

Translations KEY

Transformations: a change in the Location, Orientation or Size of a figure.

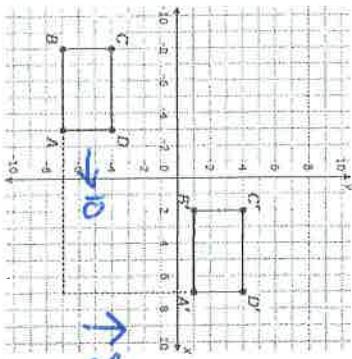
Original Shape	After a transformation
Pre-Image	Image

A Translation, also called a Slide, is the movement of a figure from one position to another without turning the figure.

A translation only changes the location of a figure. The image will stay the same size, shape and have the same Side orientation and angle measurements, as the pre-image. So, we say that a translation keeps a figure Congruent, or the same.

Example:

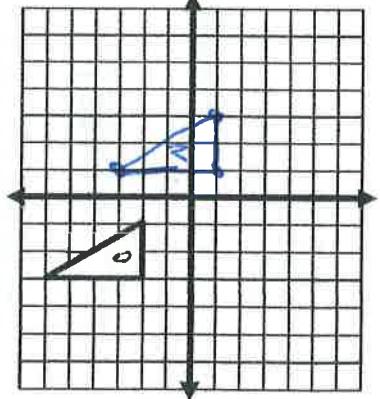
Rectangle ABCD is +10 translated by 10 units to the right and 8 units up forming Rectangle +8 A'B'C'D'



Graph the Translation and list the coordinates of the image:

$\xrightarrow{+4}$

ABC is translated 4 units to the right, and 3 units down.



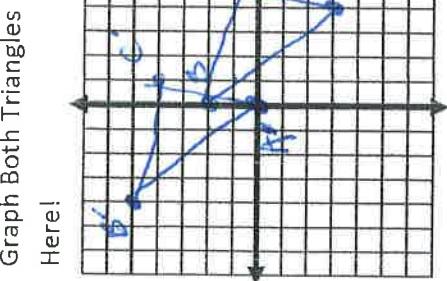
$$(x+4, y-3)$$

Apply Coordinate Notation.

The vertices of triangle ABC are A(4, -3), B(0, 2), C(5, 1).

Translate triangle ABC by (-4, 3). This translates the triangle 4 units left and 3 units up. Fill in the chart. Graph both triangles.

Pre-Image	Process	Image
A(4, -3)	$(x + (-4), y + 3)$	$A'(-4, 0)$
B(0, 2)	$(x + (-4), y + 3)$	$B'(-4, 5)$
C(5, 1)	$(x + (-4), y + 3)$	$C'(-1, 4)$



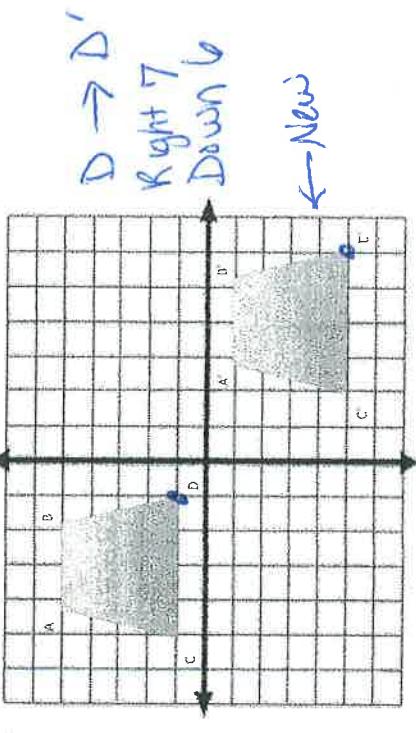
Rules! Coordinate Notation $(x, y) \rightarrow (x \pm a, y \pm b)$

(a is the number of units left or right and b is the number of units up or down)

Write the translation Mathematically:

Example:	Pre-Image Coordinates (x, y)
Left 15 units and 24 units up $\downarrow -15$	Image Coordinates : $(x - 15, y + 24)$
Right 8 units, down 4 units $\uparrow +8$	Pre-Image Coordinates (x, y) Image Coordinates : $(x + 8, y - 4)$
6 units left and 15 units down $\downarrow -6$	Pre-image : (x, y) Image : $(x - 6, y - 15)$
3 units right and 10 units up $\uparrow +3$	Pre-image : (x, y) Image : $(x + 3, y + 10)$

Use Coordinate Notation to describe the translation that occurred. **Choose one point to find the translation rule**



Verbal Description: Right 7, Down 6
Coordinate Notation: $(x, y) \rightarrow (x + 7, y - 6)$