

NAME:

HONORS CHEMISTRY

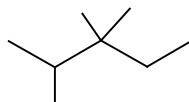
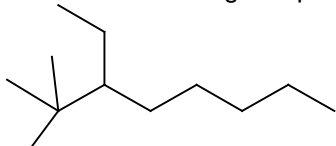
SECTION:

Alkanes and Alkenes

Alkanes

The suffix “-ane” indicates that all the carbon-carbon bonds are single bonds, which are shown with a single line. Alkanes are saturated hydrocarbons, i.e., every carbon is bonded to the maximum number of hydrogen atoms.

1. Name the following compounds.



2. Draw structures for the following compounds.

2,3-dimethylhexane

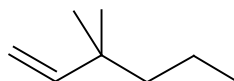
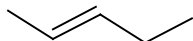
3-methyl-4-propyldecane

Alkenes

However, carbon can bond in many ways, including carbon-carbon double bonds. Carbon-carbon double bonds are shown with two lines connecting the carbon atoms. Hydrocarbons with a carbon-carbon double bond are called alkenes. Alkenes are examples of unsaturated hydrocarbons, as they do not contain the maximum number of possible hydrogen atoms.

- Identify the longest continuous chain that contains both carbons in the double bond.
- The location of the double bond is indicated with a number; give the double bond the lowest number regardless of the placement of other substituents.
- Replace the “ane” ending of the parent chain with “ene.”

3. Name the following compounds.



4. Draw structures for the following compounds.

2-methyl-1-butene

5-ethyl-4-methyl-3-octene