

PROBLEMAS DE ECUACIONES DE SEGUNDO GRADO

Problema 74:

Resolver:

$$\frac{x}{1 - \frac{1}{x + \frac{1}{2}}} = \frac{1}{12}$$

Solución Problema 74:

$$\frac{x}{1 - \frac{1}{x + \frac{1}{2}}} = \frac{1}{12} \text{ ecuación 1}$$

Para ello iremos quitando los sucesivos denominadores de la ecuación 1

$$\frac{x}{1 - \frac{1}{\frac{2x+1}{2}}} = \frac{1}{12}$$

$$\frac{x}{1 - \frac{2}{2x+1}} = \frac{1}{12}$$

$$\frac{x}{\frac{2x+1-2}{2x+1}} = \frac{1}{12}$$

$$\frac{x}{\frac{2x-1}{2x+1}} = \frac{1}{12}$$

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

$$12x(2x+1) = 2x-1$$

$$24x^2 + 12x = 2x - 1$$

$$24x^2 + 10x + 1 = 0$$

PROBLEMAS DE ECUACIONES DE SEGUNDO GRADO: Problema 74

$$x = \frac{-10 \pm \sqrt{10^2 - 4 \cdot 24 \cdot 1}}{48} = \frac{-10 \pm \sqrt{100 - 96}}{48} = \frac{-10 \pm \sqrt{4}}{48}$$

$$\frac{-10 \pm 2}{48}$$

$$x_1 = \frac{-10 + 2}{48} = \frac{-8}{48} = \frac{-1}{6}$$

$$x_2 = \frac{-10 - 2}{48} = \frac{-12}{48} = \frac{-1}{4}$$