

(6/34) $n=2 \rightarrow n=6$

$E = R_H \left(\frac{1}{n_i^2} - \frac{1}{n_f^2} \right) \rightarrow \frac{hc}{\lambda} = E$

$= 2.18 \times 10^{-18} \left(\frac{1}{2^2} - \frac{1}{6^2} \right)$

$E = 4.84 \times 10^{-19} \text{ J}$ Absorbed.

$E = hf$
 $f = \frac{c}{\lambda}$
 $\lambda = \frac{hc}{E}$

$\lambda = \frac{(6.63 \times 10^{-34})(3 \times 10^8)}{4.84 \times 10^{-19}} = 4.11 \times 10^{-7} \text{ m}$

$4.11 \times 10^{-7} \text{ m}$
 411 nm

$\lambda = 10^{-9} \text{ m}$
 nano meter

Find λ in nm
 + color

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(6.41a) 85 kg $\frac{50 \text{ km}}{\text{hr}}$

$\frac{50 \text{ km}}{\text{hr}} \times \frac{1000 \text{ m}}{1 \text{ km}} \times \frac{1 \text{ hr}}{3600 \text{ sec}} = 13.89 \text{ m/sec}$

$\lambda = \frac{h}{mv}$

$= \frac{6.63 \times 10^{-34} \text{ J}\cdot\text{sec}}{(85)(13.89)}$

$5.6155 \times 10^{-37} \text{ m}$

$J = \frac{\text{kg}\cdot\text{m}^2}{\text{sec}^2}$

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