6.1 Types of chemical reactions

_____ reactions are also known as formation reactions. Two or more reactants (usually elements) join to form a compound.

__+ __→ _____where __ and __ represent elements

Ionic: Magnesium metal reacts with oxygen gas to form magnesium oxide.

_____

Covalent: Nitrogen gas and oxygen gas join to form dinitrogen monoxide.

_____

_____ reactions are the opposite of synthesis reactions.

A _____ breaks down into two or more products (often elements).

_____ where __ and __ represent elements

Ionic: _____

Covalent: _____

_____ reactions replace one element from a compound with a separate element added as a reactant.

A compound and an element react, and the element switches places with part of the original compound.

_____ where A is a metal, or

_____ where A is a non-metal

When A is a metal:
Aluminum foil in a solution of copper(II) chloride produces solid copper and aluminum chloride.

_____

When A is a non-metal:
When fluorine is bubbled through a sodium iodide solution, iodine and sodium fluoride are produced.

_____ reactions swap elements between two compounds reacting together to form two new compounds.

Two compounds react, with elements switching places between the original compounds.

Two solutions react to form a precipitate (ppt, solid) and another solution

Ionic solution + ionic solution $\rightarrow$ ionic solution + ionic solid

_____

When potassium chromate and silver nitrate react, they form a red precipitate, silver chromate, in a solution of potassium nitrate.

_____

_____ reactions occur when an acid (most compounds starting with H) and a base (most compounds ending in OH, or beginning with NH_4) react to form a salt and water.

Acid + base $\rightarrow$ salt + water

_____where X and M are elements

Sulfuric acid is used to neutralize calcium hydroxide:

_____

Phosphoric acid helps to neutralize the compounds that cause rust, such as iron(II) hydroxide.

_____

_____ reactions occur when a compound or element react with oxygen to release energy and produce an oxide.

Also sometimes referred to as hydrocarbon combustion.

_____ where X and Y represent integers

Natural gas (methane) is burned in furnaces to heat homes.

_____

Carbohydrates like glucose combine with oxygen in our body to release energy.

_____