Standardized Test Prep

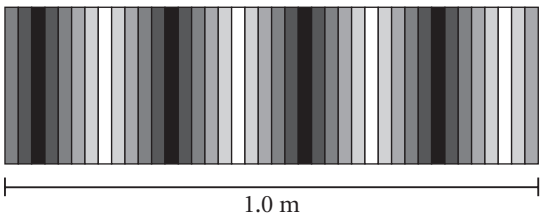
MULTIPLE CHOICE

1. When a part of a sound wave travels from air into water, which property of the wave remains unchanged?

A. speed
B. frequency
C. wavelength
D. amplitude

2. What is the wavelength of the sound wave shown in the figure below?

F. 1.00 m
G. 0.75 m
H. 0.50 m
J. 0.25 m



3. If a sound seems to be getting louder, which of the following is probably increasing?

A. speed of sound
B. frequency
C. wavelength
D. intensity

4. The intensity of a sound wave increases by 1000 W/m^2. What is this increase equal to in decibels?

F. 10
G. 20
H. 30
J. 40

5. The Doppler effect occurs in all but which of the following situations?

A. A source of sound moves toward a listener.
B. A listener moves toward a source of sound.
C. A listener and a source of sound remain at rest with respect to each other.
D. A listener and a source of sound move toward or away from each other.

6. If the distance from a point source of sound is tripled, by what factor is the sound intensity changed?

F. $\frac{1}{9}$
G. $\frac{1}{3}$
H. 3
J. 9

7. Why can a dog hear a sound produced by a dog whistle, but its owner cannot?

A. Dogs detect sounds of less intensity than do humans.
B. Dogs detect sounds of higher frequency than do humans.
C. Dogs detect sounds of lower frequency than do humans.
D. Dogs detect sounds of higher speed than do humans.

8. The greatest value ever achieved for the speed of sound in air is about 1.0×10^4 m/s, and the highest frequency ever produced is about 2.0×10^{10} Hz. If a single sound wave with this speed and frequency were produced, what would its wavelength be?

F. 5.0×10^{-6} m
G. 5.0×10^{-7} m
H. 2.0×10^{6} m
J. 2.0×10^{14} m