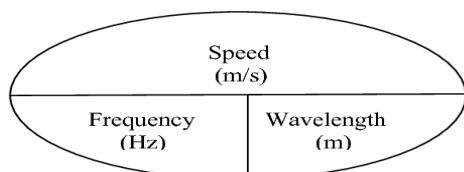


**Speed / Frequency / Wavelength Quiz****Equation: Speed of all Electromagnetic Spectrum Waves (c) =  $3.0 \times 10^8$  m/s****Speed of light (m/s) = Frequency x Wavelength****Frequency (Hz) = Speed  $\div$  Wavelength      Wavelength (m) = Speed  $\div$  Frequency**

1. Violet light has a wavelength of  $4.10 \times 10^{-12}$  m. What is the frequency?
2. Green light has a frequency of  $6.01 \times 10^{14}$  Hz. What is the wavelength?
3. What is the wavelength (in meters) of the electromagnetic carrier wave transmitted by The Sports Fan radio station at a frequency of 640 Hz?
4. Calculate the wavelength of radiation with a frequency of  $8.0 \times 10^{14}$  Hz.
5. What is the wavelength of light with a frequency of  $7.66 \times 10^{14}$  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  $4.80 \times 10^{17}$  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  $10^6$ )