Name: _____
Hour: ____ Date: _____

Chemistry: *Chemical Reaction Practice*

Write the correct formula for the compound formed by each of the following pairs of ions. HINT: Remember the criss-cross rule.

1. Na^{+} F^{-} — 1. _____
2. K^{+} S^{2-} — 2. _____
3. Al^{3+} SO_4^{2-} — 3. _____
4. Ni^{2+} O^{2-} — 4. _____
5. Ca^{2+} ClO_3^{-} — 5. _____

For each of the following compounds, write…

A) the symbols of the ions in the compound (HINT: You might need your polyatomic ion sheet)
B) AND the number of each ion in one molecule of that compound. The first one is done for you!

6. $Fe_2(SO_4)_3$ — 6. 2 Fe^{3+} and 3 SO_4^{2-}
7. $Mg(NO_3)_2$ — 7. _____
8. NH_4NO_2 — 8. _____
9. $KC_2H_3O_2$ — 9. _____
10. $Na_2Cr_2O_7$ — 10. _____
11. CaI_2 — 11. _____
12. Na_2CO_3 — 12. _____
13. $Ga(ClO_3)_3$ — 13. _____
14. CuF_2 — 14. _____
15. $(NH_4)_3PO_4$ — 15. _____

Single Replacement Reactions

*For each single replacement reaction below, determine if the reaction will proceed by using the activity series. If the reaction will NOT occur, write **NR** (no rxn). If the reaction will occur, **predict the products and balance the resulting equation.***

1. ____ Al + ____ HCl → _____
2. ____ F_2 + ____ HBr → _____
3. ____ KI + ____ Fe → _____
4. ____ H_2 + ____ $CuNO_3$ → _____
5.. ____ Sr + ____ $CaCO_3$ → _____
6. ____ CuF_2 + ____ Cl_2 → _____

Double Replacement Reactions

For each double replacement reaction below, determine if the reaction will proceed by using the solubility table. Remember, for a DR reaction to occur, you usually need to produce a precipitate, a gas, or water. If the reaction will NOT occur, write ***NR*** *(no rxn). If the reaction will occur,* ***predict the products with appropriate phases (i.e. aq, s, l, g) and balance the resulting equation.***

1. ____ $AgNO_3(aq)$ + ____ $NH_4Cl(aq)$ → _____ FeI_2 _____

2. ____ $HCl(aq)$ + ____ $NaOH\ (aq)$ → _____ $Fe^{2+}\ 2I^{1-}$ _____

3. ____ $KOH(aq)$ + ____ $FeI_2(aq)$ → _____ $K^{1+}\ I^{1-}\quad Fe^{2+}\ OH^{1-}$ $KI + Fe(OH)_2$ _____

4. ____ $Na_2SO_4(aq)$ + ____ $AgNO_3(aq)$ → _____

5. ____ $NH_4OH(aq)$ + ____ $H_3PO_4(aq)$ → _____

6. ____ $NaBr(aq)$ + ____ $HgNO_3(aq)$ → _____

7. ____ $ZnCl_2(aq)$ + ____ $CuSO_4(aq)$ → _____

8. ____ $CuCrO_4(aq)$ + ____ $Na_2S(aq)$ → _____

9. ____ $MgI_2(aq)$ + ____ $(NH_4)_3PO_4(aq)$ → _____

10. ____ $CuBr_2(aq)$ + ____ $(NH_4)_2CO_3(aq)$ → _____