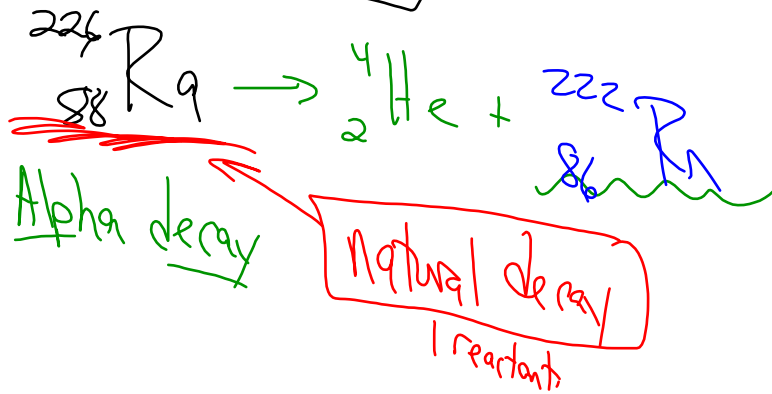


Heavy (comparatively)  $\rightarrow$  Slow

STOP = 1 sheet of paper.

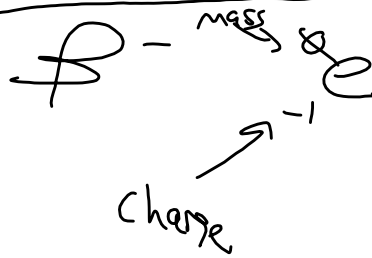
Penetrating power = 1"



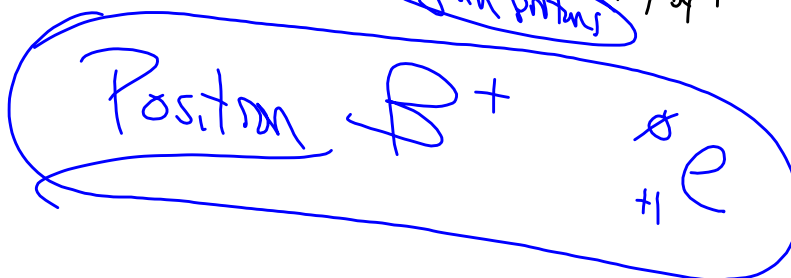
Beta Decay

$\rightarrow$  Beta Particle

Lighter - faster  
 Penetrating power '100'



gain protons  $\uparrow$



Gamma Radiation  $\gamma$  <sup>mass 0</sup>

charge  $\rightarrow$

pure energy = X ray.

Penetrating Power "1000"

Beta decay  $\rightarrow$   ${}_{-1}^0e^{+}$

electron capture  ${}_{+1}^0e \rightarrow$

Half Life  $t_{1/2}$

1<sup>st</sup> order Rxn

↳ Time it takes for 1/2 of the mass of the substance to decay.

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

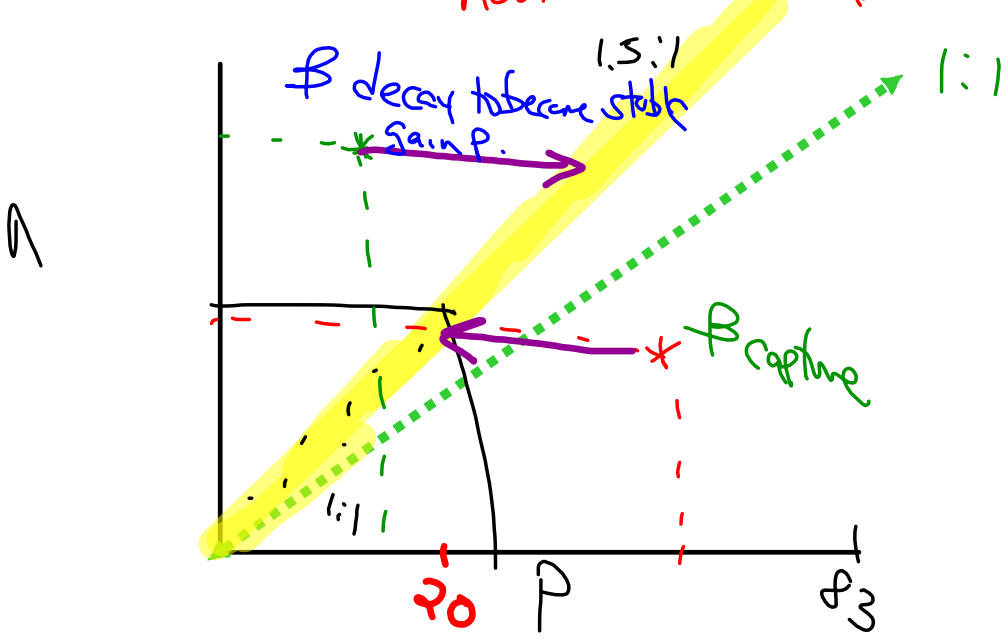
$t_{1/2} = \frac{0.693}{K}$

Chap 14

Stable?

look at neutron : Proton

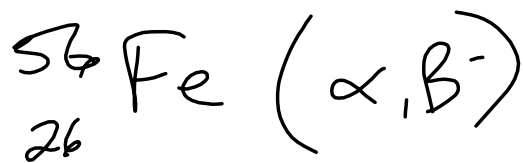
Belt of Stability



$$21 / \underbrace{18, 24, 28}_{\text{magic numbers}}, \underbrace{34, 36}_{\text{magic numbers}}$$

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

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



Iron-56

