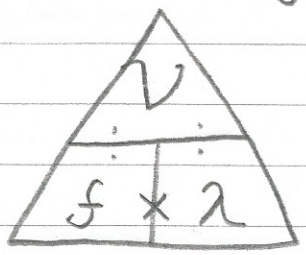
Wave Speed Equation

$$v = f \times \lambda$$

- v: wave speed in metres per second (m/s or ms^{-1})
- f: frequency in hertz (Hz)
- λ (lambda) is the wavelength in metres, (m).

- As with all equations with three variables we can construct a triangle to help us rearrange the formula.



- To use a formula triangle you cover up the one you want to find out!

Example: A water wave has a frequency of 0.75 Hz and a wavelength of 4m. What is its wave speed?

$$v = f \times \lambda \qquad v = 0.75\text{Hz} \times 4\text{m}$$

$$v = 3\text{ m/s}$$

Example: A wave has a frequency of 4.0×10^7 Hz and a speed of 3.0×10^8 m/s. What is its wavelength.

$$v = f \times \lambda \qquad \frac{v}{f} = \lambda$$

$$\frac{3.0 \times 10^8}{4.0 \times 10^7} = 7.5\text{m}$$