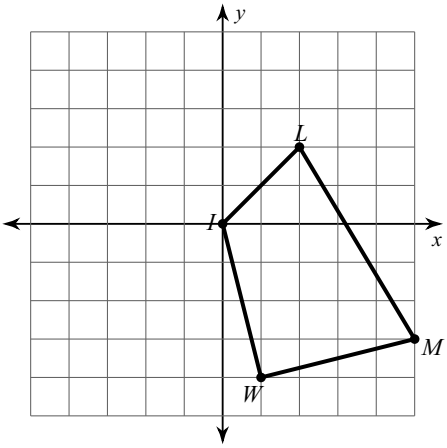
Rotations

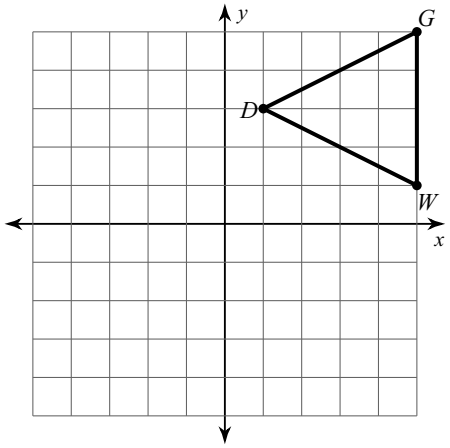
Date_____ Period____

Graph the image and list the coordinates of the new figure using the transformation given.

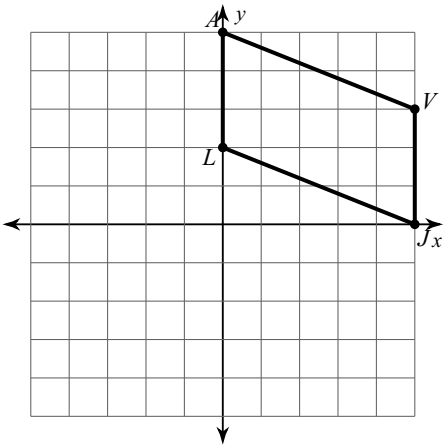
1) rotation 90° clockwise about the origin



2) rotation 180° about the origin



3) rotation 90° counterclockwise about the origin



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

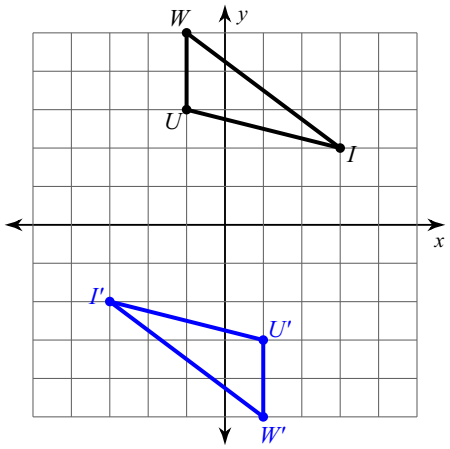
4) rotation 180° about the origin
$M(-5, -3)$, $Q(-4, 0)$, $Y(-1, -2)$, $U(-1, -3)$

A) $Q'(0, 0)$, $Y'(-3, -2)$, $U'(-3, -3)$, $M'(1, -3)$
B) $M'(3, -5)$, $Q'(0, -4)$, $Y'(2, -1)$, $(3, -1)$
C) $M'(-3, 5)$, $Q'(0, 4)$, $Y'(-2, 1)$, $(-3, 1)$
D) $M'(5, 3)$, $Q'(4, 0)$, $Y'(1, 2)$, $(1, 3)$

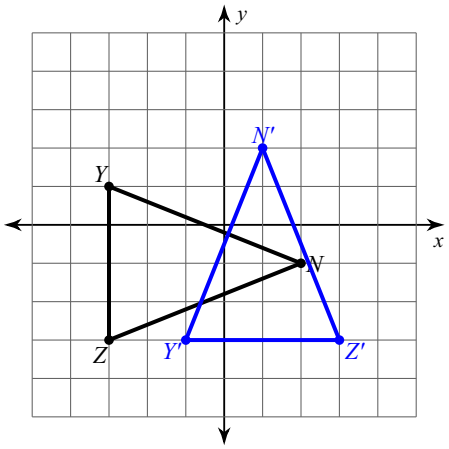
5) rotation 90° clockwise about the origin
$J(-2, 3)$, $G(1, 5)$, $H(3, 1)$

Write a rule to describe each transformation.

6)



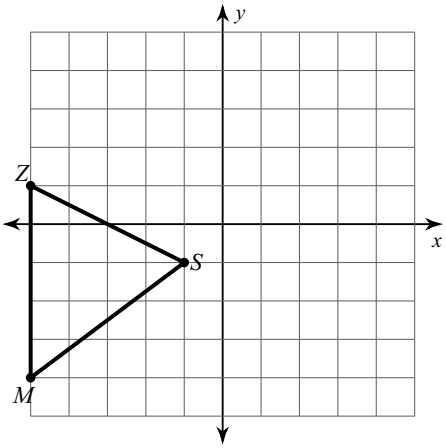
7)



A) reflection across $y = 1$
B) rotation 180° about the origin
C) reflection across the x-axis
D) rotation 90° counterclockwise about the origin

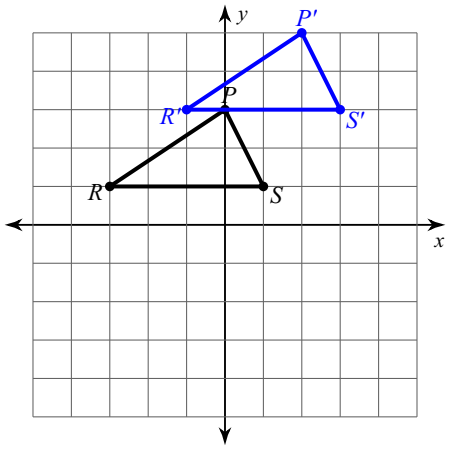
Graph the image of the figure and list the coordinates of the new image. using the transformation given.

8) translation: $(x, y) \rightarrow (x + 1, y + 1)$



Write a rule to describe each transformation.

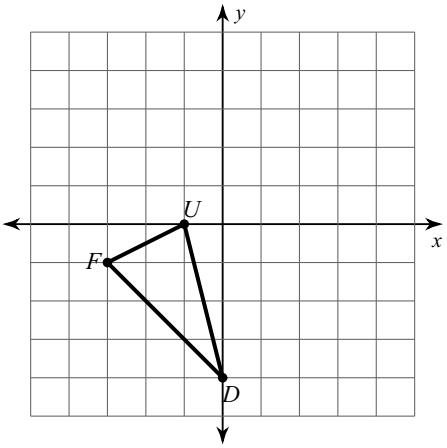
9)



10) $H(1, 0), P(3, 3), L(4, 0)$
to
$H'(2, -3), P'(4, 0), L'(5, -3)$

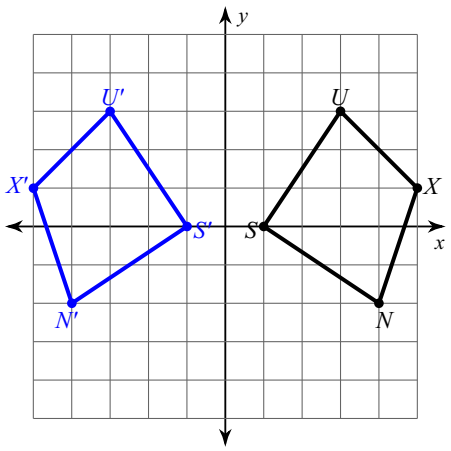
Graph the image of the figure and list the points of the new image using the transformation given.

11) reflection across the y-axis



Write a rule to describe each transformation.

12)



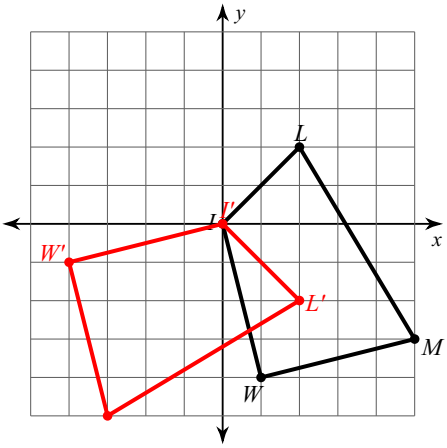
13) $Z(0, 0), M(3, 4), L(5, 1)$
to
$M'(-3, 4), L'(-5, 1), Z'(0, 0)$

Rotations

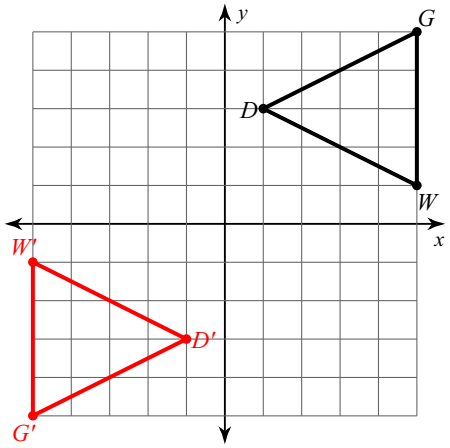
Date_____ Period____

Graph the image and list the coordinates of the new figure using the transformation given.

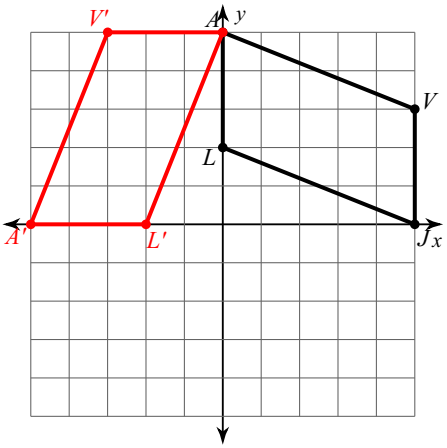
1) rotation 90° clockwise about the origin



2) rotation 180° about the origin



3) rotation 90° counterclockwise about the origin



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

4) rotation 180° about the origin
$M(-5, -3)$, $Q(-4, 0)$, $Y(-1, -2)$, $U(-1, -3)$

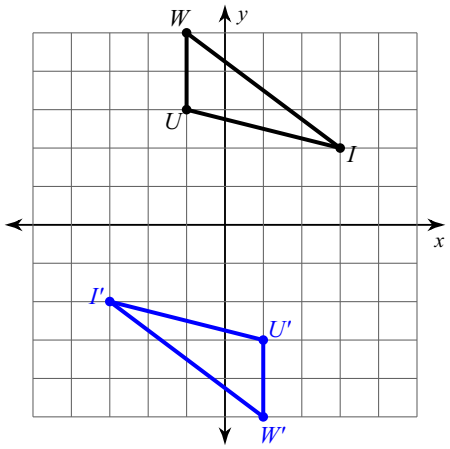
A) $Q'(0, 0)$, $Y'(-3, -2)$, $U'(-3, -3)$, $M'(1, -3)$
B) $M'(3, -5)$, $Q'(0, -4)$, $Y'(2, -1)$, $(3, -1)$
C) $M'(-3, 5)$, $Q'(0, 4)$, $Y'(-2, 1)$, $(-3, 1)$
*D) $M'(5, 3)$, $Q'(4, 0)$, $Y'(1, 2)$, $(1, 3)$

5) rotation 90° clockwise about the origin
$J(-2, 3)$, $G(1, 5)$, $H(3, 1)$

$J'(3, 2)$, $G'(5, -1)$, $H'(1, -3)$

Write a rule to describe each transformation.

6)



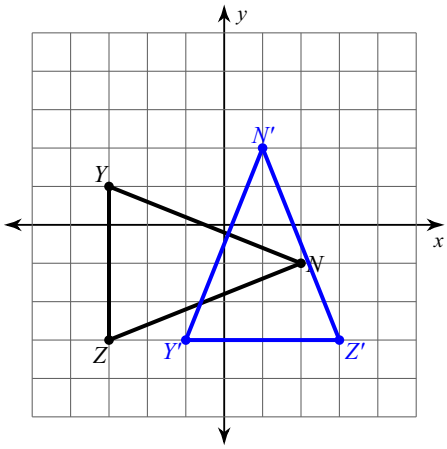
A) reflection across $y = 1$

*B) rotation 180° about the origin

C) reflection across the x-axis

D) rotation 90° counterclockwise about the origin

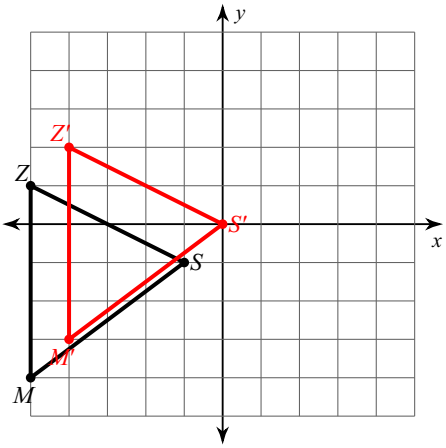
7)



rotation 90° counterclo
origin

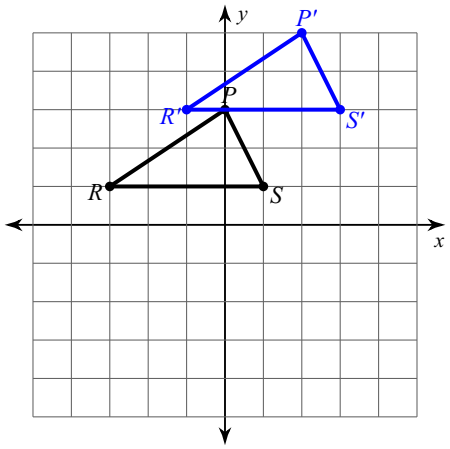
Graph the image of the figure and list the coordinates of the new image. using the transformation given.

8) translation: $(x, y) \rightarrow (x + 1, y + 1)$



Write a rule to describe each transformation.

9)

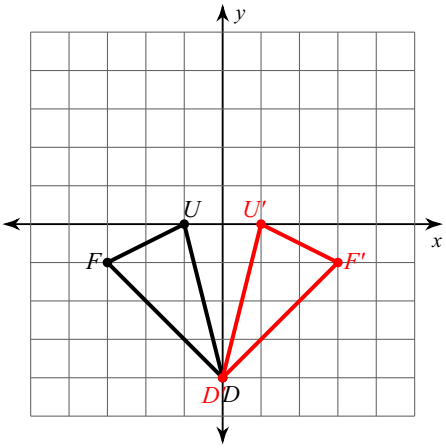


translation: 2 units right and 2 units up

10) $H(1, 0), P(3, 3), L(4, 0)$
to
$H'(2, -3), P'(4, 0), L'(5, -3)$
translation: 1 unit right and 3 units down

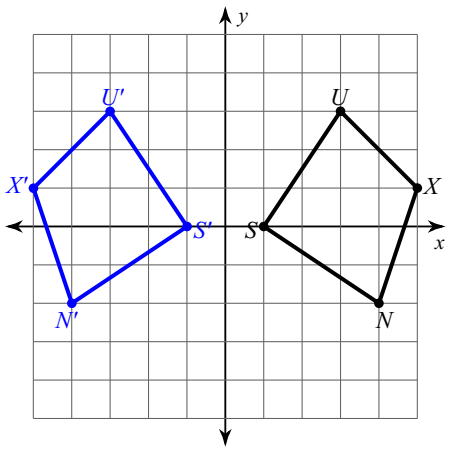
Graph the image of the figure and list the points of the new image using the transformation given.

11) reflection across the y-axis



Write a rule to describe each transformation.

12)



reflection across the y-axis

13) $Z(0, 0), M(3, 4), L(5, 1)$
to
$M'(-3, 4), L'(-5, 1), Z'(0, 0)$
reflection across the y-axis