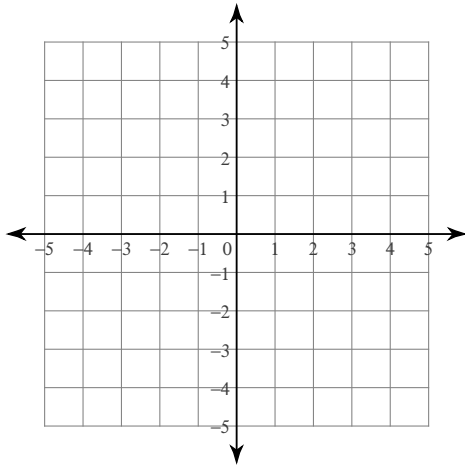


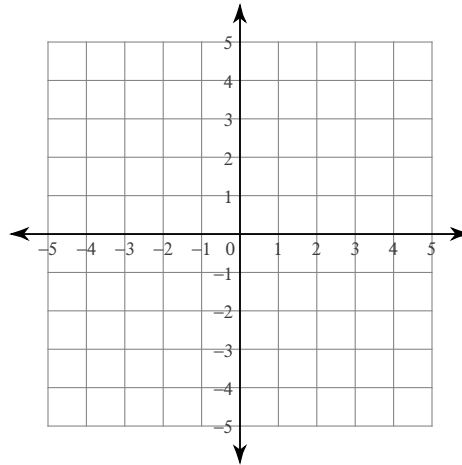
Systems of Two Equations

Solve each system by graphing.

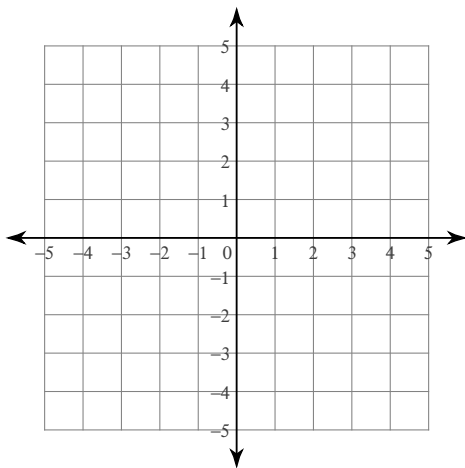
$$\begin{aligned} 1) \quad & y = -3x + 4 \\ & y = 3x - 2 \end{aligned}$$



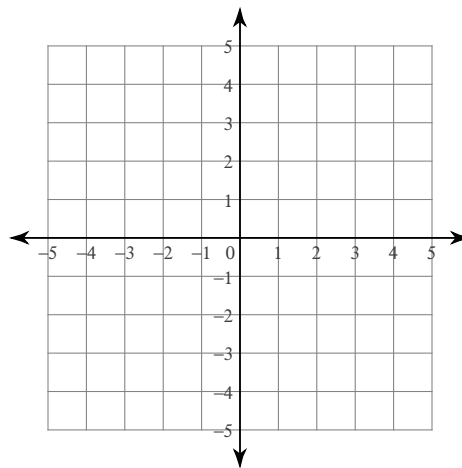
$$\begin{aligned} 2) \quad & y = x + 2 \\ & x = -3 \end{aligned}$$



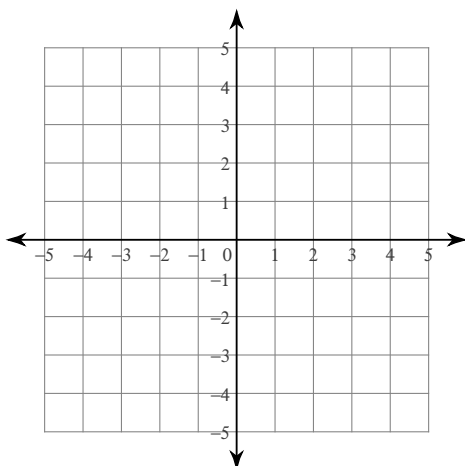
$$\begin{aligned} 3) \quad & x - y = 3 \\ & 7x - y = -3 \end{aligned}$$



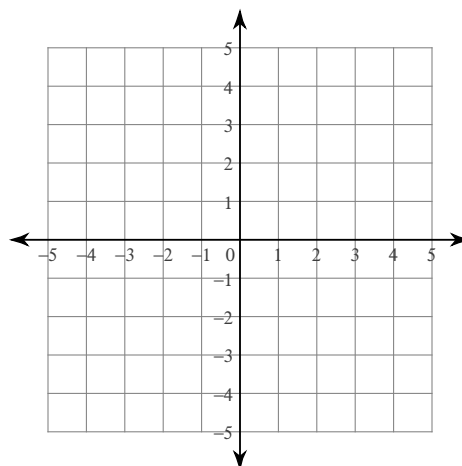
$$\begin{aligned} 4) \quad & 4x + y = 2 \\ & x - y = 3 \end{aligned}$$



$$\begin{aligned} 5) \quad & 8x + y = -4 \\ & 0 = -4 - y - 8x \end{aligned}$$



$$\begin{aligned} 6) \quad & 2y + x + 4 = 0 \\ & -x = -8 - 2y \end{aligned}$$



Solve each system by substitution.

$$\begin{aligned} 7) \quad y &= 4x - 9 \\ y &= x - 3 \end{aligned}$$

$$\begin{aligned} 8) \quad 4x + 2y &= 10 \\ x - y &= 13 \end{aligned}$$

$$\begin{aligned} 9) \quad y &= -5 \\ 5x + 4y &= -20 \end{aligned}$$

$$\begin{aligned} 10) \quad x + 7y &= 0 \\ 2x - 8y &= 22 \end{aligned}$$

$$\begin{aligned} 11) \quad 6x + 8y &= -22 \\ y &= -5 \end{aligned}$$

$$\begin{aligned} 12) \quad 7x + 2y &= -6 \\ -14x - 4y &= -2 \end{aligned}$$

$$\begin{aligned} 13) \quad 2x + 2y &= -6 \\ 5x - 5y &= -15 \end{aligned}$$

$$\begin{aligned} 14) \quad -x + 2y &= -7 \\ -2x - 6y &= -14 \end{aligned}$$

Solve each system by elimination.

$$\begin{aligned} 15) \quad -x - y &= 8 \\ x - 3y &= 8 \end{aligned}$$

$$\begin{aligned} 16) \quad -2x - 2y &= 6 \\ 10x + 10y &= -30 \end{aligned}$$

$$\begin{aligned} 17) \quad 4x + 5y &= -9 \\ 8x - y &= -7 \end{aligned}$$

$$\begin{aligned} 18) \quad -2x + 3y &= 15 \\ -6x + 6y &= 18 \end{aligned}$$

$$\begin{aligned} 19) \quad 2x + 18y &= 22 \\ -x - 9y &= -11 \end{aligned}$$

$$\begin{aligned} 20) \quad 36 + 7x - 8y &= 0 \\ -10y &= -12 - 6x \end{aligned}$$

$$\begin{aligned} 21) \quad -x + \frac{2}{5} &= -\frac{3}{5}y \\ 3y &= -\frac{18}{11}x + \frac{51}{11} \end{aligned}$$

$$\begin{aligned} 22) \quad -17 - 5y - 11x &= 0 \\ -15 &= 9x + 4y \end{aligned}$$

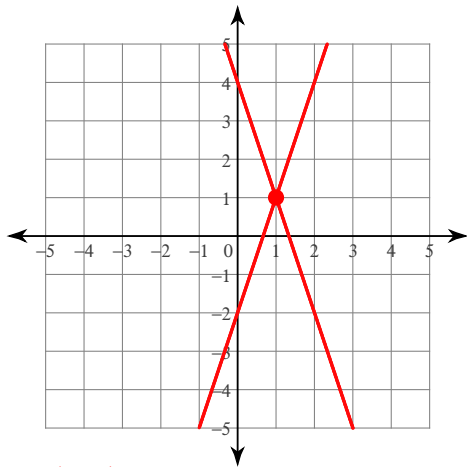
Critical thinking questions:

23) Write a system of equations with the solution $(4, -3)$.

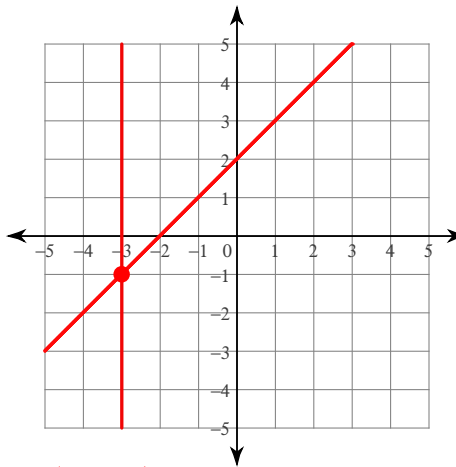
Systems of Two Equations

Solve each system by graphing.

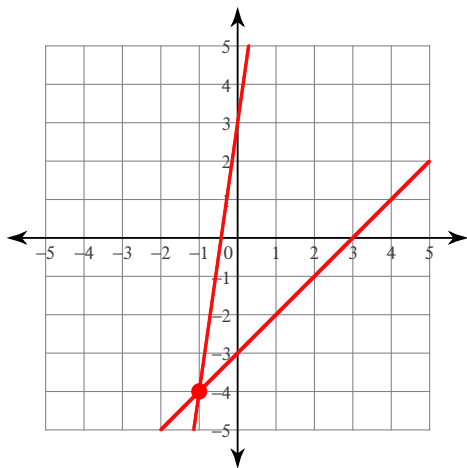
$$1) \begin{aligned} y &= -3x + 4 \\ y &= 3x - 2 \end{aligned}$$

 $(1, 1)$

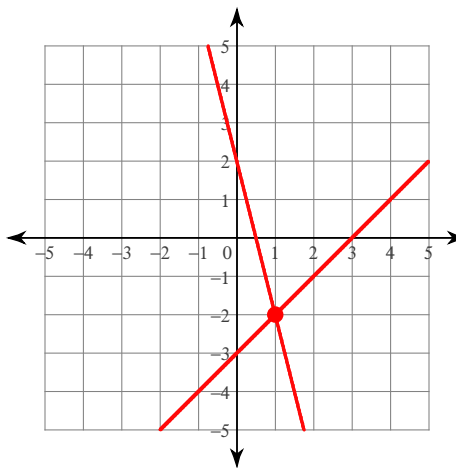
$$2) \begin{aligned} y &= x + 2 \\ x &= -3 \end{aligned}$$

 $(-3, -1)$

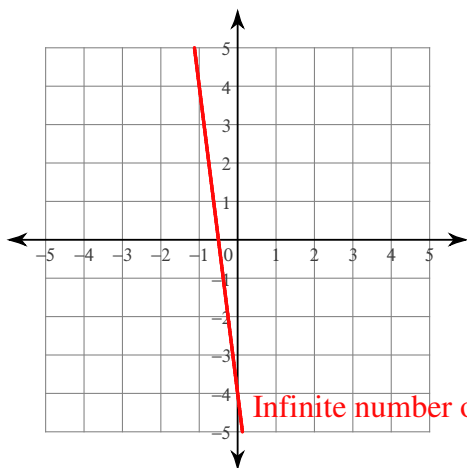
$$3) \begin{aligned} x - y &= 3 \\ 7x - y &= -3 \end{aligned}$$

 $(-1, -4)$

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

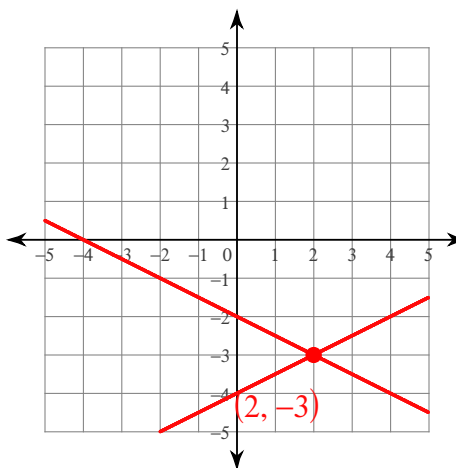
 $(1, -2)$

$$5) \begin{aligned} 8x + y &= -4 \\ 0 &= -4 - y - 8x \end{aligned}$$



Infinite number of solutions

$$6) \begin{aligned} 2y + x + 4 &= 0 \\ -x &= -8 - 2y \end{aligned}$$

 $(2, -3)$

Solve each system by substitution.

$$\begin{aligned} 7) \quad y &= 4x - 9 \\ y &= x - 3 \\ (2, -1) \end{aligned}$$

$$\begin{aligned} 8) \quad 4x + 2y &= 10 \\ x - y &= 13 \\ (6, -7) \end{aligned}$$

$$\begin{aligned} 9) \quad y &= -5 \\ 5x + 4y &= -20 \\ (0, -5) \end{aligned}$$

$$\begin{aligned} 10) \quad x + 7y &= 0 \\ 2x - 8y &= 22 \\ (7, -1) \end{aligned}$$

$$\begin{aligned} 11) \quad 6x + 8y &= -22 \\ y &= -5 \\ (3, -5) \end{aligned}$$

$$\begin{aligned} 12) \quad 7x + 2y &= -6 \\ -14x - 4y &= -2 \\ \text{No solution} \end{aligned}$$

$$\begin{aligned} 13) \quad 2x + 2y &= -6 \\ 5x - 5y &= -15 \\ (-3, 0) \end{aligned}$$

$$\begin{aligned} 14) \quad -x + 2y &= -7 \\ -2x - 6y &= -14 \\ (7, 0) \end{aligned}$$

Solve each system by elimination.

$$\begin{aligned} 15) \quad -x - y &= 8 \\ x - 3y &= 8 \\ (-4, -4) \end{aligned}$$

$$\begin{aligned} 16) \quad -2x - 2y &= 6 \\ 10x + 10y &= -30 \\ \text{Infinite number of solutions} \end{aligned}$$

$$\begin{aligned} 17) \quad 4x + 5y &= -9 \\ 8x - y &= -7 \\ (-1, -1) \end{aligned}$$

$$\begin{aligned} 18) \quad -2x + 3y &= 15 \\ -6x + 6y &= 18 \\ (6, 9) \end{aligned}$$

$$\begin{aligned} 19) \quad 2x + 18y &= 22 \\ -x - 9y &= -11 \\ \text{Infinite number of solutions} \end{aligned}$$

$$\begin{aligned} 20) \quad 36 + 7x - 8y &= 0 \\ -10y &= -12 - 6x \\ (-12, -6) \end{aligned}$$

$$\begin{aligned} 21) \quad -x + \frac{2}{5} &= -\frac{3}{5}y \\ 3y &= -\frac{18}{11}x + \frac{51}{11} \\ (1, 1) \end{aligned}$$

$$\begin{aligned} 22) \quad -17 - 5y - 11x &= 0 \\ -15 &= 9x + 4y \\ (-7, 12) \end{aligned}$$

Critical thinking questions:

23) Write a system of equations with the solution $(4, -3)$. **Many answers.** Ex: $x + y = 1$, $2x + y = 5$