Report Name_____

Section_____

A. Practice Titrations

	Trial 1		Trial 2		Trial 3	
	Acid	Base	Acid	Base	Acid	Base
Buret Reading						
Final (mL)	_____	_____	_____	_____	_____	_____
Initial (mL)	_____	_____	_____	_____	_____	_____
Vol. used (mL	_____	_____	_____	_____	_____	_____

Calculations (You must show your method and the number of significant figures must be correct. Assume that the molarity of the NaOH is exactly 0.1000.)

Trial 1

Trial 2

Trial 3

Average molarity of the HCl: _____

Range (highest value - lowest) _____

B. Calculations for amount of NaOH required to make 500. mL of 0.1 M solution:

C. NaOH soln prepared:
Weight beaker + NaOH _____

beaker _____

g NaOH _____

Standardization of NaOH with $KHC_8H_4O_4$

Equation for the reaction:

	Sample 1	Sample 2	Sample 3
Weight of sample (g)	_____	_____	_____
Final NaOH (mL)	_____	_____	_____
Initial NaOH (mL)	_____	_____	_____
Vol. Used (mL)	_____	_____	_____
M NaOH	_____	_____	_____

Average molarity of the NaOH: _____

Range _____

Calculations (You must show your method and the number of significant figures must be correct.)

Sample 1

Sample 2

Sample 3

Report Name_____

Unknown#_____

D. Analysis of Unknown HCl

Equation for the reaction:

	Trial 1		Trial 2		Trial 3	
	Acid	Base	Acid	Base	Acid	Base
Buret Reading						
Final (mL)	_____	_____	_____	_____	_____	_____
Initial (mL)	_____	_____	_____	_____	_____	_____
Vol. Used (mL)	_____	_____	_____	_____	_____	_____

Calculations (You must show your method and the number of significant figures must be correct.)

Trial 1

Trial 2

Trial 3

AVERAGE MOLARITY OF HCl:_____ True Value_____

Range_____ Absolute Error_____

Percent Error_____

Name_____

Questions

1. Define and give an example of a monoprotic acid.

2. Define and give an example of a diprotic acid.

3. Complete and balance the following equations.

   (a) $SO_{3\,(g)} + H_2O_{(l)}$ ------>

   (b) $P_4O_{10\,(s)} + H_2O_{(l)}$ ------>

   (c) $Na_2O_{(s)} + H_2O_{(l)}$ ------>

   (d) $BaO_{(s)} + H_2O_{(l)}$ ------>

Name_____

4. Balance the following equations; write the ionic equations and the net ionic equation (if different from the ionic equation).

(a) $H_2SO_{4\,(aq)} + NaOH_{(aq)} \text{ ------> } Na_2SO_{4\,(aq)} + H_2O_{(l)}$

(b) $Al_2O_{3\,(s)} + HCl_{(aq)} \text{ ------> } AlCl_{3\,(aq)} + H_2O_{(l)}$

(c) $SO_{2\,(g)} + KOH_{(aq)} \text{ ------> } K_2SO_{3\,(aq)} + H_2O_{(l)}$

(d) $HC_2H_3O_{2\,(aq)} + Ca(OH)_{2\,(aq)} \text{ ------> } Ca(C_2H_3O_2)_{2\,(aq)} + H_2O_{(l)}$

Problems (You must show your method of solution!)

l. Calculate the molarity of a solution prepared by dissolving 0.600 g of $KHC_8H_4O_4$ in enough water to make 50.0 mL of solution.

_____M

2. Calculate the molarity of a solution prepared by dissolving 0.600 g of $H_2C_2O_4 \cdot 2H_2O$ in enough water to make 50.0 mL of solution.

_____M

Name_____

3. If 30.65 mL of $Ca(OH)_2$ solution is needed to react with 0.240 g of primary standard $H_2C_2O_4 \cdot 2H_2O$, what is the molarity of the $Ca(OH)_2$ solution?

_____M

4. If 41.40 mL of 0.1283 M NaOH solution is needed to neutralize 50.00 mL of an H_2SO_4 solution what is the molarity of the H_2SO_4 solution?

_____M

5. (a) How many millimoles of NaOH are contained in 50.0 mL of 0.125 M NaOH solution?

_____

(b) How many milliliters of 0.100 N H_2SO_4 solution would be needed to neutralize the above 50.0 mL of NaOH solution?

_____

(c) How many grams of $H_2C_2O_4 \cdot 2H_2O$ would be needed to neutralize 50.0 mL of the above NaOH solution?

_____