

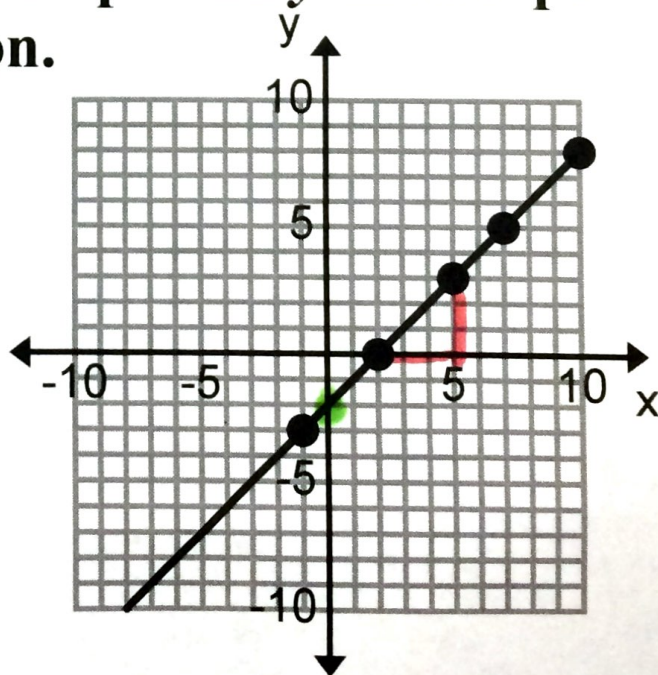
Vocabulary	Definition
<b>Slope:</b> <b>m</b> Constant Rate of Change	Rise <hr/> Run $\frac{y_2 - y_1}{x_2 - x_1}$ Steepness of line ↙ +slope ↘ ↖ -slope ↗
<b>y-intercept:</b> <b>b</b> Always on a y-int X=0 (0, 4) (0, -1) (0, -5)	where the line hits the y axis 
<b>Slope-Intercept Form:</b>	$y = \underline{m}x + \underline{b}$ ↓ Slope      ↓ y-int

**Ex. 1:** Identify the slope and the y-intercept for the graph below. Show how the slope and y-intercept are connected to the equation.

$$y = 1x - 2$$

$$m = 1$$

$$b = -2$$

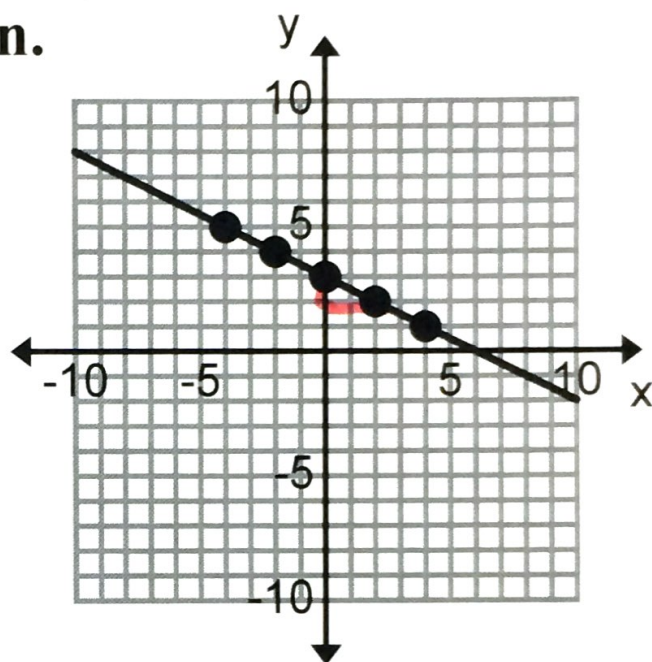


**Ex. 2:** Identify the slope and the  $y$ -intercept for the graph below. Show how the slope and  $y$ -intercept are connected to the equation.

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

$$m = -\frac{1}{2}$$

$$b = 3$$

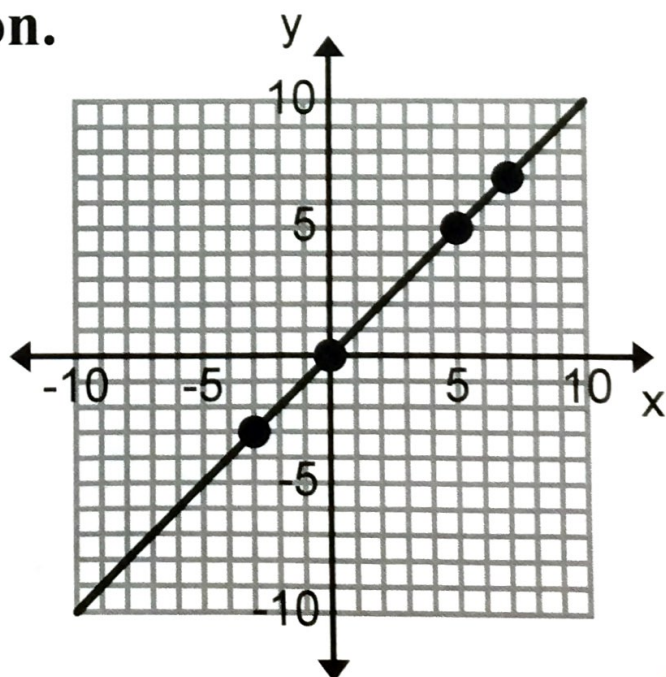


**Ex. 3:** Identify the slope and the  $y$ -intercept for the graph below. Show how the slope and  $y$ -intercept are connected to the equation.

$$y = 1x + 0$$

$$m = 1$$

$$b = 0$$



**Ex. 4:** Identify the slope ( $m$ ),  $y$ -intercept ( $b$ ) and then graph the equation.

$$y = mx + b$$

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

① Graph the  $y$ -intercept ( $b$ )

Rise

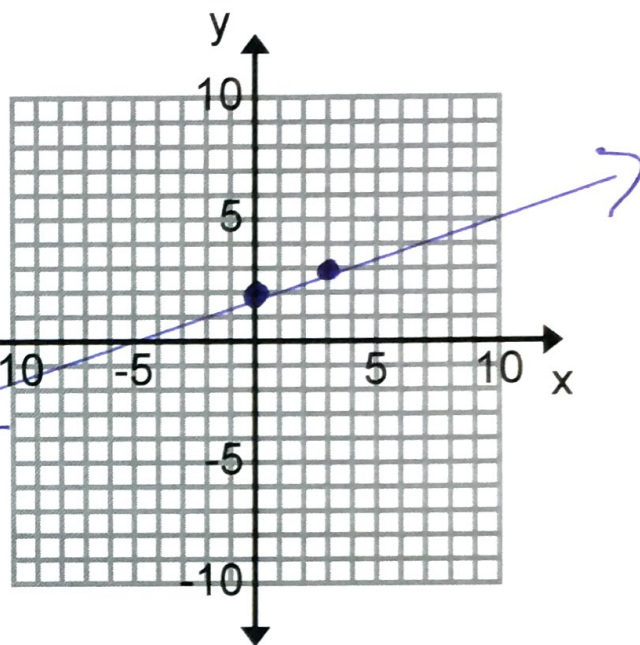
$$m = \frac{1}{3}$$

Run

② Start at the  $y$ -int & rise and run using the slope.

2nd pt.

$$b = 2$$



**Ex. 5:** Identify the slope ( $m$ ),  $y$ -intercept ( $b$ ) and then graph the equation.

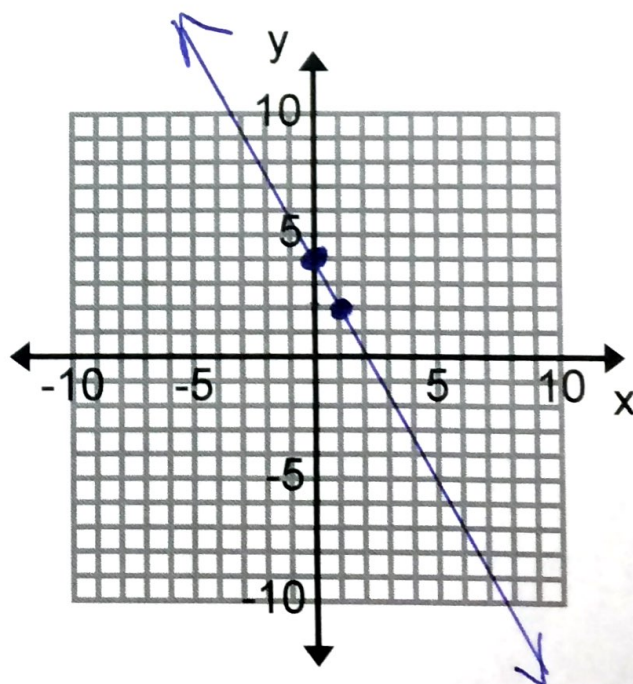
$$y = -2x + 4$$

Rise

$$m = \frac{-2}{1}$$

Run

$$b = 4$$

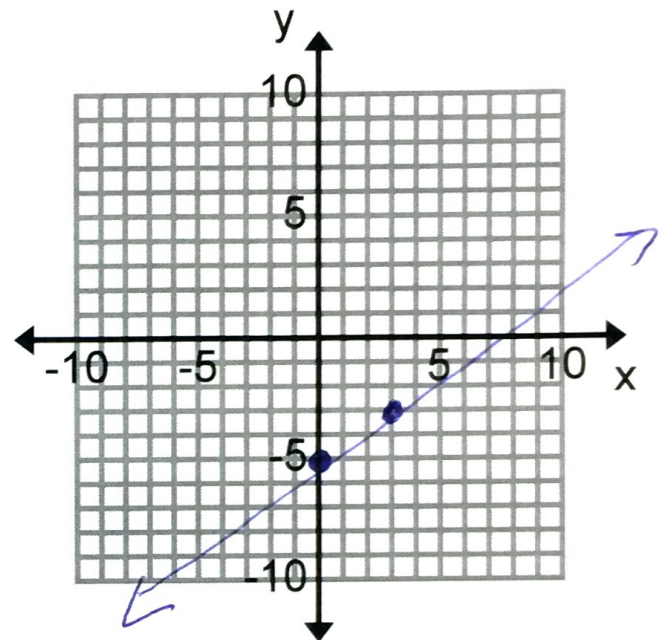


**Ex. 6:** Identify the slope ( $m$ ),  $y$ -intercept ( $b$ ) and then graph the equation.

$$y = \frac{2}{3}x - 5$$

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

$$b = -5$$

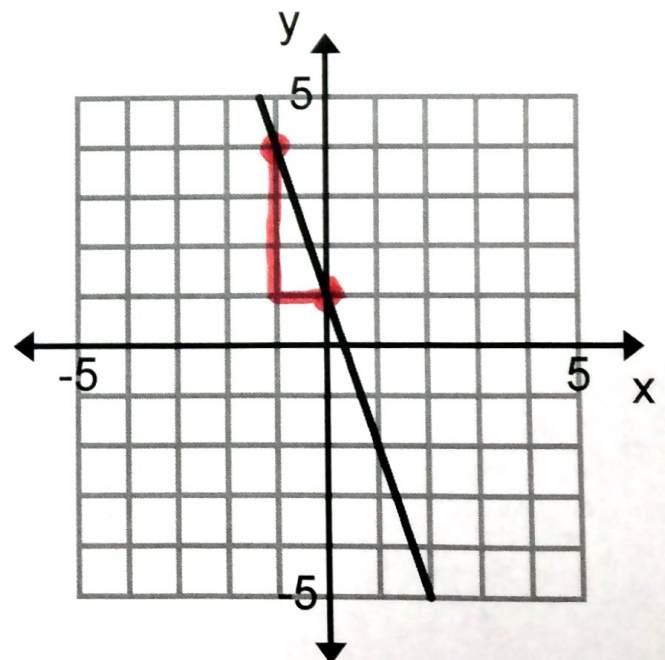


**Ex. 7:** Given the graph, identify the slope ( $m$ ),  $y$ -intercept ( $b$ ) and write the equation of the line.

$$m = \frac{-3}{1} = -3$$

$$b = 1$$

$$\text{Equation} = \underline{y = -3x + 1}$$

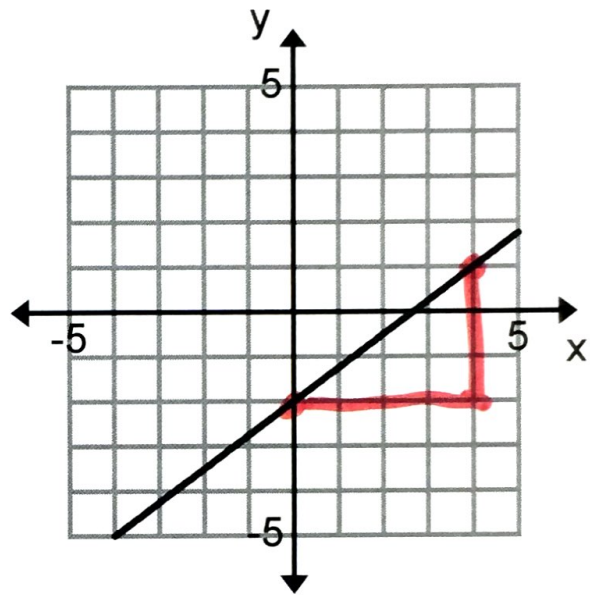


**Ex. 8:** Given the graph, identify the slope ( $m$ ),  $y$ -intercept ( $b$ ) and write the equation of the line.

$$m = \frac{3}{4}$$

$$b = -2$$

$$\text{Equation} = \underline{y = \frac{3}{4}x - 2}$$



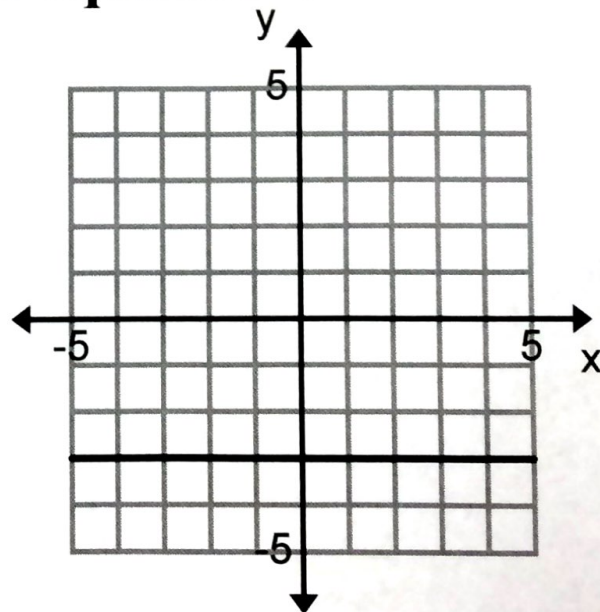
**Ex. 9:** Given the graph, identify the slope ( $m$ ),  $y$ -intercept ( $b$ ) and write the equation of the line.

$$y = 0x - 3$$

$$m = \underline{0}$$

$$b = \underline{-3}$$

$$\text{Equation} = \underline{y = -3}$$



**Ex. 10:** Given the table, identify the slope ( $m$ ),  $y$ -intercept ( $b$ ) and write the equation of the line.

$m = \underline{-2}$ 
 $\frac{5-1}{-3-1} = \frac{4}{-2} = -2$

$b = \underline{-1}$

Equation =  $\underline{y = -2x - 1}$

x	y
-3	5
-1	1
0	-1
3	-7

*y-int* →

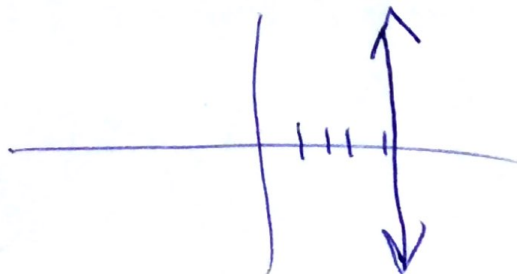
**Ex. 11:** Given the table, identify the slope ( $m$ ),  $y$ -intercept ( $b$ ) and write the equation of the line.

$m = \underline{\text{und}}$

$b = \underline{\text{none}}$

Equation =  $\underline{x = 4}$

x	y
4	8
4	0
4	-3
4	-10



**Ex. 12:** Liam is reading a 254-page book for school. He can read 40 pages in one hour. The equation for the number pages he has left to read is  $y = 254 - 40x$ , where  $x$  is the number hours he reads.  $y = -40x + 254$

a. State the slope and the  $y$ -intercept of the equation.

$$m = \frac{-40}{1}$$

$$b = 254$$

b. Graph the equation.



c. Interpret what the slope and the  $y$ -intercept represent.

$-40$  pages per hr.

# of pages 254  
he started with