

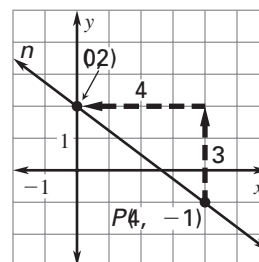


### Objective 3 TEKS A.6.D Review

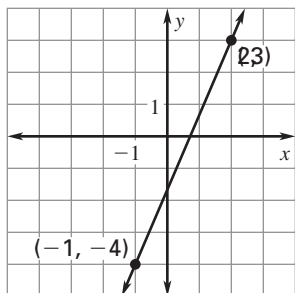
#### A.6.D Graph and write equations of lines given characteristics such as two points, a point and a slope, or a slope and y-intercept.

You can use the **slope-intercept** form or the **point-slope** form of a linear equation to write an equation of line  $n$ .

	Slope-Intercept Form	Point-Slope Form
General form of the equation	$y = mx + b$	$y - y_1 = m(x - x_1)$
Characteristics of graphed line	$m = -\frac{3}{4}; b = 2$	$(x_1, y_1) = P(4, -1)$ $m = -\frac{3}{4}$
Equation of line	$y = -\frac{3}{4}x + 2$	$y + 1 = -\frac{3}{4}(x - 4)$



**EXAMPLE** What is an equation of the graphed line?



Since you are given two points on the line, you can use the point-slope form of the equation of a line.

First find the slope of the line.

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-4 - 3}{-1 - 2} = \frac{7}{3}$$

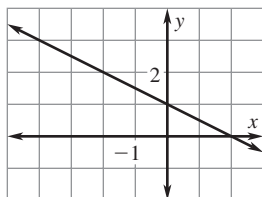
Then substitute values for  $m$  and a point on the line into the point-slope equation. For example, use the point  $(2, 3)$ .

$$y - y_1 = m(x - x_1)$$

$$y - 3 = \frac{7}{3}(x - 2)$$

An equation of the line is  $y - 3 = \frac{7}{3}(x - 2)$ .

**YOU DO IT** What is the slope-intercept form of the equation of the graphed line?



The slope of the line is

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{\boxed{0} - \boxed{1}}{\boxed{2} - \boxed{0}} = -\frac{1}{2}$$

The y-intercept is  $\boxed{1}$ .

The general form of the slope-intercept equation is  $y = mx + b$ .

What is the slope-intercept form of the equation of the graphed line?  $y = -\frac{1}{2}x + 1$