

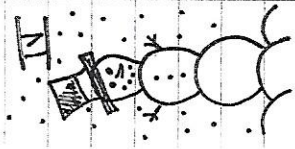
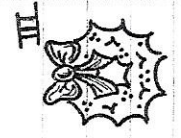
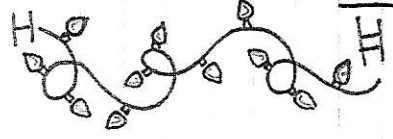
Key

S.T.U.D.Y : GUIDE

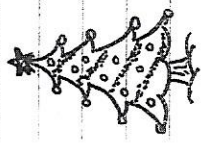
Classify each reaction:

- A) $PbCl_2 + AgNO_3 \rightarrow Pb(NO_3)_2 + AgCl$ DR
- B) $NH_3 + HCl \rightarrow NH_4Cl$ SYN
- C) $Al_2S_3 \rightarrow Al + S$ DEC
- D) $C_4H_{12} + D_2 \rightarrow CD_2 + H_2O$ COM
- E) $Zn + S \rightarrow ZnS$ SYN
- F) $Fe + H_2SO_4 \rightarrow FeSO_4 + H_2$ SR
- G) $Cl_2 + KBr \rightarrow KCl + Br_2$ SR

product	liquid	acid	subscript
reactants	gas	hydroxide	coefficient
Solid	aqueous	superscript	diatomic



1. In reaction E from Part I, ZnS is a product
2. In reaction C from Part I, the "2" in Al_2S_3 is called a subscript, and it represents the number of Aluminum atoms.
3. The only number that can be changed in balancing an equation is the coefficient
4. $H_2(g) + O_2(g) \rightarrow H_2O(l)$ The "l" means liquid
5. When a nonmetal reacts with water, an acid is formed.
6. There are seven diatomic elements.
*They are $H_2, I_2, N_2, Br_2, O_2, Cl_2, F_2$
7. In reaction G, Cl_2 is part of the reactants
8. A compound dissolved in water is called aqueous
9. A metal reacts with water to form a metal hydroxide.



Balance each equation:

- A) $1 C_4H_{12} + 7 O_2 \rightarrow 4 CO_2 + 6 H_2O$
- B) $2 Na + 2 H_2O \rightarrow 2 NaOH + 1 H_2$
- C) $1 Li_2O + 1 H_2O \rightarrow 2 LiOH$
- D) $1 PbCl_2 + 2 AgNO_3 \rightarrow 1 Pb(NO_3)_2 + 2 AgCl$

Predict the products: (if no reaction, write NR)

- A) $MgBr_2 + Cl_2 \rightarrow MgCl_2 + Br_2$
- B) $Al + Fe_2O_3 \rightarrow Al_2O_3 + Fe$
- C) $H_2SO_4 + NaOH \rightarrow Na_2SO_4 + H_2O$
- D) $C_4H_8 + O_2 \rightarrow CO_2 + H_2O$
- E) $BaF_2 + Ca \rightarrow NR$
- F) $K_2O + H_2O \rightarrow KOH$

Write a balanced equation for each: (show states of matter!)

- A) Solid aluminum is added to aqueous copper(II) chloride to form an aluminum chloride solution and copper precipitate.
 $2 Al(s) + 3 CuCl_2(aq) \rightarrow 2 AlCl_3(aq) + 3 Cu(s)$
- B) Aqueous solutions of Ammonium carbonate and Sodium hydroxide react to form ammonium hydroxide and Sodium carbonate.
 $(NH_4)_2CO_3(aq) + 2 NaOH(aq) \rightarrow 2 NH_4OH(aq) + Na_2CO_3(aq)$
- C) Iodine trichloride decomposes to form iodine crystals and chlorine gas.
 $2 ICl_3(s) \rightarrow I_2(s) + 3 Cl_2(g)$

