

Name: _____ Period: _____



Chemistry

Homework: Stoichiometry

1. Explain how to determine the molar mass of sodium chloride, NaCl.

2. Use the periodic table to complete the second column of the following table:

Chemical Formula	Molar Mass (g/mol)	Moles of What?
Ne(g)		1 mol Ne atoms
Ca(s)		1 mol Ca atoms
CO ₂ (g)		1 mol carbon dioxide molecules
CaCO ₃ (s)		1 mol calcium carbonate units
Fe ₂ O ₃ (s)		1 mol iron oxide units
Mg(OH) ₂ (aq)		1 mol magnesium hydroxide units
SO ₂ (g)		1 mol sulfur dioxide molecules
CrCl ₂		1 mol chromium (III) chloride

3. Which contains more **molecules**, 1.0 g of methanol, CH₄O, or 1.0 g of ethanol, C₂H₆O? Explain your choice.

4. How many grams of each molecule are in 2 mol of each substance?

a. Methane, CH₄

b. Methanol, CH₄O

c. Ethanol, C₂H₆O

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5. List these compounds in order of **increasing** moles of molecules: 2.0 g of CH_4O , 2.0 g of H_2O , 2.0 g of C_8H_{18} . Show your work or explain your answer.

6. List these compounds in order of **increasing** mass in grams: 2.0 mol of SiCl_4 , 2.0 mol of PbO , 2.0 mol of Fe_2O_3 . Show your work or explain your answer.

7. Suppose you run a company that buys copper compounds and then recycles the copper for resale. Your company wants to get the most pure copper for the lowest cost. Three different suppliers want to sell you 1 mol $\text{CuO}(s)$, 1 mol $\text{CuCO}_3(s)$, and 1 mol $\text{Cu}_2\text{S}(s)$ for the same price.

a. Which compound has the **greatest** total mass? Show your work.

b. Which compound has the **greatest** mass of only Cu? Show your work.

c. Assuming it costs the same to extract the copper from each compound, which represents the best deal for your company? Explain.