

Lunes, 1 de junio.

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

$$\text{mín.c.m}\{5,10,8,4\} = 40$$

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

$$24x + 16 - 16x + 4 + 25x - 10 = 10x + 10$$

$$33x + 10 = 10x + 10$$

$$33x - 10x = 10 - 10$$

$$23x = 0; \quad x = \frac{0}{23} = 0$$

Solución: $x = 0$

7b

$4(x-3)(x+3) - (2x+1)^2 = 3$	$\begin{array}{r} x \quad -3 \\ * \quad x \quad +3 \\ \hline +3x \quad -9 \\ +x^2 \quad -3x \\ \hline x^2 \quad \quad -9 \end{array}$	$\begin{array}{r} 2x \quad +1 \\ * \quad 2x \quad +1 \\ \hline +2x \quad +1 \\ 4x^2 \quad +2x \\ \hline 4x^2 \quad +4x \quad +1 \end{array}$
$4(x^2 - 9) - (4x^2 + 4x + 1) = 3$		
$4x^2 - 36 - 4x^2 - 4x - 1 = 3$		
$-37 - 4x = 3$		
$-4x = 3 + 37$		
$-4x = 40; \quad x = \frac{40}{-4} = -10$		

Solución: $x = -10$

11b)

$(x+1)(x-3) + (x-2)(x-3) = x^2 - 3x - 1$	$\begin{array}{r} x \quad -3 \\ * \quad x \quad +1 \\ \hline +x \quad -3 \\ +x^2 \quad -3x \\ \hline x^2 \quad -2x \quad -3 \end{array}$	$\begin{array}{r} x \quad -2 \\ * \quad x \quad -3 \\ \hline +2x \quad +1 \\ 4x^2 \quad +2x \\ \hline 4x^2 \quad +4x \quad +1 \end{array}$
$x^2 - 2x - 3 + x^2 - 5x + 6 = x^2 - 3x - 1$		
$2x^2 - 7x + 3 = x^2 - 3x - 1$		
$2x^2 - 7x + 3 - x^2 + 3x + 1 = 0$		
$x^2 - 4x + 4 = 0 \quad \begin{cases} a = 1 \\ b = -4 \\ c = 4 \end{cases}$		

$$x = \frac{-(-4) \pm \sqrt{(-4)^2 - 4 \cdot 1 \cdot 4}}{2 \cdot 1} = \frac{4 \pm 0}{2} = \begin{cases} x_1 = \frac{4+0}{2} = 2 \\ x_2 = \frac{4-0}{2} = 2 \end{cases}$$

Solución: $x = 2$ raíz doble

17d)

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

$$\text{mín.c.m.}\{2, (x+4)\} = 2(x+4)$$

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

$$x^2 + 4x = 2x + 8 + 4x - 8$$

$$x^2 + 4x = 6x$$

$$x^2 + 4x - 6x = 0$$

$$x^2 - 2x = 0 \quad \begin{cases} a = 1 \\ b = -2 \\ c = 0 \end{cases} \quad x = \frac{-(-2) \pm \sqrt{(-2)^2 - 4 \cdot 1 \cdot 0}}{2 \cdot 1} = \frac{2 \pm 2}{2} = \begin{cases} x_1 = \frac{2+2}{2} = 2 \\ x_2 = \frac{2-2}{2} = 0 \end{cases}$$

Comprobación:

$$x = 0; \quad \frac{0}{2} = 1 + \frac{2 \cdot 0 - 4}{0 + 4}; \quad 0 = 0 \quad \text{Sí}$$

$$x = 2; \quad \frac{2}{2} = 1 + \frac{2 \cdot 2 - 4}{2 + 4}; \quad 1 = 1 \quad \text{Sí}$$

Soluciones: $x = 0$ y $x = 2$

19b)

$$x - \sqrt{25 - x^2} = 1$$

$$x - 1 = \sqrt{25 - x^2}$$

$$(x - 1)^2 = (\sqrt{25 - x^2})^2$$

$$x^2 - 2x + 1 = 25 - x^2$$

$$x^2 - 2x + 1 - 25 + x^2 = 0$$

$$2x^2 - 2x - 24 = 0 \begin{cases} a = 2 \\ b = -2 \\ c = -24 \end{cases} \quad x = \frac{-(-2) \pm \sqrt{(-2)^2 - 4 \cdot 2 \cdot (-24)}}{2 \cdot 2} = \frac{2 \pm 14}{4} =$$

$$= \begin{cases} x_1 = \frac{2 + 14}{4} = 4 \\ x_2 = \frac{2 - 14}{4} = -3 \end{cases}$$

Comprobación:

$$x = -3; \quad -3 - \sqrt{25 - (-2)^2} = 1; \quad -7 \neq 1 \quad \text{No}$$

$$x = 4; \quad 4 - \sqrt{25 - 4^2} = 1; \quad 1 = 1 \quad \text{Sí}$$

Solución: $x = 4$