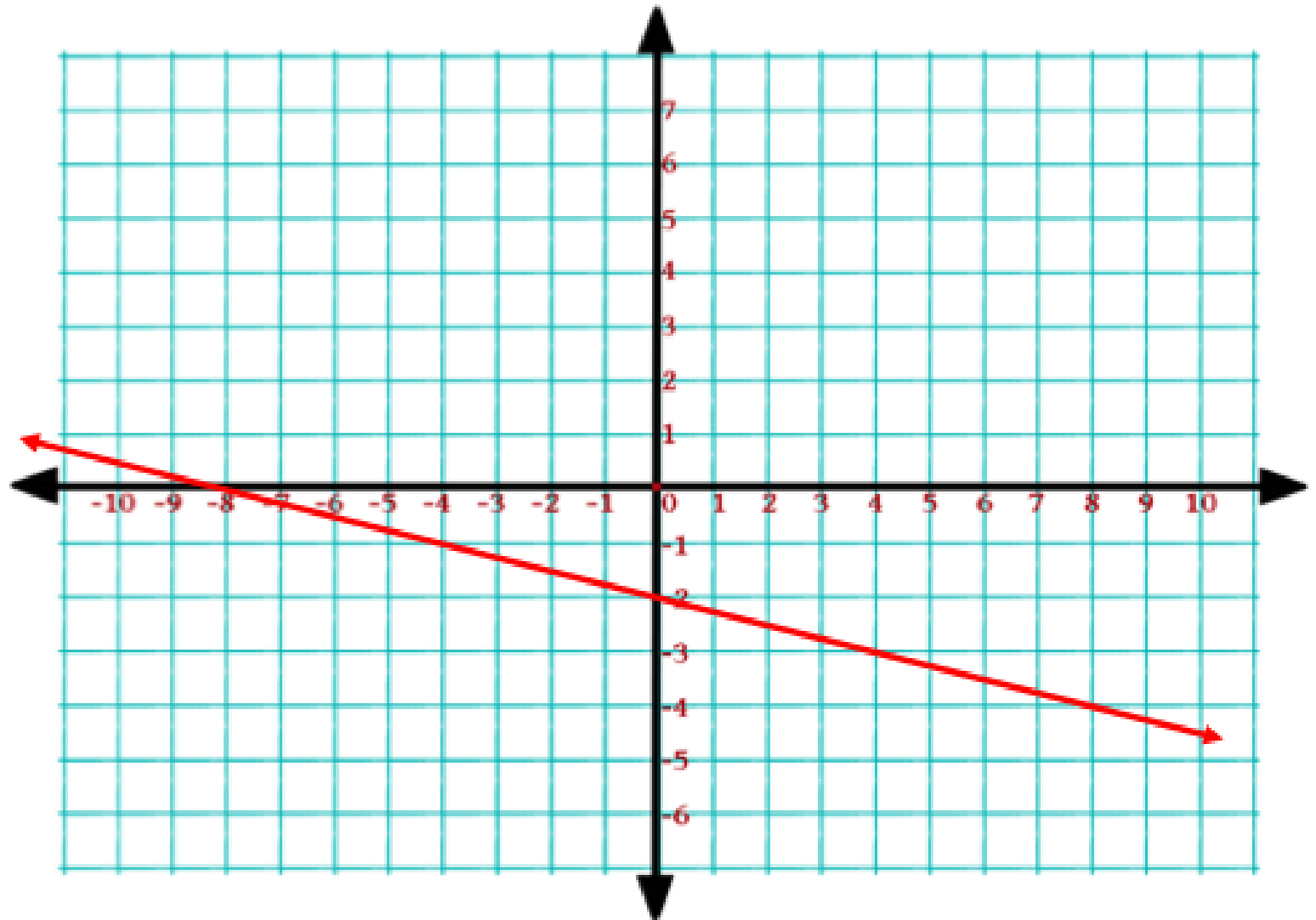


Bell Ringer - Write the equation of the line.



Writing Linear Equations Given the Slope and a Point

Slope-Intercept Form $y = mx + b$

if given the slope and a point, what do I need to find?

y-intercept

Remember a point on the line is an ordered pair (x, y) that represents a solution to the equation.

You can solve for "b" by substituting *x and y* into the equation.

Write the equation of the line that passes through the given point and has the given slope.

1. $(1, 3); m = 4$

$$y = mx + b$$

$$3 = (4)(1) + b$$

$$3 = 4 + b$$

$$-1 = b$$

$$y = 4x - 1$$

2. $(-3, 2); m = 1/3$

$$2 = \frac{1}{3}(-3) + b$$

$$2 = -1 + b$$

$$3 = b$$

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

Write the equation of the line that passes through the given point and has the given slope.

3. x-intercept -6 ; $m = 2$

$$(-6, 0)$$

$$0 = 2(-6) + b$$

$$0 = -12 + b$$

$$12 = b$$

$$y = 2x + 12$$

4. Write the equation of the line that is parallel to $y = 5x + 2$ and passes through point $(3, 2)$

$$y = 5x + b$$

$$2 = 5(3) + b$$

$$2 = 15 + b$$

$$-13 = b$$

$$y = 5x + -13$$

5. All of the garden center employees are given a \$0.40 per hour raise each year. Jim now makes \$10.15 per hour after three years as an employee. Write an equation that models Jim's salary in terms of the number of years worked. Use the model to find Jim's hourly wage after 6 years.

Let x = number of years worked; number of years as an employee

Let y = total hourly wage; hourly pay

$$y = mx + b$$

$$10.15 = 0.4(3) + b$$

$$10.15 = 1.2 + b$$

$$8.95 = b$$

$$(3, 10.15)$$

$$y = .4x + 8.95$$

$$y = 0.4(6) + 8.95$$

$$y = \$11.35$$