

Unit 10: Ch 19 – Acid/Base Neutralization & Titrations

NEUTRALIZATION REACTION:

- When _____ acids/bases react, a _____ reaction occurs.
 - Special _____ reaction: _____
 - Ex: _____

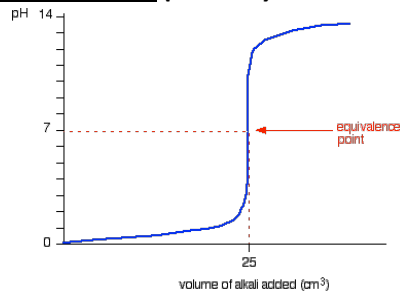
ACID/BASE TITRATIONS:

- **TITRATION** – Lab procedure that determines the _____ concentration _____ of a solution by _____ it with a solution of _____ concentration _____.
 - **INDICATOR** – Chemical _____ whose _____ changes when in _____ or _____ solutions.
 - **ACID/BASE INDICATORS:**
 - **RED** Litmus Paper: _____ in acid; _____ in base
 - **BLUE** Litmus Paper: _____ in acid; _____ in base
 - **PHENOLPHTHALEIN** - _____ in acid; _____ in base
 - **END POINT** - _____ level at which *indicator* _____ color.
 - Approximation of the _____.
 - **EQUIVALENCE POINT (EQ)** - _____
 - Point of _____.
 - **titranT** – Solution of _____ concentration (____)
 - **titranD (Analyte)** – Solution of _____ concentration (____)

TITRATION CURVES:

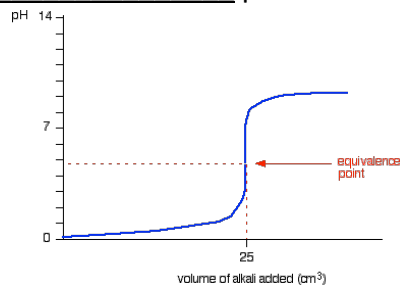
➤ **DEFINITION:** Graph of _____ vs *titranT* _____ that reveals _____.

➤ **Graph:** _____ (*titranT*) titrated with _____ (*titranD*) → EQ Point: _____ pH 7.



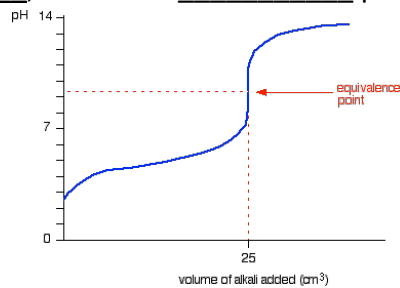
➤ **Graph:** _____ (*titranT*) titrated with _____ (*titranD*).

○ _____ produced is slightly _____; EQ Point: _____ pH 7.



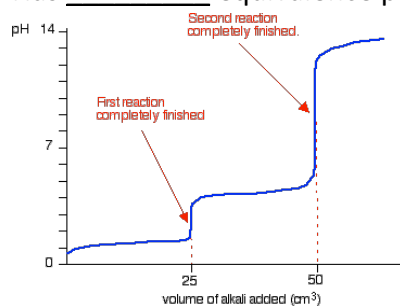
➤ **Graph:** _____ (*titranT*) titrated with _____ (*titranD*). "Salt" produced is slightly

_____ ; EQ Point: _____ pH 7.



➤ **Graph:** _____ (*titranT*) titrated with _____ acid (*Two H⁺ to give away*) (*titranD*).

▪ Has _____ equivalence points; one for each _____ in the acid.



TITRATION PROBLEMS:

➤ FORMULA #1:

- _____ and _____ = Balanced _____ from an acid/base
_____ reaction equation.

➤ FORMULA #2:

- **Remember:** At the EQ Point - _____

➤ FORMULA #3:

- **Remember:** At the EQ Point - _____

TITRATION PRACTICE:

- 1) 25.0 mL of HCl acid solution is required to neutralize 20.0 mL of 0.500 M NaOH solution:

Reaction Equation:

- What is the concentration of the HCl solution?
 - How many moles of H^+ were present originally?
 - What is the pH at the EQ point?
- 2) What volume of 0.0750 M NaOH solution is required to titrate 12.8 mL of 0.0375 M H_2SO_4 solution?

Reaction Equation: