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| first titration dayCλeMis+ry: http://genest.weebly.com Stop in for help every day at lunch and Tues, &Thurs after school!After-hours question? Email me at home: eagenest@madison.k12.wi.us | H | Name\_\_\_\_\_\_\_\_\_Period\_\_\_\_\_\_\_\_ |

1. Which of the following is the most acidic?

a. pH =10 b. pH =11 c. pH=12 d. pH =2 e. pH=4

1. Which of the following solutions is the most basic?

a. [H+]= 1 x 10-4 c. [H+]= 1 x 10-9

b. [OH-] = 1 x 10-4 d. [OH-] = 1 x 10-9

1. When tested, a solution turns red litmus to blue. This indicates that the solution contains more
	1. more H+ ions than OH- ions
	2. more H3O+ ions than OH- ions
	3. more OH- ions than H3O+ ions
	4. more H+ and OH- ions than H2O molecules
2. If an aqueous solution turns blue litmus red, which relationship exists between the hydronium ion and hydroxide ion?
	1. [H3O+] < [OH-]
	2. [H3O+] = [OH-]
	3. [H3O+] > [OH-]
	4. Neither ion is present
3.

From here down is Sort of a review of Unit 8 (march 9 to MARCH 27)

1. For this balanced reaction, calculate the following

CaH2 + 2 H2O → Ca(OH)2 + 2 H2

1. If 3.03x10-5 grams of CaH2 react, how many grams of water react?

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| \_\_\_\_ g CaH2 |  \_\_\_\_\_ mol CaH2 | \_\_\_\_\_ mol H2O | \_\_\_\_\_ grams H2O | = |  |
|  | \_\_\_\_\_ g CaH2 | \_\_\_\_\_ mol CaH2 | \_\_\_\_\_ mol H2O |  |

1. If 0.746 moles of water react, how many moles of CaH2 will react?
* **theoretical yield** (also called calculated yield) this is how much product you *expected* to get, based on your calculations
* **actual yield** This is measured by you in a laboratory, usually by weighing the product
* **%yield** = $\frac{\begin{array}{c}actual \\yield\end{array}}{\begin{array}{c}theoretical \\yield\end{array}} x 100$
1. Suppose 4.61 g of zinc was allowed to react with excess hydrochloric acid to produce zinc chloride and hydrogen gas.
	1. How much zinc chloride should you get?
	2. Suppose that you actually recovered 8.56 g of zinc chloride. What is your percent yield?

**Reaction Terminology**

Theoretical yield is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Actual yield is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Percent yield is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_divided by\_\_\_\_\_\_\_\_\_\_\_\_\_times one hundred

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| **Lab Data Use this to answer the next four questions**A student placed a piece of nickel in silver nitrate solution. Silver metal precipitated and aqueous nickel(II) nitrate was produced. The student collected the following data:Mass of beaker 102.05 gMass of beaker with silver 103.13 gMass of nickel before 5.00 gMass of nickel after 4.69 g |

1. Write a balanced equation for the reaction.
2. From the mass of Ni reacted, determine the theoretical yield of silver
3. Determine the actual yield of silver
4. Determine the percent yield of silver.
5. Tin (II) chloride, SnCl2, reacts with oxygen gas to produce tin (II) oxide and chlorine dioxide. If 0.750 moles of O2 and 0.750 moles of SnCl2 were put in a test tube for this chemical reaction, find the following:
	1. Which reactant is the limiting reactant?
	2. what massof
	tin (II) oxide would be produced?
6. Magnesium sulfate, MgSO4, decomposes when heated to produce magnesium sulfide and oxygen gas. If 6.32 grams of MgSO4 were heated in a test tube, what volume, in liters, of oxygen gas at STP should be released? (recall that 22.4 liters of ANY gas is 1 mole of gas at 0 degrees C and 1.00 atm)
7. What mass of CO was used up in the reaction with an excess of oxygen gas if 24.7 g of carbon dioxide is formed? 2 CO + O2 🡪 2 CO2