

# ROTATION

# ANSWERS

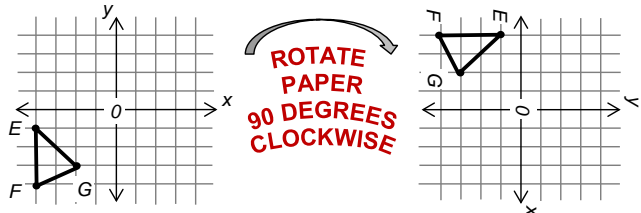
Graph the original figure. Find the new coordinates of the vertices after the given rotation about the origin. Then graph the rotation.

### HELPFUL EXAMPLE

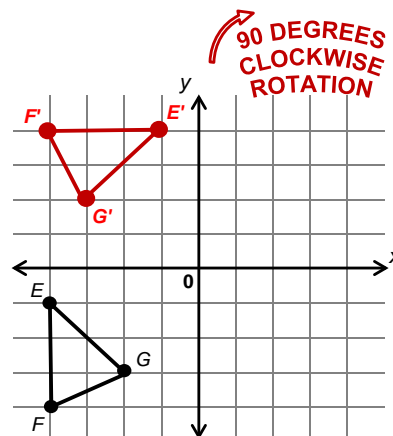
If you can not visualize the rotation in your head, the best way to see the rotation is to rotate your paper in the direction stated.

Original figure vertices:  $E(-4,-1)$ ;  $F(-4,-4)$ ;  $G(-2,-3)$ .

Find the coordinates of the vertices after a  $90^\circ$  clockwise rotation.



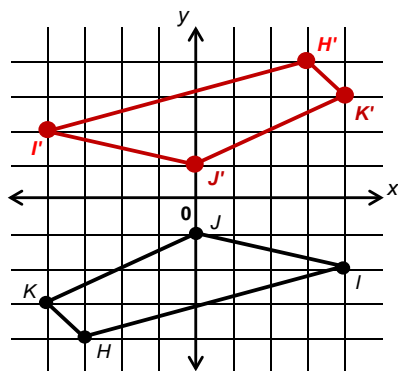
$E(-4,-1) \rightarrow E'(-1,4)$   
 $F(-4,-4) \rightarrow F'(-4,4)$   
 $G(-2,-3) \rightarrow G'(-3,2)$



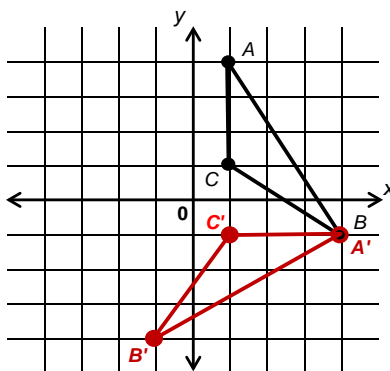
After you rotate the paper you can see the new location of the figure and use this information to find the new vertices.

Now your turn.

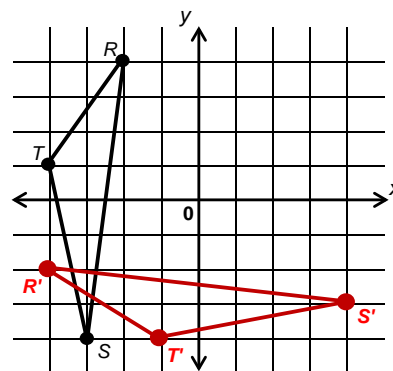
1. Polygon  $HJK$  with vertices:  
 $H(-3,-4)$ ;  $I(4,-2)$ ;  $J(0,-1)$ ;  $K(-4,-3)$   
 $180^\circ$  clockwise rotation.



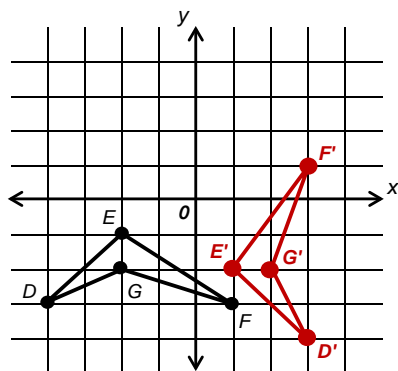
2. Polygon  $ABC$  with vertices:  
 $A(1,4)$ ;  $B(4,-1)$ ;  $C(1,1)$   
 $90^\circ$  clockwise rotation.



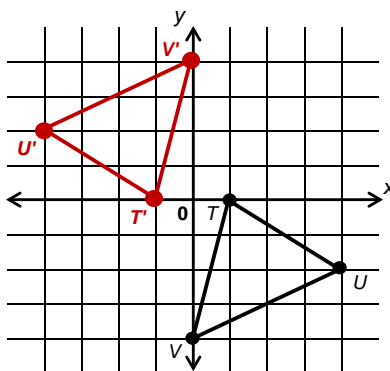
3. Polygon  $RST$  with vertices:  
 $R(-2,4)$ ;  $S(-3,-4)$ ;  $T(-4,1)$   
 $90^\circ$  counterclockwise rotation.



4. Polygon  $DEFG$  with vertices:  
 $D(-4,-3)$ ;  $E(-2,-1)$ ;  $F(1,-3)$ ;  $G(-2,-2)$   
 $90^\circ$  counterclockwise rotation.



5. Polygon  $TUV$  with vertices:  
 $T(1,0)$ ;  $U(4,-2)$ ;  $V(0,-4)$   
 $180^\circ$  counterclockwise rotation.



6. Polygon  $LMN$  with vertices:  
 $L(-1,2)$ ;  $M(-3,-1)$ ;  $N(-3,3)$   
 $90^\circ$  clockwise rotation.

