

Name _____ Hour _____

PHYSICS: Answer Sheet for Week 2- Sound Waves----40 points

1. What is the source of all sound?
2. How does pitch relate to frequency?
3. What is the average frequency range of a young person/s hearing?
4. Light can travel through a vacuum, as is evidenced when you see the sun or moon. Can sound travel through a vacuum also? Explain why or why not.
5. If the moon blew up, why wouldn't we be able to hear it?
6. How fast does the speed of sound in air compare with its speed in water and steel?
7. How does air temperature affect the speed of sound?
8. How does the speed of sound in air compare with its speed in water and in steel?
9. Why does sound travel faster in solids and liquids than in gases?
10. Sound intensity and loudness are not exactly the same. How are they different?
11. You hear a chirp of a cricket. When you move twice as close to the cricket, how much louder is the sound?

Show work>

12. Find the wavelength of a 680-Hz tone in the air, where the wave speed is 340m/s

Show work>

13. Find the wavelength of a 68,000-Hz ultrasound wave in air where it travels at 340m/s.

Show work>

14. Your teacher says Hello to you from across the gym, 34m away. How long does it take the sound to reach you. Air Speed - 340m/s

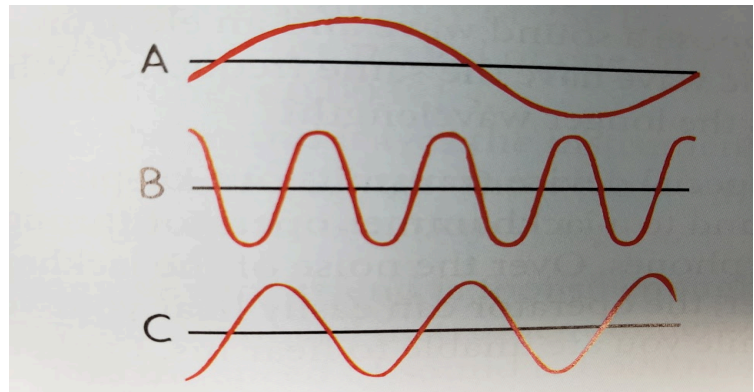
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15. You are in at the top of Dead Horse point. There is a great canyon wall across from you. You holler "HELLO" and 0.5 second later you hear your echo return softer "hello". How far away was the canyon. Air speed is 340m/s.

16. Why is an echo weaker than the original sound?

17. The three waves below have the same frequency and travel in different media. Rank their speeds from greatest to least.

Fastest Wave _____
Medium Wave _____
Slowest Wave _____



18. When watching a baseball game, we often hear the bat hitting the ball after we actually see the hit. Why?

19. When a sound wave propagates past a point in the air, what are the changes that occur in the pressure of air at this point?

20. If the speed of sound depended on its frequency, would you enjoy a concert sitting in the second balcony?

21. If the frequency of sound is doubled, what change will occur in the speed of the wave?

22. If the frequency of sound is doubled, what change will occur in the wavelength of the wave?