

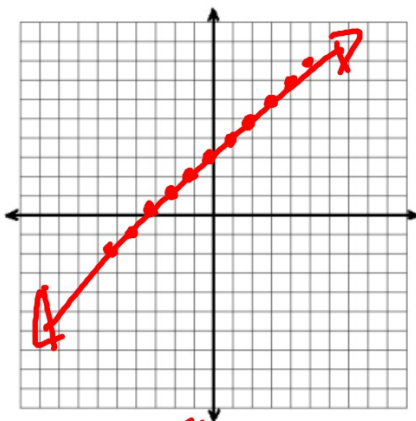
GRAPHICALLY

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

$$+6 \quad +6$$

$$\frac{2y}{2} = \frac{2x}{2} + \frac{6}{2}$$

$$y = x + 3$$

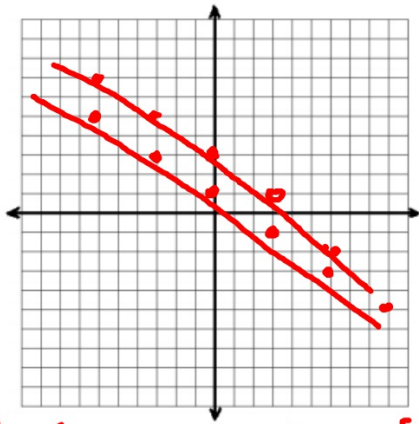


Infinitely Many
Solutions

GRAPHICALLY

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

$-2x$ $-2x$



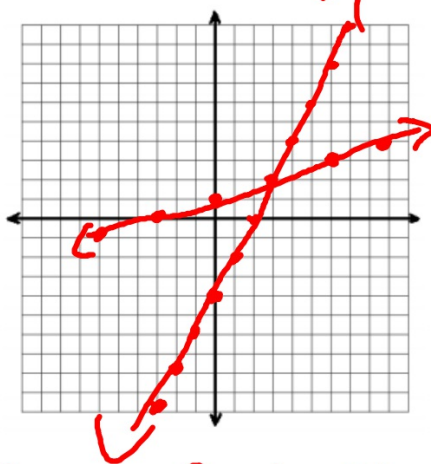
$$\frac{3y}{3} = \frac{-2x}{3} + \frac{9}{3}$$

$$y = -\frac{2}{3}x + 3$$

No solution

GRAPHICALLY

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



$$2x - y = 4$$
$$\begin{array}{r} -2x \end{array}$$

$$-2x$$

$$\begin{array}{r} -y = -2x + 4 \\ \hline -1 \quad \quad -1 \\ y = 2x - 4 \end{array}$$

One Solution (3, 2)

SUBSTITUTION

$$\begin{cases} 2x + y = -1 \\ x = 2y - 13 \end{cases}$$

$$\begin{array}{r} 2x + y = -1 \\ -2x \quad -2x \\ \hline \end{array}$$

$$y = -2x - 1$$

$$x = 2(-2x - 1) - 13$$

$$x = -4x - 2 - 13$$

$$\boxed{x = -3} \quad \begin{array}{r} 5x = -15 \\ 5 \quad 5 \end{array} \quad \begin{array}{r} x = -4x - 15 \\ +4x \quad +4x \end{array}$$

ONE
Solution

$$2(-3) + y = -1$$

$$(-3, 5)$$

$$\begin{array}{r} -6 + y = -1 \\ +6 \quad +6 \\ \hline \end{array}$$

$$\boxed{y = 5}$$

SUBSTITUTION

$$\begin{cases} 4x - 3y = 15 \\ y = \frac{4}{3}x - 7 \end{cases}$$

$$4x - 3\left(\frac{4}{3}x - 7\right) = 15$$

$$\cancel{4x} - \cancel{4x} + 21 = 15$$

No solution

SUBSTITUTION

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

$$x + 2\left(-\frac{1}{2}x + 4\right) = 8$$

$$x + \cancel{-1x} + 8 = 8$$

$$0x + \cancel{8} = \cancel{8}$$

$$0 = 0$$

Infinitely many solutions

ELIMINATION

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

$$\begin{array}{r} 4x + 2y = 12 \\ + -4x - 2y = 5 \\ \hline 0 = 17 \\ \text{NO Solution} \end{array}$$

ELIMINATION

$$\begin{cases} -x + 5y = -6 \\ 2x - 10y = 12 \end{cases}$$

$$\begin{array}{r} 2(-x + 5y = -6) \\ -2x + 10y = -12 \\ + \quad 2x - 10y = 12 \\ \hline 0x + 0y = 0 \end{array}$$

Infinitely many

ELIMINATION

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