

Actividad 5:

$$a) [(\log_4 1/4)^3 : (\log 1000)] - (\log_{5/6} 36/25)$$

$$= (-1 : 3) - (-2)$$

$$= -\frac{1}{3} + 2$$

$$= \left(\frac{5}{3}\right)$$

$$b) (\log_6 \sqrt{6} + \log_{1/3} 1/24)^{-2}$$

$$= (\log_6 6 : 2 + 3)^{-2}$$

$$= (1/2 + 3)^{-2}$$

$$= \left(\frac{7}{2}\right)^{-2}$$

$$= \left(\frac{4}{49}\right)$$

$$c) \log_2 32 - \log_3 \sqrt{81} - \log_4 (1/16)^2$$

$$= 5 - (\log_3 81 : 2) - (2 \cdot \log_4 1/16)$$

$$= 5 - 2 - (2 \cdot -2)$$

$$= 3 + 4$$

$$= 7$$

$$d) \log_8 (\log_{1/8} 0,125)$$

$$\therefore \log_8 1 = \textcircled{0}$$

6)

$$a) \log_4 X = 1/2 = 4^{1/2} = X$$

$$\sqrt{4} = X$$

$$\textcircled{2 = X}$$

$$b) \log_x 5 = 3$$

$$\boxed{X = \sqrt[3]{5}}$$

$$c) \sqrt{(7^x)} = 49$$

$$\log_{49} 7^x = 2$$

$$x \cdot \log_{49} 7 = 2$$

$$x \cdot \frac{1}{2} = 2$$

$$\textcircled{X = 4}$$

7)

$$a) \log_2 (8:32) = \log_2 8 - \log_2 32 = 3 - 5 \\ = \textcircled{-2}$$

$$b) \log_3 (27 \cdot 1/81) = \log_3 27 - \log_3 1/81 = 3 - (-4) \\ = 3 + 4 \\ = \textcircled{7}$$

$$c) \log_4 64^6 = 6 \cdot \log_4 64 = 6 \cdot 3 \\ = \textcircled{18}$$

$$d) \log_3 (\sqrt[3]{81})^5 = 5 \cdot \log_3 \sqrt[3]{81} \\ = 5 \cdot (\log_3 81 : 3) \\ = 5 \cdot (4 : 3) \\ = 5 \cdot \frac{4}{3} \\ = \textcircled{\frac{20}{3}}$$

Nombre

Curso

Materia

$$\begin{aligned} e) \log_{2/3} \sqrt{2/3} \cdot \sqrt{9/4} &= \\ &= 1/2 \cdot 9/4 \\ &= \left(\frac{9}{8} \right) \end{aligned}$$

$$A \log_5 62 = \frac{\log 62}{\log 5} = \frac{1,792}{0,903}$$

8)

$$\begin{aligned} a) \log_5 4 + \log_5 10 - \log_5 8 &= \\ &= \log_5 (40) - \log_5 8 \\ &= \log_5 5 \\ &= 1 \end{aligned}$$

$$\begin{aligned} b) \frac{1}{3} \cdot \log_3 27 + 2 \cdot \log_3 9 &= \\ &= \log_3 (27^{\frac{1}{3}}) + \log_3 (9^2) \\ &= \log_3 3 + \log_3 81 \\ &= \log_3 243 \\ &= 5 \end{aligned}$$

$$\begin{aligned}
 c) (\log_4 1/32 - \log_4 2)^{-1} &= \\
 &= (\log_4 1/64)^{-1} \\
 &= (\log_4 1 - \log_4 64)^{-1} \\
 &= (3)^{-1} \\
 &= \textcircled{-3}
 \end{aligned}$$

$$\begin{aligned}
 d) 3 \cdot \log_5 5 + \log_5 1/5 - (\log_5 1/125) &: 3 \\
 &= \log_5 5^3 + \log_5 1/5 - 1 \\
 &= \log_5 125 - \log_5 1/5 - 1 \\
 &= 3 - 1 - 1 \\
 &= \textcircled{1}
 \end{aligned}$$

$$\begin{aligned}
 e) \ln e^4 + \ln e^{-2} \\
 &= 4 - 2 \\
 &= \textcircled{2}
 \end{aligned}$$