

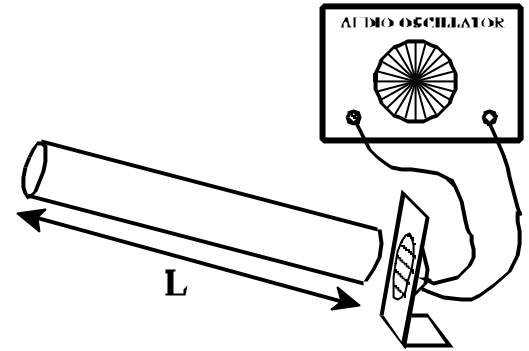
Name _____

Physics Quiz # 18D

Period _____

Sound Waves

An speaker is attached to an audio oscillator. This speaker is in turn placed in front of a tube that is open at both ends as shown. The frequency is adjusted upward from 0.0 Hz. until the sound volume suddenly gets louder. The tube is $L = 42.0$ cm long and has an inner diameter of 3.50 cm. The temperature is 10.0° C.



1. What is the wavelength of the lowest frequency sound that will resonate in this open tube? [3 pts]

2. What will be the speed of sound at this temperature? [3 pts]

3. What is the lowest frequency sound that will resonate in this open tube? [3 pts]

The frequency of the audio oscillator is again increased until the sound intensity increases a second time.

4. What is the frequency of this second sound ? [3 pts]

5. What part of a wavelength is now resonating in this tube? Explain! [3 pts]