

Quiz.

1. Which of the following is not a transverse wave?
 - a) light
 - b) radio
 - c) infrared
 - d) sound
 - e) ocean
 - f) stadium

2. During a single period, the distance traveled by a wave is
 - a) half of a wavelength
 - b) one wavelength
 - c) two wavelengths

3. Which type of pendulum would have the longest period, (all others being the same)?
 - a) a long pendulum
 - b) a heavy pendulum
 - c) a short pendulum
 - d) all pendulums have the same period

4. The displacement of a transverse wave propagates in a direction
 - a) parallel to the direction of wave travel
 - b) perpendicular to the direction of wave travel
 - c) diagonal to the direction of wave travel

5. When two identical waves occupy the same space at the same time,
 - a) they subtract.
 - b) they cancel.
 - c) they double.

6. The higher the frequency, the _____ the period.
 - a) shorter
 - b) longer
 - c) slower

7. The source of all waves is something that is
 - a) vibrating.
 - b) moving.
 - c) accelerating.

8. Light can travel through (Circle all that apply.)
 - a) air.
 - b) a vacuum.
 - c) water.
 - d) glass.

9. Which would you experience first when watching a distant firework show?
- a) I would hear the fireworks first.
 - b) I would see the fireworks first.
 - c) I would see and hear the fireworks at the same time.

Answer Key.

1. d)

Sound waves are longitudinal waves.

2. b)

The wavelength of a wave is the distance a wave travels over one period.

3. a)

Longer pendulums have more rotational inertia, so it is more difficult to change their rotational motion, and they take longer to oscillate.

4. b)

Think about a stadium wave: the wave travels across the entire stadium from right to left or left to right, but each person only moves up and down.

5. c)

Constructive interference occurs when overlapping waves add. Destructive interference occurs when overlapping waves subtract. The more similar the waves are the more they add, and the more opposite the waves are the more they subtract.

6. a)

Frequency and period are inversely proportional to each other.

7. a)

In order to have a perfectly repeating pattern, the source must be oscillating or vibrating.

8. a), b), c), & d)

Light does not need a medium to travel through, however it can travel through media. Some glass is opaque to certain wavelengths of light, however.

9. b)

The speed of light is faster than the speed of sound.