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**Ch 11.3 Properties of Waves** Page 387 - Practice Problems D– Wave Speed

1. A piano emits frequencies that range from a low of about 28 Hz to a high of about 4200 Hz. Find the range of wavelengths in air attained by this instrument when the speed of sound in air is 340 m/s.
2. The speed of all electromagnetic waves in empty space is 3.00 x 108 m/s. Calculate the wavelength of electromagnetic waves emitted at the following frequencies?
3. Radio wave at 88.0 MHz
4. Visible light at 6.0 x 108 MHz
5. X Ray at 3.0 x 1012 MHz
6. Red light emitted by He-Ne laser has a wavelength of 633 nm in air and travels at 3.00 x 108 m/s. Find the frequency of the laser light.
7. A turning fork produces a sound with a frequency of 256 Hz and a wavelength in air of 1.35 m.
8. What value does this give for the speed of sound in air?
9. What would be the wavelength of this same sound in water in which sound travels at 1500 m/s?