P # 30

Ch 29 - pg 929

$$^{238}_{92}U \rightarrow {}^{234}_{90}Th + {}^{4}_{2}He$$

$m_U = 238.050784\ u$

$m_{Th} = 234.043583\ u$

$m_{He} = 4.002602\ u$

(from App. B)

$$\Delta m = (m_U) - (m_{Th} + m_{He})$$

$$= (238.050784) - (234.043583 + 4.002602\ u)$$

$$\Delta m = .004599\ u$$

$$E = m \cdot c^2$$

$$= (.004599\ u) \cdot \frac{931\ MeV}{c^2} \cdot c^2$$

$$\boxed{E = 4.28\ MeV}$$