**Ch 13.1 Circular Motion** Page 449 - Practice Problems A– Electromagnetic Waves

1. Gamma-ray bursters are objects in the universe that emit pulses of gamma rays with high energies. The frequencies of the most energetic bursts has been measured at around 3.0x 1021 Hz. What is the wavelength of these gamma rays?
2. What is the wavelength range for the FM radio band (88 MHz – 108 MHz)?
3. Shortwave radio is broadcast between 3.50 and 29.7 MHz. To what range of wavelength does this correspond? Why do you suppose this part of the spectrum is called shortwave radio?
4. What is the frequency of an electromagnetic wave if it has a wavelength of 1.0 km?
5. The portion of the visible spectrum that appears brightest to the human eye is around 560 nm in wavelength, which corresponds to yellow-green. What is the frequency of 560 nm light?
6. What is the frequency of highly energetic ultraviolet radiation that has the wavelength of 125 nm?