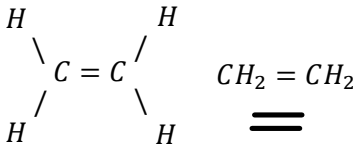
C11 - 6.3 - Alkene = Alkyne ≡ Bonds/Cis/Trans Isomers Notes

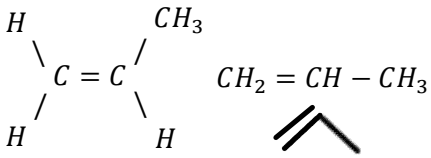
Alkene: Double Bond | *Naming:* ane → ene | C_nH_{2n}

ethene



$CH_2 = CH_2$

propene



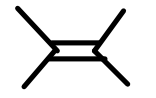
$CH_2 = CH - CH_3$

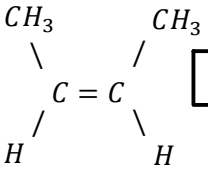
Isomers

Cis: Same side of double *Bond*

Imagine a horizontal line

Trans: Opposite side of double *Bond*

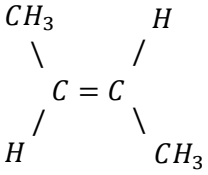




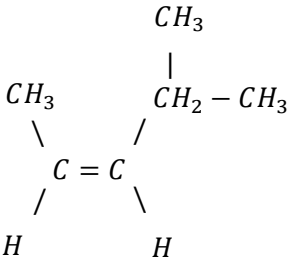
cis/trans $2 - Butene$

$CH_3 - CH = CH - CH_3$

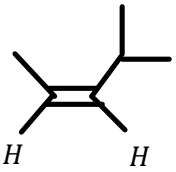
C_4H_8



$4 - ethyl - 2 - pentene$



$CH_3 - CH = CH - CH_2 - CH_3$



<u>dienes</u>: two double bonds

Naming: diene

$2,3 - pentadiene$

$CH_3 - CH = C = CH - CH_3$

Alkyne: Triple Bond

Naming: ane → yne | C_nH_{2n-2}

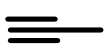
Ethyne

$CH \equiv CH$

Propyne

$CH \equiv C - CH_3$

OR



$2 - Butyne$

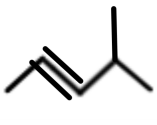
$CH_3 - C \equiv C - CH_3$

OR

$4 - methyl - 2 - pentyne$

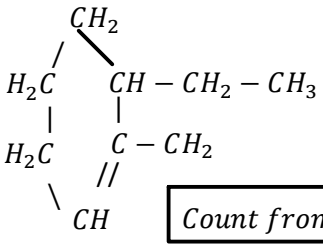
$CH_3 - C \equiv C - CH - CH_2$

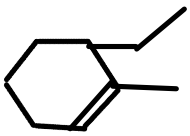
CH_3



Double/Triple Bond Overrides Alphabetical!

$3 - ethyl - 2 - methyl - 1 - cyclohexene$





Count from before the double/triple bond