Stoichiometry and Chemical Equations

1. ***Coefficients*** are written in front of the formulas of reactants and products in chemical equations. They give us the ratios of reactants and products in a balanced chemical equation.

2. ***Reactants*** are on the left side of the reaction arrow and ***products*** are on the right.

3. *Only* coefficients can be changed when balancing chemical equations!

4. ***Synthesis reactions*** occur when two or more reactants combine to form a single product. *Example*: $2H_{2(g)} + O_{2(g)} \rightarrow 2H_2O_{(g)}$

5. ***Decomposition reactions*** occur when a single reactant forms two or more products. *Example:* $CaCO_{3(s)} \rightarrow CaO_{(s)} + CO_{2(g)}$

6. ***Single replacement reactions*** occur when one element replaces another element in a compound.

   Example: $Mg + 2HCl \rightarrow MgCl_2 + H_2$

7. ***Double replacement reactions*** occur when two compounds react to form two new compounds.

   Example: $AgNO_3 + KCl \rightarrow AgCl + KNO_3$

8. The masses of the reactants in a chemical equation is always equal to the masses of the products. "***Law of Conservation of Mass***."

USE THE REFERENCE TABLES!!!