

TEMA 6: ECUACIONES: Ecuaciones de Segundo grado

1)

$$a) x^2 - \frac{1}{4} = \frac{1}{5} \left(\frac{x}{4} - 1 \right)$$

$$b) \frac{x}{2} \left(x + \frac{1}{30} \right) = \frac{x}{3} \left(x + \frac{2}{5} \right)$$

$$c) \frac{x}{3} \left(x - \frac{1}{20} \right) = \frac{x^2}{2} - \frac{1}{15} \left(2x - \frac{1}{2} \right)$$

$$d) \frac{x^2}{2} + x = \frac{2x^2 - 5}{3} - 1$$

$$a) 20x^2 - x - 1 = 0 \rightarrow x = \frac{1}{4}; x = -\frac{1}{5}$$

$$b) 10x^2 - 7x = 0 \rightarrow x = 0; x = \frac{7}{10}$$

$$c) 10x^2 - 7x + 2 = 0 \rightarrow \text{Sin solución.}$$

$$d) x^2 - 6x - 16 = 0 \rightarrow x = 8; x = -2$$

2)

$$a) 3x^2 - 12x = 0$$

$$b) x - 3x^2 = 0$$

$$c) 2x^2 - 5x = 0$$

$$d) 2x^2 - 8 = 0$$

$$e) 9x^2 - 25 = 0$$

$$f) 4x^2 + 100 = 0$$

$$g) 16x^2 = 100$$

$$h) 3x^2 - 6 = 0$$

$$a) 3x^2 - 12x = 0 \rightarrow 3x(x - 4) = 0 \begin{cases} x = 0 \\ x = 4 \end{cases}$$

$$b) x - 3x^2 = 0 \rightarrow x(1 - 3x) = 0 \begin{cases} x = 0 \\ x = 1/3 \end{cases}$$

$$c) 2x^2 - 5x = 0 \rightarrow x(2x - 5) = 0 \begin{cases} x = 0 \\ x = 5/2 \end{cases}$$

$$d) 2x^2 - 8 = 0 \rightarrow 2x^2 = 8 \rightarrow x^2 = 4 \begin{cases} x = 2 \\ x = -2 \end{cases}$$

$$e) 9x^2 - 25 = 0 \rightarrow 9x^2 = 25 \rightarrow x^2 = \frac{25}{9} \begin{cases} x = 5/3 \\ x = -5/3 \end{cases}$$

$$f) 4x^2 + 100 = 0 \rightarrow 4x^2 = -100 \text{ No tiene solución.}$$

$$g) 16x^2 = 100 \rightarrow x^2 = \frac{100}{16} \begin{cases} x = 10/4 = 5/2 \\ x = -10/4 = -5/2 \end{cases}$$

$$h) 3x^2 - 6 = 0 \rightarrow 3x^2 = 6 \rightarrow x^2 = 2 \begin{cases} x = \sqrt{2} \\ x = -\sqrt{2} \end{cases}$$