1. Use Heisenberg's uncertainty principle to calculate the energy of an electron
(1) assuming the electron is confined to the nucleus (find an appropriate nucleus size)

$\Delta X := 10^{-15}\ m$

$\Delta P \geq \frac{\hbar}{2 \cdot \Delta X}$ $\qquad$ $\frac{\hbar}{2 \cdot \Delta X} = \left(5.273 \cdot 10^{-20}\right)\ \frac{kg \cdot m}{s}$

$m := 9.10938356 \cdot 10^{-31}$ $\qquad$ $\Delta P := 5.273 \cdot 10^{-20}$

$V := \frac{\Delta P}{m} = 5.789 \cdot 10^{10}$

$Kinetic\_Energy := \frac{m \cdot V^2}{2} = 1.526 \cdot 10^{-9}$