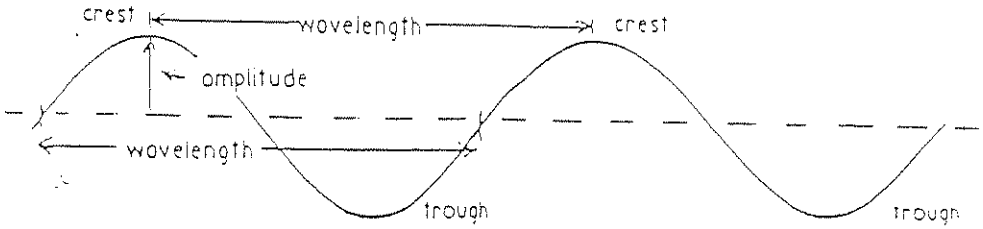
Name: _____ Period: _____ Date Due: _____ EN ____

Anatomy of A Wave

Short and Long Wavelengths

The sine curve is a pictorial representation of a wave—the high points being *crests*, and the low points *troughs*. The height of the wave is its *amplitude*. The wavelength is the distance between successive identical parts of the wave (like between crest to crest, or trough to trough). Wavelengths of water waves at the beach are measured in meters, wavelengths of ripples in a pond are measured in centimeters, and the wavelengths of light in billionths of a meter (nanometers).



In the boxes below sketch three waves of the same amplitude—Wave A with half the wavelength of Wave B, and Wave C with wavelength twice as long as Wave B.

Wave A

Wave B

Wave C

1) If all three waves have the same speed, which has the highest frequency? _____

2) Compared with solar radiation, terrestrial radiation has a _____ wavelength

3) In a florist's greenhouse, _____ waves are able to penetrate the greenhouse glass, but _____ waves cannot.

4) The Earth's atmosphere is similar to the glass in a greenhouse. If the atmosphere were to contain excess amounts of water vapor and carbon dioxide, the air would be opaque to _____ waves.