10-6. A weak acid HA ($pK_a = 5.00$) was titrated with 1.00 M KOH. The acid solution had a volume of 100.0 mL and a molarity of 0.100 M. Find the pH at the following volumes of base added and make a graph of pH versus V_b: $V_b = 0$, 1, 5, 9, 9.9, 10, 10.1, and 12 mL.

10-1. Distinguish the terms *end point* and *equivalence point*.

10-2. Consider the titration of 100.0 mL of 0.100 M NaOH with 1.00 M HBr. Find the pH at the following volumes of acid added and make a graph of pH versus V_a: $V_a = 0$, 1, 5, 9, 9.9, 10, 10.1, and 12 mL.

10-8. What is the pH at the equivalence point when 0.100 M hydroxyacetic acid is titrated with 0.050 0 M KOH?

10-17. A 50.0-mL solution of 0.031 9 M benzylamine was titrated with 0.050 0 M HCl. Calculate the pH at the following volumes of added acid: $V_a = 0$, 12.0, $\frac{1}{2}V_e$, 30.0, V_e, and 35.0 mL.

10-23. The dibasic compound B ($pK_{b1} = 4.00$, $pK_{b2} = 8.00$) was titrated with 1.00 M HCl. The initial solution of B was 0.100 M and had a volume of 100.0 mL. Find the pH at the following volumes of acid added and make a graph of pH versus V_a: $V_a = 0$, 1, 5, 9, 10, 11, 15, 19, 20, and 22 mL.

10-24. A 100.0-mL aliquot of 0.100 M diprotic acid H_2A ($pK_1 = 4.00$, $pK_2 = 8.00$) was titrated with 1.00 M NaOH. Find the pH at the following volumes of base added and make a graph of pH versus V_b: $V_b = 0$, 1, 5, 9, 10, 11, 15, 19, 20, and 22 mL.