The photon model of EM radiation

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Use $h = 6.64 \times 10^{-34}$ J s and $c = 3.0 \times 10^8$ m s^{-1}.

1. Calculate the energies of the photons for

   (a) a frequency of 5×10^{14} Hz
   (b) a frequency of 2.2×10^7 Hz

2. Calculate the photon energies for

   (a) microwaves, wavelength 3.0 cm
   (b) red light, wavelength 700 nm,
   (c) X-rays, wavelength 10^{-11} m

3. Estimate the number of photons per second coming off a 100 W light bulb.
   (For the wavelength, find the wavelength of red and blue light and average it).