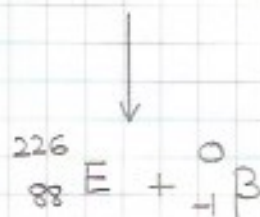
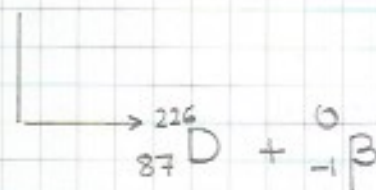
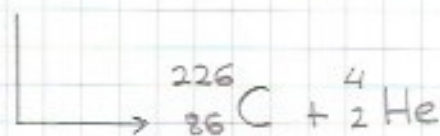
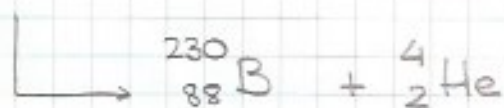
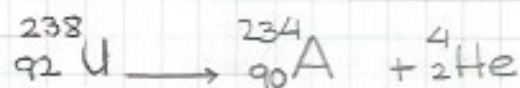
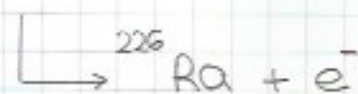
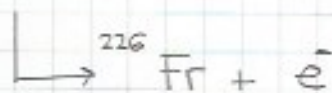
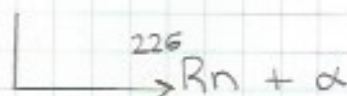
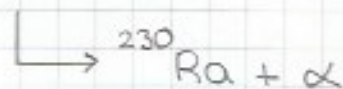
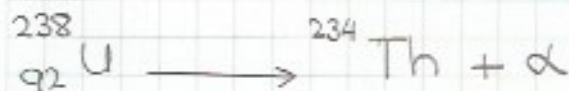


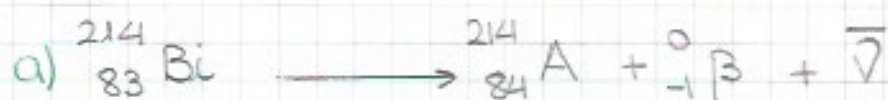
1.



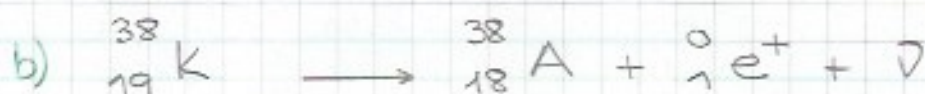
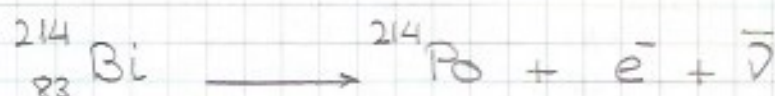
Consultando la tabla periódica, completamos los símbolos de A, B, C, D y E



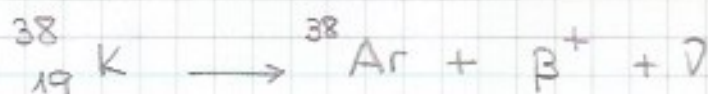
2.



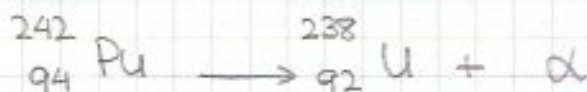
Buscando en la tabla periódica el elemento de $Z=84$ encontramos A. Entonces



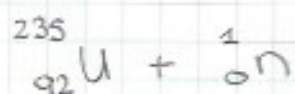
Buscando en la tabla periódica $Z=18$ encontramos A



Buscando en la tabla periódica $Z=92$



3. En las reacciones nucleares se conserva la carga y el n° total de nucleones.



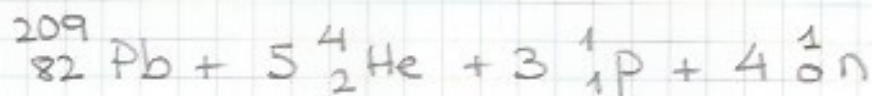
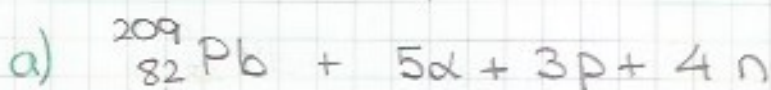
Entonces:

- Para el Uranio: $Z = 92$
 $A = 235$

- Fijándonos en todo el miembro:

$$Z_T = 92 + 0 = 92$$
$$A_T = 235 + 1 = 236$$

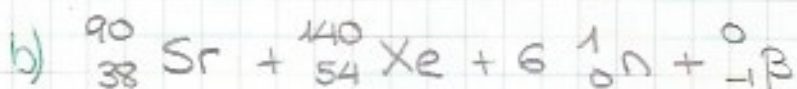
veamos cada apartado:



veamos el valor de A_{total} y Z_{total} .

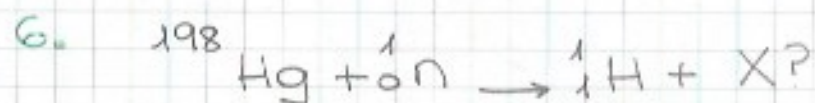
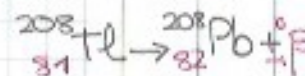
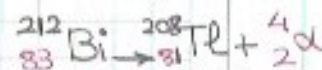
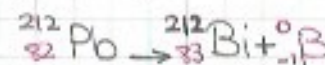
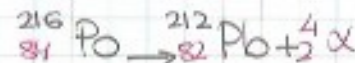
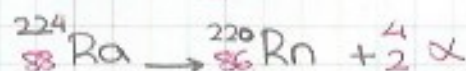
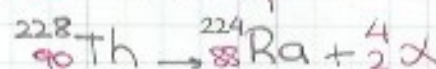
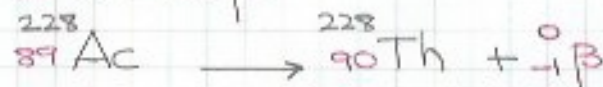
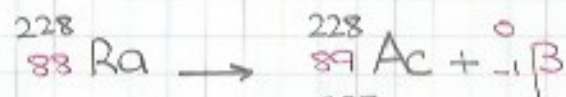
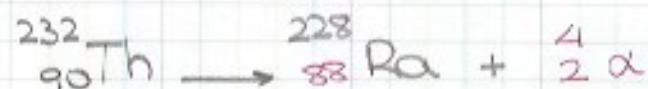
$$Z_T = 82 + 5 \cdot 2 + 3 \cdot 1 + 4 \cdot 0 = 95 \text{ (Ya podíamos decir que no)}$$

$$A_T = 209 + 5 \cdot 4 + 3 \cdot 1 + 4 \cdot 1 = 236$$

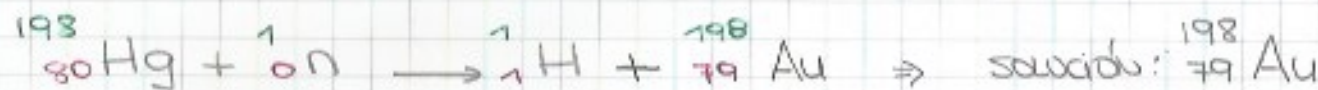


$$Z_T = 38 + 54 + 6 \cdot 0 - 1 = 91 \Rightarrow \text{veamos entonces c)}$$

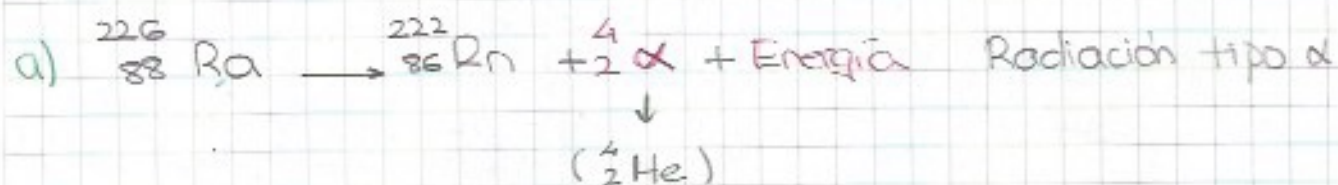
5. Hacemos uso de la tabla periódica para ver los n° atómicos.



En una reac nuclear, la suma de n° atómicos y másicos es la misma en reactivos y productos.



7.



b) Calculamos la energía liberada por defecto de masa

$$\Delta m = \text{Masa}(\text{Ra}) - [\text{Masa}(\text{Rn}) + \text{Masa}(\text{He})]$$

$$\Delta m = 226,0960 - 222,0869 - 4,00387$$

$$\Delta m = 5,23 \cdot 10^{-3} \text{ u}$$

$$\Delta m = 8,6818 \cdot 10^{-30} \text{ kg}$$

$$E = \Delta m \cdot c^2 \quad \text{Ec. Einstein}$$

$$E = 8,6818 \cdot 10^{-30} \text{ kg} \cdot (3 \cdot 10^8)^2 \frac{\text{m}^2}{\text{s}^2}$$

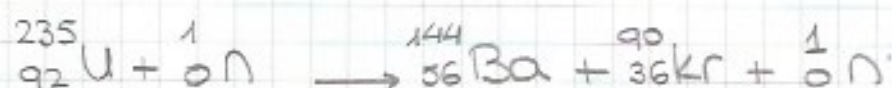
$$E = 7,81 \cdot 10^{-13} \text{ J}$$

Nota: En una reacción nuclear, para calcular el Defecto de masa, en algunos libros proceden:

$$\Delta m = \sum \text{Masa}(\text{productos}) - \sum \text{Masa}(\text{reactivos})$$

Así la cantidad no daría negativa, por lo que cogemos el valor absoluto o trabajaríamos con el signo negativo. Al final la energía sería negativa lo que indicaría que es desprendida.

8.



Tenemos que buscar el coeficiente que acompaña a ${}_0^1\text{n}$ en el 2º miembro de la reacción nuclear.



Procedemos como en el ejercicio anterior

$$\Delta m = 143,92 + 89,94 + 2 \cdot (1,008665) - (235,12 + 1,008665)$$

$$\Delta m = 0,251335\text{u} = 4,27 \cdot 10^{-28} \text{ kg}$$

$$E = \Delta m \cdot c^2 \Rightarrow E = 4,27 \cdot 10^{-28} \text{ kg} \cdot (3 \cdot 10^8)^2 \frac{\text{m}^2}{\text{s}^2}$$

$$E = 384 \cdot 10^{-11} \text{ J}$$