

Name _____

Period _____

Key

Naming Alkanes – Worksheet #1

Name the following branched alkanes:

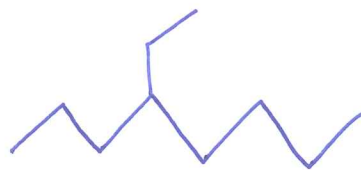
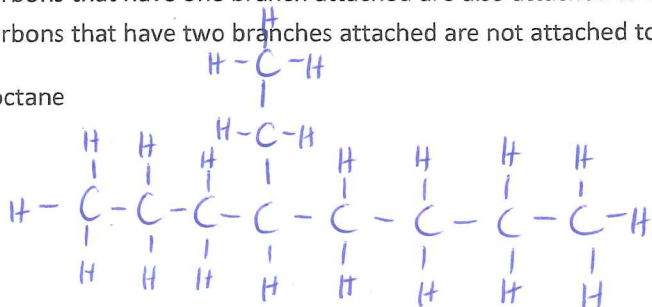
1.	$ \begin{array}{c} 1 \quad 2 \quad 3 \\ \text{H}_3\text{C} - \text{CH} - \text{CH}_3 \\ \\ \text{CH}_3 \end{array} $	2-methylpropane
2.	$ \begin{array}{c} 1 \quad 2 \\ \text{H}_3\text{C} - \text{CH} - \text{CH}_3 \\ \\ \text{CH}_2 - \text{CH}_3 \\ 3 \quad 4 \end{array} $	2-methylbutane
3.	$ \begin{array}{c} 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-ethylheptane
4.	$ \begin{array}{c} \text{CH}_2 - \text{CH}_3 \\ \\ 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-methylheptane
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 \\ \qquad \qquad \\ \text{CH}_3 \qquad \qquad \text{CH}_2 - \text{CH}_2 - \text{CH}_3 \\ \qquad \qquad \qquad 6 \quad 7 \quad 8 \end{array} $	5-ethyl-3-methyloctane
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 \\ \qquad \qquad \qquad \\ \text{H}_3\text{C} - \text{CH}_2 - \text{CH}_2 - \text{CH}_2 - \text{C} - \text{CH}_2 - \text{CH}_3 \\ 1 \quad 2 \quad 3 \quad 4 \qquad \qquad \\ \qquad \qquad \qquad \qquad \qquad \text{CH}_3 \end{array} $	5-ethyl-5-methyldecane
7.	$ \begin{array}{c} 3 \quad 2 \quad 1 \\ \text{CH}_2 - \text{CH}_2 - \text{CH}_3 \\ \\ \text{H}_2\text{C} - \text{CH} - \text{CH}_2 - \text{CH} - \text{CH}_3 \\ \qquad \qquad \\ \text{CH}_3 \qquad \qquad \text{CH}_2 - \text{CH}_2 - \text{CH}_3 \\ \qquad \qquad \qquad 7 \quad 8 \quad 9 \end{array} $	4-ethyl-6-methylnonane

(over)

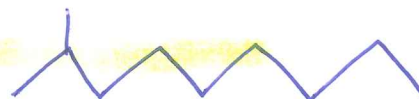
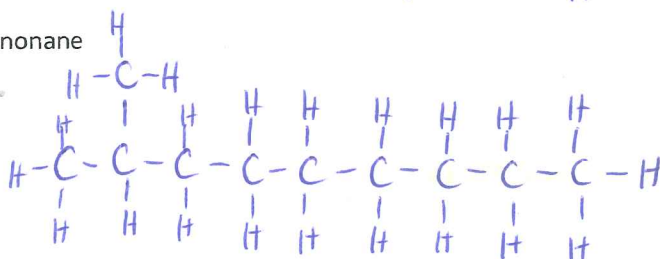
Draw structural formulas for the following molecules. Remember the following:

- 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

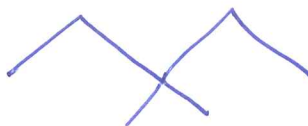
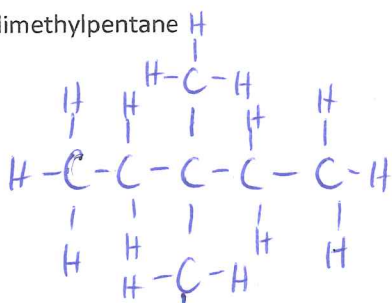
8. 4-ethyloctane



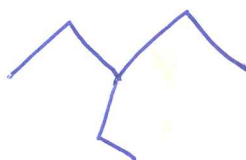
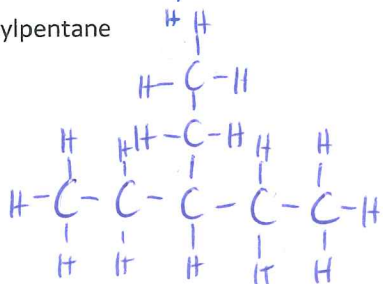
9. 2-methylnonane



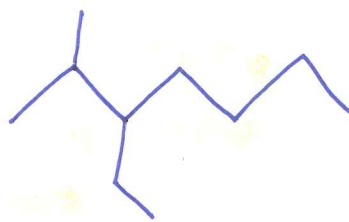
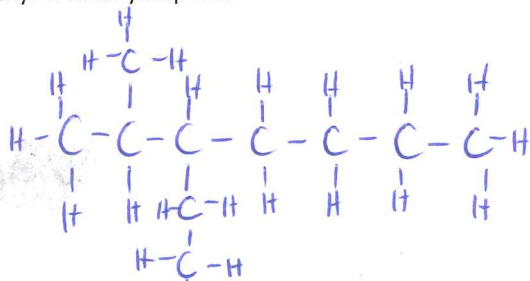
10. 3,3-dimethylpentane



11. 3-ethylpentane



12. 3-ethyl-2-methylheptane



- 1) 2-methylpropane 2) 2-methylbutane 3) 4-ethylheptane 4) 3-ethyl-4-methylheptane 5) 5-ethyl-3-methyloctane 6) 5-ethyl-5methyldecane
7) 4-ethyl-6-methylnonane 8-12) see website