

Waves II

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- Write out the wave equation in symbols.
 - Say what each symbol stands for.
 - What units are each quantity in?
- Use the wave equation to complete the table.

Wave speed / m/s	Frequency / Hz	Wavelength / m
	10	2.5
	50	0.02
340	170	
2.4	0.5	
310		0.5

- What is the wavelength of a 200 Hz sound wave in air if the speed of sound in air is 340 m/s.
- Sound waves travel at 1500 m/s in water. Calculate the wavelength of 300 Hz sound wave in water.
- How many waves are made in 3 minutes by a swimming pool's wave machine if its frequency is 0.25 Hz.
- A tuning fork vibrates at
- 256 Hz. How many times does one of its prongs vibrate back and forth in 5 s.
- A water wave travels 10 m in 5 s. Calculate...
 - ... the speed of the wave.
 - ... the frequency of the wave if its wavelength is 1.5 m.
- A man fires a gun and hears an echo from the cliff after 4 s. The cliff is 600 m away.
 - How long did the sound wave take to travel to the cliff?
 - Use $\text{speed} = \frac{\text{distance}}{\text{time}}$ to work out the speed of sound.
- A sonar pulse is sent out from a boat and arrives back after 3 s. If the speed of sound in water is 1500 m/s, how deep is the water?



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