1. Draw the Lewis structures of the following atoms. If there is a formal charge, point it out.
   a. HCN
   
   b. H₂CO₃
   
   c. BH₄⁻
   
   d. CH₃COOH
   
   e. SbCl₅²⁻

2. What are the molecular shapes of each of the compounds/ions above?

3. What are the approximate bond angles?

4. What are the hybridizations of the central atoms?
5. Propene cation.
   a. Without using your notes, what are the resonant structures of a propene cation?

   b. What are the bond angles of each structure?

   c. What are the hybridizations of each carbon?

   d. How many p orbitals are involved with delocalized bonds?

   e. Draw the orbitals on the structure below.
f. How many molecular orbitals would be made out of those p orbitals? Draw each of those below with the highest energy orbital on top.


g. How many of those orbitals have electrons?

h. If you instead look at ethenamine, what does that structure look like? Are there resonant structures?

i. Carbon-nitrogen single bonds are usually around 1.4 Å, ethenamine has a bond length of 1.2 Å. What is the hybridization of nitrogen and why?

j. If you were to fill the orbitals in part f for ethenamine, how many electrons are in the p orbitals?