

## Chapter 8 Homework – part I

1.   3   FeO (l) +   2   Al (l) →        Al<sub>2</sub>O<sub>3</sub> (l) +   3   Fe (l)
2.        CH<sub>4</sub> (g) +   2   O<sub>2</sub> (g) →        CO<sub>2</sub> (g) +   2   H<sub>2</sub>O (g)
3.   3   MnO<sub>2</sub> (l) +   4   Al (l) →   2   Al<sub>2</sub>O<sub>3</sub> (l) +   3   Mn (l)
4.        Ca (s) +   2   H<sub>2</sub>O (l) →        Ca(OH)<sub>2</sub> (aq) +        H<sub>2</sub> (g)
5.   3   H<sub>2</sub>SO<sub>4</sub> (aq) +   2   Al(OH)<sub>3</sub> (aq) →        Al<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub> (s) +   6   H<sub>2</sub>O (l)
6.        Fe (s) +   3   AgNO<sub>3</sub> (aq) →        Fe(NO<sub>3</sub>)<sub>3</sub> (aq) +   3   Ag (s)
7.        C<sub>4</sub>H<sub>9</sub>OH (g) +   6   O<sub>2</sub> (g) →   4   CO<sub>2</sub> (g) +   5   H<sub>2</sub>O (g)
8.   2   Al (s) +   3   I<sub>2</sub> (s) →   2   AlI<sub>3</sub> (s)
9.        Li<sub>2</sub>CO<sub>3</sub> (aq) +        CuCl<sub>2</sub> (aq) →        CuCO<sub>3</sub> (s) +   2   LiCl (aq)
10.   2   Co (s) +   6   HBr (aq) →   3   H<sub>2</sub> (g) +   2   CoBr<sub>3</sub> (g)

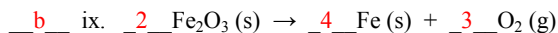
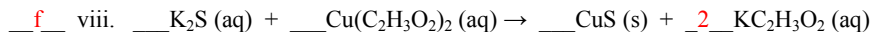
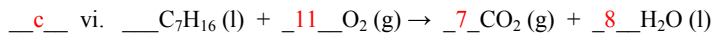
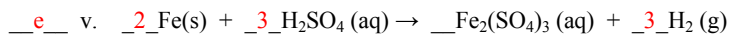
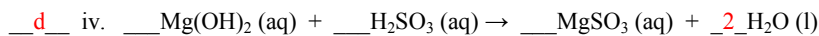
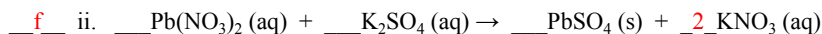
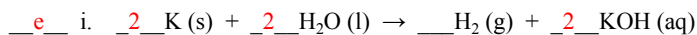
## Chapter 8 – Part II Predicting Chemical Reactions

1. Using the solubility table provided for you on your periodic table, predict whether the following ionic compounds are soluble or insoluble in water.

a. Mg(OH) <sub>2</sub>	_____ <b>insoluble</b> _____
b. Li <sub>2</sub> CO <sub>3</sub>	_____ <b>soluble</b> _____
c. potassium chromate	_____ <b>soluble</b> _____
d. Ca <sub>3</sub> (PO <sub>4</sub> ) <sub>2</sub>	_____ <b>insoluble</b> _____
e. NH <sub>4</sub> Cl	_____ <b>soluble</b> _____
f. Pb(C <sub>2</sub> H <sub>3</sub> O <sub>2</sub> ) <sub>2</sub>	_____ <b>soluble</b> _____
g. mercury (I) fluoride	_____ <b>insoluble</b> _____
h. CaSO <sub>4</sub>	_____ <b>soluble</b> _____
i. K <sub>2</sub> S	_____ <b>soluble</b> _____
j. zinc sulfide	_____ <b>insoluble</b> _____
k. nickel (II) nitrate	_____ <b>soluble</b> _____
l. ammonium hydroxide	_____ <b>soluble</b> _____

2. First balance the following reactions, then classify each as

a. Combination                      b. Decomposition                      c. Combustion  
d. Neutralization                      e. Single-Replacement                      f. Double-Replacement



3. i. Predict the products for the following reactions. If no reaction occurs, write NR. Check the solubility rules to help you out.

ii. Balance the reaction.

iii. Classify the reaction according to question number 2.

