

Chapter 13: Sound

PRINT Name _____ Period _____

1. Define: a) Physics definition of Sound, b) Tone, c) Noise, d) Pitch, e) Quality of Sound.
2. Sound waves are Longitudinal. Explain Longitudinal.
3. Find the Speed of Sound in air at 40°C. $v = 331 \text{ m/s} + 0.6(t) \text{ m/s}$.
Ans: 355m/s.
4. Compare Intensity of Sound with Loudness of Sound.
5. State the Inverse Square Law and give Five things that obey it.
6. What is the Decibel and give some examples.
7. Diagram the Harmonics in an Open and Closed pipe resonators.
8. a) Explain the Beat Frequency. b) Give an example.
9. State the Four Laws of Strings.
10. a) Tell what causes that annoying Feedback that can occur in PA Systems. b) Why do we think we sound differently in a recording?
11. Explain the Doppler Effect and give an example.
12. Define a Transducer Microphone and give two examples.
13. Show how a Loudspeaker converts electrical signals into sound.
14. Find the speed of a wave whose frequency is 100.0 Hz and whose wavelength is 5.00 m. $v = f \lambda$ Ans: 500m/s.
15. Find the distance to a thunder clap when the time for the sound to arrive is 18.0s at 20°C. $v = 331 \text{ m/s} + 0.6(t) \text{ m/s}$. $d = vt$,
Ans: 6170m.
16. Determine the wave length of a closed tube organ pipe that has a diameter of 0.05m and a length of 2.0m. $\lambda = 4(L + 0.4d)$.
Ans: 8.08m.