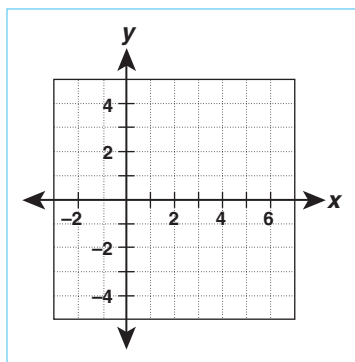




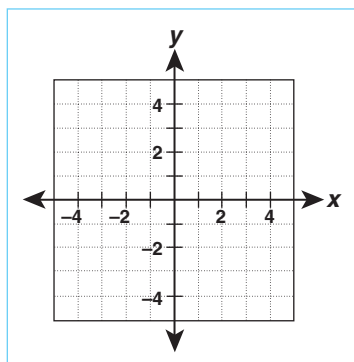
3-1 Solving Linear Systems by Using Graphs and Tables

Solve each system by using a graph and a table. Check your answer.

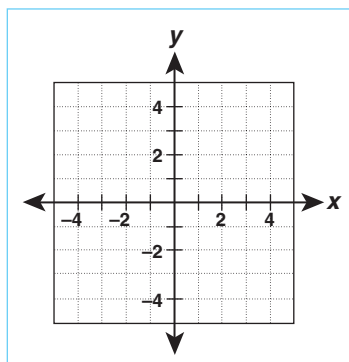
1. $\begin{cases} x + y = 5 \\ 2x - y = 4 \end{cases}$



2. $\begin{cases} x = y - 1 \\ 2x - 3y = 0 \end{cases}$



3. $\begin{cases} 3x + y = 5 \\ x - 2y = 4 \end{cases}$



Classify each system, and determine the number of solutions.

4. $\begin{cases} 6x - 2y = 2 \\ 9x - 3y = 1 \end{cases}$

5. $\begin{cases} 2x + y = 6 \\ 3x + 4y = 4 \end{cases}$

6. $\begin{cases} 2x - 3y = 6 \\ 4x - 6y = 12 \end{cases}$

3-2 Solving Linear Systems by Using Algebraic Methods

Use substitution to solve each system of equations.

7. $\begin{cases} y = 5 - 4x \\ 2x - 3y = 13 \end{cases}$

8. $\begin{cases} x = 7 \\ 3x + 2y = 11 \end{cases}$

9. $\begin{cases} x - y = 7 \\ 4x - 3y = 26 \end{cases}$

Use elimination to solve each system of equations.

10.
$$\begin{cases} 9x + 3y = -3 \\ 2x - 3y = -8 \end{cases}$$

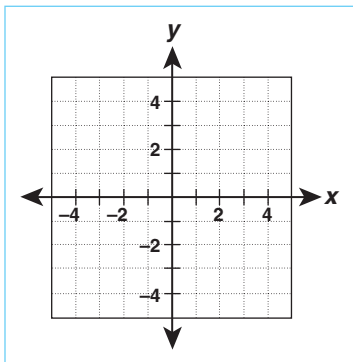
11.
$$\begin{cases} 5x - 7y = -16 \\ 2x + 8y = 26 \end{cases}$$

12.
$$\begin{cases} 5x - 3y = 24 \\ 3x - 5y = 28 \end{cases}$$

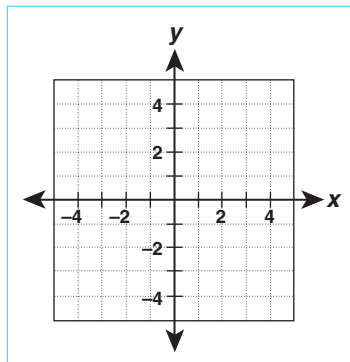
3-3 Solving Systems of Linear Inequalities

Graph each system of inequalities.

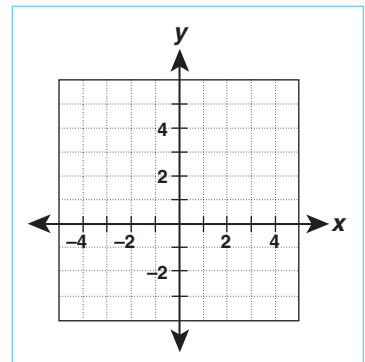
13.
$$\begin{cases} x + y \leq 4 \\ x - y < 4 \end{cases}$$



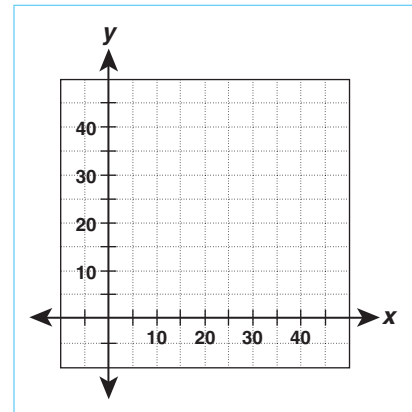
14.
$$\begin{cases} y \geq x \\ y \geq 2x - 4 \end{cases}$$



15.
$$\begin{cases} y \leq 2x - 3 \\ y > -2x + 1 \\ y \leq 5 \end{cases}$$



16. Pamela is selling necklaces and bracelets at a craft show. She only has enough beads to make a total of 40 items. Therefore, she can sell no more than a total of 40 necklaces and bracelets. Each necklace sells for \$5.00 and each bracelet sells for \$3.50. Pamela needs at least \$150 in sales to meet her goal. Write and graph a system of inequalities that models this situation.

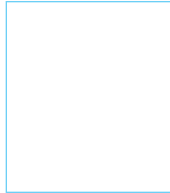
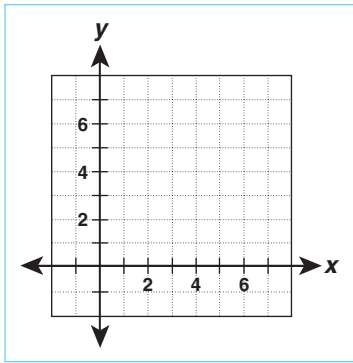


3-4 Linear Programming

Graph each feasible region, and maximize or minimize the objective function shown for each exercise.

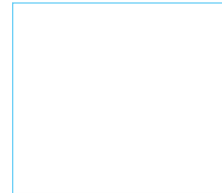
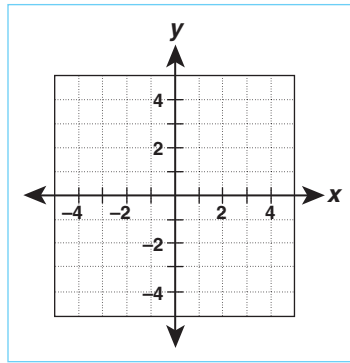
17. $P(x) = 7x + 8y$

$$\text{maximize; } \begin{cases} 3x + 2y \leq 12 \\ 2y - x \leq 4 \\ x \geq 0 \\ y \geq 0 \end{cases}$$

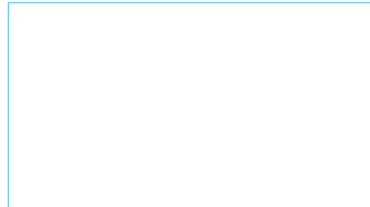


18. $P(x) = 2y - 3x$

$$\text{minimize; } \begin{cases} y \leq 2x + 1 \\ y \geq -2x + 3 \\ x \leq 3 \end{cases}$$



19. A landscaper is working on a design for a customer. The customer has a budget of \$700. The customer has room to a maximum of 10 plants. The landscaper must plant at least 3 shrubs to help with drainage. The shrubs cost \$40 each and the trees cost \$100 each. Write the constraints and graph. constraint



Profit = (\$10 x shrubs) + (\$18 x tree). Find the number of shrubs and trees that produces the maximum profit.

