

## Unit 08(B) Review (Waves)

1. What are the four equations you need to have memorized?

**Solution:**

$$T = \frac{t}{\#osc}$$

$$f = \frac{\#osc}{t}$$

$$T = \frac{1}{f}$$

$$f = \frac{1}{T}$$

2. What do waves transport and what do they not transport?

**Solution:** a wave transports energy without transporting matter

3. Draw an example of constructive and destructive interference. Label each.

**Solution:**

4. Define the following:

- (a) amplitude

**Solution:** the maximum displacement from equilibrium

- (b) frequency

**Solution:** how many oscillations happen in a second

- (c) longitudinal wave

**Solution:** a wave in which the particles in the medium move parallel to the motion of the wave

- (d) medium

**Solution:** the matter that waves travel through

- (e) period

**Solution:** the time of one oscillation

- (f) transverse wave

**Solution:** a wave in which the particles in the medium move perpendicular to the motion of the wave

- (g) wavelength

**Solution:** the distance before a wave repeats itself

Name:

Date:

Period:

5. What is the only thing you can do to change the speed of a wave?

**Solution:** the only thing that affects the speed of a wave is the medium it is traveling through

6. How are frequency and wavelength related?

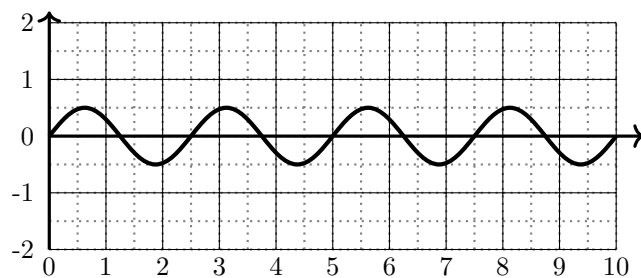
**Solution:** they are inversely proportional to each other

7. You are floating in the ocean. The waves have an amplitude of 1.5 meters. The frequency with which you bob up and down is 0.2 Hz. How far apart are the waves if they are traveling at 3 m/s?

**Solution:** Knowns/Unknowns:  $A = 1.5$  m,  $f = 0.2$  Hz,  $v = 3$  m/s.

$$\begin{aligned}v &= f\lambda \\3 &= (0.2)\lambda \\15 \text{ m} &= \lambda\end{aligned}$$

8. The wave below is traveling at 13 m/s. All measurements are in meters.



- (a) What kind of wave is this?

**Solution:** transverse

- (b) What is its amplitude?

**Solution:** 0.5 m

- (c) What is the wavelength?

**Solution:** 2.5 m

- (d) What is the frequency?

**Solution:**

$$\begin{aligned}v &= f\lambda \\13 &= f(2.5) \\5.2 \text{ Hz} &= f\end{aligned}$$