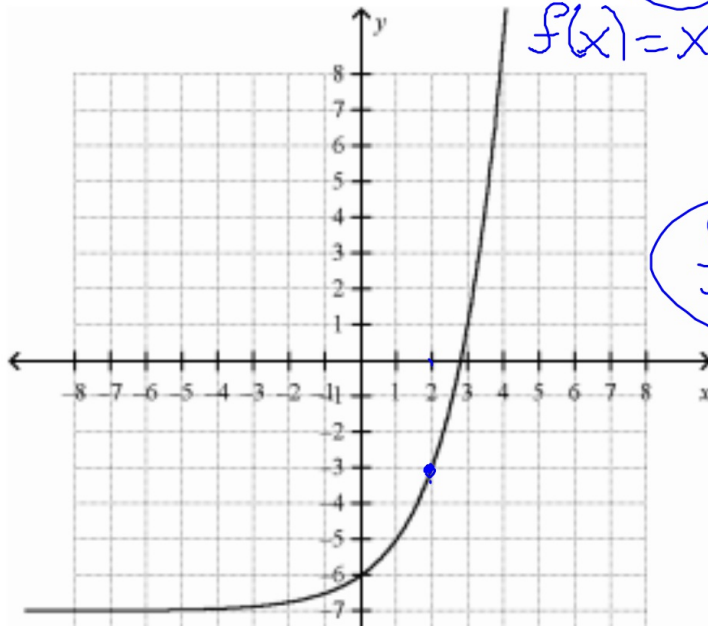


# Warm-up

Take out your Homework

- 1) If  $y$  varies inversely to  $x$  according to the formula  $y = \frac{2}{\sqrt{x+1}}$ , find  $y$  when  $x = 8$ .
- 2) Given the graph of  $f(x)$  below, what is  $f(2)$ ?



$$f(x) = x + 2$$

$$y = \frac{2}{\sqrt{8+1}} = \frac{2}{\sqrt{9}}$$

$$y = \frac{2}{3}$$

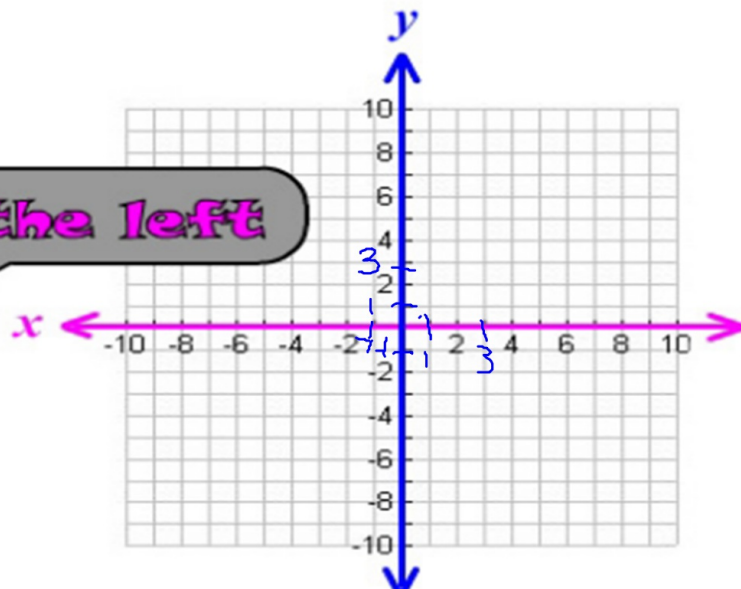
$$f(2) = -3$$

Prepare your graph paper by drawing and labelling your x and y axis.

The x-axis and y-axis trick:

y to the sky

x to the left



# Translation

1. Draw and label triangle ABC, such that the vertices are as follow:

A (3,2) B (10,2) and C (3,12)  
A (3,2) B (10,2) C (3,12)

2. Move the triangle ABC 2 units to the right and 3 units up. Write down the new coordinates:

A' (5,5) B' (12,5) C' (5,15)

- a. What happened to the **x-coordinates** when you moved 2 units to the **right**?

+2

- b. What happened to the **y-coordinates** when you moved 3 units **up**?

+3

## Translation

3. Now move the triangle 5 units left and 4 units to the down from the last location. Write down the new coordinates:

A'' (0,1) B'' (7,1) C'' (0,1)

- a. What happened to the **x-coordinates** when you moved 5 units to the **left**?

-5

- b. What happened to the **y-coordinates** when you moved 4 units **down**?

-4

4. Next, move the triangle 4 units up from the last location. Write down the new coordinates:

A''' (0,5) B''' (7,5) C''' (0,5)

- a. What happened to the **x-coordinates**?

nothing

- b. What happened to the **y-coordinates**?

+4

5. Finally, move the triangle (x-2, y+1). Write down the new coordinates:

A'''' (-2,6) B'''' (5,6) C'''' (-2,6)

5) T<sub>-5,6</sub>

A'(-2,8)

B'(5,8)

C'(-2,18)

## Critical Thinking:

1. What happened to the notation of the coordinates of the triangle every time you moved the triangle?

added an ap straph

2. When did the x-coordinate change? In other words, what movement changed the x-coordinate?

changing left or right

3. When did the y-coordinate change? In other words, what movement changed the y-coordinate?

changing up and down

## Notes:

What is translation?

A translation is a transformation that moves each point of a figure the same distance in the same direction by sliding.

What is the pre-image?

The original figure, called a preimage.

What is the image?

The new figure that has been obtained after the transformation is called the image.

$T_{-3,6}$  (left 3  
up 6)  $x-3, y+6$

# Independent Practice

$(X, Y)$

X=Horizontal Shift

+Right

-Left

Y=Vertical Shift

+Up

-Down

