1) A 0.1025-g sample of copper metal is dissolved in 35 mL of concentrated HNO_3 solution to form Cu^{2+} ions and then water is added to make the total volume of 200.0 mL. Calculate the molarity of copper ions in the final solution.

2) How many grams of NaOH are contained in 250.0 mL of a 0.400 M sodium hydroxide solution?

3) How would you prepare 2.00 L of 0.100 M K_2CrO_4 solution from 1.75 M K_2CrO_4 solution?

4) A solution is prepared by dissolving 10.8 g of ammonium sulfate in enough water to make 100.0 mL of stock solution. A 10.00 mL of that stock solution is added to 50.00 mL of water. Calculate the concentration of ammonium ions and sulfate ions in the final solution.

5) When the following solutions are mixed together, what precipitate will form?

  (a) $Hg_2(NO_3)_2$ (*aq*) + $CuSO_4$ (*aq*)
  (b) $Ni(NO_3)_2$ (*aq*) + $CaCl_2$ (*aq*)
  (c) K_2CO_3 (*aq*) + MgI_2 (*aq*)
  (d) Na_2CrO_4 (*aq*) + $AlBr_3$ (*aq*)

6) What mass of Na_2CrO_4 is needed to precipitate all of the silver ions from 75.0 mL of a 0.100 M solution of $AgNO_3$?

7) What mass of solid aluminum hydroxide is produced when 50.0 mL of 0.200 M $Al(NO_3)_3$ is added to 200.0 mL of 0.100 M KOH.

8) What volume of 0.0200 M calcium hydroxide is required to neutralize 35.00 mL of 0.0500 M nitric acid.

9) Hydrochloric acid (75.0 mL of 0.250 M) is added to 225.0 mL of 0.0550 M $Ba(OH)_2$ solution. What is the concentration of the excess H^+ or OH^- ions left in the final solution?