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| *Empirical*  CλeMis+ry: http://genest.weebly.com  Stop in for help every day at lunch and Tues &Thurs after school! |  | Name\_\_\_\_\_\_\_\_\_\_\_\_\_  Period\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**Convert each of the following into an empirical formula:**

1. C14H14O2 (naproxen: “Alleve”)
2. C6H6 (Benzene)
3. C9H8O4 (aspirin)
4. C2H2 (acetylene welding gas)
5. Which of the compounds above have the exact same empirical formula? \_\_\_\_\_\_\_\_\_\_\_\_
6. What is the empirical formula for a compound that has 69.94 grams iron and 30.06 grams of oxygen?
7. What is the empirical formula for a compound that is 40.0 grams of carbon, 6.7 grams of hydrogen, and 53.3grams of oxygen ?

5. A sample of iron oxide was found to contain 1.116 g of iron and 0.480 g of oxygen. Its molar mass is roughly 5 x as great as that of oxygen gas. Find the empirical formula and the molecular formula of this compound.

7. Find the percentage carbon of a compound that contains 1.94 g of carbon, 0.48 g of hydrogen, and 2.58 g of sulfur in a 5.00 g sample of the compound.

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| Key to understanding the cartoons on this sheet: | | | | | | | |
| 1 chlorine atom | | 1 hydrogen atom | 1 oxygen atom | | 1 nitrogen atom | 1 carbon atom | |
|  | |  |  | |  |  | |
|  | 1. Calculate the molecular mass of this molecule shown at the left. | | | | | | |
|  | | | | 1. How many atoms, total, are in this box? \_\_\_\_\_ 2. How molecules are in this box? \_\_\_\_\_ 3. The What is the **molecular** formula of this compound? \_\_\_\_ 4. What is the **empirical** formula of this compound? \_\_\_\_ | | |

|  |  |
| --- | --- |
|  | 1. How many atoms, total, are in this box? \_\_\_\_\_ 2. How molecules are in this box? \_\_\_\_\_ 3. What is the **molecular** formula of this compound? \_\_\_\_ 4. What is the **empirical** formula of this compound? \_\_\_\_ |

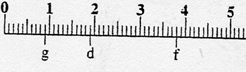
17 A compound composed of hydrogen and oxygen is found to contain 0.59 g of hydrogen and 9.40 g of oxygen. The molar mass of this compound is 34.0 g/mol. Find the empirical and molecular formulas.

PAGES 1 &2 MANDATORY. PAGES 3 &4 OPTIONAL. WON’T BE CHECKED. ANSWERS WILL BE GIVEN AND I WILL ANSWER QUESTIONS ABOUT THEM

18Find the percentage composition of a compound that contains 17.6 g of iron and   
10.3 g of sulfur. The total mass of the compound is 27.9 g.

19 What is the % by mass of oxygen in Mg(NO3)2 ?

1. Write the measurement for each letter. *Always make the last digit zero when the hairline hits the mark dead center*.

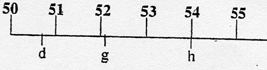
 G \_\_\_\_\_\_ D\_\_\_\_\_\_\_\_ F\_\_\_\_\_\_\_\_

|  |  |  |  |
| --- | --- | --- | --- |
| 1. Answer questions   for these lines. **Line A**  **has been done below for you**  **as an example**. | |  | |
| For Line A   * Calculate the slope   of Line A     * Write a “For every…” sentence. | | 1. For Line B  * Calculate the slope of Line B * Write a “For every…” sentence. | | 1. For Line C  * Calculate the slope of Line B * Write a “For every…” sentence. |

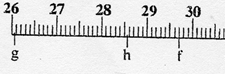
1. What is the answer, to the correct number of significant figures of each
   1. 83 x 0.7 =
   2. 83 + 0.7 =
2. The Law of Conservation of Mass says that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| --- | --- | --- | --- | --- | --- | --- |
| 1. before: a wet cotton ball on the ground, after: same cotton ball after six hours in the sun [Your drawing should explain why the total mass decreases.] |  | macroscopic view | |  | microscopic view | |
|  |  |  |  |  |
| before | after |  | before | after |
|  |
|  |  |
| Symbols that I used: |  |

1. Write the measurement for each letter. *Estimate between marks when the hairline doesn’t hit dead center. If it does, make the last digit zero.*

 D \_\_\_\_\_\_ G\_\_\_\_\_\_\_\_ H\_\_\_\_\_\_\_\_

1. Write the measurement for only g, h, & f in these blanks

 G \_\_\_\_\_\_ H\_\_\_\_\_\_\_\_ F\_\_\_\_\_\_\_\_