Reactions HW #1 - Synthesis and Decomposition Name: _____

Write out the word equations or balanced chemical equations for these 7 reactions, including phases, then indicate if they are Synthesis or Decomposition reactions in the last column.

#	If there are symbols, write the word equation, if there are words, write the balanced chemical equation with phase symbols.	Is this reaction synthesis or decomposition? S or D
1	$2Mg + O_2 \rightarrow 2MgO$	
2	$Fe_2S_3 \rightarrow 2Fe + 3S$	
3	$MgO + CO_2 \rightarrow MgCO_3$	
4	copper I sulfide powder breaks down into copper and sulfur	
5	beryllium combines with oxygen to form beryllium oxide	
6	calcium reacts with nitrogen to form calcium nitride	
7	Potassium chlorate breaks down to potassium chloride & oxygen	
8	$N_{2(G)} + O_{2(G)} \rightarrow 2NO_{(G)}$	

Reactions HW #2 - <u>Single Replacement Reactions</u> Name: _____

Write balanced chemical reactions for each of these, with <u>phase symbols</u>. If there is no reaction, Write the symbols for the reactants, an arrow and an "X". A solution means it is AQUEOUS.

1	Zinc reacts with hydrochloric acid solution	
2	Iron (II) nitrate solution plus silver metal	
3	Fluorine gas mixed with sodium bromide solution	
4	Gold (III) chloride solution with magnesium metal	
5	Copper (II) sulfate solution with silver metal	
6	Bromine liquid into ammonium iodide solution	
7	Ammonium fluoride solution with chlorine gas	
8	Lithium hydroxide solution with titanium metal	
9	Barium hydrogen carbonate solution and lithium metal	
10	Potassium sulfate solution with lead metal	
11	Aluminum metal into nickel (II) chlorate solution	

Reactions HW #3 - <u>Double Replacement Reactions</u> Name: _____

Write balanced equations with PHASES, which are mandatory. Use the Solubility Guidelines Table (table F). One of these is not a reaction, will you find it? If it is a "no reaction", you will still balance the equation and indicate both products as AQ. Do not just write NO REACTION, that is not enough.

Sodium carbonate + zinc chlorate solutions react
Copper (II) sulfate + calcium chloride solutions react
Potassium hydroxide + lead (IV) nitrate solutions react
Silver hydrogen carbonate + Iron (II) bromide solutions react
Barium hydroxide + lithium sulfate solutions react
Ammonium phosphate + tin (II) acetate solutions react
Calcium chromate + sodium sulfide solutions react
Strontium acetate + lithium carbonate solutions react
Ammonium phosphate + rubidium nitrate solutions react

Reactions HW #4 - <u>Combustion Reactions</u> Name: _____

Write as FULL SENTENCES.

1. Combustion reactions always have these 2 products...
2. Combustion reactions always combine a hydrocarbon with…
3. A hydrocarbon is a molecule which ONLY contains…
4. If octane (gasoline) burns cleanly and completely, what are the products?
5. Propane is written as C_3H_8. Write the balanced chemical equation with phases for its combustion.
6. Define EXOTHERMIC and ENDOTHERMIC.
7. Combustion reactions are always exothermic or endothermic (circle one)
8. If methane gas in your Bunsen burner does not get enough oxygen, the combustion is incomplete a different chemical reaction occurs, called incomplete combustion. Balance this word equation: Methane (CH_4) and oxygen make solid carbon, carbon dioxide, and water.
9. Soot is the fine black dust that fills up chimneys everywhere is the carbon that does not get to form into CO_2 during incomplete combustion. Why would increasing $O_{2(G)}$ would eliminate soot.
10. List the other 4 kinds of chemical reactions you have learned already. Which of them is your favorite and why? <u>Be specific or funny</u>, it will help you remember.

Reactions HW #5 - <u>Reactions Review HW</u> Name: _____

Write Syn, Decomp, SR, DR, or Comb in the first column to describe each reaction. Then finish the reactions, with PHASE SYMBOLS.

	Type of Reaction	Balance these carefully, with PHASES.
1		$SrCl_{2(AQ)} + \quad Li_{(S)} \rightarrow$
2		$C_4H_{10(G)} + \quad O_{2(G)} \rightarrow$
3		$AgNO_{3(AQ)} + \quad CaCl_{2(AQ)} \rightarrow$
4		$P_{(S)} + \quad Cl_{2(G)} \rightarrow \quad PCl_{5(G)}$
5		$Al_{(S)} + \quad CuSO_{4(AQ)} \rightarrow$
6		$Ca(OH)_{2(AQ)} + \quad AlBr_{3(AQ)} \rightarrow$
7		$F_{2(G)} + \quad NaCl_{(AQ)} \rightarrow$
8		$SrCO_{3(S)} \rightarrow \quad SrO_{(S)} + \quad CO_{2(G)}$