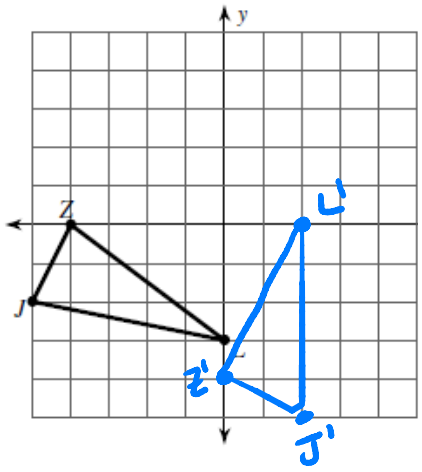
Key

Quiz Review

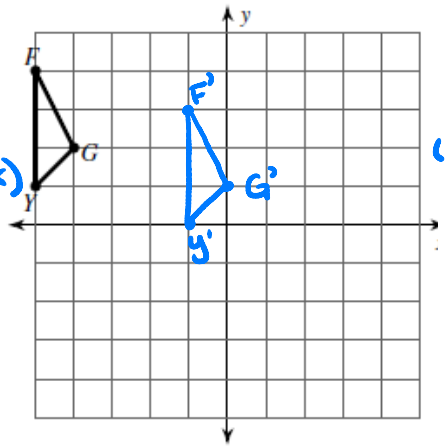
Graph the image of the figure using the transformation given AND write the algebraic rule.

1) rotation 90° counterclockwise about the origin



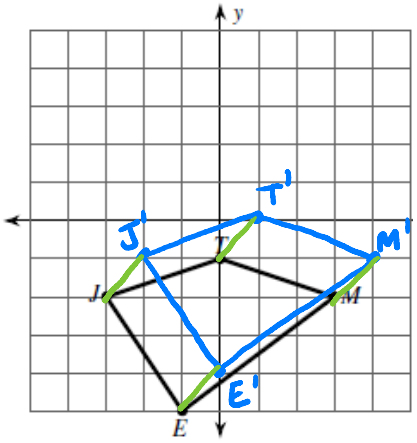
Algebraic Rule: $(x,y) \rightarrow (-y,x)$

2) translation: 4 units right and 1 unit down



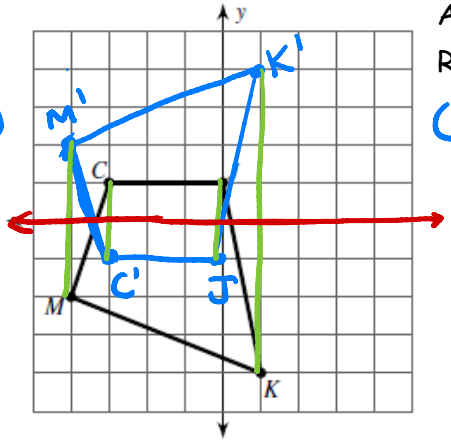
Algebraic Rule: $(x,y) \rightarrow (x+4,y-1)$

3) translation: 1 unit right and 1 unit up



Algebraic Rule: $(x,y) \rightarrow (x+1,y+1)$

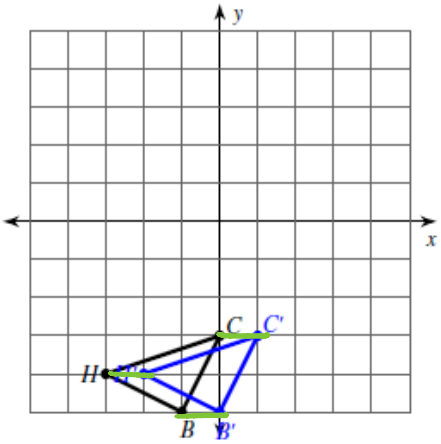
4) reflection across the x-axis



Algebraic Rule: $(x,y) \rightarrow (x,-y)$

Write a verbal description and a motion rule, as requested, to describe each transformation.

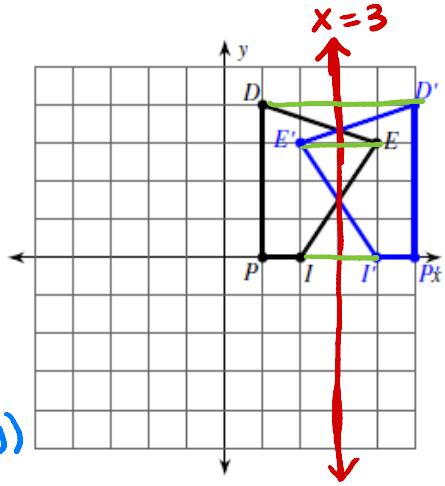
5)



Description: Translate right 1

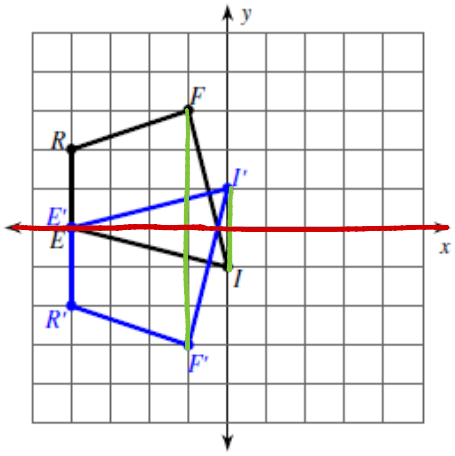
Algebraic Rule: $(x,y) \rightarrow (x+1,y)$

6)



Description: Reflect over line $x=3$

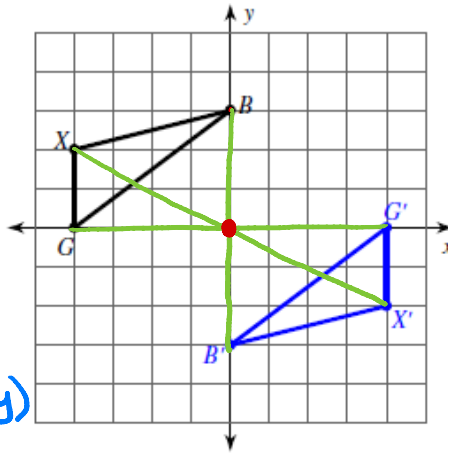
7)



Description: Reflect over x-axis

Algebraic Rule: $(x,y) \rightarrow (x,-y)$

8)

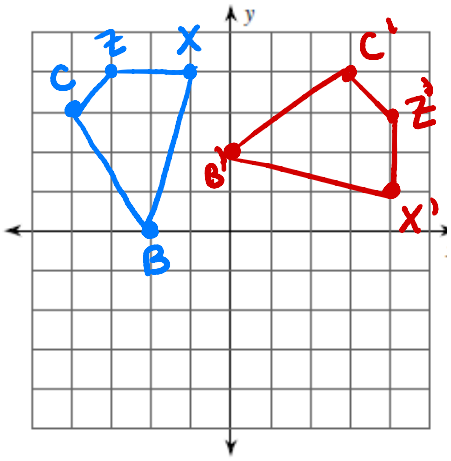


Description: Rotate 180° about the origin

Algebraic Rule: $(x,y) \rightarrow (-x,-y)$

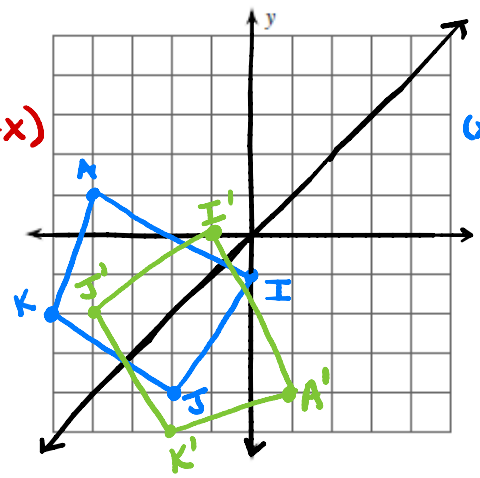
Graph the image of the figure using the transformation given and write the algebraic rule.

9) rotation 90° clockwise about the origin
$B(-2, 0), C(-4, 3), Z(-3, 4), X(-1, 4)$



Algebraic Rule: $(x, y) \rightarrow (y, -x)$

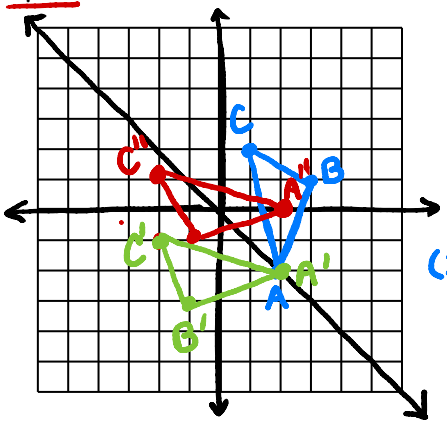
10) reflection across $y = x$
$K(-5, -2), A(-4, 1), I(0, -1), J(-2, -4)$



Algebraic Rule: $(x,y) \rightarrow (y,x)$

11. Use ΔABC with A(2,-2), B(3,1), and C(1,2)

ΔABC is reflected over y = -x and moved up 2



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

$\downarrow$

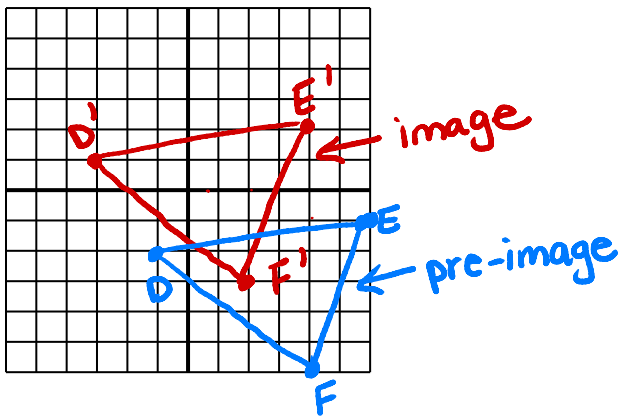
$(-y,-x+2)$

Algebraic Rule: $(x,y) \rightarrow (-y,-x+2)$

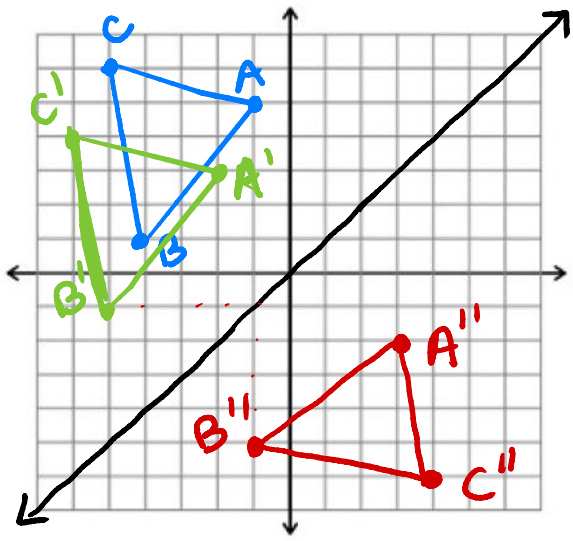
12. If $\Delta D'E'F'$ has coordinates D' (-3, 1), E'(4, 2) and F'(2, -3) was the result of a translation with rule (x - 2, y + 3),

what are the coordinates for the preimage, ΔDEF ?

D $(-1,-2)$ E $(6,-1)$ F $(4,-6)$



13. Graph and label a triangle with vertices A (-1, 5), B (-4, 1), and C (-5, 6). Apply a translation with the rule (x, y) -----> (x – 1, y – 2). Label triangle A'B'C'. Then reflect triangle A'B'C' over the line y = x. Label triangle A''B''C''. Derive the algebraic rule that maps the pre-image to the final image.



shift left 1, down 2

$(x,y) \rightarrow (x-1, y-2)$ Reflect over $y=x$ $\rightarrow (y-2, x-1)$

Algebraic Rule: (x, y) → (y-2 , x-1)

14. The vertices of a triangle are $P(-7, -1)$, $Q(2, 1)$, and $R(-5, 3)$. Name the algebraic rule for the composition of reflecting in the line $y = x$, then translating left 7 and down 4.

A. (x, y) -> (y – 7, x – 4)

B. (x, y) -> (y – 4, x – 7)

C. (x, y) -> (x – 7, y – 4)

D. (x, y) -> (x – 4 , y – 7)

Reflect over $y = x$ $(x,y) \rightarrow (y,x)$

Then translate $(y-7, x-4)$
left 7 down 4