Chapter 7 Worksheet:
Reactions in Solution

For each reaction below, determine if and what type of reaction will occur (under "REACTION TYPE" write either: precipitation, gas forming, or no reaction), **predict the products** for the reaction, and then write a **balanced chemical equation**. For those which do not react, indicate this by writing "No Reaction." for the products in the equation.

REACTION TYPE

iron (III) chloride + sodium carbonate _____

copper (II) sulfate + ammonium hydroxide _____

barium nitrate + lithium sulfate _____

magnesium chloride + silver nitrate _____

aluminum sulfate + calcium hydroxide _____

lead (II) nitrate + sodium chloride _____

Aluminum Nitrate + Potassium Iodide _____

magnesium iodide + sodium carbonate _____

sodium bicarbonate + hydrochloric acid _____

KEY

REACTION TYPE

Iron (III) chloride + sodium carbonate…….....Precipitation

$2FeCl_3(aq) + 3Na_2CO_3(aq) \rightarrow Fe_2(CO_3)_3(s) + 6NaCl(aq)$

Copper (II) sulfate + ammonium hydroxide…….....Precipitation

$CuSO_4(aq) + 2\ NH_4OH(aq) \rightarrow Cu(OH)_2(s) + (NH_4)_2SO_4\ (aq)$

Barium nitrate + lithium sulfate……..…….....Precipitation

$Ba(NO_3)_2(aq) + Li_2SO_4\ (aq) \rightarrow 2\ LiNO_3(aq) + BaSO_4\ (s)$

Magnesium chloride + silver nitrate…….....Precipitation

$MgCl_2(aq) + 2\ AgNO_3\ (aq) \rightarrow Mg(NO_3)_2(aq) + 2\ AgCl\ (s)$

Aluminum sulfate + calcium hydroxide…….....Precipitation

$Al_2(SO_4)_3(aq) + 3\ Ca(OH)_2(aq) \rightarrow 2\ Al(OH)_3(s) + 3CaSO_4\ (aq)$

Lead (II) nitrate + sodium chloride……..…….....Precipitation

$Pb(NO_3)_2(aq) + 2\ NaCl\ (aq) \rightarrow PbCl_2(s) + 2\ NaNO_3\ (aq)$

Aluminum Nitrate + Potassium Iodide…….….....….…….....NO REACTION

$Al(NO_3)_3(aq) + 3\ KI(aq) \rightarrow$ ~~$AlI_3(aq) + 3KNO_3(aq)$~~

Magnesium iodide + sodium carbonate…….…….....Precipitation

$MgI_2(aq) + Na_2CO_3\ (aq) \rightarrow 2\ NaI(aq) + MgCO_3\ (s)$

Sodium bicarbonate + hydrochloric acid…….....Gas Forming

$NaHCO_3(aq) + HCl(aq) \rightarrow CO_2(g) + H_2O(l) + NaCl(aq)$

NOTE: $H_2CO_3(aq)$ is initially formed, but then it decomposes to $CO_2(g) + H_2O(l)$