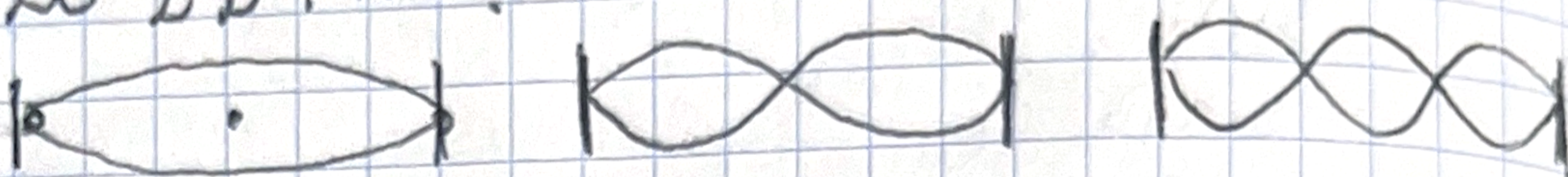


20 22, 10.



$m, L_0, F_1, L_1 = 1,01 L_0$

$F \sim L$

$F_2, L_2 = 1,03 L_0$

$L_1 = L_1 - L_0 = 0,1 L_0$

$L_2 = L_2 - L_0 = 0,3 L_0$

$V = \sqrt{\frac{F}{\mu}} \quad \mu = \frac{m}{L} \quad V = \sqrt{\frac{F \cdot L}{m}}$

$f = \frac{V}{\lambda}$

$V = \lambda f$

~~$\lambda = 2L$~~ $L = 2 \cdot \frac{1}{4} \lambda = \frac{1}{2} \lambda$

$\frac{f_2}{f_1} = \frac{\frac{V_1}{\lambda_1}}{\frac{V_2}{\lambda_2}} = \frac{V_1 \cdot \lambda_2}{V_2 \cdot \lambda_1} = \frac{V_1}{V_2} \cdot \frac{\lambda_2}{\lambda_1} =$

$= \frac{\sqrt{\frac{F_1 \cdot L_1}{m}}}{\sqrt{\frac{F_2 \cdot L_2}{m}}} \cdot \frac{2L_2}{2L_1} = \frac{\sqrt{\frac{L_1 \cdot L_1}{m}}}{\sqrt{\frac{L_2 \cdot L_2}{m}}} \cdot \frac{L_2}{L_1} =$

$= \frac{\sqrt{0,1 L_0 \cdot 1,01 L_0}}{\sqrt{0,3 L_0 \cdot 1,03 L_0}} \cdot \frac{1,03 L_0}{1,01 L_0} = 0,58$