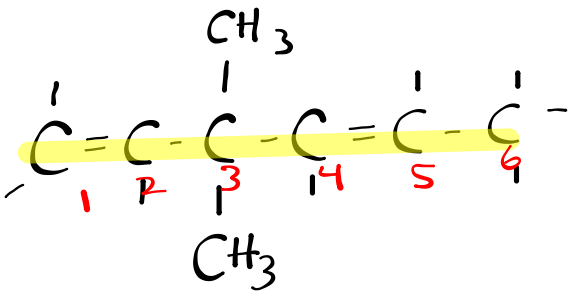
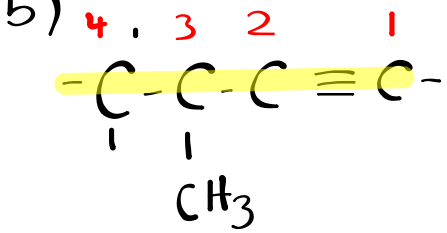
Warm Up

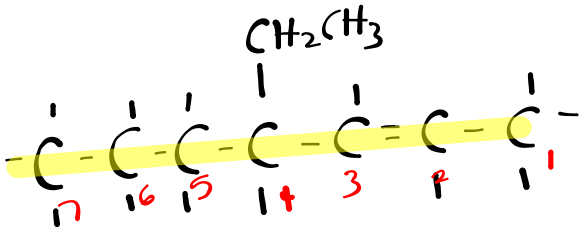
Name the following molecules:

a) 

b) 

methyl-1-butyne

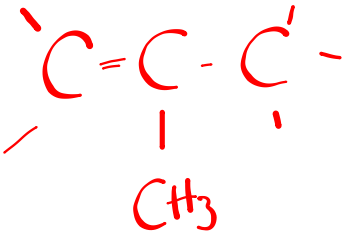
3,3-dimethyl-1,4-hexadiene

c) 

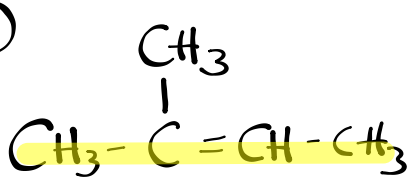
4-ethyl-2-heptene

Check Homework

(3) methylpropene

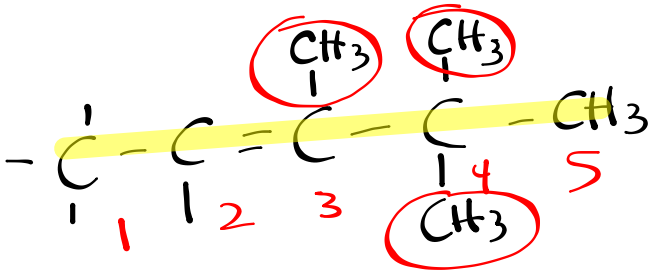


(9)



methyl-2-butene

(10) $CH_3-CH=C(CH_3)-C(CH_3)_2-CH_3$



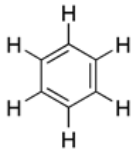
3,4,4-trimethyl-2-pentene

(11) $CH_2=CH-CH_3$

propene

Aromatic Compounds

~~Historically aromatic compounds were organic compounds with an odour.~~ Today aromatic compounds are defined as benzene (C_6H_6) and all carbon compounds that contain benzene-like structures.

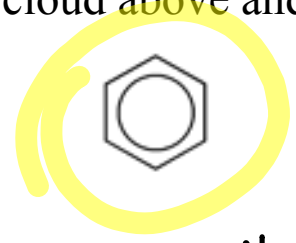
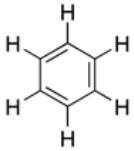
Ex. 

Although the molecular formula for benzene suggests 3 double bonds between three single bonds, empirical evidence shows:

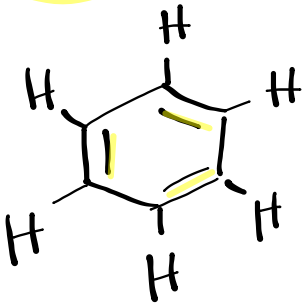
(i) the ring is relatively unreactive ← **we know multiple bonds are reactive**

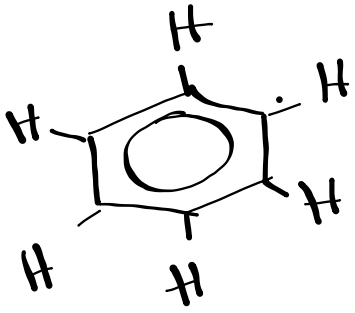
(ii) The C--C bonds are of equal length and strength
[EMPIRICAL EVIDENCE DOES NOT MATCH THEORY]

The evidence can only be explained if the pi electrons are delocalized (do not stay with any one carbon) and circle in a donut shaped cloud above and below the plane of the sp^2 C-C bonds.

 **or** 

think multiple bonds





Substituted Benzenes

Mono- substituted benzene structures

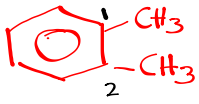
Ex.

ethylbenzene

No number is needed for mono-substitued benzenes because all ring positions are identical.

Simple Di - substituted benzenes

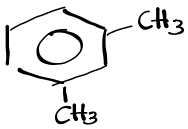
Ex.



~~When two groups are attached to benzene, the ring is numbered to give the lower numbers to the branches.~~

1,2-dimethylbenzene or ortho-dimethylbenzene

The prefix meta is used for 1,3 di-substituted benzenes.
Ex.

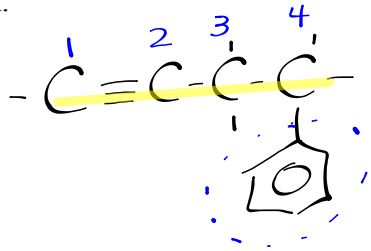


1,3-dimethylbenzene or meta-dimethylbenzene

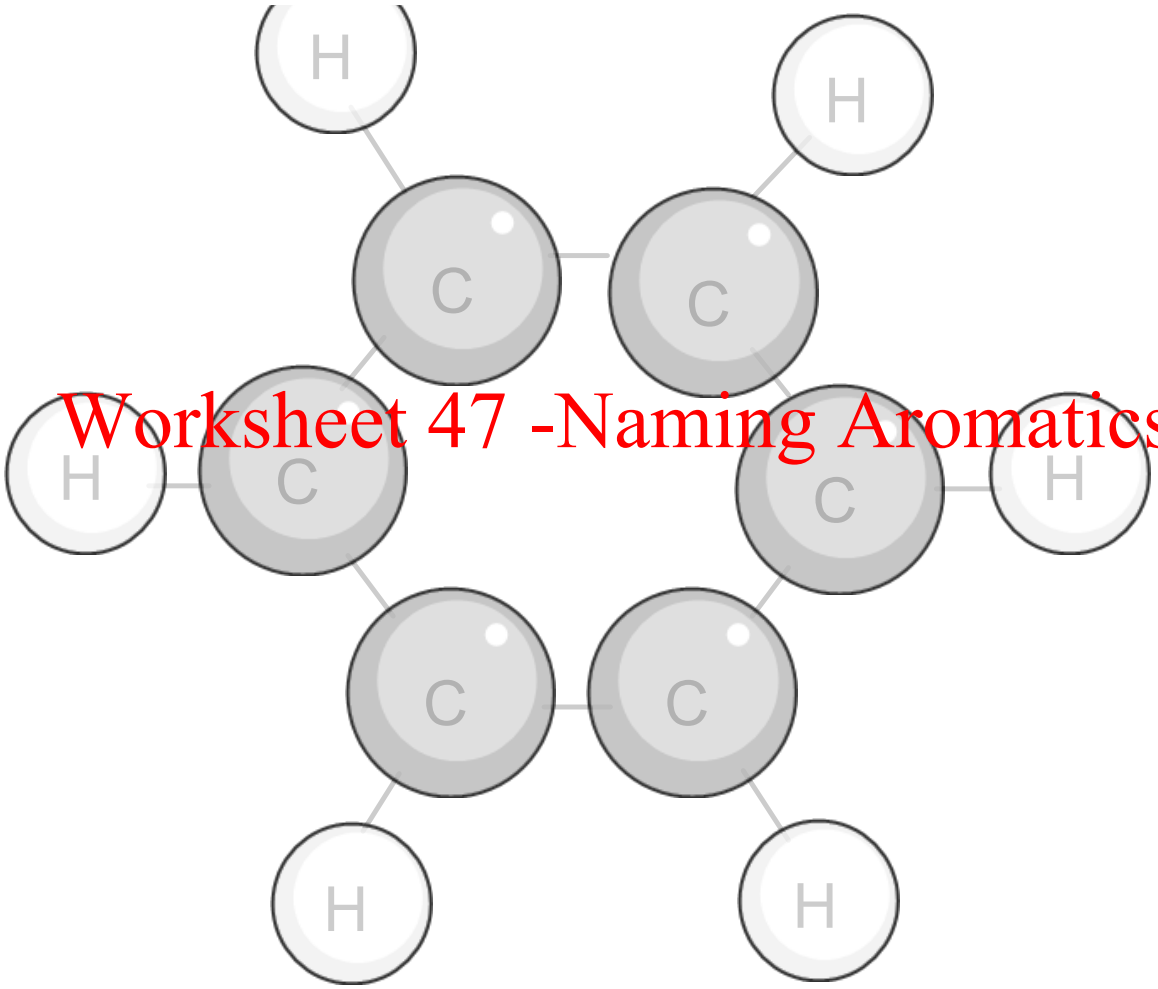
The prefix para is used for 1,4 di- substituted benzenes.
Ex.

1,4-dimethylbenzene or para-dimethylbenzene

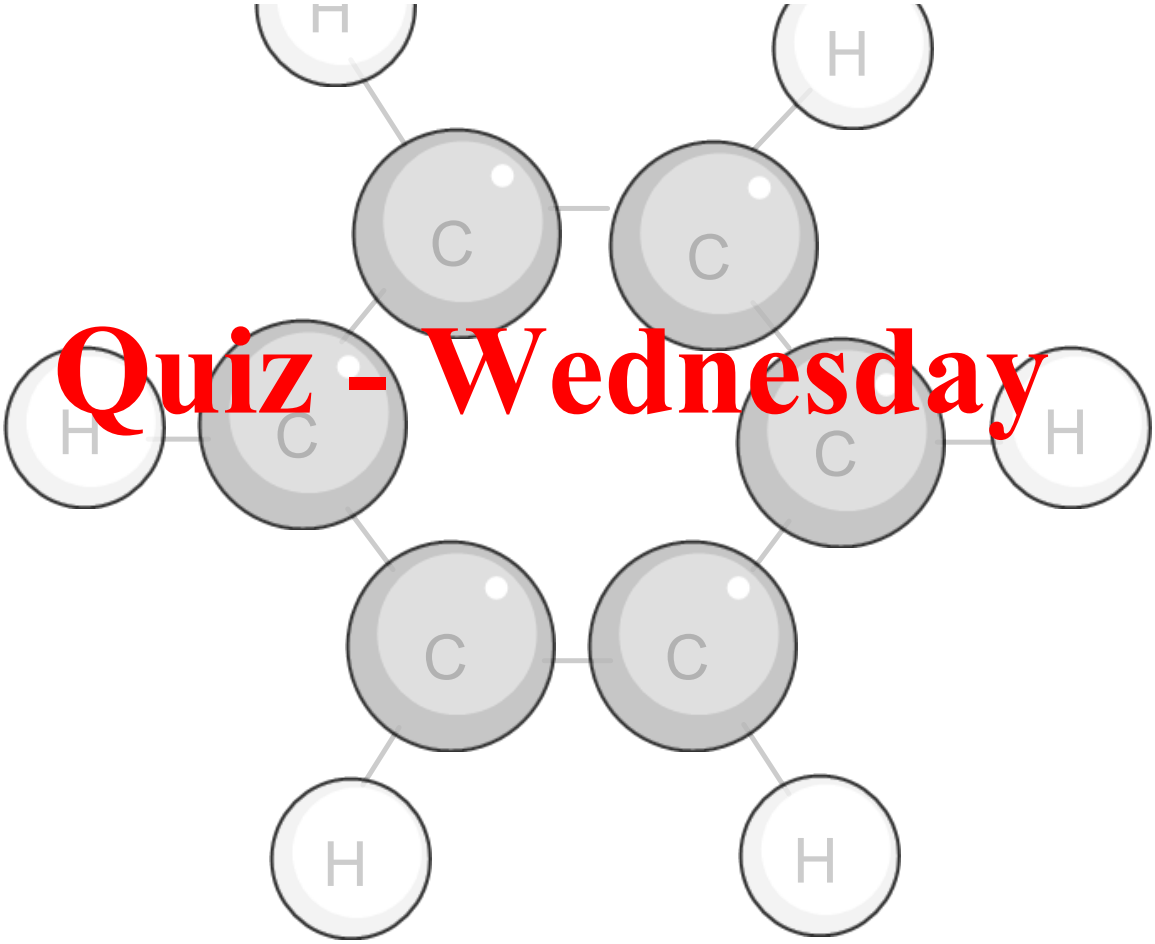
When the benzene ring itself is considered as a branch, it is given the name *phenyl*
Ex.



4-phenyl-1-butyne



Worksheet 47 -Naming Aromatics



Quiz - Wednesday