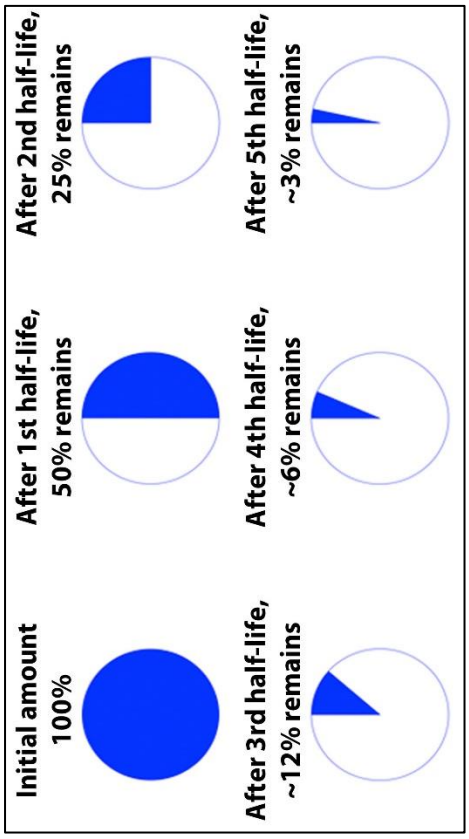
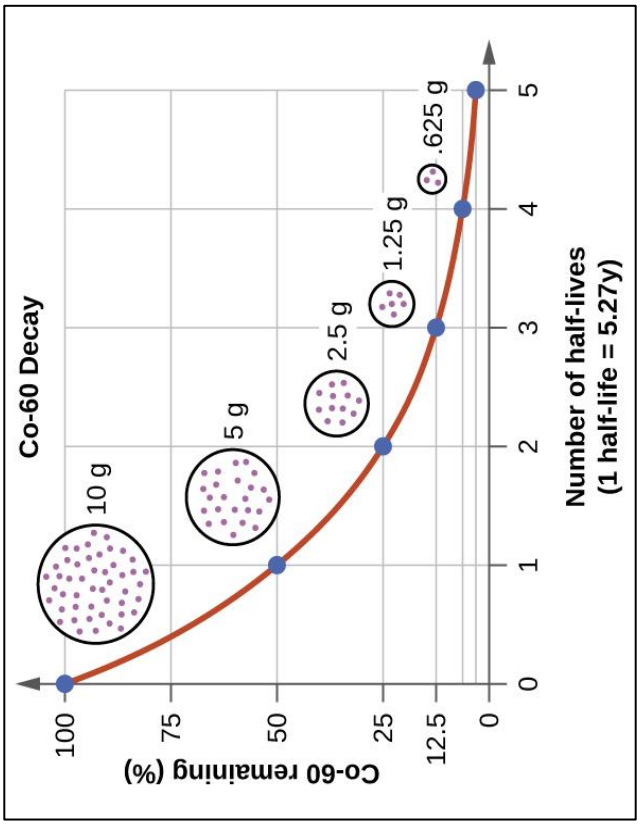
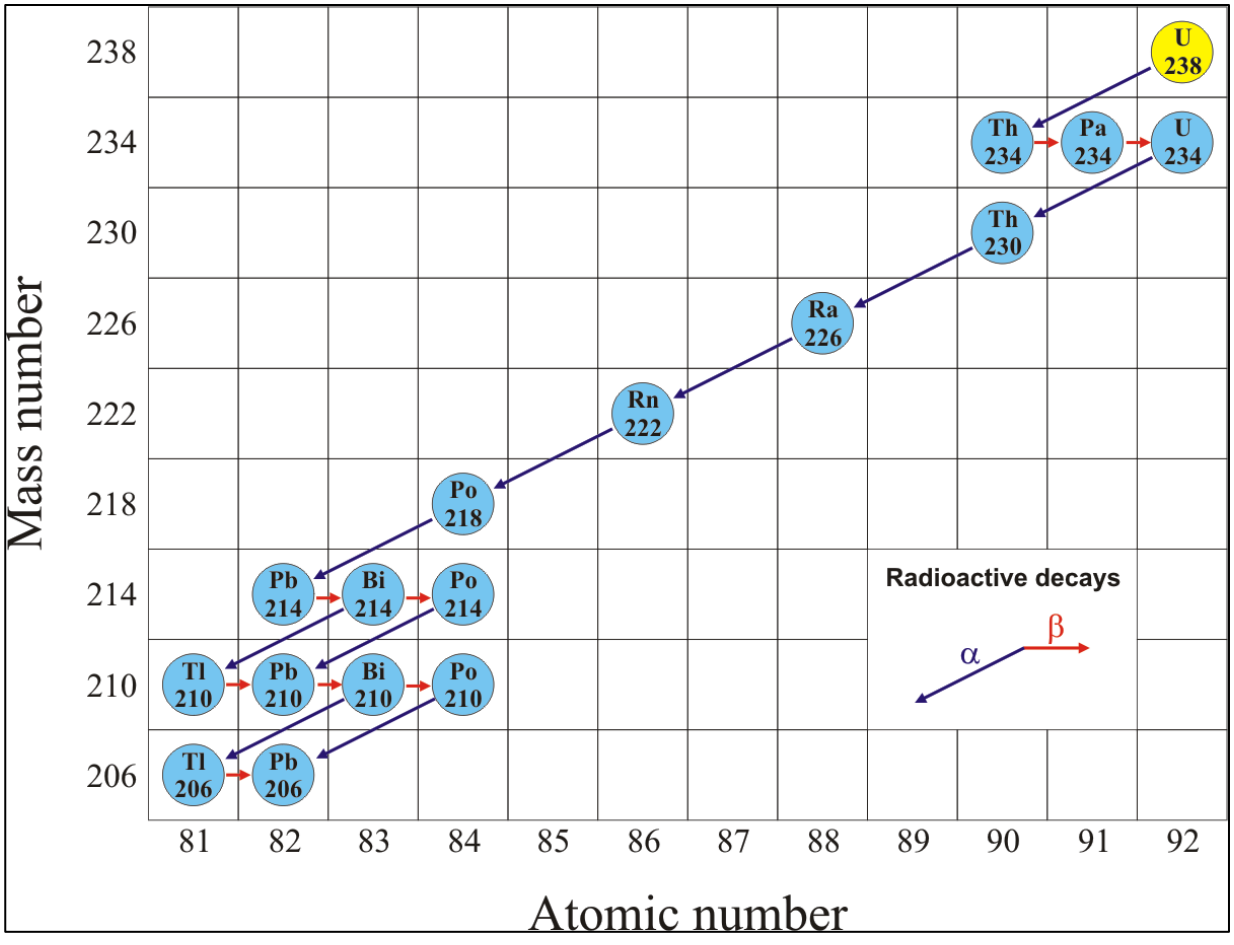
Nuclear Info Sheet







Nuclear Info Sheet

Half Life Equation

$$A_E = A_s \times 0.5^n$$

A_E = amount ending
A_S = amount starting
n = number of half lives

of Half Lives

$$n = \frac{t}{h}$$

n = number of half-lives
t = time that has passed
h = length of a half life

% still radioactive or % decayed

$$\%_{still\ r.a.} = \frac{A_E}{A_S} \times 100$$

A_E = amount ending
A_S = amount starting
n = number of half lives

$$\%_{still\ r.a.} = 0.5^n \times 100$$

$$\%_{decayed} = 100 - \%_{still\ r.a.}$$

Solving for t, or h

Same as this version:

$$\log\left(\frac{A_E}{A_S}\right) = n \times log(0.5)$$

$$\log\left(\frac{A_E}{A_S}\right) = \frac{t}{h} \times log(0.5)$$

Simply isolate the variable you are trying to solve for

$$t = \frac{h \times \log\left(\frac{A_E}{A_S}\right)}{log(0.5)}$$

$$h = \frac{t \times \log(0.5)}{log\left(\frac{A_E}{A_S}\right)}$$