

Salts, Buffers, and Titrations Practice

1. Calculate the pH of a 0.200 M NH_4NO_3 solution given $K_b = 1.8 \times 10^{-5}$.
2. For the solution created using 20 mL of 0.10 M HF and 0.050 g of NaF, calculate the pH assuming the K_a of HF is 3.5×10^{-4} .
3. Calculate the pH of the solution resulting from titrating 30 mL of 0.10 M HOBr with 24 mL of 0.10 M NaOH assuming the K_a of HOBr is 2.0×10^{-9} .
4. Sketch a titration curve for the titration of 30 mL of the 0.25 M diprotic acid HA with 0.25 M NaOH by calculating the following ($K_{a1} = 5.9 \times 10^{-2}$ and $K_{a2} = 6.4 \times 10^{-5}$):
 - (a) The initial pH
 - (b) The pH of both equivalence points
 - (c) The pH of both half-equivalence points