

## Naming Alkanes – Worksheet #1

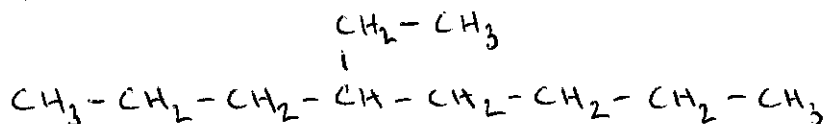
Name the following branched alkanes:

1.	$\begin{array}{c} 1 \quad 2 \quad 3 \\ \text{H}_3\text{C} - \text{CH} - \text{CH}_3 \\   \\ \text{CH}_3 \end{array}$	2-methyl propane
2.	$\begin{array}{c} 1 \quad 2 \\ \text{H}_3\text{C} - \text{CH} - \text{CH}_3 \\   \\ 3 \text{ CH}_2 - \text{CH}_3 \\   \\ 4 \end{array}$	2-methyl butane
3.	$\begin{array}{c} 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7 \\ \text{H}_3\text{C} - \text{CH}_2 - \text{CH}_2 - \text{CH} - \text{CH}_2 - \text{CH}_2 - \text{CH}_3 \\   \\ \text{CH}_2 - \text{CH}_3 \end{array}$	4-ethyl heptane
4.	$\begin{array}{c} \quad \quad \quad \quad \quad \quad \text{CH}_2 - \text{CH}_3 \\ \quad \quad \quad \quad \quad \quad   \\ 7 \quad 6 \quad 5 \quad 4 \quad 3 \quad 2 \quad 1 \\ \text{H}_3\text{C} - \text{CH}_2 - \text{CH}_2 - \text{CH} - \text{CH} - \text{CH}_2 - \text{CH}_3 \\   \\ \text{CH}_3 \end{array}$	3-ethyl-4-methyl heptane
5.	$\begin{array}{c} 1 \quad 2 \quad 3 \quad 4 \quad 5 \\ \text{H}_3\text{C} - \text{CH}_2 - \text{CH} - \text{CH}_2 - \text{CH} - \text{CH}_2 - \text{CH}_3 \\   \quad \quad \quad   \\ \text{CH}_3 \quad \quad \quad \text{CH}_2 - \text{CH}_2 - \text{CH}_3 \\ \quad \quad \quad \quad \quad \quad 6 \quad 7 \quad 8 \end{array}$	5-ethyl-3-methyl octane
6.	$\begin{array}{c} 10 \quad 9 \quad 8 \quad 7 \quad 6 \\ \text{H}_3\text{C} - \text{CH}_2 - \text{CH}_2 - \text{CH}_2 - \text{CH}_2 \\   \\ \text{H}_3\text{C} - \text{CH}_2 - \text{CH}_2 - \text{CH}_2 - \text{C} - \text{CH}_2 - \text{CH}_3 \\   \quad \quad \quad   \\ 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad \quad \quad \text{CH}_3 \end{array}$	5-ethyl-5-methyl decane
7.	$\begin{array}{c} \quad \quad \quad 3 \quad 2 \quad 1 \\ \quad \quad \quad \text{CH}_2 - \text{CH}_2 - \text{CH}_3 \\ \quad \quad \quad   \\ \text{H}_2\text{C} - \text{CH} - \text{CH}_2 - \text{CH} - \text{CH}_3 \\   \quad \quad \quad   \\ \text{CH}_3 \quad \quad \quad \text{CH}_2 - \text{CH}_2 - \text{CH}_3 \\ \quad \quad \quad \quad \quad \quad 7 \quad 8 \quad 9 \end{array}$	4-ethyl-6-methyl nonane

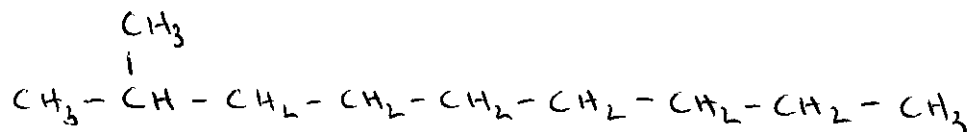
Draw structural formulas for the following molecules. Remember the following:

- Carbons on the end of a chain are attached to three hydrogens
- Carbons in the middle of a chain are attached to two hydrogens
- Carbons that have one branch attached are also attached to one hydrogen
- Carbons that have two branches attached are not attached to any hydrogens.

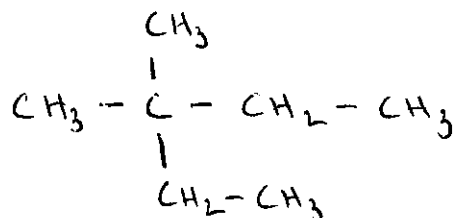
8. 4-ethyl-octane



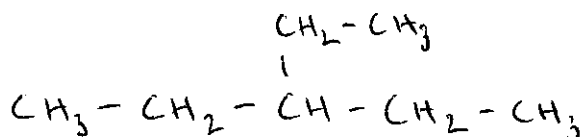
9. 2-methyl-nonane



10. 2-methyl-2-ethyl-butane      proper name: 3,3-dimethylpentane



11. 3-ethyl-pentane



12. 2-methyl-3-ethyl-heptane      proper name: 3-ethyl-2-methylheptane

