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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\_\_\_\_\_\_\_\_\_\_\_\_\_ |

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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 |
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| --- | --- |
|  | 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? \_\_\_\_\_\_ |

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| stand back! this is the high-explosive substance known as TNT. | 1. How many atoms, total, are in this box? \_\_\_\_\_ 2. How many 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. What is the empirical formula for a compound that has 69.94 grams iron and 30.06 grams of oxygen?
2. 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 ?

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|  | 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? \_\_\_\_ |

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| --- | --- |
|  | 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? \_\_\_\_ |

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

1. Co3H9
2. C6H12O6 (fructose)
3. C24H32O4
4. N2H4
5. CH2O (formaldehyde – a carcinogen)
6. C2H4O2 (acetic acid – vinegar flavor)
7. Which of the compounds above have the exact same empirical formula?

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| 1. Of all the shapes in this square, what percent are X’s? | O O H X X O O O X O X H O O O H X X O O O X O X H O H X X X X H X X X X |  |

1. What is the molecular mass of C7H16?
2. What is the molecular mass of C3H6O2?

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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. A sample of a chromium compound has a molar mass of 151.99 g/mol. Elemental analysis of the compound shows that it contains 68.43% chromium and 31.57% oxygen. What is the identity of the compound?