Problem Set 1

114.5 mM HCl is used to titrate a sample of 353.7 mg of a sample containing CaCO3 and CaCl2. 15.32 ml if acid is required to titrate the sample. What is the percent composition of CaCO3 in the sample?

152.3 mg of Silver Nitrate in solution is mixed with 132.4 mg of Calcium Chloride, which is also in solution, to form an insoluble precipitate. What is the maximum quantity of precipitate in moles and grams that could be formed?

What is the approximate Molarity of a 33.0% solution of Sulfuric Acid? To what volume should 100ml of the acid be diluted to prepare a 1.80M solution of H2SO4?

Using this diluted solution, how much acid should be added to make up 1.000 L of 0.500M H2SO4 Solution. How much of this final 0.500 M solution would be needed to titrate to equivalence 45.21mL of 190 mM Sodium Hydroxide?

Consider the following experimental data

Creatinine (C4H7N3O) has a molar mass of 113.1201g/mol

Four weights in grams were taken

**0.3235, 0.3245, 0.3235, and 0.3238**

What are the means and standard deviations for both the mass AND the moles collected. **INCLUDE PROPER SIG FIGS!!**

125.3 mg of Ferric Chloride is dissolved in a sufficient volume of water to fill to a 500ml Volumetric to the marker. What is the Iron concentration of this solution in both ppm and mM?

46.5mg of AgNO3 is weighed by difference and then the transferred solid is quantitatively dissolved in a 100ml Volumetric. Using the fact that the error for the 100ml volumetric is +/- 0.08ml and the balance error per measurement is +/- 0.3mg

What is the Molarity and Error of the noted solution?