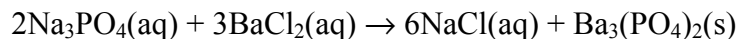


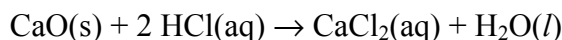
WKS
Solution Stoichiometry 2

Name _____
Period _____

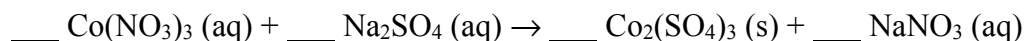
1. What volume of 0.325 M Na_3PO_4 would be needed to precipitate 25.00 g $\text{Ba}_3(\text{PO}_4)_2$ with excess BaCl_2 by the following balanced reaction?



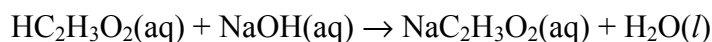
2. How many grams of CaO are required for complete reaction with the HCl in 275 mL of a 0.523 M HCl solution? The balanced equation for the reaction is:



3. When 53.0 mL of 0.750 M cobalt (III) nitrate are added to a sodium sulfate solution, how many grams of cobalt (III) sulfate can be precipitated? Balance the equation first.



4. 34.57 mL of $\text{HC}_2\text{H}_3\text{O}_2$ (acetic acid) solution of unknown concentration is used to neutralize 25.19 mL of NaOH (sodium hydroxide) with concentration 0.4295 M according to the following balanced equation:



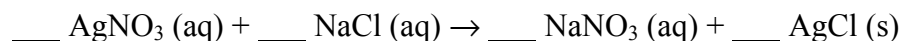
- a. How many moles of acetic acid are used?

- b. What is the concentration of the acetic acid solution, in M?

5. When 321 mL of HCl (hydrochloric acid) solution of unknown concentration reacts with Na₂CO₃ (sodium carbonate), it forms NaCl (sodium chloride), water, and 11.1 g of CO₂ (carbon dioxide):



- a. How many moles of HCl are used in the reaction?
- b. What was the concentration of the HCl solution, in M?
6. Gravimetric analysis is a method of determining the concentration of a compound in solution by measuring the mass of a precipitate. In one experiment, 1.18 g AgCl precipitates when 25.0 mL of AgNO₃ solution reacts with excess NaCl solution in the following reaction:



- a. Balance the equation.
- b. How many moles of AgNO₃ were reacted?
- c. What is the concentration of AgNO₃ solution, in M?