

EJERCICIO M1BE3293:

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Sabiendo que: $\log 2 = 0,3010$
 $\log 3 = 0,4771$, Hallar:

$$\begin{aligned} \text{a) } \log 0,00000002 &= \log 2^{-8} = -8 \log 2 = \\ &= -8 \cdot 0,3010 = -2,408 \end{aligned}$$

$$\begin{aligned} \text{b) } \log 0,125 &= \log \frac{125}{1000} = \log 125 - \log 1000 = \\ &= \log \frac{1000}{8} - \log 1000 = -0,903 \\ &= \log 1000 - \log 8 - \log 1000 = -\log 8 = \\ &= -\log 2^3 = -3 \log 2 = -3 \cdot 0,3010 = -0,903 \end{aligned}$$

$$\begin{aligned} \text{c) } \log 5 &= \log \frac{10}{2} = \log 10 - \log 2 = \\ &= 1 - 0,3010 = 0,699 \end{aligned}$$

$$\begin{aligned} \text{d) } \log 72 &= \log(2^3 \cdot 3^2) = \\ &= \log 2^3 + \log 3^2 = \\ &= 3 \cdot \log 2 + 2 \cdot \log 3 = \\ &= 3 \cdot 0,3010 + 2 \cdot 0,4771 = 1,8572 \end{aligned}$$

$$\begin{array}{r|l} 72 & 2 \\ 36 & 2 \\ 18 & 2 \\ 9 & 3 \\ 3 & 3 \\ 1 & \end{array}$$

$$\begin{aligned} \text{e) } \log 60 &= \log(2^2 \cdot 3 \cdot 5) = \\ &= \log 2^2 + \log 3 + \log 5 = \\ &= 2 \cdot \log 2 + \log 3 + \log \frac{10}{2} = \\ &= 2 \cdot \log 2 + \log 3 + \log 10 - \log 2 = \\ &= 2 \cdot 0,3010 + 0,4771 + 1 - 0,3010 = 1,7781 \end{aligned}$$

$$\begin{array}{r|l} 60 & 2 \\ 30 & 2 \\ 15 & 3 \\ 5 & 5 \\ 1 & \end{array}$$

$$\begin{aligned} f) \log 18 &= \log 3^2 \cdot 2 = \log 3^2 + \log 2 = \\ &= 2 \cdot \log 3 + \log 2 = \\ &= 2 \cdot 0,4771 + 0,3010 = 1,2552 \end{aligned}$$