1. $H = -\frac{\hbar^2}{2\mu}\nabla^2 - \frac{e^2}{4\pi\epsilon_0}\frac{1}{r}$

2. $a = \frac{4\pi\epsilon_0\hbar^2}{\mu e^2}$

3. $E_n = -\frac{\hbar^2}{2\mu a^2 n^2} = \frac{\mu e^4}{2(4\pi\epsilon_0)^2\hbar^2 n^2}$

    - $E_1 = 13.6\,\mathrm{eV}$