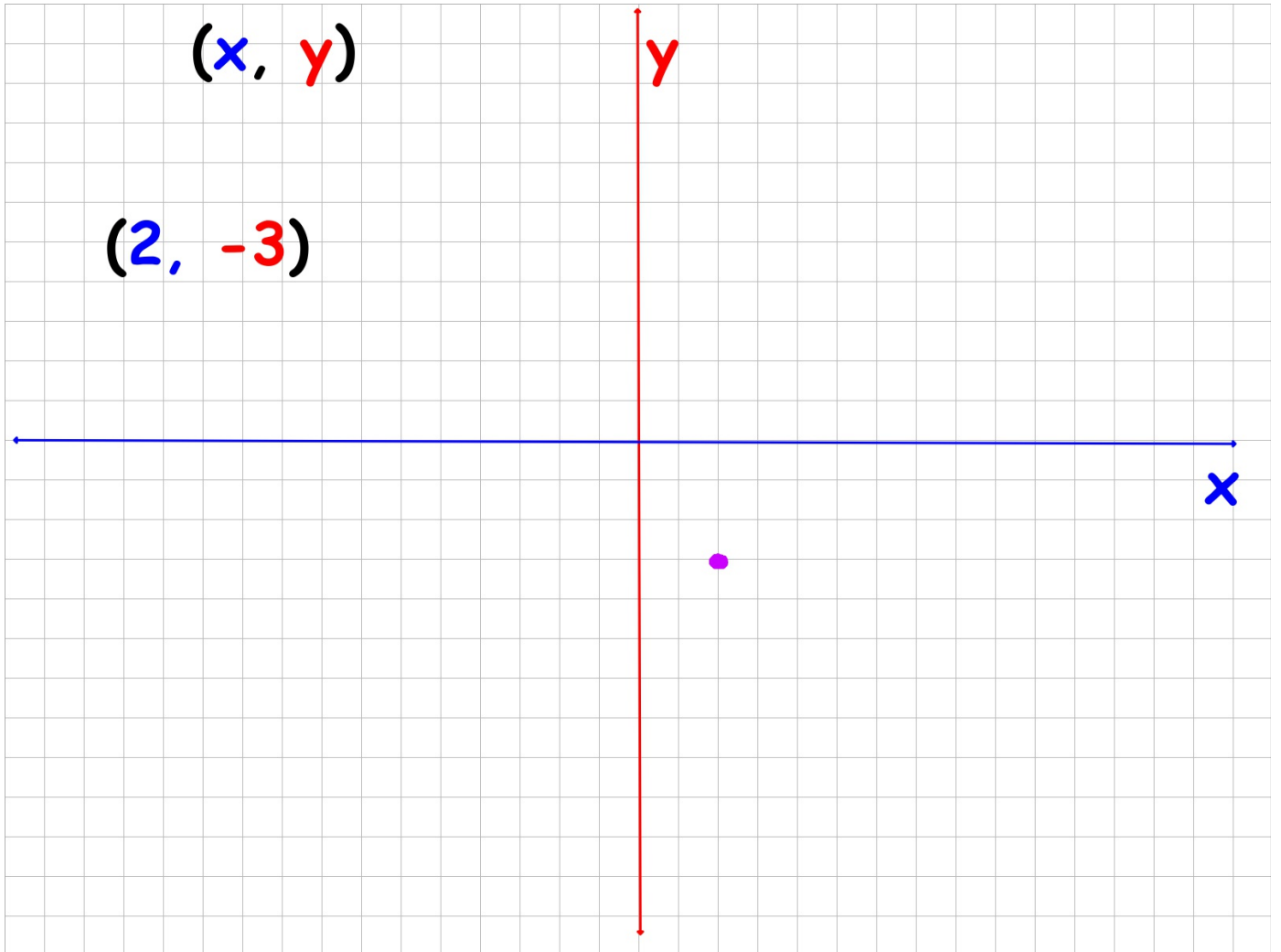


2.2 Translations

Learning Targets:

- Translate a figure in the Coordinate Plane
- Write the Coordinates of the Image

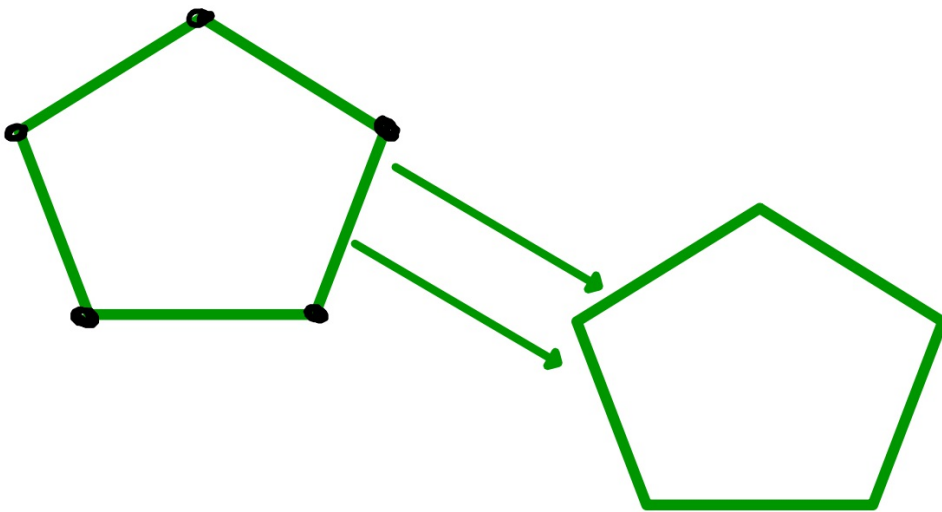


A **TRANSFORMATION** changes an **ORIGINAL** figure into another figure.
The new Figure is called the **IMAGE**

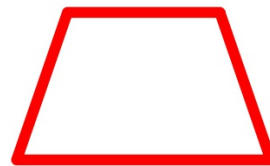
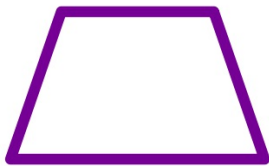
Transformations:

- **Translations**
- **Reflections**
- **Rotations**
- (● **Dialations**)

A **TRANSLATION** is a transformation in which a figure SLIDES but does NOT turn. Every Point of the figure moves the same distance and same direction



Translation

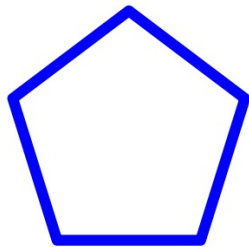


Original
Figure

Slide

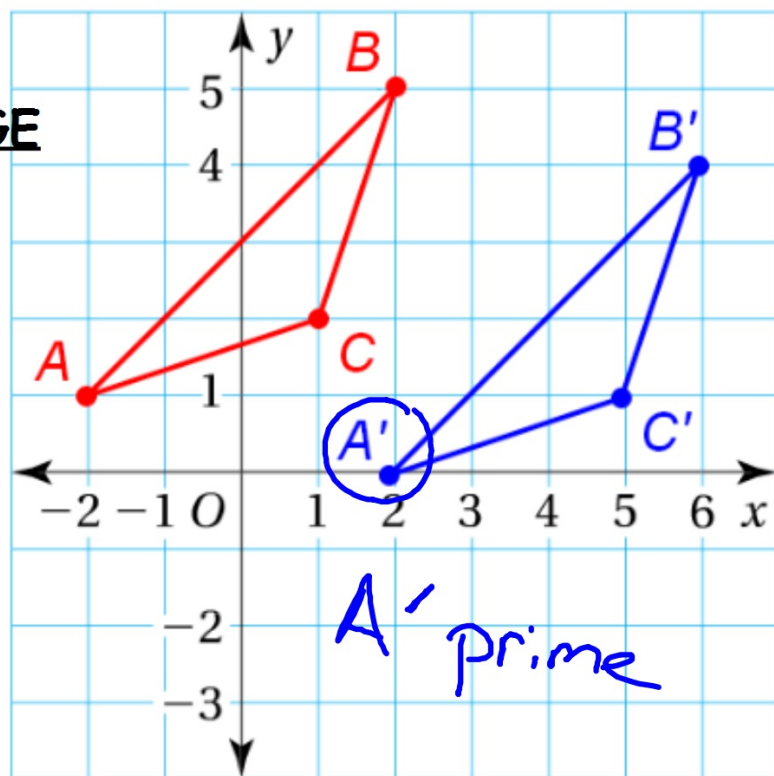
Image

Not Translations



Translating a Figure in the Coordinate Plane

Find the
Coordinates
of the IMAGE



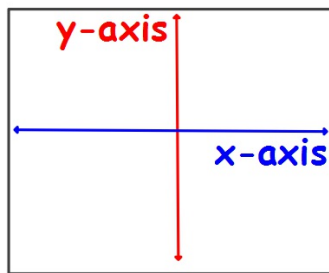
A(-2,1)
B(2,5)
C(1,2)

A'(2,0)
B'(6,4)
C'(5,1)

Translations: Reading "Directions"

Translate the figure 6 units to the left and 5 units down

- Left/Right: Changes the **x** Coordinate
- Up/Down: Changes the **y** Coordinate



$$(x, y) \xrightarrow{\hspace{2cm}} (x', y')$$
$$(x + a, y + b)$$

Rule

Translations: Reading "Directions"

- Left/Right: Changes the x Coordinate
- Up/Down: Changes the y Coordinate

Translate a Point **3 units to the right** and 5 units down

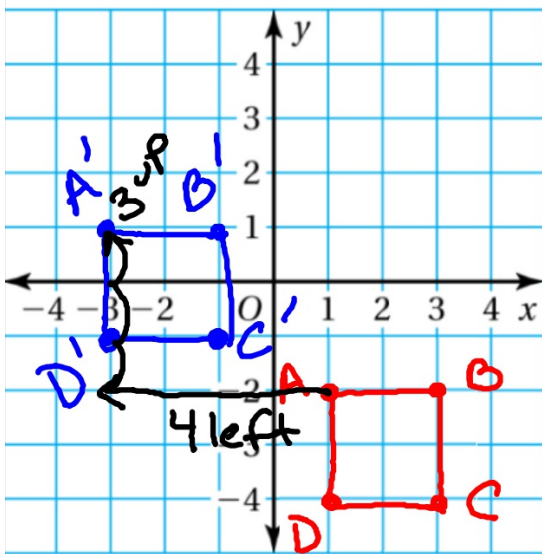
$$(x, y) \xrightarrow{\hspace{2cm}} (x', y')$$
$$(x + a, y + b)$$

A (6, 9)

Rule:

$$(x+3, y-5)$$

A' (9, 4)



$A(1, -2)$
 $B(3, -2)$
 $C(3, -4)$
 $D(1, -4)$

$A'(\square, \square)$
 $B'(\square, \square)$
 $C'(\square, \square)$
 $D'(\square, \square)$

Draw the figure
 after a translation
 of 4 units left and
 3 units up.



$A(1, -2)$

$B(3, -2)$

$C(3, -4)$

$D(1, -4)$

$(x-4, y+3)$
 $A'(-3, 1)$
 $B'(-1, 1)$
 $C'(-1, -1)$
 $D'(-3, -1)$

Homework

Pg. 52, 53 #5-21 odd