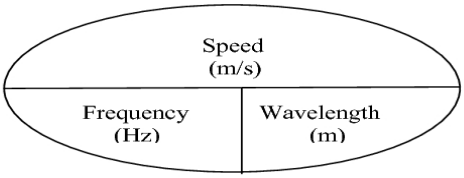
Mr. Niedenzu Chemistry I Name:_____

Speed /Frequency / Wavelength Quiz

Equation: Speed of all Electromagnetic Spectrum Waves (c) = 3.0 x 10^8 m/s

Speed of light (m/s) = Frequency x Wavelength
Frequency (Hz) = Speed ÷ Wavelength **Wavelength (m) = Speed ÷ Frequency**



1. Violet light has a wavelength of 4.10 x 10^{-12} m. What is the frequency?

2. Green light has a frequency of 6.01 x 10^{14} Hz. What is the wavelength?

3. What is the wavelength (in meters) of the electromagnetic carrier wave transmitted by <u>The Sports Fan</u> radio station at a frequency of 640 Hz?

4. Calculate the wavelength of radiation with a frequency of 8.0 x 10^{14} Hz.

5. What is the wavelength of light with a frequency of 7.66 x 10^{14} Hz?

6. A helium laser emits light with a wavelength of 633 nm. What is the frequency of the light?

7. What is the wavelength of X-rays having a frequency of 4.80 x 10^{17} Hz?

8. An FM radio station broadcasts at a frequency of 107.9 MHz. What is the wavelength of the radio signal?
(Hint: First, convert Mega Hertz [MHz] into Hertz by multiplying by 10^6)