

1. p019e01 - Resuelve los sistemas:

(a)
$$\begin{cases} 3x - 2y = 1 \\ x + 6y = 7 \end{cases}$$

Sol:
$$\begin{bmatrix} 3 & -2 & 1 \\ 0 & \frac{20}{3} & \frac{20}{3} \end{bmatrix} \rightarrow \{x : 1, \quad y : 1\}$$

(b)
$$\begin{cases} 6x - 2y = 14 \\ 3x - y = 7 \end{cases}$$

Sol:
$$\begin{bmatrix} 6 & -2 & 14 \\ 0 & 0 & 0 \end{bmatrix} \rightarrow \{x : \frac{y}{3} + \frac{7}{3}\}$$

(c)
$$\begin{cases} 6x - 2y = 9 \\ 3x - y = 10 \end{cases}$$

Sol:
$$\begin{bmatrix} 6 & -2 & 9 \\ 0 & 0 & \frac{11}{2} \end{bmatrix} \rightarrow \square$$

(d)
$$\begin{cases} 4x + 7y = -3 \\ 7x + 4y = 36 \end{cases}$$

Sol:
$$\begin{bmatrix} 4 & 7 & -3 \\ 0 & -\frac{33}{4} & \frac{165}{4} \end{bmatrix} \rightarrow \{x : 8, \quad y : -5\}$$

(e)
$$\begin{cases} 4x + 16 = 5y \\ 5y - 19 = 3x \end{cases}$$

Sol:
$$\begin{bmatrix} 4 & -5 & -16 \\ 0 & \frac{5}{4} & 7 \end{bmatrix} \rightarrow \{x : 3, \quad y : \frac{28}{5}\}$$

(f)
$$\begin{cases} x - 5 = y + 2 \\ 1 + 3x + 2y = x - 4 \end{cases}$$

Sol:
$$\begin{bmatrix} 1 & -1 & 7 \\ 0 & 4 & -19 \end{bmatrix} \rightarrow \{x : \frac{9}{4}, \quad y : -\frac{19}{4}\}$$

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

Sol:
$$\begin{bmatrix} 1 & -1 & 7 \\ 0 & 0 & -19 \end{bmatrix} \rightarrow \square$$

(h)
$$\begin{cases} x + 3y = 6 \\ 6y - 5 = 7 - 2x \end{cases}$$

Sol:
$$\begin{bmatrix} 1 & 3 & 6 \\ 0 & 0 & 0 \end{bmatrix} \rightarrow \{x : -3y + 6\}$$

(i)
$$\begin{cases} x - y = 8 \\ x + y = 24 \end{cases}$$

Sol:
$$\begin{bmatrix} 1 & -1 & 8 \\ 0 & 2 & 16 \end{bmatrix} \rightarrow \{x : 16, \quad y : 8\}$$

(j)
$$\begin{cases} x + 2y = 11 \\ 2x - y = 2 \end{cases}$$

Sol:
$$\begin{bmatrix} 1 & 2 & 11 \\ 0 & -5 & -20 \end{bmatrix} \rightarrow \{x : 3, \quad y : 4\}$$

(k)
$$\begin{cases} 3x - 4y = -9 \\ 2x + y = 5 \end{cases}$$

Sol:
$$\begin{bmatrix} 3 & -4 & -9 \\ 0 & \frac{11}{3} & 11 \end{bmatrix} \rightarrow \{x : 1, \quad y : 3\}$$

(l)
$$\begin{cases} 10(x - 2) + y = 1 \\ x + 3(x - y) = 5 \end{cases}$$

Sol:
$$\begin{bmatrix} 1 & 0 & 5 \\ 0 & 1 & 1 \end{bmatrix} \rightarrow \{x : 2, \quad y : 1\}$$

(m)
$$\begin{cases} \frac{x-y}{2} + \frac{x-y}{3} = 5 \\ \frac{x+7}{4} + y = 3 \end{cases}$$

Sol:
$$\begin{bmatrix} 0 & 1 & 3 \\ 0 & 0 & 5 \end{bmatrix} \rightarrow \{x : \frac{29}{5}, \quad y : -\frac{1}{5}\}$$

(n)
$$\begin{cases} \frac{3(y+2x+2)}{4} = \frac{4x+y-1}{3} \\ \frac{1}{3}(x+y) - \frac{1}{6}(x-y) = \frac{y-1}{6} \end{cases}$$

Sol:
$$\begin{bmatrix} -\frac{4}{3} & -\frac{1}{3} & -\frac{1}{3} \\ 0 & \frac{1}{24} & -\frac{1}{8} \end{bmatrix} \rightarrow \{x : 39, \quad y : -20\}$$

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

Sol:
$$\begin{bmatrix} 1 & -3 & -2 \\ 0 & \frac{3}{2} & \frac{11}{3} \end{bmatrix} \rightarrow \{x : 12, \quad y : -2\}$$

$$(o) \quad \begin{cases} \frac{3-2y}{4} - \frac{1}{4} = \frac{1-2x}{6} \\ \frac{25}{8} - 1 = \frac{x+3}{2} - \frac{3(1+y)}{8} \end{cases}$$

$$\textbf{Sol:} \quad \begin{bmatrix} \frac{3}{8} & \frac{x}{2} - \frac{25}{8} + \frac{17}{8} \\ 0 & -\frac{x}{3} + \frac{5}{12} \end{bmatrix} \rightarrow \{x : 5, \quad y : 4\}$$

$$(p) \quad \begin{cases} \frac{4y-5x}{6} + \frac{3x-2y}{2} = 1 - \frac{2}{9}(x+y) \\ \frac{4y+x-8}{8} - x = \frac{2(y-2x)}{3} \end{cases}$$

$$\textbf{Sol:} \quad \begin{bmatrix} \frac{2}{9} & \frac{2}{9} & 1 \\ 0 & -1 & -\frac{3}{2} \end{bmatrix} \rightarrow \left\{x : \frac{4}{7}, \quad y : -\frac{31}{7}\right\}$$