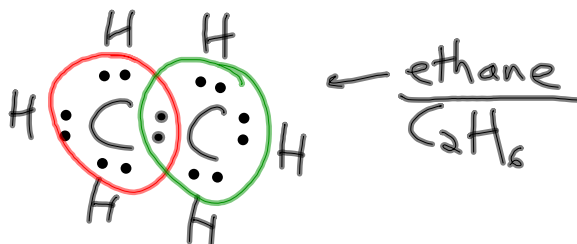


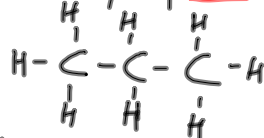
Organic Chemistry - Carbon compounds

- $\cdot \overset{\cdot}{\underset{\cdot}{\text{C}}} \cdot$ - Group IVA
 - 4 outer e^-
 - can covalently bond at 4 sites

Types of hydrocarbons

Alkanes - contain only single bonds

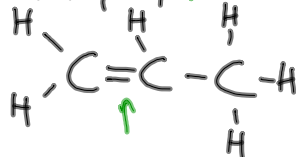
i.e. propane



- saturated
- every carbon is bonded to 4 other atoms

Alkenes - contain 1 or more double bonds

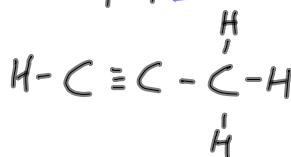
i.e. propene



- unsaturated
- some carbons are not bonded to 4 other atoms

Alkynes - contain 1 or more triple bonds

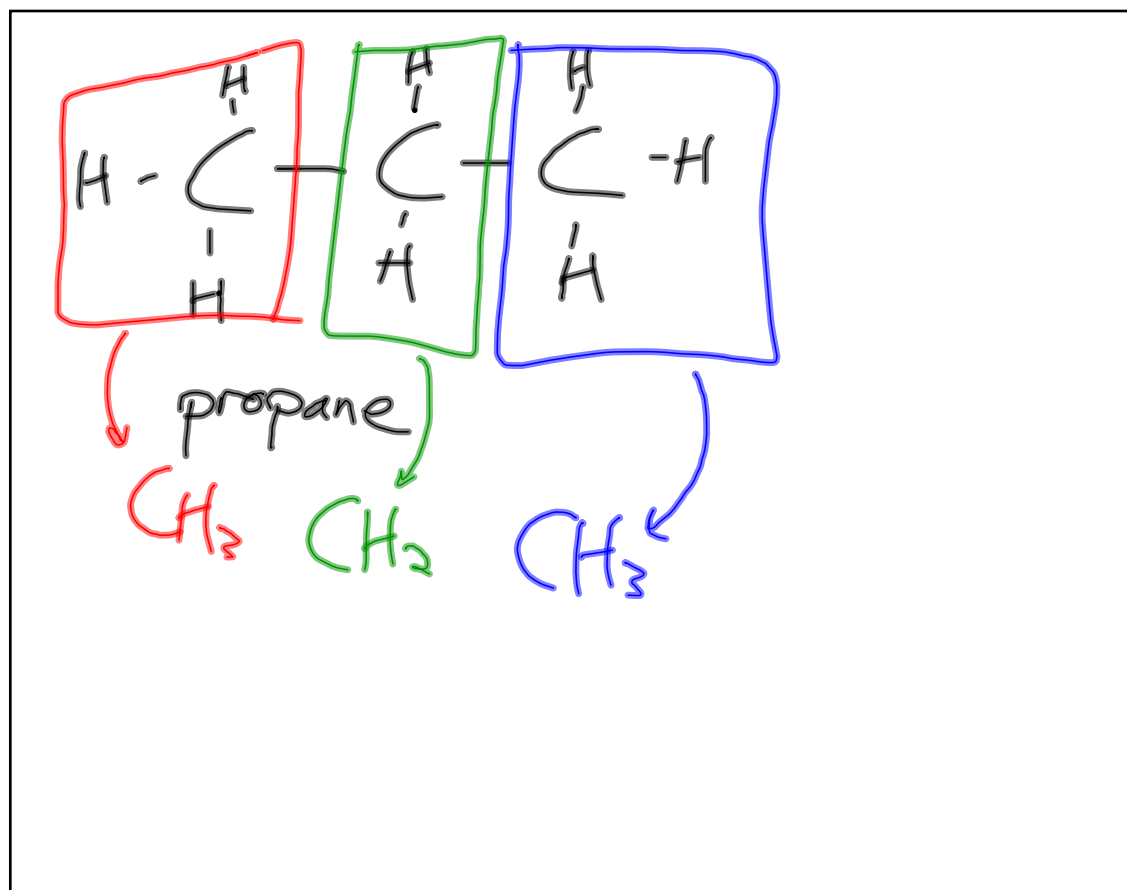
i.e. propyne



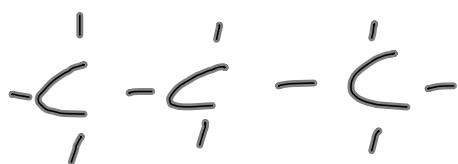
- unsaturated
- not common in nature

Alkane	Molecular	Condensed
methane	CH_4	CH_4
ethane	C_2H_6	CH_3CH_3
propane	C_3H_8	$\text{CH}_3(\text{CH}_2)\text{CH}_3$
butane	C_4H_{10}	$\text{CH}_3\text{CH}_2(\text{CH}_2)\text{CH}_3$
pentane	C_5H_{12}	$\text{CH}_3(\text{CH}_2)_2\text{CH}_2\text{CH}_3$
hexane	C_6H_{14}	$\text{CH}_3(\text{CH}_2)_3\text{CH}_3$
heptane	C_7H_{16}	$\text{CH}_3(\text{CH}_2)_4\text{CH}_3$
octane	C_8H_{18}	$\text{CH}_3(\text{CH}_2)_5\text{CH}_3$

p. 745



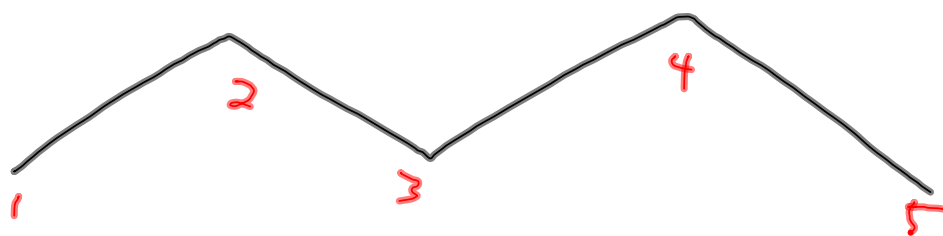
Ways of drawing chains - i.e., propane



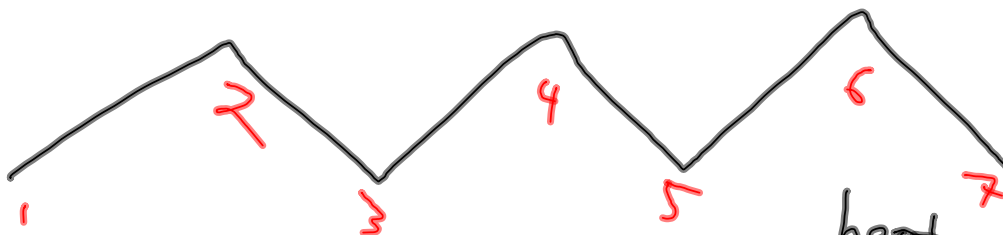
skeletal model
hydrogens are
assumed to
be there



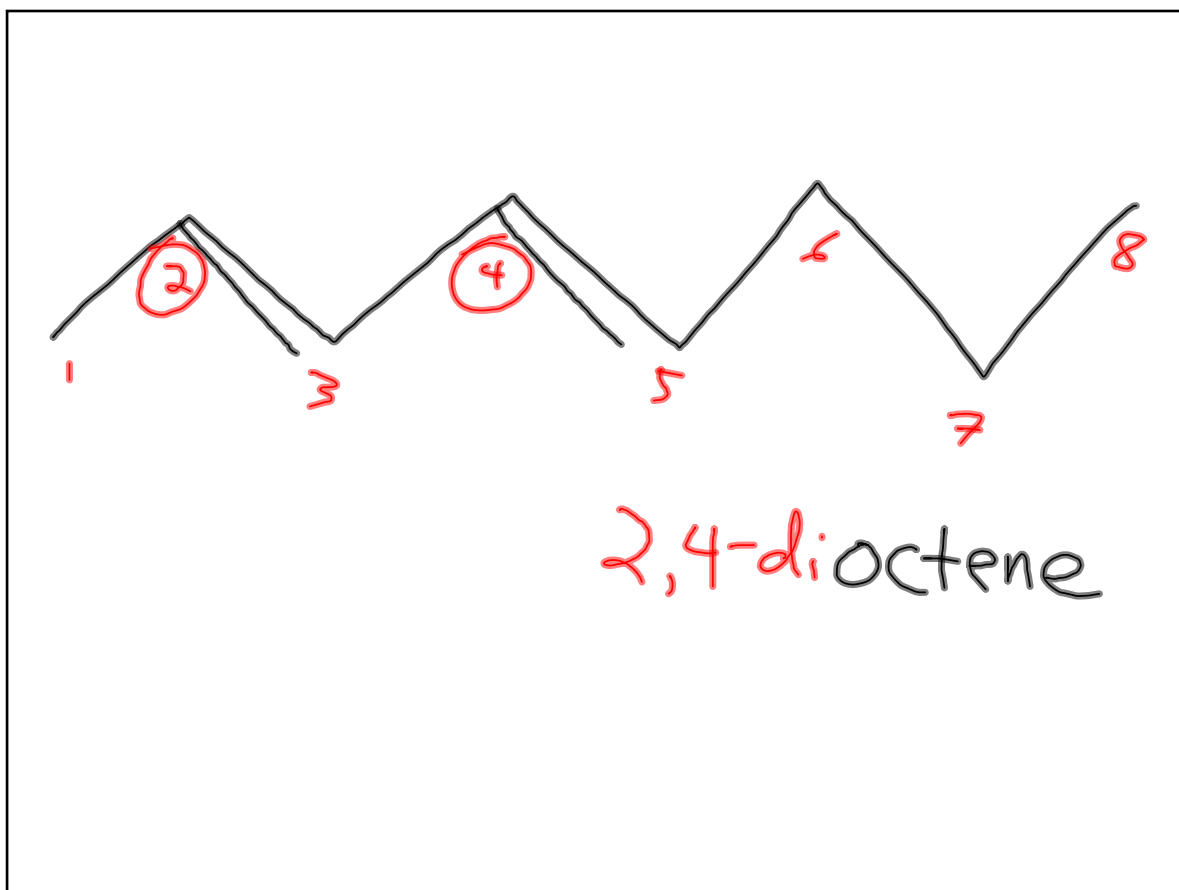
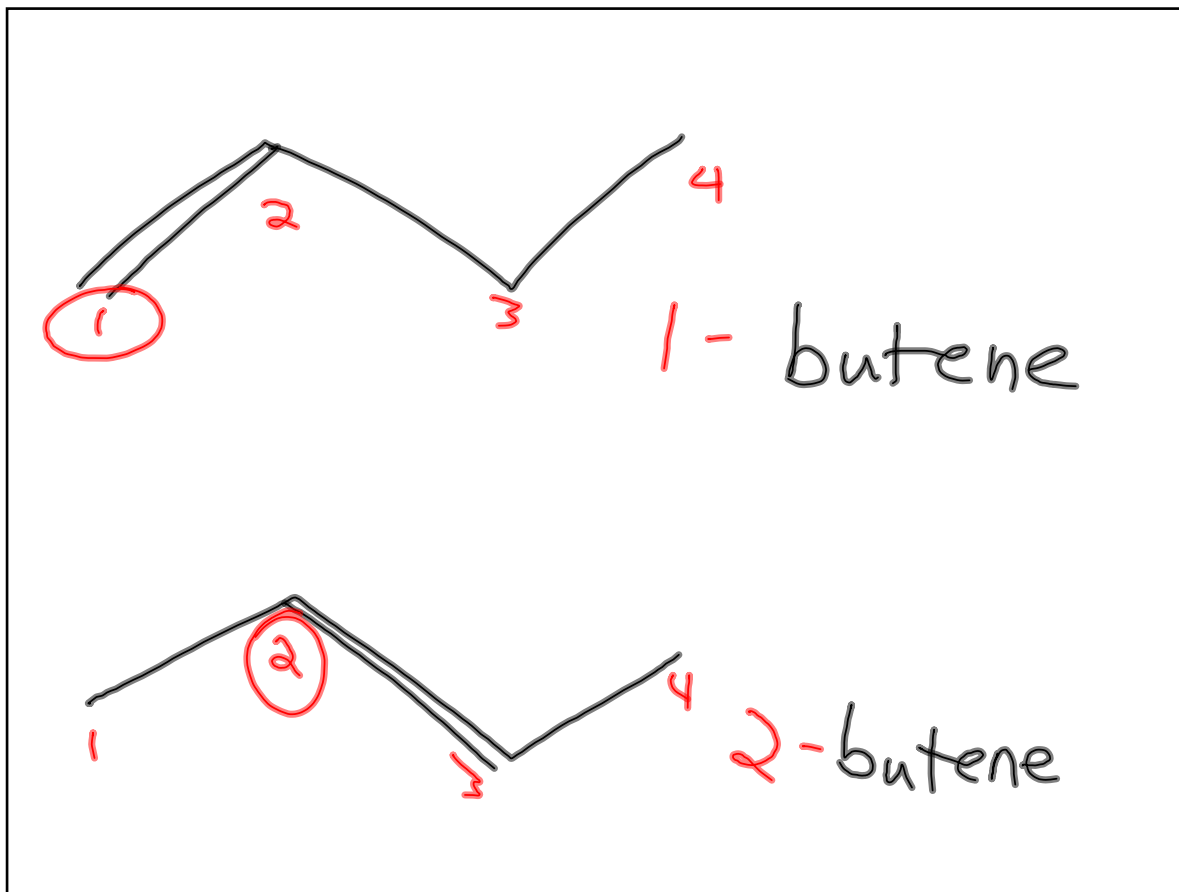
line model
assumes C
& H to be there;
C represented by
bends & ends

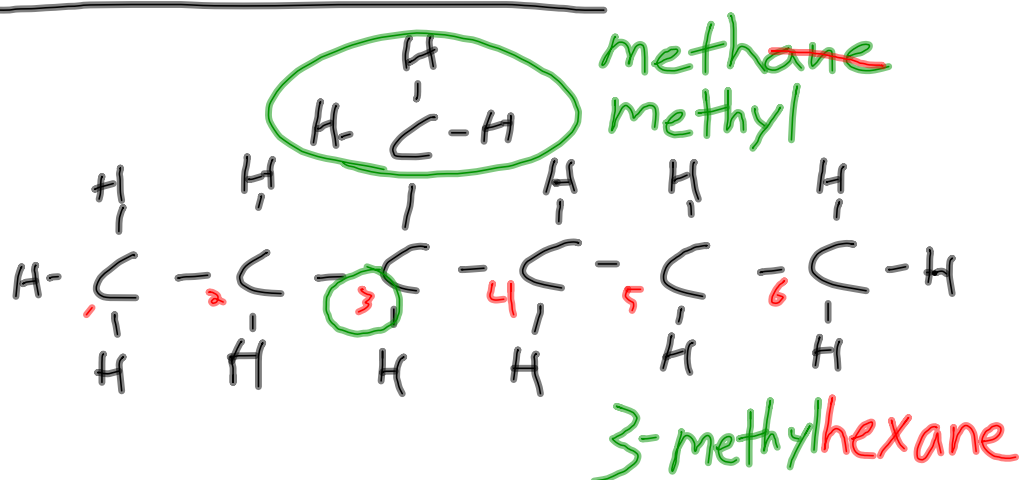


pentane



heptane



branched-chain alkane

- count the longest carbon chain and name it (i.e., hexane)
 - look for double or triple bonds and change the suffix if necessary
 - count the number of carbons in each branch and name them (i.e., methyl)
 - figure out their position (#) on the longest carbon chain (i.e., 3)
 - add # and branch to the front of the longest chain name
- = **3-methylhexane**