Group Learning Activity - Chapter 1

Instructions: Work in groups of 3 or 4 without using your notes. If you need help at any point, ask and I will lead you in the right direction.

1. Draw 2 different Lewis structures for the formula C_3H_4 that do not contain any rings. Make models for each of these compounds to verify that they are in fact different. Label the geometry and hybridization for each carbon atom in both compounds. Specify what two atomic orbitals go together to make each bond. 2. Draw 3 different Lewis structures for compounds with the formula C₂H₃NO. Make models of each of these compounds. Label the geometry and hybridization for all carbon, nitrogen, and oxygen atoms. 3. Draw Lewis structures for the following formulas, and calculate the number of electrons for each. Then explain the rules under which nitrogen can have a negative and a positive formal charge. a) CH₅N

- b) CH_6N^+ (positive charge on N)
- c) CH₄N⁻ (negative charge on N)
- 4. How many different compounds can you make with the following formulas. Draw Lewis structures for each compound.
 - a) C₄H₉Cl
 - b) C₄H₆Cl₂ in which all four carbons are in a ring