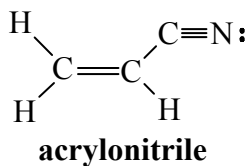
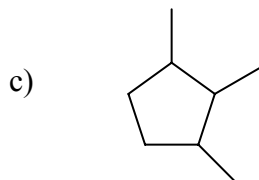
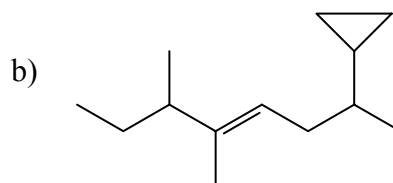
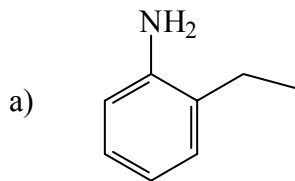



CHEM 241
Some Chapter 1 and 2 problems

- Propose reasonable Lewis-dot structures for the following. There may be more than one correct answer.
 - H_2CO_2
 - HNO_3
 - N_2O
 - NH_3O
 - $\text{C}_2\text{H}_3\text{ClO}$
 - $\text{C}_2\text{H}_5\text{NO}$
- Identify the hybridization of each atom other than H and Cl in the compounds above.
- Draw NO_2^+ and NO_2^- . Which ion has a “localized” charge and which has a “delocalized” charge. Explain (resonance, see Wade 1-9)).
- Propose a structure of a hydrocarbon with 4 carbons that has 2 $\text{sp}^2 - \text{sp}$ σ bonds.
- BF_3 is non-polar and NF_3 is polar despite the fact that the B-F bond has significantly greater bond moment than the N-F bond. Explain (see Wade, 2-9).
- Draw an orbital depiction of acrylonitrile. Label all bonds (π or σ) and orbitals (e.g. sp^3).



- Determine the molecular formula of the following compounds:



 draw this compound in zig-zag form

