Name _____   Period _____

Chemistry
Worksheet on Electromagnetic Radiation #2

$c = 3.00 \times 10^8$ m/s $h = 6.626 \times 10^{-34}$ Js

1) A microwave has a wavelength of about 1.0 cm. What is the frequency of one photon of this radiation?

2) What is the energy of the photon in question #1?

3) Some red light has a wavelength of 675 nm. What is the frequency of this light?

4) What is the energy of the photon in question #3?

5) A radio station has a frequency of 100.3 MHz. What is it's wavelength?

6) What is the energy of one photon of the radiation in question 5?

7) A television remote control operates on a frequency of 38 KHz. What is the wavelength and energy of this signal?

8) In England radio stations are identified by their wavelength and not their frequency. One station operates at 3.14 m. What is the frequency and energy of this radio station?

9) The bright line spectrum of Hydrogen has a line at 486 nm. What is the frequency and energy of this line?

10) X-Rays can have a frequency of 3.0×10^{16} Hz. What is the wavelength and energy of 10 photons of this radiation?