21.28e

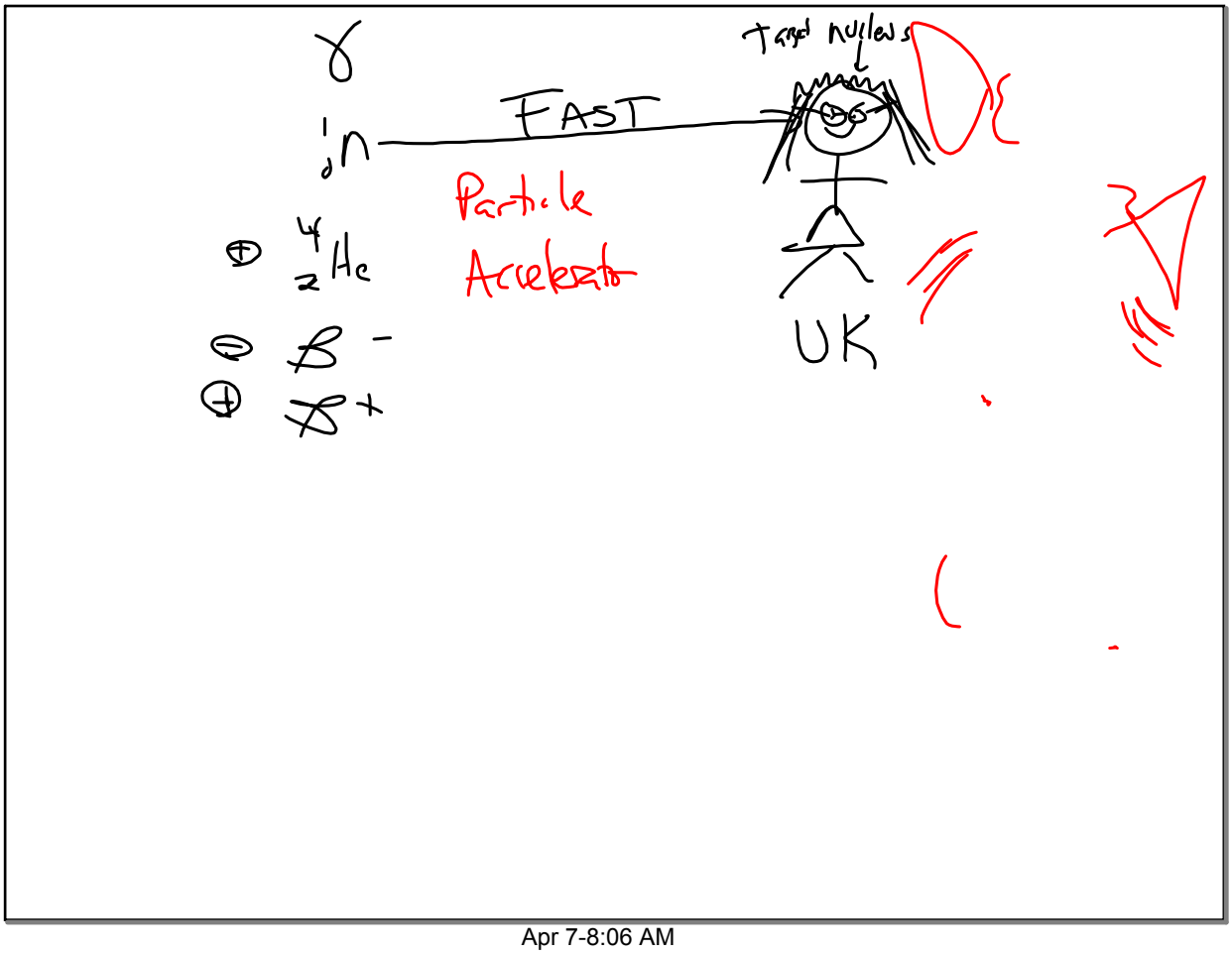
$^{235}_{92}U + {}^{1}_{0}n \rightarrow {}^{135}_{54}Xe + 2\,{}^{1}_{0}n + {}^{99}_{38}Sr$

236 = 135 + 2 +

Artificial decay

Nuclear Fission

Apr 7-7:34 AM



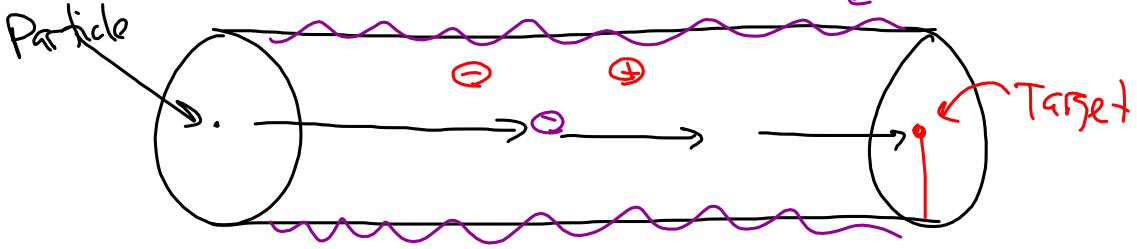
Apr 7-8:06 AM

Particle Accelerator

Speeds up + aims particle.

electro magnet

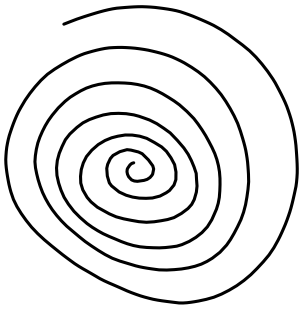
① Linear accelerator



~ 1 mile

Apr 7-8:09 AM

② Cyclotron

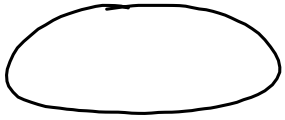


Start -> end

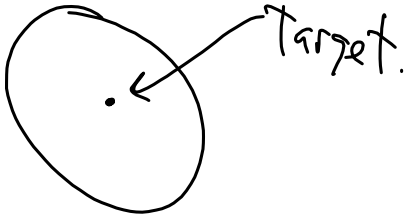
need speed. If not sufficient speed at end .....

Apr 7-8:15 AM

③ Synchotron - loop



Inside



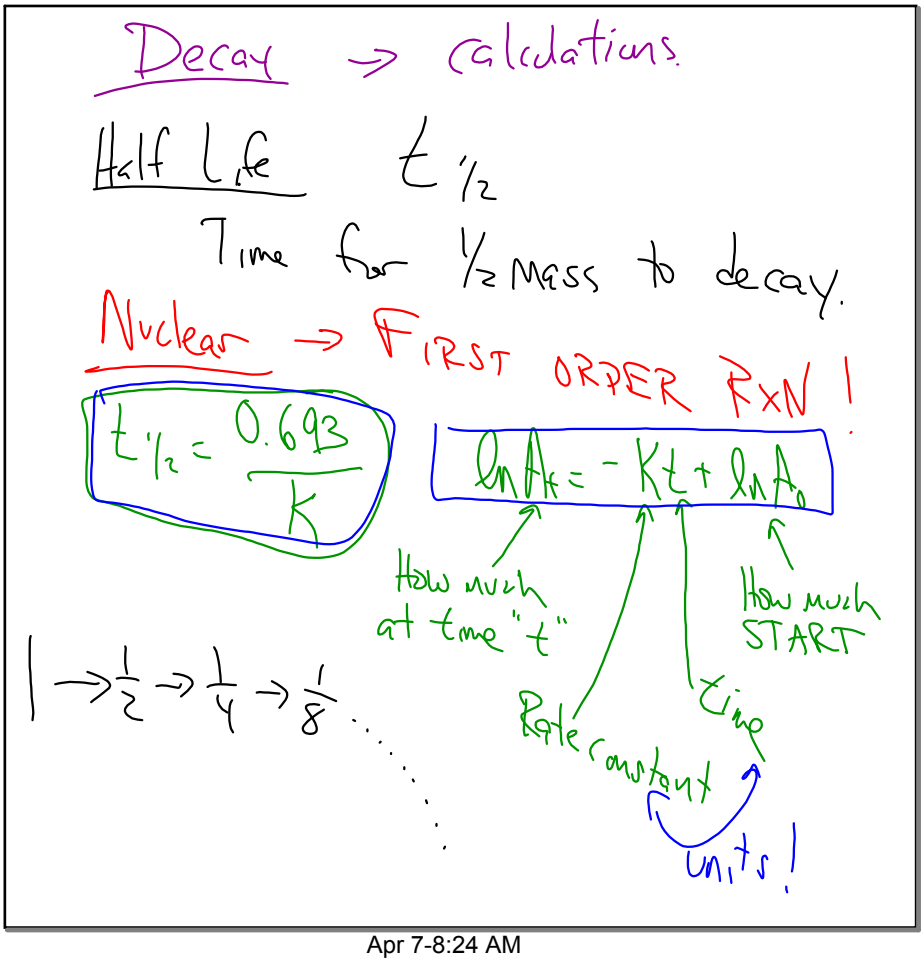
Apr 7-8:16 AM

$$^{14}_{7}N + {}^{4}_{2}He \rightarrow {}^{17}_{8}O + {}^{1}_{1}H$$

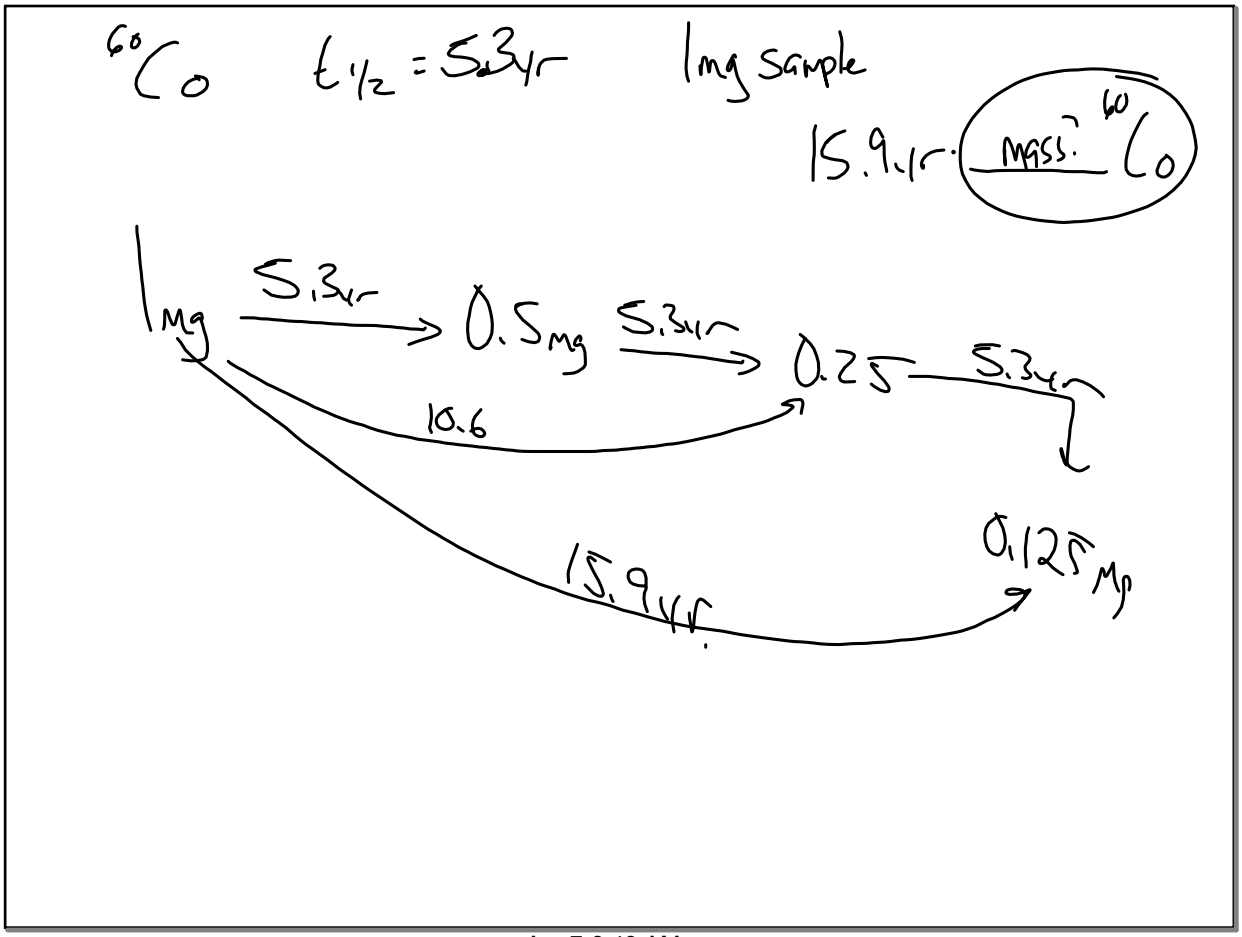
stable

Force to break up by smash with α

Apr 7-8:21 AM



Apr 7-8:24 AM



Apr 7-8:43 AM

(37) have 1g ^{90}Sr, 0.953g remains after 2 yr.

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

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

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

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

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

$t_{1/2}$ 28.79 yr

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

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

$A_t \approx 0.886g$

Apr 7-8:48 AM

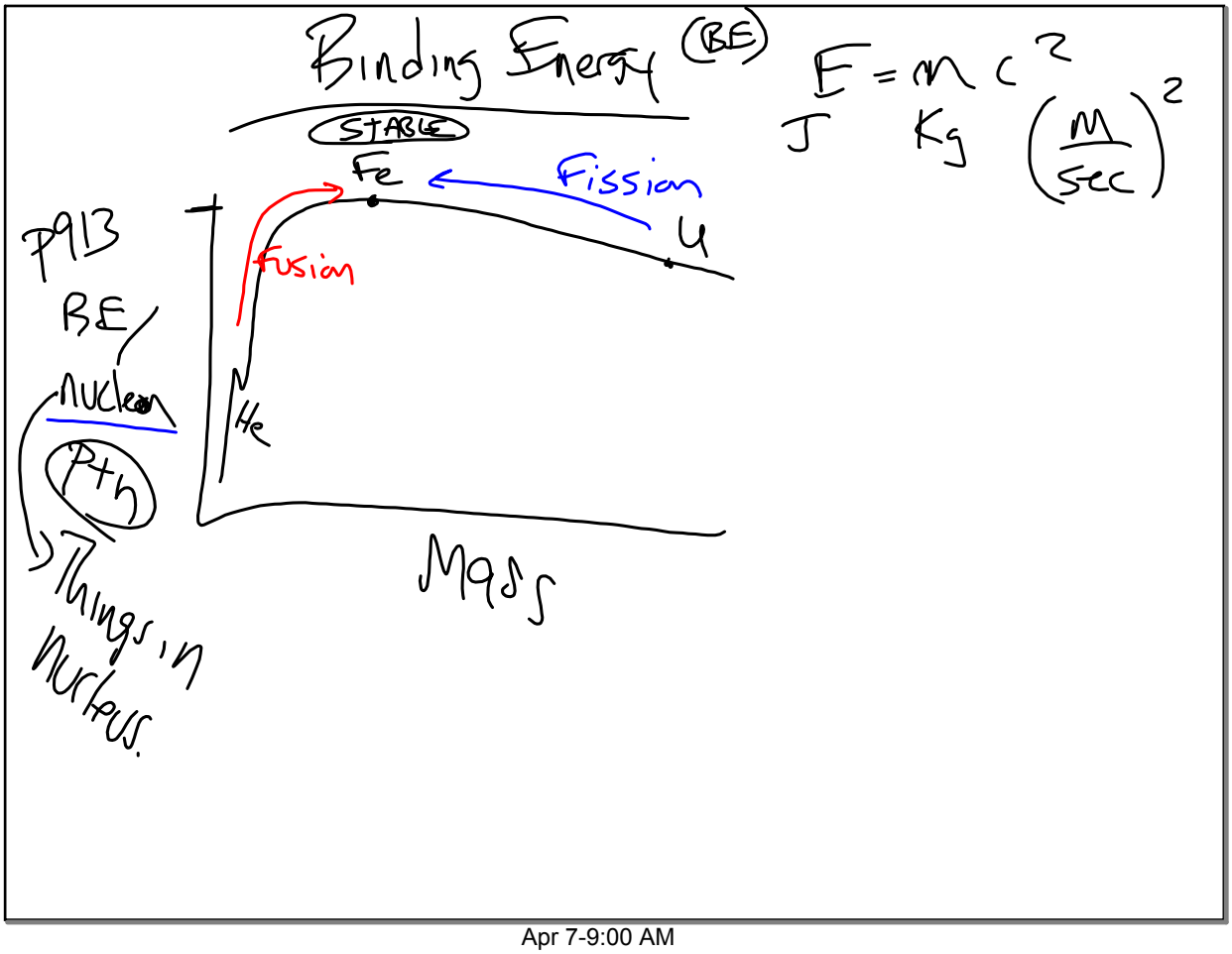
How long will it take for 60% to decompose.

$A_0 = 1$ or 100

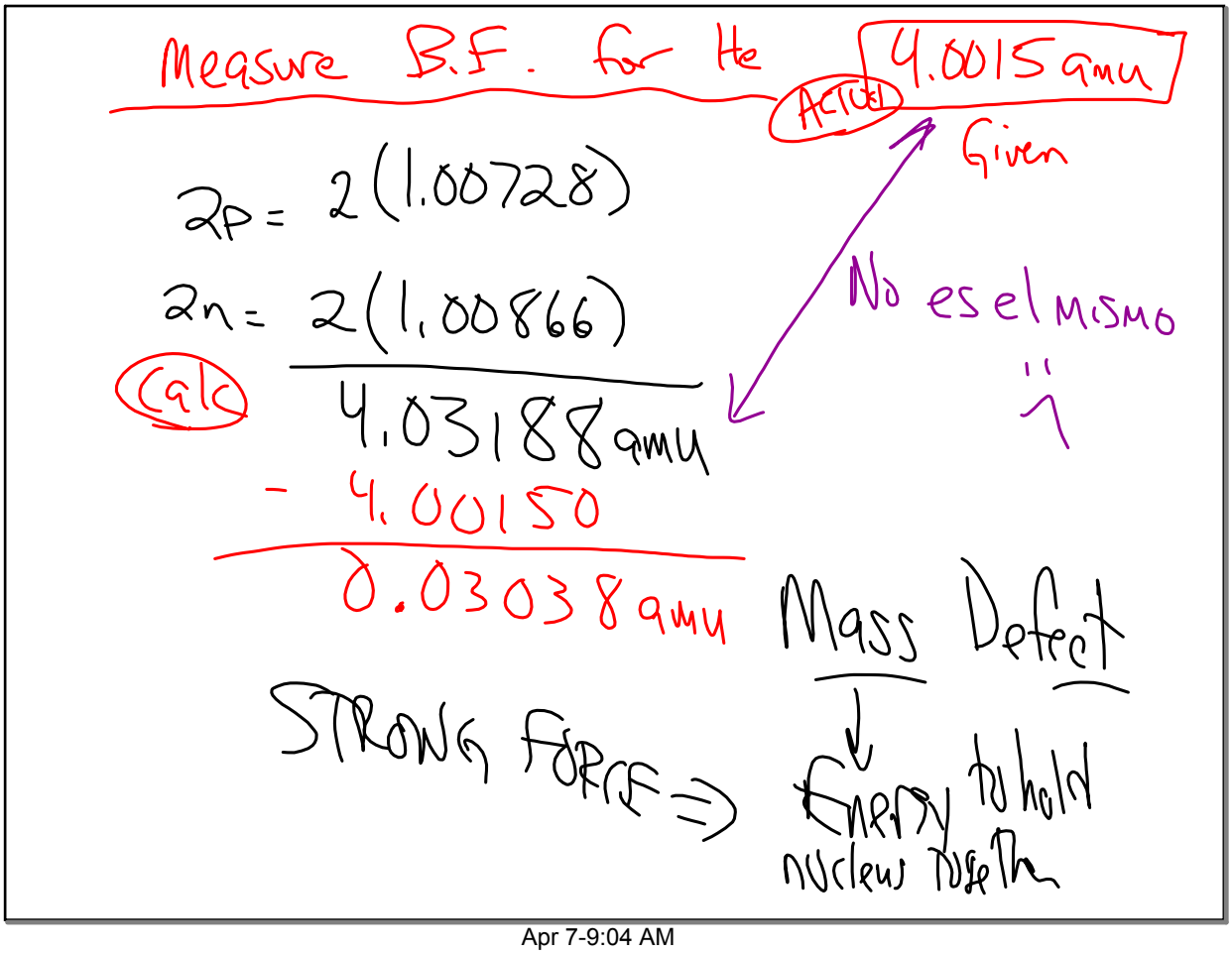
$A_t = 0.4$ or 40

How much you HAVE

Apr 7-8:57 AM



Apr 7-9:00 AM



Apr 7-9:04 AM

0.03038 gmm OR $\frac{g}{mole}$

$1\,g = 6\times10^{23}$ gmm

$\frac{0.03038\times10^{-3}\ Kg}{mole}$

$E = mc^2$

$= (5.063\times10^{-29})(3\times10^8)^2$

$E = 4.56\times10^{-12}\ J$

$\frac{0.03038\ gmm}{6\times10^{23}\ gmm} \left|\frac{1\,g}{100\,g}\right| \frac{1\,Kg}{}$

$5.063\times10^{-29}\ Kg$

Apr 7-9:09 AM

HW ① 21/34, 36, 40

② PS 21-1 #1 - 22

PS 21-2 # 1 - 17

Apr 7-9:14 AM