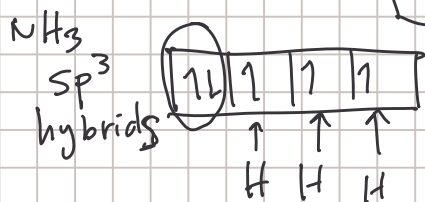
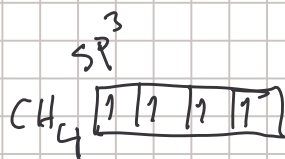
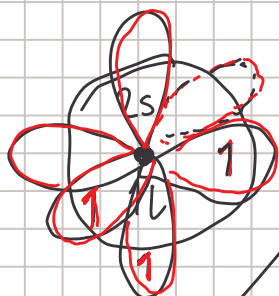
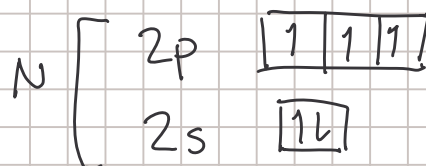
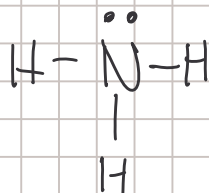


Ch 2

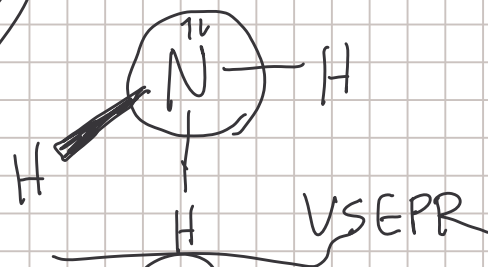
Note Title

9/6/2005

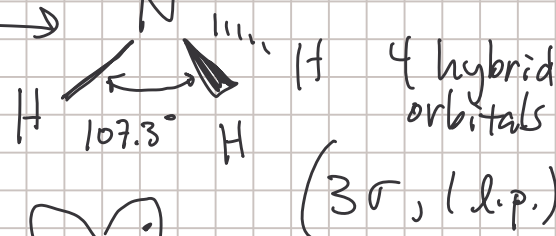
sp^3 4 σ bonds



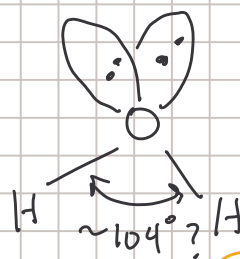
hybridize



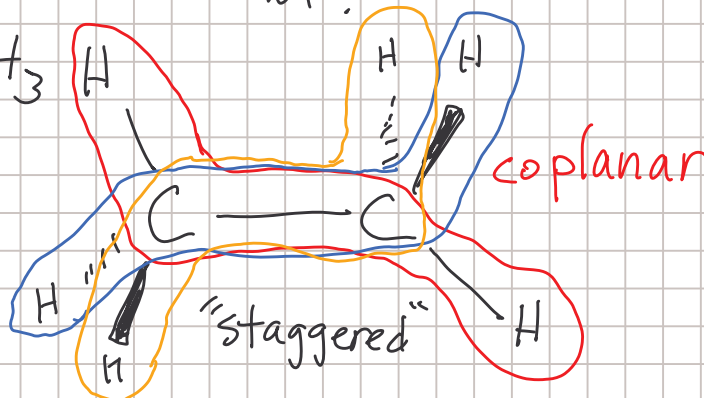
a little larger than a σ bond

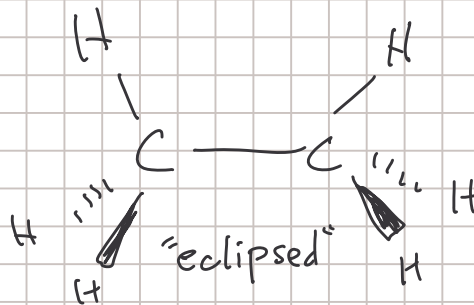


CH_4 109.5° bond angles



the lowest energy "conformation" of ethane

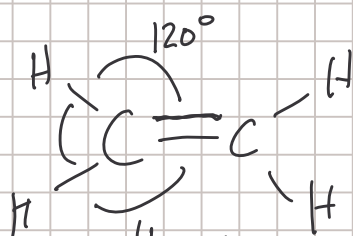




Hybridization rules

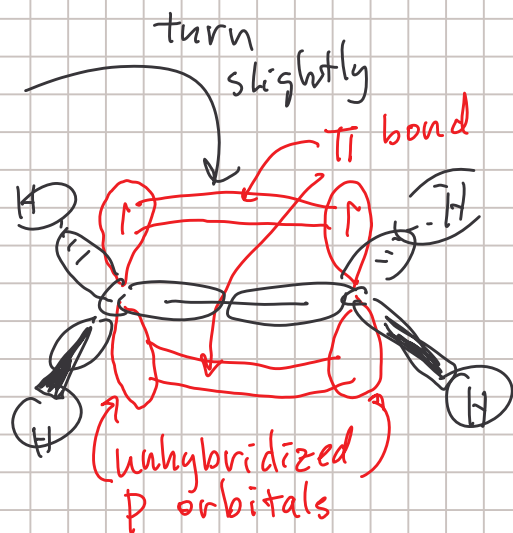
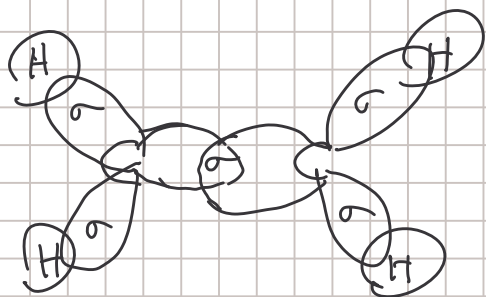
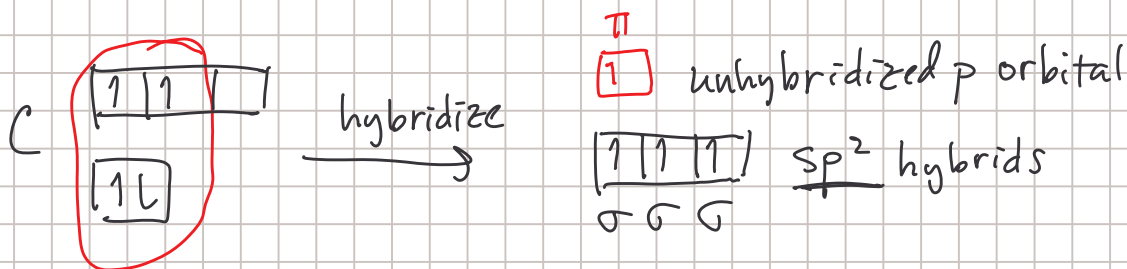
1. σ bonds and lone pairs may use hybrid orbitals
2. π bonds use unhybridized p orbitals

CH_2CH_2 ethene (ethylene)



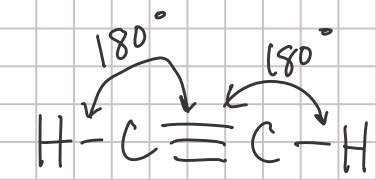
C's are sp^2 hybridized

all atoms - each C has 3 σ bonds
 Coplanar - 1 π bond between carbons



a double bond contains
 1 σ bond and 1 π bond

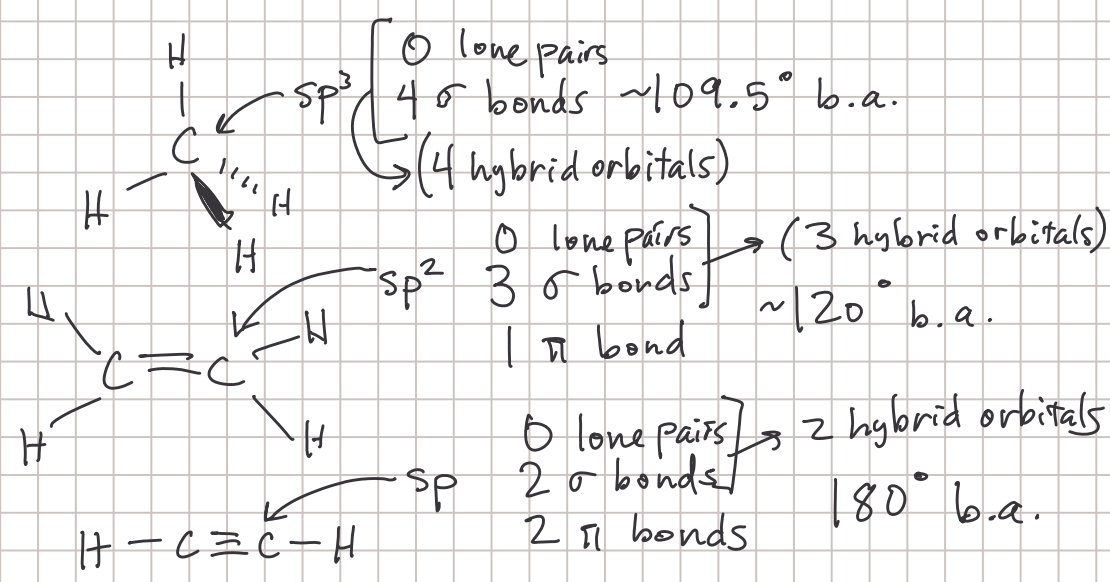
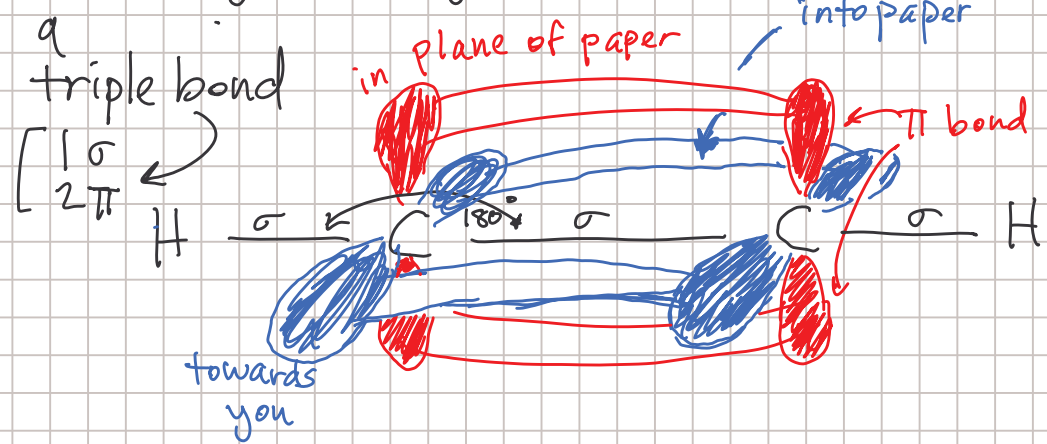
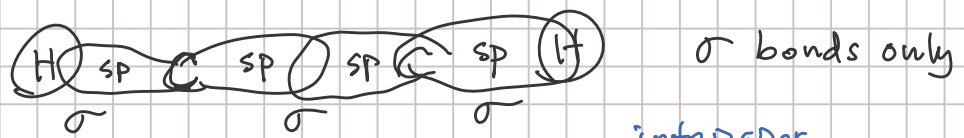
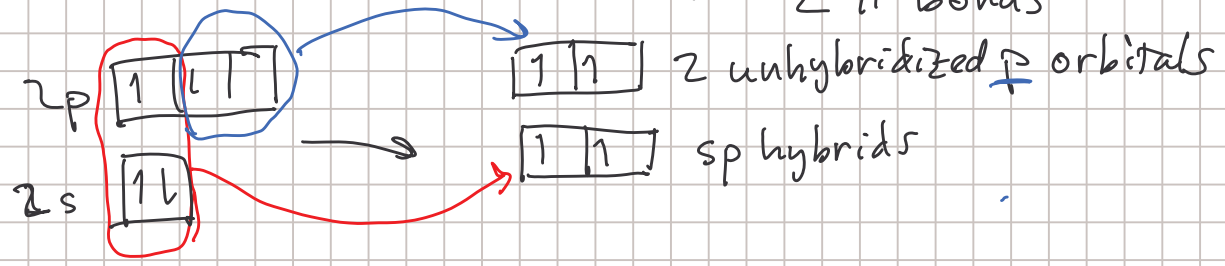
Triple bond

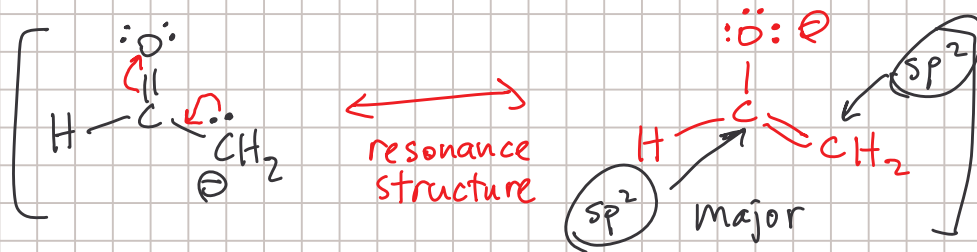
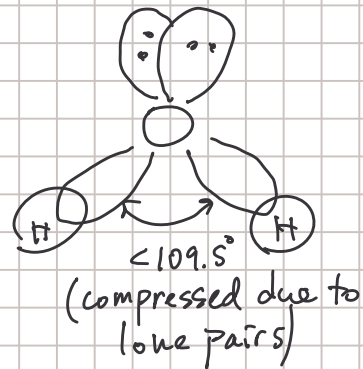
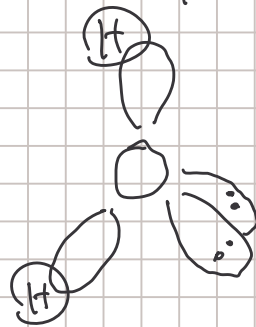
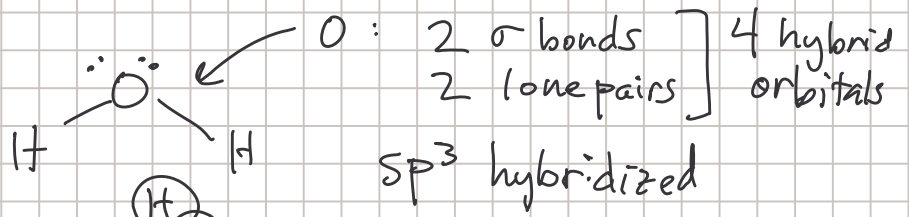
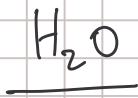


linear molecule

ethyne
(acetylene)

each carbon makes 2 σ bonds
" " 2 π bonds





An orbital diagram must take all important resonance structures into account

Start w/major