

Boletín Ecuac. V – Grado Mayor que 2 - Matemáticas 3º E.S.O.

Ejemplo

$$x^4 - x^3 - 13x^2 + x + 12 = 0 \xrightarrow{\text{APLICAMOS RUFFINI}}$$

| | | | | | |
|----|----|----|-----|-----|-----|
| | +1 | -1 | -13 | +1 | +12 |
| -1 | | -1 | +2 | +11 | -12 |
| | +1 | -2 | -11 | +12 | 0 |
| +1 | | +1 | -1 | -12 | |
| | +1 | -1 | -12 | 0 | |
| -3 | | -3 | +12 | | |
| | +1 | -4 | 0 | | |

$$x^4 - x^3 - 13x^2 + x + 12 = (x+1)(x-1)(x+3)(x-4) = 0$$

$$(x+1)(x-1)(x+3)(x-4) = 0 \rightarrow \begin{cases} x+1=0 \\ x-1=0 \\ x+3=0 \\ x-4=0 \end{cases} \longrightarrow \begin{aligned} x+1=0 &\rightarrow x_1 = -1 \\ x-1=0 &\rightarrow x_2 = +1 \\ x+3=0 &\rightarrow x_3 = -3 \\ x-4=0 &\rightarrow x_4 = +4 \end{aligned}$$

1. Resuelve las siguientes ecuaciones **de grado mayor a dos**.

a. $x^3 + 2x^2 - 5x - 6 = 0$

f. $12x^4 - 59x^3 + 46x^2 - 8x = 0$

b. $3x^3 + 2x^2 - 19x + 6 = 0$

g. $3x^3 - 12x + 18x^2 - 72 = 0$

c. $x^3 - 2x^2 - 20x - 24 = 0$

h. $x^4 - 5x^2 + 4 = 0$

d. $5x^3 - 2x^2 - 80x + 32 = 0$

i. $x^4 - x^3 - 13x^2 + x + 12 = 0$

e. $9x^3 + 9x^2 - x - 1 = 0$

b. $x^3 - 4x^2 - 4x + 20 = 0$

2. Resuelve las siguientes ecuaciones **de grado mayor a dos**.

a. $x^3 + 3x^2 - x - 3 = 0$

d. $x^3 - x^2 - x + 1 = 0$

Solución: $x_1 = 1, x_2 = -1, x_3 = -3$

Solución: $x_1 = 1, x_2 = -1,$

b. $x^3 + 2x^2 + 2x + 1 = 0$

e. $x^3 - 2x^2 - 4x + 8 = 0$

Solución: $x_1 = 1$

Solución: $x_1 = 2, x_2 = -2,$

c. $x^3 + 3x^2 - 4x - 12 = 0$

f. $6x^3 + 7x^2 - 9x + 2 = 0$

Solución: $x_1 = 2, x_2 = -2, x_3 = -3$

Solución: $x_1 = -2$