

**8 - 5**

# **Translations**

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**transformation:**

**translation:**

**preimage:**

**image:**



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# ***Real-world examples***

***\*\*repeated translations  
(animation in movies)***



# Which coordinates are changing? And how?

Left 2

$$x - 2$$

Down 3

$$y - 3$$

Up 7

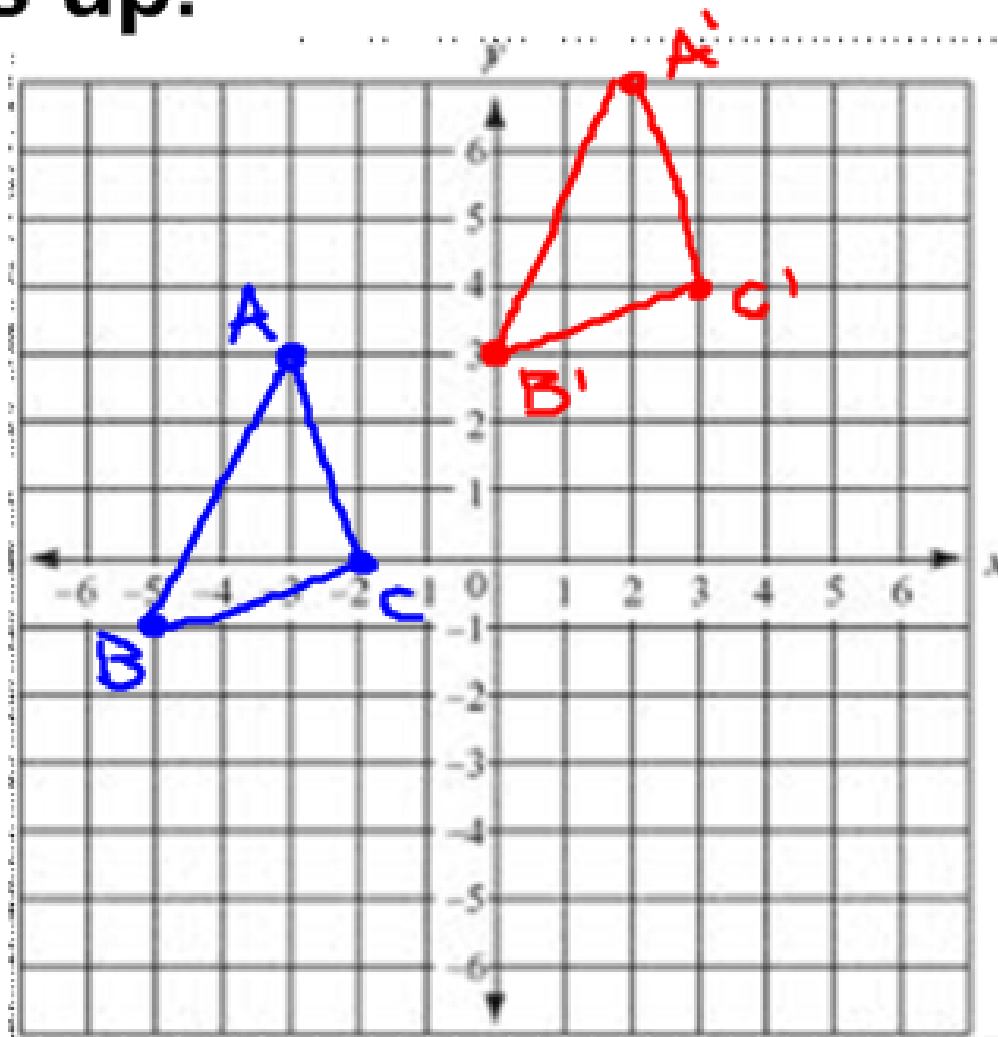
$$y + 7$$

Right 1

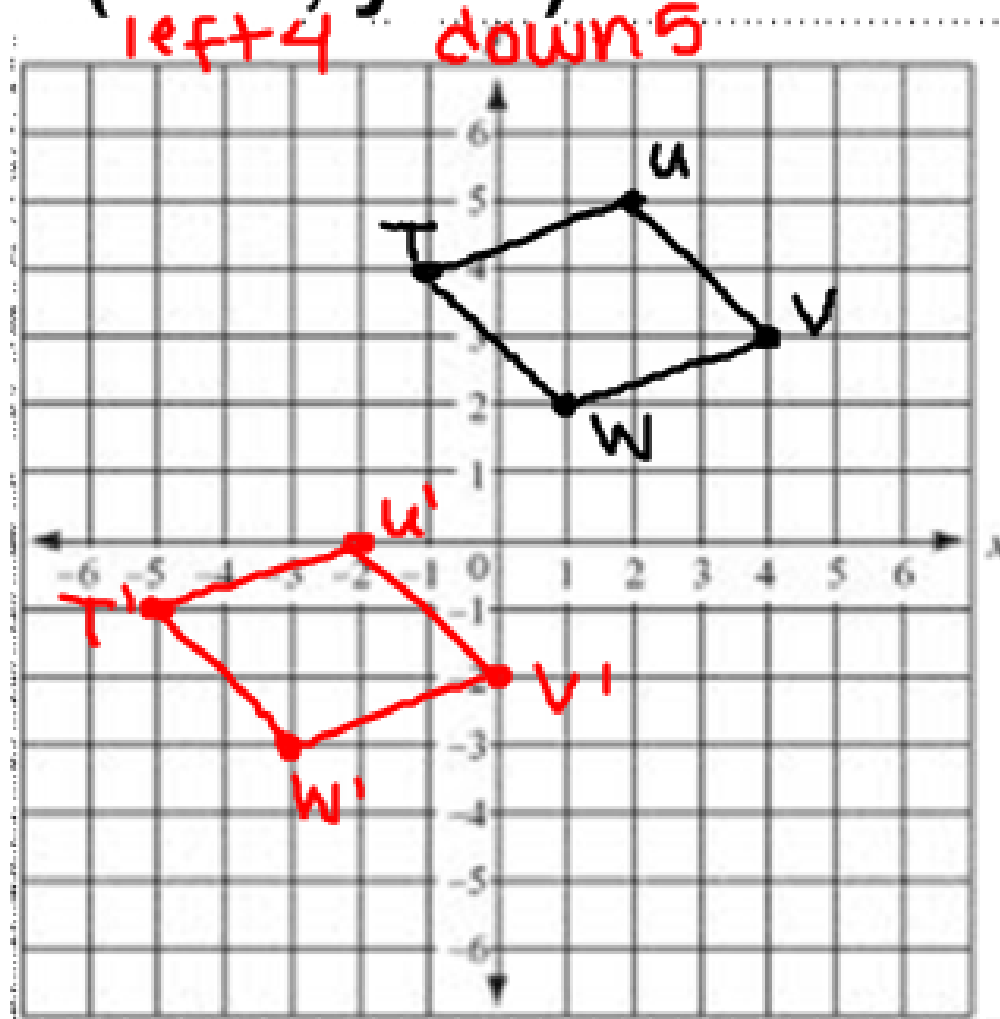
$$x + 1$$



**Ex: Graph  $\triangle ABC$  with vertices  $A(-3, 3)$ ,  $B(-5, -1)$ , and  $C(-2, 0)$  and its image after a translation 5 units right and 4 units up.**



**Ex: Parallelogram TUVW with vertices T(-1, 4), U(2, 5), V(4, 3), and W(1, 2) and its image after a translation  $(x, y) \rightarrow (x - 4, y - 5)$ .**



**Ex: Find the translation from A(-5, -1) to B(-3, 1).**

$$(x, y) \rightarrow (x + 2, y + 2)$$

$$-5 + 2 = -3$$

$$-1 + 2 = 1$$

**Ex: Find the translation from F(-3, 1) to G(4, 5).**

$$(x, y) \rightarrow (x + 7, y + 4)$$



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Homework:

8 - 5 WS

