

1.

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

$$\begin{cases} x + y = 5 & \text{eq. (1)} \\ x - y = 1 & \text{eq. (2)} \end{cases}$$

Somando eq. (1) e eq. (2) :

$$\begin{array}{r} x + y = 5 \\ + \quad x - y = 1 \\ \hline 2x + 0y = 6 \end{array} \quad \rightarrow \quad 2x = 6$$

$$x = \frac{6}{2} \quad \boxed{x = 3}$$

Substituindo $x = 3$ na eq. (1) :

$$\begin{array}{l} x + y = 5 \\ \downarrow \\ + 3 + y = 5 \end{array} \quad \rightarrow \quad y = 5 - 3$$

$$\boxed{y = 2}$$

$$S = \{[3, 2]\}$$

2.

$$\begin{cases} 3x - 2y = -14 \\ 2x + 3y = 8 \end{cases}$$

$$\begin{cases} 3x - 2y = -14 & (\times 3) \\ 2x + 3y = 8 & (\times 2) \end{cases} \quad \rightarrow \quad \text{o objetivo é igualar os termos em } y \text{ para eliminar esta variável.}$$

$$\begin{array}{r} 9x - 6y = -42 \\ + \quad 4x + 6y = 16 \\ \hline 13x + 0y = -26 \end{array} \quad \rightarrow \quad 13x = -26$$

$$x = \frac{-26}{13} \quad \boxed{x = -2}$$

$$\begin{array}{l} 3x - 2y = -14 \\ \downarrow \\ 3(-2) - 2y = -14 \end{array} \quad \rightarrow \quad \text{Substituindo } x = -2$$

$$-6 - 2y = -14$$

$$-2y = -14 + 6$$

$$y = \frac{-8}{-2} \quad \boxed{y = 4}$$

$$S = \{[-2, 4]\}$$

3.

$$\begin{cases} 2x - 5y = 9 \\ 7x + 4y = 10 \end{cases}$$

$$\begin{cases} 2x - 5y = 9 & (\times 4) \\ 7x + 4y = 10 & (\times 5) \end{cases}$$

$$\begin{array}{r} 8x - 20y = 36 \\ + \quad 35x + 20y = 50 \\ \hline 43x + 0y = 86 \end{array} \quad \rightarrow \quad 43x = 86$$

$$x = \frac{86}{43} \quad \boxed{x = 2}$$

$$\begin{array}{l} 7x + 4y = 10 \\ 7 \cdot 2 + 4y = 10 \\ 4y = 10 - 14 \end{array} \quad \rightarrow \quad y = \frac{-4}{4} \quad \boxed{y = -1}$$

$$S = \{[2, -1]\}$$

4.

$$\begin{cases} 4x + 5y = 2 \\ 6x + 7y = 4 \end{cases}$$

$$\begin{cases} 4x + 5y = 2 & \times 7 \\ 6x + 7y = 4 & \times 5 \end{cases}$$

$$\begin{cases} 28x + 35y = 14 \\ - \quad 30x + 35y = 20 \\ \hline -2x + 0y = -6 \end{cases} \quad \rightarrow \quad \text{elementos iguais nos duas equações: } +35y.$$

$$-2x + 0y = -6 \quad \rightarrow \quad -2x = -6$$

$$x = \frac{-6}{-2} \quad \boxed{x = 3}$$

$$\begin{array}{l} 4x + 5y = 2 \\ 4 \cdot 3 + 5y = 2 \\ 5y = 2 - 12 \end{array} \quad \rightarrow \quad y = \frac{-10}{5} \quad \rightarrow \quad \boxed{y = -2}$$

$$S = \{[3, -2]\}$$

5.

$$\begin{cases} 2x + 5y = 0 \\ 3x - 2y = 0 \end{cases}$$

$$\begin{cases} 2x + 5y = 0 & \times (2) \\ 3x - 2y = 0 & \times (5) \end{cases}$$

$$\begin{array}{r} 4x + 10y = 0 \\ + \quad 15x - 10y = 0 \\ \hline 19x + 0y = 0 \end{array} \quad \rightarrow \quad 19x = 0$$

$$x = \frac{0}{19} \quad \boxed{x = 0}$$

$$\begin{array}{l} 3x - 2y = 0 \\ 3 \cdot 0 - 2y = 0 \\ -2y = 0 \\ \boxed{y = 0} \end{array}$$

$$S = \{[0, 0]\}$$