

Warm Up

- 1) A wave has a wavelength of 40 m and a period of 4 s. How fast is the wave moving?
- 2) A source oscillates 20 times every second, creating waves which are 3 m long. What is the speed of these waves?
- 3) A 500 m/s has a period of 5 s. What is the size of one wave?

LESSON

BACKGROUNDS

- 1) A wave has a wavelength of 40 m and a period of 4 s.
How fast is the wave moving?

$v = ?$

~~$v = \lambda f$~~

$$v = \frac{\lambda}{T} = \frac{40\text{m}}{4\text{s}} = 10\frac{\text{m}}{\text{s}}$$

LESSON

BACKGROUNDS

2) A source oscillates 20 times every second, creating waves which are 3 m long. What is the speed of these waves?

$$f = 20 \text{ Hz}$$

$$\lambda = 3 \text{ m}$$

$$v = ?$$

$$\begin{aligned} v &= \lambda f \\ &= (3 \text{ m})(20 \text{ Hz}) \\ &= 60 \frac{\text{m}}{\text{s}} \end{aligned}$$

LESSON

BACKGROUNDS

3) A 500 m/s has a period of 5 s. What is the size of one wave?

$$v = 500 \frac{\text{m}}{\text{s}}$$

$$T = 5 \text{ s}$$

$$\lambda = ?$$

$$\begin{aligned} \cancel{v} &= \cancel{\lambda} \cancel{f} \\ v &= \frac{\lambda}{T} \rightarrow 500 = \frac{\lambda}{5} \times 5 \end{aligned}$$

$$2500 \text{ m} = \lambda$$

LESSON

BACKGROUNDS

Goals

- Practice problems involving the speed, wavelength, period, and frequency of waves

LESSON

BACKGROUNDS

Worksheet

LESSON

BACKGROUNDS

Cool Down

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- If the wavelength of a wave is 2 m and the frequency is 15 Hz, how fast is the wave moving?
- Draw a longitudinal wave and label wavelength



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