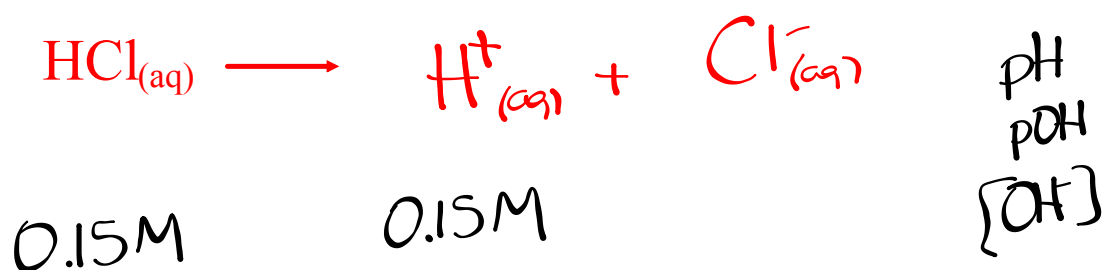


## Strong Acids

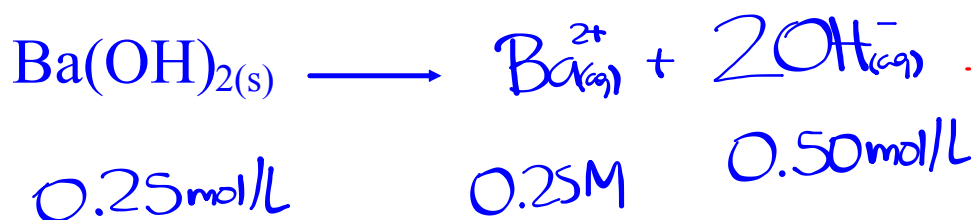
Calculate the concentration of the hydroxide ions, pH and pOH of a 0.15 mol/L solution of hydrochloric acid at 25°C.

**\*Strong acids will always completely ionize\***



## Strong Bases (Ionic Hydroxides)

Calculate the hydrogen ion concentration in a 0.25 mol/L solution of barium hydroxide.



$[\text{OH}^-]$  ✓  
 $[\text{H}^+]$   
 pH  
 pOH

$$\text{pOH} = -\log[\text{OH}_{(aq)}^-]$$

$$\text{pOH} = -\log[0.50]$$

$$\text{pOH} = 0.30$$

$$\text{pH} + \text{pOH} = 14.00$$

$$\text{pH} = 14.00 - 0.30$$

$$\text{pH} = 13.70$$

$$K_w = [\text{H}_{(aq)}^+][\text{OH}_{(aq)}^-] = 1.0 \times 10^{-14}$$

$$[\text{H}_{(aq)}^+] = \frac{1.0 \times 10^{-14}}{0.50 \text{ M}}$$

$$[\text{H}_{(aq)}^+] = 2.0 \times 10^{-14} \text{ M}$$