Names and Formulas **Name**_____

Binary Molecular Compounds

Read from **Lesson 2: Molecular Compounds** in the **Chemistry Tutorial Section, Chapter 4** of **The Physics Classroom**: **Part a:** Properties of Molecular Compounds **Part b:** Names and Formulas

Binary molecular compounds contain two nonmetals. Prefixes are used to denote subscripts. The second element name will end in **-ide** just as in binary ionic compounds. There are no charges and no reduction in subscripts. The most commonly used prefixes are "***mono***" for **1**, "***di***" for **2**, "***tri***" for **3**, "***tetra***" for **4**, "***penta***" for **5**, "***hexa***" for **6,** "***hepta***" for **7**, "***octa***" for **8**, "***nona***" for **9**, and "***deca***" for **10**. The only exception is that "mono" is never used on the first element listed in the compound.

Examples:

CO	carbon **mono**xide	PCl_3	phosphorus **tri**chloride	N_2Br_4	**di**nitrogen **tetra**bromide
CO_2	carbon **di**oxide	SF_6	sulfur **hexa**fluoride	Si_3N_7	**tri**silicon **hepta**nitride

Practice

1. What are the formulas for these binary molecular compounds?
   a. silicon dioxide

   b. trinitrogen pentachloride

   c. dichlorine heptoxide

   d. dinitrogen tetrahydride

   e. tetraphosphorus decasulfide

2. What are the formulas for these binary molecular compounds?
   a. ClI_3

   b. SBr_6

   c. N_2O_5

   d. Si_3N_4

   e. S_2F_9

3. Three chemistry students, Ben Thayer, Don Thatt, and Jean Yuss are working in the lab. They are making a solution by adding blue-green crystals to a beaker of water. The label on the container of the blue-green solid gives the formula of the compound as **$CuCl_2$** but is missing the **name** of the compound. Ben states that the name of the compound is **copper dichloride**. Don says that the name of the compound is **copper chloride**. Jean is certain that the name of the compound is **copper (II) chloride**. Who is correct? Justify your answer.