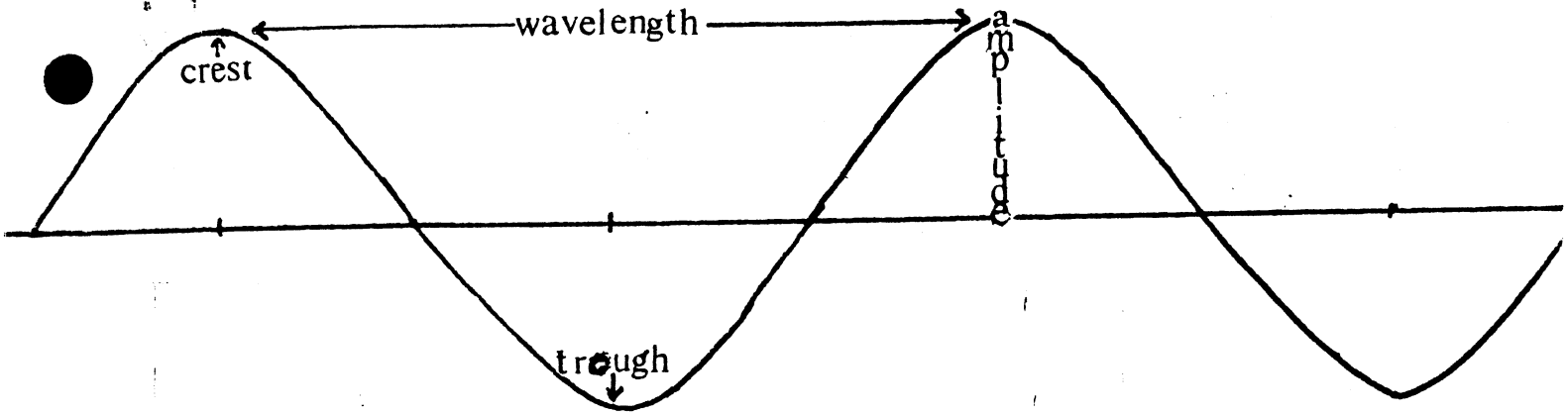
PARTS OF A WAVE



SINE WAVE-- Light's magnetic and electric vectors oscillate across space as a sine wave. A sine wave is the graph of the trigonometric function y=rsin O, derived from the relationships of sides and angles in a right triangle.

CREST-- The highest point or maximum of a wave.

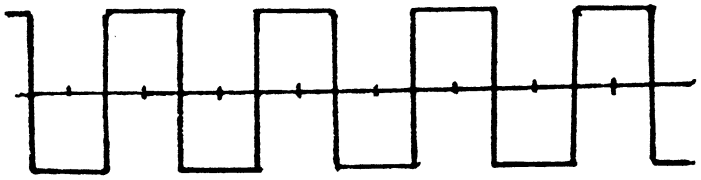
TROUGH--The lowest point or minimum of a wave.

AMPLITUDE--is one-half the distance from crest to trough. It is used to measure intensity.

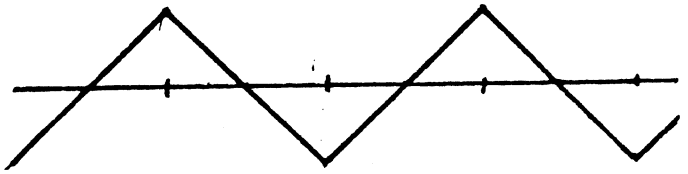
WAVELENGTH--represented by the Greek letter λ, is the distance between two consecutive crests. For visible light the wavelengths are between 400 and 700 nm.

FREQUENCY--tells how often a wave goes through a complete cycle from crest to crest in a unit of time. The unit commonly used to denote frequency is a Hertz, (Hz), one cycle per second, and the range of frequencies for light starts at 430 trillion Hz for red light and goes to about 750 trillion Hz for blue.

NOT ALL WAVES ARE SINE WAVES



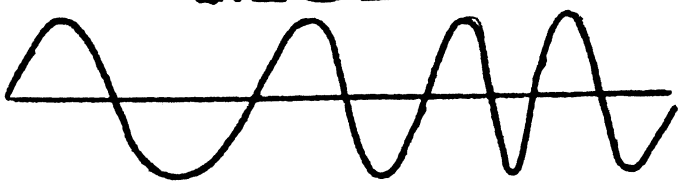
SQUARE WAVE



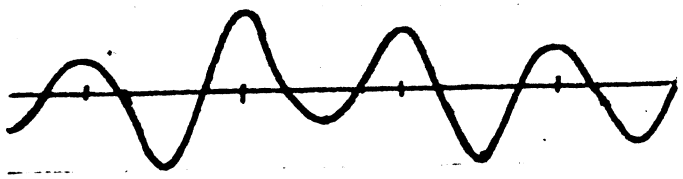
DELTA OR TRIANGULAR WAVE

The above terms are applicable to these waves.

MODULATED WAVES

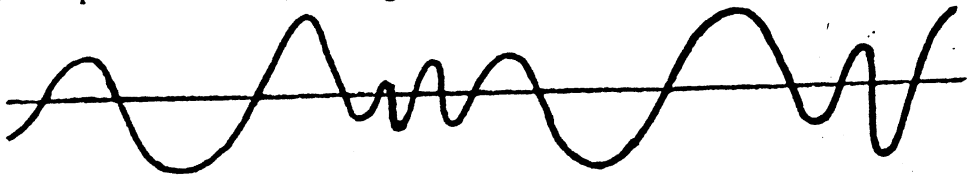


Wave of constant amplitude but varying frequency (Frequency Modulated)



Wave of constant frequency but varying amplitude (Amplitude Modulated)

The waves of light which are used for making holograms must be temporally coherent; that is, their frequencies or wavelengths do not change.



Wave of constant amplitude and frequency