

**I. Write and Balance the Following Equations**

- $\text{Ca}(\text{AlO}_2)_2 + \text{HCl} \rightarrow \text{AlCl}_3 + \text{CaCl}_2 + \text{H}_2\text{O}$
- $\text{CeO}_2 + \text{KI} + \text{HCl} \rightarrow \text{KCl} + \text{CeCl}_3 + \text{H}_2\text{O} + \text{I}_2$
- $\text{Ho} + \text{H}_2\text{O} \rightarrow \text{Ho}(\text{OH})_3 + \text{H}_2$
- $\text{IrCl}_3 + \text{NaOH} \rightarrow \text{Ir}_2\text{O}_3 + \text{HCl} + \text{NaCl}$
- $\text{MoO}_3 + \text{Zn} + \text{H}_2\text{SO}_4 \rightarrow \text{Mo}_2\text{O}_3 + \text{ZnSO}_4 + \text{H}_2\text{O}$
- $\text{Cu} + \text{H}_2\text{SO}_4 \rightarrow \text{CuSO}_4 + \text{SO}_2 + \text{H}_2\text{O}$
- $(\text{NH}_4)_2\text{SO}_4 + \text{KOH} \rightarrow \text{K}_2\text{SO}_4 + \text{NH}_3 + \text{H}_2\text{O}$
- ferric sulfide + oxygen gas  $\rightarrow$  ferric oxide + sulfur dioxide
- ammonia + oxygen gas  $\rightarrow$  nitrogen monoxide + water
- calcium hydroxide + nitrous acid  $\rightarrow$  calcium nitrite + water
- aluminum + plumbous nitrate  $\rightarrow$  aluminum nitrate + lead
- methane + oxygen gas  $\xrightarrow{\Delta}$  carbon dioxide + water vapor
- aluminum nitrate + sulfuric acid  $\rightarrow$  aluminum sulfate + nitric acid
- iron + hydrochloric acid  $\rightarrow$  ferric chloride + hydrogen
- phosphoric acid + magnesium hydroxide  $\rightarrow$  magnesium phosphate + water
- ferric bromide + ammonium sulfide  $\rightarrow$  ferric sulfide + ammonium bromide
- benzene ( $\text{C}_6\text{H}_6$ ) + oxygen gas  $\xrightarrow{\Delta}$  carbon dioxide + water vapor