Name:	Section: 1 2 3 4 5
-------	--------------------

Stoichiometry Workshop 2: Solutions – Week of September 27



- 1. Consider a 1.50 g mixture of magnesium nitrate and magnesium chloride. After dissolving this mixture in water, 0.500M silver nitrate is added dropwise until precipitation is complete. This mass of white precipitate formed is 0.641g.
 - a. Calculate the mass percent of magnesium chloride in the mixture.

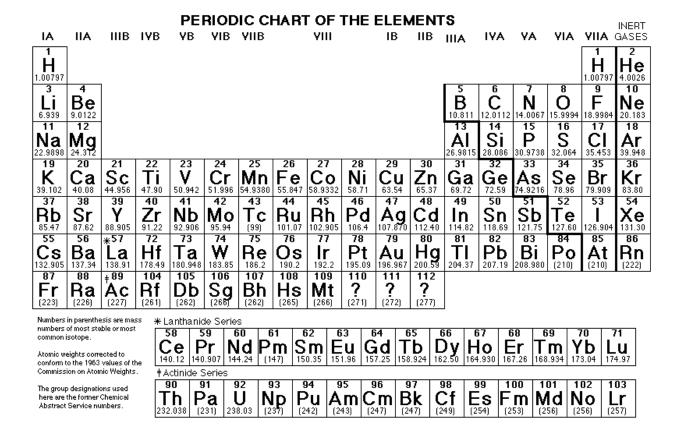
b. Determine the minimum volume of silver nitrate that must have been added to ensure complete formation of the precipitate.

2. Citric acid, which can be obtained from lemon juice, has the molecular formula C₆H₇O₇. A 0.250 g sample of citric acid dissolved in 25.0ml of water requires 37.2ml of 0.105M NaOH for complete neutralization. How many acidic hydrogens per molecule does citric acid have?

3. A 230. ml sample of 0.275 M CaCl₂ solution is left on a hot plate overnight; the following morning, the solution is 1.10 M. What volume of water evaporated from the 0.275 M CaCl₂ solution?

4.	ma	nen hydrochloric acid reacts with magnesium metal, hydrogen gas and aqueous gnesium chloride are produced. Write a balanced equation for the reaction. Indicate the oxidation state of each element in the reactants and products. Which species is oxidized? Which is reduced?
	b.	What volume of 5.0 M HCl is required to react completely with 3.00 g of magnesium?
	c.	If 27.6 ml of 5.0 M HCl are used instead, what will be the concentration of magnesium ions in the resulting solution?

5. A student added 50.0 ml of an NaOH solution of unknown concentration to 100.0 ml of 0.400 M HCl. The solution was then treated with an excess of chromium (III) nitrate, resulting in formation of 2.06 g of precipitate. Determine the concentration of the NaOH solution.



http://chemlab.pc.maricopa.edu/periodic/printable.gif

H = hydrogen

C = carbon

O = oxygen

Mg = magnesium

Al = aluminum

Cl = chlorine

Ca = calcium

Fe = iron