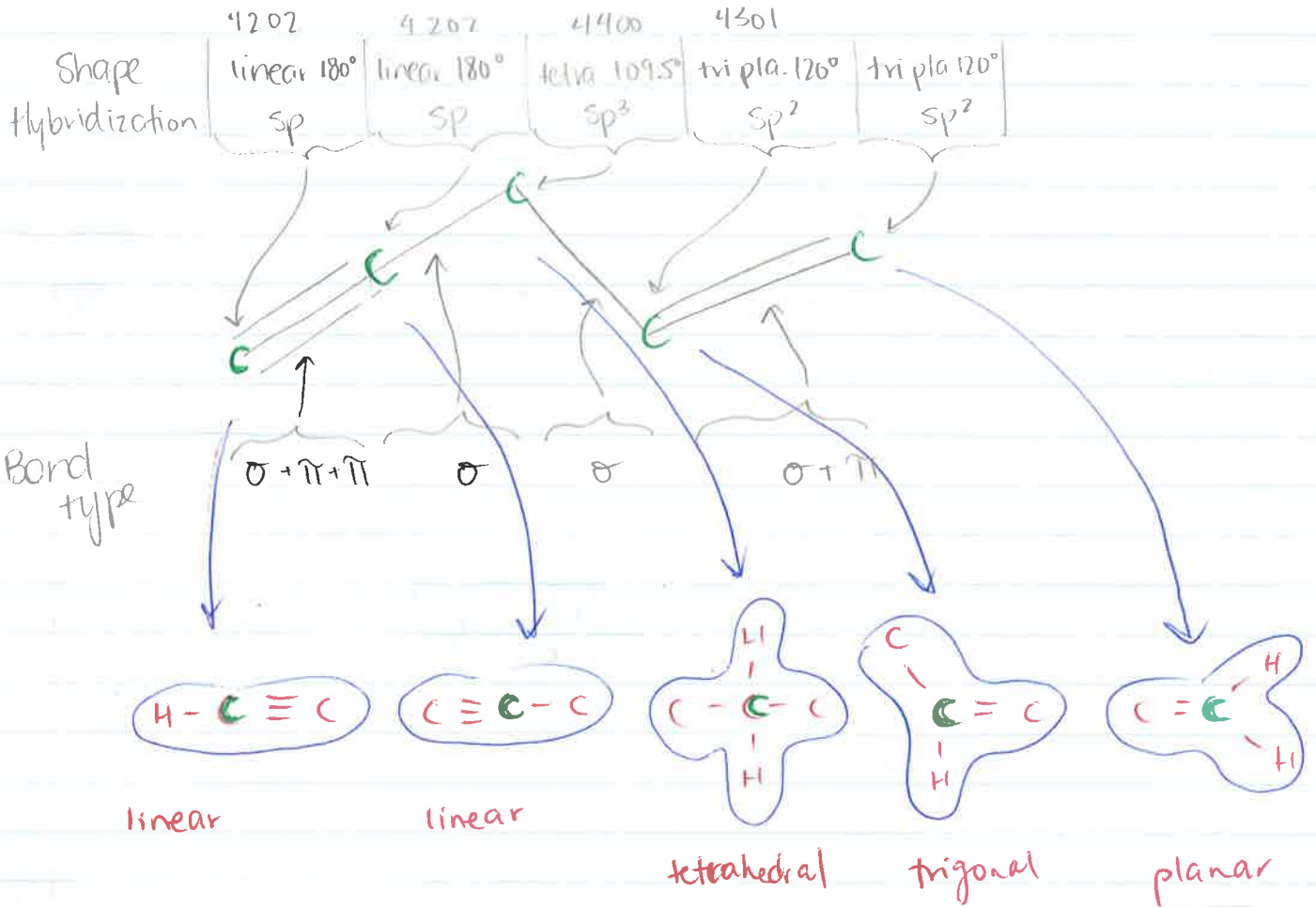
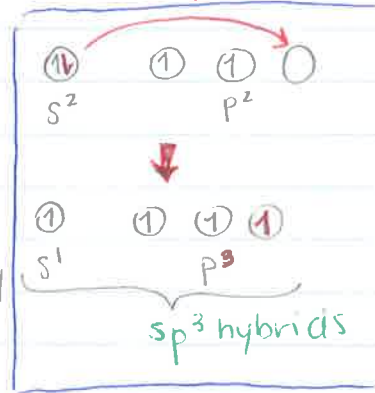


Hybridization. Quick Q

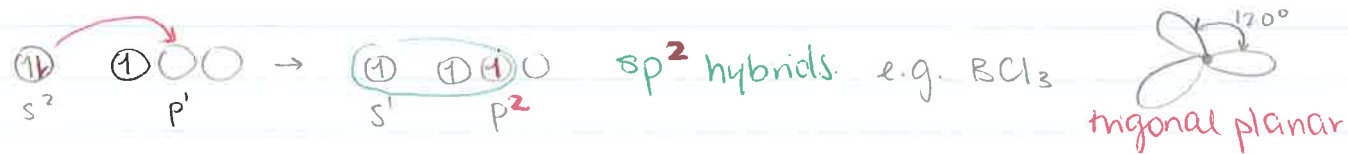


eg. for methane CH₄

- "electron promotion" from s to an empty p orbital
 ↳ creates 4 identical hybrid sp³ atomic orbitals (equivalent in shape & energy). (2s e⁻s + 2p e⁻s)
 ↳ explains carbon's ability to have 4 equal bonds where "naturally" its one s orbital is full and a p: empty
 * exists only when bonding occurs (not present in isolated atom).

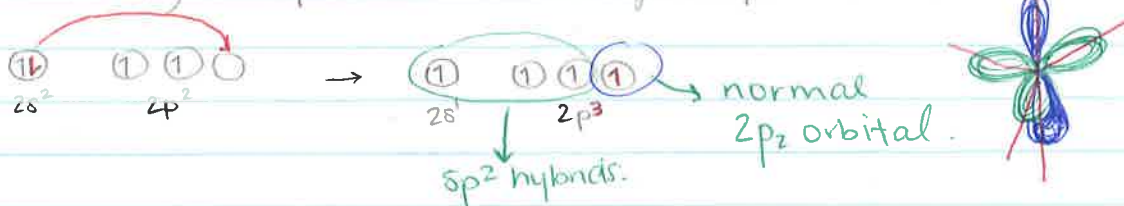


Forms (Single Bonds).

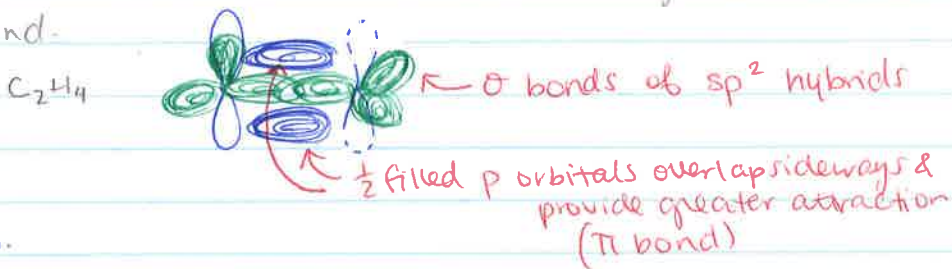


Double Bonds.

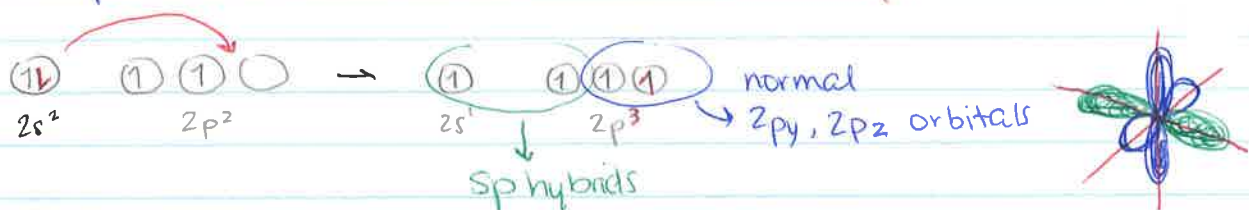
- partial hybridization of the available orbitals
 ↳ leaving 1-2 p orbitals with single unpaired electrons.



- * here, we have 3 hybridized orbitals and one "normal" p orbital
- 3 hybrid orbitals form σ bonds (with C and H)
- $\frac{1}{2}$ filled normal p orbital interacts with other one on adjacent carbon
 ↳ form π bond.



Triple Bonds.



- * here we have 2 hybridized orbitals and 2 "normal" p orbitals
- 2 hybrid orbitals form σ bonds (with C and H)
- $\frac{1}{2}$ filled normal p orbitals interact with others on adjacent carbon
 ↳ form π bonds

