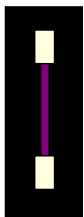


The Four Problems...

1. Atomic structure: why aren't the electrons in the nucleus?



2. Why do gases glow when electrified?

3. Why are only certain colors seen?



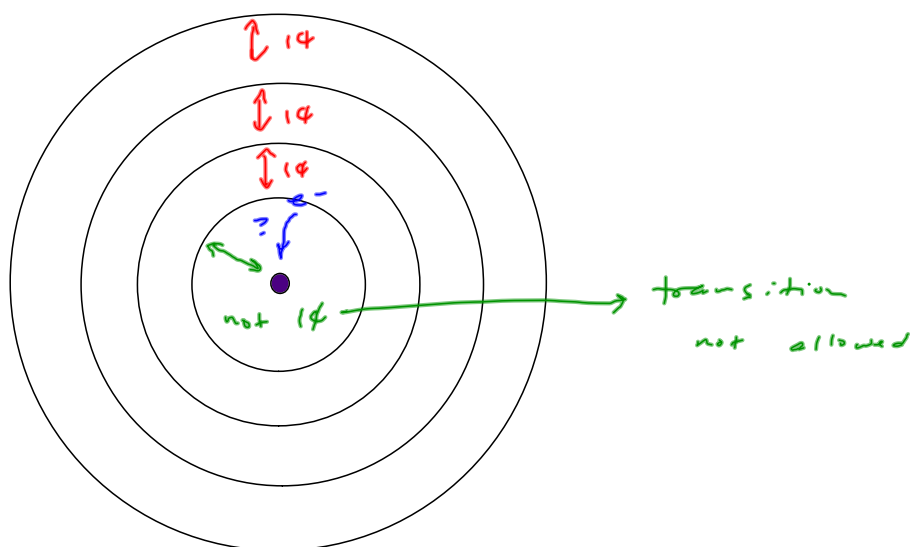
4. $1/\lambda = R(1/1 - 1/n^2)$?

$1/\lambda = R(1/9 - 1/n^2)$?

$1/\lambda = R(1 - 1/n^2)$?

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Bohr's Answer



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$$c = \lambda \nu$$

$$E = h \nu$$

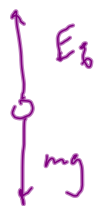
$$E = -k \left(\frac{1}{4} - \frac{1}{n^2} \right)$$

$$E = \overset{-k}{\downarrow} \underbrace{Rhc}_{\text{to from}} \left(\frac{1}{n_1^2} - \frac{1}{n_2^2} \right)$$

$$E = -k \left(\frac{1}{n_1^2} - \frac{1}{n_2^2} \right) \leftarrow$$

$$\frac{1}{\lambda} = R \left(\frac{1}{n_1^2} - \frac{1}{n_2^2} \right) \leftarrow$$

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$$\checkmark \quad ? \quad = \quad ? \quad \checkmark$$

$$E_b = mg$$

Oct 2-8:44 AM

Diagram 1 (Top): A particle moving in a circular path in a magnetic field. The forces are balanced: $F_{cent} = F_{mag}$. The equation $\frac{v}{r} = B \sin(\theta)$ is written.

Diagram 2 (Bottom): A particle moving in a straight line in a crossed electric and magnetic field. The forces are balanced: $F_{mag} = F_{esuc}$. The velocity is given by $v = \frac{E}{B}$. The equations $\frac{mE}{B} = Bb$ and $\frac{E}{B^2} = \frac{q}{m}$ are written.

Oct 2-8:53 AM