

(10.8) Calculate the mass of an electron accelerated through a potential of  $2 \cdot 10^8$  V.

$$MeV := 1.60217733 \cdot 10^{-13} \cdot \text{joule} \quad amu := 1.6605402 \cdot 10^{-27} \cdot \text{kg}$$

$$m_{0e} := 5.4857990 \cdot 10^{-4} \cdot amu \quad E_e := 2 \cdot 10^8 \cdot 10^{-6} \cdot MeV$$

$$\Delta m_e := \frac{E_e}{931.5 \cdot \frac{MeV}{amu}}$$

From  $E = m \cdot c^2$  as in eqn. (10.3)

$$m_e := m_{0e} + \Delta m_e$$

$$m_e = 3.574 \cdot 10^{-28} \cdot \text{kg}$$

$$m_e = 0.2153 \cdot amu$$