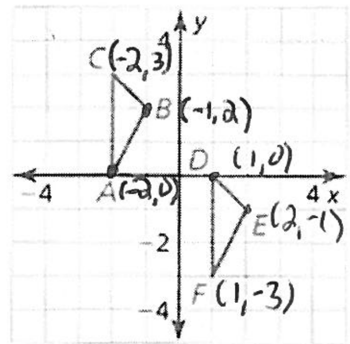
4.2 Reflections

Use coordinate rules

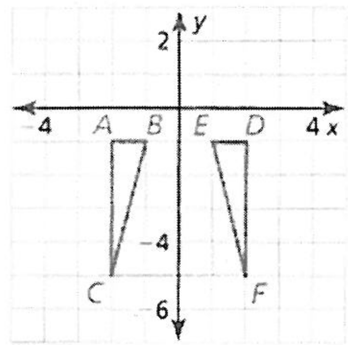
1) Determine if the coordinates give the lines of reflection
   a) ABC over the y axis A'(2,0) B'(1,2) C'(2,3)
   b) ABC over the x axis A'(-2,0) B'(-1,-2) C'(-2,-3)
   c) DEF over y = x. ~~A'(0,-2) B'(2,-1) C'(3,-2)~~
   d) DEF over y = -x. ~~A'(0,2) B'~~

→ D'(0,1) E'(-1,2) F'(-3,1)

→ D'(0,-1) E'(1,-2) F'(3,-1)



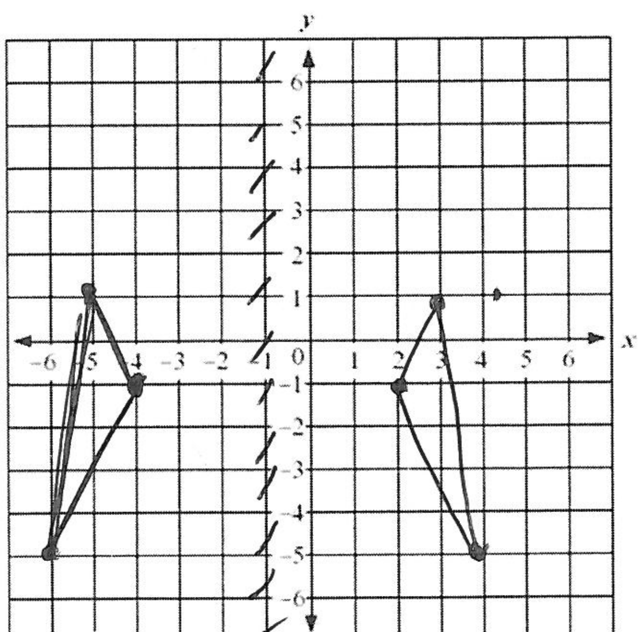
2) Determine if the coordinate plane shows a reflection over the lines $x = 0$, $y = 0$, or neither.



~~y axis = x=0~~

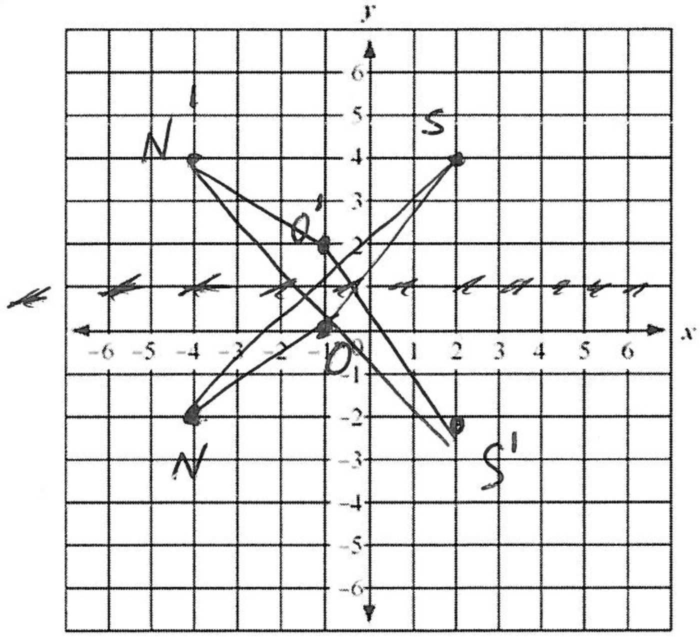
Y-axis is the line x=0
Since every point on the y axis has an X coordinate of zero.

3) Graph ΔMAN and its image over the line of reflection.
   M(2, -1), A(4, -5), N(3, 1) reflect over $x = -1$

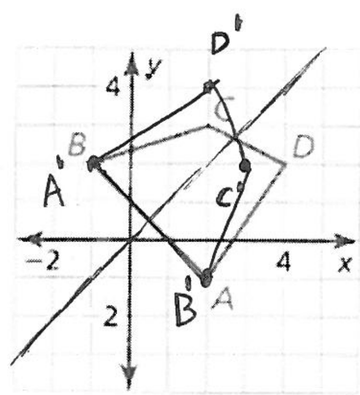


X=-1

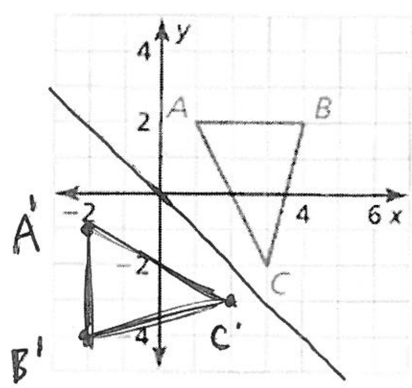
4) Graph ΔSON and its image over the line of reflection.
$S(2, 4)$, $O(-4, -2)$, $N(-1, 0)$ reflect over $y = 1$



5) Graph the line of reflection and the image over $y = x$.

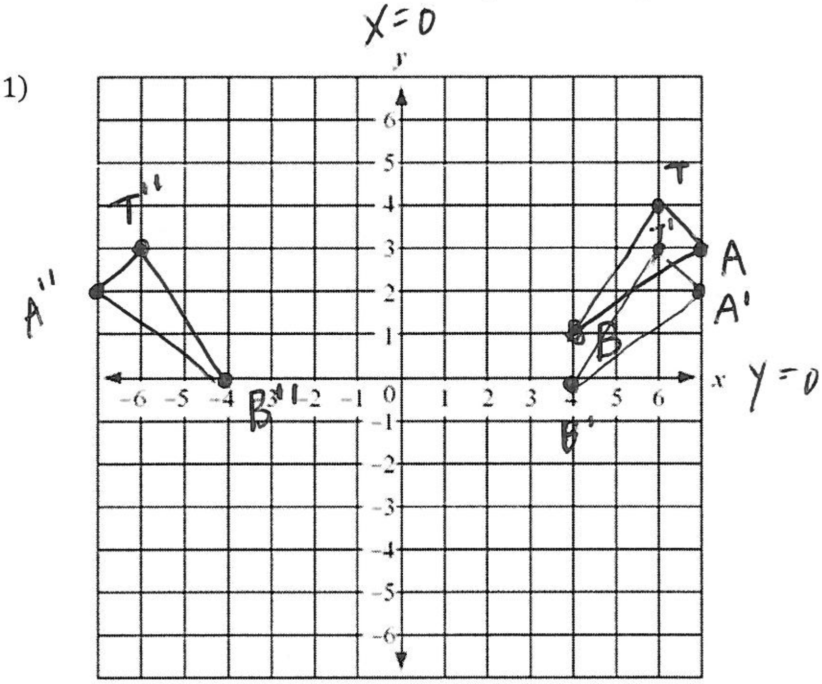


6) Graph the line of reflection and the image over $y = -x$.

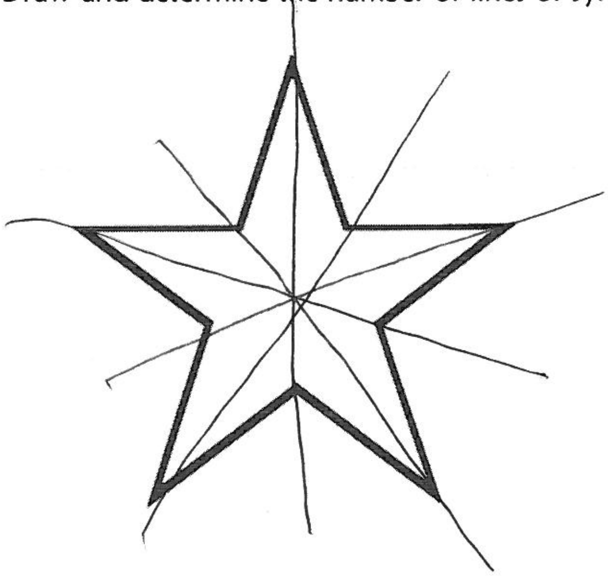


7) Graph ΔBAT with vertices B(4, 1), A(7, 3), and T(6, 4) and its image after the glide reflection.

Translation: $(x, y) \rightarrow (x, y - 1)$
Reflection: over $x = 0$

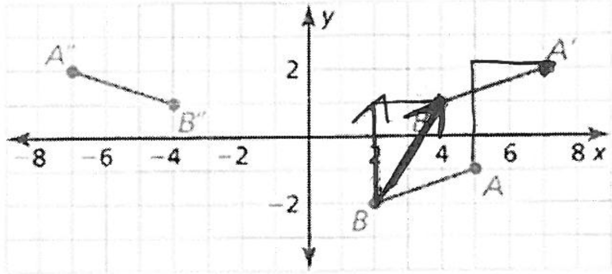


8) Draw and determine the number of lines of symmetry in the figure.



5

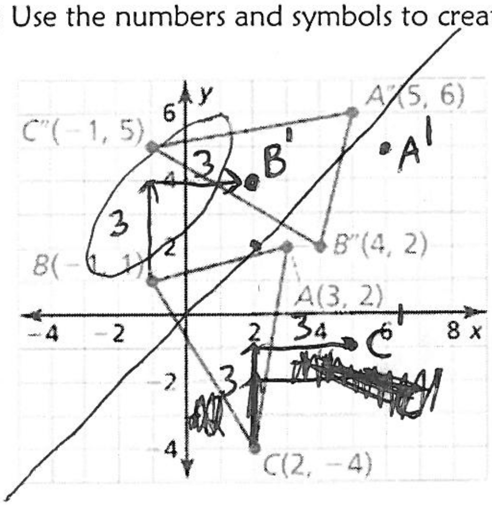
9) Describe and correct the error in describing the transformation.



$\overline{AB}$ to $\overline{A''B''}$ is a glide reflection.

This question is stupid but techically for it to be considered a "glide reflection", the vector has to be parallel to the line of reflection.

10) Use the numbers and symbols to create the glide reflection resulting in the image shown.



To do this, I first reflected A'', B'', C'' (just pick one) over y=x, then I looked at how many units up/right you need to move to get from A to A'.

Translation: $(x, y) \rightarrow$ (X+3 , y+3)
Reflection: over $y = x$

x	y	1	2
3	+	−	