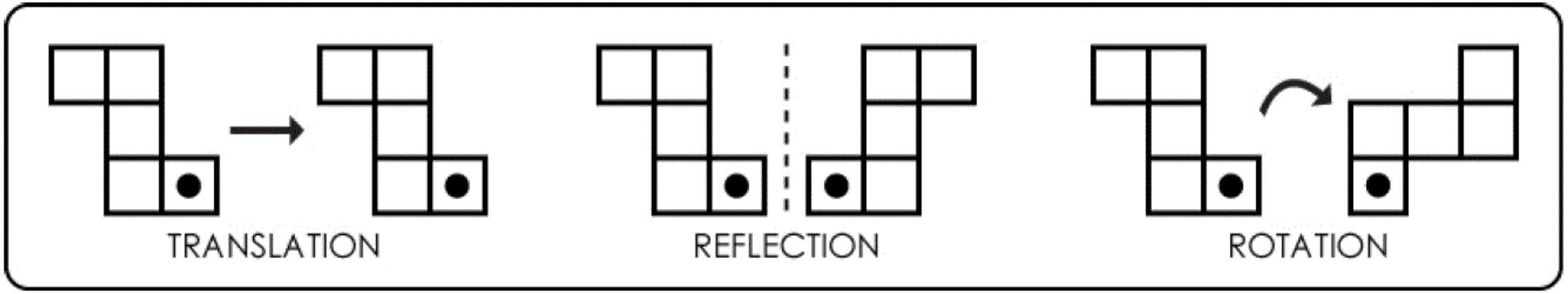
TRANSLATIONS

SLIDES OR SHIFTS



SLIDES **FLIPS** **TURNS**

THE RIGID MOTIONS

Any transformation that moves a figure without changing its size and shape.

In a transformation, you start with a pre-image.
Then you 'transform' it to create the image.

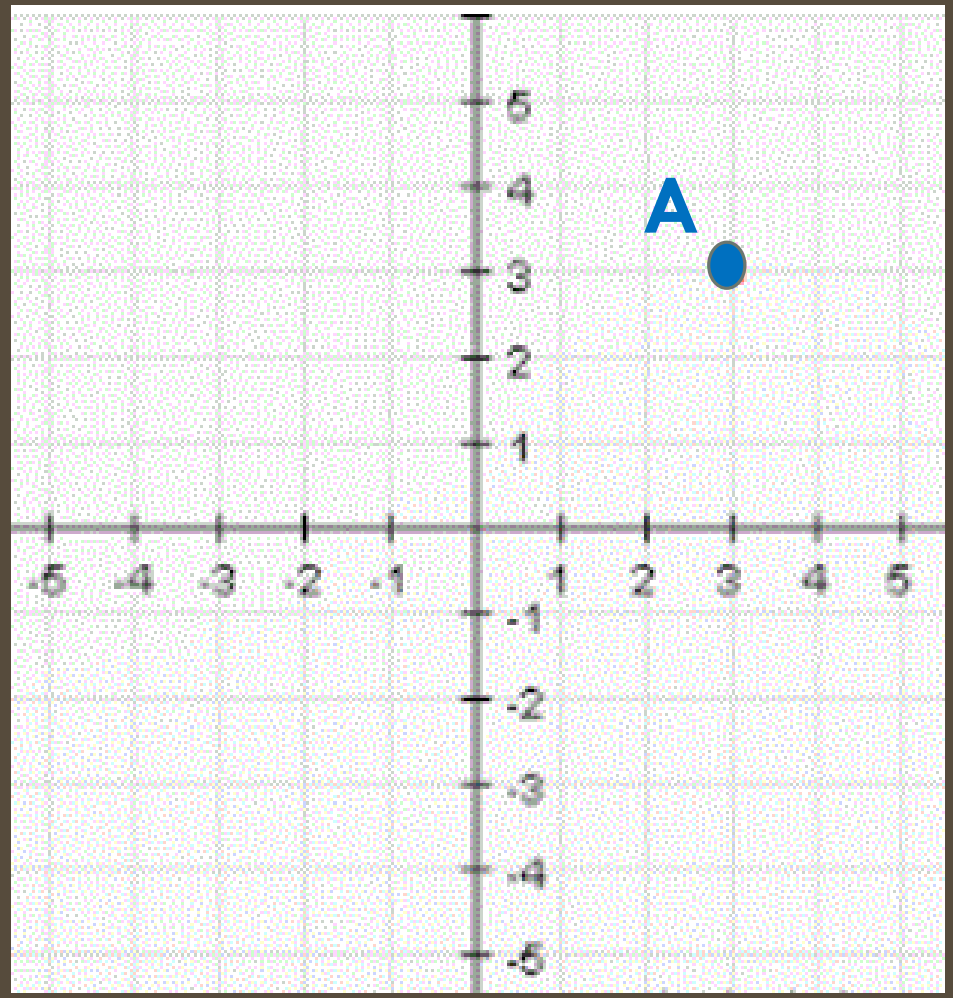
*pre-image: the starting image

*image: the resulting image

- use an apostrophe

- read as "prime', 'double prime', etc.

TRANSLATE 4 UNITS TO THE LEFT AND 3 UNITS DOWN.



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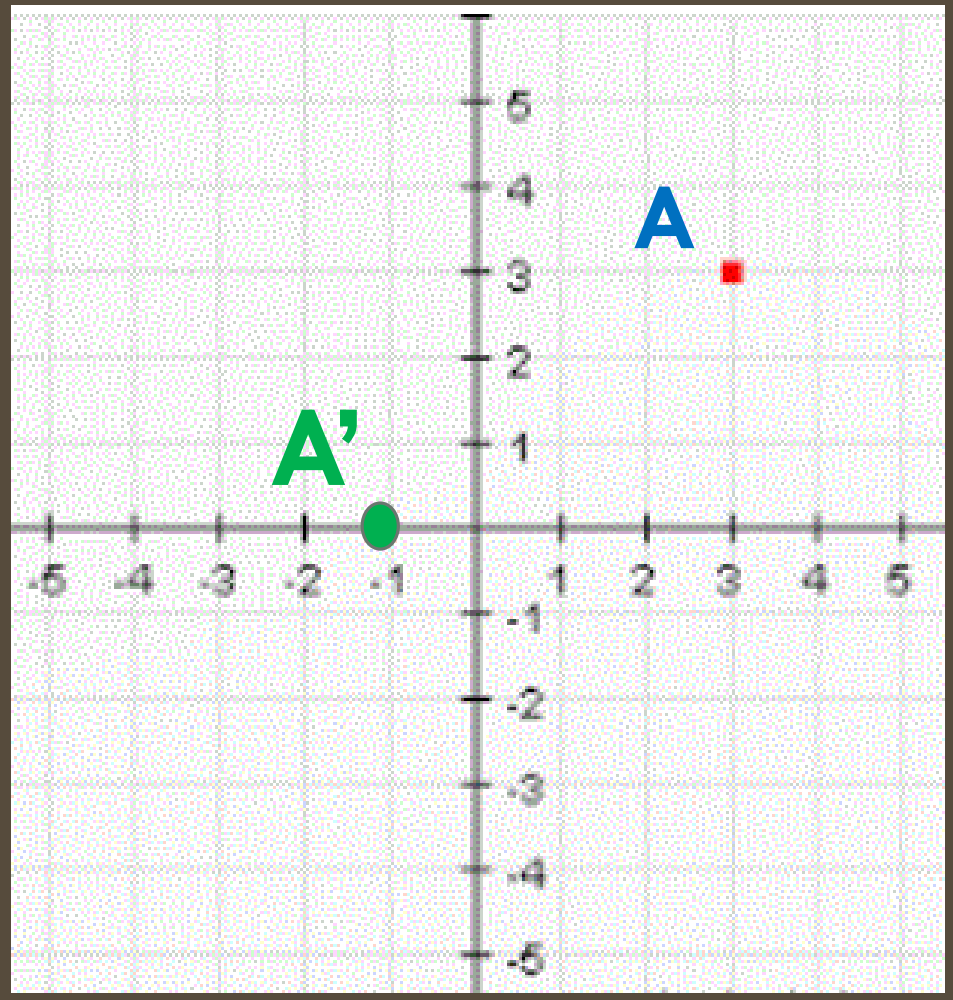
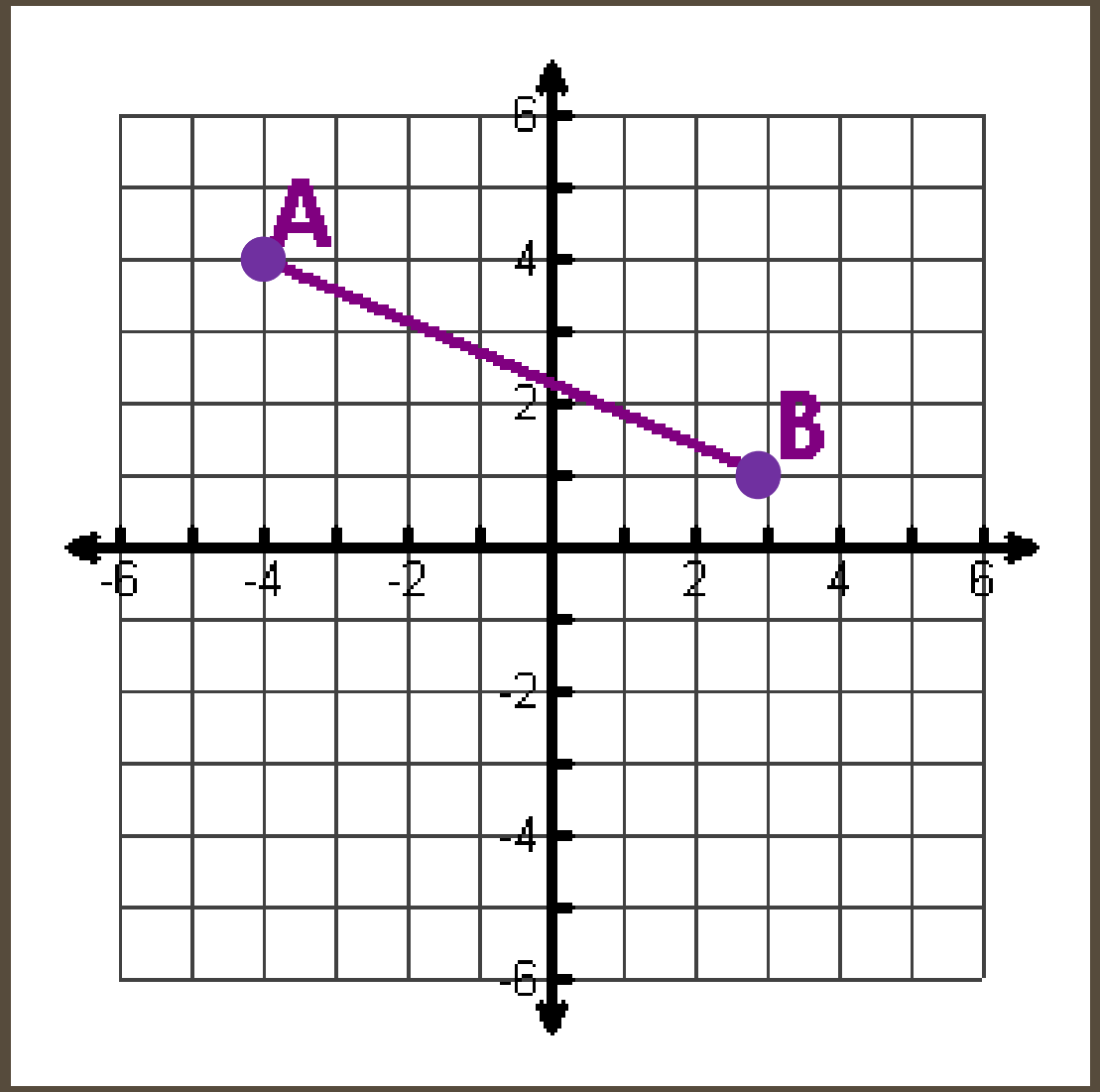
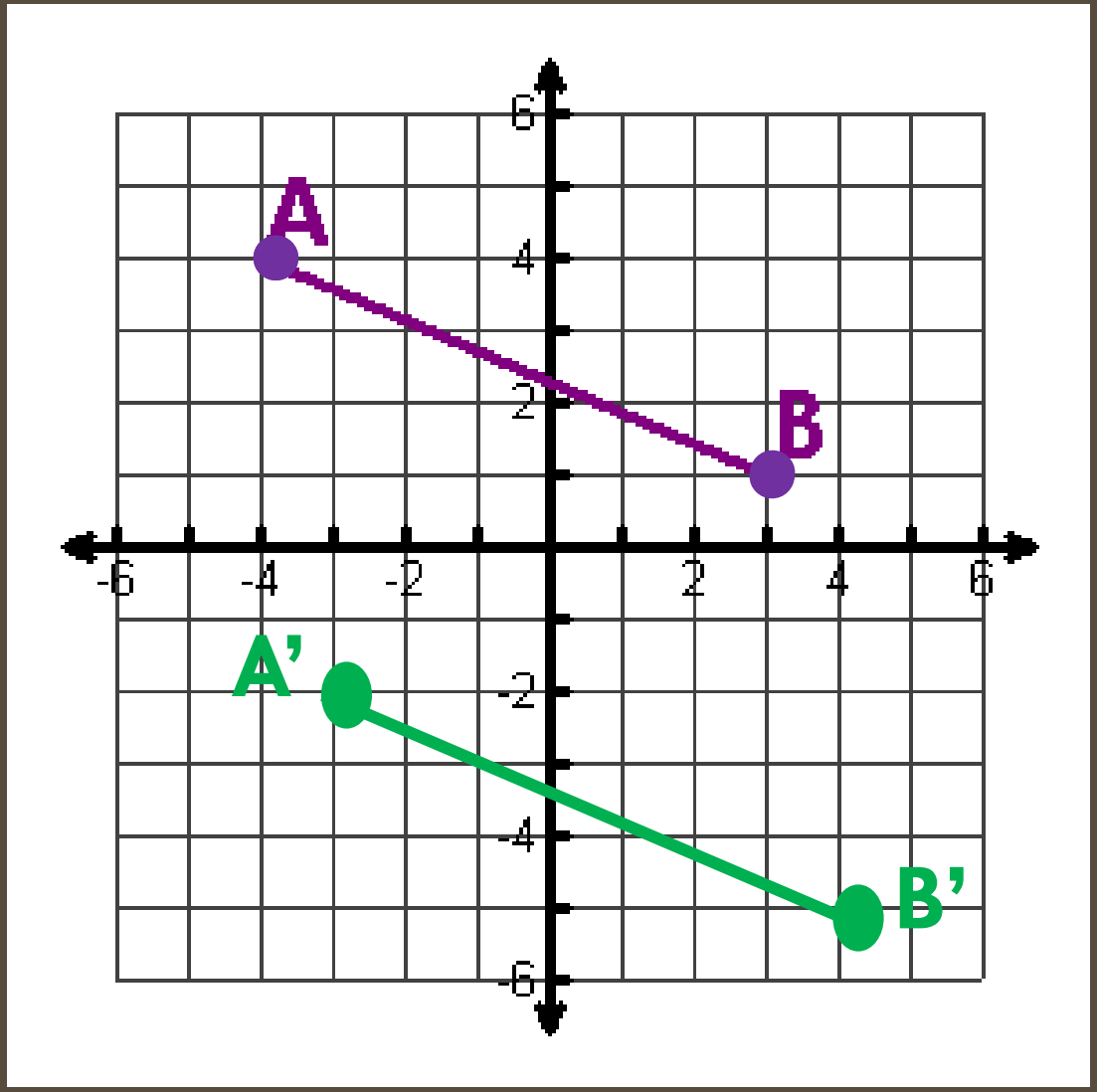


TRANSLATE 1 UNIT TO THE RIGHT AND 6 UNITS DOWN.

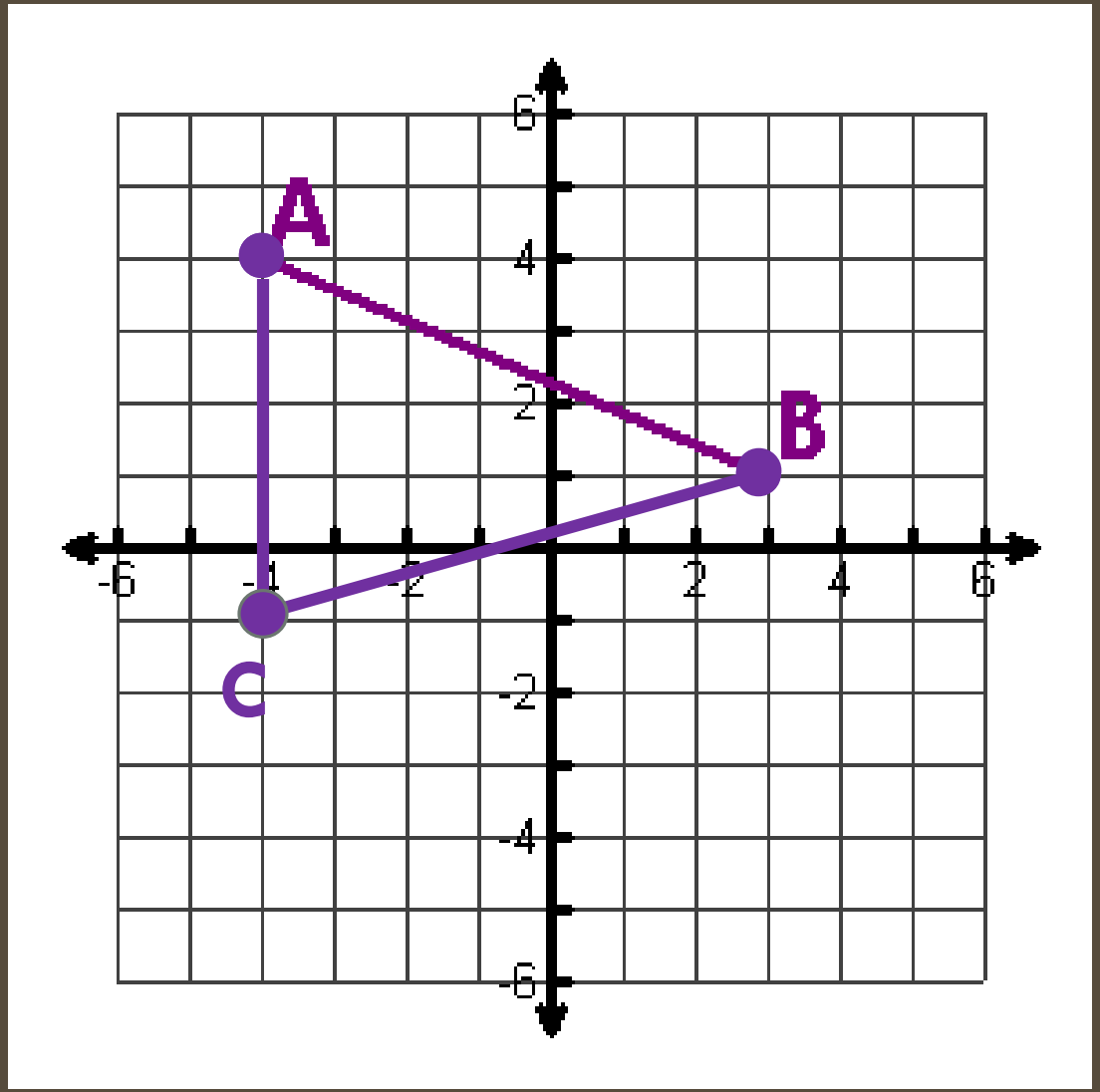


TRANSLATE 1 UNIT TO THE RIGHT AND 6 UNITS DOWN.

Translate each point right 1 unit and down 6 units.

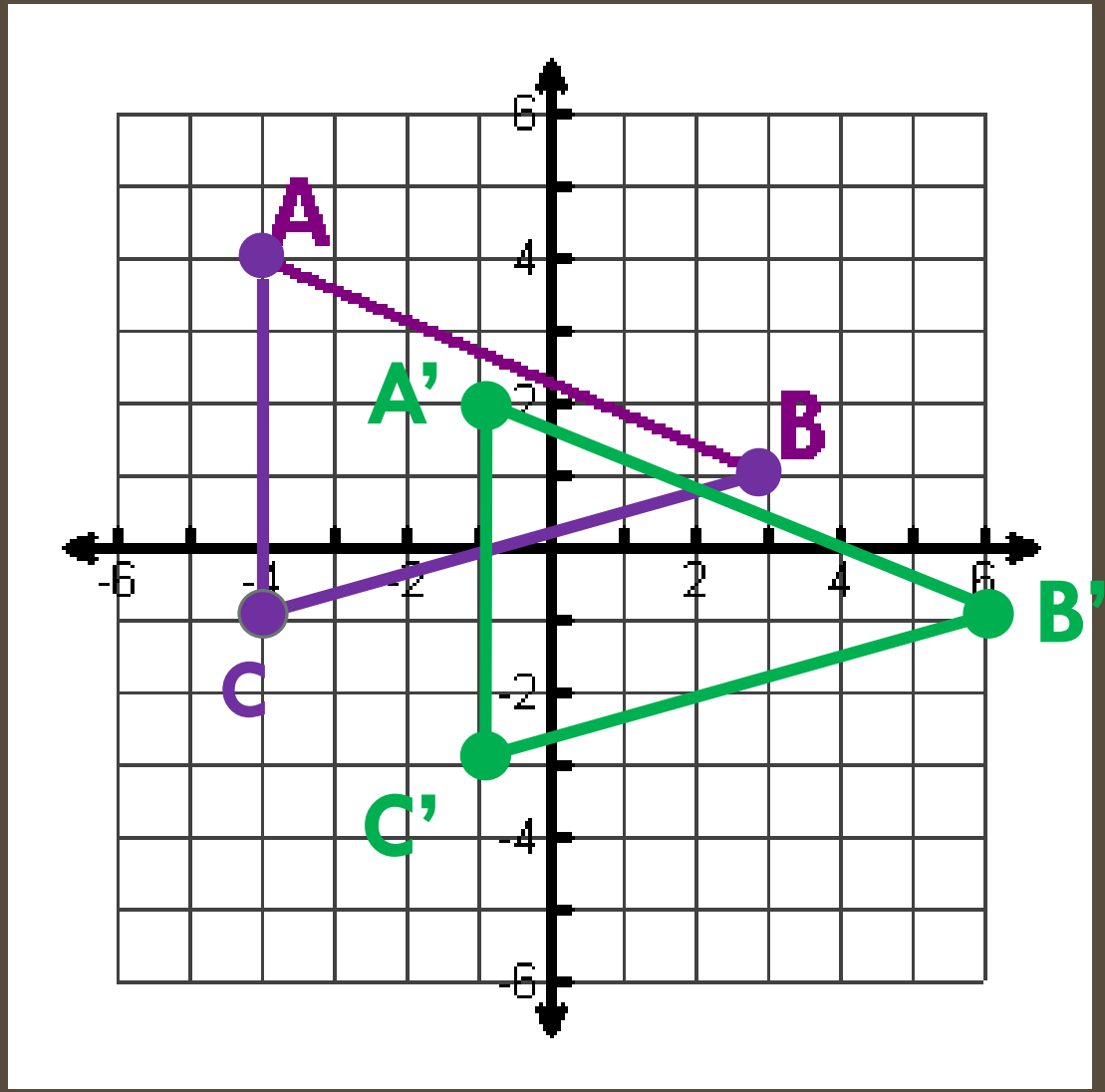


TRANSLATE 3 UNITS TO THE RIGHT AND 2 UNITS DOWN.



TRANSLATE 3 UNITS TO THE RIGHT AND 2 UNITS DOWN.

Translate each point right 3 units and down 2 units.



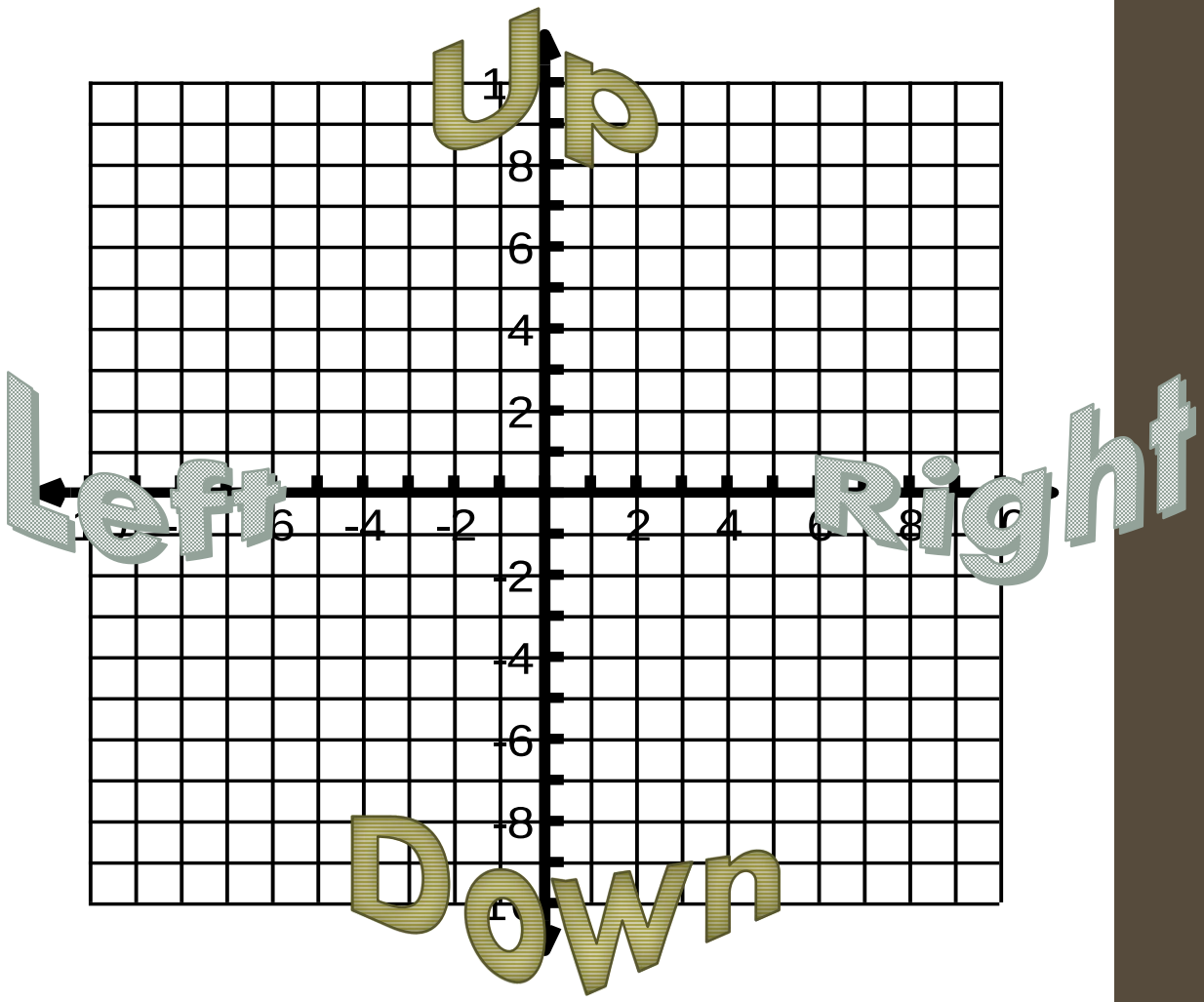
START AT POINT (3, -5) AND GO 12 UNITS RIGHT AND 15 UNITS DOWN. AT WHAT POINT DO YOU END UP AT?

START AT POINT (3, -5) AND GO 12 UNITS RIGHT AND 15 UNITS DOWN. AT WHAT POINT DO YOU END UP AT?

(3, -5)

+12 -15

(15, -20)



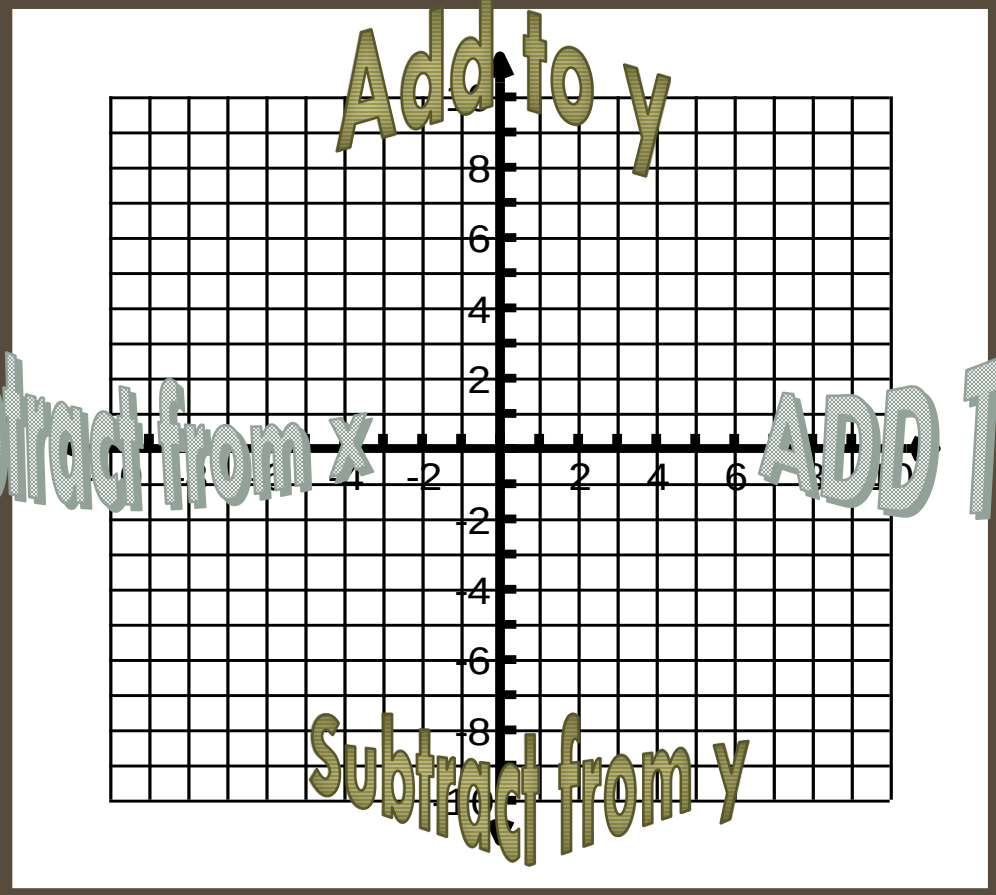
RIGHT: ADD to the x-value

LEFT: SUBTRACT from the x-value

UP: ADD to the y-value

DOWN: SUBTRACT from the y-value

A(-4, 4) AND B(3, 1) ARE THE ENDPOINTS OF SEGMENT AB. TRANSLATE 1 UNIT TO THE RIGHT AND 6 UNITS DOWN. WHAT ARE THE COORDINATES OF SEGMENT A'B'.



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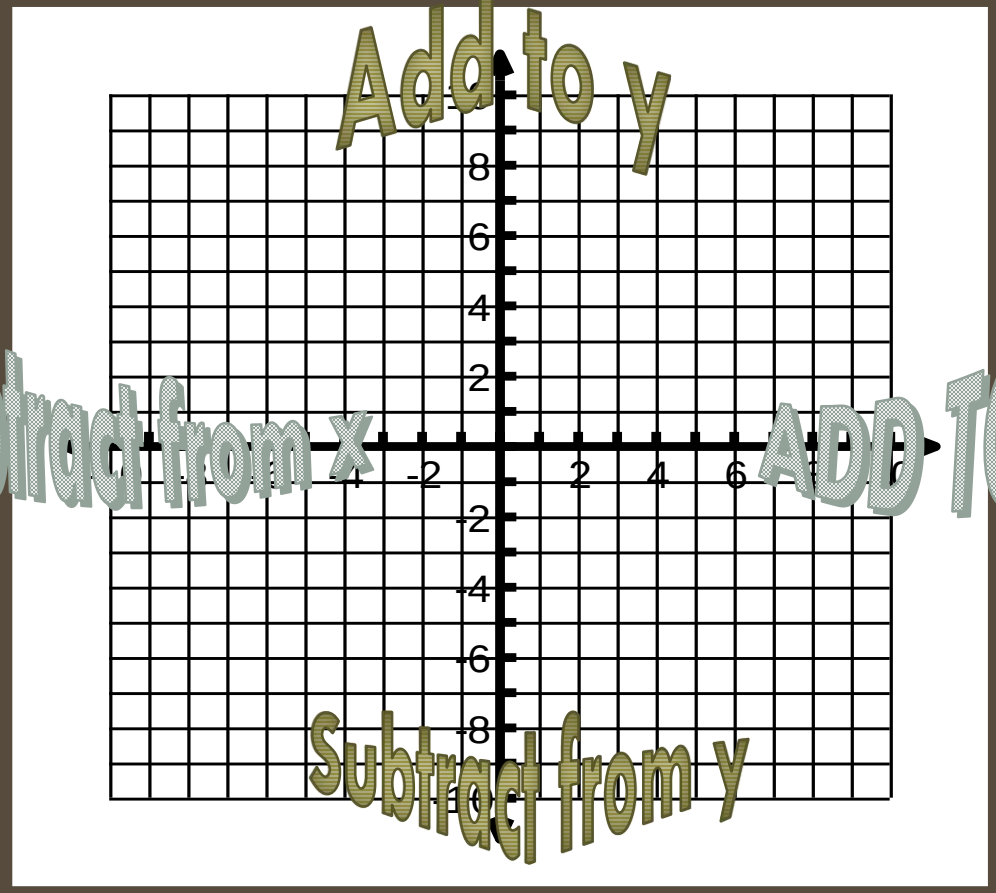

A(-4, 4) + 1 -6 → A'(-3, -2)

B(3, 1) + 1 -6 → B'(4, -5)

GIVEN △ABC WHERE A(-4, 4), B(3, 1) AND C(-4, -1). TRANSLATE 3 UNITS TO THE LEFT AND 2 UNITS UP. WHAT ARE THE COORDINATES OF △A'B'C'?

GIVEN $\triangle ABC$ WHERE A(-4, 4), B(3, 1) AND C(-4, -1). TRANSLATE 3 UNITS TO THE LEFT AND 2 UNITS UP. WHAT ARE THE COORDINATES OF $\triangle A'B'C'$?

A(-4, 4)

+ -3 +2

A'(-7, 6)

B(3, 1)

+ -3 +2

B'(0, 3)

C(-4, -1)

+ -3 +2

C'(-7, 1)

GIVEN $T_{(x,\ y)} \rightarrow (x - 9,\ y + 8)$, FIND C'O'W'.

$C(-9,12)$

$O(-12,-4)$

$W(22,-19)$

GIVEN $T_{(x, y)} \rightarrow (x - 9, y + 8)$, FIND C'O'W'.

C(−9,12)

O(−12,−4)

W(22,−19)

C'(-18,20)

O'(-21,4)

W'(13,-11)

COORDINATE (GENERIC) NOTATION

A way to represent a transformation using numbers, operations, and variables.

EX: TRANSLATE 3 UNITS TO THE LEFT AND 2 UNITS UP

$$T_{(x,y)} \rightarrow (x - 3, y + 2)$$

Translate

Left 3

Add 2