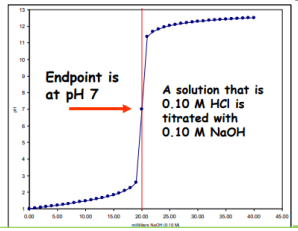
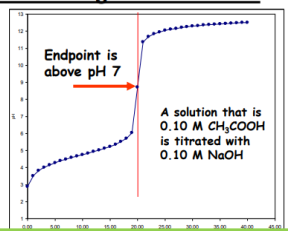
N40

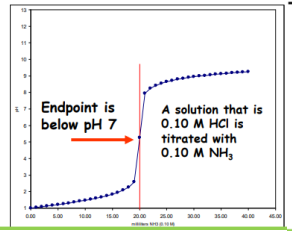
Strong Acid/Strong Base Titration



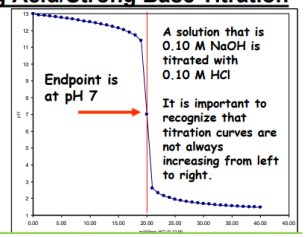
Weak Acid/Strong Base Titration



Strong Acid/Weak Base Titration



Strong Acid/Strong Base Titration



Titration Calculations…

1. **Starting pH**
   - ICE table then pH
2. **Early on during titration**
   - Stoich then He-Ha
3. **Equivalence Point**
   - mol acid = mol base
   - No more buffer! Reverse rxn
   - Calc new K value - ICE then pH
4. **½ Way Point**
   - ½ moles @ eq.pt
   - pH = pKa
5. **Towards end of titration**
   - Extra titrant left over
   - Stoich then simple pH

Calculations to Plot a Titration Curve

1. **Starting pH**
   - ICE table then pH
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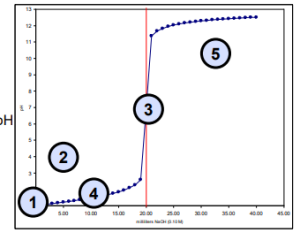

Indicator	pH Range in which Color Change Occurs	Color Change as pH increases
Crystal violet	0.0 - 1.6	yellow to blue
Thymol blue	1.2 - 2.8	red to yellow
Orange IV	1.4 - 2.8	red to yellow
Methyl orange	3.2 - 4.4	red to yellow
Bromcresol green	3.8 - 5.4	yellow to blue
Methyl red	4.8 - 6.2	red to yellow
Chlorophenol red	5.2 - 6.8	yellow to red
Bromthymol blue	6.0 - 7.6	yellow to blue
Phenol red	6.6 - 8.0	yellow to red
Neutral red	6.8 - 8.0	red to amber
Thymol blue	8.0 - 9.6	yellow to blue
Phenolphthalein	8.2 - 10.0	colourless to pink
Thymolphthalein	9.4 - 10.6	colourless to blue
Alizarin yellow	10.1 - 12.0	yellow to blue
Indigo carmine	11.4 - 13.0	blue to yellow

N40

Strong Acid/Strong Base Titration

Weak Acid/Strong Base Titration

Strong Acid/Weak Base Titration

Strong Acid/Strong Base Titration

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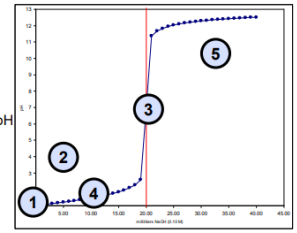

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