

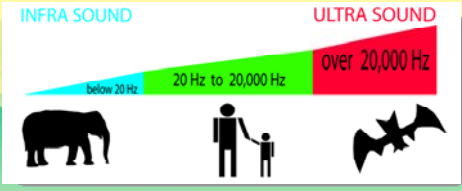
Example 2

Tuesday, March 5, 2013
3:52 PM

$$.6 \frac{\text{m/s}}{^\circ\text{C}}$$

$$T = \frac{1}{f}$$

Example 2 (Parallel Exercise Group B #2)



1) The lower frequency limit for human hearing is usually considered to be 20 Hz. What is the corresponding wavelength for this frequency if the air temperature is 20°C?

$$\lambda = ?$$

$$f = 20 \text{ Hz} \approx 20 / \text{s}$$

$$v = f \lambda$$

$$\lambda = \frac{v}{f}$$

$$\lambda = \frac{343 \text{ m/s}}{20 / \text{s}}$$

$$\lambda = 17.15 \text{ m}$$

$$\rightarrow v = 331 \text{ m/s} + (.6) T(^{\circ}\text{C})$$

$$v = 331 \text{ m/s} + (.6)(20^{\circ}\text{C})$$

$$v = 331 \text{ m/s} + 12 \text{ m/s}$$

$$v = 343 \text{ m/s}$$