

Clase IV Actividad

IV.e.1.1

a) $2x - 5 = 4x - 2$

$$2x - 4x = 5 - 2$$

$$-2x = 3$$

$$x = -3/2$$

b) $x - 9x + 5 = 2x + 3$

$$x - 9x - 2x = -5 + 3$$

$$-10x = -2$$

$$x = -2/10$$

$$x = -1/5$$

c) $\frac{x+1}{5} - \frac{4x+2}{3} = \frac{x-1}{6}$

$$\left(\frac{x}{5} + \frac{1}{5}\right) - \left(\frac{4x}{3} + \frac{2}{3}\right) = \left(\frac{x}{6} - \frac{1}{6}\right)$$

$$30\left(\frac{x}{5} + \frac{1}{5}\right) - 30\left(\frac{4x}{3} + \frac{2}{3}\right) = 30\left(\frac{x}{6} - \frac{1}{6}\right)$$

$$6(x+1) - 10(4x+2) = 5(x-1)$$

$$6x+6-40x-20=5x-5$$

$$6x-40x-5x=-5-6+20$$

$$-39x=9$$

$$x = -\frac{9}{39}$$

$$x = -\frac{3}{13}$$

$$\begin{aligned}
 d) \quad & \underset{5}{8x-1} = \underset{3}{2x+3} \\
 & \cancel{15}(\cancel{8x-1}) = \cancel{15}(\cancel{2x+3}) \\
 & 3(8x-1) = 5(2x+3) \\
 & 24x-3 = 10x+15 \\
 & 24x-10x = 3+15 \\
 & 14x = 18 \\
 & x = \cancel{18/14} \\
 & x = 9/7
 \end{aligned}$$

IV. K. 1 Resolución y verificación

$$\begin{aligned}
 a) \quad & \begin{cases} 3x+5y=3 & 1 \\ 2x+3y=1 & 2 \end{cases} \\
 & \text{Despejo X en 2} \\
 & 2x+3y=1 \\
 & 2x=1-3y \\
 & x=\frac{1-3y}{2}
 \end{aligned}$$

Reemplazo el valor de X en 1

$$3 \left(\frac{1-3y}{2} \right) + 5y = 3$$

$$\left(\frac{3-9y}{2} \right) + 5y = 3$$

$$\frac{3}{2} - \frac{9y}{2} + \frac{10y}{2} = 3$$

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

Serie X

$$2x+3(3)=1$$

$$2x+9=1$$

$$x = -8/2$$

$$x = -4$$

$$= \frac{3}{2} + \frac{1}{2}y = 3$$

$$\frac{1}{2}y = 3 - \frac{3}{2}$$

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

$$y = 0$$

Verifico

$$\begin{aligned} 3 \cdot (-4) + 5(3) &= 3 \\ -12 + 15 &= 3 \\ 3 &= 3 \end{aligned}$$

$$\begin{aligned} 2(-4) + 3(3) &= 1 \\ -8 + 9 &= 1 \\ 1 &= 1 \end{aligned}$$

$$\begin{aligned} b) \begin{cases} \frac{2}{\sqrt{x}} - \frac{1}{\sqrt{y}} = \frac{2}{3} & 1 \\ \frac{1}{\sqrt{x}} + \frac{2}{\sqrt{y}} = \frac{7}{6} & 2 \end{cases} \quad \begin{matrix} u = 1/\sqrt{x} \\ v = 1/\sqrt{y} \end{matrix} \end{aligned}$$

$$2(1/2) - 1/3 = 2/3$$

$$1 - 1/3 = 2/3$$

$$2/3 = 2/3 \checkmark$$

Despejo V de 1

$$2u - v = 2/3$$

$$-v = (2/3 - 2u)$$

$$v = -2/3 + 2u$$

$$1/2 + 2(1/3) = 7/6$$

$$1/2 + 2/3 = 7/6$$

$$7/6 = 7/6 \checkmark$$

Reemplazo en 2

$$u + 2(-2/3 + 2u) = 7/6$$

$$u - 4/3 + 4u = 7/6$$

$$5u = 7/6 + 4/3$$

$$u = 5/2 \cdot 5$$

$$u = 1/2 \checkmark$$

Saco V

$$v = -2/3 + 2(1/2)$$

$$v = -2/3 + 1$$

$$v = 1/3 \checkmark$$

IV. K. 2

a) 45000 personas
495000 recaudación
botones de 10 o 15
cuántos tipos de botones?

A: Se vendieron 36000 botones de 10 y 9000 botones de 15.

$$\begin{cases} x + y = 45000 & (1) \\ 10x + 15y = 495000 & (2) \end{cases}$$

Despejo X en (1)

$$x = 45000 - y$$

Reemplazo X en (2)

$$10(45000 - y) + 15y = 495000$$

$$450000 - 10y + 15y = 495000$$

$$5y = 495000 - 450000$$

$$y = 45000 / 5$$

$$y = 9000$$

Busco X en (1)

$$x + 9000 = 45000$$

$$x = 45000 - 9000$$

$$x = 36000$$

Verifico en (1)

$$36000 + 9000 = 45000$$

$$45000 = 45000$$

$$10(36000) + 15(9000) = 495000$$

$$495000 = 495000$$