

ECUACIONES EXPONENCIALES Y LOGARÍTMICAS

$$\boxed{x=2} \quad 1) \quad 3^{3x-1} = 243 \quad \boxed{x=-\frac{1}{6}} \quad 2) \quad \sqrt{8^{2x-1}} = \frac{1}{4} \quad \boxed{x=4} \quad 3) \quad 2^{1-x} = \frac{1}{8}$$

$$\boxed{x=-1} \quad 4) \quad 5^{x^2+3x-1} = \frac{1}{125} \quad \boxed{\begin{matrix} 4 \\ -3 \\ \frac{3}{2} \end{matrix}} \quad 5) \quad 4^{2x^2-5x-12} = 1 \quad \boxed{x=2} \quad 6) \quad 3^{x+1} + 3^x + 3^{x-1} = 39$$

$$\boxed{\begin{matrix} x=0 \\ x=1 \end{matrix}} \quad * \quad 7) \quad 3^x + 3^{1-x} = 4 \quad \boxed{x=3} \quad 8) \quad 9^{x-1} = 3^{3x+1} \quad 9) \quad 2^{3x-1} = \sqrt{2} \quad \boxed{x=1/2}$$

$$\boxed{x=2} \quad 10) \quad 5^{2x+1} - 5^{x+2} = 2500 \quad 11) \quad 3^x + 3^{2-x} = 10$$

$$\boxed{x=2} \quad 12) \quad 9^x - 6 \cdot 3^{x+1} + 81 = 0 \quad 13) \quad 3^{2x+2} - 28 \cdot 3^x + 3 = 0$$

$$\boxed{x=1} \quad * \quad 13) \quad 2^{4x} - 2^{2x} - 12 = 0 \quad 14) \quad \log 7 = \log x + \log 3 \quad \boxed{x=\frac{4}{3}}$$

$$\boxed{x=2} \quad 15) \quad \log_x 100 - \log_x 25 = 2 \quad 16) \quad \log_7 \left(\frac{x}{2}\right) + \log_7 5 = 2 \quad \boxed{x=\frac{98}{5}}$$

$$* \quad 17) \quad \log 2 + \log(x+3) = \log \sqrt{2x}$$

$$18) \quad \log(x+1) - \log x = 1 \quad \boxed{x=1/9}$$

$$19) \quad \log(3x+5) - \log(2x+1) = 1 - \log 5 \quad \boxed{x=3}$$

$$20) \quad \log(4x-1) - \log(3x-2) = \log 2 \quad \text{no tiene}$$

$$21) \quad 2 \log x - \log(x+6) = 1 \quad \boxed{5 + \sqrt{85}}$$

$$22) \quad \log(2x-3) - \log(x+1) = \log(2x-5) - \log(1-x) \quad \text{no tiene}$$

$$23) \quad 3 \log x - \log(2x^2 + x - 2) = 0 \quad \boxed{\begin{matrix} x=2 \\ x=1 \end{matrix}}$$

$$24) \quad 4 \log x - \log\left(x^2 - \frac{4}{5}\right) = \log 5$$

$$25) \quad \log(5x) + \log(x^2) = \log(x^4) \quad \boxed{x=5}$$

$$26) \begin{cases} 3^x + 3^y = 90 \\ 3^{x+y} = 729 \end{cases} \left\{ \begin{array}{l} x=4 \\ y=2 \end{array} \right.$$

$$27) \begin{cases} 7^{x+y} = \sqrt{343} \\ 7^{x-y} = \sqrt{7} \end{cases}$$

$$28) \begin{cases} \sqrt{x+y} = 2 \\ (x+y)^3 = 2097152 \end{cases} \left\{ \begin{array}{l} x=7 \\ y=121 \end{array} \right.$$

$$29) \begin{cases} 3^x + 5^y = 14 \\ 3^{2x+1} - 5^{2y+1} = 118 \end{cases}$$

$$30) \begin{cases} \log_y (9-x) = \frac{1}{2} \\ x^2 = y+9 \end{cases}$$

$$31) \begin{cases} x-y=8 \\ \log_2 x = 7 - \log_2 y \end{cases} \left\{ \begin{array}{l} x=? \\ y=? \end{array} \right.$$

$$32) \begin{cases} \log x + \log y = 3 \\ 2 \log x - 2 \log y = -1 \end{cases} \left\{ \begin{array}{l} (10^{5/4}, 10^{7/4}) \end{array} \right.$$

$$33) \begin{cases} \log(x+y) = \log 3^2 \\ \log(2^x \cdot 3^y) = \log 2592 \end{cases} \left\{ \begin{array}{l} x=5 \\ y=4 \end{array} \right.$$

$$34) \begin{cases} \log_x (y-18) = 2 \\ \log_y (x+3) = \frac{1}{2} \end{cases} \left\{ \begin{array}{l} x = \frac{3}{2} \\ y = \frac{81}{4} \end{array} \right.$$

$$35) \begin{cases} 2 \log x - \log y = 5 \\ \log(x \cdot y) = 4 \end{cases}$$