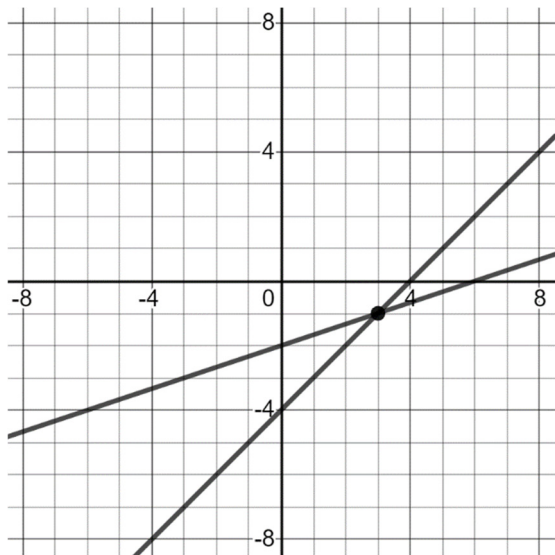


Solving Linear Systems by Graphing (ALG.SYS.02)

Solve and classify each linear system by graphing.

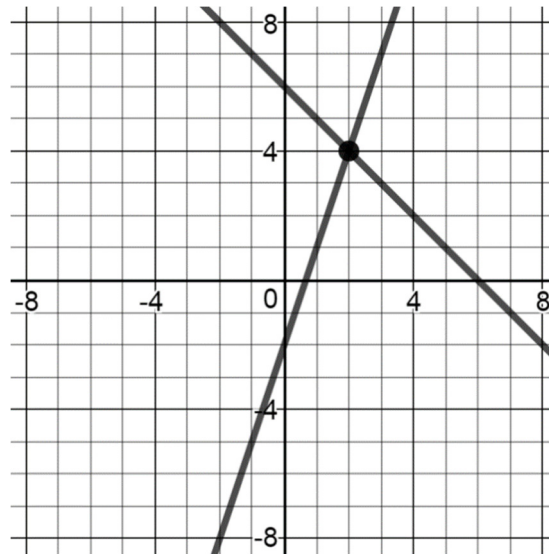
1.
$$\begin{cases} y + 4 = \frac{1}{3}(x + 6) \\ x - y = 4 \end{cases}$$



$(3, -1)$

Consistent and Independent

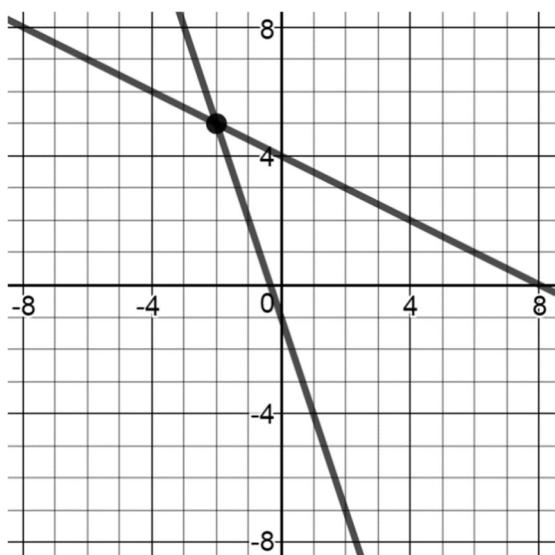
2.
$$\begin{cases} y = 3x - 2 \\ y = -x + 6 \end{cases}$$



$(2, 4)$

Consistent and Independent

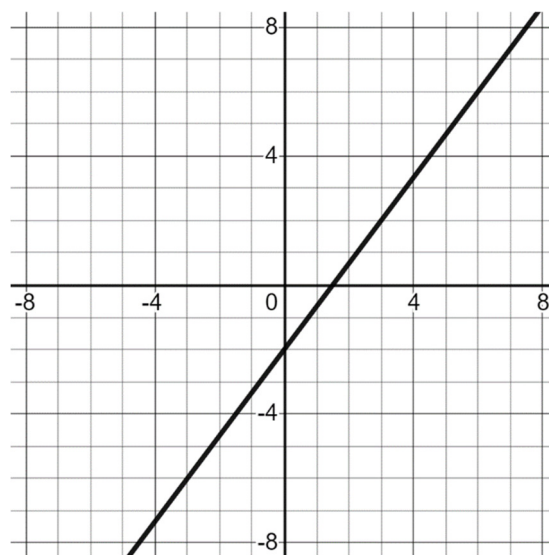
3.
$$\begin{cases} y = -\frac{1}{2}x + 4 \\ y = -3x - 1 \end{cases}$$



$(-2, 5)$

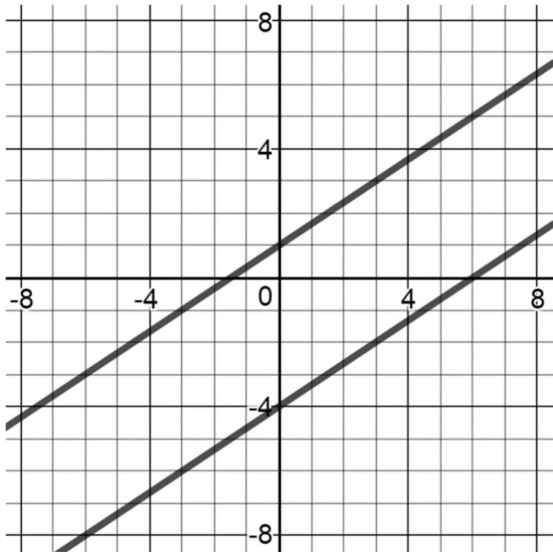
Consistent and Independent

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



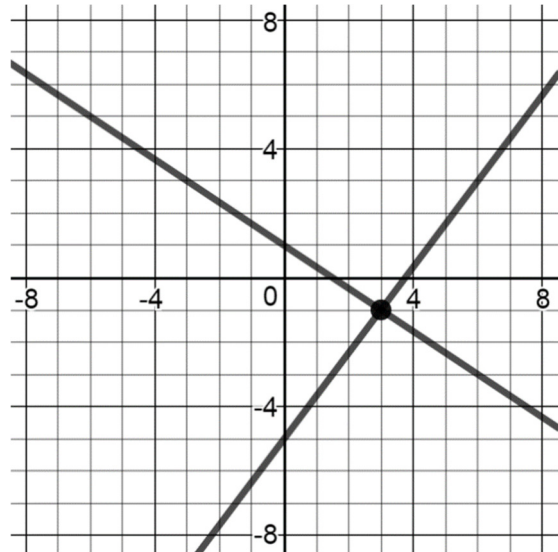
**Infinite Solutions
Consistent and Dependent**

5.
$$\begin{cases} y = \frac{2}{3}x - 4 \\ y = \frac{2}{3}x + 1 \end{cases}$$



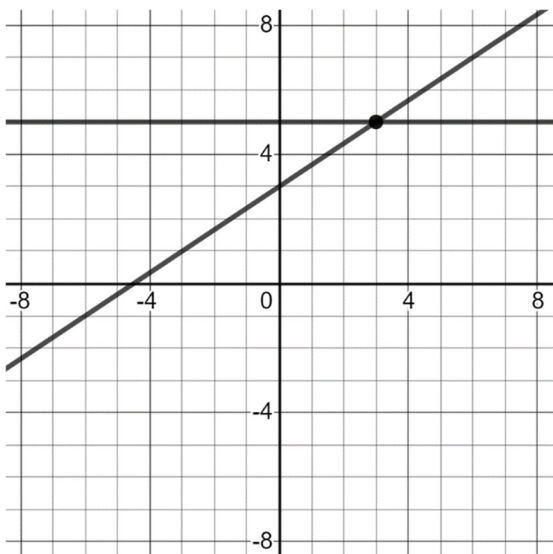
No solution
Inconsistent

6.
$$\begin{cases} y = \frac{4}{3}x - 5 \\ y = -\frac{2}{3}x + 1 \end{cases}$$



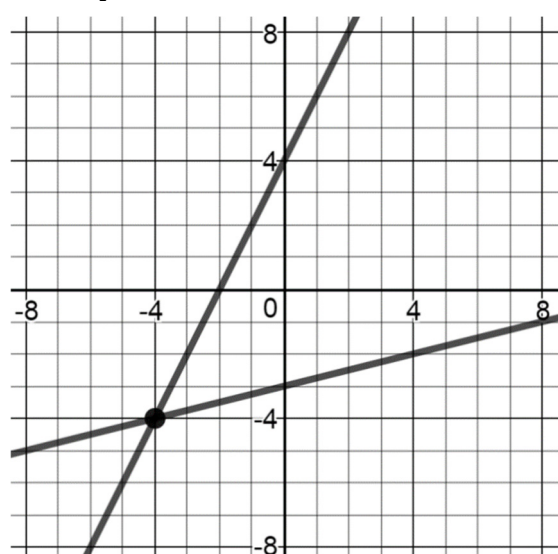
(3, -1)
Consistent and Independent

7.
$$\begin{cases} 2x - 3y = -9 \\ y = 5 \end{cases}$$



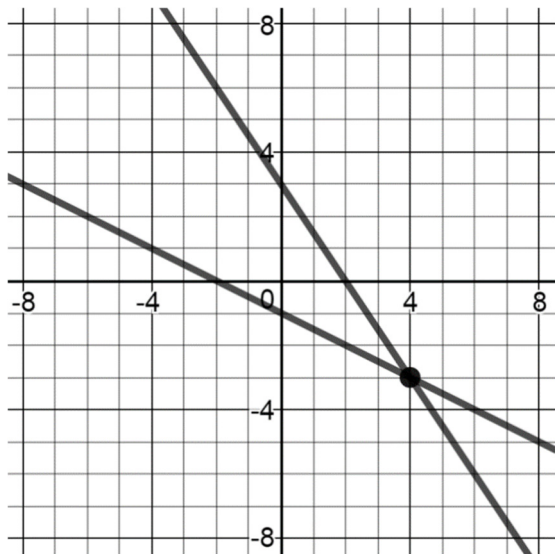
(3, 5)
Consistent and Independent

8.
$$\begin{cases} y = 2x + 4 \\ y = \frac{1}{4}x - 3 \end{cases}$$



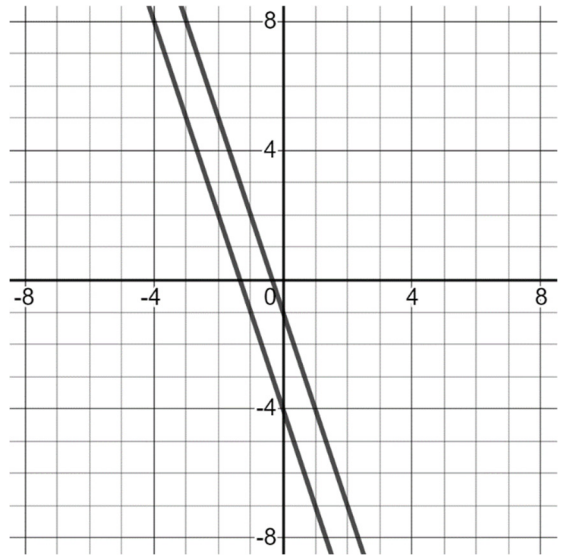
(-4, -4)
Consistent and Independent

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



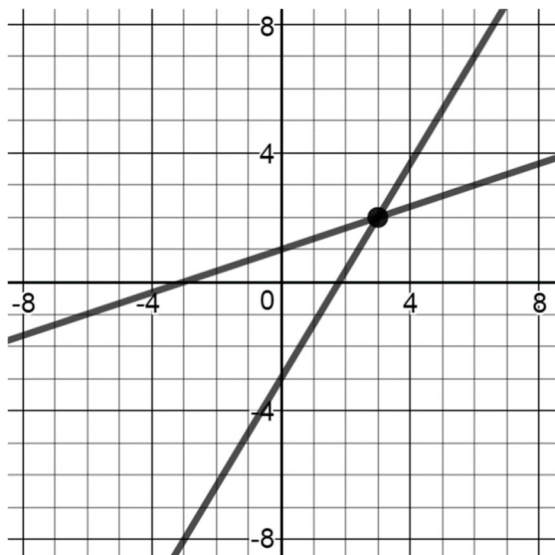
(4, -3)
Consistent and Independent

10.
$$\begin{cases} y = -3x - 1 \\ 6x + 2y = -8 \end{cases}$$



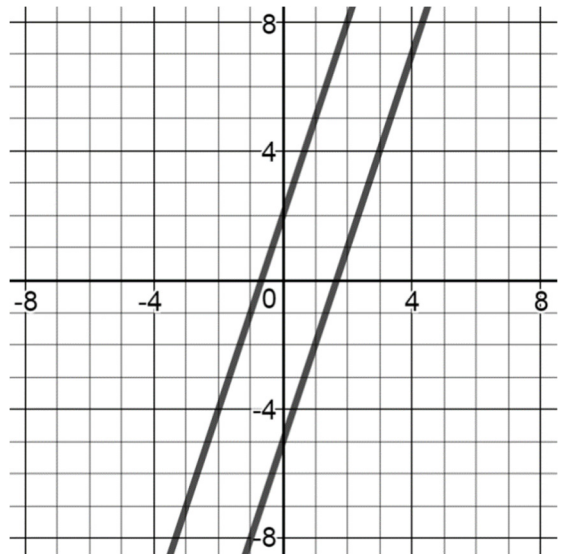
No Solution
Inconsistent

11.
$$\begin{cases} y = \frac{1}{3}x + 1 \\ y = \frac{5}{3}x - 3 \end{cases}$$



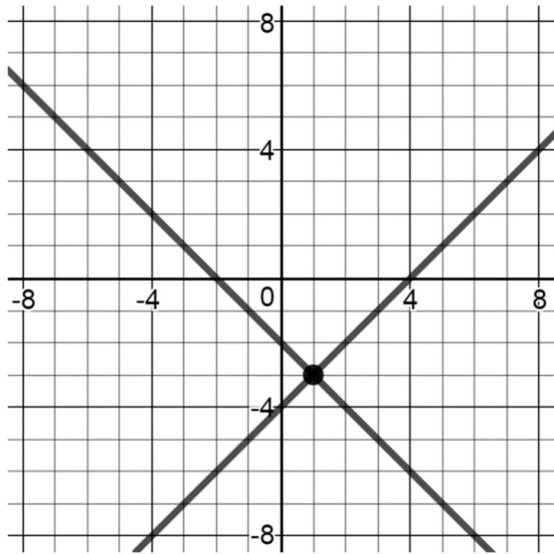
(3, 2)
Consistent and Independent

12.
$$\begin{cases} y = 3x - 5 \\ y = 3x + 2 \end{cases}$$



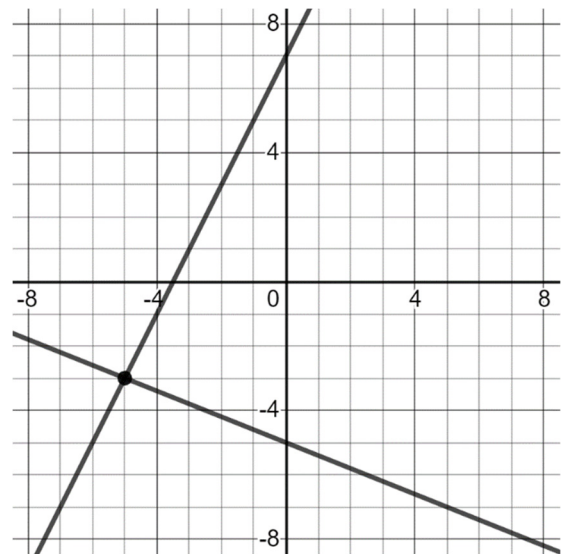
No solution
Inconsistent

13.
$$\begin{cases} 4 + y = x \\ -x = y + 2 \end{cases}$$



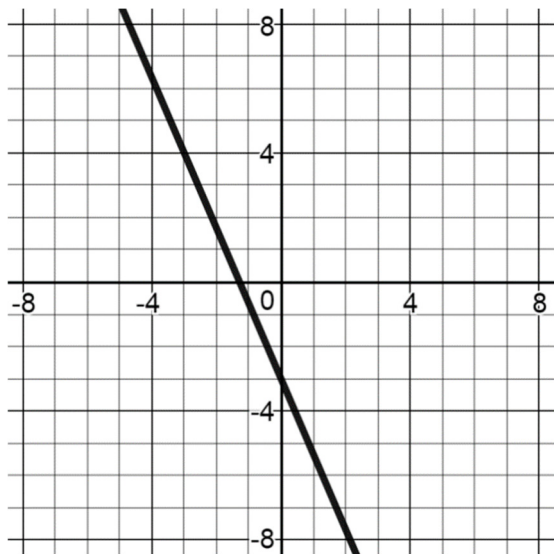
(1, -3)
Consistent and Independent

14.
$$\begin{cases} y - 3 = 2(x + 2) \\ y = -\frac{2}{5}x - 5 \end{cases}$$



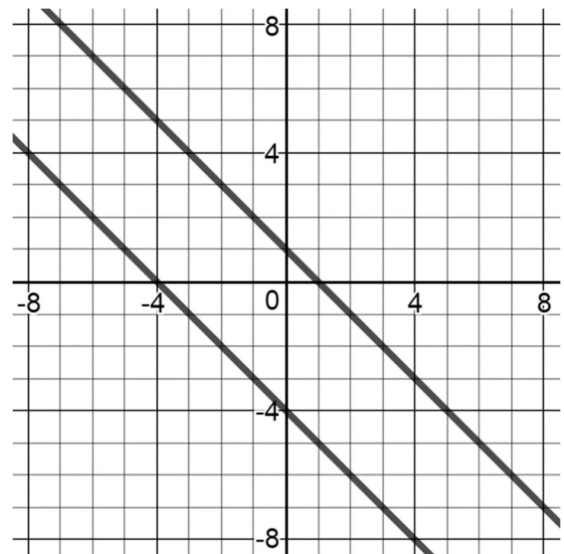
(-5, -3)
Consistent and Independent

15.
$$\begin{cases} 9 = -7x - 3y \\ -3y - 9 - 7x = 0 \end{cases}$$



Infinite Solutions
Consistent and Dependent

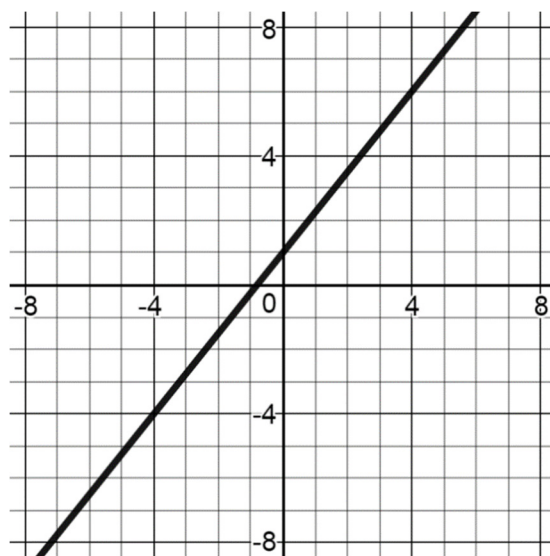
16.
$$\begin{cases} -y = -1 + x \\ -3y = 12 + 3x \end{cases}$$



No solution
Inconsistent

$$17. \begin{cases} 15x = 12y - 12 \\ -4y + 4 + 5x = 0 \end{cases}$$

Infinite Solutions
Consistent and Dependent



18. Determine the value of k that will make the system intersect at the point $Q(1, -2)$.

$$\begin{cases} y = 2x - 4 \\ y = -3x + k \end{cases} \quad k = 1$$

19. Determine values of a and b such that the linear system has a solution of $P(4, -9)$.

$$\begin{cases} y = -\frac{1}{2}x + a \\ 2x + y = b \end{cases} \quad a = -7, b = -1$$

20. Determine the values of a and b that will make the system intersect at the point $M(-5, 7)$.

$$\begin{cases} 2x + ay = 11 \\ y - 1 = 2(x + b) \end{cases} \quad a = 3, b = 8$$

21. Determine values of a and b that will make the system have no solution.

$$\begin{cases} y = ax - 4 \\ y = -\frac{4}{3}x + b \end{cases} \quad a = -\frac{4}{3}, b \neq -4$$

22. Determine values of a and b such that the linear system has infinite solutions.

$$\begin{cases} 2x - 3y = a \\ y - 1 = b(x + 6) \end{cases} \quad a = -15, b = \frac{2}{3}$$

23. Determine the values of a and b that will make the system have an infinite number of solutions.

$$\begin{cases} 2x - y = a \\ y = bx + 7 \end{cases} \quad a = -7, b = 2$$