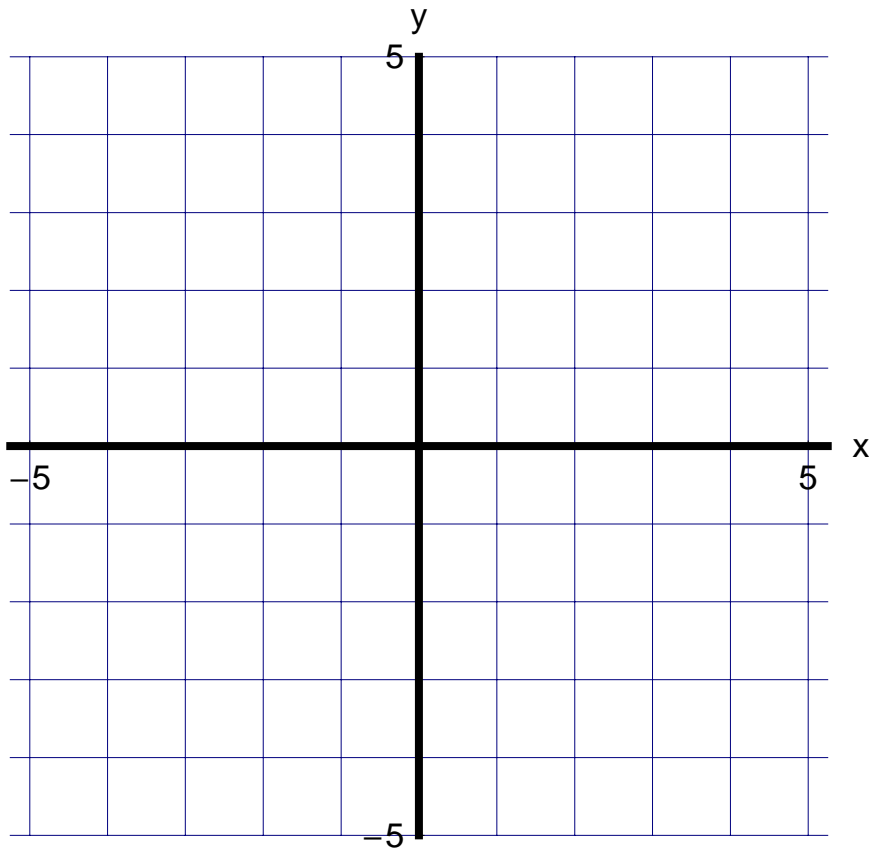


Worksheet 11.4: Equations of a Line

Draw the graph of each equation shown below.



1. $x + 3y = 6$

2. $2x + 3y = 6$

3. $2x + y = 4$

Write, in point-slope form, an equation of the line that passes through the given point and has slope m .

4. $(2, 3); m = \frac{2}{3}$

5. $(0, 5); m = -4$

6. $(-4, -3); m = \frac{-3}{7}$

Write an equation of the line that contains the given points.

7. $(1, 4)$ and $(5, 2)$

8. $(2, 0)$ and $(-4, 5)$

9. $(0, 5)$ and $(-6, -3)$

Write an equation of the line with the given slope and y-intercept.

10. slope = $\frac{-4}{3}$; y-intercept = -5

11. slope = $\frac{1}{2}$; y-intercept = 3

Show that the following pairs of equations are equivalent by writing each in the form $ax + by = c$.

12. $y - 1 = \frac{5}{2}(x - 3)$
 $y + 4 = \frac{5}{2}(x - 1)$

13. $y + 2 = -\frac{4}{3}(x - 3)$
 $y - 2 = -\frac{4}{3}x$

Write an equation of the line described.

14. The line through $(3, 6)$ and parallel to the line $3x + 4y = 5$.

15. The x-axis

16. The y-axis

17. The line through $(-5, 8)$ and parallel to the y-axis.

Solve each system of equations.

$$\begin{aligned} 18. \quad & y = x - 4 \\ & y = 3x + 2 \end{aligned}$$

$$\begin{aligned} 19. \quad & 2x - y = 8 \\ & x + 2y = 9 \end{aligned}$$

$$\begin{aligned} 20. \quad & 3x + y = 4 \\ & -6x - 2y = 12 \end{aligned}$$

$$\begin{aligned} 21. \quad & y = 2x + 1 \\ & y = 3x - 7 \end{aligned}$$

$$\begin{aligned} 22. \quad & 3x + 3y = 6 \\ & 5x - 6y = 15 \end{aligned}$$

$$\begin{aligned} 23. \quad & x - y = 2x - 2 \\ & x + y = 2y - 2 \end{aligned}$$

$$\begin{aligned} 24. \quad & 2x + 5y + 2z = -5 \\ & -3x + 3y + 5z = 2 \\ & x + 4y - z = 3 \end{aligned}$$

$$\begin{aligned} 25. \quad & 2x - y = 3z - 3 \\ & 3x + 2y = z - 1 \\ & x + 3y = z - 10 \end{aligned}$$