

## LOGARITMOS

Problema 14:

Resolver la siguiente ecuación

$$\frac{\log(35 - x^3)}{\log(5 - x)} = 3$$

Solución Problema 14:

$$\frac{\log(35 - x^3)}{\log(5 - x)} = 3$$

$$\log(35 - x^3) = 3\log(5 - x)$$

$$\log(35 - x^3) = \log(5 - x)^3$$

Simplificando logaritmos

$$35 - x^3 = 125 - 75x + 15x^2 - x^3$$

$$15x^2 - 75x + 90 = 0$$

$$x^2 - 5x + 6 = 0$$

$$x = \frac{5 \pm \sqrt{25 - 24}}{2} = \frac{5 \pm 1}{2}$$

$$x_1 = \frac{5 + 1}{2} = \frac{6}{2} = \mathbf{3}$$

$$x_2 = \frac{5 - 1}{2} = \frac{4}{2} = \mathbf{2}$$