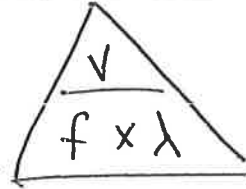NAME _____

Math Skills

Wave Speed

$$V = f\lambda$$

1. A wave with a frequency of 60.0 Hz travels through vulcanized rubber with a wavelength of 0.90 m. What is the speed of this wave?

2. A wave with a frequency of 60.0 Hz travels through steel with a wavelength of 85.5 m. What is the speed of this wave?

3. The lowest pitch that the average human can hear has a frequency of 20.0 Hz. If sound with this frequency travels through air with a speed of 331 m/s, what is its wavelength?

4. One of the largest organ pipes is in the auditorium organ in the convention hall in Atlantic City, New Jersey. The pipe is 38.6 ft long and produces a sound with a wavelength of about 10.6 m. If the speed of sound in air is 346 m/s, what is the frequency of this sound?

5. A certain FM radio station broadcasts electromagnetic waves at a frequency of 9.05×10^7 Hz. These radio waves travel at a speed of 3.00×10^8 m/s. What is the wavelength of these radio waves?