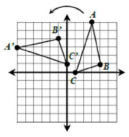


**ROTATIONS**

(about the origin)



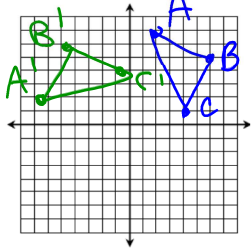
- A **TURN** around a fixed point called the **Center** of **rotation**.
- The figure rotates at a specific **angle** and **direction**.
- Though the figure can rotate around any fixed point, the most common center of rotation is the **origin (0,0)**.

Rules for rotating points about the ORIGIN:		
<b>90°</b> (counterclockwise) <i>270 CW</i>		$(x, y) \rightarrow (-y, x)$
<b>180°</b>		$(x, y) \rightarrow (-x, -y)$
<b>270°</b> (counterclockwise) <i>90 CW</i>		$(x, y) \rightarrow (y, -x)$

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Jan 16-1:11 PM

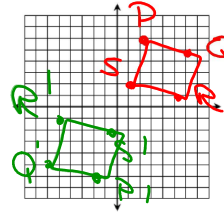
1. Triangle  $ABC$  with vertices  $A(2, 7)$ ,  $B(6, 5)$ , and  $C(4, 1)$ :  
**90° counterclockwise**



A': \_\_\_\_\_ C': \_\_\_\_\_  
B': \_\_\_\_\_

$A'(-7, 2)$   
 $B'(-5, 6)$   
 $C'(-4, 4)$

2. Square  $PQRS$  with vertices  $P(2, 6)$ ,  $Q(6, 5)$ ,  $R(5, 1)$ , and  $S(1, 2)$ : **180°**



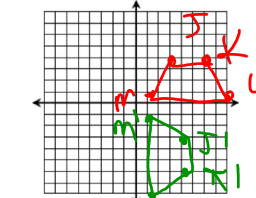
P': \_\_\_\_\_ R': \_\_\_\_\_  
Q': \_\_\_\_\_ S': \_\_\_\_\_

$S'(-1, -2)$   
 $P'(-2, -6)$   
 $R'(-5, -1)$   
 $Q'(-6, -5)$

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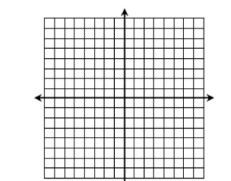
3. Trapezoid  $JKLM$  with vertices  $J(3, 4)$ ,  $K(6, 4)$ ,  $L(8, 1)$ , and  $M(1, 1)$ : **270° counterclockwise**



J': \_\_\_\_\_ L': \_\_\_\_\_  
K': \_\_\_\_\_ M': \_\_\_\_\_

$M'(1, -1)$   
 $J'(4, -3)$   
 $K'(4, -6)$   
 $L'(1, -8)$

4. Triangle  $XYZ$  with vertices  $X(3, -2)$ ,  $Y(6, 1)$ , and  $Z(5, -7)$ : **180°**



X': \_\_\_\_\_ Z': \_\_\_\_\_  
Y': \_\_\_\_\_

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Jan 16-1:10 PM

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