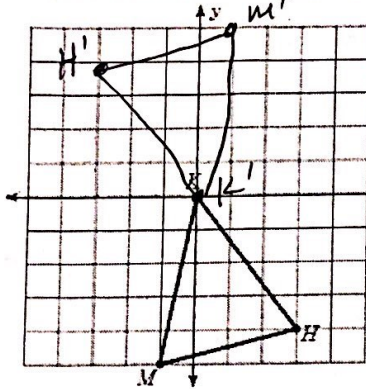


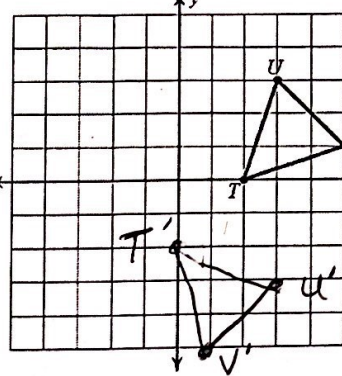
1. Rotate 180 degrees.



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

- $M(-1, -5) \quad M'(1, 5)$
- $H(3, -4) \quad H'(-3, 4)$
- $K(0, 0) \quad K'(0, 0)$

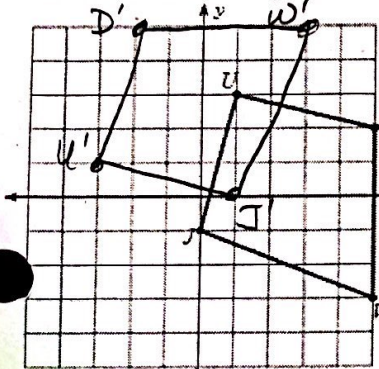
2. Rotate 90 degrees CW.



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

- $T(2, 0) \quad T'(0, -2)$
- $U(3, 3) \quad U'(3, -3)$
- $V(5, 1) \quad V'(1, -5)$

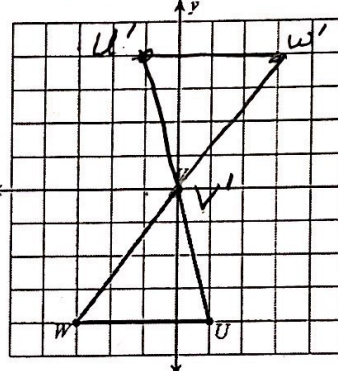
3. Rotate 90 degrees CCW.



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

- $W(5, -3) \quad W'(3, 5)$
- $U(1, 3) \quad U'(-3, 1)$
- $J(0, -1) \quad J'(1, 0)$
- $D(5, 2) \quad D'(-2, 5)$

4. Rotate 180 degrees.

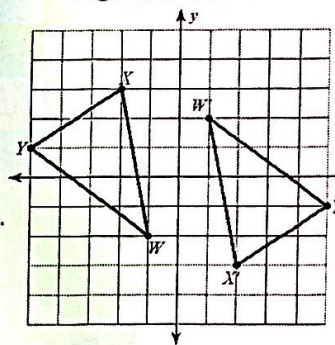


$(x, y) \rightarrow (-x, -y)$

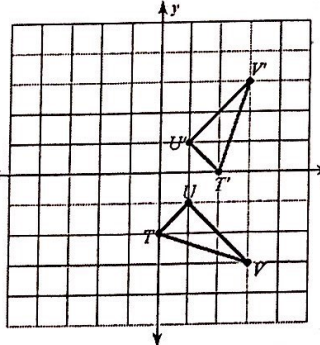
- $W(-3, -4) \quad W'(3, 4)$
- $U(1, -4) \quad U'(-1, 4)$
- $V(0, 0) \quad V'(0, 0)$

Write the degree and direction of the rotation shown below!

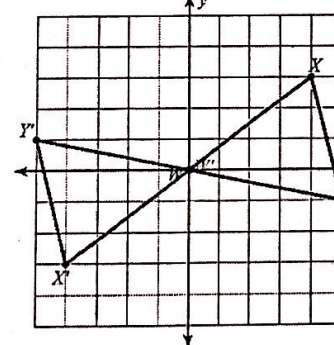
1. 180° rotation



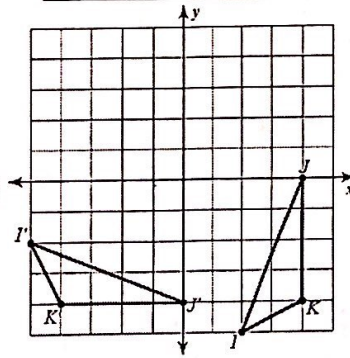
2. 90° ccw rotation



3. 180° rotation

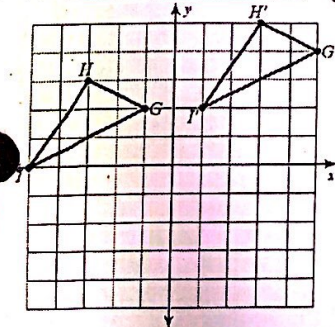


4. 90° cw rotation

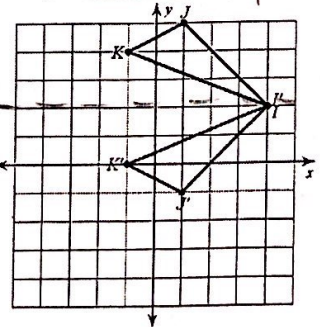


EVERYTHING! Write the translation vector, line of reflection, or direction and degree of rotation!

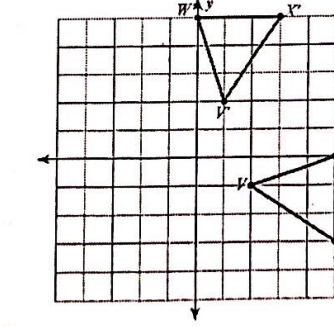
1. Translation  $\langle 6, 2 \rangle$



2. Reflection  $y=2$



3. 90° ccw rotation



4. 180° rotation

