

Cuarto Medio Modulo 7

$$1) \begin{cases} \frac{2}{3}x + y = -1 & | \cdot 3 \\ \frac{x+1}{3} + \frac{y-1}{6} = -1 & | \cdot 6 \end{cases} \text{ MCM de los denominadores.}$$

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

$$\begin{array}{r} 2x + 3y = -3 \\ 2x + 2 + y - 1 = -6 \\ \hline 2x + 3y = -3 \quad | \cdot -1 \\ 2x + y = -7 \\ \hline -2x - 3y = 3 \\ 2x + y = -7 \\ \hline -2y = -4 \quad | \cdot -2 \\ \hline \boxed{y = 2} \end{array}$$

Reemplazo $y = 2$

$$\begin{aligned} 2x + 3 \cdot 2 &= -3 \\ 2x &= -3 - 6 \\ 2x &= -9 \\ \boxed{x = -\frac{9}{2}} \end{aligned}$$

$$2) \textcircled{1} \frac{2-x}{3} + \frac{3+y}{6} = 2 \quad | \cdot 6$$

$$\textcircled{2} \frac{1}{3} \left(\frac{2(x+y)}{3} - \frac{x+2}{6} \right) - \frac{7}{9} = -y \Rightarrow \frac{2x+2y}{9} - \frac{x+2}{18} - \frac{7}{9} = -y \quad | \cdot 18$$

Reducir

$$\begin{aligned} \textcircled{1} \frac{2-x}{3} \cdot \frac{2}{6} + \frac{3+y}{6} \cdot \frac{1}{6} &= 12 \\ 4 - 2x + 3 + y &= 12 \\ -2x + y &= 5 \end{aligned}$$

$$\begin{aligned} \frac{2x+2y}{9} \cdot \frac{18}{18} - \frac{x+2}{18} \cdot \frac{18}{18} - \frac{7}{9} \cdot \frac{2}{2} &= -18y \\ 4x + 4y - x - 2 - 14 &= -18y \\ 3x + 22y &= 16 \end{aligned}$$

$$\begin{array}{r} -2x + y = 5 \quad | \cdot 3 \\ 3x + 2y = 16 \quad | \cdot 2 \end{array}$$

$$\begin{array}{r} -6x + 3y = 15 \\ 6x + 4y = 32 \end{array}$$

$$4y = 47$$

$$\boxed{y = 1}$$

Reemplazo $y = 1$

$$-2x + 1 = 5$$

$$-2x = 4$$

$$\boxed{x = -2}$$

$$\textcircled{3} \quad \begin{array}{l} 2(3x - 2) = y - 1 \\ 3(x + y) + 2(x - y) = 8 \end{array}$$

$$\begin{array}{l} 6x - 4 = y - 1 \\ 3x + 3y + 2x - 2y = 8 \end{array}$$

$$\begin{array}{l} 6x - y = 3 \\ 5x + y = 8 \end{array}$$

$$11x = 11$$

$$\boxed{x = 1}$$

Reemplazo $x = 1$

$$6 \cdot 1 - y = 3$$

$$-y = -3$$

$$\boxed{y = 3}$$

$$\begin{array}{r} 2 \cdot 7 + 8 \cdot 4 \\ 14 + 32 \\ 46 \\ \frac{46}{3} = 15 \frac{1}{3} \end{array}$$

$$\textcircled{4} \quad \frac{x}{3} - \frac{3y}{2} = 4 + y \quad | \cdot 6$$

$$\frac{x+y}{2} + \frac{y}{4} = 2 \quad | \cdot 4$$

$$\frac{x}{3} \cdot 6 - \frac{3y}{2} \cdot 6 = 24 + 6y$$

$$\frac{x+y}{2} \cdot 4 + \frac{y}{4} \cdot 4 = 8$$

$$\begin{array}{l} 2x - 9y = 24 + 6y \\ 2x + 2y + y = 8 \end{array}$$

$$\begin{array}{l} 2x - 15y = 24 \\ 2x + 3y = 8 \end{array} \quad | -1$$

$$\begin{array}{l} 2x - 15y = 24 \\ -2x - 3y = -8 \end{array}$$

$$-18y = 16$$

$$\boxed{y = -\frac{8}{9}}$$

Reempl.

$$2x + 3 \cdot -\frac{8}{9} = 8 \quad | \cdot 9$$

$$18x - 24 = 72$$

$$18x = 96$$

$$x = 5 \frac{1}{3}$$

$$\begin{array}{l}
 \textcircled{5} \quad \frac{x+1}{3} = 1-y \quad | \cdot 3 \\
 \frac{x-3}{4} + 2y = 1 \quad | \cdot 4 \\
 \hline
 \frac{x+1}{3} \cdot 3 = 3-3y \\
 \frac{x-3}{4} \cdot 4 + 8y = 4 \\
 \hline
 x+1 = 3-3y \\
 x-3+8y = 4 \\
 \hline
 x+3y = 2 \quad | \cdot -1 \\
 x+8y = 7
 \end{array}$$

$$\begin{array}{l}
 -x-3y = 2 \\
 x+8y = 7 \\
 \hline
 5y = 5 \\
 \boxed{y=1}
 \end{array}$$

Reemplazo $x+3 \cdot 1 = 2$
 $\boxed{x = -1}$

$$\begin{array}{l}
 \textcircled{6} \quad \frac{1}{2} \left(x-1 + \frac{y+1}{2} \right) = 1 \\
 \frac{2x-y}{2} = \frac{2y+1}{6} = 1
 \end{array}$$

$$\begin{array}{l}
 \frac{1}{2}x - \frac{1}{2} + \frac{y+1}{4} = 1 \quad | \cdot 4 \\
 \frac{2x-y}{2} - \frac{2y+1}{6} = 1 \quad | \cdot 6
 \end{array}$$

$$\begin{array}{l}
 \frac{1}{2}x \cdot 4 - \frac{1}{2} \cdot 4 + \frac{y+1}{4} \cdot 4 = 4 \\
 \frac{2x-y}{2} \cdot 6 - \frac{2y+1}{6} \cdot 6 = 6
 \end{array}$$

$$\begin{array}{l}
 2x - 2 + y + 1 = 4 \\
 6x - 3y - 2y - 1 = 6
 \end{array}$$

$$\begin{array}{l}
 2x + y = 5 \quad | \cdot 5 \\
 6x - 5y = 7
 \end{array}$$

$$\begin{array}{l}
 10x + 5y = 25 \\
 6x - 5y = 7
 \end{array}$$

$$16x = 32 \Rightarrow \boxed{x=2}$$

Reemplazo $x=2$

$$2 \cdot 2 + y = 5$$

$$4 + y = 5$$

$$\boxed{y=1}$$

$$\textcircled{7} \quad \left. \begin{aligned} 5(x+3) - 2(y-1) &= 3(5x-y) - 8x \\ \frac{x+1}{7} - \frac{y}{5} &= 2 \end{aligned} \right\} \cdot 35$$

$$\left. \begin{aligned} 5x+15-2y+2 &= 15x-3y-8x \\ \frac{x+1}{7} \cdot 35 - \frac{y}{5} \cdot 35 &= 70 \end{aligned} \right\}$$

$$\left. \begin{aligned} -2x+y &= -17 \\ 5x+5-7y &= 70 \end{aligned} \right\} \cdot 7$$

$$\left. \begin{aligned} -2x+y &= -17 \\ 5x-7y &= 65 \end{aligned} \right\} \cdot 7$$

$$-14x+7y = -119$$

$$5x-7y = 65$$

$$-9x = -54$$

$$\boxed{x=6}$$

Reemplazo $x=6$

$$-2 \cdot 6 + y = -17$$

$$-12 + y = -17$$

$$\boxed{y=-5}$$

$$\textcircled{8} \quad \left. \begin{aligned} x - \frac{y-2}{4} &= 1 \\ 2\left(x - \frac{3}{2}x\right) - 3 &= 5x \end{aligned} \right\} \cdot 4$$

$$4x - y - 2 = 4$$

$$2x - 3y - 3 = 5x$$

$$4x - y = 6 \quad \left\} \cdot 3\right.$$

$$-3x - 3y = 3$$

$$-12x + 3y = -18$$

$$-3x - 3y = 3$$

$$-15x = -15$$

$$\boxed{x=1}$$

Reemplazo $x=1$

$$4 \cdot 1 - y = 6$$

$$4 - y = 6$$

$$-y = 2$$

$$\boxed{y=-2}$$