

Directions: Answer the following problems. Show your work for chance at partial credit. Box in your answer.

$c = f\lambda$        $E = hf$        $h = 6.6 \times 10^{-34} \text{ J} \cdot \text{s}$        $c = 3 \times 10^8 \text{ m/s}$        $m = 1 \times 10^9 \text{ nm}$

1. What is the wavelength of light having a frequency of  $4.5 \times 10^{14} \text{ Hz}$  ?
  
  
  
  
  
  
  
  
  
  
2. What is the frequency of light having a wavelength of  $6.0 \times 10^{-7} \text{ m}$  ?
  
  
  
  
  
  
  
  
  
  
3. What would be the color of light in: (Use diagram on back)  
A. problem #1 \_\_\_\_\_  
B. problem #2 \_\_\_\_\_
  
  
  
  
  
  
  
  
  
  
4. What is the wavelength of light having a frequency of  $4.8 \times 10^{14} \text{ Hz}$  ?
  
  
  
  
  
  
  
  
  
  
5. What is the frequency of light having a wavelength of  $6.8 \times 10^{-7} \text{ m}$  ?

6. What is the ENERGY of orange light whose frequency is  $4.9 \times 10^{14}$  Hz ?

7. What is the ENERGY of green light whose frequency is  $5.2 \times 10^{14}$  Hz ?

8. What is the ENERGY of light whose WAVELENGTH is  $4.1 \times 10^{-7}$  m ?

