

Activity AP6.8 Questions on $v = f\lambda$ **Remember**velocity = frequency \times wavelength

$$v = f\lambda$$

To answer

- 1 Some ocean waves have a wavelength of 150 m and arrive once every 10 seconds – a frequency of 0.1 Hz. Calculate the speed of the waves.
- 2 Ripples on a pond have crests 10 cm apart. Eight waves arrive at the bank every second.
 - a What is the wavelength of the water wave in metres?
 - b What is the frequency in Hz?
 - c Calculate the speed of the water waves in m/s.
- 3 Low rumbling thunder has a frequency of 80 Hz and a wavelength of 4.25 m. Use these values to calculate the speed of sound in air.
- 4 The humming noise made by a mosquito is its wings beating 600 times each second.
 - a What is the frequency of the hum?
 - b Use the speed of sound = 340 m/s to work out a value for the wavelength.
- 5 The wavelength of a wave in a guitar string is 1.58 m and the speed of the wave is 404 m/s. What is the frequency of the note produced?
- 6 Inside the body ultrasound waves travel at 1540 m/s. The frequency is 500 kHz (500×10^3) Hz. Calculate the wavelength.