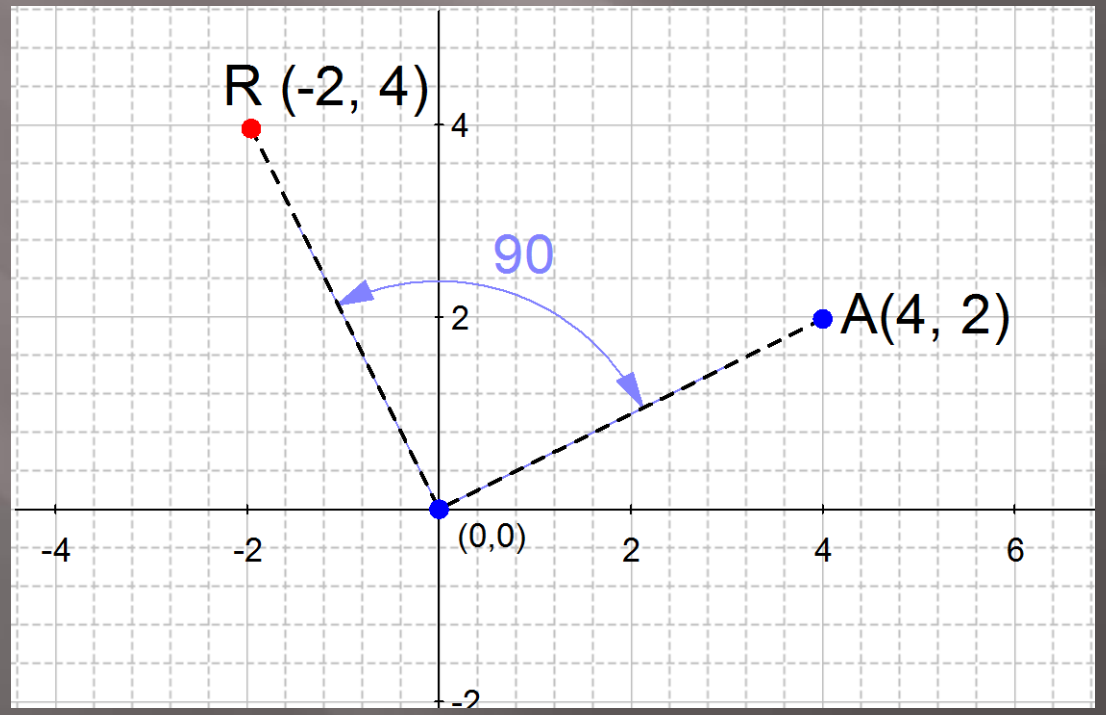


To Draw a Rotation

- Draw a rotation of 140 degrees about point k.
- Draw a segment from one vertex to point K.
- Measure a 140 angle and measure the distance from vertex to point K and plot the point

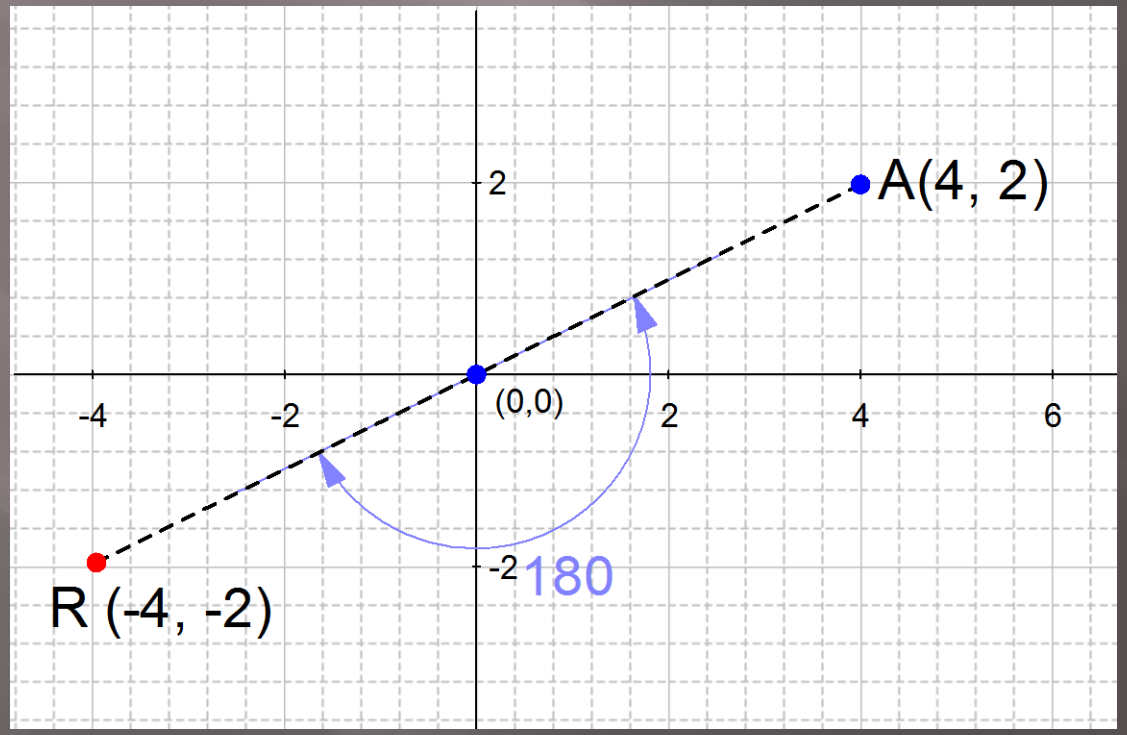
90 Degree Rotation in a Coordinate Plane

- To rotate a point 90 degrees counter clockwise about the origin (x, y)→(-y, x)
- Rotate point A around origin at 90 degrees



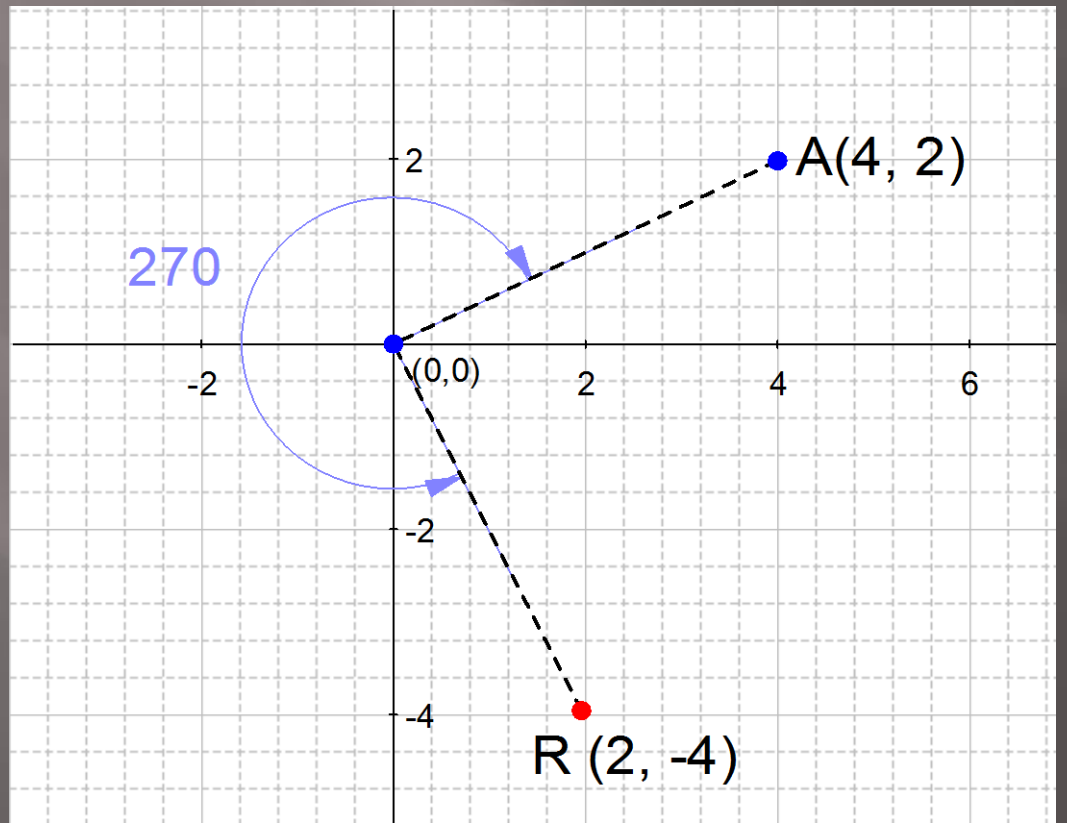
180 Degree Rotation in a Coordinate Plane

- To rotate a point 180 degrees counter clockwise about the origin $(x, y) \rightarrow (-x, -y)$
- Rotate point A around origin at 180 degrees



270 Degree Rotation in a Coordinate Plane

- To rotate a point 270 degrees counter clockwise about the origin (x, y)→(y, -x)
- Rotate point A around origin at 270 degrees

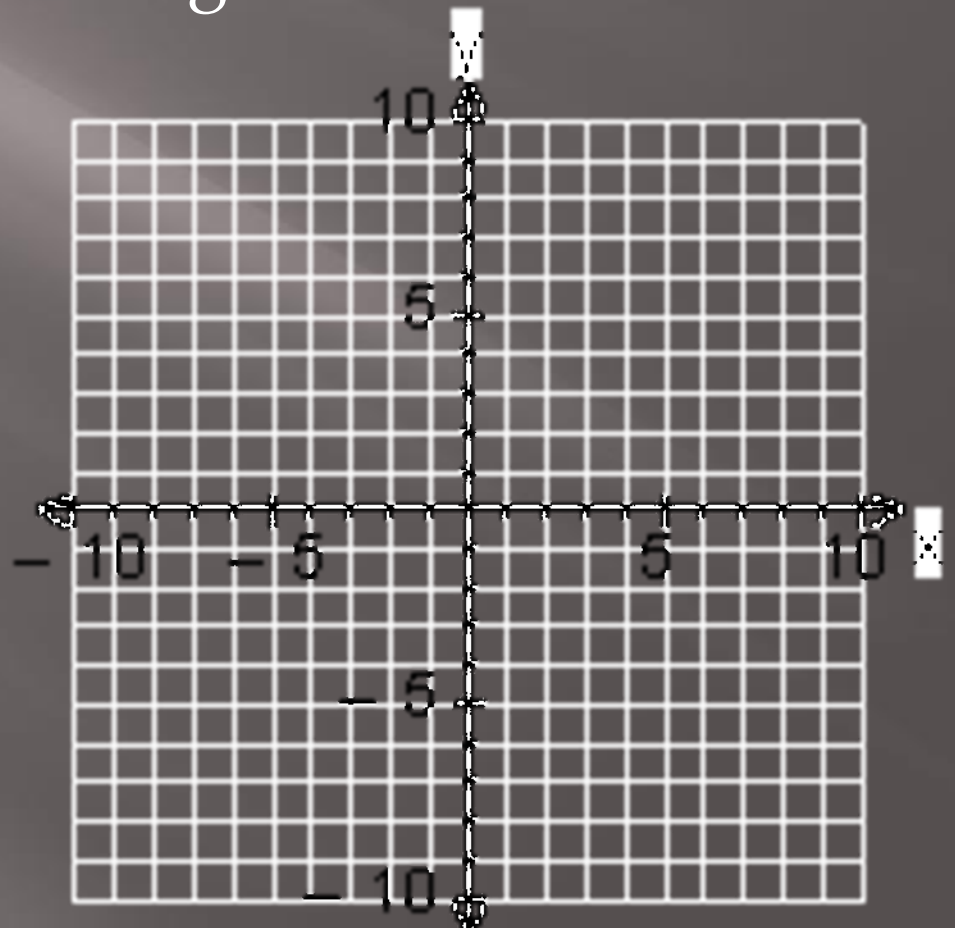


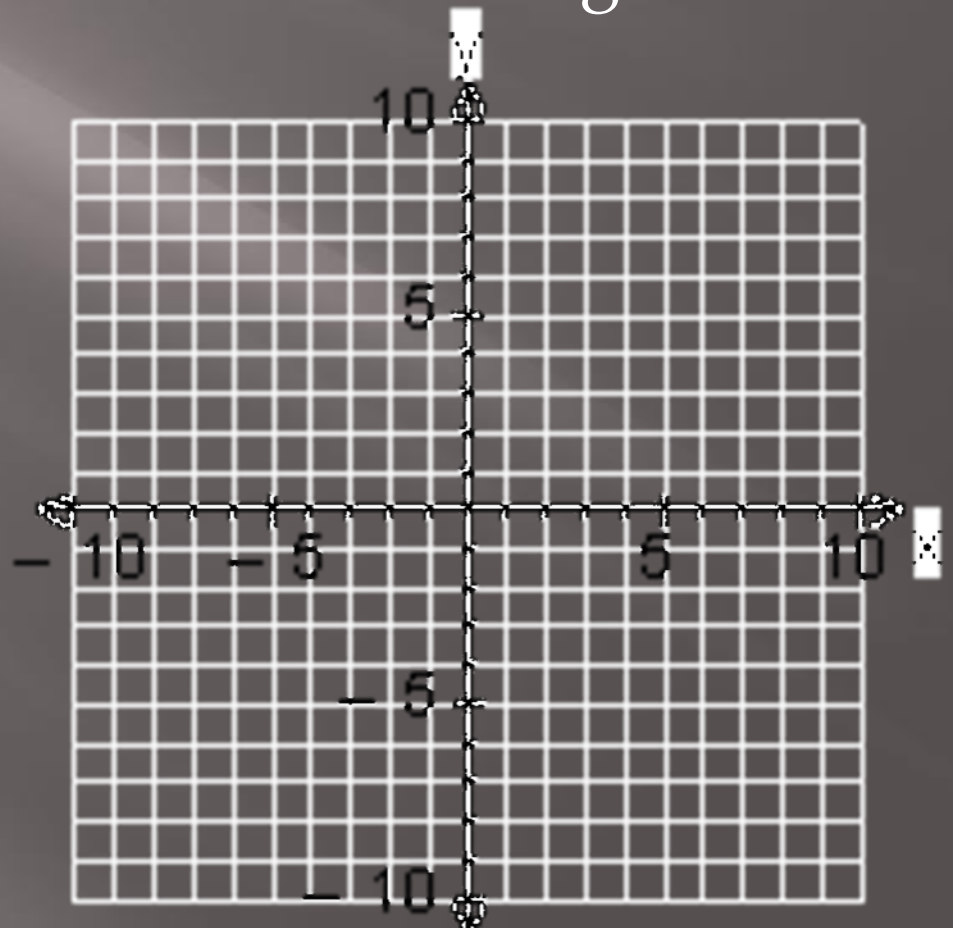
Examples

- Rotate P(5,2) 90 degrees counter clockwise about the origin.
- Rotate X(2,1) 180 degrees counterclockwise about the origin.
- Rotate Y(-2,3) counter 270 degrees about the origin
- Rotate R(-2,5) clockwise 90 degrees about the origin

Examples

- Triangle PQR has vertices P(1,1), Q(4,5), and R(5,1). Graph it and rotate the image 90° about the origin.



Examples

- Line PQ has points P(1,3) and Q(3,5). What are the new coordinates after a 270° rotation about the origin.