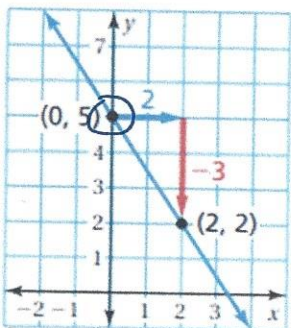


4.6 Writing Equations in Slope-Intercept For p.180

$$y = mx + b$$

m = the slope

b = the y-intercept

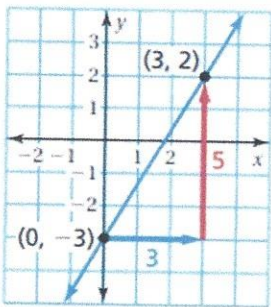


$$y = -\frac{3}{2}x + 5$$

$$m = \frac{\text{rise}}{\text{run}} = \frac{-3}{2}$$

$$y\text{-intercept} = 5$$

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

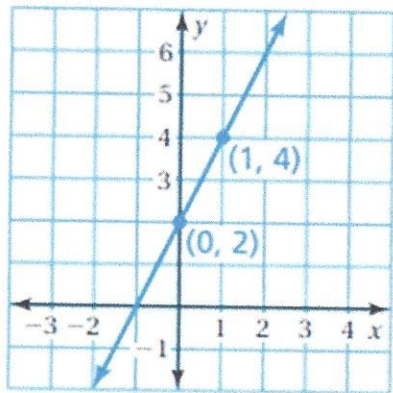


$$y = \frac{5}{3}x + -3$$

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

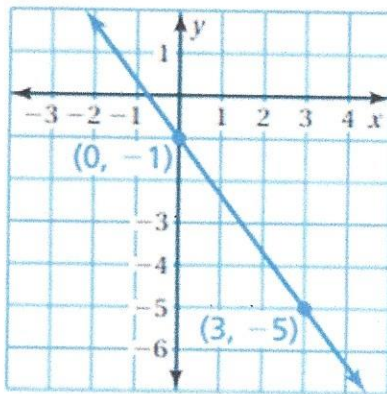
Write an equation of the line in slope-intercept form.

1.



$$y = 2x + 2$$

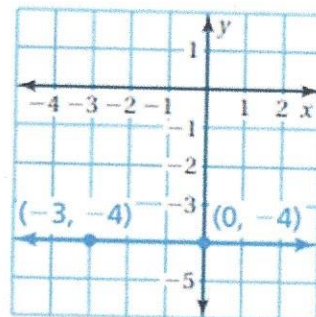
2.



$$y = -\frac{4}{3}x - 1$$

Which equation is shown in the graph?

- Ⓐ $y = -4$ Ⓑ $y = -3$
 Ⓒ $y = 0$ Ⓓ $y = -3x$



Find the slope and the y -intercept.

The line is horizontal, so the change in y is 0.

$$m = \frac{\text{change in } y}{\text{change in } x} = \frac{0}{3} = 0$$

Because the line crosses the y -axis at $(0, -4)$, the y -intercept is -4 .

❖ So, the equation is $y = 0x + (-4)$, or $y = -4$. The correct answer is Ⓐ.

The graph shows the distance remaining to complete a tunnel.

(a) Write an equation that represents the distance y (in feet) remaining after x months. (b) How much time does it take to complete the tunnel?

a. Find the slope and the y -intercept.

$$m = \frac{\text{change in } y}{\text{change in } x} = \frac{-2000}{4} = -500$$

Because the line crosses the y -axis at $(0, 3500)$, the y -intercept is 3500.

❖ So, the equation is $y = -500x + 3500$.

b. The tunnel is complete when the distance remaining is 0 feet. So, find the value of x when $y = 0$.

$$y = -500x + 3500$$

Write the equation.

$$0 = -500x + 3500$$

Substitute 0 for y .

$$-3500 = -500x$$

Subtract 3500 from each side.

$$7 = x$$

Divide each side by -500 .

❖ It takes 7 months to complete the tunnel.

