

Name:

### 8.3 Extension: Rotation not around the origin

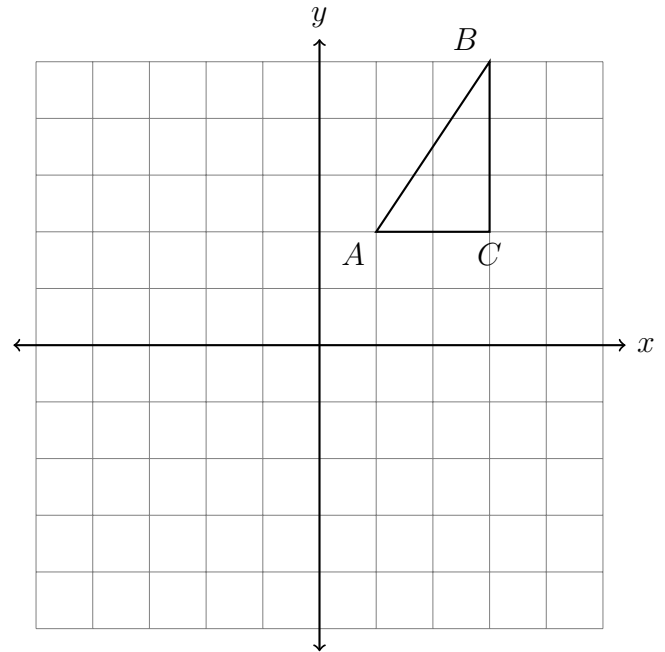
CCSS.HSG.CO.A.5

1. Rotate the triangle  $90^\circ$  counterclockwise around the origin,  $\triangle ABC \rightarrow \triangle A'B'C'$ . Complete the table of the coordinates and plot and label the image on the grid.

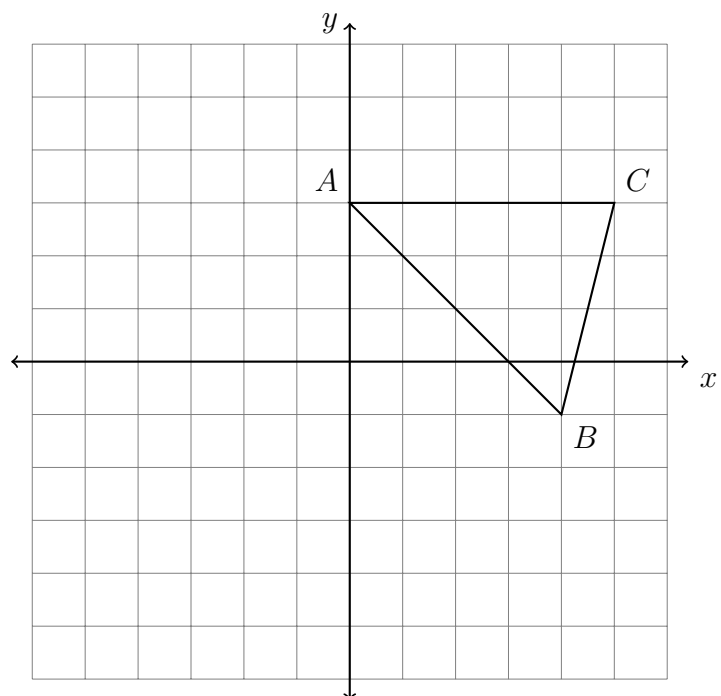
$A(1, 2) \rightarrow$

$B(3, 5) \rightarrow$

$C(3, 2) \rightarrow$

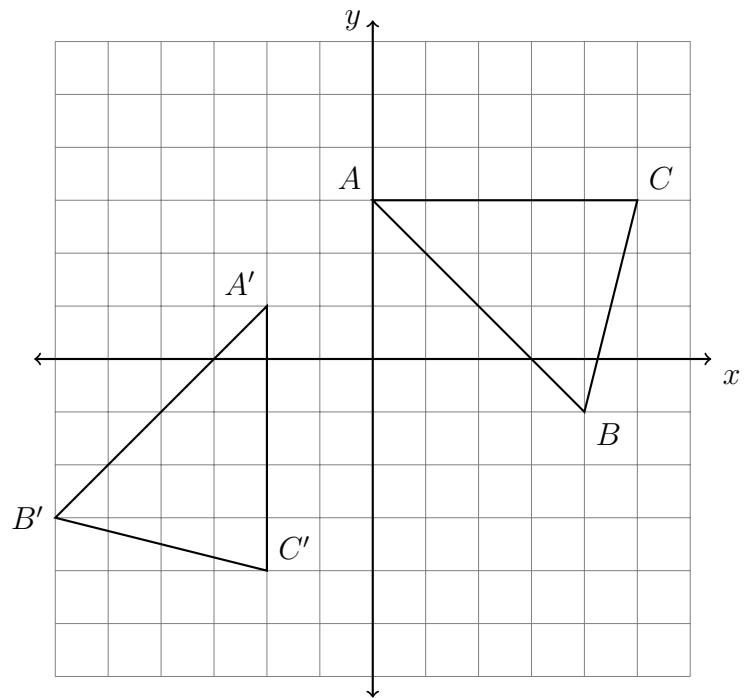


2.  $\triangle ABC$  is shown with vertices  $A(0, 3)$ ,  $B(4, -1)$ , and  $C(5, 3)$ . Rotate the triangle  $90^\circ$  clockwise around the origin. Write down its coordinates in a table and plot and label it on the graph.



### Challenge

3. A rotation *not* centered at the origin maps  $\triangle ABC \rightarrow \triangle A'B'C'$  as shown in the diagram below. Mark the center of rotation on the grid and label it  $P$ . To the left, completely specify the transformation, including the coordinates of the center of rotation, the direction, and the magnitude in degrees.



4. Rotate  $\triangle ABC$   $90^\circ$  counterclockwise around the point  $P$ . (label the image)

