

logaritmos

1.

A. $\ln(x-1) = 4$

$$x-1 = e^4$$

$$x = e^4 + 1$$

B. $\ln y = 5$

$$y = e^5$$

C. $\log_8 4 = \frac{2}{3}$

$$4 = 8^{\frac{2}{3}}$$

$$4 = \sqrt[3]{8^2}$$

$$4 = \sqrt[3]{64}$$

$$4 = 4$$

D. $\log_2\left(\frac{1}{8}\right) = -3$

$$\left(\frac{1}{8}\right) = 2^{-3}$$

$$\frac{1}{8} = \frac{1}{2^3}$$

$$\frac{1}{8} = \frac{1}{8}$$

E. $\log_5 1 = 0$

$$1 = 5^0$$

F. $\log_{10} 0,1 = -1$

$$0,1 = 10^{-1}$$

2.

A. $e^{0,5x} = t$

$$\ln t = 0,5x$$

B. $10^{-4} = 0,0001$

$$\log_{10} 0,0001 = -4$$

C. $81^{1/2} = 9$

$$\log_{81} 9 = \frac{1}{2}$$

D. $4^{-3/2} = 0,125$

$$\log_4 0,125 = -\frac{3}{2}$$

$$e. 8^{-1} = \frac{1}{8}$$

$$\log_8 \frac{1}{8} = -1$$

$$F. 2^{-3} = \frac{1}{8}$$

$$\log_2 \frac{1}{8} = -3$$

3.

$$A. \log_9 9 = 1$$

$$C. \log_5 5^4 = 4$$

$$e. \log_3 1 = 0$$

$$B. \log_4 64 = \log_4 (4^3) = 3$$

$$D. \log_3 3^2 = 2$$

$$F. \log_3 3 = 1$$

4.

$$A. \log 12 + \frac{1}{2} \log 7 - \log 2$$

$$\log 12 + \log 7^{\frac{1}{2}} - \log 2$$

$$\log_{10} \left(\frac{12 \cdot 7^{\frac{1}{2}}}{2} \right)$$

$$\log_{10} (6 \sqrt{7})$$

$$B. \log_3 5 + 5 \log_3 2$$

$$\log_3 5 + \log_3 2^5$$

$$\log_3 (5 \cdot 2^5)$$

$$\log_3 (5 \times 32)$$

$$\log_3 160$$

$$C. \log_a b + c \log_a d - r \log_a 5$$

$$\log_a b + \log_a d^c + \log_a 5^{-r}$$

$$\log_a (bd^c \cdot 5^{-r})$$

$$\log_a \left(bd^c \cdot \frac{1}{5^r} \right)$$

$$D. \log_2 A + \log_2 B - 2 \log_2 C$$

$$= \log_2 A + \log_2 B + \log_2 C^{-2}$$

$$= \log_2 ABC^{-2}$$

$$= \log_2 \frac{AB}{C^2}$$

$$= \log_2 \frac{AB}{C^2}$$

$$e. 2(\log_5 x + 2 \log_5 y - 3 \log_5 2)$$

$$= 2 \log_5 x + 2 \cdot 2 \log_5 y - 2 \cdot 3 \log_5 2$$

$$= 2 \log_5 x + 4 \log_5 y - 6 \log_5 2$$

5.

$$D = \frac{73}{100} D_0$$

$$D = 0,73 D_0$$

$$A = -8267 \ln(0,73)$$

$$A = 2601,71$$

R/ = La edad seria de 2601.17 años