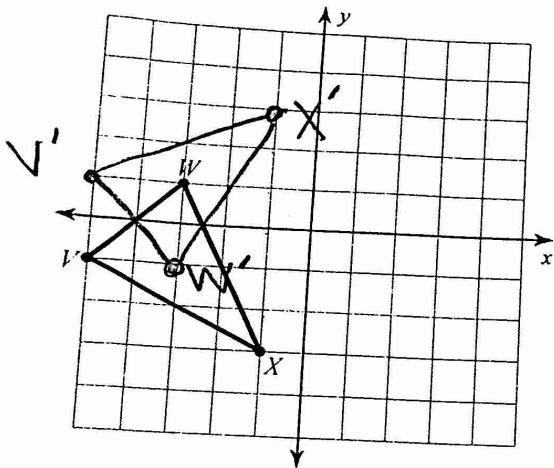


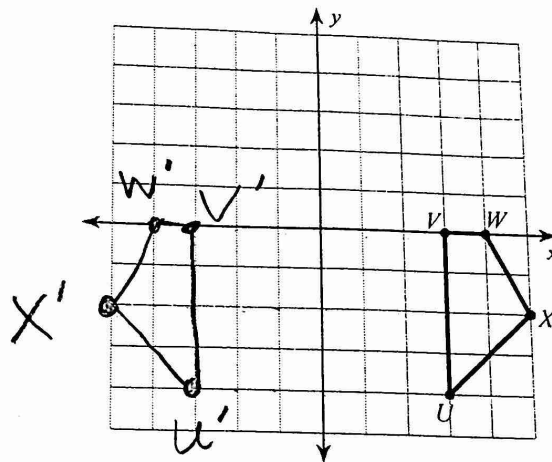
Reflections--Ordered Pair Notation

Graph the image of the figure using the transformation given.

1) reflection across the x-axis



2) reflection across the y-axis



Write a rule to describe each transformation using ordered pair notation.

3) $F(1, 1), G(4, 3), H(5, 0)$
to
 $G'(4, -3), H'(5, 0), F'(1, -1)$

reflects over
x axis

4) $A(3, 1), B(5, 5), C(5, 2)$
to
 $B'(-5, 5), C'(-5, 2), A'(-3, 1)$

-x, y
reflects over
y axis

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

5) reflection across the x-axis
 $S(-1, 2), T(0, 4), U(4, 0)$

$(-1, -2) (0, -4) (4, 0)$

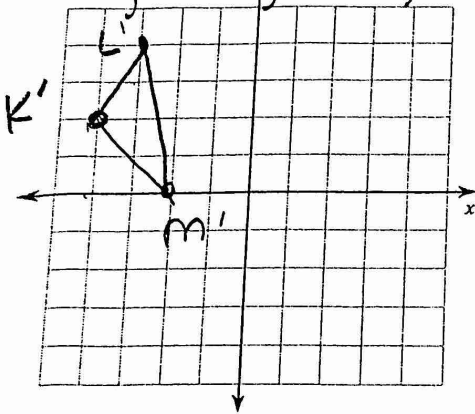
6) reflection across the y-axis
 $K(-4, -2), J(-3, 1), I(1, -3)$

$(4, -2) (3, 1) (-1, -3)$

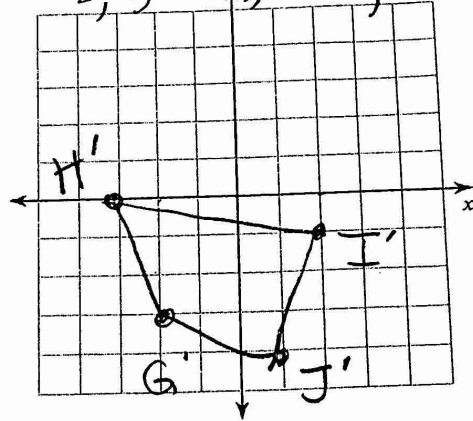
Assignment

Graph the image of the figure using the transformation given.

- 1) translation: $(x, y) \rightarrow (x - 1, y + 3)$
 $K(-3, -1), L(-2, 1), M(-1, -3)$
 $-4, 2 \quad -3, 4 \quad -2, 0$

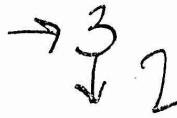


- 2) translation: $(x, y) \rightarrow (x, y + 1)$
 $G(-2, -4), H(-3, -1), I(2, -2), J(1, -4)$
 $-2, -3 \quad -3, 0 \quad 2, -1 \quad 1, -3$



Write a rule to describe each transformation.

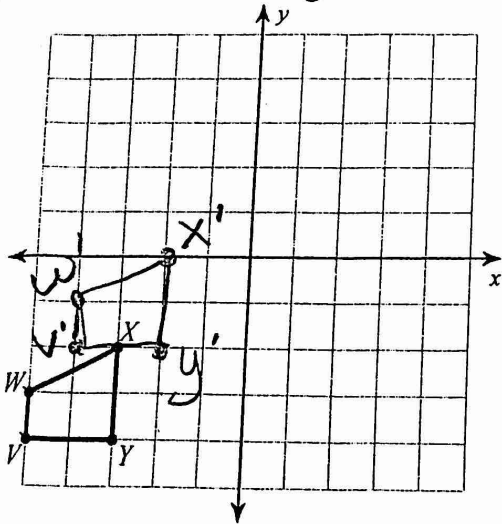
- 3) $R(-5, 2), S(-3, 5), T(-2, 1)$
 to
 $R'(-2, 0), S'(0, 3), T'(1, -1)$



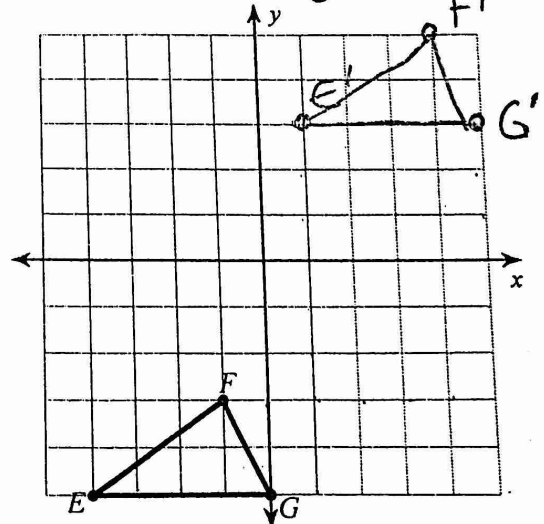
- 4) $F(-1, -2), E(-1, 2), D(4, 3), C(4, -1)$
 to
 $F'(-4, -2), E'(-4, 2), D'(1, 3), C'(1, -1)$
 Left 3

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

- 5) translation: 1 unit right and 2 units up



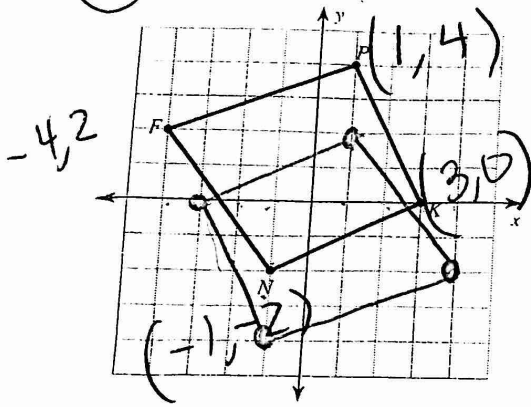
- 6) translation: 5 units right and 8 units up



Rotations

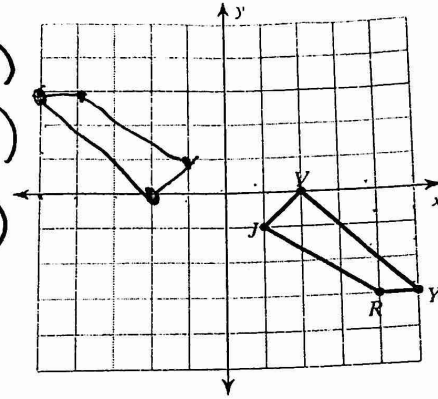
Graph the image of the figure using the transformation given.

1) rotation 180° about the origin



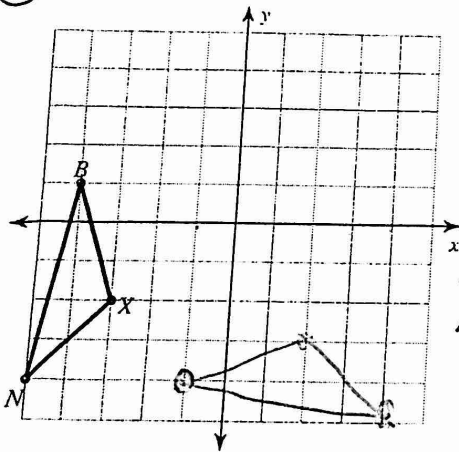
$F'(4, -2)$
 $P'(-1, -4)$
 $N'(-3, 0)$
 $K'(1, 2)$

2) rotation 180° about the origin



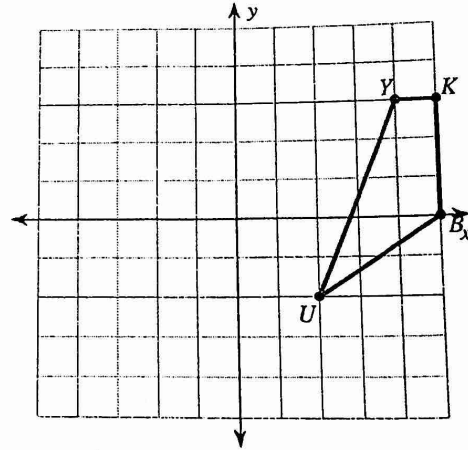
J'
 Y'
 R'
 Y'

3) rotation 90° counterclockwise about the origin



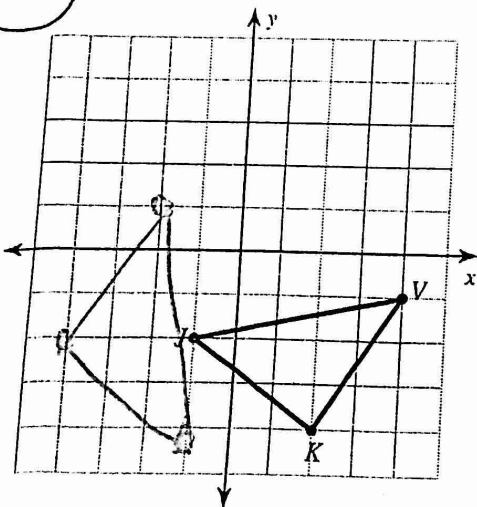
B'
 N'
 X'

4) rotation 90° clockwise about the origin



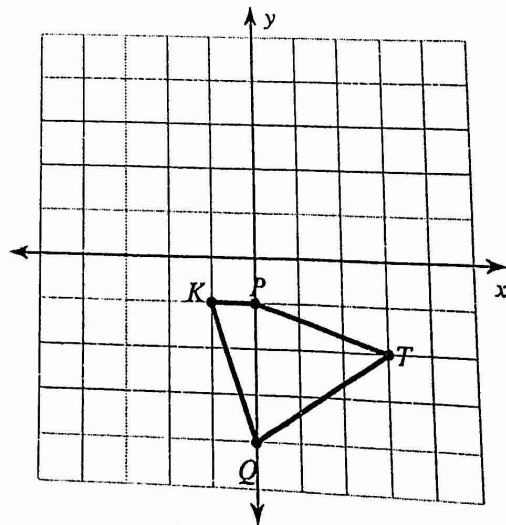
Try # 7 on the back

5) rotation 90° clockwise about the origin



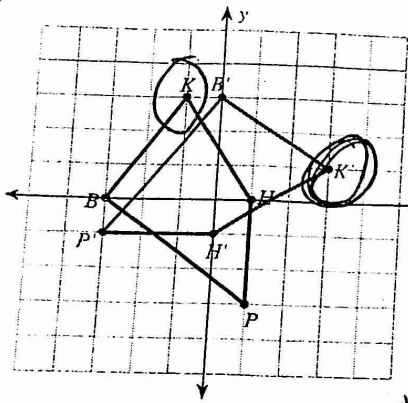
J'
 K'
 V'

6) rotation 180° about the origin



Write a rule to describe each transformation.

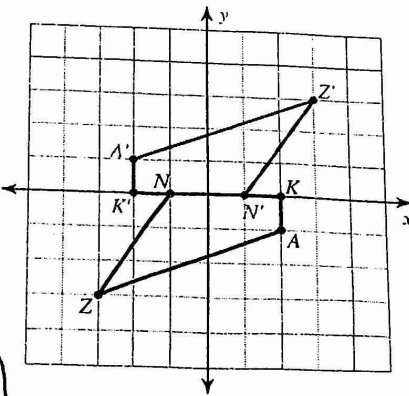
7)



$K(1,3)$
 $K'(3,1)$
 $(y, -x)$

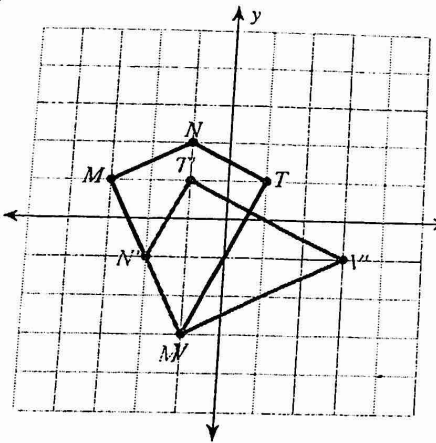
90° CW

8)



180°
 $A(2,-1)$
 $A'(-2,1)$

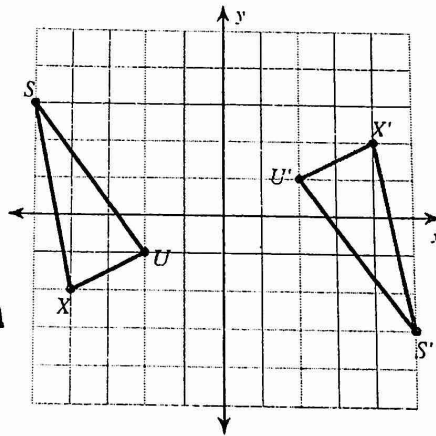
9)



270 CW
 $(-y, x)$

90° CCW

10)

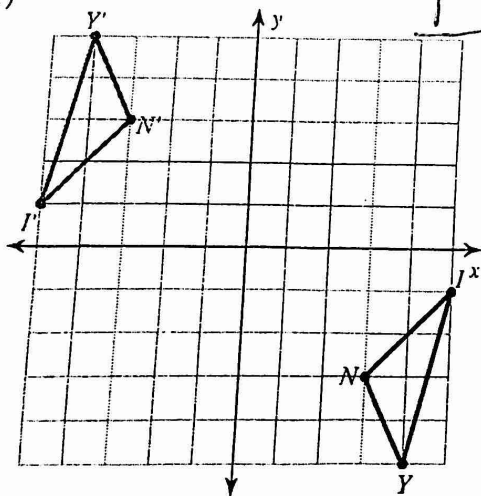


180°

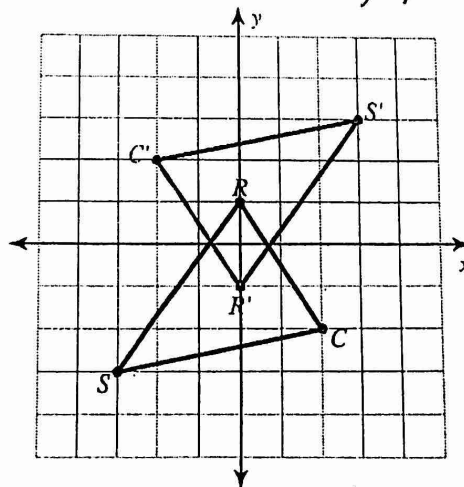
180° CW

$U(-2,-1)$
 $U'(2,1)$

11)



12)



180°
 $C(2,-2)$
 $C'(-2,2)$

$S(-3,-3)$
 $S'(3,3)$