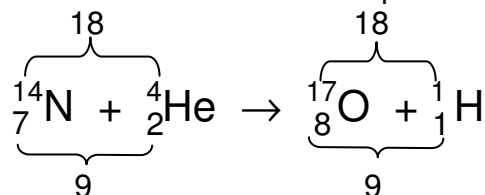
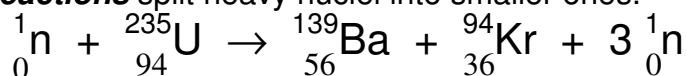


# Nuclear Chemistry

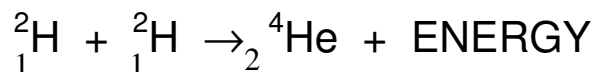
1. Unstable atoms that are radioactive are called **radioisotopes**. (*Table N*)
2. Radioisotopes can decay by giving off any of the particles/emanations listed in **Table J**.
3. **Alpha particles** (see Table J) are positively charged (+).  
**Beta particles** (see Table J) are negatively charged (-).
4. The sum of the mass numbers and atomic numbers must be equal on both sides of the reaction arrow for nuclear equations.



5. **Fission reactions** split heavy nuclei into smaller ones.



6. **Fusion reactions** occur when light nuclei combine to form a heavy nucleus and a lot of energy.



7. The **half life** of a radioisotope is the *length of time* it takes for one half of the atoms in a sample to radioactively decay. (*Table N*)
8. C-14 is used to determine the ages of organic material up to 23,000 years old.
9. U-238 is used to determine the ages of rocks.
10. I-131 is used to treat thyroid disorders.
11. Co-60 is used to treat cancer tumors.
12. Radiation can be used to kill bacteria on foods to slow the spoilage process.
13. Disposal of radioactive waste is a problem associated with nuclear reactors.

USE THE REFERENCE TABLES!!!