

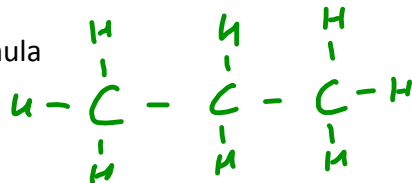
Types of Structural Formulas

Chemical formula

C_3H_8 - propane

2-methylpentane

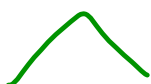
Structural formula



Condensed structural formula



Line structural formula



Structural Isomers

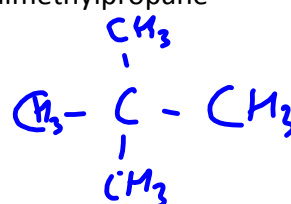
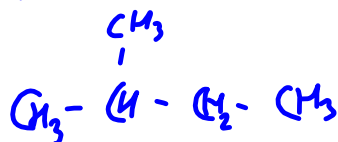
- Structural isomers are compounds that have the same **molecular formula**, but a different structure and name

Ex. C_5H_{12}

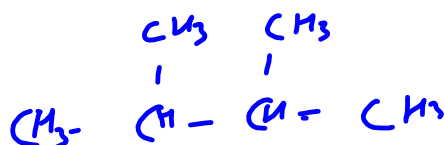
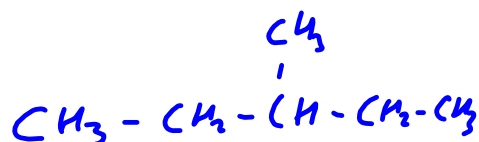
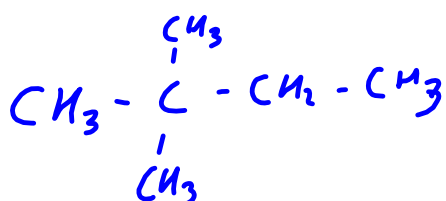
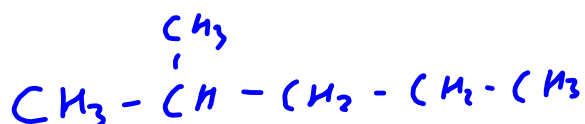
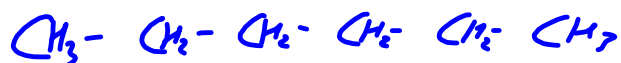
pentane

methylbutane

dimethylpropane



Ex. Draw the isomers of C_6H_{14}



Part 2 - Alkenes and Alkynes (pg 374-379)

- Alkenes are hydrocarbons that contain **double bonds**

- Alkynes are hydrocarbons that contain **triple bonds**

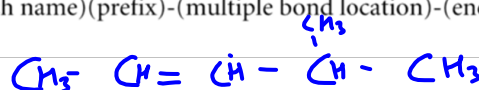
- Both are classified as **unsaturated hydrocarbons** b/c the multiple bonds take up spots where hydrogen's could bond

- this means the compound is not **saturated** with hydrogen atoms

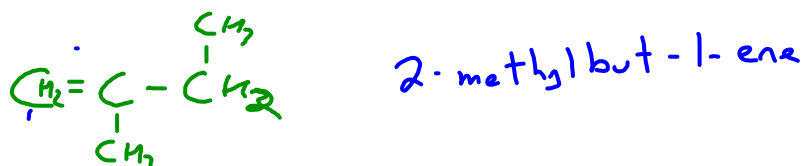
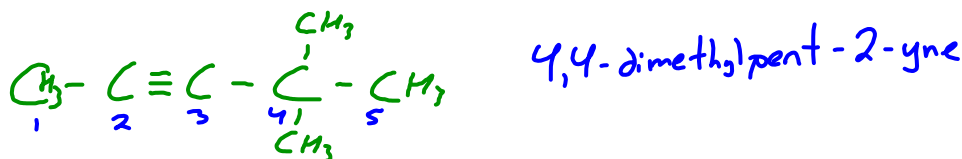
Naming Alkenes and Alkynes

- The same rules apply to both, but **alkenes end in -ene** and **alkynes end in -yne**

- Rules for Naming
 - Number the longest chain containing the multiple bond from the **end closer to the multiple bond.**
 - Identify the type and location of each branch.
 - Write the IUPAC name using the format:
(branch location)-(branch name)(prefix)-(multiple bond location)-(ene/yne);
e.g., 4-methylpent-2-ene



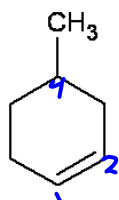
Examples:



Cycloalkenes and cycloalkynes

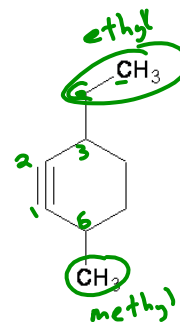
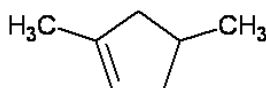
- Carbons in the double or triple bond always gets numbered 1-2

- Pick which carbon gets number 1 by looking at which way will give the branches the lowest numbering



4-methylcyclohexene

1,4-dimethylcyclopentene



3-ethyl-6-methylcyclohexene