

52. In Eq. 44-13,

$$\begin{aligned} Q &= (2m_{2\text{H}} - m_{3\text{He}} - m_n)c^2 \\ &= [2(2.014102 \text{ u}) - 3.016049 \text{ u} - 1.008665 \text{ u}](931.5 \text{ MeV/u}) \\ &= 3.27 \text{ MeV} . \end{aligned}$$

In Eq. 44-14,

$$\begin{aligned} Q &= (2m_{2\text{H}} - m_{3\text{H}} - m_{1\text{H}})c^2 \\ &= [2(2.014102 \text{ u}) - 3.016049 \text{ u} - 1.007825 \text{ u}](931.5 \text{ MeV/u}) \\ &= 4.03 \text{ MeV} . \end{aligned}$$

Finally, in Eq. 44-15,

$$\begin{aligned} Q &= (m_{2\text{H}} + m_{3\text{H}} - m_{4\text{He}} - m_n)c^2 \\ &= [2.014102 \text{ u} + 3.016049 \text{ u} - 4.002603 \text{ u} - 1.008665 \text{ u}](931.5 \text{ MeV/u}) \\ &= 17.59 \text{ MeV} . \end{aligned}$$