

Problem 48

An electron has a mass of 9.11×10^{-31} kg. A proton has a mass of 1.67×10^{-27} kg. What is the mass of a proton in electron-masses?

Solution

Starting with the mass of a proton, multiply by the appropriate conversion factors so that electron-masses appears in the numerator.

$$1.67 \times 10^{-27} \cancel{\text{kg}} \times \frac{1 \text{ electron-mass}}{9.11 \times 10^{-31} \cancel{\text{kg}}} \approx 1830 \text{ electron-masses}$$