Name: _____ Date: _____ Course: _____ Professor: _____

S7a Prelab: Measuring Sound Speed by Air Column Resonance

Read lab instructions before answering the questions

1) You are given a tube with a diameter of d = 33.38 mm. Calculate the End-Correction Factor (ECF). Be sure to convert to meters (m).

2) The tube has one end closed and is filled with water so that the air column inside has a length of 40.2 cm. A speaker with a constant frequency sound is on top of the tube and generates the second resonance (n = 3). Using the ECF you calculated in the previous question determine the wavelength (λ) of the speaker sound.

3) For the situation described above, the frequency of the sound waves is f = 624 Hz. Using the calculated wavelength in the previous question, find the velocity of the sound.