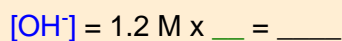
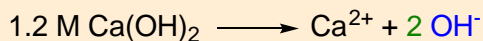
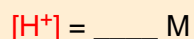
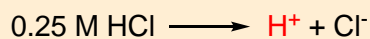


CONCEPT: pH OF STRONG ACIDS AND BASES

- Recall: strong acids and strong bases completely ionize in water

☐ $[H^+]$ and $[OH^-]$ are _____ to concentration of _____ acid and base, respectively.



- Recall: strong bases may contain the following ions.

Ions of Strong Bases:

 OH^- , H^- , NH_2^- , O^{2-}

Calculation of pH or pOH:

Calculation of pH or pOH: $[\text{ }] = [\text{H}^+], [\text{NH}_2^-], [\text{O}^{2-}]$

EXAMPLE: If the concentration of $\text{Ba}(\text{H})_2$ solution is 0.398 M, calculate its pOH.

PRACTICE: An aqueous solution of HBrO_4 has a pH of 4.34. Find the molar concentration of HBrO_4 solution.

PRACTICE: Calculate the pH of a 25 mL of 5.45×10^{-2} M LiOH solution.

PRACTICE: HI is a strong acid ($K_a = 3.2 \times 10^9$). Calculate $[H^+]$, $[OH^-]$, pH and pOH of a 7.1×10^{-2} M HI solution.

pH & pOH Formulas

$$\text{pH} + \text{pOH} = 14$$

$$\text{pH} = -\log [\text{H}^+]$$

$$[H^+] = 10^{-pH}$$

$$\text{pOH} = -\log [\text{OH}^-]$$

$$[\text{OH}^-] = 10^{-\text{pOH}}$$