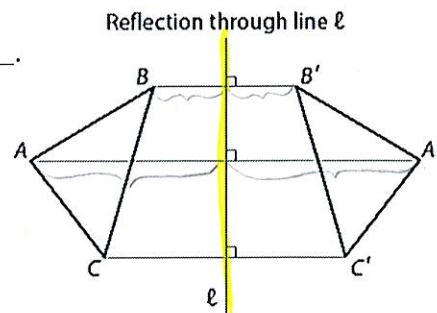


A reflection is a transformation where each point in a shape appears at an equal distance on the opposite side of a given line, called the line of reflection.

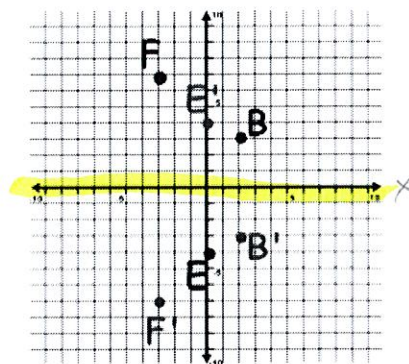


It preserves congruence so it is an isometry.

Each point in the preimage will move twice the distance from the line of reflection along a line that is perpendicular to the line of reflection.

X-AXIS REFLECTION

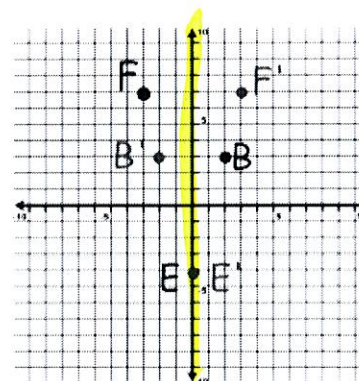
Pre-Image	Image
F: (-3, 7)	F': (-3, -7)
E: (0, -4)	E': (0, 4)
B: (2, 3)	B': (2, -3)



When reflecting across the x-axis what coordinate changes and how? y-coordinate change sign
 What coordinate stays the same? x So, $(x, y) \rightarrow (x, -y)$.

Y-AXIS REFLECTION

Pre-Image	Image
F: (-3, 7)	F': (3, 7)
E: (0, -4)	E': (0, -4)
B: (2, 3)	B': (-2, 3)

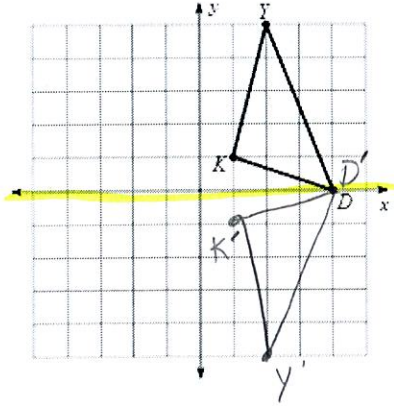


When reflecting across the y-axis what coordinate changes and how? x-coordinate change sign
 What coordinate stays the same? y So, $(x, y) \rightarrow (-x, y)$.

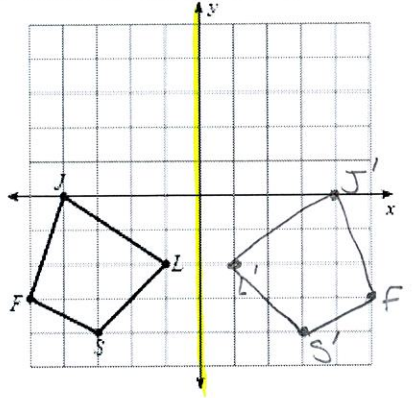
**Note: If E is on the line of reflection, then E and E' are the same point.

Let's Try! Reflect the given figure across the given axis.

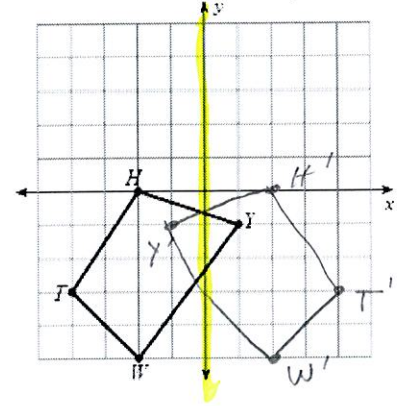
1. Reflect across the x-axis.



2. Reflect across the y-axis.

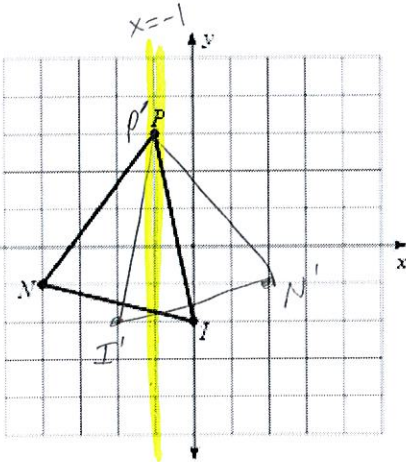


3. Reflect across the y-axis.

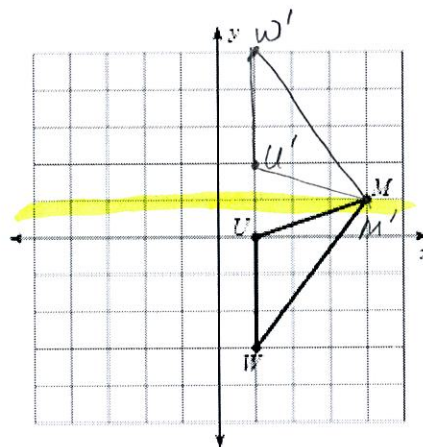


What if the line of reflection is not the x- or y-axis?

Ex 1. Reflection across $x = -1$



Ex 2. Reflection across $y = 1$

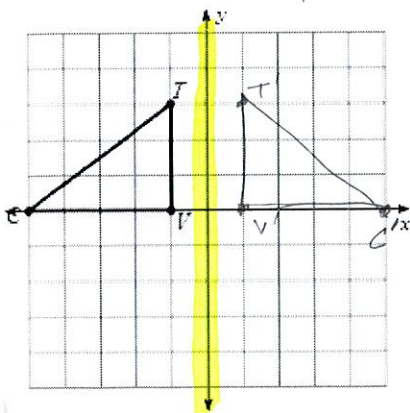


REMEMBER:
 A horizontal line will have the equation $y = \#$,
 while a vertical line will have the equation $x = \#$.
VUX HOY

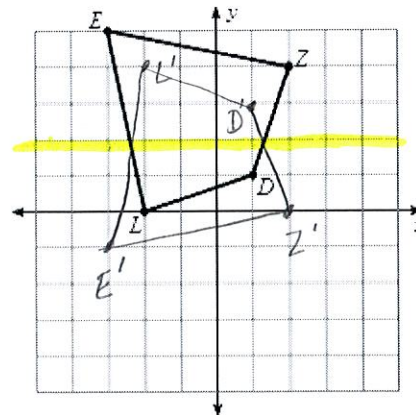
Reflect the figure over the given line of reflection.

1. Reflect across $x = 0$

y-axis



2. Reflect across $y = 2$



3. Reflect across $x = 2$

