

6-5

NAME _____ DATE _____

Graphing Linear Equations (Pages 356–361)

Graphing Equations Using Two Points	Use the equation to find the coordinates of any two points on the line. Draw the line representing the equation by connecting them. The two points chosen can be the x - and y -intercepts.
Graphing Equations Using a Point and the Slope	Graph one point and use the slope to find another point by moving the distance of the change in y and then the distance of the change in x from that point. When the equation is in point-slope form, $y - y_1 = m(x - x_1)$, use the point (x_1, y_1) and the slope m . When the equation is in slope-intercept form, $y = mx + b$, use the point $(0, b)$ and the slope m .

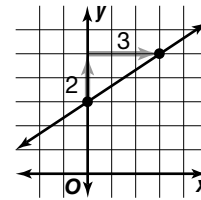
EXAMPLEGraph $-2x + 3y = 9$ by using the slope and y -intercept.

$$3y = 2x + 9 \quad \text{Solve the equation for } y.$$

$$y = \frac{2}{3}x + 3 \quad \text{Slope-intercept form}$$

$$y\text{-intercept: } 3 \Rightarrow (0, 3) \text{ is on the line.}$$

$$\text{slope of line: } \frac{2}{3} \Rightarrow \text{Move up 2 units, then right 3 units from that point.}$$

**PRACTICE**Graph each equation by using the x - and y -intercepts.

1. $y = 2x - 7$

2. $9x - y = 5$

3. $\frac{1}{3}x - \frac{3}{4}y = -6$

Graph each equation by using the slope and a point on the line.

4. $y - 6 = x - 5$

5. $y + 1 = -\frac{9}{4}(x + 1)$

6. $4(x - 2) = y + 2$

Graph each equation by using the slope and y -intercept.

7. $y = -\frac{5}{6}x + 4$

8. $x - 2y = -5$

9. $5y + 4 = -1$

Graph each equation.

10. $y = 3x - 2$

11. $3y + 1 = y + 5$

12. $4(y + 1) = -3x$

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

14. $3x + 2y = 12$

15. $\frac{1}{2}x - y = 8$

16. $8x - y = 2$

17. $10x - 8y = 40$

18. $y = 0.2x + 0.7$



19. Standardized Test Practice The y -intercept of the graph of a linear equation is 3. What additional information would allow you to graph the equation?

A x -intercept

B slope

C a second point on the line

D any of these

Answers: 1–18. See Answer Key. 19. D