

# Rotations

Students will draw a rotation in the coordinate plane.

Rotation: A transformation that turns  
a figure around a point

Center of Rotation: a point that  
the object rotates around

In Coord Plane  $\rightarrow$  origin

Angle of Rotation: how many degrees  
you move the object

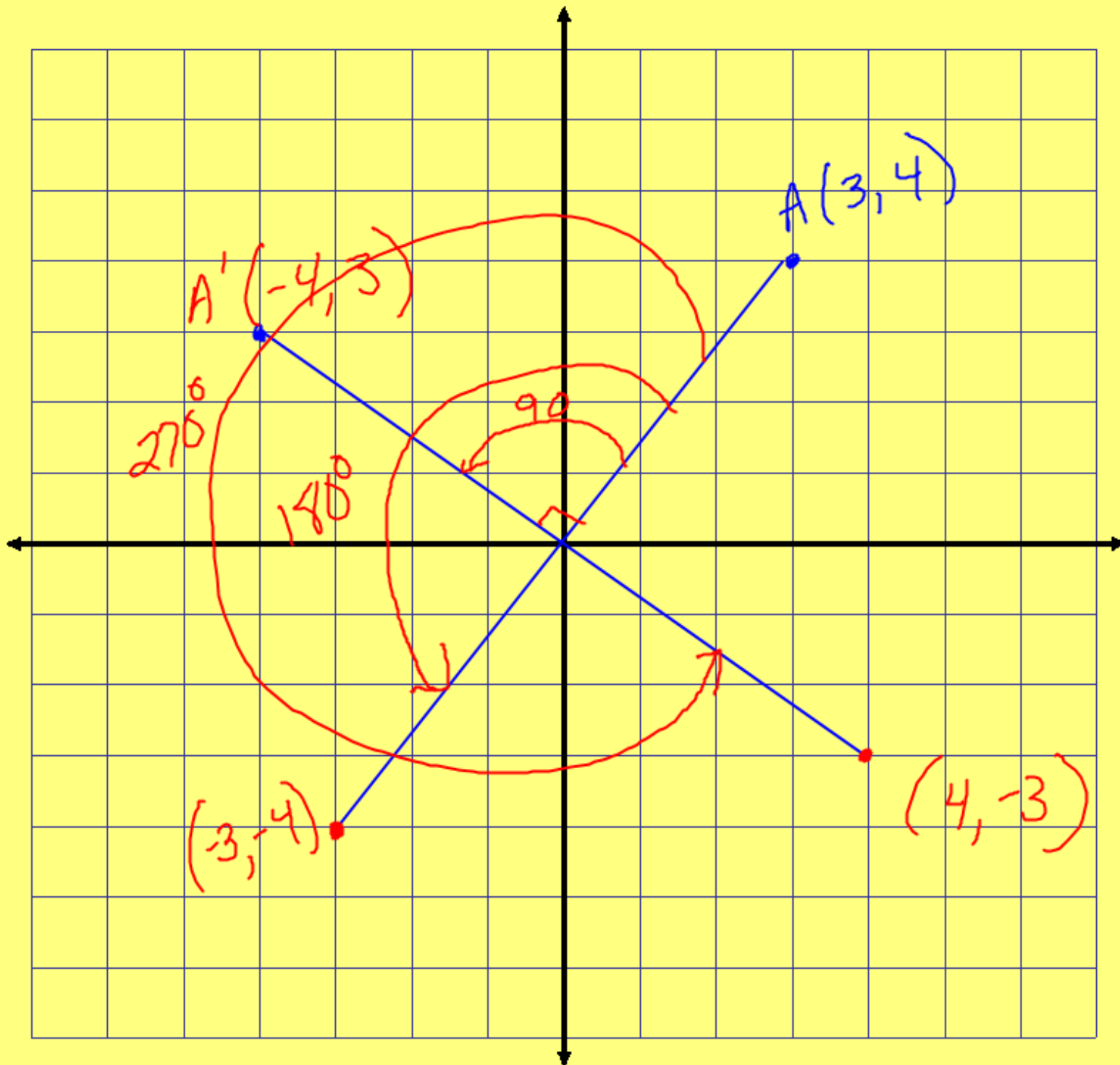
Direction of Rotation:

Clockwise



Counterclockwise

$\hookrightarrow$  use this unless  
specified



# Rotations in the Coordinate Plane

## Centered about the origin

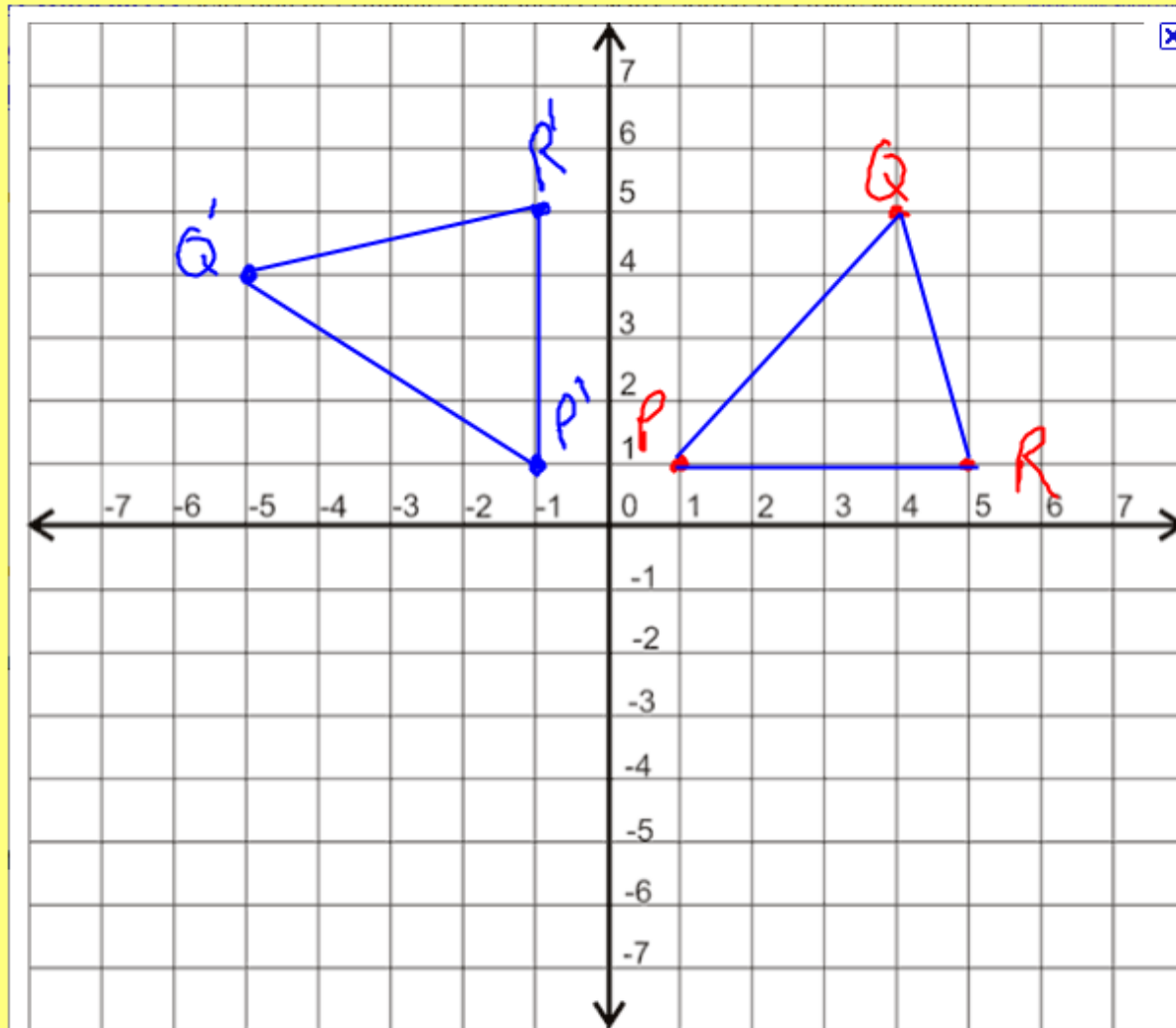
### Counter clockwise

$$90^\circ (x, y) \rightarrow (-y, x)$$

$$180^\circ (x, y) \rightarrow (-x, -y)$$

$$270^\circ (x, y) \rightarrow (y, -x)$$

Triangle  $PQR$  has vertices  $P(1,1)$ ,  $Q(4,5)$  and  $R(5,1)$ . Graph  $\Delta PQR$  and its image after a rotation of  $90^\circ$  about the origin



$$P'(-1, 1)$$

$$Q'(-5, 4)$$

$$R'(-1, 5)$$

Parallelogram  $FGHJ$  has vertices  $F(2,1)$ ,  $G(7,1)$ ,  $H(6,-3)$ , and  $J(1,-3)$ . Graph  $FGHJ$  and its image after a rotation  $180^\circ$  about the origin.

$F'(-2,-1)$   
 $G'(-7,-1)$   
 $H'(-6,3)$   
 $J'(-1,3)$

