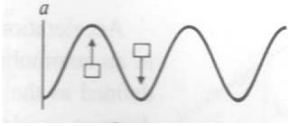


Physics 105 - Sound and Music - Homework Review questions: Quiz 1)

1. What is a wave? *A transportation of energy and information from one place to another through a medium, but the medium itself is not transported.. A disturbance ,is passed along from point to point as the wave propagates. In sound waves, it is a change in pressure and density that is transported.*
2. What is a sound source? *A sound source is a vibrating system in air.*
3. How does sound travel from a source to the detector (ear or microphone)? *Sound travel as waves in the air.*
4. What does the graphical trace for a pure tone look like? *The graphical trace for a pure tone is a sine curve.*



5. What 3 physical quantities are related in *Newton's 2nd law*? *Newton's law relates mass, force and acceleration.*
6. How does the speed of sound in air change with increasing temperature? *The speed of sound increases approximately 0.6 m/s per degree celsius increase/*
7. Give a brief definition of each of the following:
 - (a) *Force is a push or pull on an object*
 - (b) *Velocity is the distance moved (by an object) per time.*
 - (c) *Pressure is a distributed force per area.*
 - (d) *Acceleration is the rate of change of velocity (Change of velocity per time)*
 - (e) *Energy is the ability to do work*
 - (f) *Work is the force on an object times the distance the object moves..*
 - (g) *Frequency of a wave is the number of repetitions per time*
 - (h) *Period of a wave is the time to complete one full repetition.*
 - (i) *Wavelength of a wave is the distance an repetitive wave moves during one repetition.*
 - (j) *Reflection of a wave is the abrupt change in direction of wave propagation at a medium boundary.*
 - (k) *Refraction of a wave is a bending of waves when the speed of propagation changes.*
 - (l) *Constructive interference of waves is the superposition or addition of two or more identical waves which increase the amplitude.*
 - (m) *Destructive interference of waves is the superposition or addition of two or more identical wave which decrease the amplitude.*
 - (n) *Resonance is the transfer of energy to a vibrator at a natural frequency of the vibrator resulting in a large amplitude of oscillation.*
 - (o) *Vibrational node is a point or line in a vibrating system where zero amplitude occurs.*
 - (p) *Vibrational antinode is a point or line in a vibrating system where maximum amplitude occurs.*

(q) Fundamental mode of vibration is *the mode of vibration (or component of a sound) with the lowest frequency.*

(r) Overtone is *a component of sound vibration or mode with a frequency higher than that of the fundamental.*

(s) Partial is *a component of a sound vibration; includes the fundamental and the overtones*

(t) Harmonic is *a mode of vibration that is a whole number (integer) multiple of the fundamental frequency.*