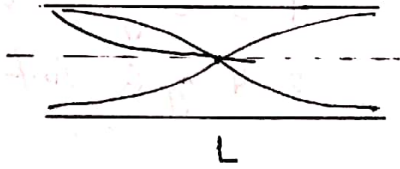# Problema nº 8

Tubo de órgano resuena a 20Hz $v = 343 \, m/s$
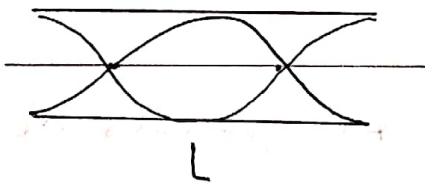
a) Si s tubo abierto. $L = ?$

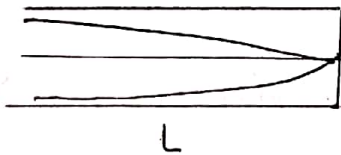Frecuencia fundamental

$$L = \frac{\lambda}{2} = \frac{v}{f} \cdot \frac{1}{2} = \frac{343}{20 \times 2} = 8{,}57 \, m$$
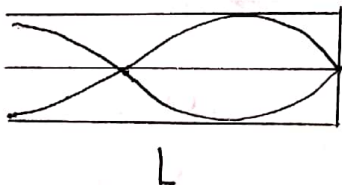
$$f = \frac{nv}{2L} \quad \text{con } n = 1, 2, 3$$

b) Si s tubo cerrado $L = ?$

Frecuencia fundamental

$$L = \frac{\lambda}{4} = \frac{v}{f} \cdot \frac{1}{4} = \frac{343}{20 \times 4} = 4{,}28 \, m$$

$$f = \frac{(2n+1)}{4} \frac{v}{L} \quad \text{con } n = 0, 1, 2, 3$$

$$\bar{o} \quad f = \frac{nv}{4L} \quad \text{con } n = 1, 3, 5, 7$$