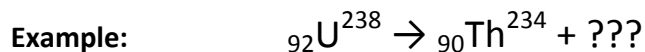
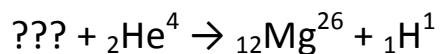
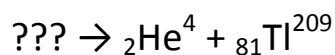
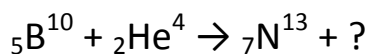
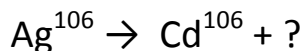
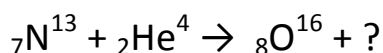
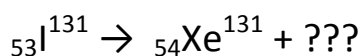


**Practice Transmutation Equations**

The total atomic number on both sides needs to be equal to each other. Currently, there are 92 protons on the reactants (left) side, but only 90 protons on the products (right) side. Thus, the atomic number of the mystery element would be 2. The same applies for the mass number where the reactant totals 238 while the product totals 234. This leaves the mass number of the mystery element as 4. The identity of the element would be Helium or  ${}_{2}\text{He}^4$ . This  ${}_{2}\text{He}^4$  particle is also known as an alpha particle.



For the above reactions, please identify which reaction(s) characterize radioactive decay. Briefly explain why for each.