

Name _____

Period _____

Naming Alkanes – Worksheet #1

KEY

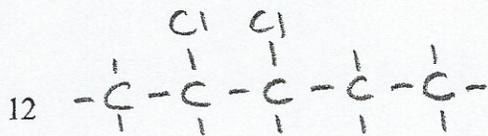
Name the following branched alkanes:

1.	$\begin{array}{c} \text{H}_3\text{C}-\text{CH}-\text{CH}_3 \\ \\ \text{CH}_3 \end{array}$	2-methyl propane or methyl propane
2.	$\begin{array}{c} \text{H}_3\text{C}-\text{CH}-\text{CH}_3 \\ \\ \text{CH}_2-\text{CH}_3 \end{array}$	2-methyl butane or methyl butane
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-ethyl heptane
4.	$\begin{array}{cccccccc} & & & & \text{CH}_2-\text{CH}_3 & & & \\ & & & & & & & \\ \text{H}_3\text{C}- & \text{CH}_2- & \text{CH}_2- & \text{CH}- & \text{CH}- & \text{CH}_2- & \text{CH}_3 \\ & & & & & & \\ & & & \text{CH}_3 & & & \end{array}$	3-ethyl-4-methyl heptane
5.	$\begin{array}{c} \text{H}_3\text{C}-\text{CH}_2-\text{CH}-\text{CH}_2-\text{CH}-\text{CH}_2-\text{CH}_3 \\ \qquad \qquad \\ \text{CH}_3 \qquad \qquad \text{CH}_2-\text{CH}_2-\text{CH}_3 \end{array}$	5-ethyl-3-methyl octane
6.	$\begin{array}{c} \text{H}_3\text{C}-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{CH}_2 \\ \\ \text{H}_3\text{C}-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{C}-\text{CH}_2-\text{CH}_3 \\ \\ \text{CH}_3 \end{array}$	5-ethyl-5-methyl decane
7.	$\begin{array}{c} \text{CH}_2-\text{CH}_2-\text{CH}_3 \\ \\ \text{H}_2\text{C}-\text{CH}-\text{CH}_2-\text{CH}-\text{CH}_3 \\ \qquad \qquad \\ \text{CH}_3 \qquad \qquad \text{CH}_2-\text{CH}_2-\text{CH}_3 \end{array}$	4-ethyl-6-methyl nonane

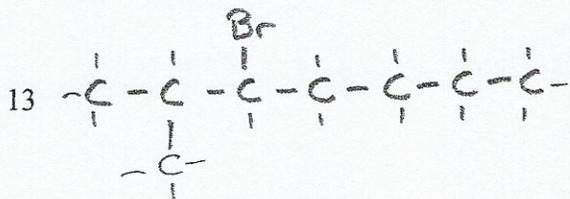
Alkanes, Alkenes, Alkynes and Cyclic Hydrocarbons

Name or draw the following compounds:

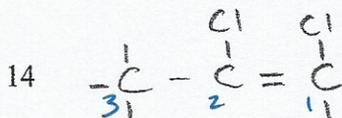
	Chemical structure	IUPAC Name
1	$\begin{array}{ccccccc} & & \text{Cl} & & & & \\ & & & & & & \\ \text{H}_3\text{C} & - & \text{CH}_2 & - & \text{CH} & - & \text{CH}_3 \\ & 4 & 3 & & 2 & 1 & \end{array}$	<u>2-chlorobutane</u>
2	$\begin{array}{ccccccc} & & & & \text{CH}_3 & & \\ & & & & & & \\ & & & & \text{CH}_2 & & \\ & & & & & & \\ \text{H}_3\text{C} & - & \text{CH} & - & \text{CH}_2 & - & \text{HC} & - & \text{CH}_3 \\ & & & & & & & & \\ & & \text{CH}_2 & & & & & & \\ & & & & & & & & \\ & & \text{CH}_3 & & & & & & \end{array}$	<u>3,5-dimethylheptane</u>
3	$\begin{array}{ccccccc} & \text{Br} & & \text{Br} & & \text{Cl} & \\ & & & & & & \\ \text{H}_3\text{C} & - & \text{CH} & - & \text{CH}_2 & - & \text{CH} & - & \text{CH} & - & \text{C} & - & \text{CH}_3 \\ & & & & & & & & & & & & \\ & & & & & & \text{CH}_3 & & & & \text{Cl} & & \end{array}$	<u>4,6-dibromo-2,2-dichloro-3-methylheptane</u>
4	$\begin{array}{ccccccc} & \text{CH}_3 & & & & \text{Cl} & \\ & & & & & & \\ & \text{CH}_2 & & & & \text{CH}_2 & \\ & & & & & & \\ \text{H}_3\text{C} & - & \text{C} & - & \text{CH}_2 & - & \text{CH} & - & \text{CH}_2 & - & \text{CH}_2 \\ & & & & & & & & & & & & \\ & & \text{CH}_2 & & & & \text{NH}_2 & & & & \text{CH}_2 & & \\ & & & & & & & & & & & & \\ & & \text{CH}_3 & & & & & & & & & & \end{array}$	<u>3-amino-1-chloro-5-ethyl-5-methylheptane</u>
5	$\begin{array}{ccccccc} & & & \text{CH}_3 & & & \\ & & & & & & \\ \text{H}_3\text{C} & - & \text{CH} & - & \text{CH}_2 & - & \text{C} & - & \text{CH}_2 & - & \text{CH}_3 \\ & & & & & & & & & & \\ & & \text{CH}_3 & & & & \text{CH}_3 & & & & \end{array}$	<u>2,4,4-trimethylhexane</u>
6	$\begin{array}{ccccccc} & \text{CH}_3 & & & & \text{Cl} & \\ & & & & & & \\ & \text{CH}_2 & & & & \text{CH} & \\ & & & & & & \\ \text{H}_3\text{C} & - & \text{C} & - & \text{CH}_2 & - & \text{CH} & - & \text{CH} & - & \text{CH}_3 \\ & & & & & & & & & & & & \\ & & \text{CH}_2 & & & & \text{Cl} & & & & \text{CH}_2 & & \\ & & & & & & & & & & & & \\ & & \text{CH} & & & & & & & & & & \\ & & & & & & & & & & & & \\ & & \text{CH}_3 & & & & & & & & & & \end{array}$	<u>2,3,7-trichloro-5-ethyloctane</u>
7	$\begin{array}{ccccccc} & \text{NH}_2 & & \text{NH}_2 & & & \\ & & & & & & \\ \text{H}_3\text{C} & - & \text{C} & - & \text{CH}_2 & - & \text{C} & - & \text{CH}_3 \\ & & & & & & & & \\ & & \text{Cl} & & & & \text{Cl} & & \end{array}$	<u>2,4-diamino-2,4-dichloropentane</u>
8	$\begin{array}{ccccccc} & \text{Cl} & & \text{Cl} & & \text{Cl} & \\ & & & & & & \\ \text{Cl} & - & \text{C} & - & \text{CH}_2 & - & \text{C} & - & \text{CH}_2 & - & \text{C} & - & \text{CH}_3 \\ & & & & & & & & & & & & \\ & & \text{Cl} & & & & \text{Cl} & & & & \text{Cl} & & \end{array}$	<u>1,2,2,4,4,6,6-heptachloroheptane</u>
9	$\begin{array}{ccccccc} & & & \text{CH}_3 & & & \\ & & & & & & \\ & & & \text{CH}_2 & & & \\ & & & & & & \\ \text{H}_3\text{C} & - & \text{C} & - & \text{CH}_2 & - & \text{CH} & - & \text{CH}_3 \\ & & & & & & & & \\ & & \text{CH}_3 & & & & \text{Br} & & \end{array}$	<u>2-bromo-4,4-dimethylhexane</u>
10	$\begin{array}{ccccccc} & & & \text{Br} & & & \\ & & & & & & \\ \text{H}_3\text{C} & - & \text{CH}_2 & - & \text{C} & - & \text{CH}_2 & - & \text{CH}_3 \\ & & & & & & & & \\ & & & & \text{Cl} & & & & \end{array}$	<u>3-bromo-3-chloropentane</u>
11	$\begin{array}{ccccccc} & \text{Cl} & & & & \text{Br} & \\ & & & & & & \\ \text{H}_3\text{C} & - & \text{CH} & - & \text{CH}_2 & - & \text{CH}_2 \\ & & & & & & \end{array}$	<u>1-bromo-3-chlorobutane</u>



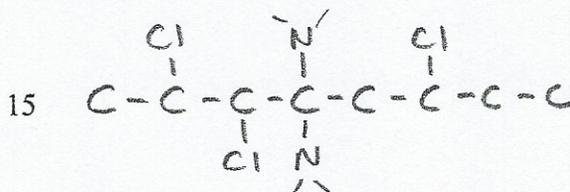
2,3-dichloropentane



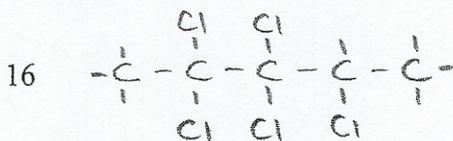
3-bromo-2-methylheptane



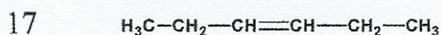
1,2-dichloropropene



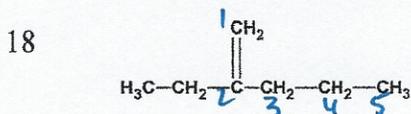
4,4-diamino-2,3,6-trichlorooctane



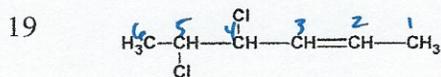
2,2,3,3,4-pentachloropentane



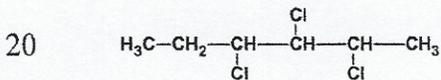
hex-3-ene or 3-hexene



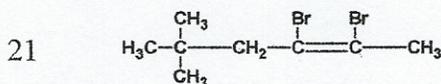
2-ethylpent-1-ene or 2-ethyl-1-pentene



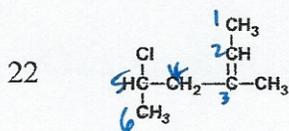
4,5-dichlorohex-2-ene



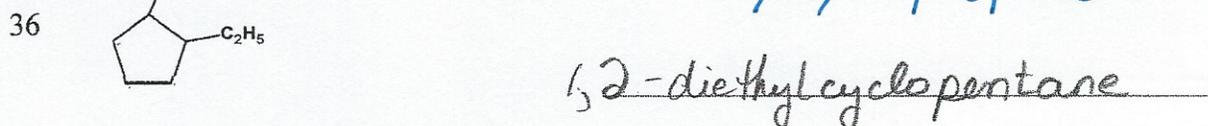
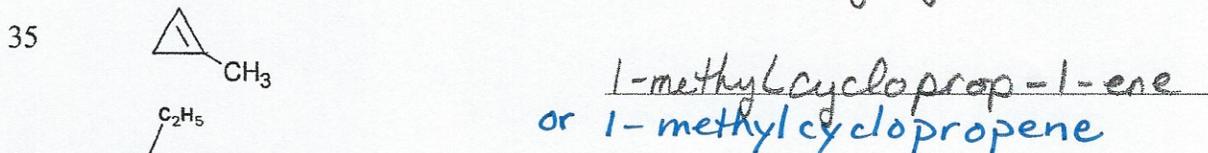
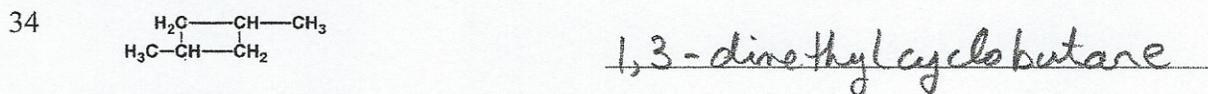
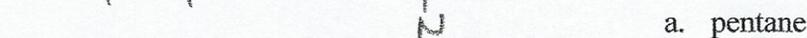
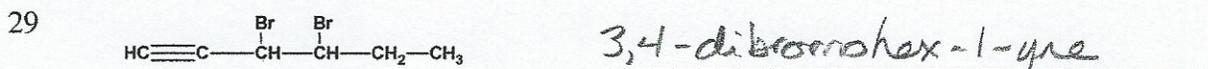
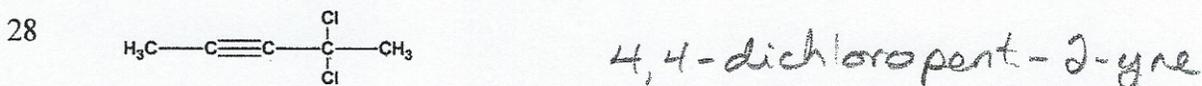
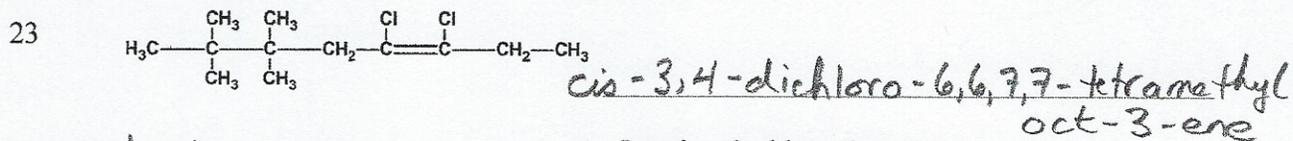
2,3,4-trichlorohexane



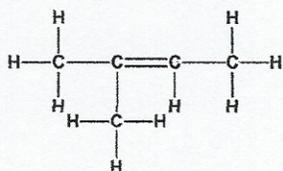
cis-2,3-dibromo-5,5-dimethylhex-2-ene



5-chloro-3-methylhex-2-ene

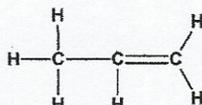


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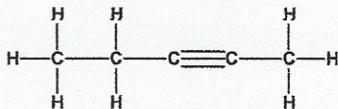
2-methylbut-2-ene

38



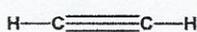
propene

40



pent-2-yne

41



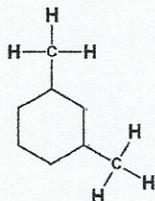
ethyne

42



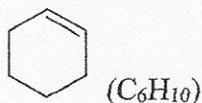
cyclohexane

43



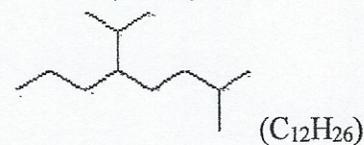
1,3-dimethylcyclohexane

44



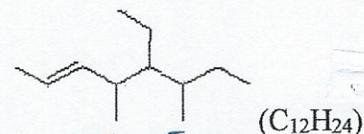
cyclohex-1-ene or cyclohexene

45



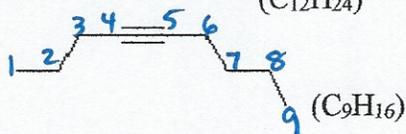
2-methyl-5-isopropyloctane
or (2-methyl-5-(1-methylethyl)octane)

46



5-ethyl-4,6-dimethyloct-2-ene

47



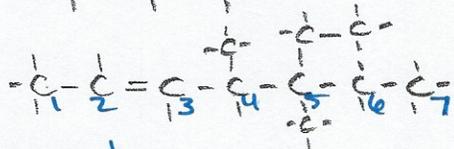
4-nonyne or non-4-yne

48



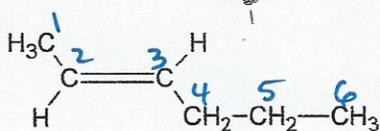
1,3-diaminopropane

49



trans-5-ethyl-4,5-dimethyl-2-heptene

50



trans-hex-2-ene