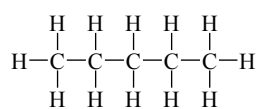


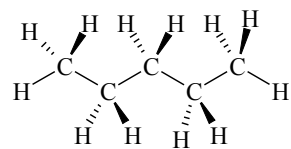
Writing Organic Molecules

CHM1032C

Lewis Structure



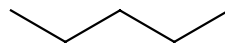
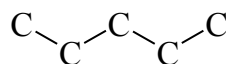
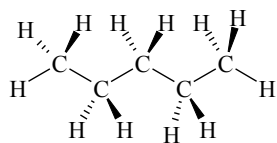
VSEPR



Condensed Formula



Stick Figures



Stick Figures (Rules)

- Hydrogens attached to carbons are not shown. (Hydrogens attached to hetero-atoms are shown)
- Each vertex and terminus is a carbon.
- All hetero-atoms are shown explicitly.

Example

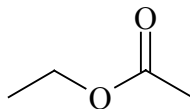
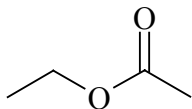
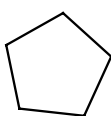


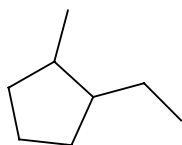
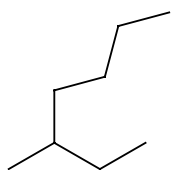
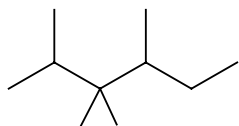
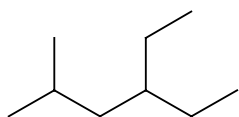
Table 11.2 Prefixes used to show the presence of one to ten carbons in an unbranched chain.

Prefix	Number of Carbon atoms	Prefix	Number of Carbon atoms
meth-	1	hex-	6
eth-	2	hept-	7
prop-	3	oct-	8
but-	4	non-	9
pent-	5	dec-	10

Naming organic compounds

Alkanes

1. Find the longest continuous chain of carbons. This becomes the root. Name the root by adding “-ane” to the appropriate prefix. A 4 carbon chain would be butane.
2. Identify any branches. Name each branch by the number of carbons. A 1 carbon branch is methyl.
3. Put side chains in alphabetical order. The side chains come before the root. Use di, tri, tetra (etc) if you have more than one of something, these do not count in alphabetizing.
4. Number root from side closest to the first branch.
5. Use numbers to tell where the side chains sprout from the root. Put a dash between any number and letter or any letter and number. Use a comma between two numbers.
6. Use the prefix “cyclo” for ring systems.
7. Be aware that some complicated branches have common names and some of those are on table 11.3.



Ketone	$\begin{array}{c} \text{O} \\ \parallel \\ \text{C} - \text{C} - \text{C} \end{array}$
Aldehyde	$\begin{array}{c} \text{O} \\ \parallel \\ \text{C} - \text{C} - \text{H} \end{array}$
Carboxylic acid	$\begin{array}{c} \text{O} \\ \parallel \\ \text{C} - \text{C} - \text{OH} \end{array}$
amide	$\begin{array}{c} \text{O} \\ \parallel \\ \text{C} - \text{C} - \text{N} \end{array}$
ester	$\begin{array}{c} \text{O} \\ \parallel \\ \text{C} - \text{C} - \text{O} - \text{C} \end{array}$
Alcohol	$\text{C} - \text{OH}$
amine	$\begin{array}{c} \quad \\ - \text{C} - \text{N} - \\ \end{array}$