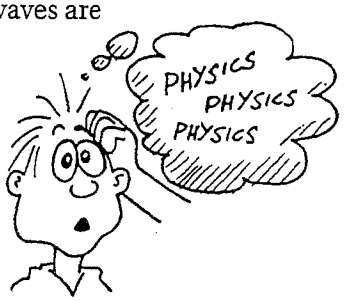
Name Period Date

Concept-Development Practice Page **26–1**

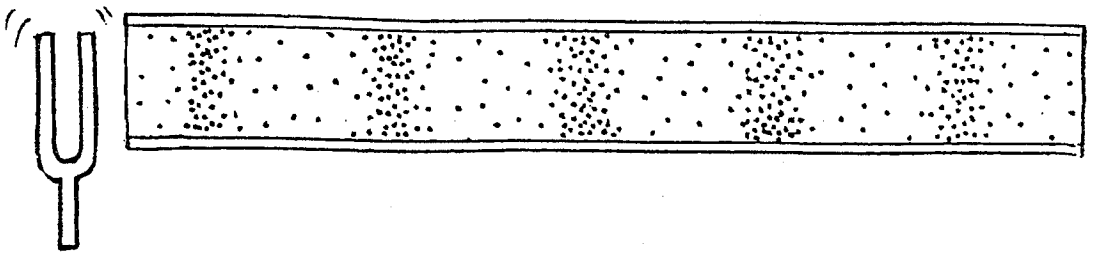
Sound

1. Two major classes of waves are *longitudinal* and *transverse*. Sound waves are
   (longitudinal) (transverse)



2. The frequency of a sound signal refers to how frequently the vibrations occur. A high-frequency sound is heard at a high
   (pitch) (wavelength) (speed)

3. The sketch below shows a snap shot of the compressions and rarefactions of the air in a tube as the sound moves toward the right. The dots represent molecules. With a ruler the wavelength of the sound wave is measured to be _____ cm.

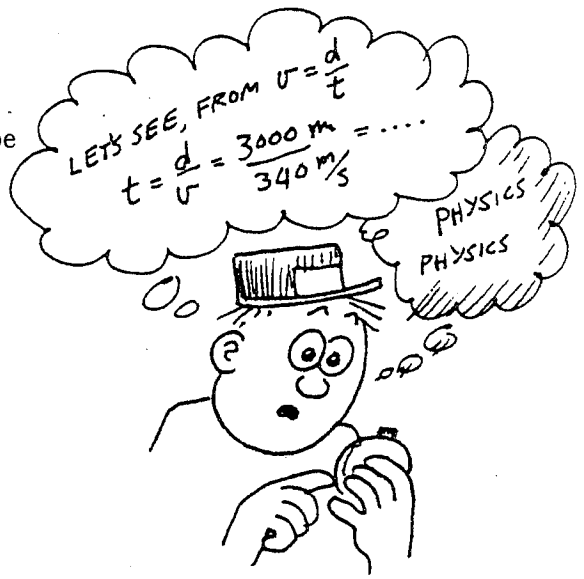


4. Compared to the wavelengths of high-pitched sounds, the wavelengths of low-pitched sounds are
   (long) (short)

5. Suppose you set your watch by the sound of the noon whistle from a factory 3 km away.

   a. Compared to the correct time, your watch will be
      (behind) (ahead)

   b. It will differ from the correct time by
      (3 seconds) (6 seconds) (9 seconds)

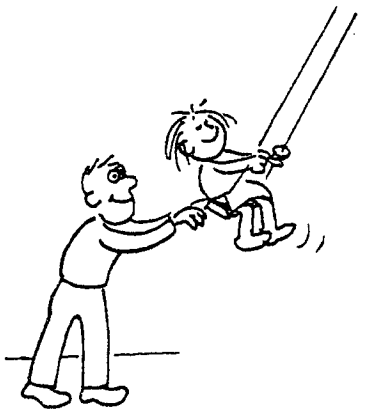


Conceptual PHYSICS

6. Sound waves travel fastest in

(solids) (liquids) (gases)

(...same speed in each)



7. If the child's natural frequency of swinging is once each 4 seconds, for maximum amplitude the man should push at a rate of once each

(2 seconds) (4 seconds) (8 seconds)

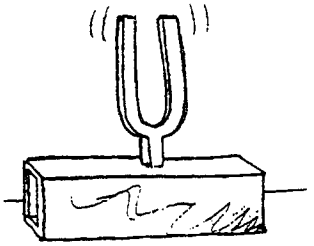
8. If the man in Question 7 pushes in the same direction twice as often, his pushes

(will) (will not)

be effective because

(the swing will be pushed twice as often in the right direction)

(every other push will oppose the motion of the swing)

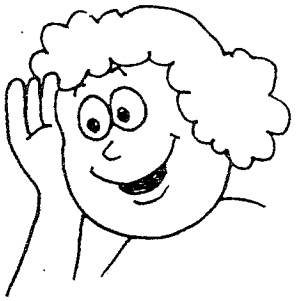


9. The frequency of the tuning fork is 440 hertz. It will NOT be forced into vibration by a sound of

(220 hertz) (440 hertz) (880 hertz)

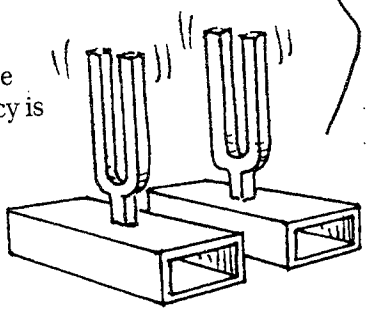
10. Beats are the result of the alternate cancellation and reinforcement of two sound waves of

(the same frequency) (slightly different frequencies)



11. Two notes with frequencies of 66 and 70 Hz are sounded together. The resulting beat frequency is

(4 hertz) (68 hertz) (136 hertz)



12. The accepted value for the speed of sound in air is 332 m/s at 0°C. The speed of sound in air increases 0.6 m/s for each Celsius degree above zero. Compute the speed of sound at the temperature of the room you are now in.