

③

$$E_n = - \frac{\mu k e^2}{2 m a_0} \left(\frac{1}{n^2} \right)$$

$$\mu = \frac{m M}{M + m}$$

$$\mu = m/2 \rightarrow E_n = - \frac{k e^2}{4 a_0} \left(\frac{1}{n^2} \right) = - \frac{13.6}{2 n^2}$$

$$L = n \hbar = |\vec{r} \wedge \vec{p}| = m v r$$

$$F = m a_c = \frac{m v^2}{r} = + \frac{k e^2}{r^2} \rightarrow r = + \frac{k e^2}{m v^2} = + \frac{k e^2}{2 T} = + \frac{k e^2}{2 E}$$

$$E = T + V = T - \frac{k e^2}{r} = T - \frac{k e^2}{k e^2 / 2 T} = - T$$

$$r_n = \frac{m a_0 n^2}{\mu}$$