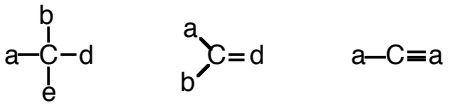
Basic Principles

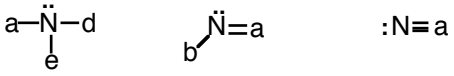
- Like charges repel, unlike charges attract.
- Atoms want to have the electronic configuration of inert gases
- For example:
  - 2 e^- around H
  - 8 e^- in outer shell around C, N, O, F)

Hence in molecules:

1. Stable uncharged carbons will have 4 bonds (each bond is 2 e^-) and no lone pairs of electrons.

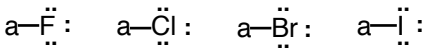


2. Stable <u>uncharged</u> nitrogens will have 3 bonds and one lone pair of electrons.



3. Stable <u>uncharged</u> oxygens will have 2 bonds and 2 lone pairs of electrons.

4. Stable <u>uncharged</u> halogens (F, Cl, Br, I) will have one bond and 3 lone pairs of electrons (remaining outer shell electrons in higher halogens are ignored in this course).



5. Stable <u>uncharged</u> hydrogens will have one bond and no lone pairs of electrons (He electronic configuration).