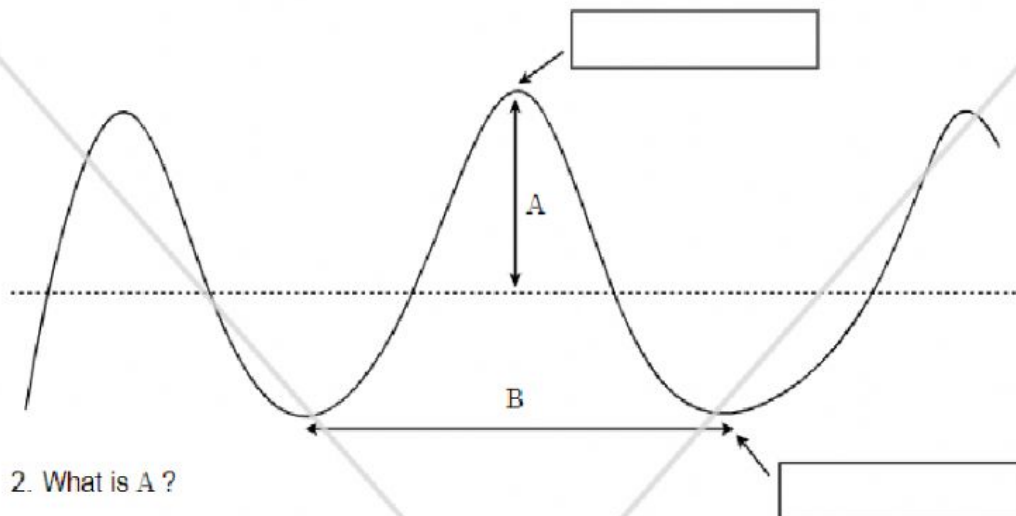


1. Write the correct terms in the boxes.



### Using the wave formula: wave speed, frequency and wavelength

$$v = f \times \lambda$$

$v$  speed (metres per second, m/s)

$\lambda$  wavelength (metres, m)

$f$  frequency (hertz, Hz)

$$f = v \div \lambda$$

$$\lambda = v \div f$$

#### Worked example

**Q:** A sound wave of frequency 220 Hz travels at a speed of 340 m/s in air. What is its wavelength?

**A:** Wavelength,  $\lambda = v \div f = 340 \div 220 = 1.55 \text{ m}$

(If the wave speed is in metres per second and the frequency is in hertz, the wavelength will be in metres)

#### Questions

1. Calculate the **wave speed** (in m/s) for the following waves:

a) A sound wave in steel with a frequency of 500 Hz and a wavelength of 3.0 metres.

b) a ripple on a pond with a frequency of 2 Hz and a wavelength of 0.4 metres.