1.5 Rotations about the Origin **Geometry**

Warm-Up
1.
2.
3.

90°CW / 270°CCW
90°CCW / 270°CW
180° CW/CCW
360° CW/CCW

Example One:

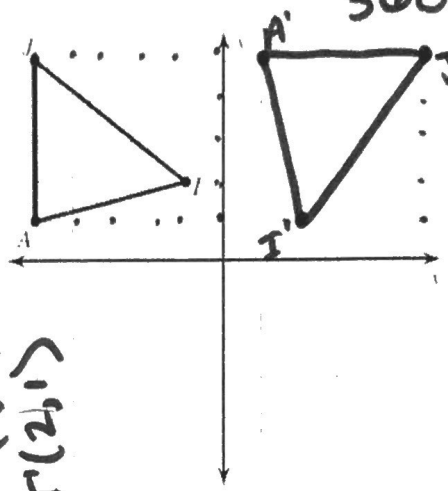
List the coordinates of the Pre-Image. Then use your rule to rotate it 90 degrees CW. Recorded and graph the coordinates of the Image.

J (-5 , 5) ⟶ 'J (5 , 5)

I (-1 , 2) ⟶ 'I (2 , 1)

A (-5 , 1) ⟶ 'A (1 , 5)

90°CW/ 270°CCW



J'(5,5)
A'(1,5)
I'(2,1)

Hint: Drive the Bus!

What is the rule for rotation 90 CW?

$(x,y) \rightarrow '(y,-x)$

Example Two:

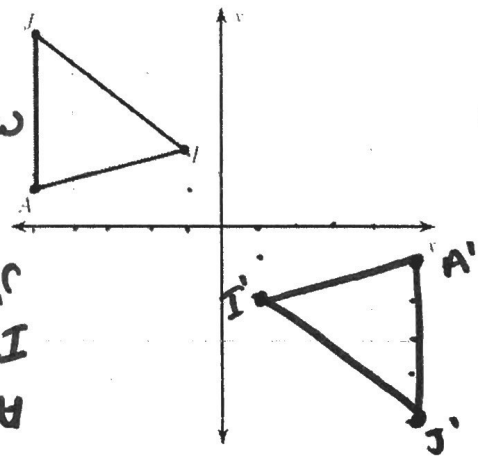
List the coordinates of the Pre-Image. Then use your rule to rotate it 180 degrees CW. Recorded and graph the coordinates of the Image.

J (-5 , 5) ⟶ 'J (5 , -5)

I (-1 , 2) ⟶ 'I (1 , -2)

A (-5 , 1) ⟶ 'A (5 , -1)

180°CW/CCW



J'(5,-5)
I'(1,-2)
A'(5,-1)

Hint: 2 Turns, means 2 Sign Changes.

What is the rule for rotation 180 CW?

$(x,y) \rightarrow '(-x,-y)$

Example Three:

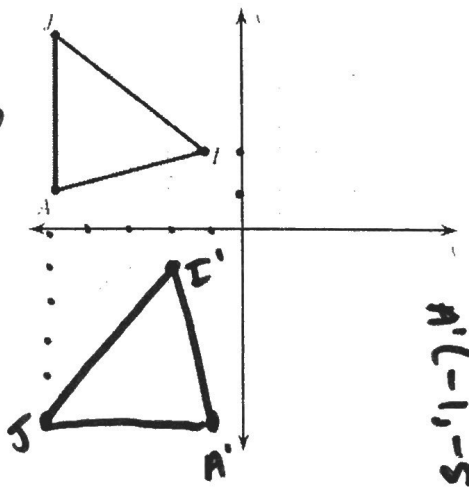
List the coordinates of the Pre-Image. Then use your rule to rotate it 270 degrees CW. Recorded and graph the coordinates of the Image.

J (-5 , 5) ⟶ 'J (-5 , -5)

I (-1 , 2) ⟶ 'I (-2 , -1)

A (-5 , 1) ⟶ 'A (-1 , -5)

90°CCW
270°CW



J'(-5,-5)
I'(-2,-1)
A'(-1,-5)

Hint: Drive Bus!

What is the rule for rotation 270 CW?

$(x,y) \rightarrow '(-y,x)$

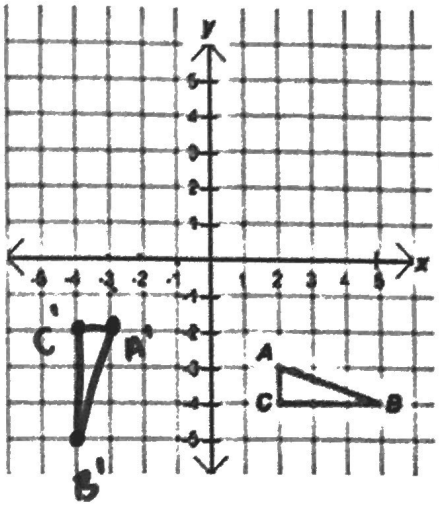
1) Rotate ΔABC 90° CW about the origin.

$(x,y) \rightarrow '(y,-x)$

$A(2,-3) \rightarrow A'(-3,2)$

$B(5,-4) \rightarrow B'(-4,-5)$

$C(2,-4) \rightarrow C'(-4,-2)$



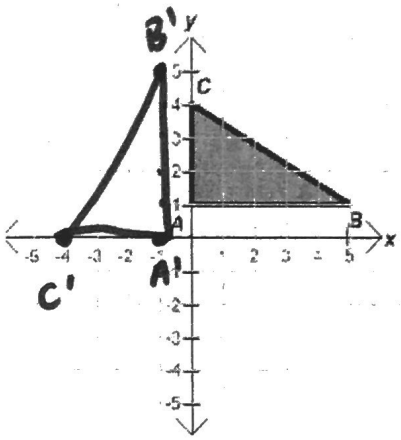
2) Rotate ΔJAI 90° CCW about the origin.

$(x,y) \rightarrow '(-y,x)$

$A(0,1) \rightarrow A'(-1,0)$

$B(5,1) \rightarrow B'(-1,5)$

$C(0,4) \rightarrow C'(-4,0)$



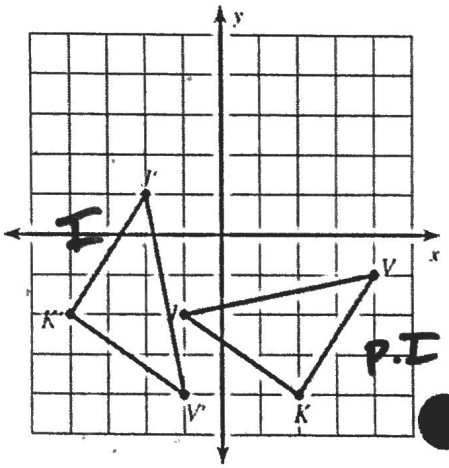
3) If T(–1, –1) and P(–3, –5) are rotated 180° CW, what are the coordinates of the image?

$(x,y) \rightarrow '(-x,-y)$

$T(-1,-1) \rightarrow T'(1,1)$

$P(-3,-5) \rightarrow P'(3,5)$

4) What transformation has occurred in the graph to the right?



$V(4,-1) \rightarrow V'(-1,-4)$

$(x,y) \rightarrow '(y,x)$

Rotate 90° cw

or

Rotate 270 cw.