1. Calculate the number of grams of barium chromate that can be precipitated by adding excess potassium chromate to 50.0 mL of 0.424 molar barium chloride.

\[ K_2\text{CrO}_4(\text{aq}) + \text{BaCl}_2(\text{aq}) \rightarrow \text{BaCrO}_4(s) + 2 \text{KCl(}aq) \]

2. Find the number of milliliters of 0.246 molar silver nitrate required to precipitate as silver phosphate all of the phosphate ion in a solution containing 2.10 grams of sodium phosphate.

\[ 3 \text{AgNO}_3(\text{aq}) + \text{Na}_3\text{PO}_4(\text{aq}) \rightarrow \text{Ag}_3\text{PO}_4(s) + 3 \text{NaNO}_3(\text{aq}) \]

3. Find the molarity of a solution of hydrochloric acid if 16.8 mL are required to react with 10.0 mL 0.863 M NaOH in a titration experiment.

\[ \text{HCl(}aq) + \text{NaOH(}aq) \rightarrow \text{NaCl(}aq) + \text{HOH(l)} \]

4. In a chemical analysis, 14.9 mL of 0.518 M AgNO₃ are required to react with all of the nickel(II) chloride in a 10.0 mL sample of a plating solution:

\[ 2 \text{AgNO}_3(\text{aq}) + \text{NiCl}_2(\text{aq}) \rightarrow 2 \text{AgCl(s)} + \text{Na(NO}_3)_2(\text{aq}) \]