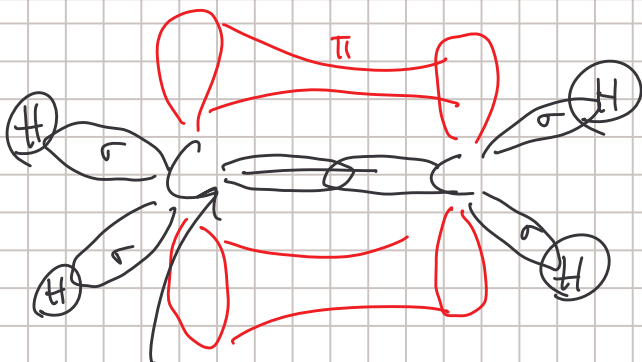


# Ch 7 Alkenes (struct & synthesis)

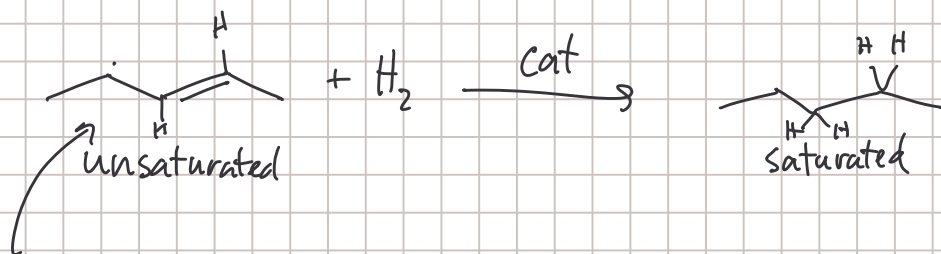
Note Title

11/15/2005

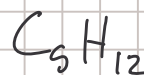
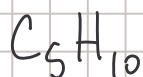


$sp^2 = 3$  hybrid orbitals =  $3\sigma$  bonds  
| unhybridized p orbital =  $\pi$  bond

Alkenes are unsaturated (can add H's w/ catalyst to make alkanes)



1 element of unsaturation (2 H's missing from alkane formula)



a ring is 1 element of unsat.



$C_5H_{10}$   
1 e.u.



$C_5H_{12}$   
0 e.u.



$C_5H_8$   
2 e.u.

# nomenclature

-ene

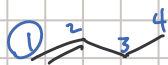


IUPAC ethene

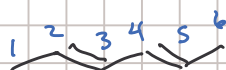
propene

Common ethylene

propylene



IUPAC 1-butene



2,4-hexadiene



2,4,6-nonatriene

new IUPAC but-1-ene

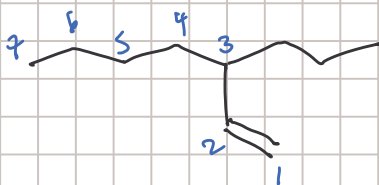
hexa-2,4-diene

nona-2,4,6-triene

(only used when necessary)

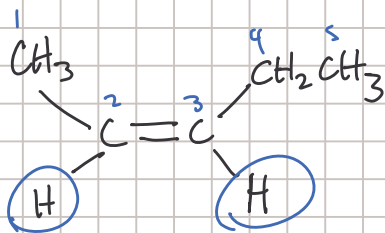


2-butene



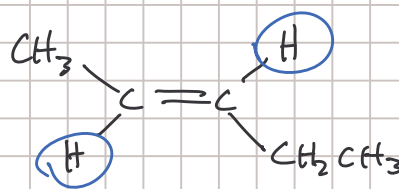
3-n-propyl-1-heptene

## Stereochemistry of alkenes



cis-2-pentene

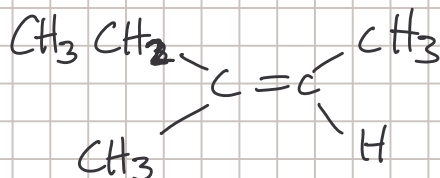
stereoisomers



trans-2-pentene

- only if 1 group per C (C=C)

= 1 H per C (C=C)



neither cis nor trans

