Objectives

After completing Tuesday and Wednesday's outside class assignments, a student should be able to:

1. explain the phenomena of sound including giving the type of wave, the medium, and its cause.
2. explain why the speed of sound depends on temperature
3. state the formula for calculating the speed of sound for a given temperature
4. explain the difference between "loudness" and sound intensity
5. state the definition of β
6. state the range of sound intensity that a human can hear without pain.
7. calculate the intensity of sound for a point source as the distance between the source and observer increases.
8. explain what is meant by the terms pitch, timbre, and tone quality.
9. state the audible range of frequencies that a human can hear.
10. describe the physical parameter(s) that determine the allowed wavelengths and frequencies of sound waves in stringed instruments and open and closed tubes.
11. describe the phenomena of beating
12. describe what is meant by the Doppler shift and give applications

Thursday Class Goals

1. Calculate the speed of sound given the temperature of air.
2. Calculate the angle of refraction for sound passing between two different media
3. Calculate the sound level for a given sound intensity.
4. Calculate the fundamental harmonic frequency and overtones for a particular stringed instrument and open and closed tubes.
5. Solve problems involving beating.
6. Solve Doppler shift problems.