Half life - time it takes for ½ mass to decay. (Go bye-bye)

$E = mc^2$

Mass → energy hold nucleus together - stable.

Apr 10-8:29 AM

Nuclear - 1° rxns

$t_{1/2} = \frac{0.693}{K}$

$\ln A_t = -Kt + \ln A_0$

A_t: How much you have at time t.

A_0: Starting amount

Apr 10-9:04 AM

^{60}Co $t_{1/2} = 5.3$ yrs. 1 mg

In 15.9 yrs = ____ mg

1 → 0.5 (5.3) → 0.25 (5.3) → 0.125 mg (5.3)

Apr 10-9:06 AM

1 g ^{90}Sr, 0.953 g remains after 2 yr

(a) $t_{1/2}$ = ? (b) how much ^{90}Sr after 5 yrs

(a) $t_{1/2} = \frac{0.693}{K}$

$t_{1/2} = 28.8$ yrs

$\ln A_t = -Kt + \ln A_0$

$\ln 0.953 = -K(2) + \ln 1$

$K = 0.024\ yr^{-1}$

(b) $\ln A_t = -Kt + \ln A_0$ $A_0 = 1$ g

$\ln A_t = -(0.024)(5) + \ln 1$

$A_t = 0.887$ g after 5 yrs.

Apr 10-9:08 AM

21 / 34, 36, 40

Apr 10-9:13 AM

Apr 10-9:16 AM