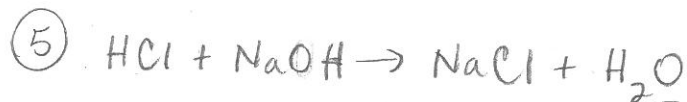


$$\frac{5.87 \text{ g Mg(OH)}_2}{1} \cdot \frac{1 \text{ mol Mg(OH)}_2}{58.33 \text{ g Mg(OH)}_2} \cdot \frac{2 \text{ mol H}_2\text{O}}{1 \text{ mol Mg(OH)}_2} \cdot \frac{18.02 \text{ g H}_2\text{O}}{1 \text{ mol H}_2\text{O}} = 3.63 \text{ g H}_2\text{O}$$

$$\frac{12.84 \text{ g HCl}}{1} \cdot \frac{1 \text{ mol HCl}}{36.46 \text{ g HCl}} \cdot \frac{2 \text{ mol H}_2\text{O}}{2 \text{ mol HCl}} \cdot \frac{18.02 \text{ g H}_2\text{O}}{1 \text{ mol H}_2\text{O}} = 6.35 \text{ g H}_2\text{O}$$

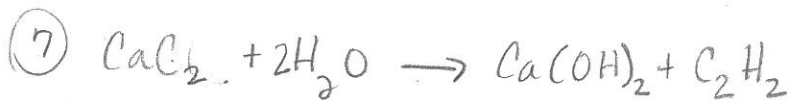
∴ Mg(OH)₂ is LR



$$\frac{7.81 \text{ g HCl}}{1} \cdot \frac{1 \text{ mol HCl}}{36.46 \text{ g HCl}} \cdot \frac{1 \text{ mol H}_2\text{O}}{1 \text{ mol HCl}} \cdot \frac{18.02 \text{ g H}_2\text{O}}{1 \text{ mol H}_2\text{O}} = 3.86 \text{ g H}_2\text{O}$$

$$\frac{5.24 \text{ g NaOH}}{1} \cdot \frac{1 \text{ mol NaOH}}{40.00 \text{ g NaOH}} \cdot \frac{1 \text{ mol H}_2\text{O}}{1 \text{ mol NaOH}} \cdot \frac{18.02 \text{ g H}_2\text{O}}{1 \text{ mol H}_2\text{O}} = 2.36 \text{ g H}_2\text{O}$$

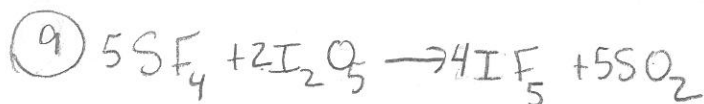
LR is NaOH



$$\frac{43.25 \text{ g CaC}_2}{1} \cdot \frac{1 \text{ mol CaC}_2}{64.10 \text{ g CaC}_2} \cdot \frac{1 \text{ mol C}_2\text{H}_2}{1 \text{ mol CaC}_2} \cdot \frac{26.04 \text{ g C}_2\text{H}_2}{1 \text{ mol C}_2\text{H}_2} = 17.57 \text{ g C}_2\text{H}_2$$

LR is CaC₂

$$\frac{33.71 \text{ g H}_2\text{O}}{1} \cdot \frac{1 \text{ mol H}_2\text{O}}{18.02 \text{ g H}_2\text{O}} \cdot \frac{1 \text{ mol C}_2\text{H}_2}{2 \text{ mol H}_2\text{O}} \cdot \frac{26.04 \text{ g C}_2\text{H}_2}{1 \text{ mol C}_2\text{H}_2} = 24.36$$



$$\frac{4.687 \text{ g SF}_4}{1} \cdot \frac{1 \text{ mol SF}_4}{108.07 \text{ g SF}_4} \cdot \frac{5 \text{ mol SO}_2}{5 \text{ mol SF}_4} \cdot \frac{64.07 \text{ g SO}_2}{1 \text{ mol SO}_2} = 2.779 \text{ g SO}_2$$

∴ LR is SF₄

$$\frac{6.281 \text{ g I}_2\text{O}_5}{1} \cdot \frac{1 \text{ mol I}_2\text{O}_5}{333.80 \text{ g I}_2\text{O}_5} \cdot \frac{5 \text{ mol SO}_2}{2 \text{ mol I}_2\text{O}_5} \cdot \frac{64.07 \text{ g SO}_2}{1 \text{ mol SO}_2} = 3.014 \text{ g SO}_2$$