

8. Дано: Период  $T_0 = 0.25$  ;  $\frac{A_1}{A_0} = 13$

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$$A_1 = A_0 e^{-bT}$$

$$A_0 = A_0 e^{bT}$$

$$\Rightarrow \frac{A_1}{A_0} = e^{5bT} = 13$$
$$bT = \frac{\ln 13}{5}$$

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$$T = \frac{2\pi}{\sqrt{\omega^2 - b^2}} = \frac{2\pi}{\sqrt{\frac{4\pi^2}{T_0^2} - \left(\frac{\ln 13}{5T}\right)^2}}$$

$$\Rightarrow T = \sqrt{T_0^2 + \frac{\ln^2 13 T_0^2}{100\pi^2}} \approx 0.25$$

Частота = 5 Гц