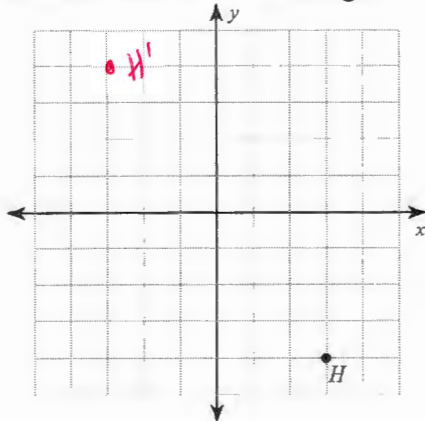


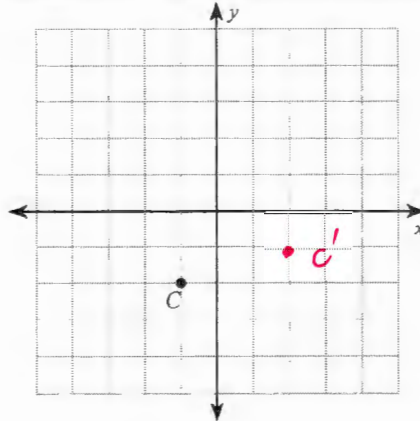
.4 – Rotations

Find the coordinates of the vertices of each figure after the given transformation.

- 1) rotation 180° about the origin

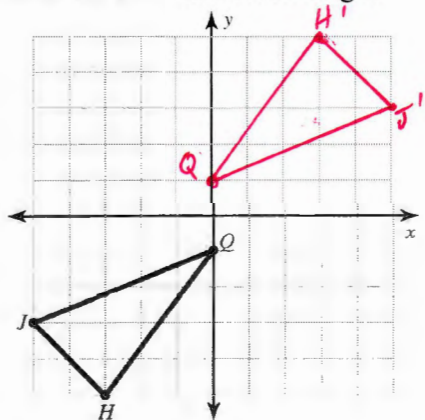


- 2) rotation 90° counterclockwise about the origin

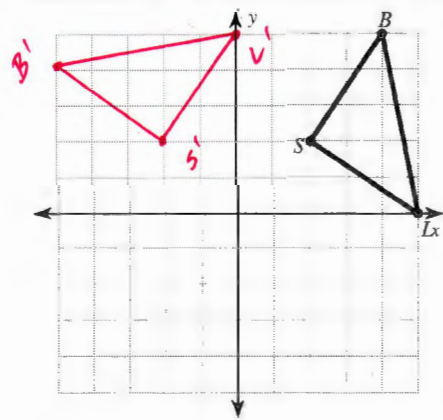


Graph the image of the figure using the given transformation

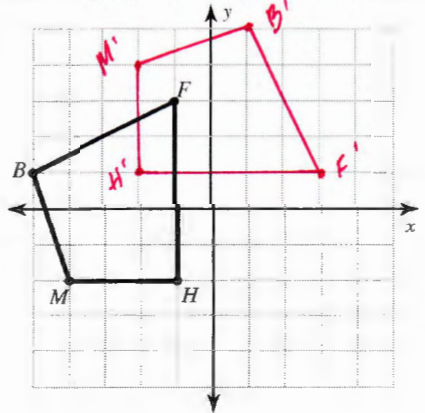
- 3) rotation 180° about the origin



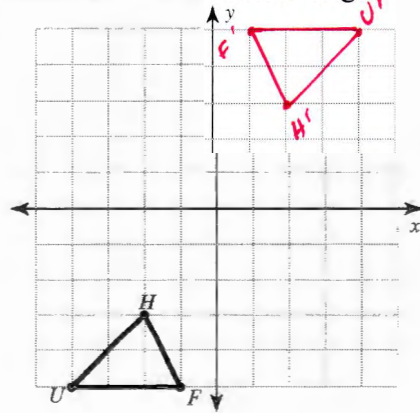
- 4) rotation 90° counterclockwise about the origin



- 5) rotation 90° clockwise about the origin

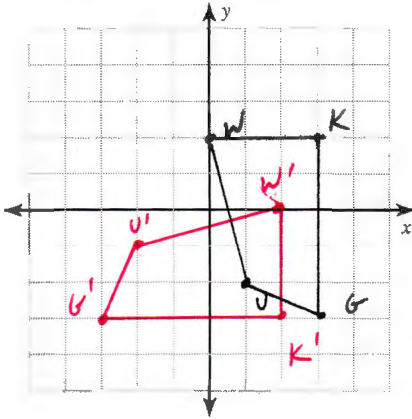


- 6) rotation 180° about the origin

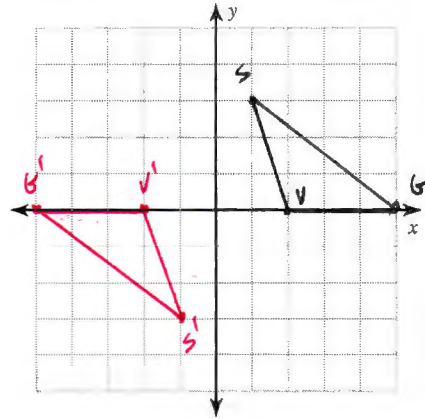


Graph the following points and then graph the image of the figure using the given transformation.

- 7) $U(1, -2)$, $W(0, 2)$, $K(3, 2)$, $G(3, -3)$
rotation 90° clockwise about the origin



- 8) $V(2, 0)$, $S(1, 3)$, $G(5, 0)$
rotation 180° about the origin



Find the coordinates of the vertices of each figure after the given transformation.

- 9) rotation 180° about the origin
 $Z(-1, -5)$, $K(-1, 0)$, $C(1, 1)$, $N(3, -2)$

$$Z'(1, 5), K'(1, 0), C'(-1, -1), N'(-3, 2)$$

- 10) rotation 180° about the origin
 $L(1, 3)$, $Z(5, 5)$, $F(4, 2)$

$$L'(-1, -3), Z'(-5, -5), F'(-4, -2)$$

- 11) rotation 90° clockwise about the origin
 $S(1, -4)$, $W(1, 0)$, $J(3, -4)$

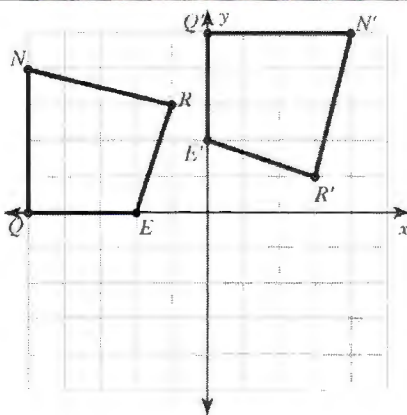
$$S'(-4, -1), W'(0, -1), J'(-4, -3)$$

- 12) rotation 180° about the origin
 $V(-5, -3)$, $A(-3, 1)$, $G(0, -3)$

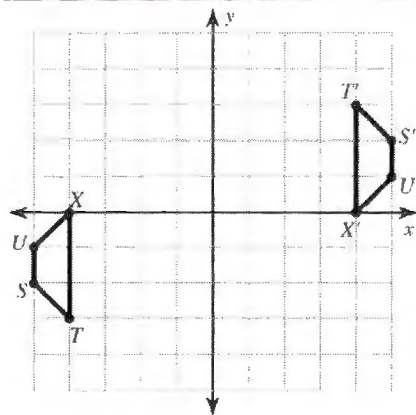
$$V'(5, 3), A'(3, -1), G'(0, 3)$$

Write a rule to describe each transformation.

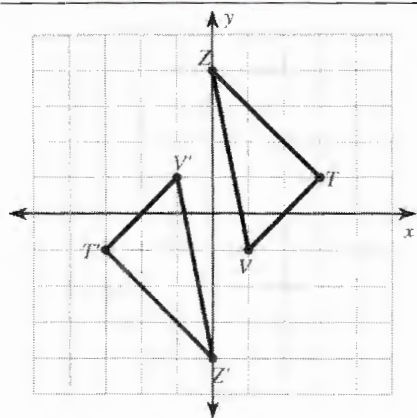
- 13) Rotation Clockwise 90°



- 14) Rotation 180°



15)

Rotation 180° 

16)

Rotation 180° 