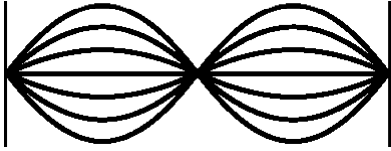


Sound Practice Quiz

Multiple Choice

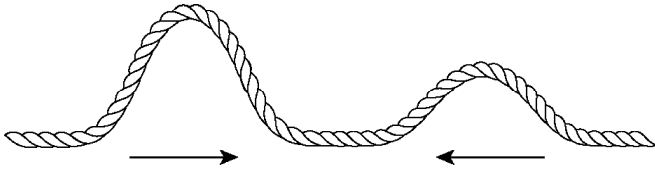
Identify the choice that best completes the statement or answers the question.



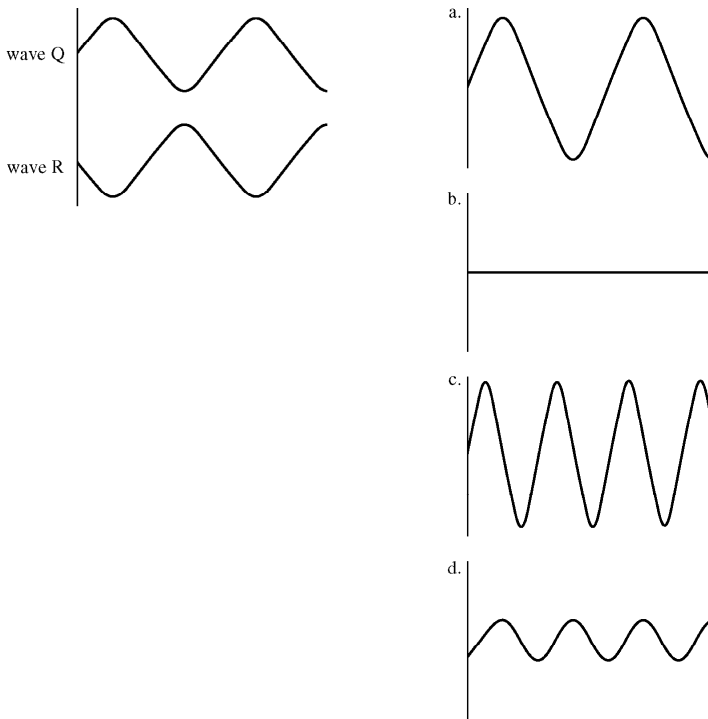
- _____ 1. How many nodes and antinodes are shown in the standing wave above?
- two nodes and three antinodes
 - one node and two antinodes
 - one-third node and one antinode
 - three nodes and two antinodes
- _____ 2. Sound waves
- are a part of the electromagnetic spectrum.
 - do not require a medium for transmission.
 - are longitudinal waves.
 - are transverse waves.
- _____ 3. Which of the following is the region of a longitudinal wave in which the density and pressure are less than normal?
- rarefaction
 - compression
 - spherical wave
 - Doppler effect
- _____ 4. Which of the following is the number of cycles per unit of time?
- infrasonic wave
 - frequency
 - ultrasonic wave
 - pitch
- _____ 5. Which statement about sound waves is correct?
- They generally travel faster through solids than through gases.
 - They generally travel faster through gases than through solids.
 - They generally travel faster through gases than liquids.
 - They generally travel faster than light.
- _____ 6. A wave in which the displacements of particles of the medium are parallel to the direction of propagation of the wave is:
- a crest
 - longitudinal
 - transverse
 - a rarefaction
- _____ 7. The velocity of a wave is a function of which one of the following?
- amplitude
 - frequency
 - medium
 - wavelength
- _____ 8. The source of all wave motion is a
- region of variable high and low pressure.
 - vibration.
 - movement of matter.
 - harmonic object.

- _____ 9. The amplitude of a particular wave is 4.0 m. The distance from crest to trough is
- 2.0 m.
 - 4.0 m.
 - 8.0 m.
 - none of the above
- _____ 10. A periodic wave has a wavelength of 0.50 m and a speed of 20 m/s. What is the wave frequency?
- 0.02 Hz
 - 20 Hz
 - 40 Hz
 - 10 Hz
- _____ 11. A musical tone sounded on a piano has a frequency of 410 Hz and a wavelength of 0.80 m. What is the speed of the sound wave?
- 170 m/s
 - 240 m/s
 - 330 m/s
 - 590 m/s
- _____ 12. A 680-Hz sound wave travels at 340 m/s in air, with a wavelength of
- 0.5 m.
 - 5 m.
 - 50 m.
 - 500 m.
 - none of the above
- _____ 13. Which of these changes when a wave refracts in passing from one medium to another?
- Speed.
 - Wavelength.
 - Frequency.
 - Only a and b.
 - All of these.
- _____ 14. Constructive interference occurs when
- the crest of one wave meets the trough of another wave.
 - two waves of the same color overlap.
 - the crests of two waves overlap.
 - all of the above
 - none of the above
- _____ 15. Resonance occurs when
- sound changes speed in going from one medium to another.
 - sound makes multiple reflections.
 - the amplitude of a wave is amplified.
 - an object is forced to vibrate at its natural frequency.
 - all of the above
- _____ 16. If you are standing equally distant from two television sets that are emitting the exact same sound waves, the sound
- is quieter because the waves destructively interfere.
 - is louder because the waves destructively interfere.
 - is quieter because the waves constructively interfere.
 - is louder because the waves constructively interfere.

- _____ 17. When two or more waves are at the same place at the same time, the resulting effect is called
- a standing wave.
 - a Doppler wave.
 - a shock wave.
 - interference.
 - a period.



- _____ 18. Which of the following types of interference will occur in the figure above?
- partial constructive
 - partial destructive
 - complete constructive
 - complete destructive



- _____ 19. In the diagram above, use the superposition principle to find the resultant wave of waves Q and R.
- a
 - b
 - c
 - d
- _____ 20. Two waves arrive at the same place at the same time exactly in step with each other. Each wave has an amplitude of 2.5 m. The resulting wave has an amplitude of
- 0.6 m.
 - 1.3 m.
 - 2.5 m.
 - 5.0 m.
 - 10.0 m.

Name: _____

ID: A

- _____ 21. Two vibrating tuning forks held side by side will create a beat frequency of what value if the individual frequencies of the two forks are 216 Hz and 224 Hz, respectively?
- | | |
|---------|---------|
| a. 6 Hz | c. 9 Hz |
| b. 8 Hz | d. 3 Hz |
- _____ 22. Two vibrating tuning forks held side by side will create a beat frequency of what value if the individual frequencies of the two forks are 567 Hz and 565 Hz, respectively?
- | | |
|---------|---------|
| a. 8 Hz | c. 2 Hz |
| b. 5 Hz | d. 7 Hz |
- _____ 23. Two notes have a beat frequency of 4 Hz. The frequency of one note is 420 Hz. What is the frequency of the other note?
- | | |
|---------------------|---------------------|
| a. 422 Hz or 418 Hz | c. 424 Hz or 416 Hz |
| b. 105 Hz | d. 1680 Hz |
- _____ 24. Two violin players tuning their instruments together hear 8 beats in 2 s. What is the frequency difference between the two violins?
- | | |
|---------|----------|
| a. 2 Hz | c. 8 Hz |
| b. 4 Hz | d. 16 Hz |