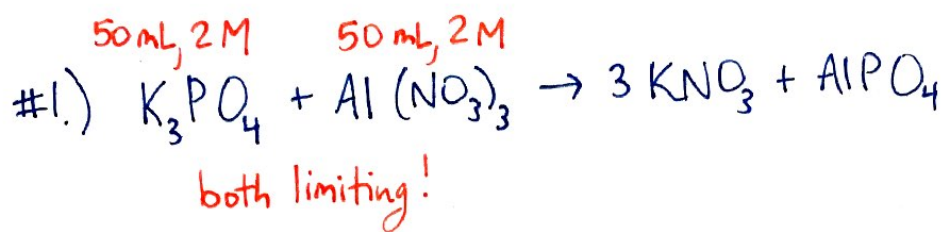


AP Unit 2 Quiz: Review Kahoot



$$50\text{ mL} \times 2\text{ M} = 100\text{ mmol K}_3\text{PO}_4 \times \frac{3\text{ K}^+}{1\text{ K}_3\text{PO}_4} = 300\text{ mmol K}^+$$

$$[\text{K}^+] = \frac{300\text{ mmol}}{100\text{ mL}} = \boxed{3\text{ M}}$$

50 mL + 50 mL

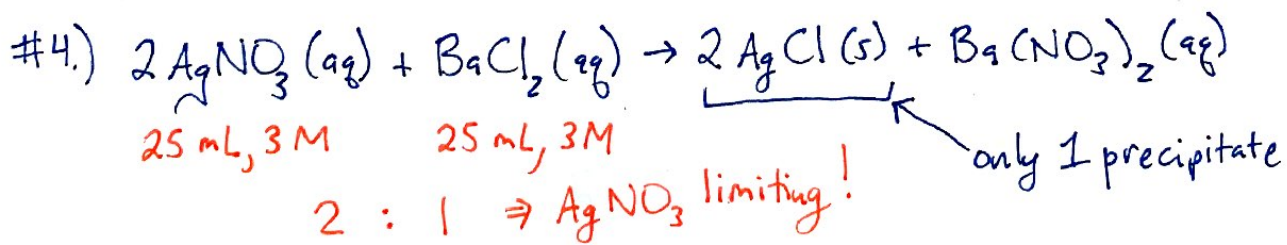


$$0.250\text{ L} \times 5.0\text{ M} = 1.25\text{ mol KClO}_3 \times \frac{3\text{ O}_2}{2\text{ KClO}_3} = 1.875\text{ mol O}_2$$

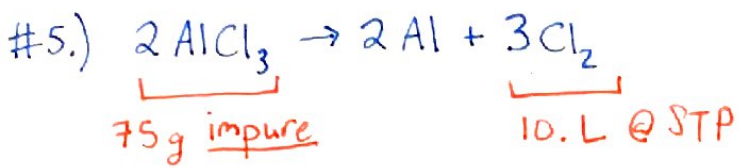
$$V = \frac{nRT}{P} = \frac{(1.875)(62.36)(\overset{315\text{ K}}{42+273})}{635} = \boxed{58\text{ L}}$$

#3.) $51.6 \times \overset{85.5\%}{0.855} = 44.118\text{ g K}_2\text{S} \times \frac{1\text{ mol}}{110.26\text{ g}} = 0.4\text{ mol}$
 $51.6 - 44.118 = 7.482\text{ g NiO} \times \frac{1\text{ mol}}{74.69\text{ g}} = 0.1\text{ mol}$

$\left. \begin{array}{l} = 4 \\ \div 0.1 \\ = 1 \end{array} \right\}$

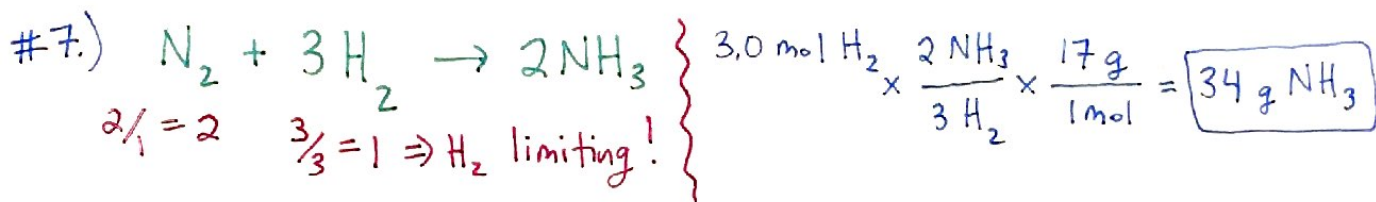


*Double replacement rxn \Rightarrow NOT redox



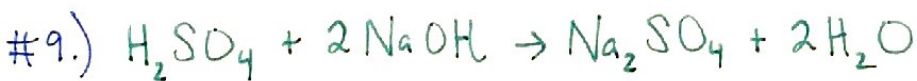
$$10. \text{ L } \text{Cl}_2 \times \frac{1 \text{ mol}}{22.4 \text{ L}} \times \frac{2 \text{ AlCl}_3}{3 \text{ Cl}_2} \times \frac{133.3 \text{ g}}{1 \text{ AlCl}_3} = 39.67 \text{ g AlCl}_3$$

$$\% = \frac{39.67 \text{ g}}{75 \text{ g}} \times 100 = \boxed{53\%}$$



$$\frac{29 \text{ g NaCl}}{58 \text{ g/mol}} = 0.5/2 = 0.25 \Rightarrow \text{NaCl limiting} \quad \left. \vphantom{\frac{29 \text{ g NaCl}}{58 \text{ g/mol}}} \right\} \frac{29 \text{ g CaO}}{56 \text{ g/mol}} \approx 0.5/1 = 0.5$$

$$29 \text{ g NaCl} \times \frac{1 \text{ mol}}{58 \text{ g}} \times \frac{1 \text{ CaCl}_2}{2 \text{ NaCl}} \times \frac{110.98 \text{ g}}{1 \text{ mol}} = \boxed{28 \text{ g CaCl}_2}$$



$$184 \text{ g Na}_2\text{SO}_4 \times \frac{1 \text{ mol}}{142 \text{ g}} \times \frac{2 \text{ H}_2\text{O}}{1 \text{ Na}_2\text{SO}_4} = \boxed{2.60 \text{ mol H}_2\text{O}}$$



$$\frac{0.31}{1} = 0.31 \quad \frac{0.52}{2} = 0.26 \Rightarrow \text{HCl limiting}$$

$$0.52 \text{ mol HCl} \times \frac{1 \text{ H}_2}{2 \text{ HCl}} \times \frac{2 \text{ g}}{1 \text{ mol}} = \boxed{0.52 \text{ g}}$$