1. Michael creates a sound wave has a frequency of 30. Hz. What is the **period**?
2. Sound waves may have a variety of frequencies, and the frequency determines the pitch of the sound. If Lindsay sings a note that has a frequency of 25 Hertz (Hz) and the wavelength is 1.30 m, what is the **speed** of sound?
3. In Denver, the Mile-High City, the speed of sound is about 30 m/s. Suppose the frequency of the sound wave created by Oscar’s car horn is 340 Hz, what is the **wavelength**?
4. Tobias’s cell phone creates a sound wave in air that has a frequency of 262 Hz and travels with a speed of 330. m/s. **How far apart are the compressions**?
5. George Michael learns that the speed of sound in steel is 500 m/s; in seawater, 1500 m/s; and in air, 330 m/s.
   1. Find the wavelength of a 100 Hz tone in steel, water and air.
   2. Find the wavelength of a 10. Hz tone in steel, water and air.
6. While hiking, Buster shouts toward a vertical cliff 685 m away. The echo is heard 4.00 s later.
   1. What is the **speed** of sound of Buster’s voice in air?
   2. The wavelength of the sound is 0.750 m. What is its **frequency**?
   3. What is the **period** of the wave?

1. S and P waves from an earthquake travel at different speeds, and this difference helps in the determination of the earthquake’s epicenter. Assuming typical speeds of 8.5 km/s and 5.5 km/s for P and S waves, respectively, **how far away did the earthquake** occur if a particular seismic station detects the arrival of these two types of waves 2.0 minutes apart?