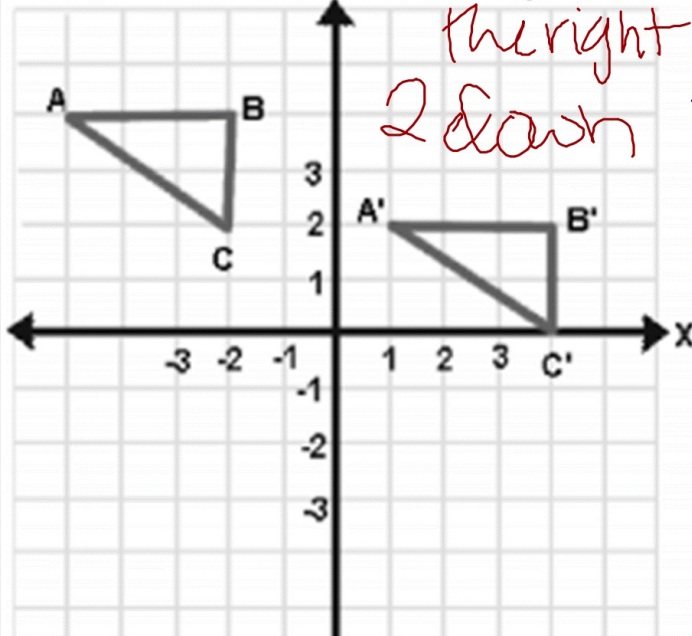


Warm-Up

Get out your homework

1) Describe the translation in the graph below



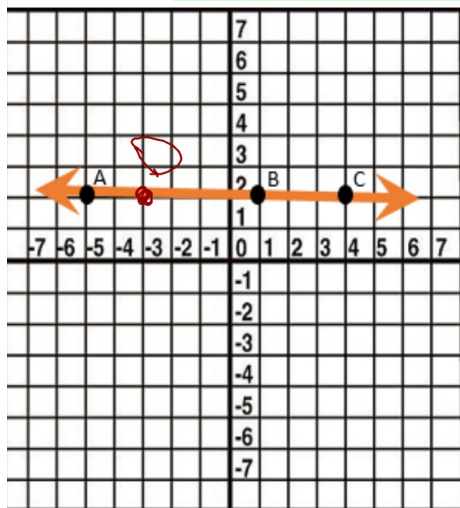
2) The point $A(-10, -5)$

has undergone the transformation $T_{3, -1}$.

What point is the preimage of A?

$A(-13, -4)$

Reflection



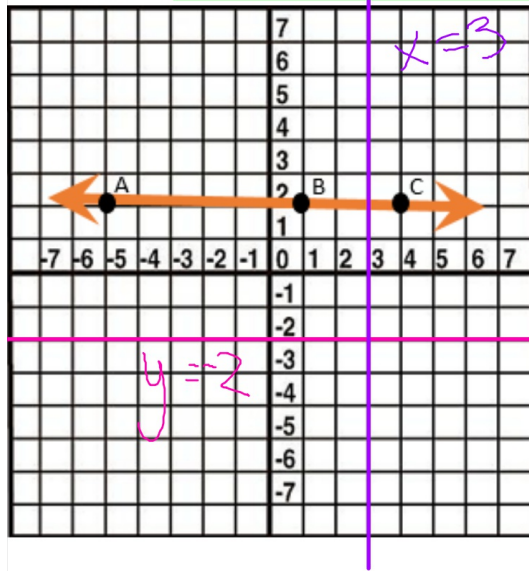
1) Write down the coordinates of each point: A $(-5, 2)$ B $(1, 2)$ C $(4, 2)$

2) Plot any point along this line. What is the y value? Try another point. What is the pattern?

all y values are 2

3) According to this pattern then, we can name this line as $y = 2$. The line $y = 2$ is parallel to the x-axis and it is a horizontal line.

Reflection



Draw and label the line $y=2$.

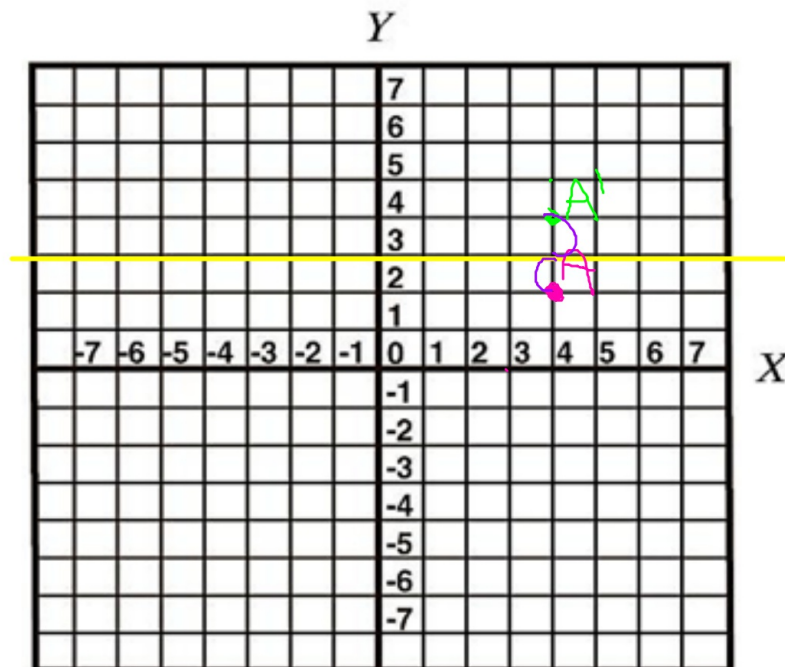
Draw and label the line $x=3$.

The $x=3$ line is parallel to the y-axis and it is a vertical line.

HOY = Zero slope
horizontal
VUX = undefined
vertical

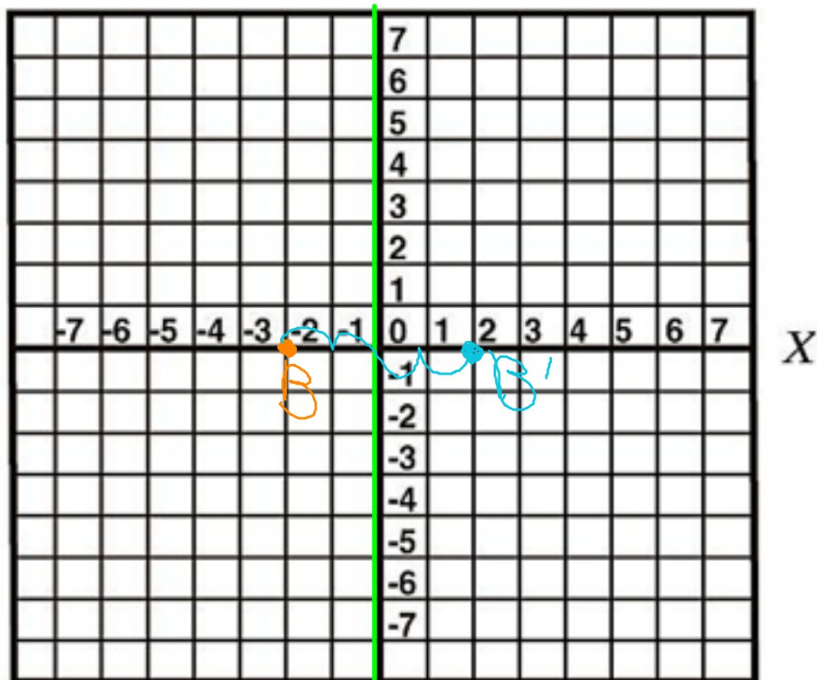
Reflection

1) Reflect the point A (4,2) across the line $y=3$.



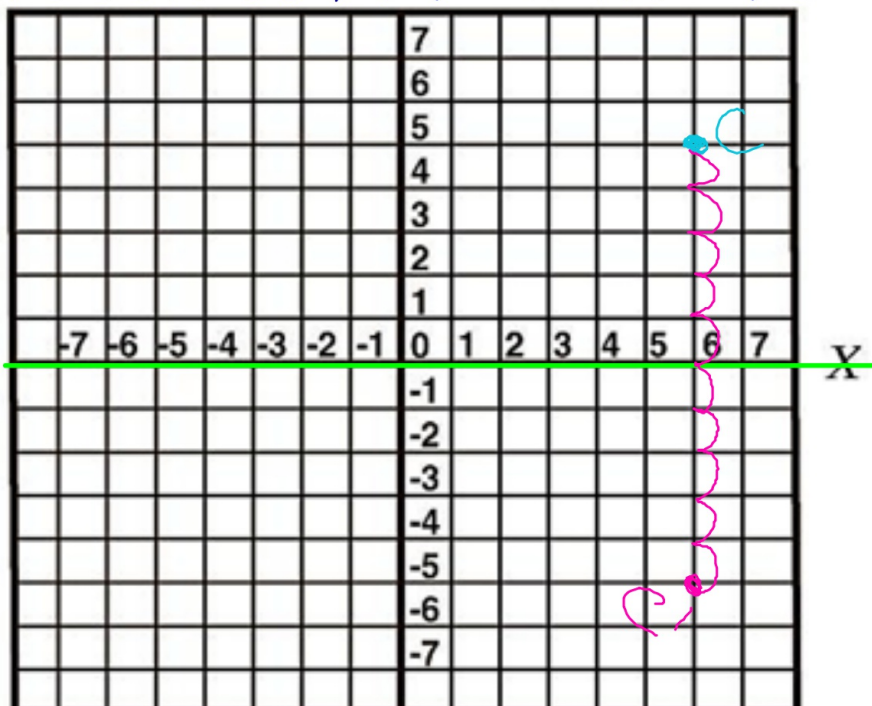
Reflection

2) Reflect the B $(-2,0)$ across the y-axis.



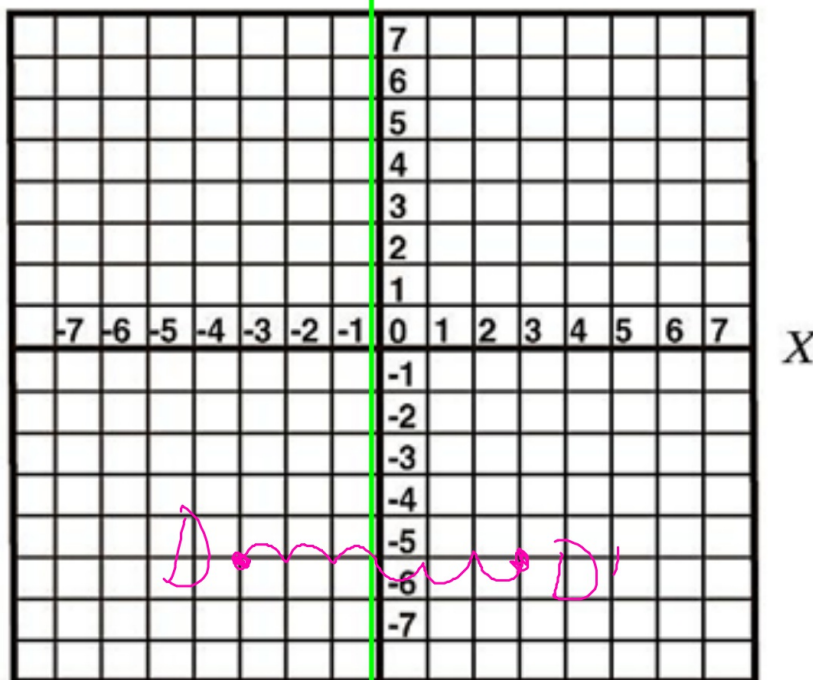
Reflection

3) Reflect the C $(6,5)$ across the x-axis.



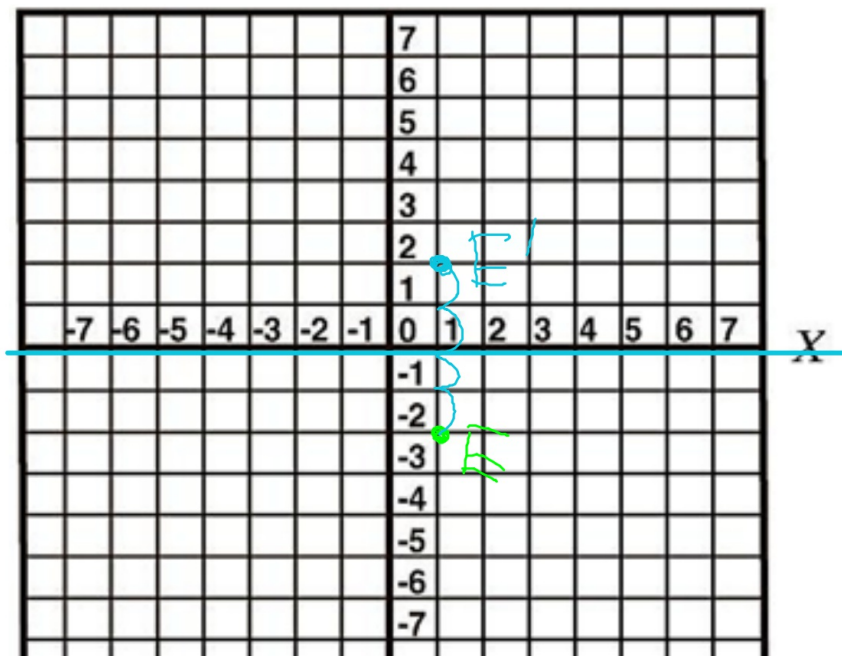
Reflection

4. Reflect the point $D(-3, -5)$ across the line y -axis



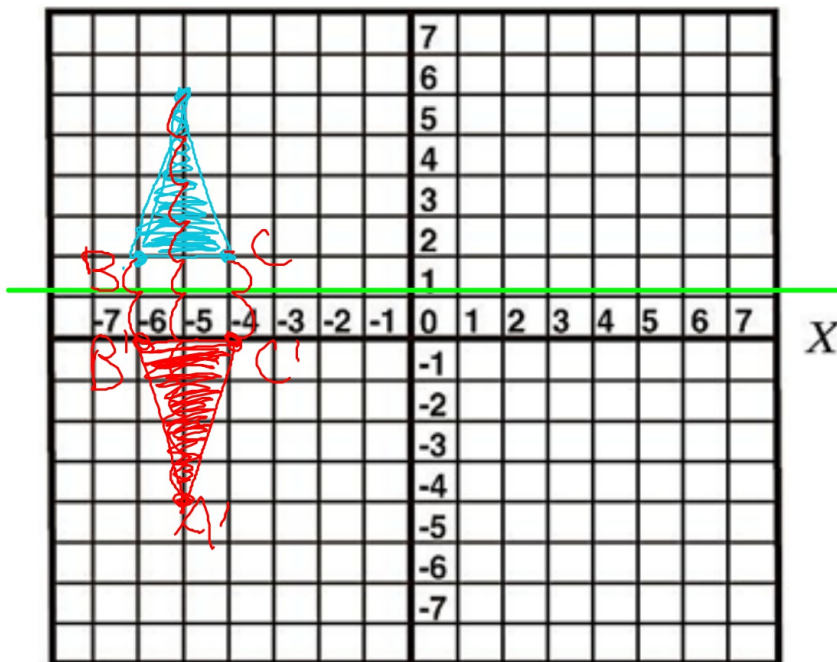
Reflection

5. Reflect the point $E(1, -2)$ across the line x -axis



Reflection

6) Reflect the shape below across the line $y=1$



Critical Thinking:

1) Look at #2 and #4. What happened to your coordinates when you reflected across the y-axis?

bd $B(-2,0)$ $B'(\underline{2}, \underline{0})$

$D(-3,-5)$ $D'(\underline{3}, \underline{-5})$

Notes: the x-value changed signs

Critical Thinking:

2) Look at #3 and #5. What happened to your coordinates when you reflected across the x-axis?

$$C(6,5) \quad C'(\underline{6}, \underline{-5})$$

$$E(1,-2) \quad E'(\underline{1}, \underline{2})$$

Notes: y-values changed signs

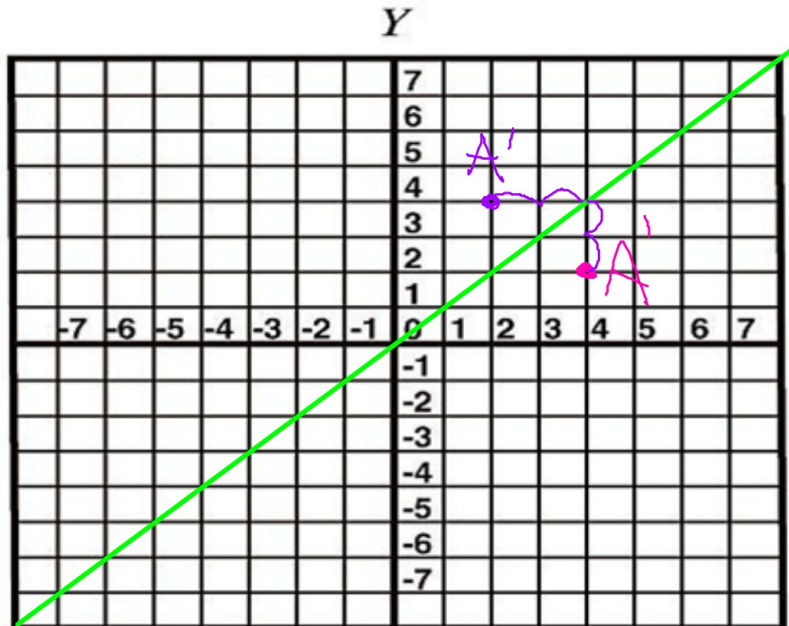
Critical Thinking:

3) How did you reflect the triangle ABC given in #6? In other words, what was your mental process? List your process.

reflected the points
individually

Critical Thinking:

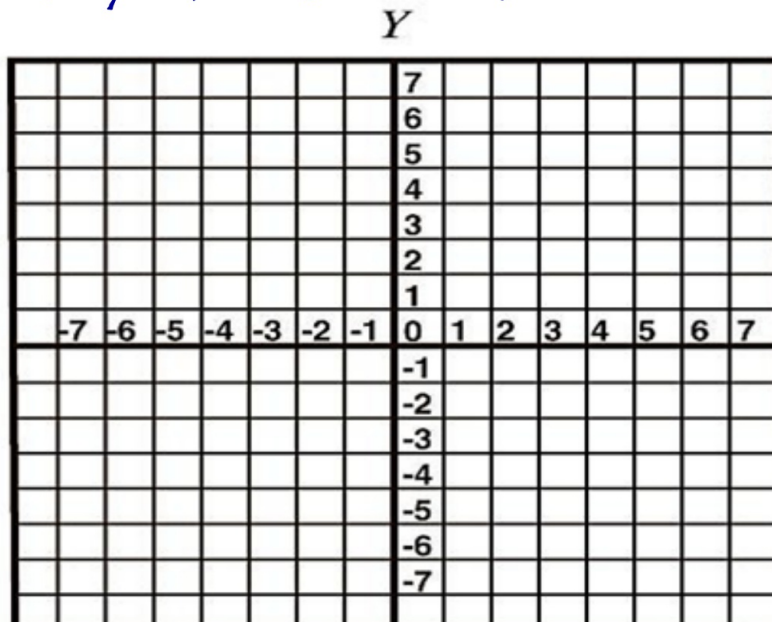
4) In the graph below, draw a $y=x$ line using the table provided.



y	x
-2	-2
-1	-1
0	0
1	1
2	2

Critical Thinking:

5) If the point A (4,2) was reflected across the line $y=x$, what would be the coordinates for A'?



y	x
-2	
-1	
0	
1	
2	

Independent Practice

Rules of Reflection

$$r_{x\text{-axis}}(x, y) = (x, -y)$$

Keep x, opposite y

$$r_{y\text{-axis}}(x, y) = (-x, y)$$

Opposite x, keep y

$$r_{y=x}(x, y) = (y, x)$$

Switch x and y

$$r_{y=-x}(x, y) = (-y, -x)$$

Switch and opposite x and y