

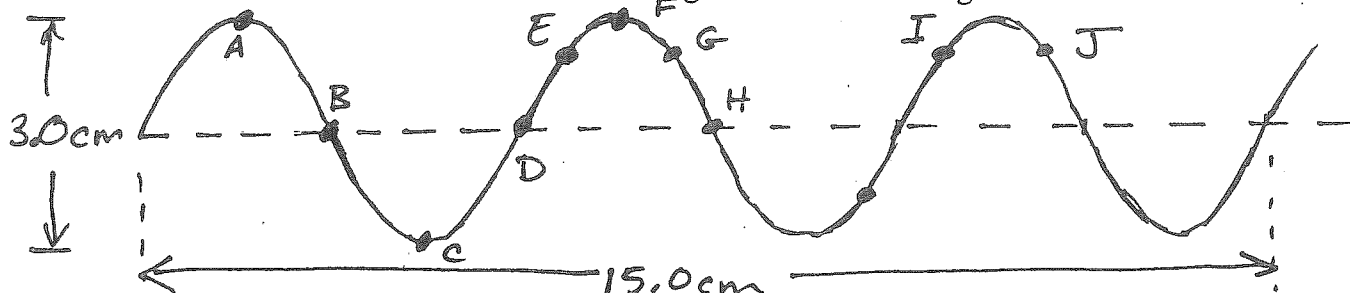
Practice
Physics 11 Quiz - Waves

Name: _____

Block: _____

1. a) On the diagram below, show and label the following parts:

- nodal line
- amplitude
- crest
- node
- one wavelength
- trough



b) Give the magnitude of:
 one amplitude: _____ cm
 one wavelength: _____ cm

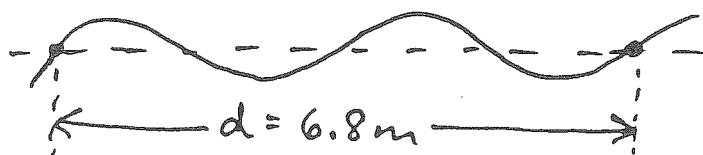
c) If the wave is moving to the LEFT, on the diagram show (with arrows) the direction of motion of each of the lettered particles (A, B, C, D, etc.).

d) List all of the pairs of points that are perfectly in phase. _____

e) List all of the pairs of points that are perfectly out of phase. _____

2. Calculate the frequency of a tuning fork that vibrates 2.4×10^3 times in 56.0 seconds.

3. The frequency of vibration of the string shown below is 5.8 Hz. What is the speed of the waves on the string?



4. How many vibrations would your eardrums experience in 4.0 seconds if your walkman is emitting sound at 2500.0 Hz?

5. The distance between crests in certain water waves is 2.5 m. The waves are observed to travel 15.0 m in 4.0 seconds. Calculate the frequency and period of the waves.

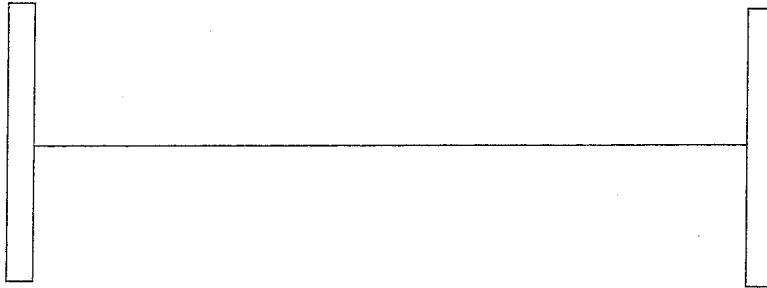
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Waves Review

$$v = \frac{d}{t} \quad v = f\lambda \quad v = \frac{\lambda}{T}$$

1. Draw a transverse wave below and label a crest, trough, amplitude and wavelength.

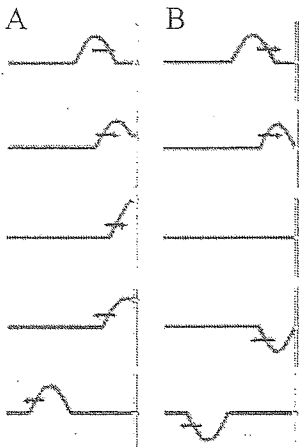


2. The average wavelength in a series of ocean waves is 17.0 meters. Find the speed of an average ocean wave if the average frequency is 3.5 Hz.
3. Find the period of an ocean wave that has a wavelength of 15.0 meters and a frequency of 2.5 Hz.
4. What determines the speed of mechanical wave?
5. A microwave oven uses a wave with a frequency of 2,450.0 MHz (1 MHz = 1×10^6 Hz) to heat food. If the speed of the wave is 3.0×10^8 what is its wavelength.
6. The speed of sound in sea water is 1530 m/s. A sonar device emits a pulse of sound at 875 Hz. What is the wavelength of sound at this frequency in sea water?

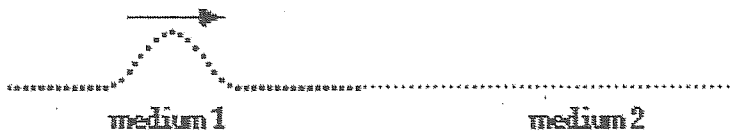
7. What is the period of a wave at this that has a speed of 25 m/s and a frequency of 4 Hz?

8. How is the reflection of a wave at a free boundary different from the reflection of a wave at a fixed boundary?

9. Identify the A and B diagrams as fixed or free end reflection.



10. A pulse is moving from a slow medium to a fast medium as shown in the diagram below.



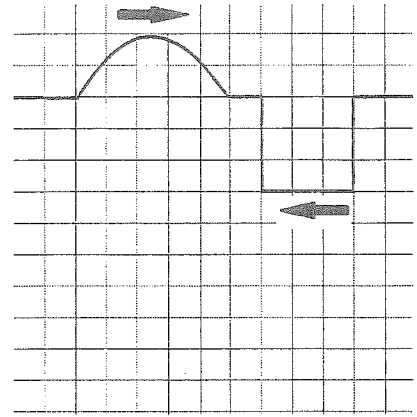
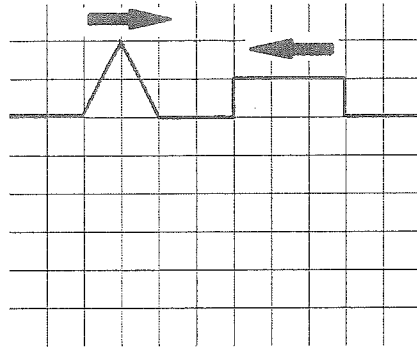
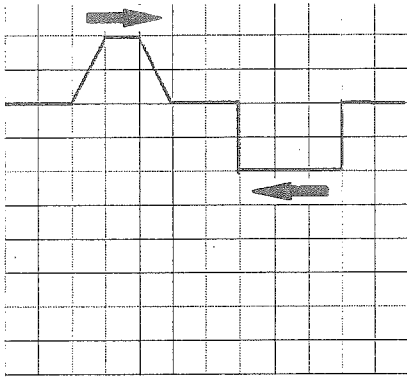
a) Explain how is going to be the speed of the reflected pulse respect the speed of the incident pulse.

b) How is going to be the wavelength of the transmitted pulse respect the wavelength of the incident pulse.

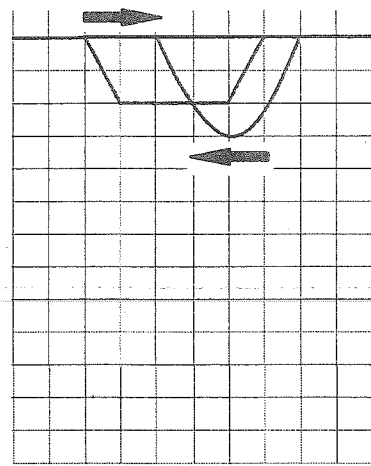
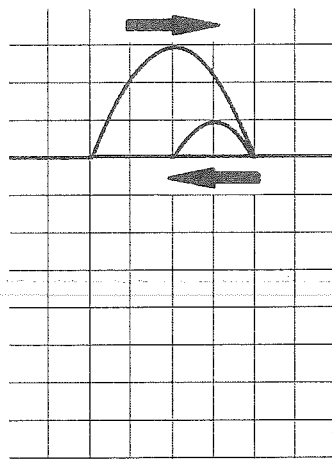
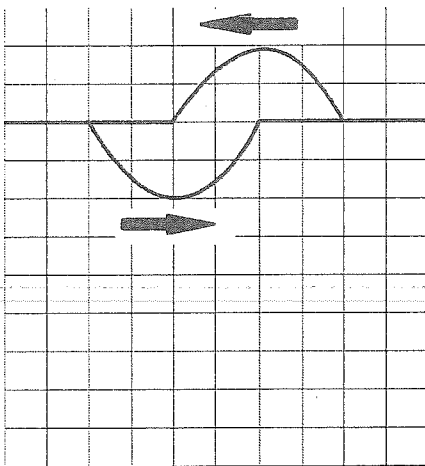
11. What is interference?

12. What are the two types of interference?

13. The following diagram show two pulses approaching one another. Sketch the appearance of the medium when the two pulses are overlap, centers coinciding and label as constructive or destructive interference.



14. Draw the resulting waves for each of the following pairs of waves and label as constructive or destructive interference.



15. How are electromagnetic waves different from mechanical waves?

16. Give the medium for each of the following waves.

- a) _____ the "wave" being done in a football stadium.
- b) _____ sound waves coming out of the radio in your earphones.
- c) _____ ripples in a pond caused by a rock being thrown in.