## Answers pg 247 #1-5

- 1. In both synthesis and single displacement reactions, at least one reactant is an element and one new compound is produced.
- 2. In both decompositions and double displacement reactions, the reactant compounds are broken down.
- 3. Synthesis and decomposition reactions appear opposite. In synthesis a compound is formed and in decomposition a compound is broken down.
- 4. a) synthesis
  - b) single replacement
  - c) double replacement
  - d) decomposition
  - e) decomposition
  - f) single replacement
  - g) synthesis

5. a) Ba + 
$$S_8 \Rightarrow BaS$$
  
8Ba +  $S_8 \Rightarrow 8BaS$ 

c) 
$$Ba(NO_3)_2 + Na_2S \Rightarrow BaS + NaNO_3$$
  
 $Ba(NO_3)_2 + Na_2S \Rightarrow BaS + 2NaNO_3$ 

e) PbO 
$$\Rightarrow$$
 Pb + O<sub>2</sub>  
2PbO  $\Rightarrow$  2Pb + O<sub>2</sub>

g) 
$$SO_3 + H_2O \Rightarrow H_2SO_4$$

b) 
$$Br_2 + Nal \Rightarrow I_2 + NaBr$$
  
 $Br_2 + 2Nal \Rightarrow I_2 + 2NaBr$ 

d) 
$$Li_2CO_3 \Rightarrow CO_2 + Li_2O$$

f) Ca + H<sub>2</sub>O 
$$\Rightarrow$$
 H<sub>2</sub> + Ca(OH)<sub>2</sub>  
Ca + 2H<sub>2</sub>O  $\Rightarrow$  H<sub>2</sub> + Ca(OH)<sub>2</sub>