Double Replacement

Description: During double replacement reactions, the cations and anions of two different compounds in solution switch.

$AB + CD \rightarrow CB + AD$ (*A* and *C* switch places!)

Comments:

(1) In these reactions, there is never a change in oxidation state (charge).

(2) NO single elements, CO_2 or H_2O as reactants!!!

Examples:

$AgNO_3 + NaCl \rightarrow NaNO_3 + AgCl_{(s)}$

$Pb(NO_3)_2 + CuSO_4 \rightarrow Cu(NO_3)_2 + PbSO_{4(s)}$

Practice Problems: Predict products and balance each equation below.

1. $K_2CO_3 + BaCl_2 \rightarrow$

2. $Cd_3(PO_4)_2 + (NH_4)_2S \rightarrow$

3. $AgNO_3 + KCl \rightarrow$

4. $Na_2CO_3 + H_2SO_4 \rightarrow$

5. $Al_2(SO_4)_3 + Ca_3(PO_4)_2 \rightarrow$

6. $FeBr_2 + K_2CO_3 \rightarrow$

ACID BASE
Double Replacement

Description: During acid base double replacement reactions, the acid and base combine to produce a metal ionic compound and water.

HB + C(OH) → CB + H(OH) (H and C switch places, to make H(OH) or H_2O)

Comments:

(1) In these reactions, there is never a change in oxidation state (charge).
(2) Reactants are an Acid (H) and a Base (OH)
(3) Products are a metal ionic compound and water (H_2O)

1. $Ca(OH)_2$ + HCl →

2. $Mg(OH)_2$ + HNO_3 →

3. $Al(OH)_3$ + H_2SO_4 →

4. $Ca(OH)_2$ + H_2CO_3 →