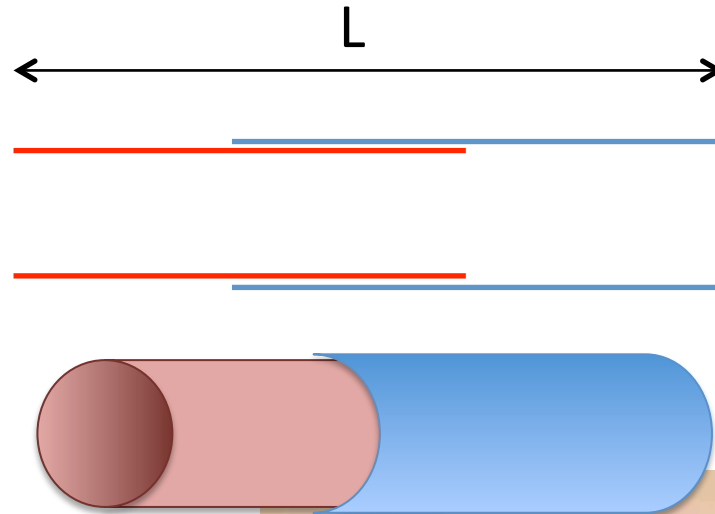
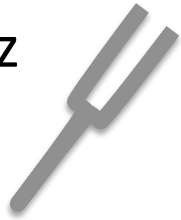


# Tube Resonance Question

250 Hz



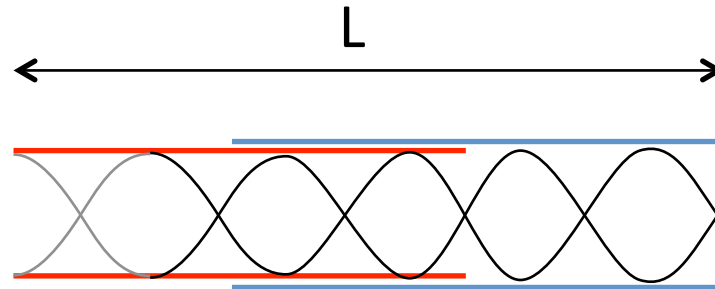
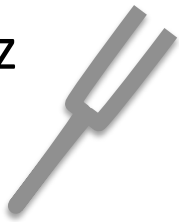
Sound from tube is especially loud for lengths  $L=1.06\text{m}$  and  $L=1.48\text{m}$

What is the speed of sound, and what modes are those?



# Tube Resonance Question

250 Hz



NOTE: Number of loops may be wrong

Sound from tube is especially loud for lengths  $L=1.06\text{m}$  and  $L=1.48\text{m}$

$$f = m \frac{v}{4L_{\text{short}}}$$

$$f = (m + 2) \frac{v}{4L_{\text{long}}}$$

divide

$$1 = \frac{m + 2}{m} \frac{4L_{\text{short}}}{4L_{\text{long}}}$$

sub in and solve

solve

$$m = 5$$

$$v = 212 \frac{\text{m}}{\text{s}}$$

What is the speed of sound, and what modes are those?