NAME: **HONORS CHEMISTRY**

SECTION: Wavelength, Energy and Frequency

Write the two light equations here: You will need to memorize the equations

List the following constants (you do not need to memorize the constants)

Planck’s constant: Speed of light:

conversion between m and nanometers:

Problems for you to solve: Write the relevant equation, show all your work and report your answer with an appropriate number of significant figures.

1. Calculate the frequency of a wave whose wavelength is 5.0 x 10-6 m.
2. Calculate the wavelength, in m, of a wave with a frequency of 8.5x 1012 s-1.
3. Calculate the energy associated with a photon with a frequency of 4.90 x 1015 s-1.
4. Calculate the frequency of a photon of light with an energy of 7.23 x 10-17 J.
5. A photon has a wavelength of 766 nm. What is its energy, in joules?
6. Calculate the wavelength, in nm, of a photon with an energy of 3.02 x 10-21 J.
7. A photon of light has a frequency of 8.69 x 1014 s-1. What is its energy (in joules) and wavelength (in meters)?
8. A photon of electromagnetic radiation has an energy of 2.65 x 10-18 J. What is its frequency in Hz (s-1) and wavelength (in meters)?