Answers pg 233 #4,5

4. A solid has a mass of 35 g. When it is mixed with a solution, a chemical reaction occurs. If the final total mass of products is 85 g, what was the mass of the solution?

solid + solution = products

35g + ?? = 85g

?? = 85 g - 35g

?? = 50g

5. Solution A has a mass of 60 g. Solution B has a mass of 40 g. When they are mixed, a chemical reaction occurs in which gas is produced. If the mass of the final mixture is 85 g, what mass of gas was produced?
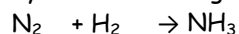
Solution A + Solution B = final mixture

60g + 40g = 85 g

100g ≠ 85 g (what is missing is the gas)

100 g - 85 g = 15 g

The mass of the gas produced was 15g

Answers pg 229 #1,2

1 a) Why is the following equation not balanced?

$$N_2 + H_2 \rightarrow NH_3$$

Because there are 2 nitrogen atoms on the left side (reactants) and only one nitrogen atom on the right side (products). Also there are 2 hydrogen atoms on the left side (reactants) and 3 hydrogen atoms on the right side. In order for an equation to be balanced it must have the same number of atoms on both sides of the equation.

b) $N_2 + H_3 \rightarrow N_2H_3$
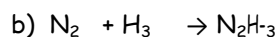
This equation is balanced incorrectly because you CANNOT change the subscripts you can only add coefficients. By changing the subscripts you are changing the chemical composition of the substance.

2. a) $\underline{2}$ Na + Cl_2 → $\underline{2}$NaCl

b) $\underline{4}$K + O_2 → $\underline{2}$ K_2O

c) $\underline{4}$$H_2$ + O_2 → $\underline{2}$$H_2O$

d) H_2 + Cl_2 → $\underline{2}$HCl

e) N_2 + $\underline{3}$$H_2$ → $\underline{2}$$NH_3$

f) $\underline{2}$CO + O_2 → $\underline{2}$ CO_2

g) $\underline{2}$Al + $\underline{3}$$Br_2$ → $\underline{3}$$AlBr_3$

h) N_2H_4 + O_2 → $\underline{2}$ H_2O + N_2

i) CH_4 + $\underline{2}$$O_2$ → CO_2 + $\underline{2}$$H_2O$