Graph the linear system and tell how many solutions it has. If there is exactly one solution, estimate the solution and check it algebraically.

1. \(2x - y = 5\)
   \(-x + y = -3\)

2. \(2x - 3y = -6\)
   \(-3y + 2x = 3\)

3. \(3x + y = 1\)
   \(2y = 2 - 6x\)

Solve the system using any algebraic method.

4. \(3x - 2y = 10\)
   \(5x + 3y = -15\)

5. \(2x - 4y = -6\)
   \(-x + 2y = 3\)

6. \(3x - 5y + 10 = 0\)
   \(-9x + 15y = -30\)

Graph the system of linear inequalities.

7. \(x \leq 0\)
   \(y \geq 0\)

8. \(x + y > -1\)
   \(3x - 2y > 4\)

9. \(-y \leq -2x - 3\)
   \(x + 2 \leq 0\)

Find the minimum and maximum values of the objective function subject to the given constraints.

10. Objective function: \(C = 4x + y\)
    Constraints: \(x \geq 0\)
                 \(y \geq 0\)
                 \(x + y \leq 3\)

11. Objective function: \(C = 6x + 7y\)
    Constraints: \(x \geq 0\)
                 \(y \geq 0\)
                 \(4x + 3y \geq 24\)
                 \(x + 3y \geq 15\)
Chapter Test C
For use after Chapter 3

Plot the ordered triple in a three-dimensional coordinate system.
12. (2, 1, 4) 13. (−3, 4, −4)

Sketch the graph of the equation. Label the points where the graph crosses the x-, y-, and z-axes.
14. \(x + y - z = 4\) 15. \(-3x - 3y + 3z = 12\)

16. Write the linear equation \(2x + 3y + z = 12\) as a function of \(x\) and \(y\). Then evaluate the function when \(x = 4\) and \(y = 1\).

Solve the system using any algebraic method.
17. \(-3x + 4y = -6\) 18. \(3x + 2y + 2z = -3\)
\[5x - 3z = -22\] \[2x + 3y + 3z = -2\]
\[3y + 2z = -1\] \[-3x - 5y + z = -9\]

19. Stamps  Postcard stamps are 20¢ each, while letter stamps are 33¢ each. If you have 50 stamps worth $12.60, how many of each type do you have?

20. Numbers  The sum of the digits of a two-digit number is 9. If the digits are reversed, the new number is 27 more than the original number. Find the original number.