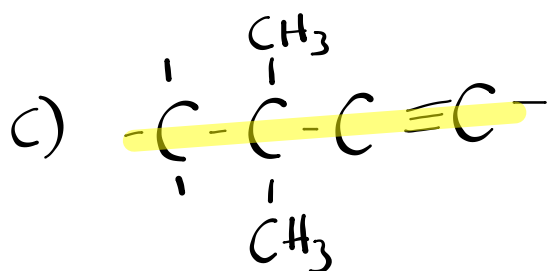
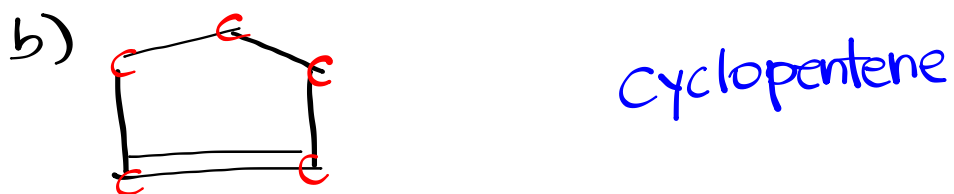
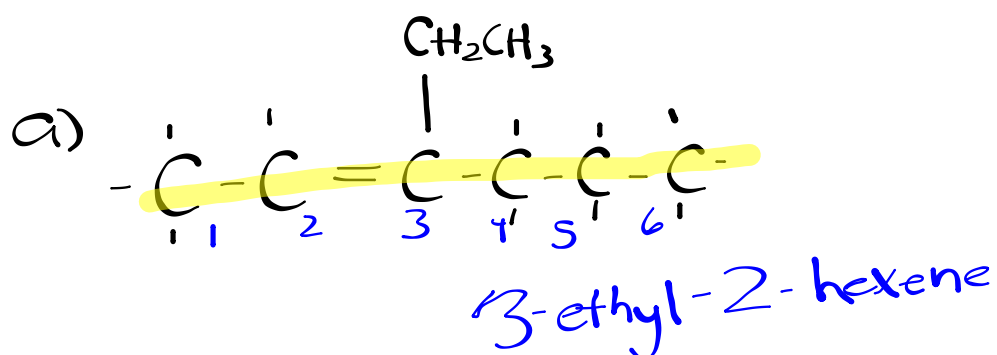
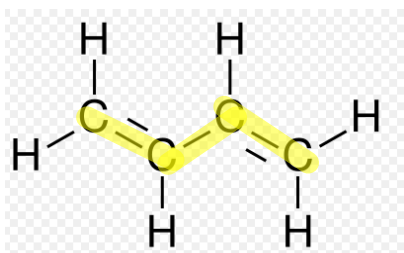


## Warm Up



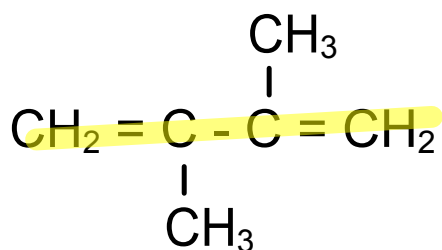
## Multiple Multiple Bonds

If there is more than one multiple bond in an organic compound, the name of the compound is changed to a \_\_\_\_\_diene, with the placing of the double bonds indicated at the beginning of the parent name.

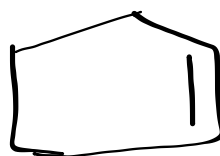


1,3-butadiene

dimethyl-1,3-butadiene



Cyclopentene

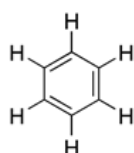


# Worksheet 46

# Aromatic Compounds

Historically aromatic compounds were organic compounds with an odour. Today aromatic compounds are defined as **benzene (C<sub>6</sub>H<sub>6</sub>)** 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:

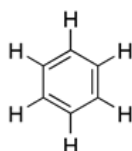
(i) the ring is relatively unreactive ← we know multiple bonds are reactive

(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 circulate in a donut shaped cloud above and below the plane of the sp<sup>2</sup> C-C bonds.



or



think multiple bonds

