



1.- Resuelve las siguientes ecuaciones exponenciales:

$$3^{x+1} = 3^{2x+3}$$

$$3 \cdot 3^x = 243$$

$$2^{2x+2} = 0.5^{2x-1}$$

$$2^{1-x^2} = \frac{1}{8}$$

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

$$2^x \cdot 3^x = 12 \cdot 18$$

$$4^x \cdot 16^x = 2$$

$$7^{2x-1} = 49^{x^2-14}$$

$$9^x - 2 \cdot 3^x - 3 = 0$$

$$7^{x^2-5x+6} = 1$$

$$3^{2(x+1)} - 28 \cdot 3^x + 3 = 0$$

$$9^x - 2 \cdot 3^{x+2} + 81 = 0$$

$$3^{5(x^2-4x+4)} = 1$$

$$27^{3x+1} = 81^{2x+1}$$

$$9^{x+3} = 3^{2x+5}$$

$$3^x + \frac{1}{3^{x-1}} = 4$$

$$4^x - 5 \cdot 2^x + 4 = 0$$

$$7^{2x+3} - 8 \cdot 7^{x+1} + 1 = 0$$

$$3^{1-x^2} = \frac{1}{27} \quad \text{sol. } x = \pm 2$$

$$5^{x^2-5x+6} = 1 \quad \text{sol. } x = 2 \quad x = 3$$

$$2^x + 2^{x+1} = 12 \quad \text{sol. } x = 2$$

$$2^{3x-1} = 4^{x+3} \quad \text{sol. } x = 7$$

$$3^{x+1} = 3^x \cdot 3 \quad \text{sol. } x = -2 \quad x = 1$$

$$5^{2x-1} = \sqrt[3]{25^{x^2-\frac{1}{4}}} \quad \text{sol. } x = \frac{5}{2} \quad x = \frac{1}{2}$$

$$4^{x+1} + 2^{x+3} - 320 = 0 \quad \text{sol. } x = 3$$

$$3^{2x+1} - 28 \cdot 3^x + 3 = 0 \quad \text{sol. } x = 1, x = -2$$

$$9^x - 2 \cdot 3^{x+2} + 81 = 0 \quad \text{sol. } x = 2$$

$$2^{2x} + 2^{2x-1} + 2^{2x-2} + 2^{2x-3} + 2^{2x-4} = 1984 \quad \text{sol } x = 5$$

$$3^{x-1} + 3^x + 3^{x+1} = 63 \quad \text{sol. } x = 3$$

$$4^x - 10 \cdot 2^x + 16 = 0 \quad \text{sol. } x = 3, x = 1$$

$$4^x - 10 \cdot 2^x + 16 = 0 \quad \text{sol. } x = 3, x = 1$$

$$3^x + 3 - x + 2 = 10 \quad \text{sol. } x = 2, \text{sol } x = 0$$

$$4^{x-1} + 2^{x+2} = 128 \quad \text{sol. } x = 5$$

2.- Calcula el valor de x para que se verifiquen las igualdades:

$$\log_2 16 = x$$

$$\log_x 81 = 4$$

$$\log_{\frac{1}{3}} x = -2$$

$$\log_{\frac{5}{2}} \frac{625}{16} = x$$

$$\log_x \sqrt{5} = 3$$

$$\log_3 \sqrt[5]{9} = x$$

$$\log_2 x + 1 = 5$$

$$\log_x 81 = -4$$

$$\log_{\frac{1}{\sqrt{3}}} 81 = x$$

$$\log_x \frac{2}{3} = \frac{1}{2}$$

$$\log_a (a^2 \cdot \sqrt{a}) = x$$

$$\log_x \left(\frac{1}{a^2}\right) = x$$

$$\log_x \sqrt[3]{64} = 2$$

$$\log_5 \frac{1}{125} = x$$

3.- Resuelve las siguientes ecuaciones exponenciales:

$$2 \log x - \log(3x - 5) = \log(5x) - 1 \quad \log x + \log(x - 1) + \log 2 = \log(x^2 + 3)$$

$$2 \log x = \log\left(\frac{x}{2}\right) - \frac{7}{4}$$

$$\log(x + 2) - \log 2 = \frac{1}{2} \log(3x - 2)$$

$$\frac{\log(x^2 + 8x)}{\log(2x + 1)} = 2$$

$$2 \log x + 1 = \log(x + 4) + \log 5x$$

$$\log x \cdot \log(x + 1) = \log x^2$$

$$3 \log x + \log 32 = 1$$

$$\log 2 - \log(x + 1) + \log(x + 3) = \log 6 \quad \log x + \log 50 = 3 \text{ sol } x = 20$$

$$5 \log_2 x + 3 = \log_2 32 \text{ sol } x = -1 \quad 2 \log x = \log(10 - 3x) \text{ sol } x = 2$$

$$\log(5x - 3) = \frac{4}{5}$$

$$\frac{1}{2} \log(2x + 3) = \log x \text{ sol } x = 3$$

$$\log(x - 1) + \log(x + 6) = \log(3x + 2) \text{ sol } x = 4$$

$$\log_a \frac{1}{3} = \frac{-1}{2} \text{ sol } a = 9$$

$$\log_7 \frac{a}{b} + \log_7 b = 2 \text{ sol } a = 49$$

$$(x^2 - 5x + 9) \log 2 + \log 125 = 3 \text{ sol } x = 3, \text{ sol } x = 2$$

$$5 \log\left(\frac{x}{2}\right) + 2 \log\left(\frac{x}{3}\right) = 3 \log x - \log \frac{32}{9} \text{ sol } x = 3$$

$$2 \log x - \log(x - 16) = 2 \text{ sol } x = 80, \text{ sol } x = 20$$