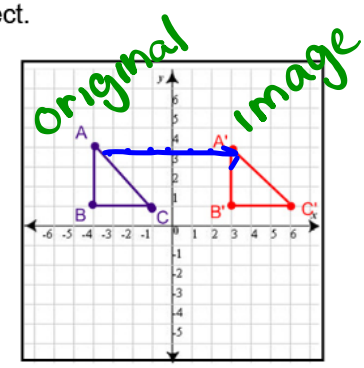
Geometry 1.2
Class-Notes

Name_____
Date_____Period_____

Transformations: Translations (Slide)

When an object has been transformed the original new image can be easily indentified based on the notation used to name the object.



In the above drawing triangle ABC is the original and triangle A'B'C' is the new image.

Using the above drawing list the coordinates for the triangle ABC and triangle A'B'C'.

x → left/right

y → up/down

	Original	Image
A =	(-4, 4)	A' = (3, 4)
B =	(-4, 1)	B' = (3, 1)
C =	(-1, 1)	C' = (6, 1)

3 + 4 = 7
3 -- 4 = 7
6 -- 1 = 7

How did the object change *horizontally*?

right 7 units

How did the object change *vertically*?

No vertical change

You can describe a translation by the notation **(x, y) → (x + *a*, y + *b*)** which means that the unit is translated horizontally **a** units and vertically **b** units.

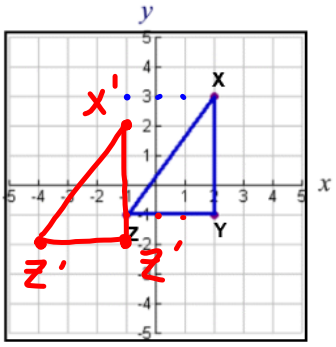
What is the rule for the the drawing above?

(x, y) → (x + 7, y + 0) ⇒ (x, y) → (x + 7, y)

Example 1:

a. Graph the image of the original using the transformation given:

Translation: 3 units left and 1 unit down.



$(x,y) \rightarrow (x-3, y-1)$

$X(2,3)$ $(2-3, 3-1) = X'(-1,2)$

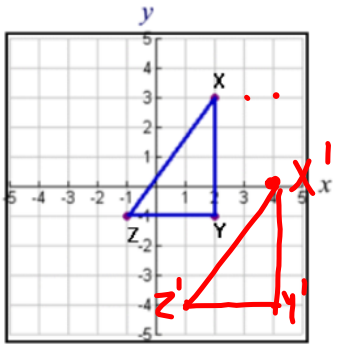
$Y(2,-1)$ $(2-3, -1-1) = Y'(-1,-2)$

$Z(-1,-1)$ $(-1-3, -1-1)$ $Z'(-4,-2)$

a. Graph the image of the original using the transformation given:

Translation $(x,y) \rightarrow (x+2, y-3)$

right 2, down 3

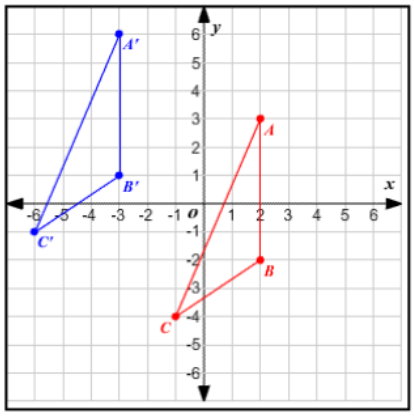


$X(2,3) \rightarrow X'(4,0)$

$Y(2,-1) \rightarrow Y'(4,-4)$

$Z(-1,-1) \rightarrow Z'(1,-4)$

b. Describe the translation horizontally and vertically, then write the rule for the translation.



Description:

left 5 units, up 3 units

Rule: $(x,y) \rightarrow (x-5, y+3)$