


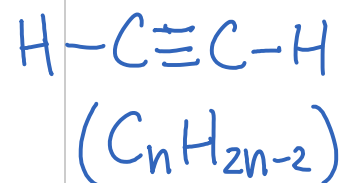
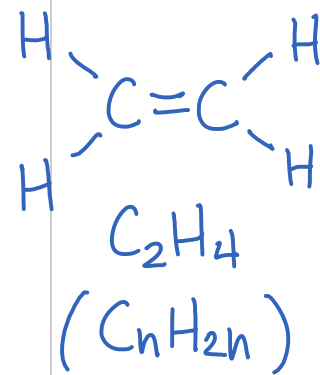
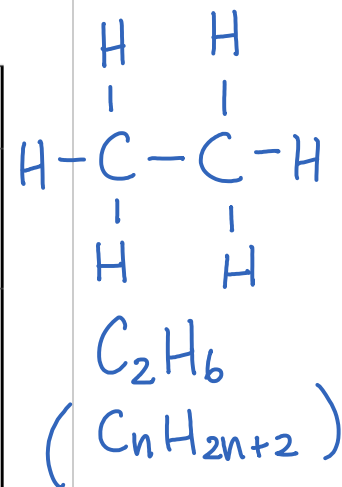
ALKENES AND ALKYNES

If insufficient numbers of atoms are available to give each carbon a bond to four atoms then we say that the hydrocarbon is **unsaturated** and the molecule will have some **double** or **triple** bonds.

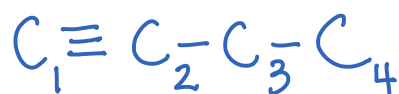
| | |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Teacher Lecture: Alkenes and Alkynes Your teacher will discuss the structure and naming systems of alkenes and alkynes. |
| General Information | An alkene or alkyne is said to be an unsaturated hydrocarbon since the presence of a double or triple bond will allow for more hydrogens to bond with at least two of the carbon atoms and hence its bonding capacity has not been used up, or is "unsaturated". |
| Chemical Formulas For Alkenes | An alkene is a hydrocarbon containing a double bond between two carbon atoms. The general formula for an alkene is C_nH_{2n} |
| Chemical Formulas For Alkynes | An alkyne is a hydrocarbon containing a triple bond between two carbon atoms. The general formula for an alkyne is C_nH_{2n-2} |
| Properties | <ol style="list-style-type: none"> Physical properties are very similar to those of the alkanes. The most important difference in chemical properties is that the double and triple bonds are reactive. |



Problem Set 7.2: Alkenes, Cycloalkenes and Alkynes
Hebden Workbook Unit X #24-25, 26, 28

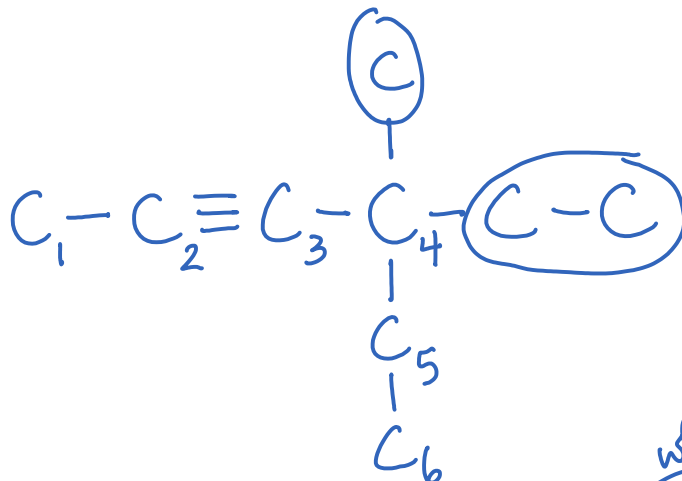


Ex. 1



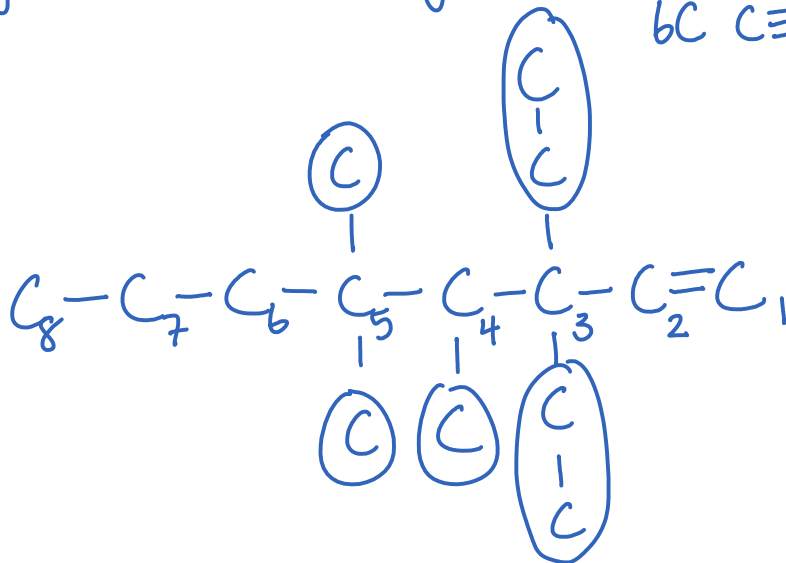
1-butyne
4C C≡C

2-butyne
4C C≡C



4-ethyl- 4 -methyl - 2-hexyne
6C C≡C

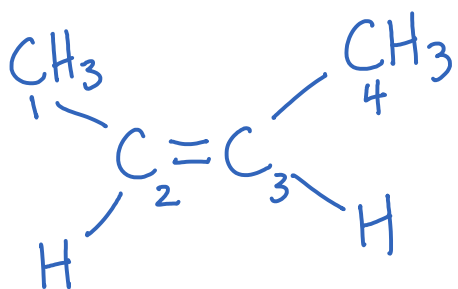
where?



3,3-diethyl - 4,5,5-tri methyl - 1-octene
8C C=C

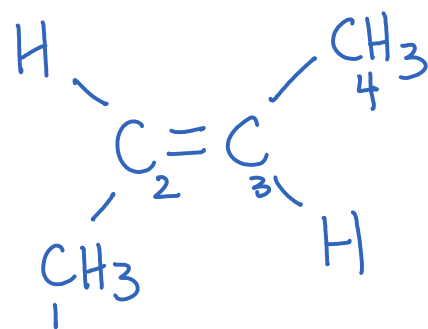
alkene

GEOMETRIC ISOMER



cis isomer
(same side)

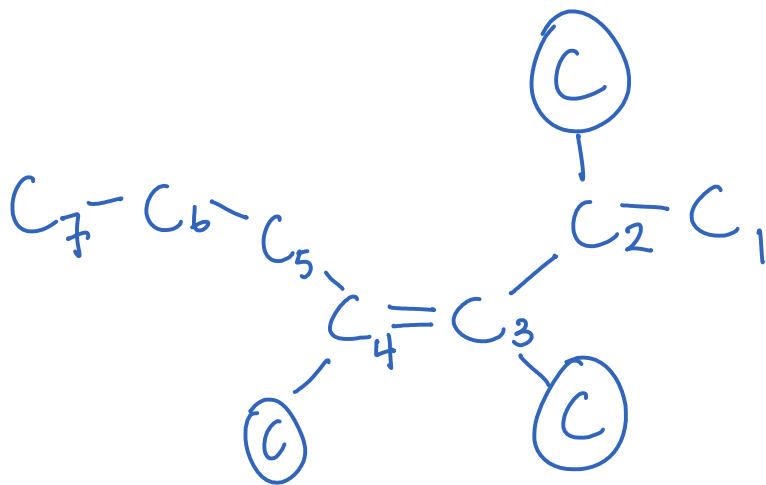
OR



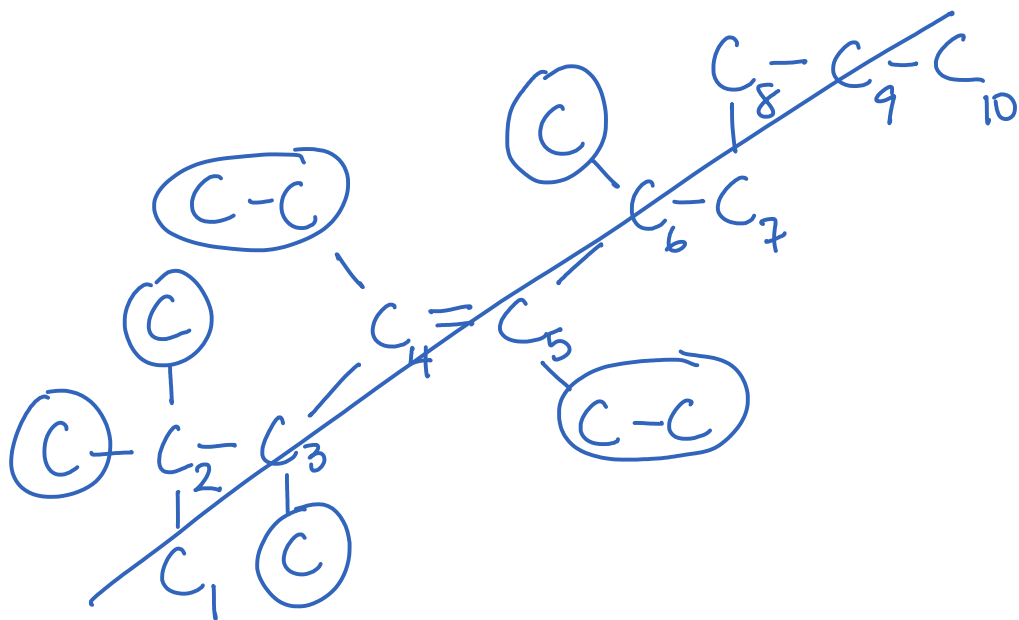
trans isomer
(across)

(cis) 2-butene
4C C=C

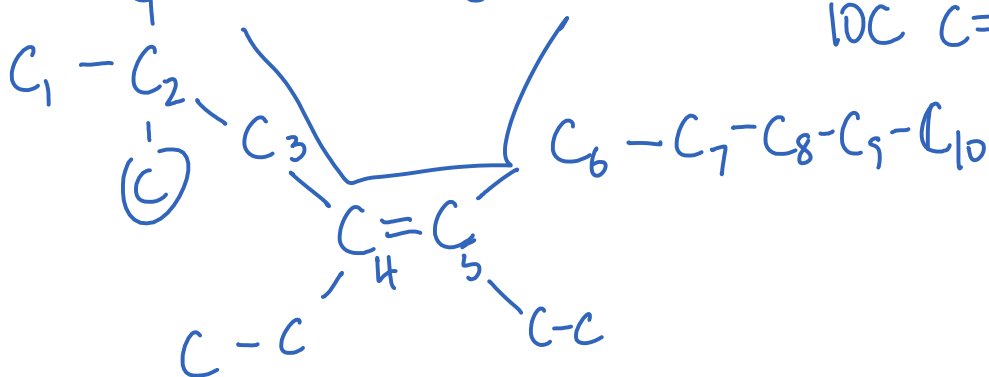
(trans) 2-butene



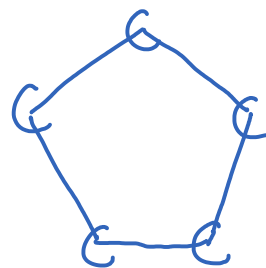
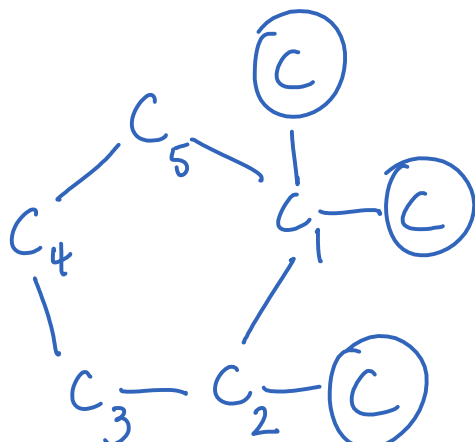
2,3,5-trimethyl - cis - 3-heptene
7C C=C



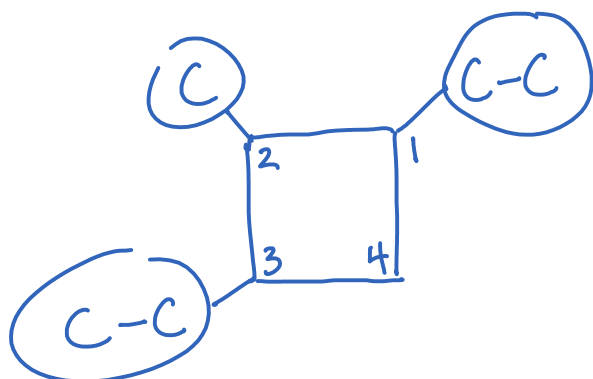
✓ ✓ ✓ ✓ ✓ ✓
 4,5-diethyl-2,2,3,6-tetramethyl-trans-4-decene
 10C C=C



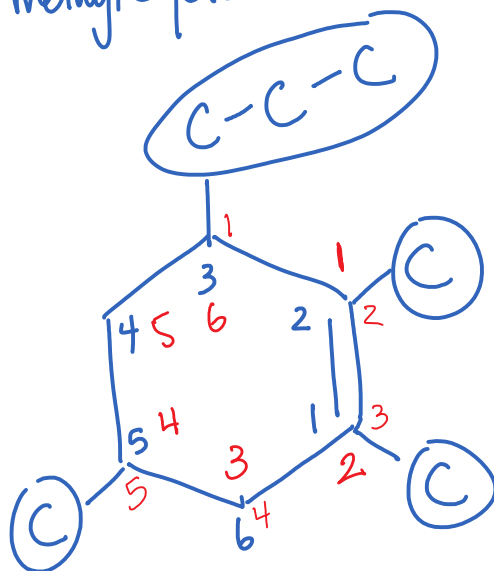
Cyclic Compounds: (Rings) prefix: "cyclo-"



1,1,2-trimethylcyclopentane
5C C-C



1,3-diethyl-2-methylcyclobutane

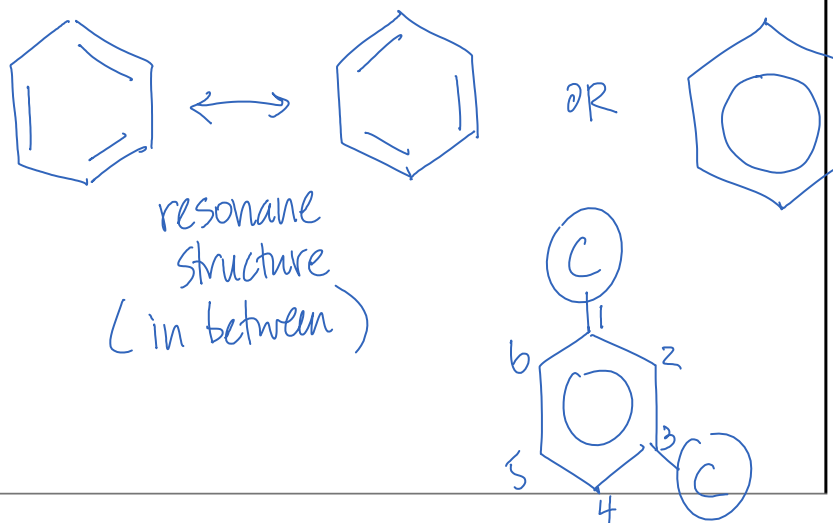


1,2,5-trimethyl-3-propylcyclo-1-hexene ✓
2,3,5
1,2,5,1
1
6
2
1

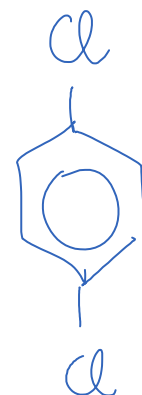
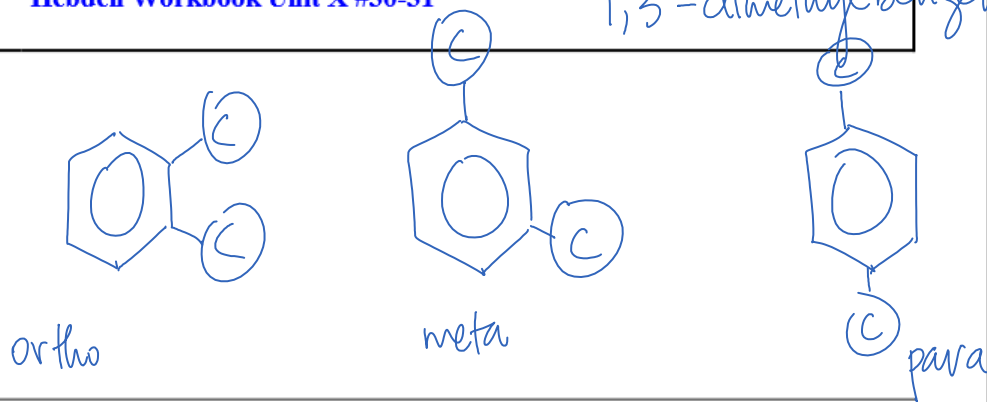
Chemistry 11 Study Guide: Unit 7 Organic Chemistry

AROMATICS

An aromatic organic compound consists of a benzene ring. Many functional groups or alkyl groups may be attached to the benzene ring creating a large number of possible compounds.

**Teacher Lecture: Aromatics****General Information****Chemical Formulas / Examples****Problem Set 7.3: Aromatics**
Hebden Workbook Unit X #30-31

1,3-dimethylbenzene

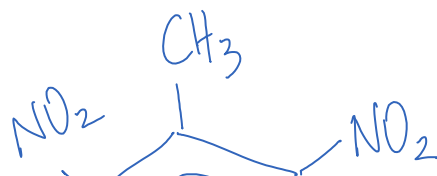


methballs

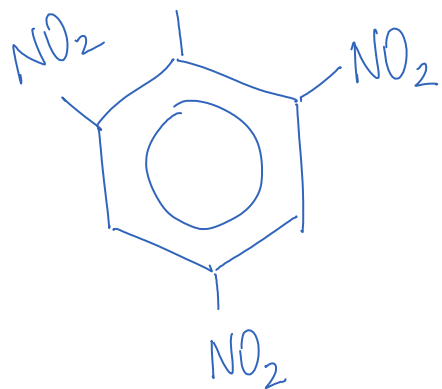
Version 2.3

page 9

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TNT (2,4,6-trinitrotoluene)



trinitro toluene (TNT)