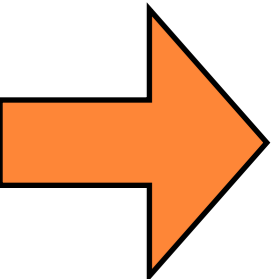


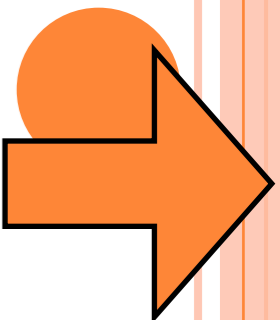
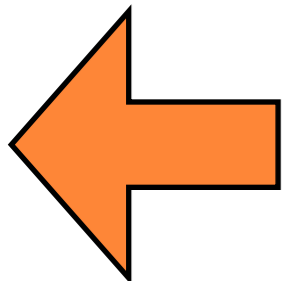
# **GRAPH USING INTERCEPTS**



## EXAMPLE 1

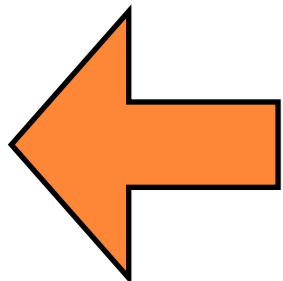
- Identify the x-intercept and the y-intercept of the following equation. Then graph using your x- and y-intercepts

$$2x + 3y = 12$$



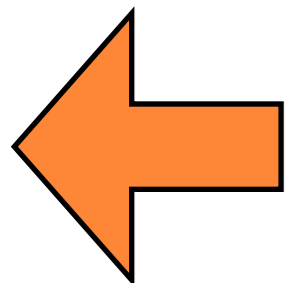
# STEP 1

- Choose which variable to make zero...let's do  $x$ .



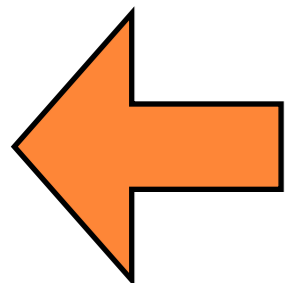
**STEP 2: IF X IS ZERO  
THEN...**

$$2(0) + 3y = 12$$



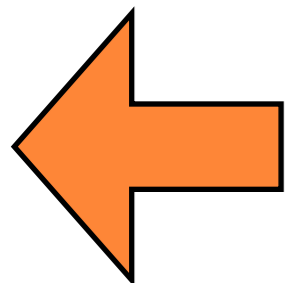
# STEP 3

$$0 + 3y = 12$$



# STEP 4

$$3y = 12$$

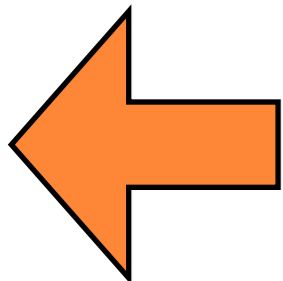


# STEP 5

$$\frac{3y}{3} = \frac{12}{3}$$

$$y = 4$$

So your y-intercept is 4 and you can graph using (0,4)



## STEP 6: NOW FIND THE X- INTERCEPT

When we let  $y = 0...$

$$2x + 3(0) = 12$$

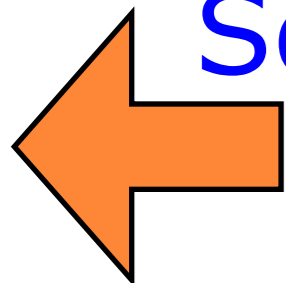
$$2x + 0 = 12$$

$$2x = 12$$

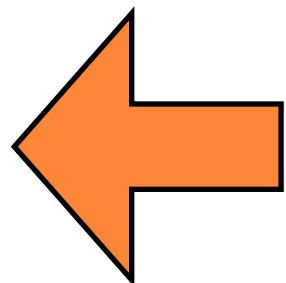
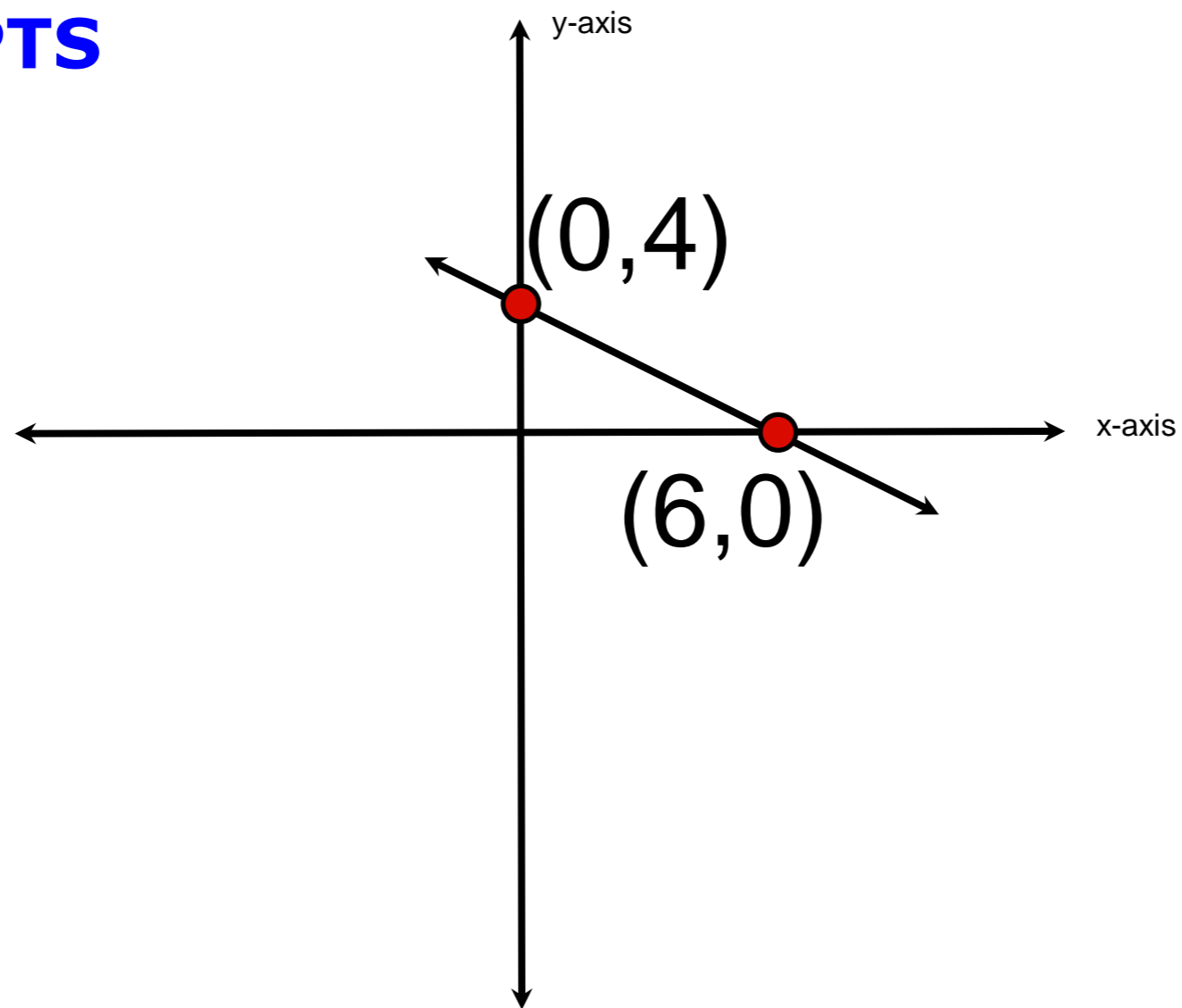
$$\frac{2x}{2} = \frac{12}{2}$$

$$x = 6$$

So our x-intercept is 6 and you can graph using (6,0)



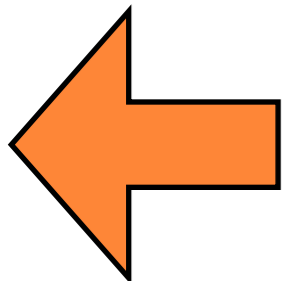
## STEP 7: GRAPH USING YOUR X- AND Y-INTERCEPTS



## EXAMPLE 2

- Given the following equation...find the slope and y-intercepts

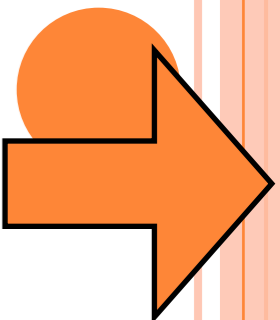
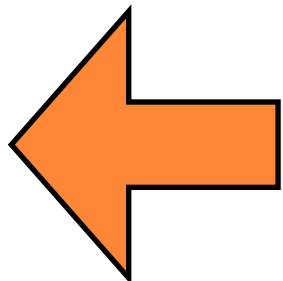
$$y = \frac{-1}{2}x + 3$$



SINCE THE EQUATION IS IN THE SLOPE-INTERCEPT FORM...

- We know that the slope is  $-\frac{1}{2}$  and the y-intercept is 3

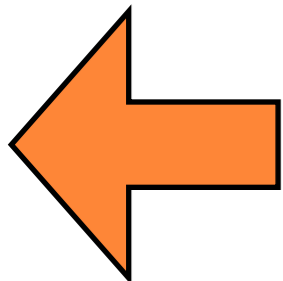
$$y = \frac{-1}{2}x + 3$$



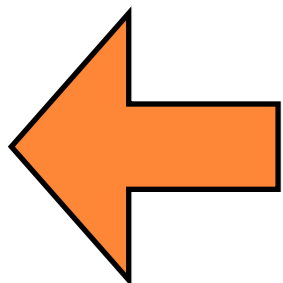
## EXAMPLE 3

- Identify the x-intercept and the y-intercept of the following equation.

$$y = 3x + 6$$



- **STEP 1** equation is in the slope-intercept form  $y = mx + b$  where  $m$  is the slope (3) and the  $b$  is the  $y$ -intercept (6)
- Therefore, to find your  $x$ -intercept...



## STEP 2: LET $Y=0$ ..

$$0 = 3x + 6$$

$$-6 = 3x$$

$$-2 = x$$

Therefore, your x-intercept is -2!

