Directions: Write the rule of the transformation. (This is a mixed review).

1) A line segment is reflected over y = –x

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

2) A line segment is translated 5 units left & 1 unit up.

$(x,y) \rightarrow '(x-5, y+1)$

3) A triangle is reflected over x = 0. → y-axis

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

4) A triangle is reflected over y = x.

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

Directions: Describe the transformation. (This is a mixed review).

5) (x, y) → '(y, x)

Reflection over y=x

6) (x, y) → '(x – 2, y)

Left 2 units

7) (x, y) → '(–x, y)

Reflection over y-axis (x=0)

8) (x, y) → '(x + 3, y – 1)

Right 3 and down 1

*9) (x, y) → ''(–x, –y)

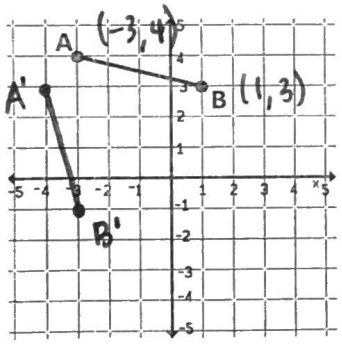
- Reflect over x-axis
- Reflect over y-axis

10) (x, y) → '(–y, –x)

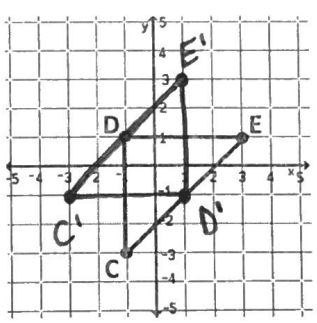
- Reflect over y=-x

Directions: Complete the transformation of the new image.

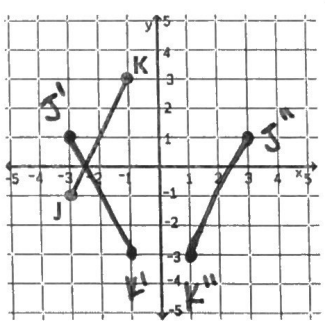
11) AB(x, y) → A'B'(–y, –x)



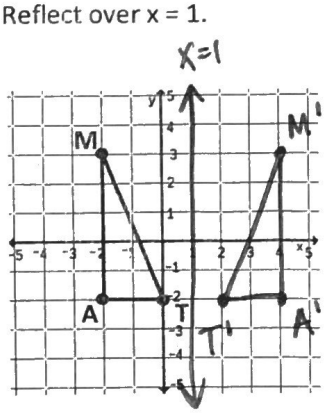
12) CDE (x, y) → C'D'E' (y, x)



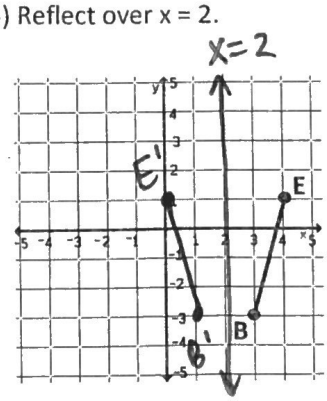
13) JK(x, y) → J''K''(–x, –y)



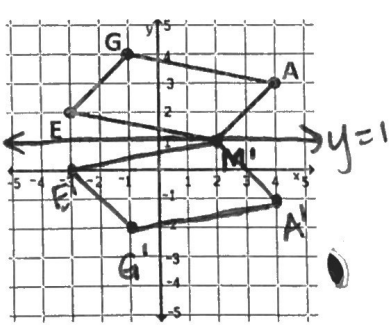
14) Reflect over x = 1.



15) Reflect over x = 2.



16) Reflect over y = 1.

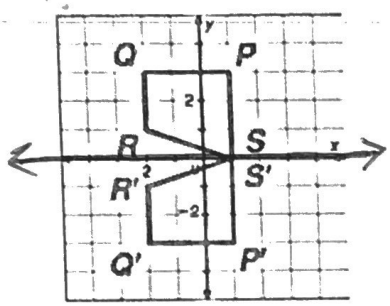


Directions: Find the equation of the line of reflection.

17) A(4, 7)→A'(4, –3) & B(0, 3)→B'(0, –7)

Reflect over $y = 3$

19)



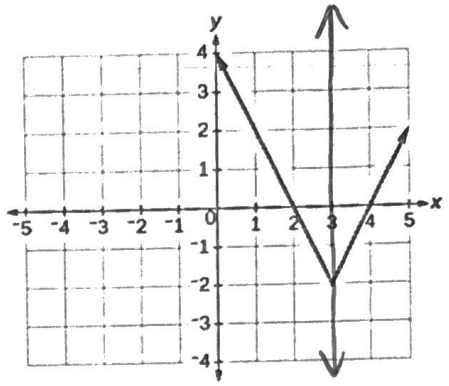
Reflect over X-axis or $y = 0$

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

18) Pre-Image: (3, –5) & Image: (5, –3)

Reflect over $y = -x$

20)

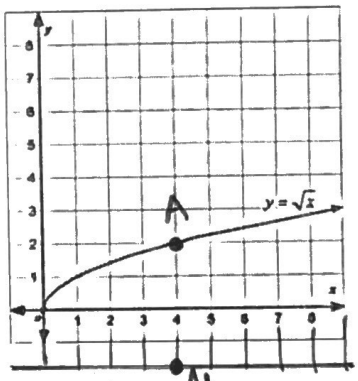


Reflect over $x = 3$

Directions: Solve each problem.

21) In the graph, the function is reflected over the x-axis and then over the y-axis. If Point A is located at the coordinate (4, 2), what is A''?

A''



$A''(-4,-2)$

22) In a sequence of transformations, A(3, –1) transforms to A''(1, 3) using reflections only. Describe a possible sequence of transformations for this pre-image and image coordinate.

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

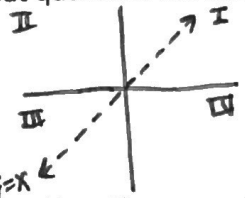
$(3,-1) \rightarrow '(-1,3) \rightarrow '' (1,3)$

Reflect over $y=x$ and then reflect over y-axis ($x=0$)

↳ there are other possible sequences!

23) In the pre-image (m, n), m and n are both natural numbers. If the pre-image is reflected over y = x, in what quadrant will the image be located?

↳ positive whole integers



Quadrant One

24) G'(4, –2) was produced after a reflection over y = –x. What is the ordered pair of the pre-image?

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

$G(2,-4) \rightarrow G'(4,-2)$