

AP CHEM

TITRATION CURVES

REVIEW & GUIDE



HENDERSON - HASSELBACH EQUATION

$$\text{pH} = \text{pK}_a + \log \frac{[\text{A}^-]}{[\text{HA}]}$$

↗ conjugate base

↘ weak acid

→ only works for **buffer solutions** (weak acid & conjugate base **both present**)

• don't use for anything past equivalence point

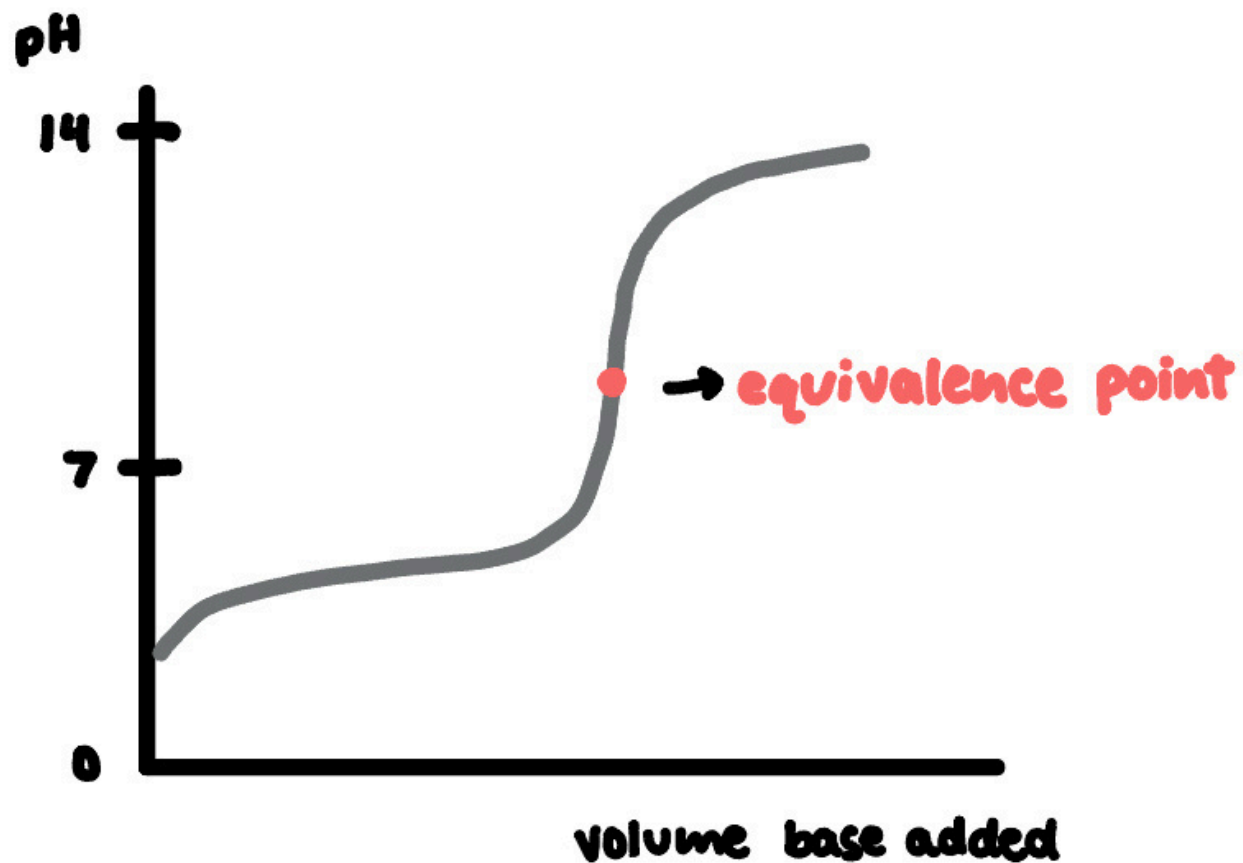
→ Half equivalence point: point in titration exactly halfway to equivalence point

→ at this point, $\text{pH} = \text{pK}_a$ as $[\text{A}^-] = [\text{HA}]$

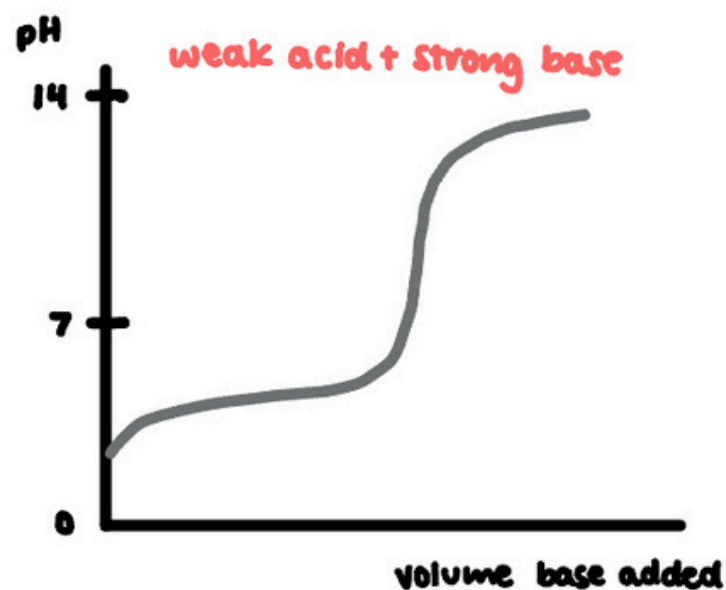
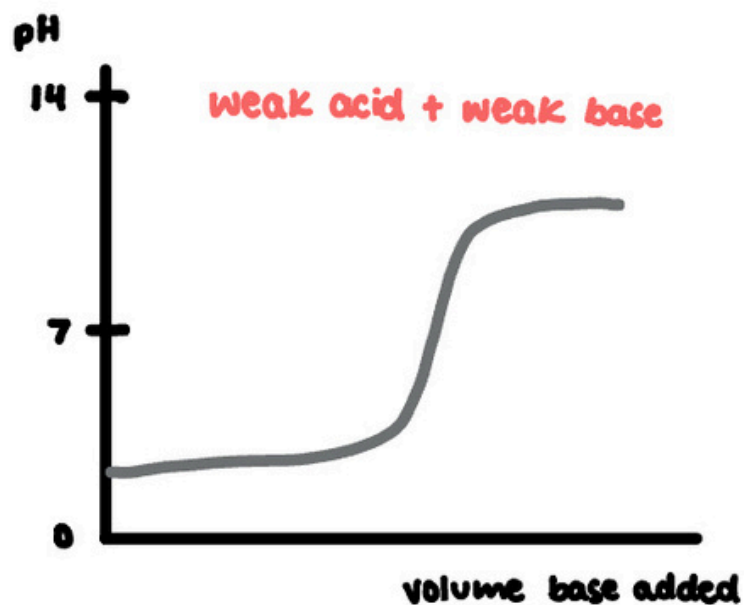
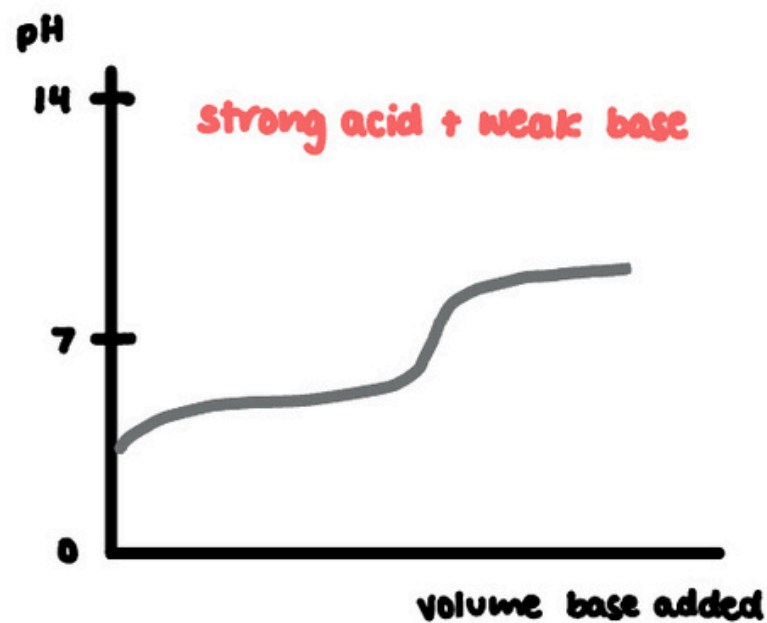
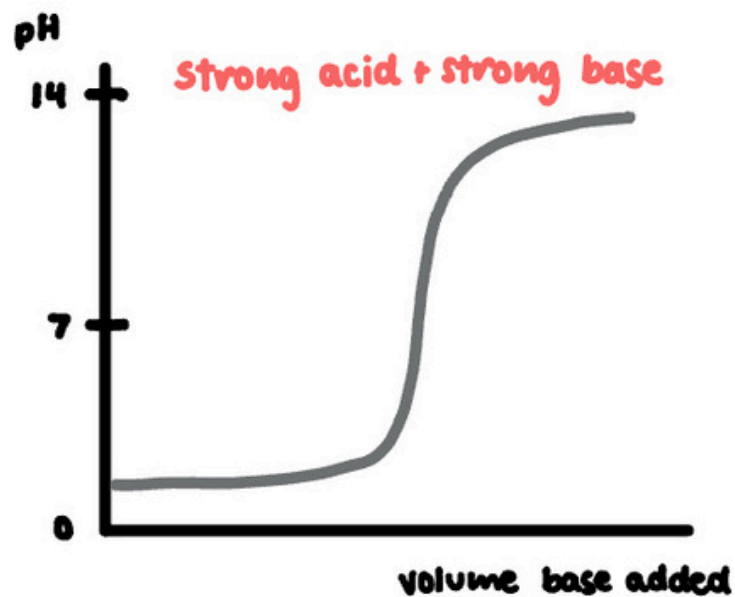
- buffer also resists pH changes the best

READING CURVES

→ **equivalence point**: added titrant has reacted completely w/ analyte



COMMON CURVES



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more!**



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