Arrhenius Theory of Acids and Bases

Acids

- > an acid is a substance that **dissociates** (breaks apart) in water to form one or more H⁺
- > an acid is therefore a proton donor

$$HBr \rightarrow H^{+}_{(aq)} + Br_{(aq)}$$

$$HCI \rightarrow H^{+}_{(aq)} + CI^{-}_{(aq)}$$

$$H_2SO_4 \rightarrow 2H^+_{(aq)} + SO_4^-_{(aq)}$$

$$H_3PO_4 -> 3H^+_{(aq)} + PO_4^{3-}_{(aq)}$$

Bases

- a base is a substance that dissociates (breaks apart) in water to form one or more OH ions (hydroxide)
- a base is a proton acceptor

$$NaOH \rightarrow Na^{+}_{(aq)} + OH^{-}_{(aq)}$$

$$Ba(OH)_2 -> Ba^+_{(aq)} + 2OH^-_{(aq)}$$

$$AI(OH)_3 -> AI^{3+}_{(aq)} + 3OH^{-}_{(aq)}$$

$$NH_4OH -> NH_4^+_{(aq)} + OH_{(aq)}^-$$

$$Ca(OH)_2 -> Ca^{2+}_{(aq)} + OH_{(aq)}^{-}$$