**Chemistry Unit 3**
**HW #6 – The Activity Series**

Using the activity series, determine if the reaction will take place. If you determine that a reaction will take place, write the complete balanced equation.

1. $Fe + CuNO_3 \rightarrow$ (assume iron (II) in products)

$Fe + 2CuNO_3 \rightarrow Fe(NO_3)_2 + 2Cu$

2. $Al + Ca(OH)_2 \rightarrow$ NR

3. $Cl_2 + 2NaBr \rightarrow 2NaCl + Br_2$

4. $Mg + 2AgNO_3 \rightarrow Mg(NO_3)_2 + 2Ag$

5. $2Li + 2HCl \rightarrow 2LiCl + H_2$

For questions 6 – 15, first write the formula for the reactants, then determine if the reaction will take place. If it does, write the complete balanced equation for the reaction.

6. Calcium is dropped into a container of boiling water

$Ca + H_2O \rightarrow CaO + H_2$

7. Nickel is mixed with silver chloride (use nickel (II))

$Ni + 2AgCl \rightarrow NiCl_2 + 2Ag$

8. Mercury comes into contact with a solution of magnesium nitrate (use mercury (I))

$Hg + Mg(NO_3)_2 \rightarrow$ NR

9. Zinc is mixed with a sodium chloride solution

$Zn + NaCl \rightarrow$ NR

10. Fluorine gas surrounds a sample of sodium chloride

$F_2 + 2NaCl \rightarrow 2NaF + Cl_2$

11. Silver is placed into a beaker with sulfuric acid

$Ag + H_2SO_4 \rightarrow$ NR

12. Ammonium bromide mixes with iodine

$NH_4Br + I_2 \rightarrow$ NR

13. Copper (II) nitrate slowly mixes with lithium

$Cu(NO_3)_2 + 2Li \rightarrow 2LiNO_3 + Cu$

14. Water is poured onto a large piece of iron — ASSUME Fe (III)

$3H_2O + 2Fe \rightarrow Fe_2O_3 + 6H_2$

15. Phosphoric acid and potassium are mixed

$2H_3PO_4 + 6K \rightarrow 2K_3PO_4 + 3H_2$