1. Propose reasonable Lewis-dot structures for the following. There may be more than one correct answer.

   a) \( \text{H-C=O-H} \) 
   b) \( \text{H-N-O-H} \) 
   c) \( \text{H-O-N-O} \) 
   d) \( \text{H-N=O} \) 
   e) \( \text{H-C=O-Cl} \) 
   f) \( \text{H-C=O-N} \) 

   (For e) and f) several possibilities)

2. Identify the hybridization of each atom other than H and Cl in the compounds above. See above.

3. Propose a structure of a hydrocarbon with 4 carbons that has 2 sp2 – sp \( \sigma \) bonds.

   \( \text{H-C=C=CH}_3 \)

4. Draw an orbital depiction of acrylonitrile. Label all bonds (\( \pi \) or \( \sigma \)) and orbitals (e.g. sp\(^3\)).

   \( \text{acrylonitrile} \)
5. Determine the molecular formula of the following compounds:

a) $\text{NH}_2$

b) $\text{C}_{13}\text{H}_{24}$

c) $\text{C}_8\text{H}_{16}$

d) $(\text{CH}_3)_2\text{CHCH}_2\text{CH(\text{CH}_3)CH}_2\text{C(\text{CH}_3)_3}$

draw this compound in zig-zag form