

- 20.0 cm³ of hydrochloric acid (HCl) was neutralized by 25.5 cm³ of 0.100 mol/dm³ potassium hydroxide (KOH) solution. Calculate the concentration of the HCl in mol/dm³.
 - Equation: $\text{HCl(aq)} + \text{KOH(aq)} \rightarrow \text{KCl(aq)} + \text{H}_2\text{O(l)}$
 - Answer: 0.128 mol/dm³
- A student titrated 25.0 cm³ of sulfuric acid (H₂SO₄) with 0.150 mol/dm³ sodium hydroxide (NaOH) solution. The average titre was 18.6 cm³. Calculate the concentration of the sulfuric acid in mol/dm³.
 - Equation: $2\text{NaOH(aq)} + \text{H}_2\text{SO}_4\text{(aq)} \rightarrow \text{Na}_2\text{SO}_4\text{(aq)} + 2\text{H}_2\text{O(l)}$
 - Answer: 0.0558 mol/dm³
- A solution of nitric acid (HNO₃) has a concentration of 0.250 mol/dm³. 25.0 cm³ of this solution was required to neutralize 15.8 cm³ of barium hydroxide (Ba(OH)₂) solution. Calculate the concentration of the barium hydroxide solution in mol/dm³.
 - Equation: $2\text{HNO}_3\text{(aq)} + \text{Ba(OH)}_2\text{(aq)} \rightarrow \text{Ba(NO}_3)_2\text{(aq)} + 2\text{H}_2\text{O(l)}$
 - Answer: 0.199 mol/dm³
- A chemist titrated 20.0 cm³ of ammonia solution (NH₃) with 0.200 mol/dm³ hydrochloric acid (HCl). It took 15.5 cm³ of the acid to reach the end point. Calculate the concentration of the ammonia solution in mol/dm³.
 - Equation: $\text{NH}_3\text{(aq)} + \text{HCl(aq)} \rightarrow \text{NH}_4\text{Cl(aq)}$
 - Answer: 0.155 mol/dm³
- A titration was carried out using 25.0 cm³ of 0.100 mol/dm³ potassium hydroxide (KOH) solution and ethanoic acid (CH₃COOH). The average titre was 31.2 cm³. Calculate the concentration of the ethanoic acid in mol/dm³.
 - Equation: $\text{CH}_3\text{COOH(aq)} + \text{KOH(aq)} \rightarrow \text{CH}_3\text{COOK(aq)} + \text{H}_2\text{O(l)}$
 - Answer: 0.125 mol/dm³
- A student used 22.8 cm³ of 0.125 mol/dm³ sodium hydroxide (NaOH) solution to neutralize 25.0 cm³ of a solution of phosphoric acid (H₃PO₄). Calculate the concentration of the phosphoric acid in mol/dm³.
 - Equation: $3\text{NaOH(aq)} + \text{H}_3\text{PO}_4\text{(aq)} \rightarrow \text{Na}_3\text{PO}_4\text{(aq)} + 3\text{H}_2\text{O(l)}$
 - Answer: 0.0380 mol/dm³
- In a titration, 17.6 cm³ of 0.100 mol/dm³ sulfuric acid (H₂SO₄) was needed to neutralize 25.0 cm³ of a solution of potassium carbonate (K₂CO₃). Calculate the concentration of the potassium carbonate solution in mol/dm³.
 - Equation: $\text{H}_2\text{SO}_4\text{(aq)} + \text{K}_2\text{CO}_3\text{(aq)} \rightarrow \text{K}_2\text{SO}_4\text{(aq)} + \text{H}_2\text{O(l)} + \text{CO}_2\text{(g)}$
 - Answer: 0.0704 mol/dm³
- A solution of hydrobromic acid (HBr) has a concentration of 0.150 mol/dm³. 20.0 cm³ of this solution neutralized 27.5 cm³ of lithium hydroxide (LiOH) solution. What is the concentration of the lithium hydroxide solution in mol/dm³?
 - Equation: $\text{HBr(aq)} + \text{LiOH(aq)} \rightarrow \text{LiBr(aq)} + \text{H}_2\text{O(l)}$
 - Answer: 0.110 mol/dm³
- A student titrated 25.0 cm³ of a solution of sodium hydrogencarbonate (NaHCO₃) with 0.100 mol/dm³ nitric acid (HNO₃). The average titre was 21.8 cm³. Calculate the concentration of the sodium hydrogencarbonate solution in mol/dm³.
 - Equation: $\text{NaHCO}_3\text{(aq)} + \text{HNO}_3\text{(aq)} \rightarrow \text{NaNO}_3\text{(aq)} + \text{H}_2\text{O(l)} + \text{CO}_2\text{(g)}$
 - Answer: 0.0872 mol/dm³
- In a titration, 18.5 cm³ of 0.200 mol/dm³ potassium hydroxide (KOH) solution was needed to neutralize 25.0 cm³ of a solution of butanoic acid (C₃H₇COOH). Calculate the concentration of the butanoic acid solution in mol/dm³.

- Equation: $\text{C}_3\text{H}_7\text{COOH}(\text{aq}) + \text{KOH}(\text{aq}) \rightarrow \text{C}_3\text{H}_7\text{COOK}(\text{aq}) + \text{H}_2\text{O}(\text{l})$
- Answer: 0.148 mol/dm³