

EDUCATIONAL ASSIGNMENT for JOSEPH JOHN WUNDERLICH for 11th grade

This assignment covers the following Educational Objectives (Subjects marked with a "■" are the main subject, and those marked with an "□" are secondary subjects):

- PHYSICS
- Geometry

Using only your Physics Textbook as a reference (unless noted otherwise), answer the following problems. Write in Pencil

1. Define each of the following:

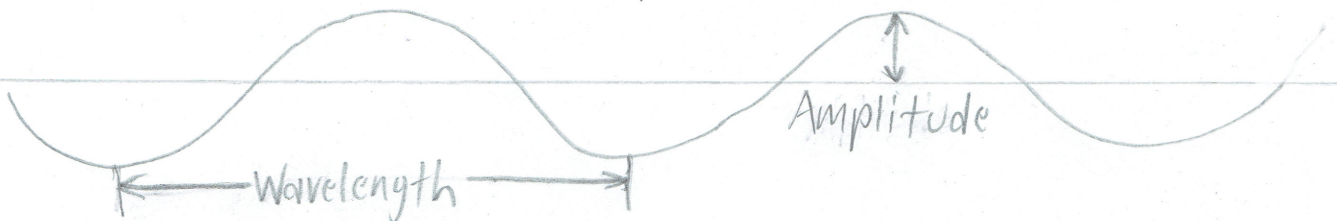
a. **WAVE OF SOUND:**

A mechanical vibration through a medium (material) that can be felt as well as heard by most living things.

b. **WAVE OF LIGHT:**

A vibration of electric and magnetic fields that is the fastest moving wave known to be possible. It can move through a vacuum.

2. Draw a picture of a **SINE WAVE (curve)** including labeling it's **WAVELENGTH** and **AMPLITUDE**

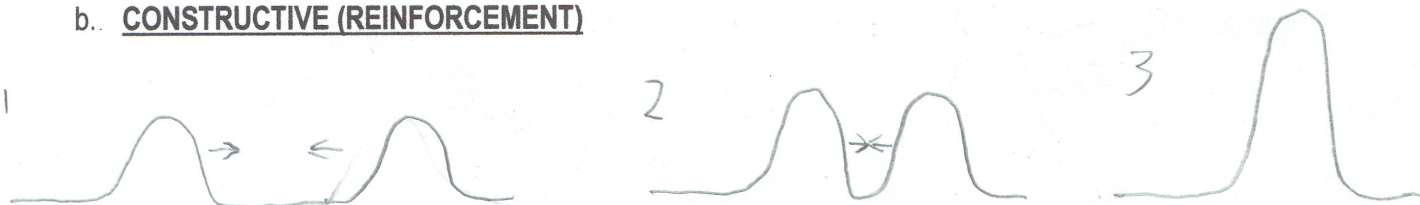


3. Draw a pictures describing **WAVE INTERFERENCE**

a. **DESTRUCTIVE (CANCELATION)**



b. **CONSTRUCTIVE (REINFORCEMENT)**



4. Describe with both pictures and words how the **DOPPLER EFFECT** works. For this problem, first read carefully everything in your Physics Textbook, then go on-line and do a little research.

The Doppler effect is a change in frequency of waves depending on the location of the receiver.

Person A receives a lower frequency of sound waves from the air plane. Person B will receive a greater frequency of sound once the plane passes over him and will feel the change much more strongly than Person A.

(Drawing of Doppler)

