Chapter 17 - Acids, Bases, Salts, Indicators

Theory: strong + weak electrolytes
nomenclature - acids + bases + salts
ionization of water $H_2O \rightleftharpoons H^+ + OH^-$
pH
$K_w = [OH^-][H^+] = 1 \times 10^{-14}$
$pH + pOH = 14$ → at 25°C
relative strength of acids + bases. K_a + K_b
hydrolysis and pH of salt solutions
hydrolysis constant K_w/K_a or K_w/K_b
Will salt soln be acidic / basic / neutral
how do indicators work (more in Ch 18).
Bronsted - Lowry acid - base theory

Calculations:
strong acids + strong bases: conc^n ions, pH
weak acids + weak bases: conc^n of ion
pH, pOH

$$pH = -\log_{10}[H^+]$$
$$pOH = -\log_{10}[OH^-]$$

$$\% \text{ ionization} = \frac{\text{amt ionized}}{\text{initial amt}} \times 100$$

pH of salt solutions using hydrolysis constant

$$\% \text{ hydrolysis} = \frac{\text{amt hydrolyzed}}{\text{initial amt}} \times 100$$

indicator calculations - endpt