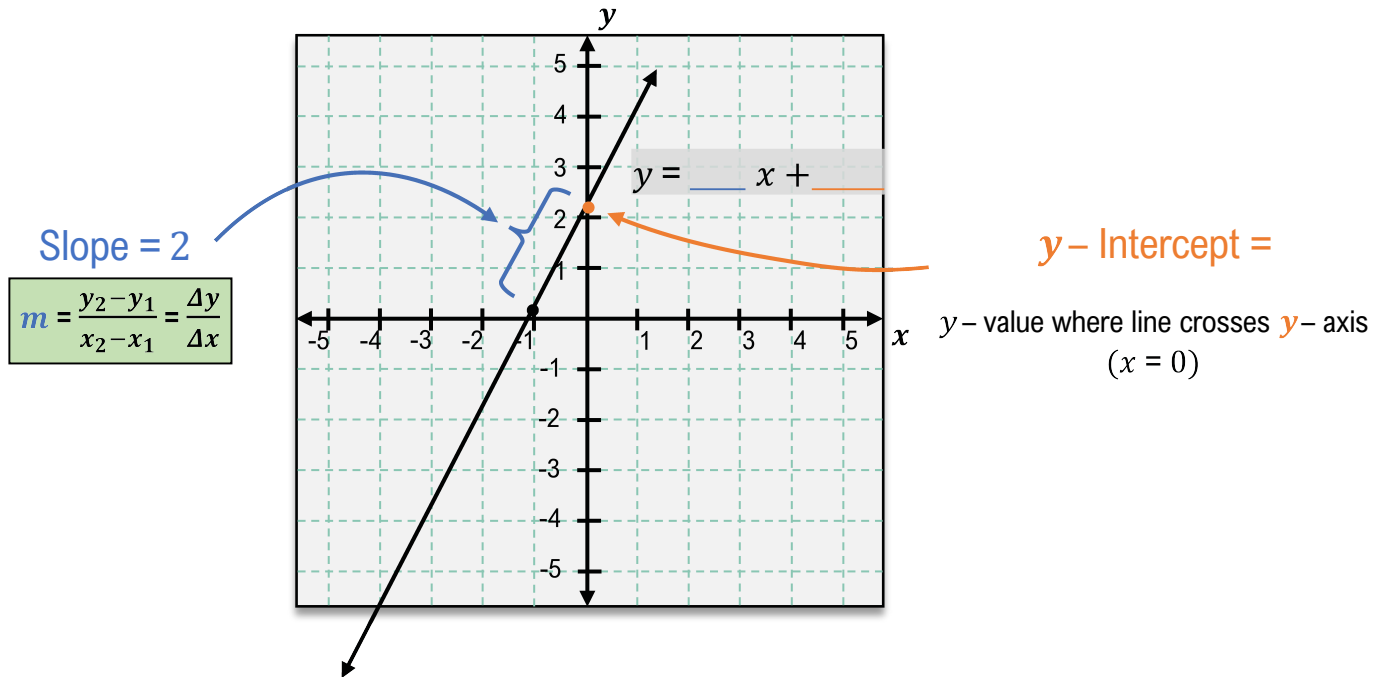## TOPIC: SLOPE INTERCEPT FORM

Slope Intercept Form

◆ We can rewrite the equation of a line using its _____ & _____.

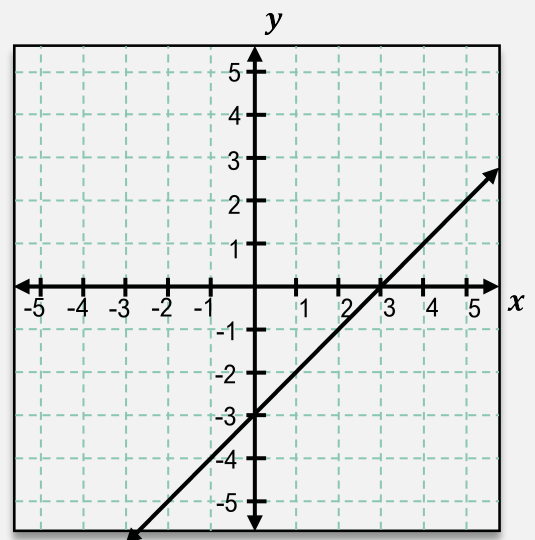$$y = \underline{}x + \underline{}$$

(Slope - Intercept Form)

Slope = 2

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{\Delta y}{\Delta x}$$

$$y = \underline{} \ x + \underline{}$$

y – Intercept =

y – value where line crosses y – axis

$(x = 0)$

EXAMPLE: In the graph below, identify the y – intercept & slope.

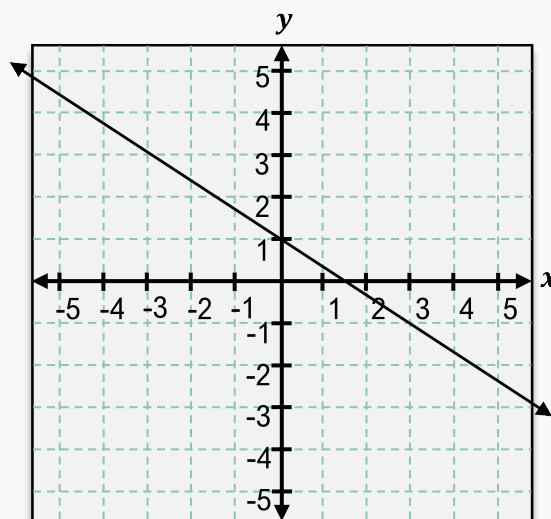Write the equation in slope-intercept form.

$b = $ _____

$m = $ _____

TOPIC: SLOPE INTERCEPT FORM

In the graph shown, identify the $y-$ intercept & slope. Write the equation of this line in Slope-Intercept form.

$$y = mx + b$$

TOPIC: SLOPE INTERCEPT FORM

Determine the equation of a line given its slope and y-intercept. Write in slope-intercept form.

(A)
Slope $= 4$

y-intercept $= -2$

(B)
Slope $= -3$

y-intercept $= \frac{5}{2}$

EXAMPLE Identify the slope of the line given by each equation.

(A)
$y = -3$

(B)
$x = 5$

TOPIC: SLOPE INTERCEPT FORM

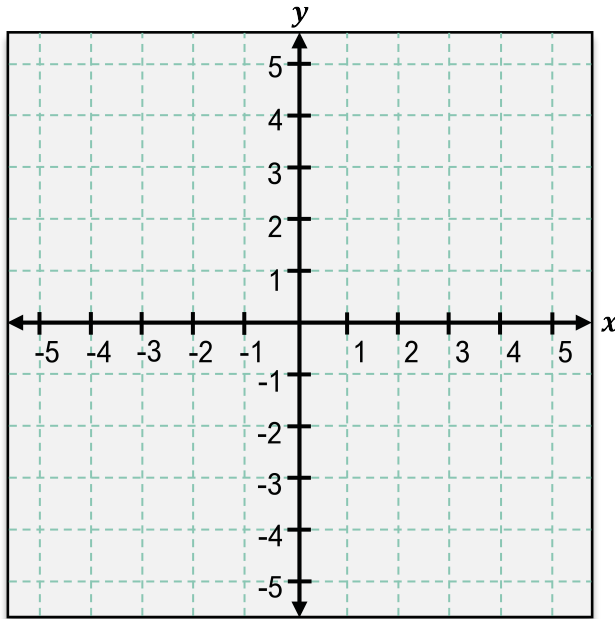### Graphing Lines from Equations in Slope Intercept Form

◆ A line equation in slope-intercept form tells you everything you need to graph it!

$$y = mx + b$$

<u>EXAMPLE</u>: Identify the y – intercept & slope of $y = \frac{2}{3}x + 1$, then graph the equation.
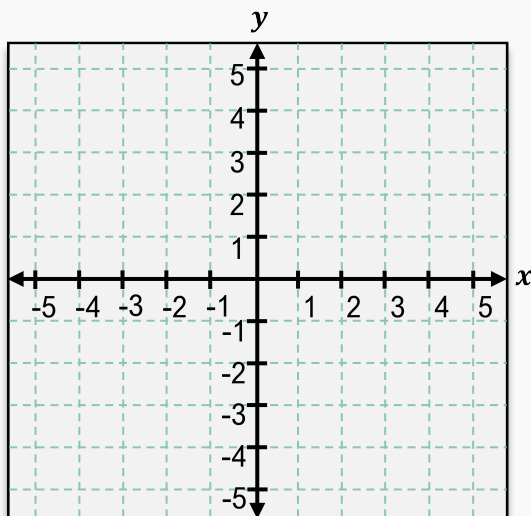
$b =$ _____

$m =$ _____

Graphing Lines in Slope-Intercept Form

1) Plot y – intercept $(0, b)$

2) Plot ONE more point using slope $\left(\frac{rise}{run}\right)$:

3) Connect points with a line

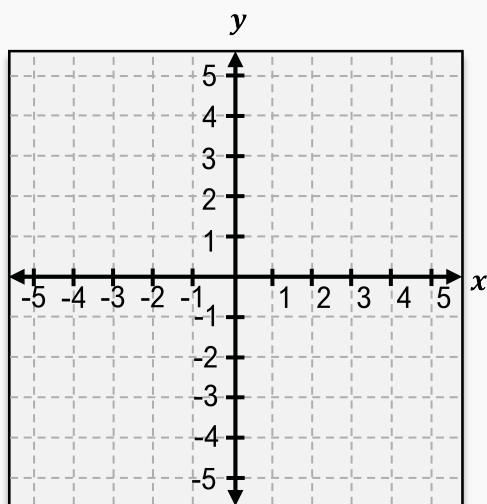**PRACTICE**   Identify the y – intercept & slope of $y = -2x - 3$. Then graph the equation.

TOPIC: SLOPE INTERCEPT FORM

Graph the line represented by the equation $y = -\frac{4}{5}x + 2$

A ride-share company models a driver's weekly earnings with the equation $y = 18.50x - 72.50$ where y is the net weekly profit in dollars and x is the number of rides given.

(A) Find the driver's profit for a week when no rides are given.

(B) Find the profit for a week when 15 rides are given.

(C) Interpret the slope and the y-intercept of the equation.