

Name(s): \_\_\_\_\_

Section: \_\_\_\_\_

*Chem 226 / Dr. Rusay*  
**ORGANIC MOLECULES WORKSHEET (1)**  
*Bonds, Formulas, Structures, & Shapes*

Review the fundamental principles of covalent bonding, Lewis structures, and VSEPR. **These concepts are absolutely indispensable to the understanding of organic chemistry.** Practice and master them. They will be used repeatedly throughout the course and are absolutely essential to your understanding and success.

1. The word "bond" in Webster's Dictionary has twelve different meanings as a noun and six as a verb. Define in your own words in one short sentence what you think "bond" means in the context of organic chemistry.
  
  
  
  
  
  
  
  
  
  
2. Write formulas for as many different possible molecules that can be produced from combinations of the following elements (Provide as many as you think reasonable. If there are too many to consider, provide a number that you think might approximate the total, eg. hundreds, thousands, millions, etc.) For example: Na and Cl has only one compound, NaCl, but there are several for Na, Cl plus O, one possibility is sodium chlorite, NaClO<sub>2</sub>.

Sodium and Chlorine: **NaCl, sodium chloride**, has only this one possibility.

- a) Na and Cl and Oxygen (Na<sub>x</sub>Cl<sub>y</sub>O<sub>z</sub>): (consider all possibilities)
  
  
  
  
  
  - b) Sodium and Carbon and Oxygen (Na<sub>x</sub>C<sub>y</sub>O<sub>z</sub>): (consider all possibilities)
  
  
  
  
  
  - c) Carbon and Hydrogen and Oxygen (C<sub>x</sub>H<sub>y</sub>O<sub>z</sub>): (consider all possibilities)
  
  
  
  
  
  - d) What theoretically can account for the different possible number of molecules in the above 3 cases? (Briefly answer in a sentence or two.)
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