

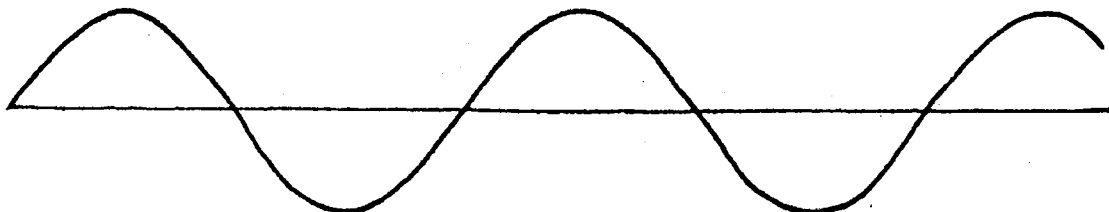
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CONCEPTUAL *Physics* PRACTICE PAGE

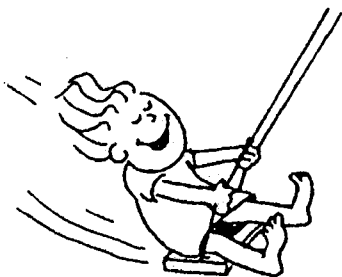
Chapter 19 Vibrations and Waves Vibration and Wave Fundamentals

1. A sine curve that represents a transverse wave is drawn below. With a ruler, measure the wavelength and amplitude of the wave.



a. Wavelength = _____

b. Amplitude = _____



2. A kid on a playground swing makes a complete to-and-fro swing each 2 seconds. The frequency of swing is

[0.5 hertz] [1 hertz] [2 hertz]

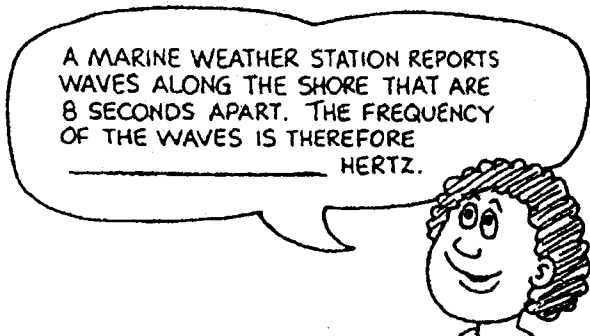
and the period is

[0.5 seconds] [1 second] [2 seconds].

3. Complete the statements:



THE PERIOD OF A 440-HERTZ SOUND WAVE IS _____ SECOND.



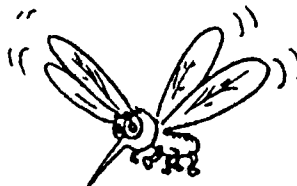
A MARINE WEATHER STATION REPORTS WAVES ALONG THE SHORE THAT ARE 8 SECONDS APART. THE FREQUENCY OF THE WAVES IS THEREFORE _____ HERTZ.

4. The annoying sound from a mosquito is produced when it beats its wings at the average rate of 600 wing beats per second.

a. What is the frequency of the sound waves?

b. What is the wavelength?

(Assume the speed of sound is 340 m/s.)

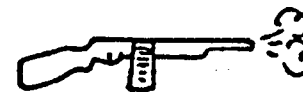


Hewitt
Drewitt!

Chapter 19 Vibrations and Waves

Vibration and Wave Fundamentals—continued

5. A machine gun fires 10 rounds per second.
The speed of the bullets is 300 m/s.



- a. What is the distance in the air between the flying bullets? _____
- b. What happens to the distance between the bullets if the rate of fire is increased?

6. Consider a wave generator that produces 10 pulses per second. The speed of the waves is 300 cm/s.

- a. What is the wavelength of the waves? _____
- b. What happens to the wavelength if the frequency of pulses is increased?

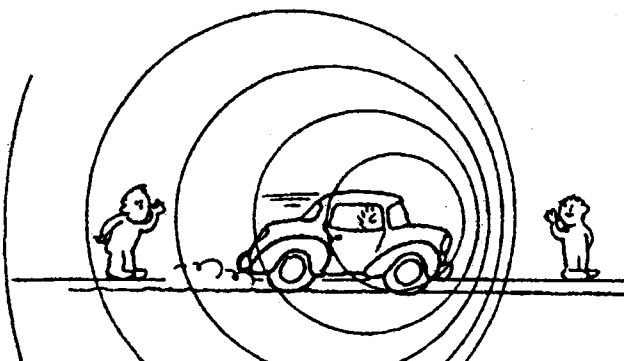
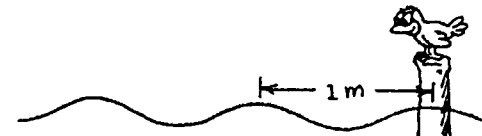
7. The bird at the right watches the waves. If the portion of a wave between 2 crests passes the pole each second,

a. what is the speed of the waves? _____

b. what is the period of wave motion? _____

c. If the distance between crests were 1.5 meters apart, and 2 crests pass the pole each second, what would be the speed of the wave?

d. What would the period of wave motion be for 7.c ?



8. When an automobile moves toward a listener, the sound of its horn seems relatively

[low pitched] [high pitched] [normal]

and when moving away from the listener, its horn seems

[low pitched] [high pitched] [normal].

9. The changed pitch of the Doppler effect is due to changes in _____