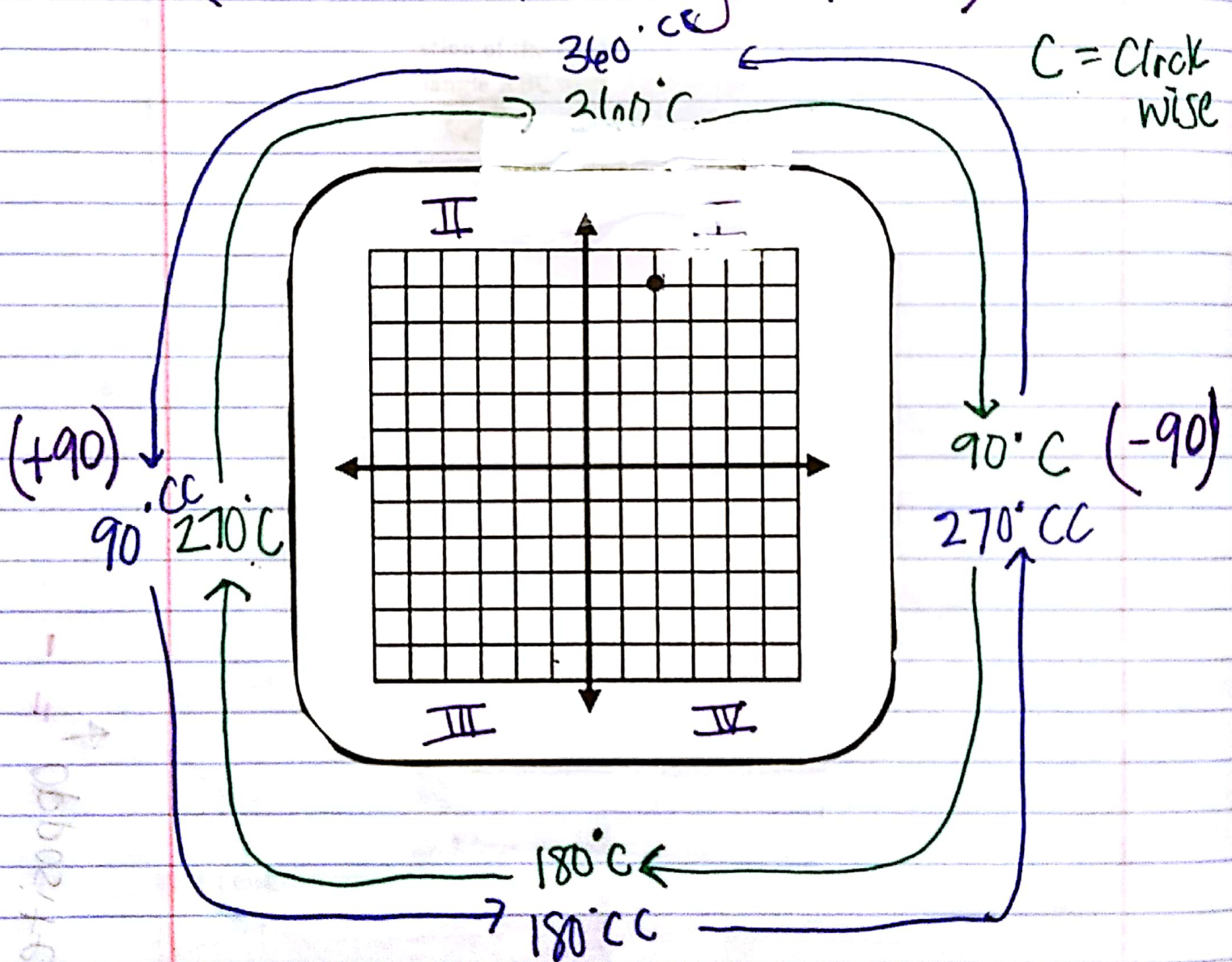


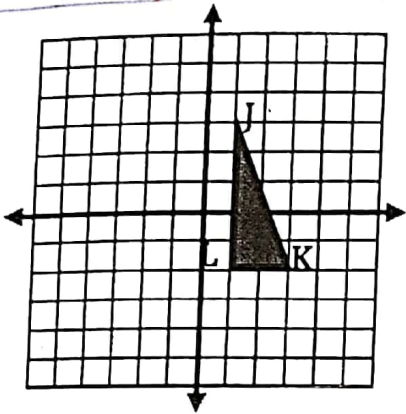
Rotations

Rotation: A transformation that turns a figure around a given point a given angle.
(ex. around the origin 90° C)



	90° C 270° CC	180° C 180° CC	270° C 90° CC	360° C 360° CC
(x,y)	(y, x)	$(-x, -y)$	$(-y, x)$	(x, y)
(2,5)	(5, -2)	(-2, -5)	(-5, 2)	(2, 5)

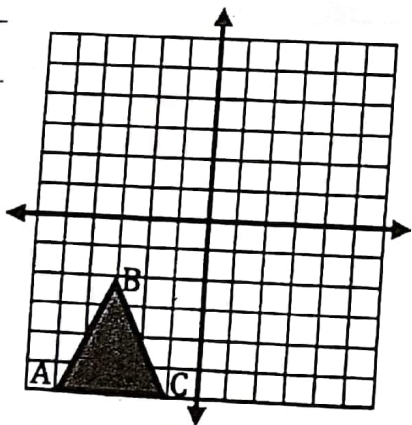
A rotation is an isometry
(reflections & translations too!)



Rotate $\triangle JKL$ 90° counter clockwise about the origin.

$$\begin{aligned} J(1, 3) &\rightarrow J'(-3, 1) \\ K(3, -2) &\rightarrow K'(2, 3) \\ L(1, -2) &\rightarrow L'(2, 1) \end{aligned}$$

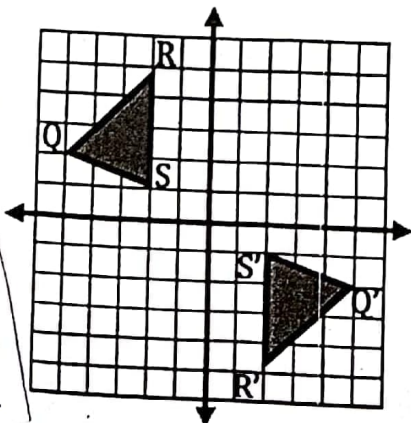
Rule: $(x, y) \rightarrow (-y, x)$



Rotate: $\triangle ABC$ 90° about the origin.

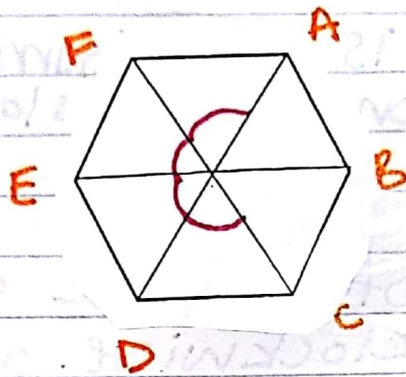
$$\begin{aligned} A(-5, -6) &\rightarrow A'(-6, 5) \\ B(-3, -2) &\rightarrow B'(-2, 3) \\ C(-1, -6) &\rightarrow C'(-6, 1) \end{aligned}$$

Rule: $(x, y) \rightarrow (y, -x)$



What happened here?

$$\begin{aligned} 180^\circ C \\ 180^\circ CC \end{aligned}$$



$$\frac{360}{6} = 60$$

If I rotate point A 240° CC
 What is its image? **C**