

Graphing Linear Equations

Example 1 Graph $x + 3y = -3$ using intercepts.

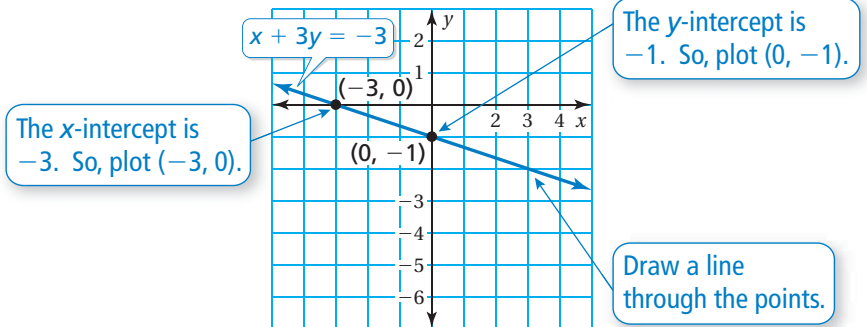
Step 1 To find the x -intercept, substitute 0 for y .

$$\begin{aligned} x + 3y &= -3 \\ x + 3(0) &= -3 \\ x &= -3 \end{aligned}$$

To find the y -intercept, substitute 0 for x .

$$\begin{aligned} x + 3y &= -3 \\ 0 + 3y &= -3 \\ y &= -1 \end{aligned}$$

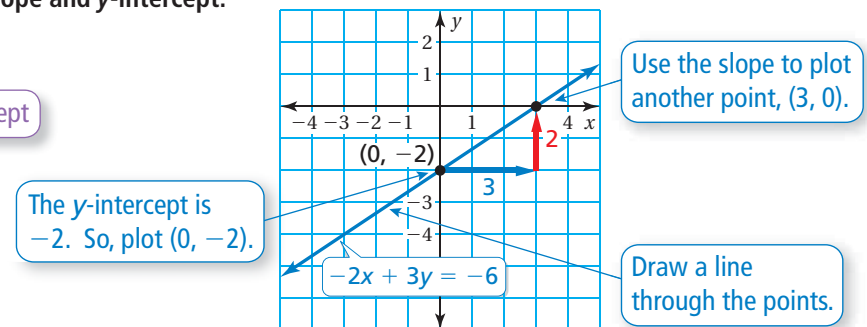
Step 2 Graph the equation.



Example 2 Graph $y = \frac{2}{3}x - 2$ using the slope and y -intercept.

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

slope \nearrow $\frac{2}{3}$ \nearrow y-intercept \nearrow (-2)



Practice

Check your answers at BigIdeasMath.com.

Graph the linear equation using intercepts.

1. $x - 4y = -8$

2. $-18x + 9y = 72$

3. $2x - 3y = 12$

Match the equation with its graph. Identify the slope and y -intercept.

4. $y = 2x + 1$

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

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

