

Cont Ej 2 - Práctica

$$e) \frac{2x+5}{1} - \frac{25}{1-2x} = \frac{(1-2x)2x + (1-2x) \cdot 5 - 25}{(1-2x)} = \frac{2x - 4x^2 + 5 - 10x - 25}{(1-2x)} =$$

$$= \frac{-4x^2 - 8x - 20}{1-2x} = \frac{(-4)(x^2 + 2x + 5)}{1-2x}$$

$$f) \frac{2}{x^2} + 3x = \frac{2 + 3x \cdot x^2}{x^2} = \frac{2 + 3x^3}{x^2}$$

$$g) \left(\frac{5x^2 + 15x}{2x+6} \right) : \left(1 + \frac{5}{2x} \right) = \frac{5x(x+3)}{2(x+3)} = \frac{5x}{2} = \frac{5x \cdot 2x}{2 \cdot (2x+5)} =$$

$$= \frac{5x^2}{2x+5}$$

$$h) \frac{x+2}{3x-12} + \frac{2x-1}{4-x} = \frac{x+2}{3(x-4)} + \frac{2x-1}{(-1)(x-4)} =$$

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

Ejercicio 3 - Práctico 0.

Resolver.

restamos 5 a c/minutos p' que no cambie la igualdad

$$a) 2x + 5 = 9 \Rightarrow 2x + \underbrace{5 - 5} = 9 - 5$$

$$2x = 4$$

$$\frac{1}{2} \cdot 2x = \frac{1}{2} \cdot 4$$

$$x = \frac{4}{2} = 2 \quad \checkmark$$

$$b) 4x - 11 = -5x + 7$$

↓

$$4x + 5x = 7 + 11$$

$$9x = 18$$

$$x = \frac{18}{9} = 2$$

$$c) 3 - \frac{x}{2} = -1$$

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

$$\left(-\frac{1}{2}\right)x = -4$$

$$x = (-4)(-2) = 8$$

$$d) \frac{5}{x} + 2 = -3 \Rightarrow \frac{5}{x} = -3 - 2$$

$$\frac{5}{x} = -5 \Rightarrow 5 = (-5)x \Rightarrow \frac{5}{-5} = x \Rightarrow -1 = x$$

Cont. Ej 3 - Prácticas 0

$$e) \frac{6x^2-12}{3x-4} = 2x \Rightarrow 6x^2-12 = 2x(3x-4)$$

$$6x^2-12 = 6x^2-8x$$

$$\cancel{6x^2} - \cancel{6x^2} - 12 + 8x = 0$$

$$8x = 12$$

$$x = \frac{12}{8} = \frac{3}{2} \checkmark$$

$$f) 3+x = x-2$$

$$3 + \cancel{x} - \cancel{x} + 2 = 0$$

$5 = 0$? \Rightarrow no existe x que satisfaga la ecuación original.



Si a un número le sumas 3, nunca puede ser igual a que al mismo número le restes 2 !

$$g) \frac{10}{x+2} = 5 \Rightarrow 10 = 5(x+2) \Rightarrow 10 = 5x+10$$

$$10-10 = 5x$$

$$0 = 5x$$

$$\frac{0}{5} = x \Rightarrow x = 0 \checkmark$$

$$h) \frac{4}{x-2} - \frac{x}{2x-4} = \frac{4}{3x-6} \Rightarrow \frac{4}{x-2} - \frac{x}{2(x-2)} = \frac{4}{3(x-2)} \Rightarrow$$

$$\Rightarrow \frac{2 \cdot 4 - x}{2(x-2)} = \frac{4}{3(x-2)} \Rightarrow \frac{8-x}{2(x-2)} = \frac{4}{3(x-2)} \Rightarrow 8-x = \frac{2 \cdot 4}{3} \Rightarrow 8-x = \frac{14}{3}$$

$$\Rightarrow \left[x = 8 - \frac{14}{3} = \frac{24-14}{3} = \frac{10}{3} \right] \checkmark$$

$$i) \frac{3x-7}{x+6} = -2 \Rightarrow 3x-7 = (-2)(x+6)$$

$$3x-7 = -2x-12$$

$$3x+2x = -12+7$$

$$5x = -5$$

$$\left[x = \frac{-5}{5} = -1 \right] \checkmark$$

$$x = -1$$

recorremos la solución
de verificar.

$$\frac{3 \cdot (-1) - 7}{-1 + 6} = \frac{-10}{5} = -2$$

OK

(***) ojo $x \neq 2$!

$$j) \frac{x + \frac{5}{1}}{x-2} = \frac{x+3}{x-2} \Rightarrow \frac{(x-2) \cdot x + 5}{x-2} = \frac{x+3}{x-2} \Rightarrow$$

$$\Rightarrow \frac{x^2 - 2x + 5}{(x-2)} = \frac{x+3}{(x-2)} \Rightarrow x^2 - 2x + 5 = x + 3 \Rightarrow$$

$$\Rightarrow x^2 - 2x - x + 5 - 3 = 0$$

$$x^2 - 3x + 2 = 0 \quad (*)$$

$$x_{1,2} = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}; \quad \boxed{ax^2 + bx + c = 0}$$

$$(*) \Rightarrow b = -3, a = 1, c = 2$$

$$x_{1,2} = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{-(-3) \pm \sqrt{(-3)^2 - 4 \cdot 1 \cdot 2}}{2 \cdot 1} = \frac{3 \pm \sqrt{9-8}}{2} = \frac{3 \pm \sqrt{1}}{2}$$

$$= \frac{3 \pm 1}{2} \rightarrow \begin{cases} \frac{3+1}{2} = \frac{4}{2} = 2 \\ \frac{3-1}{2} = \frac{2}{2} = 1 \end{cases} \Rightarrow \boxed{x=2 \text{ o } x=1} \text{ son soluciones de la ecuación cuadrática}$$

$$x^2 - 3x + 2 = 0, \text{ pero } x \neq 2$$

$$\begin{cases} 2^2 - 3 \cdot 2 + 2 = 0 \checkmark \\ 1^2 - 3 \cdot 1 + 2 = 0 \checkmark \end{cases} \Rightarrow \boxed{x=1} \text{ es la única solución!}$$