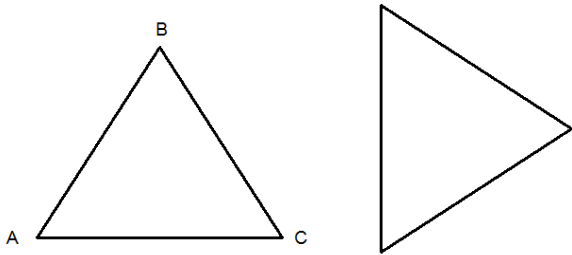


2.01 Translations and Reflections

Transformations Video [CLICK HERE](#)

What is a transformation?	Types of transformations
When a figure _____ in some way. Its size, orientation, and/or location may _____.	The four types of transformations are _____, _____, _____, and dilations.
How to label a shape after it has been transformed	
A = _____ B = B' C = _____	

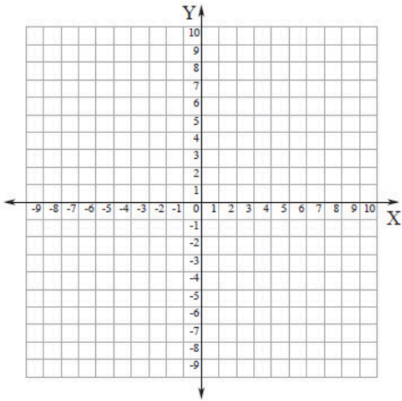
Order Matters! Video [CLICK HERE](#)

Triangle ABC is translated to create triangle DEF, list the parts of the triangles that correspond with each other.	
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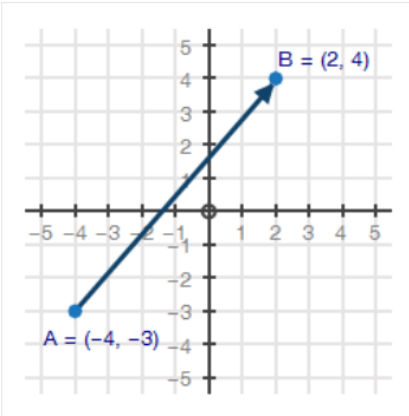
Vocabulary Review Video [CLICK HERE](#)

Pre-image	Image
A figure _____ it has been transformed.	The resulting figure _____ a pre-image has been transformed.
Translations	Collinear
The movement of a figure from one _____ to another without a _____ in shape, size, or orientation.	Points that lie on the same _____.
Rigid Motions	
A rigid transformation without altering its _____ or _____. <i>*Note:</i> It is important to note that translations are rigid transformations. The location of the figure changes during the transformation, but the shape and size do not.that lie on the same _____.	

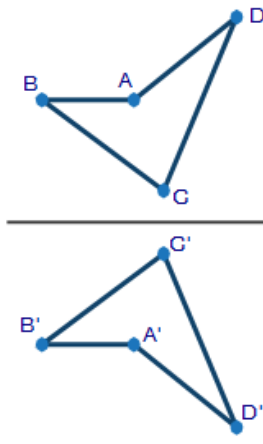
Translations as Functions Video [CLICK HERE](#)

How to write a translation	
Changes to the x-value:	
If a number is added to the x -coordinate, it shifts the image to the _____, and if a number is subtracted from the x -coordinate, it shifts the image to the _____.	
Changes to the y-value:	
If a number is added to the y -coordinate, it shifts the image _____, while subtracting a number shifts the figure _____.	

Using Vectors to represent a Translation Video [CLICK HERE](#)

Vector	Vector AB
used to describe objects in _____; represents the magnitude (<i>or length of an object</i>) and _____ of an object.	
Naming a Vector	
The image shown to the right illustrates _____ (read vector AB). The vector begins at point A, or _____ point, indicated by the tail of the vector. Point B is the _____ point, notated by the arrow of the vector.	
Example	
If a point is translated _____ units to the left and _____ units up the translation vector is $\langle _, _ \rangle$. The vector summarizes the horizontal and vertical shifts.	

Reflections Video [CLICK HERE](#)

Reflection	
A reflection is a transformation where the _____ image of a figure is shown directly opposite its _____ of reflection.	
Rigid Motion	
When a figure is _____ to a different location without altering its shape or _____.	
Line of Reflection	
The line of reflection is a unique line that is _____ from the corresponding vertices of the pre-image and image. It is also _____ to the line that connects these corresponding vertices.	

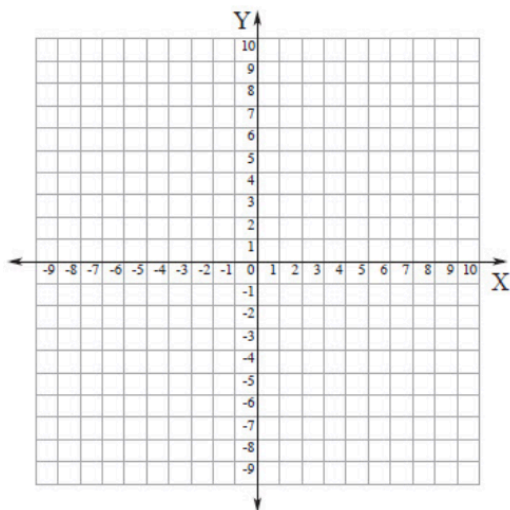
Rules of Reflection

How to reflect an image using a rule(*algebraically*)

Across the x-axis (or line $y = 0$)

Video [CLICK HERE](#)

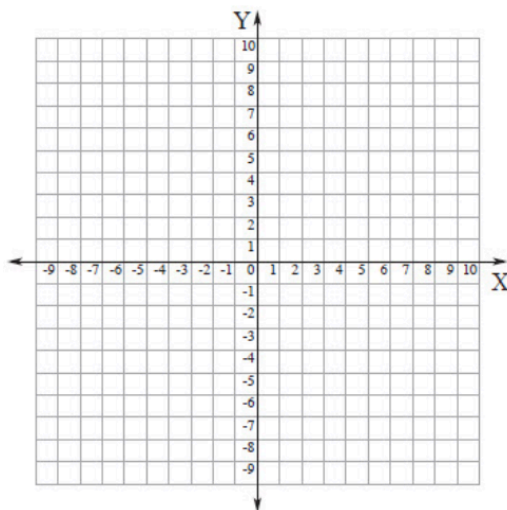
$(x, y) \rightarrow$ _____



Across the y-axis (or line $x = 0$)

Video [CLICK HERE](#)

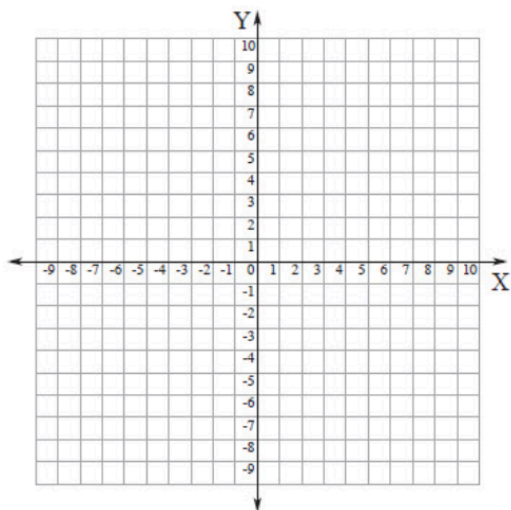
$(x, y) \rightarrow$ _____



Across the line $y = x$

Video [CLICK HERE](#)

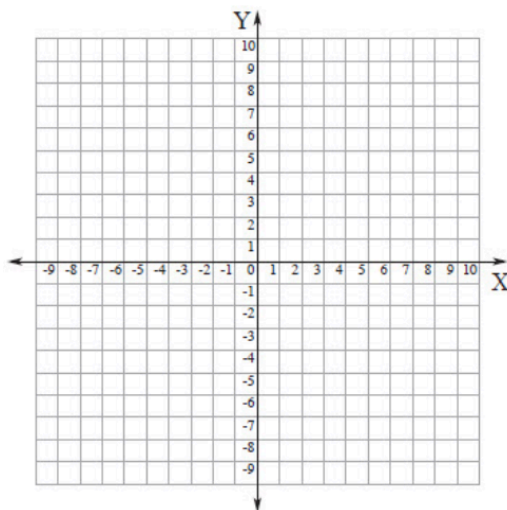
$(x, y) \rightarrow$ _____



Across the line $y = -x$

Video [CLICK HERE](#)

$(x, y) \rightarrow$ _____



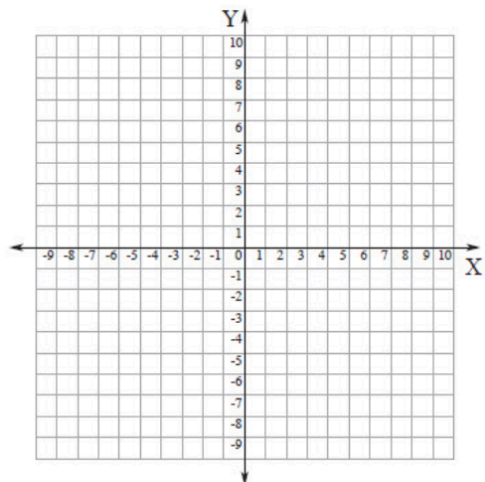
Reflections across Horizontal & Vertical Lines

How to reflect an image without a rule

Reflect Across Horizontal Lines

Video [CLICK HERE](#)

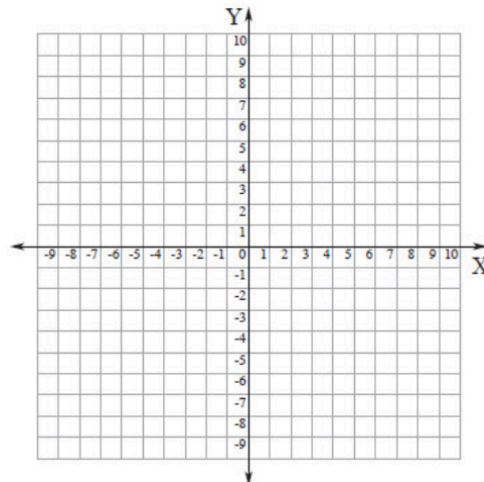
Across a **horizontal** line, Ex: $y = \underline{\hspace{2cm}}$



Reflect Across Vertical Lines

Video [CLICK HERE](#)

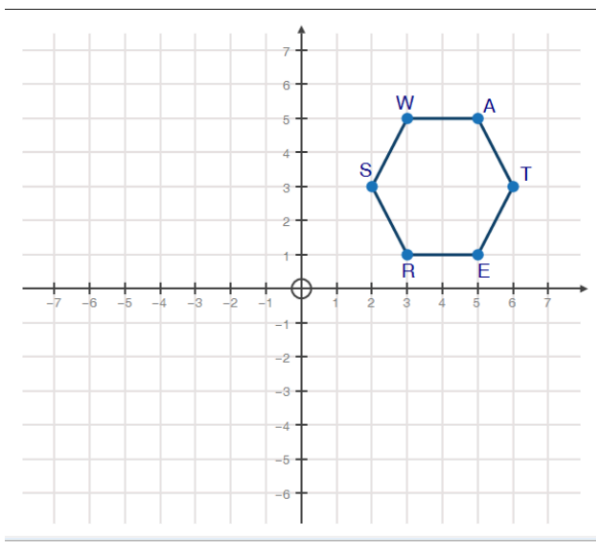
Across a **vertical** line, Ex: $x = \underline{\hspace{2cm}}$



Let's Practice!

Question 1 Video [CLICK HERE](#)

Translate WATERS 4 units to the left and 7 units down.



Write the rule:

($x \underline{\hspace{1cm}}$, $y \underline{\hspace{1cm}}$)

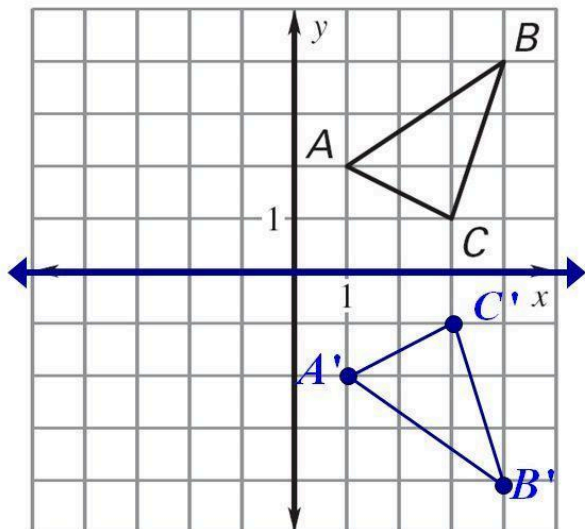
***Note:** There are a variety of ways to describe a translation using coordinates. For example, the translation pictured to the left can be described 4 ways:

1. using words: 4 units to the left and 7 units down
2. using coordinates: $(x, y) \rightarrow (x - 4, y - 7)$
3. symbol notation: $T_{x,y} = (x - 4, y - 7)$
4. by Vector: $T\langle -4, -7 \rangle$.

Question 2 Video [CLICK HERE](#)

What is the line of reflection between triangles ABC and A'B'C'?

Answer: _____ or _____



***Note:** There are multiple ways to describe a reflection using coordinates. A reflection over the x -axis can be represented as $(x, y) \rightarrow (x, -y)$ or as $rx\text{-axis}(x, y) = (x, -y)$.

Question 3 Video [CLICK HERE](#)

Graph a triangle (DEF) and reflect it over the line $y = x$ to create triangle D'E'F'. Describe the transformation using words. Draw a line segment from point D to the reflecting line and then draw a line segment from point D' to the reflecting line. What do you notice about the two line segments you drew?

*Reflection rule for $y = x$:

$(x, y) \rightarrow$ _____

Sample coordinates:

D: _____

D': _____

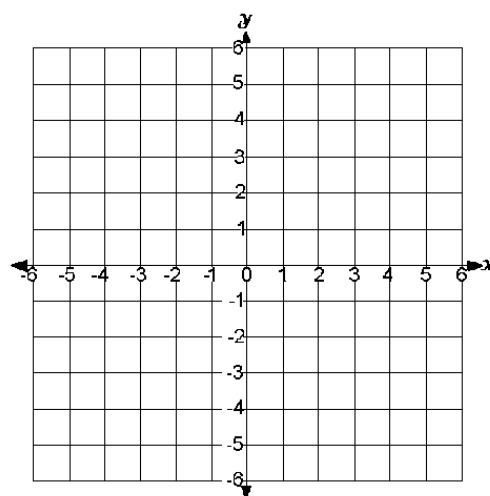
E: _____

E': _____

F: _____

F': _____

The lines are _____ and _____.



Question 4 Video [CLICK HERE](#)

What reflection and translation would map $\triangle ABC$ onto $\triangle DEF$?

