Advanced Honors Chemistry   Name _____

Mr. Stine   Date _____

Electromagnetic Radiation Worksheet #1 Light as Waves

Use the equation $c = \lambda \nu$ to solve the following problems.

c = the speed of light ($2.998 * 10^8$ m/sec)

λ = wavelength measured in meters.

ν = frequency (unit is sec^{-1} or hertz (Hz))

Conversions

1nm = 1×10^{-9}m or 1,000,000,000 nm = 1m, 100cm = 1m

1. What is the frequency in hertz of red light having a wavelength of 710 nm

2. Ozone protects the earth's inhabitants from the harmful effects of ultraviolet light arriving from the sun. This shielding is a maximum for UV light having a wavelength of 295 nm. What is the frequency in hertz of this particular wavelength of UV light?

3. Radar signals are also part of the electromagnetic spectrum in the microwave region. A typical radar signal has a wavelength of 3.19 cm. What is the frequency in hertz?

4. AM radio dials are calibrated in frequency. A certain AM Brockville radio station broadcasts at a frequency of 830 kHz. What is the wavelength of these radiowaves expressed in meters?