

1. • (a) **Audible wavelengths.** The range of audible frequencies is from about 20 Hz to 20,000 Hz. What is range of the wavelengths of audible sound in air? (b) **Visible light.** The range of visible light extends from 400 nm to 700 nm. What is the range of visible frequencies of light?
3. • If an earthquake wave having a wavelength of 13 km causes the ground to vibrate 10.0 times each minute, what is the speed of the wave?
5. • A steel wire 4.00 m long has a mass of 0.0600 kg and is stretched with a tension of 1000 N. What is the speed of propagation of a transverse wave on the wire?
6. • With what tension must a rope with length 2.50 m and mass 0.120 kg be stretched for transverse waves of frequency 40.0 Hz to have a wavelength of 0.750 m?