

1. List 2 major types or forms of energy that move as a wave: **Light and sound.** (P. 372)

2. How does length or string relate to the period of a pendulum?

(P. 372). The length of string of a pendulum determines the time of one back and forth swing. This time is called the period and it only depends on the length of string and gravity and not the mass of the pendulum.

3. What is simple harmonic motion (SHM)?

Simple harmonic motion is another name for a back-and-forth vibratory motion often called oscillatory motion. (P. 372-373)

4. Draw a sine curve and label wavelength and amplitude:



5. What is the unit for frequency?

Hertz (p 374)

6. What is the source of all waves?

(P375) a wave is energy transferred from a vibrating source to a distant receiver. There must be a vibrating source or a disturbance to create a wave.

7. The energy transferred from a vibrating source to a receiver is carried by a disturbance in a Medium, not by matter moving from one place to another within the medium. (376).

8. What is the speed of sound? 340 m/s

The speed of sound depends on the medium through which sound travels. While the speed of sound in air ranges from 340m/s to 360 m/s depending on their temperature. Sound waves travel much faster through liquids and solids. (P. 377)

9. What is the formula for wave speed? $v = \lambda \cdot f$

10. What is a transverse wave? A transverse wave is a wave where the motion of the medium is at right angles to the direction the wave travels. (P. 378).

11. What is a longitudinal wave? A longitudinal wave is a wave where the particles in the medium move in the same direction (parallel to) the direction in which the wave travels. (p378)

12. What type of waves are electromagnetic waves? (Pg 378) EM waves are transverse waves.

13. What type of waves are sound waves? (P 379) sound waves are longitudinal waves.

14. What type of interference would cause waves to be canceled out? Destructive interference causes cancellation (p. 379)

15. What parts remain stationary in a standing wave? The nodes remain stationary. (P. 380)

16. What are standing waves the result of? Standing waves are a result of an incident wave in phase with a reflected wave. This means that standing waves are a result of interference. (P. 381)

17. What is the Doppler effect? The Doppler effect is the apparent (but not real) change in frequency of the sound source or observer. (P.382-383)

18. What is an increase in frequency due to the Doppler effect called (with light) Blue shift. (P. 381)

19. What is a shock wave? (P. 385). A shock wave is produced when 3-d cone shaped waves produce overlapping circles that form a cone.