## #1 rule: Carbon has 4 bonds.

### Drawing Arrows
- Atoms may have lone pairs even if they are not shown.
- Back of arrow → negative charge/electrons
- Front (Head) of arrow → protons/atoms you’re attacking
- Count your atoms—especially if you need to conduct a retro-synthesis

### Resonance
- SUPER important in organic chemistry
- Stability, acid/bases, and hybridization are all about resonance-push electrons
- Resonate with only lone pairs or double bonds—can push electrons to the next atom or bond, don’t resonate too far to several atoms away!
- Stability is based on number of charges and how well the atom is with a charge
  - Negative - charges: O>N>C
  - Positive + charges: N>O>C

### Hybridization
- sp3 → single bonds
- sp2 → double bonds
- sp → triple bonds

- Keep the lone pairs in mind!!! Especially for S,O,N...etc.
- Try to find a lower hybridization (such as sp instead of sp2, or sp3) by resonating.

### Allylic vs. Vinylic:
- Allylic is favored.
- Vinylic is unstable and would prefer to resonate if possible.

### DeltaG
- Remember this formula: \( \Delta G = (5.7)(pK_A) \)