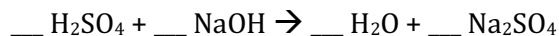


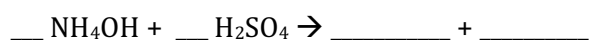
Titrations

1. Balance the following neutralization equation:



2. Write the balanced equation for the reaction between aluminum hydroxide and hydrobromic acid, HBr, to form aluminum bromide and water.

3. Complete and balance the following equation:



4. If 14.7 mL of 0.102 M NaOH is required to titrate 25.00 mL of a hydrochloric acid, HCl, solution, what is the molarity of the hydrochloric acid?

5. If 36.2 mL of 0.152 M NaOH is required to neutralize 25.00 mL of an acetic acid, CH₃COOH, solution, what is the molarity of the acetic acid?

6. If 7.3 mL of 1.25 M HNO_3 is required to neutralize 25.00 mL of a potassium hydroxide solution, what is the molarity of the potassium hydroxide?

7. If 8.6 mL of 0.0994 M HNO_3 is required to neutralize 25.00 mL of a strontium hydroxide solution, what is the molarity of the strontium hydroxide?

8. If 46.2 mL of 2.50 M NaOH is required to neutralize 1.54 M phosphoric acid, H_3PO_4 , solution, what volume of phosphoric acid was needed to reach the equivalence point?

1. $\text{H}_2\text{SO}_4 + 2\text{NaOH} \rightarrow 2\text{H}_2\text{O} + \text{Na}_2\text{SO}_4$ 2. $\text{Al}(\text{OH})_3 + 3\text{HBr} \rightarrow \text{AlBr}_3 + 3\text{H}_2\text{O}$ 3. $\text{NH}_4\text{OH} + \text{H}_2\text{SO}_4 \rightarrow (\text{NH}_4)_2\text{SO}_4 + 2\text{H}_2\text{O}$ 4. 0.0600M HCl
5. 0.220M CH_3COOH 6. 0.37M KOH 7. 0.017M $\text{Sr}(\text{OH})_2$ 8. 25.0mL H_3PO_4