Chem 2 AP Homework #4-6: Gravimetric Analysis (Problems from text pg. 155 # 76 – 80)
and Predicting Products Review

4.76 Distilled water (not tap water) must be used in the gravimetric analysis of chlorides. Why?

4.77 If 30.0 mL of 0.150 M $CaCl_2$ is added to 15.0 ml of 0.100 M $AgNO_3$, what is the mass in grams of AgCl precipitate?

Molecular Eq: $CaCl_2(aq)$ + $AgNO_3(aq) \longrightarrow AgCl(s) + Ca(NO_3)_2(aq)$

	30.0 mL	15.0 mL of		? g	
	0.150 M	0.100 M			

Net Ionic Eq

4.78 0.6760 g Ba^{2+} compound with excess $Na_2SO_4 \rightarrow$ 0.4105 g $BaSO_4$.
What is the mass % of Ba in the original compound?

Net Ionic Eq:

4.79 Mass of NaCl required to precipitate Ag^+ from 2.50×10^2 mL of 0.0113 M $AgNO_3$?

Net Ionic Eq:

4.80 What is $[Cu^{2+}]$ in water sample if treatment with excess Na_2S yields 0.0177 g CuS(s)?

Net Ionic Eq:

Answers: 77) 0.215 g AgCl; 78) 35.72%; 79) 0.165 g NaCl; 80) 2.31×10^{-4} M

Predicting Products Review For each question, assume that a reaction takes place and write out the molecular equation and net ionic equation (if one can be written.) If asked, determine if reaction would occur and explain logic.

1) Aqueous lead(II) nitrate is added to aqueous aluminum chloride *(Is this a redox reaction?_____)*

Mol. Eq:

Net Ionic:

2) Calcium metal is added to water. *(Is this a redox reaction?_____)*

Mol. Eq:

Net Ionic:

Does this reaction occur? _____ *Explain how you know.*

3) Silver wire is immersed in aqueous sulfuric acid. *(Is this a redox reaction?_____)*

Mol. Eq:

Net Ionic:

Does this reaction occur? _____ *Explain how you know.*

4) Chlorine gas is bubbled through an aqueous solution of potassium fluoride. *(Is this a redox rxn?___)*

Mol. Eq:

Net Ionic:

Does this reaction occur? _____ *Explain how you know.*

5) An aqueous solution of lithium hydroxide is mixed with an aqueous solution of phosphoric acid. (*Redox___?)*

Mol Eq:

Net Ionic:

6) Aluminum metal is placed into an aqueous solution of lead (II) nitrate. *(Is this a redox rxn?* _____*)*

Mol Eq:

Net Ionic:

Does this reaction occur? _____ *Explain how you know.*

7) Aqueous solutions of ammonium chloride and cobalt(II) sulfate are mixed. (Is this a redox rxn?___)

Mol Eq:

Net Ionic: