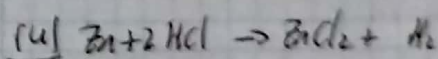


$$\text{NaOH} = 23 + 16 + 1 = 40\text{g}$$

$$120\text{g NaOH} \times \frac{1\text{mol NaOH}}{40\text{g}} \times \frac{1\text{mol CO}_2}{2\text{mol NaOH}} =$$

$$= 1.5\text{mol CO}_2$$

$$V = \frac{nRT}{P} = \frac{1.5 \cdot 0.082 \cdot 273}{1} = 33.579\text{L}$$



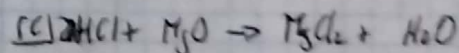
$$6\text{g HCl} \times \frac{1\text{mol HCl}}{36.5\text{g}} \times \frac{1\text{mol Zn}}{2\text{mol HCl}} \times \frac{65.4\text{g}}{1\text{mol Zn}} =$$

$$= 5.375\text{g}$$



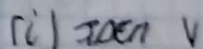
$$6\text{g HCl} \times \frac{1\text{mol HCl}}{36.5\text{g}} \times \frac{1\text{mol H}_2}{2\text{mol HCl}} = 0.082\text{moles}$$

$$V = \frac{nRT}{P} = \frac{0.082 \cdot 0.082 \cdot 273}{1} = 1.836\text{L}$$



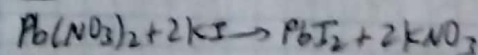
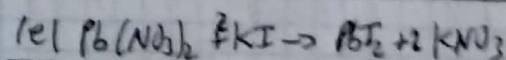
$$7.5\text{g HCl} \times \frac{1\text{mol HCl}}{36.5\text{g}} \times \frac{1\text{mol MgCl}_2}{2\text{mol HCl}} \times \frac{125.7\text{g}}{1\text{mol MgCl}_2} =$$

$$= 12.435 \text{ } 12.935\text{g}$$



$$7.5\text{g HCl} \times \frac{1\text{mol HCl}}{36.5\text{g}} \times \frac{1\text{mol H}_2\text{O}}{2\text{mol HCl}} = 0.103\text{mol}$$

$$V = \frac{nRT}{P} = \frac{0.103 \cdot 0.082 \cdot 273}{1} = 2.306\text{L}$$



$$\text{Pb}(\text{NO}_3)_2 = 331.2\text{g} \quad \text{PbI}_2 = 461\text{g}$$

$$15\text{g Pb}(\text{NO}_3)_2 \times \frac{1\text{mol Pb}(\text{NO}_3)_2}{331.2\text{g}} \times \frac{1\text{mol PbI}_2}{1\text{mol Pb}(\text{NO}_3)_2} =$$

$$= \frac{461\text{g}}{1\text{mol PbI}_2} = 20.879\text{g}$$

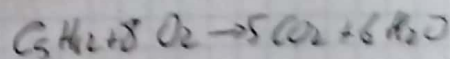
1b



$$12\text{g Zn} \times \frac{1\text{mol Zn}}{65.4\text{g}} \times \frac{1\text{mol ZnSO}_4}{1\text{mol Zn}} \times \frac{161.4\text{g}}{1\text{mol ZnSO}_4} =$$

$$= 25.41\text{g}$$

1a



$$25^\circ\text{C} = 298\text{K} \quad P = 760\text{mmHg} = 0.921\text{atm}$$

$$216\text{g C}_5\text{H}_{12} \times \frac{1\text{mol C}_5\text{H}_{12}}{72\text{g}} \times \frac{8\text{mol O}_2}{1\text{mol C}_5\text{H}_{12}} = 24\text{mol}$$

$$V = \frac{nRT}{P} = \frac{24 \cdot 0.082 \cdot 298}{0.921} = 636.76\text{L}$$

1s IDEN

$$600\text{g CO}_2 \times \frac{1\text{mol CO}_2}{44\text{g}} \times \frac{1\text{mol C}_5\text{H}_{12}}{5\text{mol CO}_2} \times \frac{72\text{g}}{1\text{mol C}_5\text{H}_{12}} =$$

$$= 216\text{g}$$

1j



$$100\text{g NaOH} \times \frac{1\text{mol NaOH}}{40\text{g}} \times \frac{1\text{mol H}_2\text{O}}{2\text{mol NaOH}} =$$

$$\times \frac{18\text{g}}{1\text{mol H}_2\text{O}} = 22.5\text{g H}_2\text{O}$$