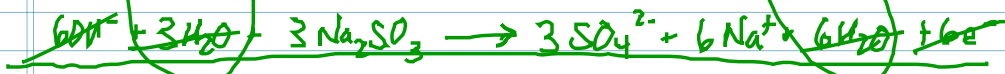
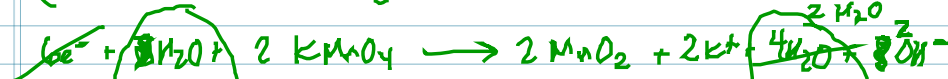
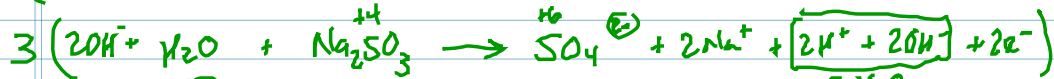
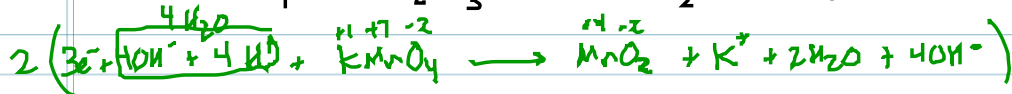
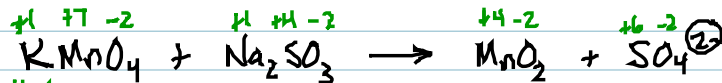


Ex. A solution of potassium permanganate reacts with a solution of sodium sulfite, producing solid manganese (IV) oxide and sulfate ions in basic media.



## COMMON LAB PROCEDURES

### I. TITRATIONS

→ a solution of known concentration (burette) is reacted with a solution of unknown concentration (flask)

→ use stoich to calculate [UNKNOWN]

\*EQUIVALENCE POINT - EXACTLY the correct amount of each sol'n are added together to react NO LIMITING REAGENT

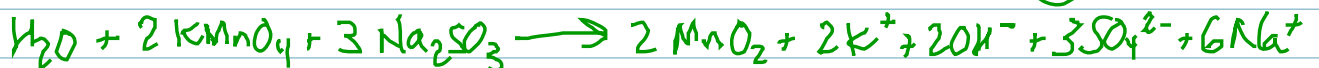
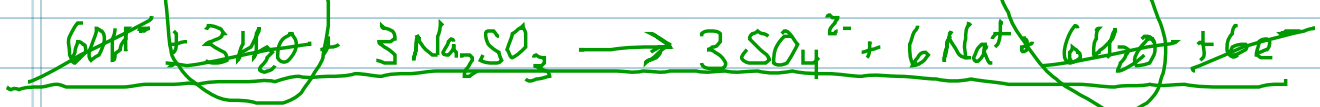
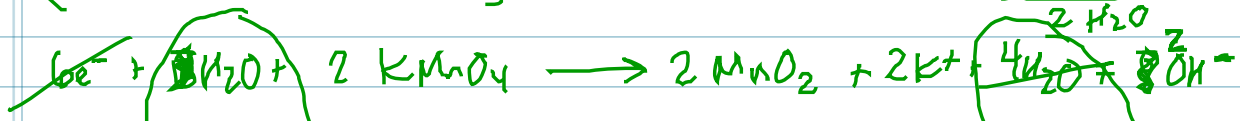
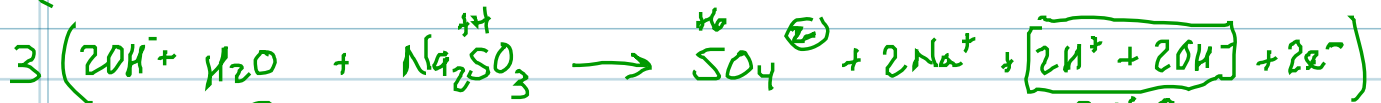
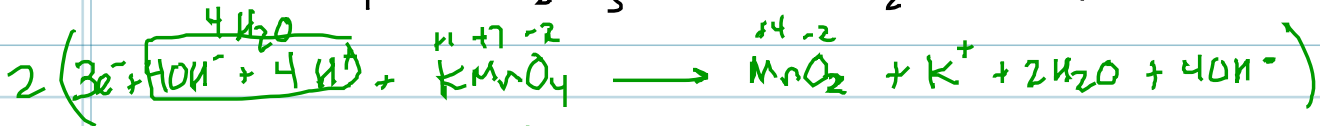
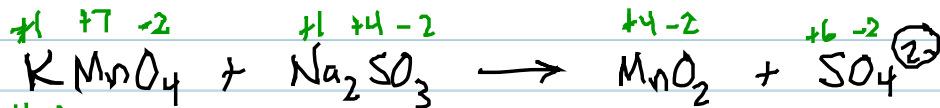
\*END POINT → the point when the indicator changes color

titrant = in the burette

analyte = in the flask

• rinse the burette with the titrant before use

~~Exp.~~ A solution of potassium permanganate reacts with a solution of sodium sulfite, producing solid manganese (IV) oxide and sulfate ions in basic media.



## COMMON LAB PROCEDURES

### I. TITRATIONS

→ a solution of known concentration (burette) is reacted with a solution of unknown concentration (flask)

→ use stoich to calculate [unknowns]

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\*END POINT → the point when the indicator changes color

titrant = in the burette  
analyte = in the flask

- rinse the burette with the titrant before use

① ACID - BASE TITRATIONS ACID/BASE

② REDOX TITRATIONS OX AGENT/RED AGENT

↳ "internal indicator"

- potentiometric titration  
→ look for a rapid change in conductivity



## II. GRAVIMETRIC ANALYSIS

→ used to determine the % of an element by mass in an unknown sample

→ use the % composition of an insoluble product to determine the mass of the ion in an unknown sample

0.685g sample of unknown compound → contains Cu

→ dissolve the sample, react w/  $H_3PO_4$  (XS)



→ filter, dry, weigh ⇒ 0.545g  $Cu_3(PO_4)_2$

$$0.545 \text{ g } \text{Cu}_3(\text{PO}_4)_2 \times \frac{\begin{array}{l} 3 \text{ - Cu's} \\ 190.65 \text{ g} \\ \hline 380.59 \text{ g} \\ \text{M.M.} \end{array}}{380.59 \text{ g}} = 0.273 \text{ g Cu}$$

$$\frac{0.273 \text{ g Cu}}{0.685 \text{ g sample}} \times 100\% = 39.9\% \text{ Cu by mass}$$