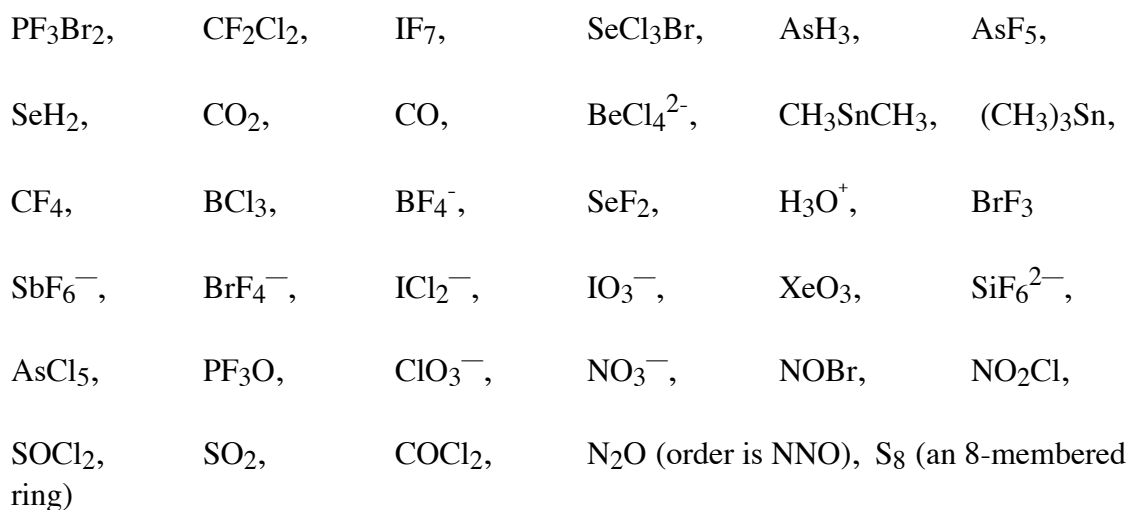


**AP Chemistry**  
*Homework on Molecular Shapes*  
*and*  
*Hybrid Orbitals*

1. For each of the following molecules or ions:
- Identify the central atom (or atoms)
  - Draw the Lewis structure, and find from that the number of sigma bonds and the number of unshared pairs on the central atom.
  - Identify the hybridization on the central atom.
  - Determine the geometry of the atoms and lone pairs.
  - Does the molecule have a dipole moment or other unusual features?



Sample Answer:



O-Central atom  
2 unshared pairs  
2 sigma bonds  
SP<sup>3</sup> Hybridization  
AB<sub>2</sub>E<sub>2</sub>  
Angular or Bent  
Dipole Moment