Single Replacement Reactions

Name _____ **Date** _____

Using the activity series, predict and balance the following single replacement reactions. Use abbreviations to indicate the appropriate phase of reactants and products. For those that do not react, write no reaction.

1. A piece of copper is dropped into a container of water.

2. Liquid bromine is added to a container of sodium iodide crystals.

3. An aluminum strip is immersed in a solution of silver nitrate.

4. Zinc pellets are added to a sulfuric acid solution.

5. Fluorine gas is bubbled into a solution of aluminum chloride.

6. Magnesium turnings are added to a solution of lead (II) acetate.

7. Iodine crystals are added to a solution of sodium chloride.

8. Calcium metal is added to a solution of nitric acid.

9. A pea-sized piece of lithium is added to water.

10. A solution of iron (III) chloride is poured over a piece of platinum wire.

Single Replacement Reactions Answer Key

1. $Cu_{(s)} + HOH_{(l)} \rightarrow$ **No Reaction.** **H is more active than Cu.**

2. $Br_{2(l)} + 2NaI_{(s)} \rightarrow I_{2(s)} + 2NaBr_{(s)}$

3. $Al_{(s)} + 3AgNO_{3(aq)} \rightarrow 3Ag_{(s)} + Al(NO_3)_{3(aq)}$

4. $Zn_{(s)} + H_2SO_{4(aq)} \rightarrow H_{2(g)} + ZnSO_{4(aq)}$

5. $3F_{2(g)} + 2AlCl_{3(aq)} \rightarrow 3Cl_{2(g)} + 2AlF_{3(aq)}$

6. $Mg_{(s)} + Pb(CH_3COO)_{2(aq)} \rightarrow Pb_{(s)} + Mg(CH_3COO)_{2(aq)}$

7. $I_{2(s)} + NaCl_{(aq)} \rightarrow$ **No Reaction.** **Cl_2 is more active than I_2.**

8. $Ca_{(s)} + 2HNO_{3(aq)} \rightarrow H_{2(g)} + Ca(NO_3)_{2(aq)}$

9. $2Li_{(s)} + 2HOH_{(l)} \rightarrow H_{2(g)} + 2LiOH_{(aq)}$

10. $Pt_{(s)} + FeCl_{3(aq)} \rightarrow$ **No Reaction.** **Fe is more active than Pt.**