

① $D_{mass} = g/mol \quad \frac{g}{mole} \rightarrow \frac{kg}{mole}$

② $E = mc^2$

$$\frac{J}{mole} \times \frac{1 \text{ mole}}{6 \times 10^{23} \text{ particles}} \times \frac{1 \text{ particle}}{\# \text{ Nucleon, } (\#p + \#n)} = \frac{J}{\text{Nucleon}}$$

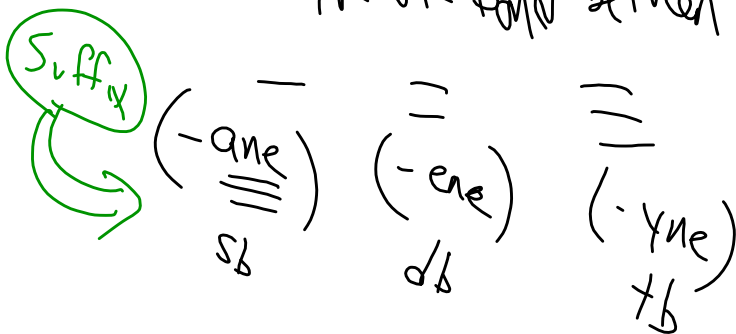
Organic Chem - CARBON main element.

Hydrocarbon C + H

Nomenclature → Naming

① # C's

② Type of bond between C's



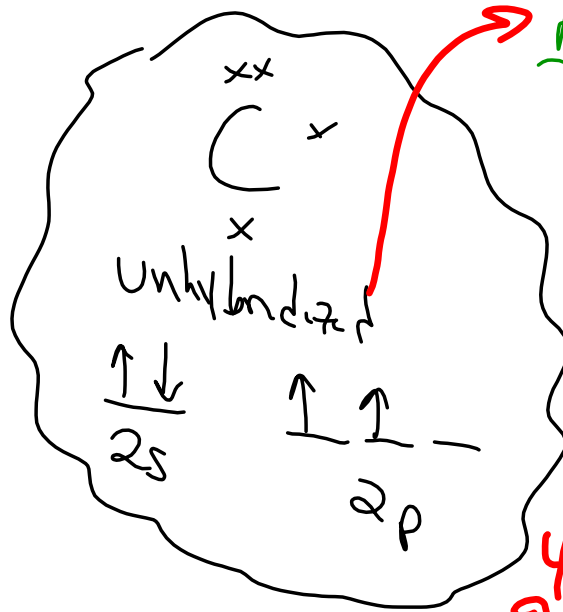
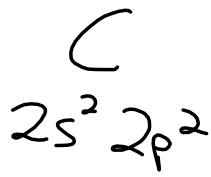
<u>#C's</u> <u>Prefix</u>		<u>#C's</u>	
1	meth-	6	hex-
2	eth-	7	hept-
3	prop-	8	oct-
4	but-	9	non-
5	pent-	10	dec-

Organic

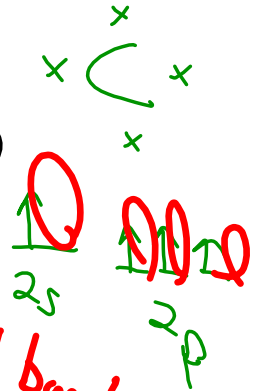
Aliphatic compound → chains
start → end.

Aromatic compound → rings
no start/end "circle" (loop)

Chams

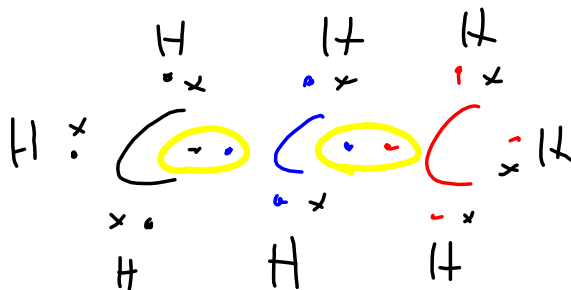


hybridize it
 $\downarrow \Rightarrow \uparrow$

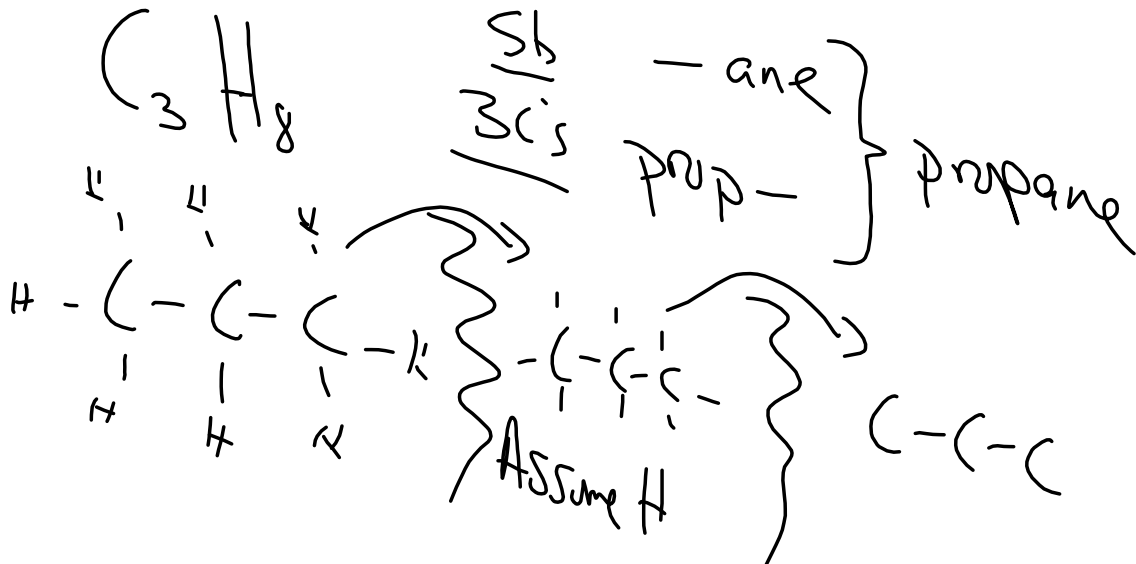
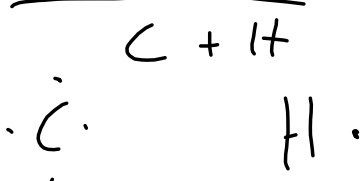


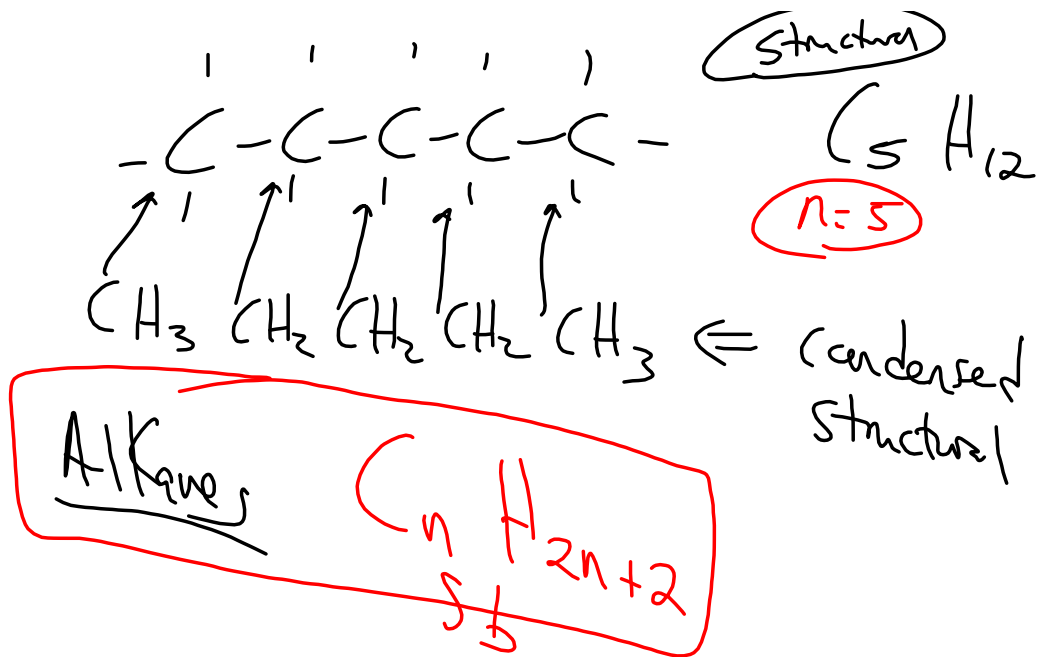
4 bond sites available

C_3H_8
 $(n H_{2n+2})$



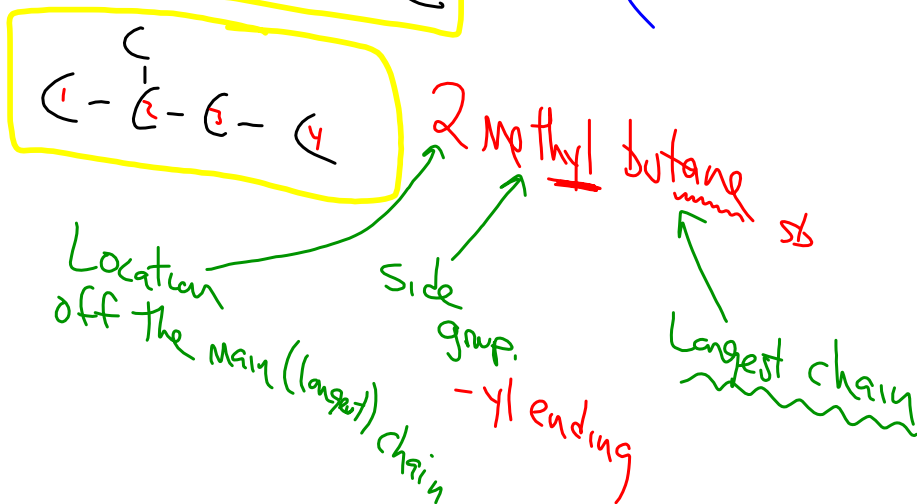
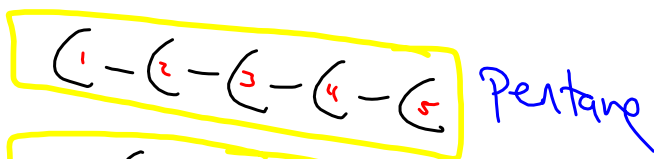
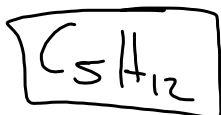
hydrocarbon

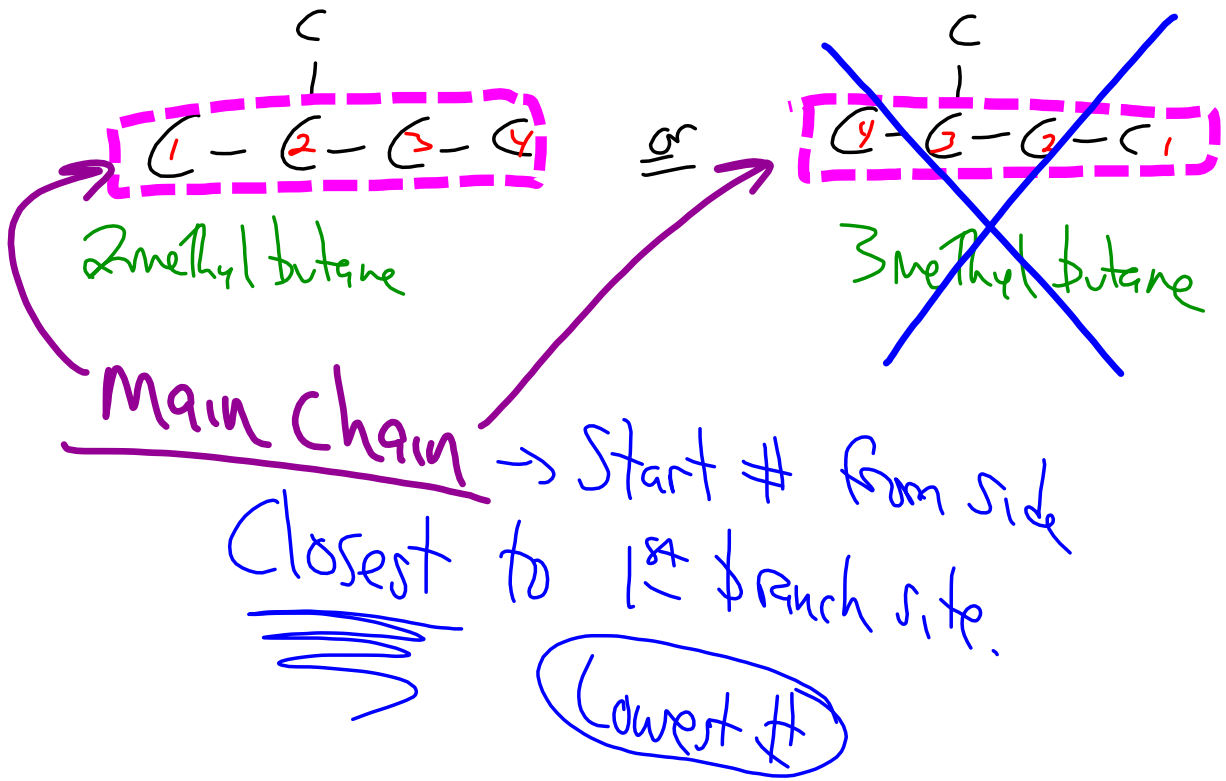




Isomer

Same # C's and H's but a different structure



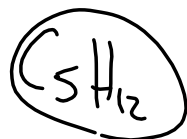
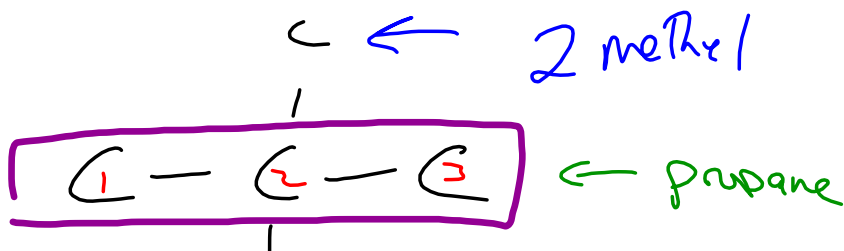


Mirror images

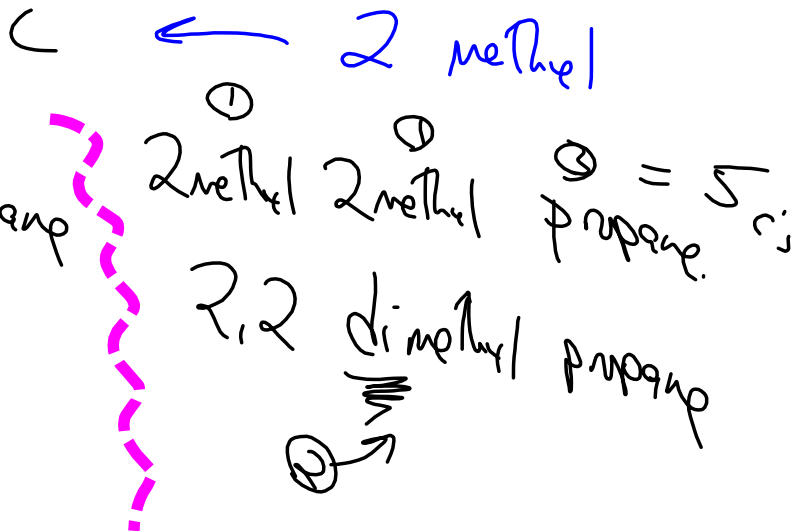
NOT isomers

Chiral

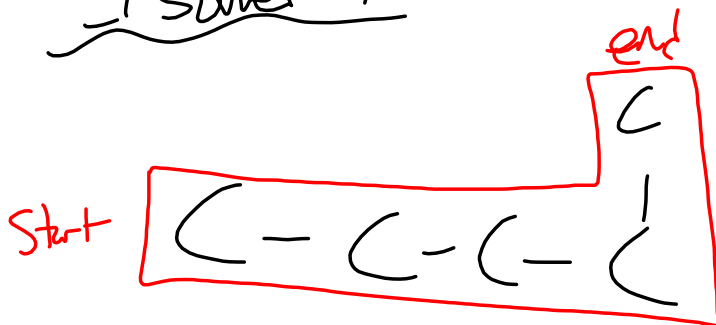
Non superimposable
Mirror image



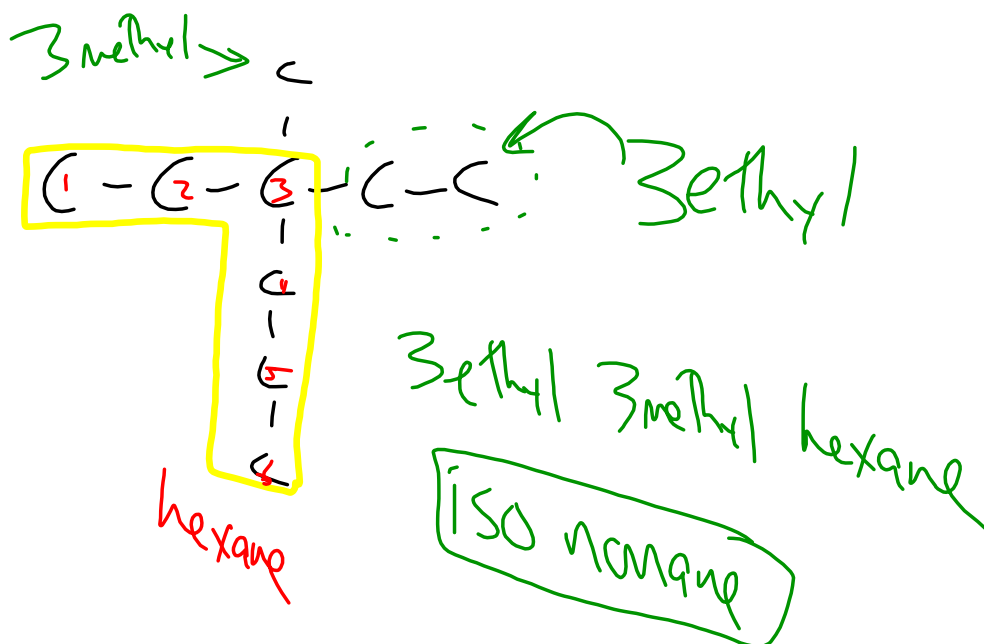
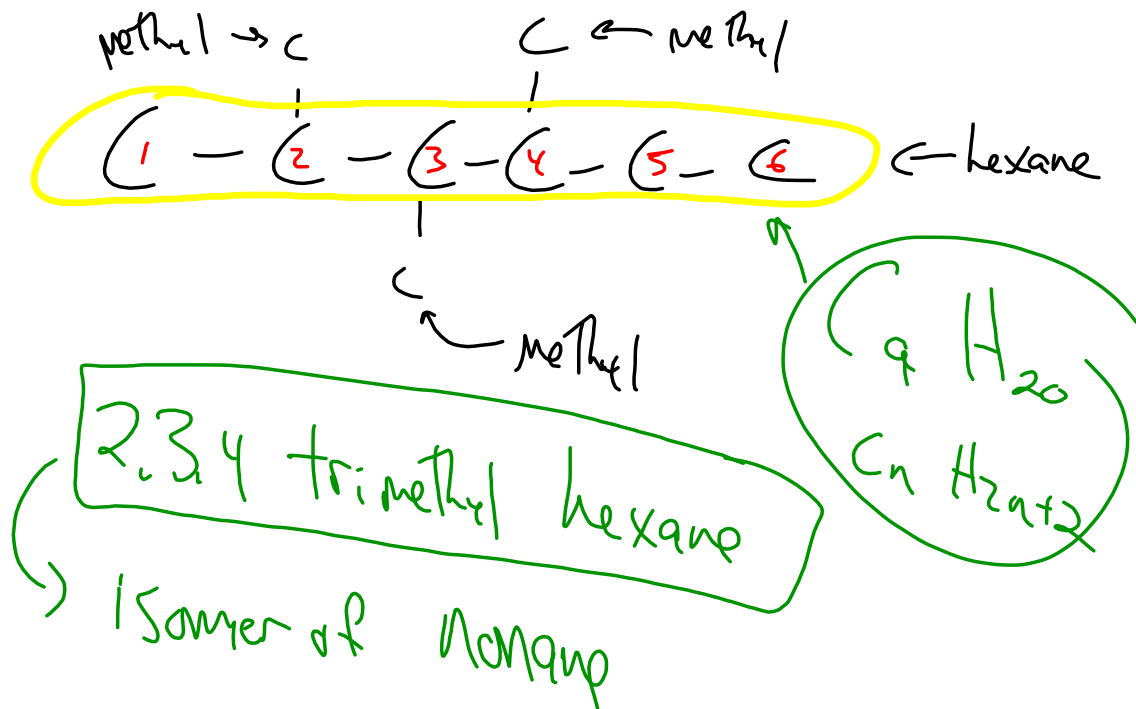
isomer of propane
iso propane



Isomer?



NOT
 an isomer.



Aromatic - Rings

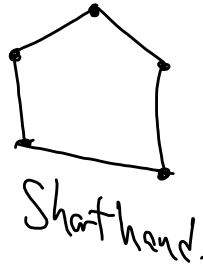
Cycloalkanes
C_nH_{2n}



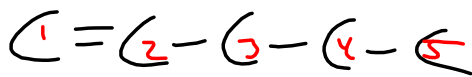
Cyclo-
Cyclo propane



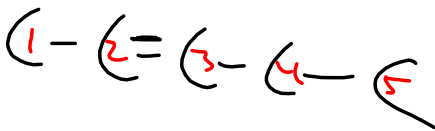
2 lines meet = "C"



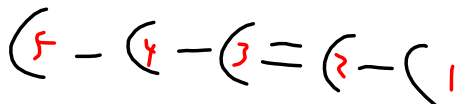
Double Bond → Add 1 db



1 pentene

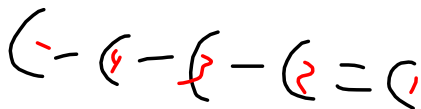


2 Pentene



2 Pentene

NOT isomers
mirror images



1 Pentene

1,3 →

← 2,4



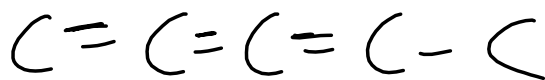
S cis

2 double bonds

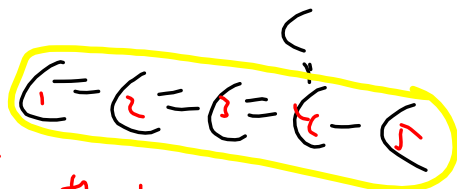
1,3 pentadiene

- diene

3 = tri
4 = tetra
5 = penta



1,2,3 penta triene



4 methyl 1,2,3 penta triene

Mult. bonds 1st
The
Side group

$$25 / 18 + 22$$