

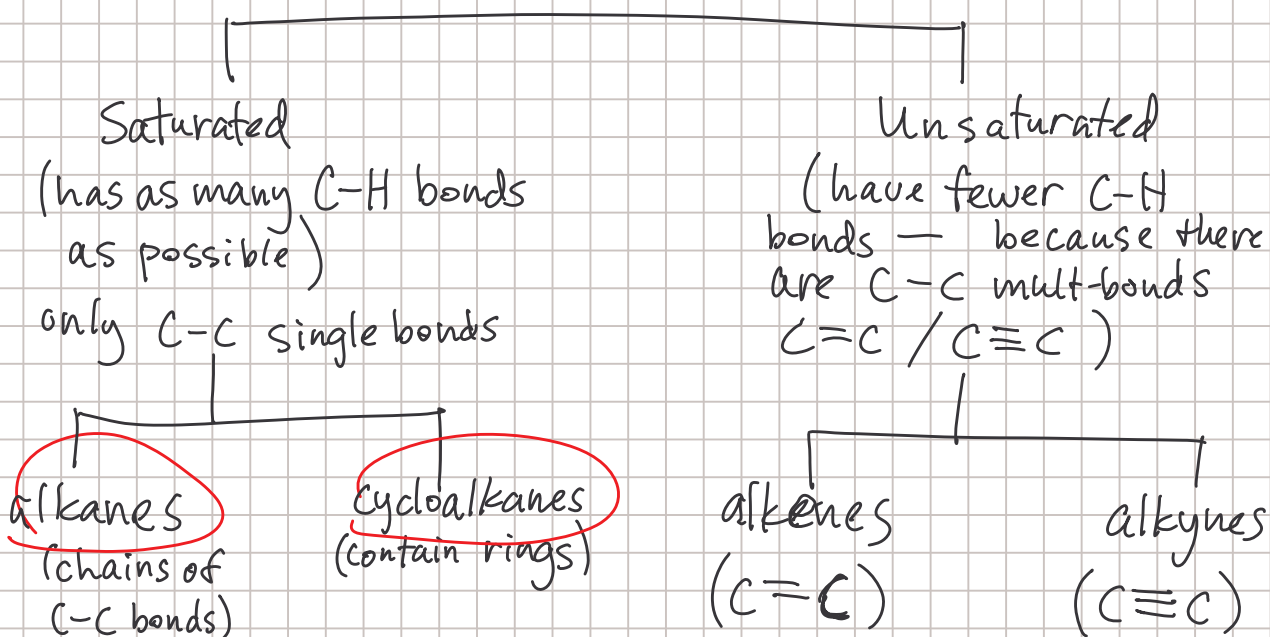
Ch 3

Note Title

9/9/2005


Structure and stereochemistry of alkanes

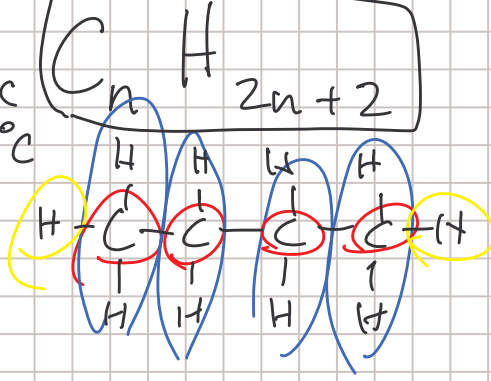
Hydrocarbons (only C & H)



Straight-chain alkanes

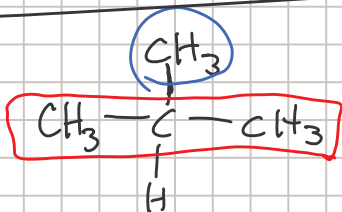
molec formula

CH ₄	<u>methane</u>	(natural gas)	CH ₄
CH ₃ CH ₃	ethane		C ₂ H ₆
CH ₃ CH ₂ CH ₃	Propane	(gas grill)	C ₃ H ₈
CH ₃ (CH ₂) ₂ CH ₃	butane	(lighters)	C ₄ H ₁₀
CH ₃ (CH ₂) ₃ CH ₃	<u>pentane</u>	industrial solvent	C ₅ H ₁₂
CH ₃ (CH ₂) ₄ CH ₃	hexane	nonpolar solvent 	C ₆ H ₁₄

# C	name	b.p.	formula
1	methane	-164°C	$C_n H_{2n+2}$ 
2	ethane		
3	propane		
4	butane	0°C	
5	pentane	36°C	
6	hexane		
7	heptane		
8	octane		
9	nonane		
10	decane		
11	undecane		
12	dodecane	216°C	

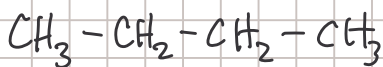
C-17 alkane is solid @ room temperature

Branched alkanes



4 carbons

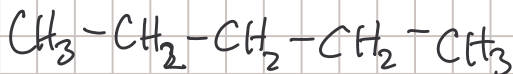
isobutane
"isomer of"



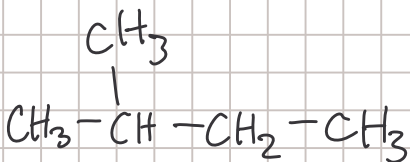
n-butane

explicitly straight-chain
"butane" common name
(n- is assumed)

n stands for "normal"

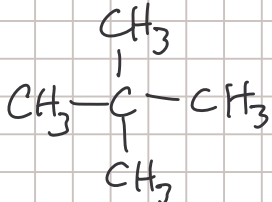


n-pentane



isopentane

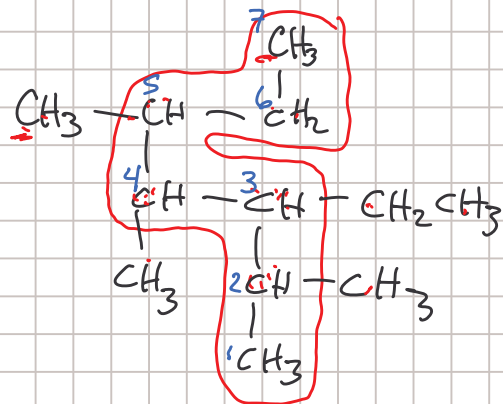
↳ branched once at end



neopentane

↳ totally branched

Naming branched alkanes systematically



1. find longest continuous chain (w/ most branches)
2. number chain from end closest to 1st branch
- 3.
- 4.