

1) What is a photon? \_\_\_\_\_

2) What is a quantum? \_\_\_\_\_

3) What is the formula relating energy and frequency? \_\_\_\_\_

4) What do each of the following stand for in energy formulas?

E = \_\_\_\_\_ c = \_\_\_\_\_

h = \_\_\_\_\_  $\lambda$  = \_\_\_\_\_

v = \_\_\_\_\_ Hz = \_\_\_\_\_

5) What is the energy of one photon of light with a frequency of  $4.31 \times 10^{14}$  Hertz?

[ $2.86 \times 10^{-19}$  J]

E = \_\_\_\_\_

h = \_\_\_\_\_

v = \_\_\_\_\_

6) How much energy does a quantum of light with a frequency  $6.26 \times 10^{14}$  Hertz have?

[ $4.15 \times 10^{-19}$  J]

E = \_\_\_\_\_

h = \_\_\_\_\_

v = \_\_\_\_\_

7) A quantum of light has a wavelength of 610. nm. (a) What color is the light? \_\_\_\_\_

(b) How much energy does the quantum have?

[ $3.26 \times 10^{-19}$  J]

E = \_\_\_\_\_ c = \_\_\_\_\_

h = \_\_\_\_\_  $\lambda$  = \_\_\_\_\_

v = \_\_\_\_\_ v = \_\_\_\_\_

8) (a) What is the energy of a photon of light of wavelength 504 nm?

[ $3.94 \times 10^{-19}$  J]

E = \_\_\_\_\_ c = \_\_\_\_\_

h = \_\_\_\_\_  $\lambda$  = \_\_\_\_\_

v = \_\_\_\_\_ v = \_\_\_\_\_

(b) What color is the light? \_\_\_\_\_