

**Mathematics: Wave Calculations**

<p><b>Wave speed = wavelength x frequency</b>  <math>v = \lambda f</math>                  (v = wave speed, wavelength, frequency, wavelength)</p>	<p><b>The speed of a wave depends on the medium it is travelling through.</b>  <math>v = \frac{d}{t}</math> <b>speed</b>                  (v = wave speed, d = distance, t = time)</p>
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1. A wave propagates along the frequency of electromagnetic radiation. Calculate the speed of the wave.
2. The speed of a wave is 3000 m/s. What is the wavelength if the frequency is 500 Hz?
3. The speed of light is 300,000,000 m/s. What is the frequency of a wave with a wavelength of 1000 nm?
4. What is the period of a wave with a frequency of 50 Hz?
5. The wavelength of a wave is 2000 m. The frequency of the wave is 100 Hz. Calculate the speed of the wave.
6. The wavelength of a wave is 1000 m. The frequency of the wave is 100 Hz. Calculate the speed of the wave.
7. A wave has a wavelength of 1000 m and a frequency of 100 Hz. Calculate the speed of the wave.
8. A wave has a wavelength of 1000 m and a frequency of 100 Hz. Calculate the speed of the wave.
9. Calculate the period of a wave with a frequency of 50 Hz.
10. Calculate the wavelength of a wave with a frequency of 100 Hz and a speed of 3000 m/s.
11. Calculate the period of a wave with a frequency of 100 Hz.
12. A wave has a wavelength of 1000 m and a frequency of 100 Hz. Calculate the speed of the wave.
  - a. Calculate the period of the wave.
  - b. Calculate the speed of the wave.
13. A wave has a wavelength of 1000 m and a frequency of 100 Hz. Calculate the speed of the wave.
  - a. Calculate the period of the wave.
  - b. Calculate the speed of the wave.
14. A wave has a wavelength of 1000 m and a frequency of 100 Hz. Calculate the speed of the wave.
  - a. Calculate the period of the wave.
  - b. Calculate the speed of the wave.