

### Chapter 4 problems

1. Calculate the frequency of a light wave that has a wavelength of  $2.44 \times 10^{-8} \text{m}$ .
2. Calculate the wavelength of a light wave that has a frequency of  $9.78 \times 10^{22} \text{ Hz}$ .
3. Calculate the frequency of a light wave that has a wavelength of  $400. \text{ nm}$ .
4. Calculate the energy of a photon that has a frequency of  $5.454 \times 10^{35} \text{ Hz}$ .
5. Calculate the energy of a photon that has a frequency of  $9.44 \times 10^{22} \text{ Hz}$ .
6. Calculate the energy of a photon that has a wavelength of  $1.45 \times 10^{-9} \text{m}$ .
7. Calculate the energy of a photon that has a wavelength of  $211 \text{ nm}$ .