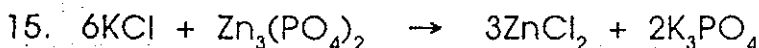
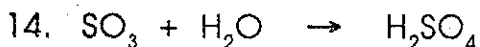
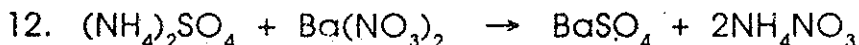
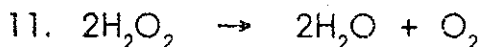
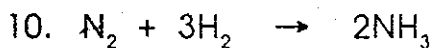
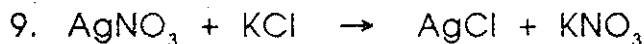
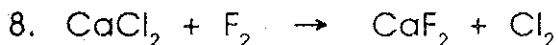
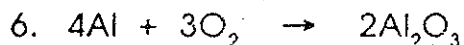
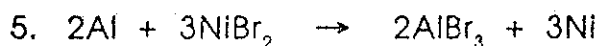
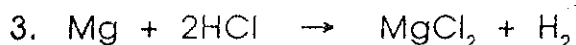
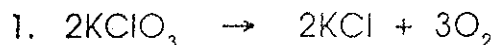


# CLASSIFYING CHEMICAL REACTIONS

Name \_\_\_\_\_

Classify the following reactions as synthesis, decomposition, single replacement or double replacement.

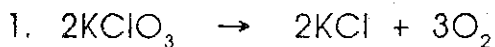


# CONSERVATION OF MASS

Name \_\_\_\_\_

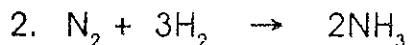
In chemical reactions, mass is neither gained nor lost. The total mass of all the reactants equals the total mass of all the products. Atoms are just rearranged into different compounds.

Using this idea, solve the following problems.



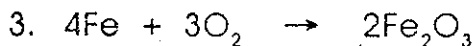
If 500 g of  $\text{KClO}_3$  decomposes and produces 303 g of  $\text{KCl}$ , how many grams of  $\text{O}_2$  are produced?

\_\_\_\_\_



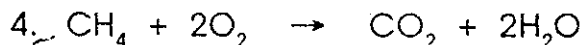
How many grams of  $\text{H}_2$  are needed to react with 100 g of  $\text{N}_2$  to produce 121 g of  $\text{NH}_3$ ?

\_\_\_\_\_



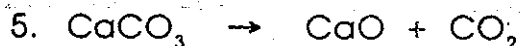
How many grams of oxygen are needed to react with 350 g of iron to produce 500 g of  $\text{Fe}_2\text{O}_3$ ?

\_\_\_\_\_



16 g of  $\text{CH}_4$  react with 64 g of  $\text{O}_2$ , producing 44 g of  $\text{CO}_2$ . How many grams of water are produced?

\_\_\_\_\_



How much  $\text{CO}_2$  is produced from the decomposition of 200 g of  $\text{CaCO}_3$  if 112 g of  $\text{CaO}$  are produced?

\_\_\_\_\_

## Classifying Chemical Reactions

Balance the following equations where needed and identify the type of reaction of each.

- $C(s) + O_2(g) \rightarrow CO_2(g)$
- $S(s) + O_2(g) \rightarrow SO_2(g)$
- $K(s) + O_2(g) \rightarrow K_2O(s)$
- $Cu(s) + O_2(g) \rightarrow CuO(s)$
- $H_2O(l) + \text{electricity} \rightarrow H_2(g) + O_2(g)$
- $Ag(s) + S(s) \rightarrow Ag_2S(s)$
- $Fe_2O_3(s) \rightarrow Fe(s) + O_2(g)$
- $CaCO_3(s) \rightarrow CaO(s) + CO_2(g)$
- $Ca(s) + O_2(g) \rightarrow CaO(s)$
- $Al(s) + S(s) \rightarrow Al_2S_3(s)$
- $Na(s) + O_2(g) \rightarrow Na_2O(s)$
- $NO(g) + O_2(g) \rightarrow NO_2(g)$
- $NH_3(g) + HCl(g) \rightarrow NH_4Cl(s)$
- $N_2(g) + H_2(g) \rightarrow NH_3(g)$
- $Al(s) + Fe_2O_3(s) \rightarrow Al_2O_3(s) + Fe(s)$
- $CO(g) + O_2(g) \rightarrow CO_2(g)$
- $FeS(s) + HCl(aq) \rightarrow FeCl_2(aq) + H_2S(g)$
- $SO_2(g) + O_2(g) \rightarrow SO_3(g)$
- $H_2(g) + Cl_2(g) \rightarrow HCl(g)$
- $CuF_2(aq) + H_2SO_4(aq) \rightarrow CuSO_4(aq) + HF(aq)$
- $Al(s) + O_2(g) \rightarrow Al_2O_3(s)$
- $P(s) + O_2(g) \rightarrow P_2O_5(s)$
- $MnO_2(s) + HCl(aq) \rightarrow H_2O(l) + MnCl_2(aq) + Cl_2(g)$
- $Mg(s) + HCl(aq) \rightarrow H_2(g) + MgCl_2(aq)$
- $Hg(l) + H_2SO_4(aq) \rightarrow HgSO_4(aq) + H_2(g)$
- $NaNO_3(aq) + HCl(aq) \rightarrow NaCl(aq) + HNO_3(aq)$
- $NaOH(aq) + HCl(aq) \rightarrow NaCl(aq) + H_2O(l)$
- $CuSO_4(aq) + KNO_3(aq) \rightarrow Cu(NO_3)_2(aq) + K_2SO_4(aq)$
- $Pb(OH)_4(s) + KI(aq) \rightarrow PbI_4(s) + KOH(aq)$
- $K_2Cr_2O_7(aq) + Na_2S(aq) \rightarrow K_2S(aq) + Na_2Cr_2O_7(aq)$

# CLASSIFYING CHEMICAL REACTIONS

Name \_\_\_\_\_

Classify the following reactions as synthesis, decomposition, single replacement or double placement.

