# Nuclear Reactions: Wayyyyy more energy than chemical reactions!

Reaction 1: Nuclear Fission Reaction

Nuclear Fission:

Examples:

a.

 b.

 c.

Why do you think the above reactions are called **nuclear fission**? What key characteristics of this reaction help you determine this is a fission reaction? (Identify at least 2)

Reaction 2: Nuclear Fusion Reaction

Nuclear Fusion:

Examples:

 a.

 b.

 c.

Why do you think the above reactions are called **nuclear fusion**? What key characteristics of this reaction help you determine this is a fission reaction? (Identify at least 2)

Reaction 3: Natural Transmutation

Natural Transmutation:

 a.

 b.

 c.

Why do you think the above reactions are called **natural transmutation**? What key characteristics of this reaction help you determine this is a fission reaction? (Identify at least 2)

Reaction 4: Artificial Transmutation

Artificial Transmutation:

Examples:

 a.

 b.

 c.

Why do you think the above reactions are called **artificial transmutation**? What key characteristics of this reaction help you determine this is a fission reaction? (Identify at least 2)

Directions: Identify the nuclear reaction type for the following equations. Then determine if mass is conserved.

|  |  |  |
| --- | --- | --- |
| **Nuclear Equation** | **Nuclear Reaction** | **Mass conserved?** |
| 1  |  |  |
| 2  |  |  |
| 3  |  |  |
| 4  |  |  |
| 5  |  |  |
| 6  |  |  |
| 7  |  |  |
| 8  |  |  |
| 9  |  |  |
| 10  |  |  |

Teacher signature for completion \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_