

Review - WAVES

I. MATCHING:

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|-------|--|--------------------|
| _____ | 1. the low point of a transverse wave | a. amplitude |
| _____ | 2. distance from the top of a crest to the equilibrium position | b. longitudinal |
| _____ | 3. waves that can travel through empty space | c. electromagnetic |
| _____ | 4. unit for measuring frequency | d. frequency |
| _____ | 5. a traveling wave which causes matter to move at right angles to the direction of the wave | e. hertz |
| _____ | 6. the distance a wave travels during one complete vibration | f. interference |
| _____ | 7. a wave that causes matter to move back and forth parallel to the direction of the wave | g. reflection |
| _____ | 8. the bouncing back of a wave form a surface | h. medium |
| _____ | 9. the number of waves that pass a certain point each second | i. trough |
| _____ | 10. the result of waves moving through each other | j. compression |
| _____ | 11. the time it takes for one complete vibration | k. period |
| _____ | 12. the material through which a wave travels | l. wavelength |
| | | m. transverse |

II. FILL IN THE BLANK:

1. A wave transfers _____ from one place to another.
2. A wave with a great amount of energy has a large _____.
3. Two waves travel through the same medium. They must have the same _____. If the wavelength of a wave "A" is four times that of wave "B", then the frequency of "A" is _____ that of "B".
4. Surface water waves are (transverse, longitudinal) and (electromagnetic, mechanical).
5. Radio waves are (electromagnetic, mechanical) because they do not need a _____.
6. Refraction occurs because the new medium changes the wave's _____.
7. The angles at which a wave hits and reflects from a boundary are always _____.
8. Sound waves bend around a corner because their _____ is large compared to the size of the opening. This spreading is called _____.
9. In an interference pattern, points of total destructive interference are called _____ and points of total constructive interference are called _____.
10. _____ is the decrease in the _____ of the wave due to energy lost in overcoming _____ and due to the spreading out of the wave front.
11. The frequency of a pendulum is affected by its _____, not by its _____ or _____.
12. Waves travel _____ in shallow water than in deep. When waves enter the shallow water they _____, or bend (away from,

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toward) the normal line drawn between the two levels of water.

13. You stand in the back left corner of a racquetball court and hit the ball to the middle of the front wall. Your opponent should stand _____ to return the ball.
14. Waves reflected from a flexible boundary are (erect, inverted).
15. When a wave reaches a new medium which is very different from the old, most of the wave will be _____ and a little will be _____.
16. When a wave passes into a new medium, its (f, λ, v) does not change, but its (f, λ, v) and (f, λ, v) do change.

III. PROBLEMS:

1. The speed of sound in air is 346 m/s. A sound wave has a frequency of 750 Hz. What is its wavelength?

What is its period?

2. It is observed that 15 waves hit the shore every 10 minutes. The distance between successive crests is 3.2 m. What is the frequency of the waves in Hz?

What is the velocity of the waves?

3. In figure A, draw the reflected wave, label angles, and draw wave fronts. In figure B, draw the refracted waves, label angles, and draw wave fronts.

