

Room temperature:

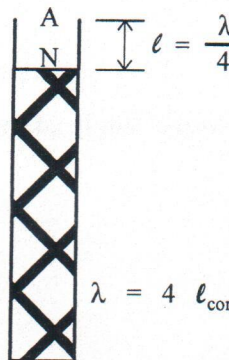
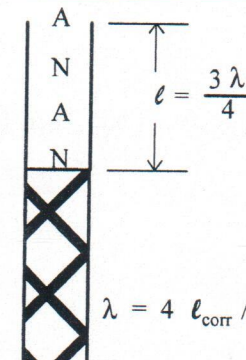
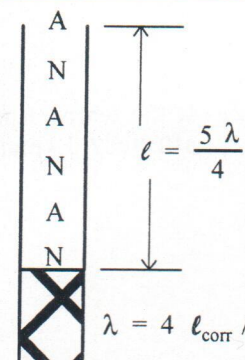
 $t_r = 23$ °C

Tuning-fork frequency:

 $f = 512$ Hz

Inside diameter of plastic tube:

 $D = 2.47$ cmDetermination of wavelength λ

Item	Reading 1	Reading 2	Reading 3
Diagrams showing nodes and antinodes of displacement			
l	(Step 4) 15.3 cm	(Step 8) 27.3 cm	40.3 cm
$l_{\text{corr}} = l + .4 D$	(Step 5) 15.7 cm	36.4 cm	432.24.15 cm
λ	(Step 6) 15.7 cm	(Step 9) 36.4 cm	(Step 9) 32.24 cm

Average $\lambda = 28.11$ cm = 0.2811 m

Measured velocity at room temperature:

 $v = f\lambda = 143.92$ m/s (Step 10)

Accepted velocity at 0 °C:

 $v_0 = 331.3$ m/s (Step 11)Accepted velocity at room temperature: $v_t = v_0 \sqrt{\frac{273.2 + t_r}{273.2}} = 344.96$ m/s (Step 12)

Percent error in measured velocity of sound:

 -58.28 % (Step 13)