# Acoustics Worksheet Answer Key

# 1. Calculate the wavelengths at the standard octave band center frequencies for sound moving through air.

**Distance between similar points on a successive wave**

**$C=f\lambda$ or $\lambda=C/f$**

**C=velocity (fps)**
**f=frequency (hz)**
**λ=wavelength (ft)**

**Lower frequency: longer wavelength**

# 1. Calculate the wavelengths at the standard octave band center frequencies for sound moving through air.

| Hz | 62.5 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|---|---|---|---|---|---|---|---|---|
| Ft | 18.1 | 9.04 | 4.25 | 2.26 | 1.13 | 0.57 | 0.28 | 0.14 |

**Calculated for “center band frequencies”** See S&R p. 730

**125 250 500 1000 2000 4000**

**Pay specific attention to 125 hz and 500 hz**