(5.4) ^{16}N decays through β- decay to ^{16}O with a half-life of 7.1 s. A number of very energetic gammas follow after the β-emission, the dominating one with an energy of 6.14 MeV. What is the ^{16}O recoil energy?

Mdc2 stands for $m_d * c^2$ calculated from $E = m\,c^2$.

$MeV := 1.60217733 \cdot 10^{-13} \cdot joule$ $keV := 10^{-3} \cdot MeV$

$E_\gamma := 6.14 \cdot MeV$ $M_d := 16$ Because the mass of the daughter is 16.

$Mdc2 := M_d\, 931.5 \cdot MeV$ Eqn. (5.28)

$$E_d := \frac{E_\gamma^2}{2 \cdot Mdc2}$$ Eqn. (5.48)

$E_d = 0.001 \cdot MeV$ or $E_d = 1.26 \cdot keV$