

FICHA 1

$$\left. \begin{array}{l} 2) \quad \frac{x}{3} + \frac{y}{5} = 7 \\ \frac{2x}{8} - \frac{3y}{9} = -2 \end{array} \right\}$$

$$I) \quad \frac{5x}{15} + \frac{3y}{15} = \frac{105}{15}$$

$$5x + 3y = 105$$

II) se puede simplificar:

$$\frac{\cancel{2}x}{\cancel{8}_4} - \frac{\cancel{3}y}{\cancel{9}_3} = -2$$

$$\frac{x}{4} - \frac{y}{3} = -2$$

$$\frac{3x}{12} - \frac{4y}{12} = \frac{-24}{12}$$

$$3x - 4y = -24$$

$$\left. \begin{array}{l} 5x + 3y = 105 \\ 3x - 4y = -24 \end{array} \right\} \begin{array}{l} \xrightarrow{\cdot 4} \\ \xrightarrow{\cdot 3} \end{array} \left. \begin{array}{l} 20x + 12y = 420 \\ 9x - 12y = -72 \end{array} \right\}$$

$$29x = 348$$

$$\boxed{x = \frac{348}{29} = 12}$$

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$$3 \cdot 12 - 4y = -24$$

$$36 + 24 = 4y$$

$$60 = 4y$$

$$\boxed{y = \frac{60}{4} = 15}$$

$$\left. \begin{aligned} \text{b) } \frac{5x-3y}{2} &= 2x+5 \\ 3(2x+1)-4y &= 4(1-2y)-7 \end{aligned} \right\}$$

$$\text{I) } \frac{5x-3y}{2} = \frac{4x}{2} + \frac{10}{2}$$

$$5x-3y = 4x+10$$

$$5x-3y-4x=10$$

$$x-3y=10$$

$$\text{II) } 6x+3-4y=4-8y-7$$

$$6x-4y+8y=4-7-3$$

$$6x+4y=-6$$

$$\begin{aligned} &\div 2 \\ &\rightarrow 3x+2y=-3 \end{aligned}$$

$$\left. \begin{aligned} x-3y &= 10 \\ 3x+2y &= -3 \end{aligned} \right\} \xrightarrow{\text{SUSTIT.}} x=10+3y$$

$$\downarrow$$

$$3(10+3y)+2y=-3$$

$$30+9y+2y=-3$$

$$11y=-3-30$$

$$11y=-33$$

$$\boxed{y = -\frac{33}{11} = -3}$$

$$\downarrow$$

$$x=10+3(-3)$$

$$\boxed{x=10-9=1}$$

$$c) \left. \begin{aligned} x - 2(x + y) &= 3y - 2 \\ \frac{x}{3} + \frac{y}{2} &= 3 \end{aligned} \right\}$$

$$I) x - 2x - 2y = 3y - 2$$

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

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

$$II) \frac{2x}{6} + \frac{3y}{6} = \frac{18}{6}$$

$$2x + 3y = 18$$

$$\left. \begin{aligned} -x - 5y &= -2 \\ 2x + 3y &= 18 \end{aligned} \right\} \xrightarrow{\cdot 2} \left. \begin{aligned} -2x - 10y &= -4 \\ 2x + 3y &= 18 \end{aligned} \right\}$$

$$-7y = 14$$

$$\boxed{y = \frac{14}{-7} = -2}$$

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$$-x - 5 \cdot (-2) = -2$$

$$-x + 10 = -2$$

$$-x = -2 - 10$$

$$-x = -12$$

$$\boxed{x = 12}$$

$$d) \left. \begin{aligned} \frac{x}{2} + \frac{2y}{3} &= \frac{1}{2} \\ \frac{5x}{4} + \frac{2y}{3} &= \frac{3}{4} \end{aligned} \right\}$$

$$I) \frac{3x}{6} + \frac{4y}{6} = \frac{3}{6}$$

$$3x + 4y = 3$$

$$II) \frac{15x}{12} + \frac{8y}{12} = \frac{9}{12}$$

$$15x + 8y = 9$$

$$\left. \begin{aligned} 3x + 4y &= 3 \\ 15x + 8y &= 9 \end{aligned} \right\} \xrightarrow{\cdot (-2)} \left. \begin{aligned} -6x - 8y &= -6 \\ 15x + 8y &= 9 \end{aligned} \right\}$$

$$9x = 3$$

$$\boxed{x = \frac{3}{9} = \frac{1}{3}}$$

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$$3 \cdot \frac{1}{3} + 4y = 3$$

$$1 + 4y = 3$$

$$4y = 3 - 1$$

$$4y = 2$$

$$\boxed{y = \frac{2}{4} = \frac{1}{2}}$$