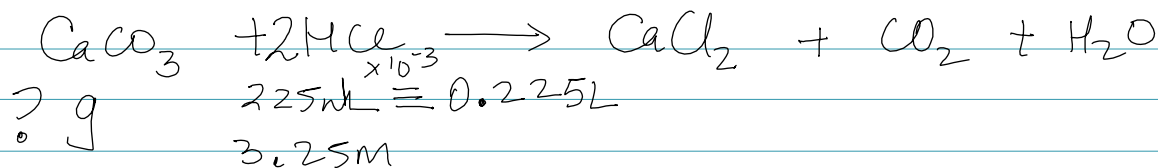


Solution Stoichiometry - solid/liquid ①

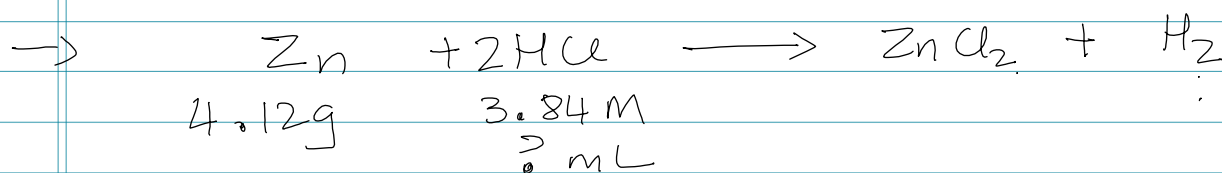
- ① In a reaction of CaCO_3 with HCl , how many grams of CaCO_3 are consumed in a reaction with 225 mL of 3.25 M HCl ?



Strategy: $\text{mol HCl} \rightarrow \text{mol CaCO}_3 \rightarrow \text{g CaCO}_3$

$$\underbrace{0.225 \text{ L} \times 3.25 \frac{\text{mol HCl}}{\text{L}}}_{\text{mol HCl}} \times \frac{1 \text{ mol CaCO}_3}{2 \text{ mol HCl}} \times \frac{100.1 \text{ g CaCO}_3}{1 \text{ mol CaCO}_3} = \boxed{36.6 \text{ g CaCO}_3}$$

- ② How many mL of 3.84 M HCl are required to consume 4.12 g Zn ?



Strategy: $\text{g Zn} \rightarrow \text{mol Zn} \xrightarrow{\text{mol ratio}} \text{mol HCl} \xrightarrow{\text{using molarity}} \text{L HCl} \rightarrow \text{mL HCl}$

$$4.12 \text{ g Zn} \times \frac{1 \text{ mol Zn}}{65.39 \text{ g}} \times \frac{2 \text{ mol HCl}}{1 \text{ mol Zn}} \times \frac{1 \text{ L HCl}}{3.84 \text{ mol HCl}} \times \frac{1000 \text{ mL}}{1 \text{ L}} = \boxed{32.8 \text{ mL}}$$

$\frac{\text{mol}}{\text{L}} \cdot \frac{\text{L}}{\text{mol}}$