

Resolver las siguientes **ecuaciones de 1^{er} grado con denominadores** y comprobar la solución:

a) $3 - \frac{5x-1}{10} = \frac{x-1}{5} - \frac{x-3}{2}$ (Soluc: $x=9$)

b) $\frac{5-x}{15} - \frac{9}{5} = -x - \frac{1-x}{3}$ (Soluc: $x=17/9$)

c) $\frac{x+8}{6-x} = 13$ (Soluc: $x=5$)

d) $\frac{3(x-2)}{4} - \frac{2(x-3)}{3} = \frac{x}{6} - \frac{3x-6}{4}$ (Soluc: $x=3/2$)

e) $\frac{x-2}{3-x} = -\frac{5}{4}$ (Soluc: $x=7$)

f) $x = \frac{x}{5} + \frac{x}{3} + 3\left(\frac{x}{3} - \frac{x}{5}\right) + 1$ (Soluc: $x=15$)

g) $\frac{1}{3} = \frac{\frac{3-x}{5}}{1+\frac{3}{5}x}$ (Soluc: $x=2/9$)

h) $4 - \frac{7-x}{12} = \frac{5x}{3} - \frac{5-3x}{4}$ (Soluc: $x=2$)

i) $x - \frac{12x+1}{3} = 2x+1 - \frac{15x+4}{3}$ (Soluc: Se trata de una identidad)

j) $\frac{2x+1}{3x-6} = \frac{3}{2}$ (Soluc: $x=4$)

k) $\frac{x}{2} - \frac{6-x}{4} = x+1$ (Soluc: $x=-10$)

l) $\frac{1+5x}{4} - \frac{3-x}{6} = 1-2x - \frac{8x-2}{9}$ (Soluc: $x=53/155$)

m) $\frac{6x+1}{11} = \frac{2x-3}{7}$ (Soluc: $x=-2$)

n) $x + \frac{3(x-5)}{2} = 3 + \frac{5x-21}{2}$ (Soluc: Se trata de una identidad)

o) $\frac{3(x-3)}{2} + \frac{2x}{3} - 2x = \frac{3(2x-1)}{9} - \frac{1}{6}$ (Soluc: $x=-8$)

p) $\frac{1+96\frac{1}{480}}{96x} = \frac{1}{1600}$ (Soluc: $x=20$)

q) $1 - \frac{2}{3}(x-3) = 2 - \frac{1}{4}(3x-4)$ (Soluc: $x=0$)

r) $2 - 4\left(\frac{2x}{7} + \frac{1}{7}\right) = \frac{3}{2} - x$ (Soluc: $x=-1/2$)

$$\text{s)} \quad 5x - 3 \left(3 - \frac{x}{4} \right) = \frac{7x}{2} - 3$$

(Soluc: $x=8/3$)

$$\text{t)} \quad 5 \left(\frac{2x}{3} - \frac{3x}{5} \right) + 1 = 2x - 2(x-1)$$

(Soluc: $x=3$)

$$\text{u)} \quad \frac{1}{2} \left(\frac{x}{3} - \frac{x}{2} \right) + \frac{1}{9} = \frac{1}{2} \left(\frac{1}{2} - \frac{x}{3} \right)$$

$$\text{v)} \quad \frac{2x}{3} - 5 \left(\frac{x}{12} + \frac{1}{4} \right) = 3 - 2 \left(1 - \frac{x}{6} \right)$$

(Soluc: $x=-27$)

$$\text{w)} \quad 3 \left(\frac{11x}{6} - x \right) - 4 = 2x - 3 \left(1 - \frac{x}{6} \right)$$