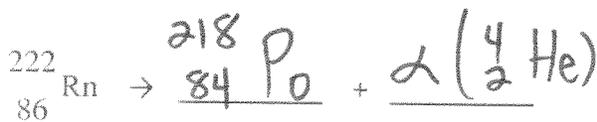
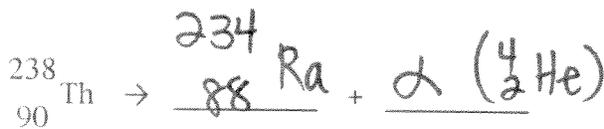
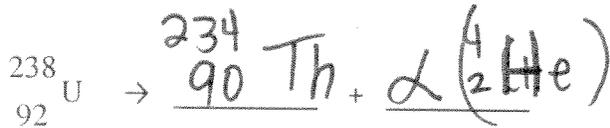
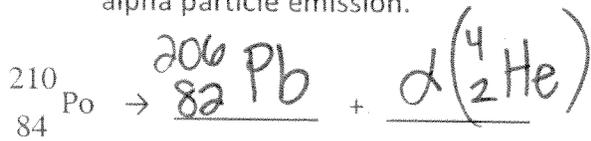


Nuclear Homework

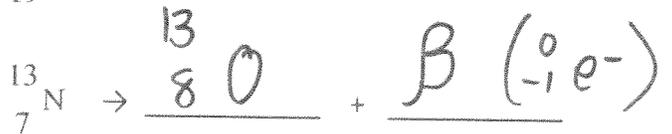
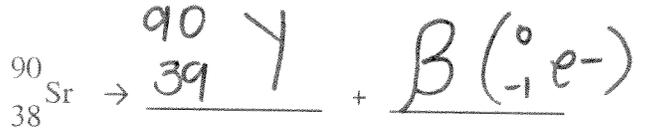
Name: _____

A. Write the complete nuclear equation.

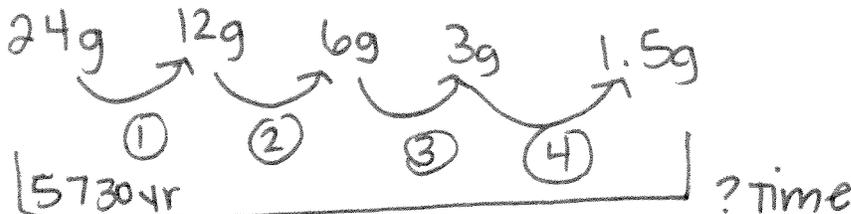
1. The following atoms all undergo alpha particle emission.



2. The following atoms all undergo beta decay.



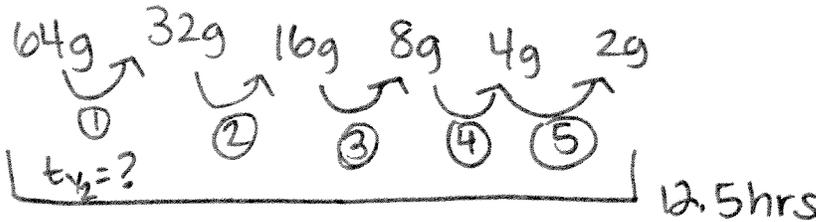
3. Given that the half-life of carbon - 14 is 5730 years, consider a sample of fossilized wood that, when alive would have contained 24 g of carbon - 14. It now contains 1.5 g of carbon - 14. How old is the sample? $t_{1/2} = 5730 \text{ yr}$



$$5730 \text{ yr} \times 4 =$$

$$\boxed{22920 \text{ years}}$$

4. A 64 g sample of germanium - 66 is left undisturbed for 12.5 hours. At the end of that period, only 2.0 g remain. What is the half-life of this material?



$$\frac{12.5 \text{ hrs}}{5} = \boxed{2.5 \text{ hr}}$$

5. 1.000 kg block of phosphorus - 32, which has a half-life of 14.3 days, is stored for 100.1 T.T. days. At the end of this period, how much phosphorus - 32 remains?

$$\frac{100.1 \text{ days}}{14.3 \text{ days}} = 7 \text{ half-life occur}$$

$$\text{Answer: } \underline{0.0078125 \text{ kg}}$$

