Pág 100

4a) $5(x-1)-6x+2 = 3(1-x)-(1-3x)$

$5x-5-6x+2 = 3-3x-1+3x$

$-x-3 = 2$

$-x = 2+3;\quad -x = 5;\quad x = -5$

5a)

$$\frac{1-2x}{9} = 1 - \frac{x+4}{6}$$

$mín.c.m\{9,6\} = 18$

$$\frac{2(1-2x)}{18} = \frac{18\cdot 1 - 3(x+4)}{18}$$

$2-4x = 18-3x-12;\quad 2-4x = 6-3x;\quad -4x+3x = 6-2;\quad -x = 4;\quad x = -4$

5b)

$$\frac{3x+2}{5} - \frac{4x-1}{10} + \frac{5x-2}{8} = \frac{x+1}{4}$$

$mín.c.m\{5,10,8,4\} = 40$

$$\frac{8(3x+2)-4(4x-1)+5(5x-2)}{40} = \frac{10(x+1)}{40}$$

$24x+16-16x+4+25x-10 = 10x+10;\quad 33x+10 = 10x+10;\quad 33x-10x = 10-10;$

$23x = 0;\quad x = \dfrac{0}{23} = 0$ $\qquad$ $Solución:\quad x = 0$

6a)

$$\frac{3-x}{2} - \frac{2(x-2)}{3} = 4 - \frac{7(2x-1)}{9}$$

$mín.c.m.\{2,3,9\} = 18$

$$\frac{9(3-x)-6\cdot 2(x-2)}{18} = \frac{18\cdot 4 - 2\cdot 7(2x-1)}{18}$$

$27-9x-12x+24 = 72-28x+28;\quad 51-21x = 100-28x;\quad -21x+28x = 100-51$

$7x = 49;\quad x = \dfrac{49}{7} = 7$ $\qquad$ $Solución:\quad x = 7$

6c)

$$\frac{3x-2}{6} - \frac{4x+1}{10} = \frac{-2}{15} - \frac{2(x-3)}{4}$$

$mín.c.m.\{6,10,15,4\} = 60$

$$\frac{10(3x-2) - 6(4x+1)}{60} = \frac{4\cdot(-2) - 15\cdot2(x-3)}{60}$$

$30x - 20 - 24x - 6 = -8 - 30x + 90; \quad 6x - 26 = -30x + 82; \quad 6x + 30x = 82 + 26$

$36x = 108; \quad x = \dfrac{108}{36} = 3 \qquad\qquad Solución: \quad x = 3$

Ecuaciones particulares.

$3x = 3x + 5; \quad 3x - 3x = 5; \quad 0 = 5$ Falso, la ecuación no tiene soluciones.

$2x + 7 = 2x + 7; \quad 2x - 2x = 7 - 7; \quad 0 = 0$ Verdadero, la ecuación tiene infinitas soluciones.

$2x + 4 = x + 7; \quad 2x - x = 7 - 4; \quad x = 3$

## ECUACIONES DE 2º GRADO.

$a\,x^2 + bx + c = 0$

$$x = \frac{-b \pm \sqrt{b^2 - 4\cdot a\cdot c}}{2\cdot a}$$

$$x^2 - 3x + 2 = 0 \qquad \begin{cases} a = 1 \\ b = -3 \\ c = 2 \end{cases}$$

$$x = \frac{-b \pm \sqrt{b^2 - 4\cdot a\cdot c}}{2\cdot a} = \frac{-(-3) \pm \sqrt{(-3)^2 - 4\cdot1\cdot2}}{2\cdot1} = \frac{3 \pm 1}{2} = \begin{cases} x_1 = \dfrac{3+1}{2} = 2 \\[2mm] x_2 = \dfrac{3-1}{2} = 1 \end{cases}$$

Soluciones: $x_1 = 1$ y $x_2 = 2$