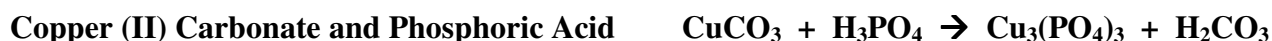
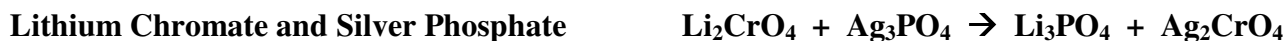
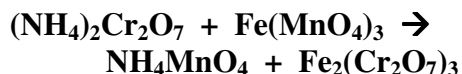


Chapter 6: Chemical Reactions, An Introduction *draft copy*

Example Reactions. Show Balanced Equations Only

Hydrochloric Acid and Cobalt (II) Nitrate	$\text{HCl} + \text{Co}(\text{NO}_3)_2 \rightarrow \text{CoCl}_2 + \text{HNO}_3$
Sodium Dichromate and Lead (II) Nitrate	$\text{Na}_2\text{Cr}_2\text{O}_7 + \text{Pb}(\text{NO}_3)_2 \rightarrow \text{PbCr}_2\text{O}_7 \text{ ppt} + 2 \text{NaNO}_3$
Methane and Oxygen [Burn Methane]	$\text{CH}_4 + 2 \text{O}_2 \rightarrow \text{CO}_2 + 2 \text{H-OH}$
Hydrofluoric Acid and silicon Dioxide	$\text{HF} + \text{SiO}_2 \rightarrow \text{SiF}_4 + \text{H}_2\text{O}$
Hydrochloric Acid and Sodium Hydroxide	$\text{HCl} + \text{NaOH} \rightarrow \text{NaCl} + \text{H-OH}$
Sulfuric Acid and Potassium Hydroxide	$\text{H}_2\text{SO}_4 + 2 \text{KOH} \rightarrow \text{K}_2\text{SO}_4 + 2 \text{H-OH}$
Phosphoric Acid and Magnesium Hydroxide	$\text{H}_3\text{PO}_4 + \text{Mg}(\text{OH})_2 \rightarrow \text{Mg}_3(\text{PO}_4)_2 + \text{H-OH}$
Sulfuric Acid and Aluminum Hydroxide	$\text{H}_2\text{SO}_4 + \text{Al}(\text{OH})_3 \rightarrow \text{Al}_2(\text{SO}_4)_3 + \text{H-OH}$
Silver Nitrate and Sodium Chloride	$\text{AgNO}_3 + \text{NaCl} \rightarrow \text{AgCl} \downarrow + \text{NaNO}_3$
Silver Nitrate and Barium Chloride	$2 \text{AgNO}_3 + \text{BaCl}_2 \rightarrow 2 \text{AgCl} \downarrow + 2 \text{NaNO}_3$
Copper (I) Sulfite and Phosphoric Acid	$\text{Cu}_2\text{SO}_3 + \text{H}_3\text{PO}_4 \rightarrow \text{Cu}_3\text{PO}_4 + \text{H}_2\text{SO}_3$
Copper (II) Hypochlorite and Nitric Acid	$\text{Cu}(\text{ClO})_2 + 2 \text{HNO}_3 \rightarrow \text{Cu}(\text{NO}_3)_2 + 2 \text{HClO}$
Iron (II) Chlorate and Potassium Hydroxide	$\text{Fe}(\text{ClO}_3)_2 + \text{KOH} \rightarrow \text{Fe}(\text{OH})_2 + \text{KClO}_3$
Iron (III) Carbonate and Sulfuric Acid	$\text{Fe}_2(\text{CO}_3)_3 \downarrow + \text{H}_2\text{SO}_4 \rightarrow \text{FeSO}_4 + \text{H}_2\text{CO}_3$
Cobalt (II) Nitrate and Sodium Iodide	$\text{Co}(\text{NO}_3)_2 + \text{NaI} \rightarrow \text{CoI}_2 + \text{NaNO}_3$
Cobalt (III) Sulfate and Barium Carbonate	$\text{Co}_2(\text{SO}_4)_3 + \text{BaCO}_3 \rightarrow \text{Co}_2(\text{CO}_3)_3 + \text{BaSO}_4$
Tin (II) Hydroxide and Magnesium Phosphate	$\text{Sn}(\text{OH})_2 + \text{Mg}_3(\text{PO}_4)_2 \rightarrow \text{SnPO}_4 + \text{Mg}(\text{OH})_2$
Tin (IV) Bisulfate and Cobalt (II) Chromate	$\text{Sn}(\text{HSO}_4)_4 + \text{CoCrO}_4 \rightarrow \text{Sn}(\text{CrO}_4)_2 + \text{Co}(\text{HSO}_4)_2$
Lead (II) Acetate and Iron (III) Chromate	$\text{Pb}(\text{C}_2\text{H}_3\text{O}_2)_2 + \text{Fe}_2(\text{CrO}_4)_3 \rightarrow$ $\text{PbCrO}_4 + \text{Fe}(\text{C}_2\text{H}_3\text{O}_2)_3$
Lead (IV) Permanganate and Iron (III) Cyanide	$\text{Pb}(\text{MnO}_4)_4 + \text{Fe}(\text{CN})_3 \rightarrow \text{Pb}(\text{CN})_4 + \text{Fe}(\text{MnO}_4)_3$
Ammonium Dichromate and Iron (III) Permanganate	

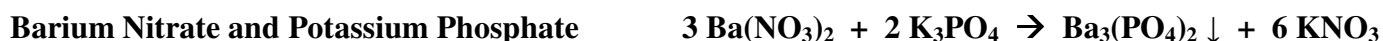


Balance the following and say if the reaction will go to completion and why?

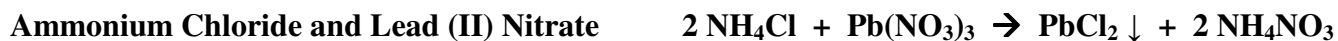
If it does go to completion, show complete ionic and net ionic reactions

Sodium Chloride and Magnesium Bromide

Potassium Hydroxide and Iron (III) Chloride



Sodium Sulfate and Potassium Chloride NR



Hydrochloric Acid and Lithium Hydroxide	$\text{HCl} + \text{LiOH} \rightarrow \text{LiCl} + \text{H-OH}$
Sulfuric Acid and Calcium Hydroxide	$\text{H}_2\text{SO}_4 + \text{Ca(OH)}_2 \rightarrow \text{CaSO}_4 + 2 \text{H-OH}$
Zinc and Hydrochloric Acid	Redox $\text{Zn} + \text{HCl} \rightarrow \text{ZnCl}_2 + \text{H}_2 \uparrow$
Aluminum oxidizes with Oxygen to form oxide	Redox $\text{Al} + \text{O}_2 \rightarrow \text{Al}_2\text{O}_3$
Sodium reacts with Oxygen to form Sodium Oxide	REDOX $\text{Na} + \text{O}_2 \rightarrow 2 \text{Na}_2\text{O}$
Hydrochloric Acid and Sodium Carbonate	$2 \text{HCl} + \text{Na}_2\text{CO}_3 \rightarrow \text{CO}_2 \downarrow + \text{H}_2\text{O} + \text{NaCl}$
Hydrogen and Oxygen burn to form water	REDOX $2 \text{H}_2 + \text{O}_2 \rightarrow 2 \text{H}_2\text{O}$
Water decomposes to Hydrogen and Oxygen	REDOX $2 \text{H}_2\text{O} \rightarrow 2 \text{H}_2 + \text{O}_2 \uparrow$
Mercury (II) Oxide decompose to Mercury and Oxygen	REDOX $2 \text{HgO} \rightarrow 2 \text{Hg} + \text{O}_2 \uparrow$
Barium Chloride and Sodium Sulfate	$\text{BaCl}_2 + \text{Na}_2\text{SO}_4 \rightarrow \text{BaSO}_4 \downarrow + 2 \text{NaCl}$
Iron (III) Chloride and Phosphoric Acid	$\text{FeCl}_3 + \text{H}_3\text{PO}_4 \rightarrow$
Barium Nitrate and Sodium Sulfate	$\text{Ba(NO}_3)_2 + \text{Na}_2\text{SO}_4 \rightarrow$