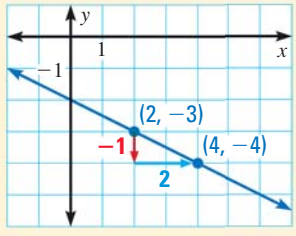
## 4.4 Find Slope and Rate of Change

*pp. 235–242*

**EXAMPLE**

**Find the slope of the line shown.**




Let $(x_1, y_1) = (2, -3)$ and $(x_2, y_2) = (4, -4)$.

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$ **Write formula for slope.**

$$= \frac{-4 - (-3)}{4 - 2}$$ **Substitute values.**

$$= -\frac{1}{2}$$ **Simplify.**

**EXAMPLES 1,2,3, and 4** on pp. 235–236 for Exs. 15–17

### EXERCISES

**Find the slope of the line that passes through the points.**

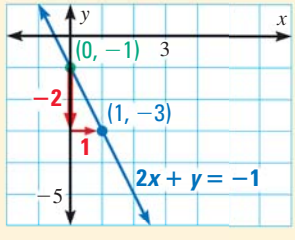
**15.** (−1, 11) and (2, 10) **16.** (−2, 0) and (4, 9) **17.** (−5, 4) and (1, −8)

## 4.5 Graph Using Slope-Intercept Form

*pp. 244–250*

**EXAMPLE**

**Graph the equation $2x + y = -1$.**




***STEP 1*** **Rewrite** the equation in slope-intercept form.

$2x + y = -1 \rightarrow y = -2x - 1$

***STEP 2*** **Identify** the slope and the $y$-intercept.

$m = -2$ and $b = -1$

***STEP 3*** **Plot** the point that corresponds to the $y$-intercept, $(0, -1)$.

***STEP 4*** **Use** the slope to locate a second point on the line. Draw a line through the two points.

### EXERCISES

**Graph the equation.**

**EXAMPLES 2 and 3** on p. 245 for Exs. 18–21

**18.** $4x - y = 3$ **19.** $3x - 6y = 9$ **20.** $-3x + 4y - 12 = 0$

**21.** **RUNNING** One athlete can run a 60 meter race at an average rate of 7 meters per second. A second athlete can run the race at an average rate of 6 meters per second. The distance $d$ (in meters) the athletes have left to run after $t$ seconds is given by the following equations:

**Athlete 1**: $d = -7t + 60$ **Athlete 2**: $d = -6t + 60$

Graph both models in the same coordinate plane. About how many seconds faster does the first athlete finish the race than the second athlete?