PHY 122 Experiment 10: Standing Waves

PART I:

1. Find speed:

time = _____

length of spring = _____

distance moved per round trip = _____

number of round trips = _____

total distance = _____

v = _____

2. Predict f's from length and v:

f_1 = _____ $\pm$ _____ f_2 = _____ $\pm$ _____ f_3 = _____ $\pm$ _____

Show all steps in how you obtained f_1 , f_2 and f_3:

3. Observe f's. N = number of vibrations, t = corresponding time.

N_1 = _____ N_2 = _____ N_3 = _____

t_1 = _____ t_2 = _____ t_3 = _____

f_1 = _____ $\pm$ _____ f_2 = _____ $\pm$ _____ f_3 = _____ $\pm$ _____

PART II:

f = _____

Measured length of air column= _____

r = _____

Correction to length = _____

Corrected length = _____

λ = _____

Find v from f & observed λ:

Temperature = _____

Compute theoretical v from temperature: