

(23)

$$E = mc^2$$

$$J = \text{Kg} \frac{\text{m}^2}{\text{sec}^2}$$

$$3.8 \times 10^{-12} \text{ J} = m (3 \times 10^8)^2$$

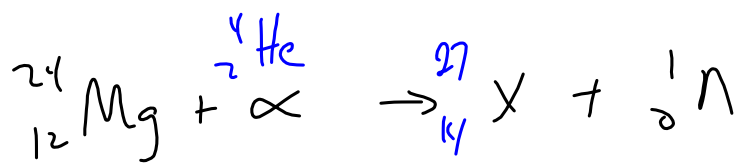
$$m = 4.26 \times 10^{-29} \text{ Kg}$$

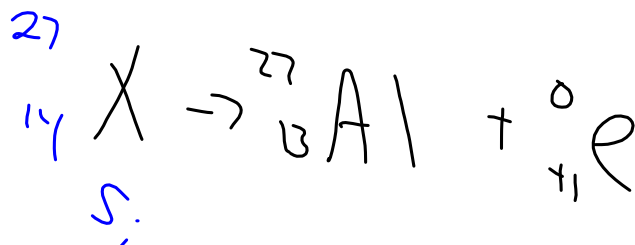
$$4.26 \times 10^{-26} \text{ g}$$

Apr 18-8:09 AM

PS21-2

(17)



$${}_{14}^{27}\text{Si}$$


Apr 18-8:16 AM

(14) $^{140}_{56}\text{Ba}$ β decay $t_{1/2} = 12.8 \text{ yr}$
 $194 \text{ g} \rightarrow 6.1 \text{ g}$ in --- yr
 $\ln A_t = -Kt + \ln A_0$
 $\ln(6.1) = \text{---} + \ln(194)$
 $K = \frac{0.693}{12.8}$

Apr 18-8:18 AM

(12) ^{24}Na , β decay, $t_{1/2} = 15 \text{ hrs}$ $K = \frac{0.693}{15}$
 0.002885 Na \rightarrow A_t
 8 AM Mon \rightarrow 8 PM WED }
 $K = 0.0462$
 Mon 8 AM \rightarrow Tues 8 AM \rightarrow WED 8 AM \rightarrow WED 8 PM $t = 60 \text{ hrs}$
 $\ln A_t = -Kt + \ln A_0$
 $\ln A_t = -(0.0462)60 + \ln 0.002885$

Apr 18-8:20 AM

HW

21 / (48)

Apr 18-8:26 AM