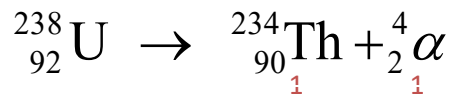


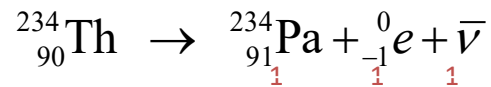
Q1-



$$A = 234$$

$$Z = 90 \quad 1$$

Q2-



$$A = 234$$

$$Z = 91 \quad 1$$

Q3- $238 - 206 = n_a \times 4$ donc $n_a = 8$

1 1

$92 - n_a \times 2 + n_b \times 1 = 82$ donc $n_b = 6$

1 1

Q4- $dN_{238} = -\lambda_{238}N_{238}dt$ 1

Q5- $dN_{\text{Th}} = \lambda_{238}N_{238}dt - \lambda_{\text{Th}}N_{\text{Th}}dt$ 1

Q6- $dN_{\text{Th}} = 0$ 1

$$N_{\text{Th}} = \lambda_{238}N_{238}/\lambda_{\text{Th}} \quad 1$$

$$N_{\text{Th}}/N_{238} = 1,47 \cdot 10^{-11} \quad 2$$

Q7-

$$N_{238}(t_s) = N_{238}e^{-\lambda_{238}t_s} \qquad N_{235}(t_s) = N_{235}e^{-\lambda_{235}t_s} \quad 1$$

$$\ln \left[\frac{98,28}{0,72} \right] = (-\lambda_{238} + \lambda_{235})t_s \quad 1$$

$$t_s = 5,87 \cdot 10^9 \text{ années} \quad 1$$