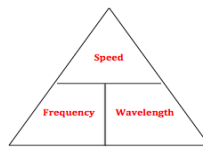


Waves: Speed & Frequency Word Problems

1. A wave has a frequency of 10 Hz and a wavelength of 30m. What's its speed?
2. If the frequency in question #1 were changed to 20 Hz, what would the wavelength of that wave be?
3. The speed of sound is 346 m/s. If a sound wave travels at a frequency of 55 Hz, what would its wavelength be?
4. If the same wave in question #3 travels through water with the same wavelength, at what frequency will it be traveling? (speed of sound in water = 350 m/s)
5. If the speed of a wave is 150 m/s and its frequency is 2 Hz, what is its wavelength?
6. A fisherman notices that one wave passes the bow of his anchored boat every 3 seconds. He measured the wavelength to be 8.5 meters. How fast are the waves traveling?
7. A sound wave in air has a frequency of 262 Hz and travels at a speed of 330 m/s. What is the wavelength of this wave?
8. A wave pulse is created in a slinky. It takes 1.2 seconds to travel the length of the slinky. If the slinky is 8 meters long (1 wavelength), what is the speed of the wave?
9. An ocean wave has a length of 10 meters. A wave passes a fixed location every 2 seconds. What is the speed of the wave?



$$\text{Speed} = (\text{wavelength})(\text{frequency})$$

$$\text{frequency} = \# \text{ of wavelengths/time}$$