AULA PRÁTICA 3

01. FALA HUMANA = 65 dB (FH)

FURADEIRA = ? 94,4 bB (FU)

$$I_{dB} = 10 \cdot \log \frac{I}{I_0}$$

FH → $65 = 10 \cdot \log \frac{I_{FH}}{I_0}$

$$6,5 = \log \frac{I_{FH}}{I_0} \rightarrow \log \frac{I_{FH}}{I_0} = 6,5 \rightarrow \frac{I_{FH}}{I_0} = 10^{6,5}$$

$$I_{FH} = I_0 \cdot 10^{6,5}$$

FU → $94,4 = 10 \cdot \log \frac{I_{FU}}{I_0}$

$$9,44 = \log \frac{I_{FU}}{I_0} \rightarrow \log \frac{I_{FU}}{I_0} = 9,44 \rightarrow \frac{I_{FU}}{I_0} = 10^{9,44}$$

$$I_{FU} = I_0 \cdot 10^{9,44}$$

COMPARANDO:

$$\frac{I_{FU}}{I_0} = \frac{I_0 \cdot 10^{9,44}}{I_0 \cdot 10^{6,5}} = \frac{10^{9,44}}{10^{6,5}} = 870,96 \text{ VEZES MAIS INTENSA}$$

02. $M = C(1 + i)^n$

$20000 = 10000\left(1 + \frac{1,5}{100}\right)^n$

$2 = 1,015^n$

$\log 2 = n \cdot \log 1,015 \longrightarrow n = 46,55$

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03. $F(x) = a \cdot b^x$

$2000 = a \cdot b^0 \longrightarrow a = 2000$

$F(x) = 2000 \cdot b^x$

$5000 = 2000 \cdot b^{15}$

$\frac{5}{2} = b^{15} \longrightarrow b = \sqrt[15]{\frac{5}{2}} = \left(\frac{5}{2}\right)^{\frac{1}{15}} \Rightarrow b = 1,063$

PORTANTO: $F(x) = 2000 \cdot 1,063^x$