

a) $L = .08 \text{ m}$
 $v = 340 \text{ m/s}$

For fundamental f :

$$L = \frac{1}{4} \cdot \lambda_1$$

$$(.08 \text{ m}) = \frac{1}{4} \cdot \lambda_1$$

$$\lambda_1 = .32 \text{ m}$$



For frequency:

$$v = f_1 \cdot \lambda_1$$

$$(340 \text{ m/s}) = f_1 \cdot (.32 \text{ m})$$

$$f_1 = 1063 \text{ Hz}$$

b) For 3rd harmonic:

c) $\lambda = .32 \text{ m}$
 (same tuning fork):

From the diagram:

$$L = \frac{5}{4} \cdot \lambda$$

$$= \frac{5}{4} \cdot (.32 \text{ m})$$

$$L = .40 \text{ m}$$

