Volumetric (Solution) Stoichiometry and Titration

1. A 45.00 mL sample of HNO_3 was titrated with 0.450 M NaOH. The equivalence point volume was 37.54 mL of NaOH. What is the concentration of the HNO_3? (Write a balanced equation)

2. What volume of 0.135 M $HClO_4$ is required to neutralize 50.00 mL of 0.0926 M $Ba(OH)_2$? Write a balanced equation.

3. Consider the following chemical equation.

$$3\ CaCl_2\ (aq) + 2\ K_3PO_4\ (aq) \rightarrow Ca_3(PO_4)_2\ (s) + 6\ KCl\ (aq)$$

If 25.00 mL of 0.455 M $CaCl_2$ is mixed with 30.00 mL of 0.365 M K_3PO_4, how many grams of $Ca_3(PO_4)_2$ are formed?

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