

Systematic Nomenclature (IUPAC System)

Prefix-Parent-Suffix

Parent- number of carbons .

Prefix- substituents

Suffix- functional groups

Naming Alkanes

General Formula: $C_nH_{(2n+2)}$

suffix: -ane

Parent Names:

1.	CH_4	Methane	CH_4
2.	CH_3CH_3	Ethane	C_2H_6
3.	$CH_3CH_2CH_3$	Propane	C_3H_8
4.	$CH_3(CH_2)_2CH_3$	Butane	C_4H_{10}
5.	$CH_3(CH_2)_3CH_3$	Pentane	C_5H_{12}
6.	$CH_3(CH_2)_4CH_3$	Hexane	C_6H_{14}
7.	$CH_3(CH_2)_5CH_3$	Heptane	C_7H_{16}
8.	$CH_3(CH_2)_6CH_3$	Octane	C_8H_{18}
9.	$CH_3(CH_2)_7CH_3$	Nonane	C_9H_{20}
10.	$CH_3(CH_2)_8CH_3$	Decane	$C_{10}H_{22}$

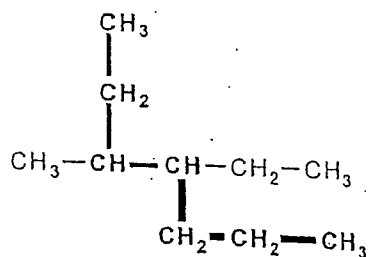
Alkyl Substituents

R= Rest of the molecule

1.	CH_3-R	Methyl
2.	CH_3CH_2-R	Ethyl
3.	$CH_3CH_2CH_2-R$	Propyl
4.	$CH_3(CH_2)_2CH_2-R$	Butyl
5.	$CH_3(CH_2)_3CH_2-R$	Pentyl
6.	$CH_3(CH_2)_4CH_2-R$	Hexyl
7.	$CH_3(CH_2)_5CH_2-R$	Heptyl
8.	$CH_3(CH_2)_6CH_2-R$	Octyl
9.	$CH_3(CH_2)_7CH_2-R$	Nonyl
10.	$CH_3(CH_2)_8CH_2-R$	Decyl

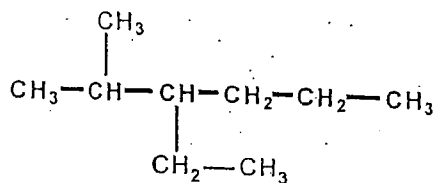
Rules for Systematic Nomenclature of Alkanes

1. *Find the parent chain*
 - a. Identify the longest continuous carbon chain as the parent chain.

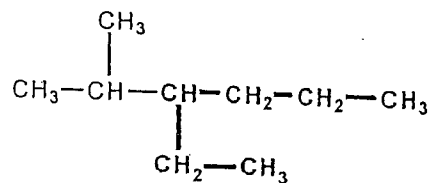


7 carbons = hept-

- b. If more than one different chains are of equal length (number of carbons), choose the one with the greater number of branch points (substituents) as the parent.



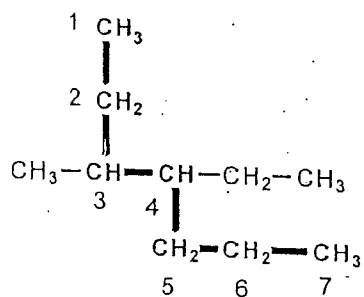
2 branch pts.



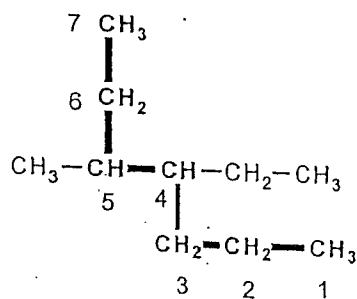
1 branch pt.

2. *Numbering the carbons of the parent chain*

- a. Number the carbon atoms of the parent chain so that any branch points have the lowest possible number



branch pts. at carbons 3 and 4



branch pts. at carbons 4 and 5

