**Balancing Chemical Equations**

A chemical reaction is a rearrangement of atoms. Both sides of the equation must have the same type of atoms and the same number of each type of atom due to conservation of mass.

**1. Balance the following equations:**

$NaOH\ (aq) + Cl_2\ (aq) \rightarrow NaOCl\ (aq) + NaCl\ (aq) + H_2O\ (l)$

$CaCN_2\ (s) + H_2O\ (l) \rightarrow CaCO_3\ (s) + NH_3\ (aq)$

$C_6H_{14}\ (l) + O_2\ (g) \rightarrow CO_2\ (g) + H_2O\ (l)$

$CaC_2\ (s) + H_2O\ (l) \rightarrow Ca(OH)_2\ (aq) + C_2H_2\ (g)$

$Mg\ (s) + HNO_3\ (aq) \rightarrow H_2\ (g) + Mg(NO_3)_2\ (aq)$

2. Write a balanced chemical equation for the reaction of solid calcium phosphate with solid silicon dioxide and solid carbon to produce tetratomic phosphorous, $P_4$, wollastonite ($CaSiO_3$), and carbon monoxide gas.