

Naming Alkanes - Worksheet #1

Name the following branched alkanes:

$\begin{array}{c} \text{H}_3\text{C}-\text{CH}-\text{CH}_3 \\ \\ \text{CH}_3 \end{array}$	
$\begin{array}{c} \text{H}_3\text{C}-\text{CH}-\text{CH}_3 \\ \\ \text{CH}_2-\text{CH}_3 \end{array}$	
$\begin{array}{c} \text{H}_3\text{C}-\text{CH}_2-\text{CH}_2-\text{CH}-\text{CH}_2-\text{CH}_2-\text{CH}_3 \\ \\ \text{CH}_2-\text{CH}_3 \end{array}$	
$\begin{array}{c} \text{H}_3\text{C}-\text{CH}_2-\text{CH}_2-\text{CH}-\text{CH}-\text{CH}_2-\text{CH}_3 \\ \qquad \qquad \\ \text{CH}_3 \qquad \qquad \text{CH}_2-\text{CH}_3 \end{array}$	
$\begin{array}{c} \text{H}_3\text{C}-\text{CH}_2-\text{CH}-\text{CH}_2-\text{CH}-\text{CH}_2-\text{CH}_2-\text{CH}_3 \\ \qquad \qquad \qquad \\ \text{CH}_3 \qquad \qquad \text{CH}_2-\text{CH}_2-\text{CH}_3 \end{array}$	
$\begin{array}{c} \text{H}_3\text{C}-\text{CH}_2-\text{C}-\text{CH}_2-\text{CH}-\text{CH}_2-\text{CH}_3 \\ \qquad \qquad \\ \text{CH}_3 \qquad \qquad \text{CH}_3 \end{array}$	
$\begin{array}{c} \text{H}_3\text{C}-\text{CH}_2-\text{C}-\text{CH}_3 \\ \\ \text{CH}_3 \end{array}$	
$\begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_3-\text{C}-\text{CH}_3 \\ \\ \text{CH}_3 \end{array}$	
$\begin{array}{c} \text{H}_3\text{C}-\text{CH}_2-\text{C}-\text{CH}_2-\text{CH}_3 \\ \qquad \qquad \\ \text{CH}_2-\text{CH}_3 \qquad \text{CH}_2-\text{CH}_3 \end{array}$	
$\begin{array}{c} \text{H}_3\text{C}-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{CH}_2 \\ \\ \text{H}_3\text{C}-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{C}-\text{CH}_2-\text{CH}_3 \\ \\ \text{CH}_3 \end{array}$	

Naming Alkanes - Worksheet #2

Draw the structural formula and line bond 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

4-ethyl-octane

2-methyl-nonane

3,3-dimethyl-pentane

3-ethyl-pentane

3-ethyl-2methyl-heptane

2,2,3-trimethyl-butane

3-ethyl-2,2-dimethyl-hexane

2,3,4,5,6,7-hexamethyl-octane

4-ethyl-octane

2-methyl-nonane

2-ethyl-2methyl-butane

3-ethyl-pentane

2-ethyl-2-methyl-heptane

NAME Key Date _____ Due Date _____

Naming Alkanes - Worksheet #1

Name the following branched alkanes:

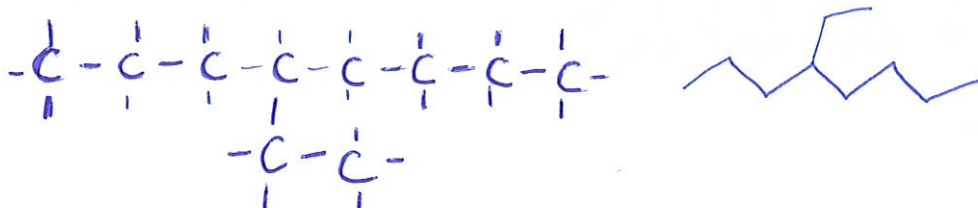
1)	$ \begin{array}{c} \text{H}_3\text{C}-\text{CH}-\text{CH}_3 \\ \\ \text{CH}_3 \end{array} $	2-methylpropane
2)	$ \begin{array}{c} \text{H}_3\text{C}-\text{CH}-\text{CH}_3 \\ \\ \text{CH}_2-\text{CH}_3 \end{array} $	2-methylbutane
3)	$ \begin{array}{c} \text{H}_3\text{C}-\text{CH}_2-\text{CH}_2-\text{CH}-\text{CH}_2-\text{CH}_2-\text{CH}_3 \\ \\ \text{CH}_2-\text{CH}_3 \end{array} $	4-ethylheptane
4)	$ \begin{array}{c} \text{H}_3\text{C}-\text{CH}_2-\text{CH}_2-\text{CH}-\text{CH}-\text{CH}_2-\text{CH}_3 \\ \qquad \\ \text{CH}_3 \qquad \text{CH}_2-\text{CH}_3 \end{array} $	3-ethyl-4-methylheptane
5)	$ \begin{array}{c} \text{H}_3\text{C}-\text{CH}_2-\text{CH}-\text{CH}_2-\text{CH}-\text{CH}_2-\text{CH}_2-\text{CH}_3 \\ \qquad \\ \text{CH}_3 \qquad \text{CH}_2-\text{CH}_2-\text{CH}_3 \end{array} $	3-methyl-5-propyloctane
6)	$ \begin{array}{c} \text{H}_3\text{C}-\text{CH}_2-\text{C}-\text{CH}_2-\text{CH}-\text{CH}_2-\text{CH}_3 \\ \qquad \qquad \\ \text{CH}_3 \qquad \text{CH}_3 \qquad \text{CH}_3 \end{array} $	3,3,5-trimethylheptane
7)	$ \begin{array}{c} \text{H}_3\text{C}-\text{CH}_2-\text{C}-\text{CH}_3 \\ \\ \text{CH}_3 \end{array} $	2,2-dimethylbutane
8)	$ \begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_3-\text{C}-\text{CH}_3 \\ \\ \text{CH}_3 \end{array} $	2,2-dimethylpropane
9)	$ \begin{array}{c} \text{H}_3\text{C}-\text{CH}_2-\text{C}-\text{CH}_2-\text{CH}_3 \\ \qquad \\ \text{CH}_2-\text{CH}_3 \qquad \text{CH}_2-\text{CH}_3 \end{array} $	3,3-diethylpentane
10)	$ \begin{array}{c} \text{H}_3\text{C}-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{C}-\text{CH}_2-\text{CH}_3 \\ \\ \text{CH}_3 \end{array} $	5-ethyl-5-methyldecane
11)	$ \begin{array}{c} \text{H}_2\text{C}-\text{CH}-\text{CH}_2-\text{CH}-\text{CH}_3 \\ \qquad \qquad \\ \text{CH}_3 \qquad \text{CH}_2-\text{CH}_2-\text{CH}_3 \end{array} $	4-ethyl-6-methylnonane

<p>12)</p> $ \begin{array}{cccc} & & \text{CH}_3 & \text{CH}_3 \\ & & & \\ \text{CH}_3 & & \text{CH}_2 & \text{CH}_2 \\ & & & \\ \text{CH}_2 & - & \text{CH} & - \text{CH}_2 \end{array} $	<p>4-ethyl heptane</p>
<p>13)</p> $ \begin{array}{ccccccc} & & \text{CH}_3 & & \text{CH}_3 & & \\ & & & & & & \\ \text{CH}_3 & & \text{CH}_2 & & \text{CH}_2 & & \\ & & & & & & \\ \text{CH}_3 & - & \text{CH} & - & \text{C} & - & \text{C} & - & \text{CH}_2 & - & \text{CH}_2 & \text{CH}_3 \\ & & & & & & & & & & & \\ \text{CH}_2 & & \text{CH}_2 & & \text{CH}_2 & & \text{CH}_2 & & & & & \\ & & & & & & & & & & & \\ \text{CH}_3 & & \text{CH}_3 & & & & & & & & & \end{array} $	<p>4,5,5-triethyl-3-methyl-4-propyloctane</p>
<p>14)</p> $ \begin{array}{cccc} & & \text{CH}_3 & \\ & & & \\ \text{CH}_2 & - & \text{C} & - & \text{CH} & - & \text{CH} \\ & & & & & & \\ \text{CH}_2 & & \text{CH}_2 & & \text{CH}_2 & & \text{CH}_3 \\ & & & & & & \\ \text{CH}_3 & & \text{CH}_3 & & \text{CH}_3 & & \end{array} $	<p>4,4-diethyl-2,3-dimethylheptane</p>
<p>15)</p> $ \begin{array}{ccccccc} & & & & \text{CH}_3 & & \\ & & & & & & \\ \text{CH}_3 & \text{CH}_2 & \text{CH}_2 & \text{CH} & - & \text{CH}_2 & - & \text{CH} & - & \text{CH}_3 \\ & & & & & & & & & \\ & & & \text{CH}_3 & & \text{CH}_3 & & \text{CH}_3 & & \end{array} $	<p>2,4-dimethylheptane</p>
<p>16)</p> $ \begin{array}{ccccccc} & & & & & & \text{CH}_3 \\ & & & & & & \\ & & & & & & \text{CH}_2 \\ & & & & & & \\ \text{CH}_3 & \text{CH}_2 & \text{CH}_2 & \text{CH} & - & \text{C} & - & \text{CH} & - & \text{CH}_2 \\ & & & & & & & & & \\ \text{CH}_2 & & \text{CH}_2 & \text{CH}_2 & & \text{CH}_2 & & \text{CH}_2 & & \text{CH}_2 \\ & & & & & & & & & \\ \text{CH}_3 & & \text{CH}_3 & \text{CH}_3 & & \text{CH}_3 & & \text{CH}_3 & & \end{array} $	<p>4,5-dimethyl-5,6-dipropyldecane</p>
<p>17)</p> $ \begin{array}{cccc} & & \text{CH}_3 & \\ & & & \\ \text{CH}_2 & - & \text{CH} & - & \text{C} & - & \text{CH} \\ & & & & & & \\ \text{CH}_2 & & \text{CH}_2 & & \text{CH}_2 & & \text{CH}_2 \\ & & & & & & \\ \text{CH}_2 & & \text{CH}_3 & & \text{CH}_3 & & \text{CH}_3 \\ & & & & & & \\ \text{CH}_3 & & \text{CH}_3 & & \text{CH}_3 & & \end{array} $	<p>3,4,5-trimethyl-4-methylnonane</p>

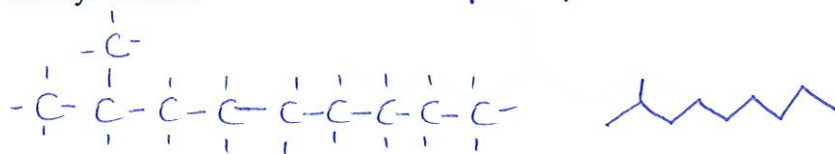
Naming Alkanes - Worksheet #2

Draw the structural formula and line angle formula for the following molecules. Remember the following:

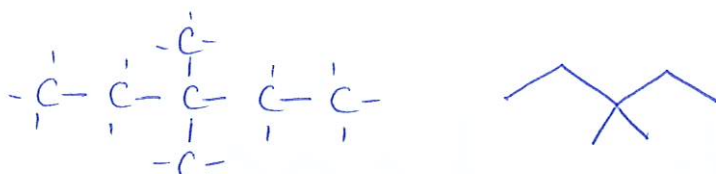
1) 4-ethyl-octane



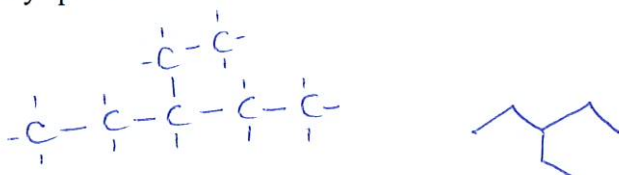
2) 2-methyl-nonane



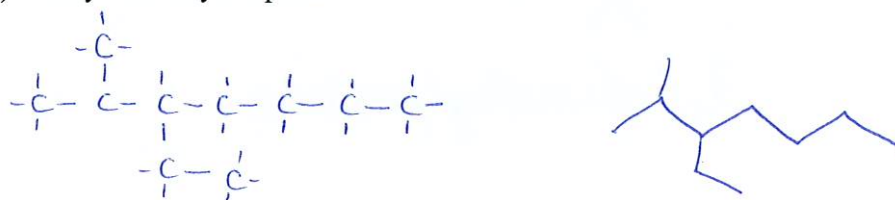
3) 3,3-dimethyl-pentane



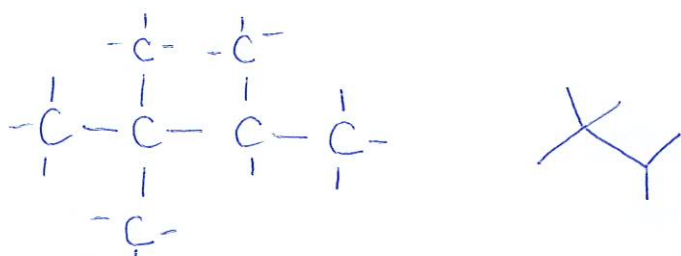
4) 3-ethyl-pentane



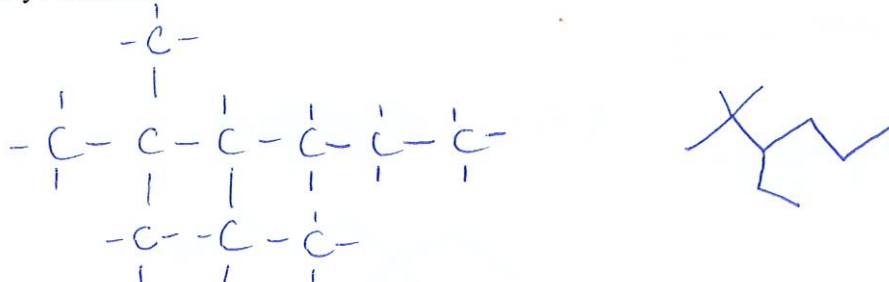
5) 3-ethyl-2methyl-heptane



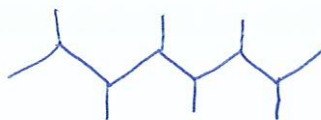
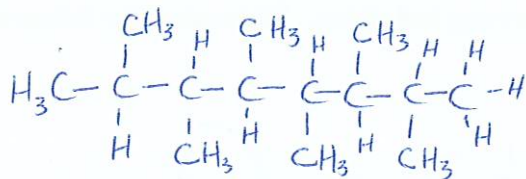
6) 2,2,3-trimethyl-butane



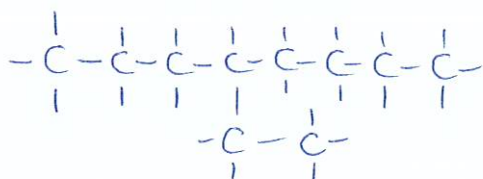
7) 3-ethyl-2,2-dimethyl-hexane



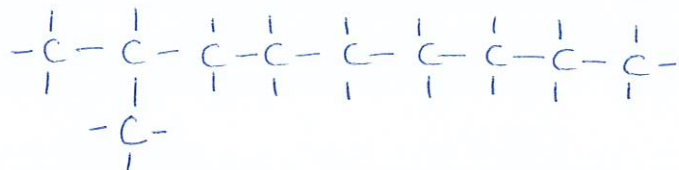
8) 2,3,4,5,6,7-hexamethyl-octane



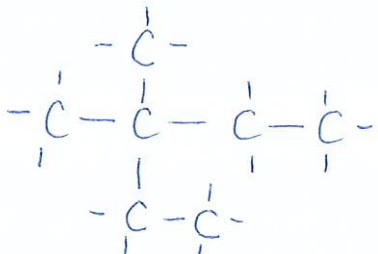
9) 4-ethyl-octane



10) 2-methyl-nonane

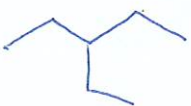
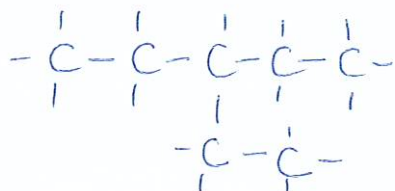


11) 2-ethyl-2methyl-butane wrong name

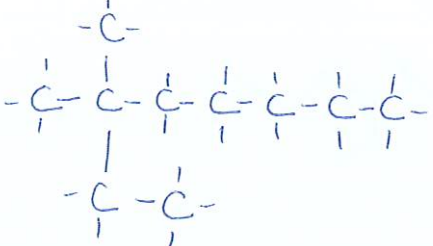


3,3-dimethylpentane

12) 3-ethyl-pentane



13) 2-ethyl-2-methyl-heptane wrong name

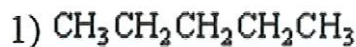


3,3-dimethyloctane

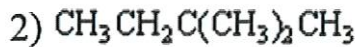


WORKSHEET #3

Give the correct name for the following compounds:



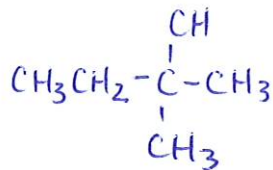
pentane



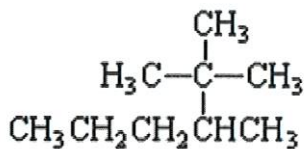
2,2 dimethylbutane



OR

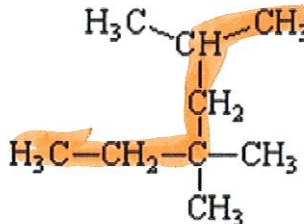


3)



2,2,3-trimethylhexane

4)



2,4,4-trimethylhexane

5)

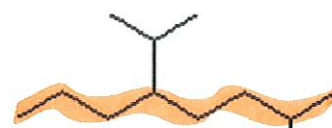


4-methylnonane

2,3 dimethylhexane

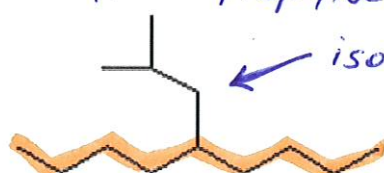


7)



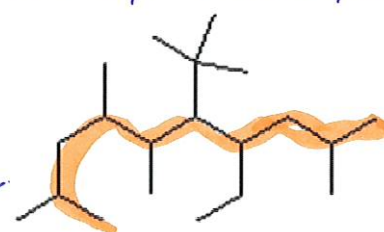
2-methyl-5-isopropyloctane

8)



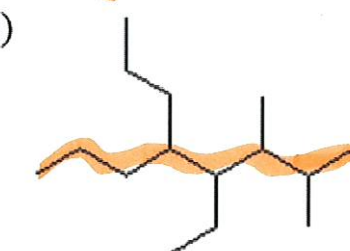
5-isobutyl-4-methylnonane

9)



4-ethyl-2,3-dimethyl-5-propyloctane

10)



5-*t*-butyl-4-ethyl-2,6,7,9-tetramethyldecane

