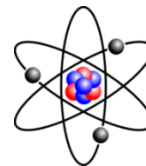Name:

COLONIAL CHRISTIAN SCHOOL

Physical Science MATH Light Assignment

Directions: Sign the pledge; write the formula that you use for each question; show all your work; circle your final answer.

I promise that I have neither given nor received any information beyond that permitted by the instructor. **Signed:**

$c = \lambda f$
$E = hf$
c: speed of light 3.00×10^8 m/s
λ: Wave Length in **m**
f: Frequence in **Hz** or **s^{-1}**
h: Plank's Constant 6.63×10^{-34} **joule sec**
E: Energy in **J/s** or **kgm^2/s^3**

Color	Wave Length (λ) Write in Sci Notation	Frequency in Hz Write in Sci Notation	Energy in Joules Write in Sci Notation
Violet (Example)	**400 nm** $= 4.00 \times 10^{-7}$	$c = \lambda f$ $3.00 \times 10^8 = 4.00 \times 10^{-7} f$ $3.00 \times 10^8 / 4.00 \times 10^{-7} = f$ $0.75 \times 10^{15} =$ $7.5 \times 10^{14} = f$	$E = h f$ $E = 6.63 \times 10^{-34} (7.5 \times 10^{14})$ $E = 4.97 \times 10^{-19}$
Indigo	**445 nm**		
Blue	**475 nm**		
Green		**5.88 x 10^{14} Hz**	
Yellow		**5.26 x 10^{14} Hz**	
Orange			**3.37 x 10-19**
Red			**3.26 x 10-19**
Cell Phone	**12 cm**		
Typical X-Ray	**0.01 nm**		