Name _____ Honors Balancing Reactions

A) For each of the following determine the missing mass for each reaction.

1) If 15.0 grams of nitrogen are reacted with 3.2 grams of hydrogen gas to form nitrogen III hydride, how many grams of nitrogen III hydride will be formed?

$N_2 + 3\ H_2 \rightarrow 2\ NH_3$

2) If 37.0 grams of magnesium react with hydrogen chloride to form 77.2 grams of magnesium chloride and 1.1 grams of hydrogen gas, how many grams of hydrogen chloride were reacted?

$Mg + 2\ HCl \rightarrow MgCl_2 + H_2$

B) Balance the following equations/reactions by placing small whole-number coefficients in front of the formulas, and determine the sum of the coefficients.

Reaction: Fill in the coefficients	**Sum of Coefficients**
___$C(s)$ + ___$H_2(g)$ → ___ $CH_4(g)$	
___$Fe(s)$ + ___$O_2(g)$ → ___$Fe_2O_3(s)$	
___$NaI(s)$ → ___$Na(s)$ + ___$I_2(s)$	
___$C_6H_{12}O_6(s)$ → ___$C(s)$ + ___$H_2O(l)$	
___$Na_2CO_3(aq)$ + ___$HCl(aq)$ → ___$NaCl(aq)$ + ___$H_2O(l)$ + ___$CO_2(g)$	
___$H_2(g)$ + ___$Cl_2(g)$ → ___$HCl(g)$	
___$CH_4(g)$ + ___$O_2(g)$ → ___$CO_2(g)$ + ___$H_2O(l)$	
___$N_2(g)$ + ___$H_2(g)$ → ___$NH_3(g)$	
___$Al_2O_3(s)$ → ___$Al(s)$ + ___$O_2(g)$	
___$CuO(s)$ + ___$C(s)$ → ___$Cu(s)$ + ___$CO_2(g)$	
___$Ca(OH)_2(aq)$ + ___$HCl(aq)$ → ___$CaCl_2(aq)$ + ___$H_2O(l)$	
___$K(s)$ + ___$B_2O_3(s)$ → ___$K_2O\ (s)$ + ___$B(s)$	
___$C_3H_8(g)$ + ___$O_2(g)$ → ___$CO_2(g)$ + ___$H_2O(g)$	
___$FeS(s)$ + ___$O_2(g)$ → ___$Fe_2O_3(s)$ + ___$SO_2(s)$	