Alkenes and Alkynes

1)Identify the number of carbons.

2) Use the appropriate IUPAC prefix with the ending _____.

1)Draw the numbe	er of	
identified by the IUPAC prefix. Attach		
them each by a	bond.	
2)	each carbon using	
a		



Examples	Examples
Name: CH ₃ - CH ₂ - CH ₃	Draw: pentane
CH3 - CH2 - CH2 - CH2 - CH2 - CH3	octane
Alkanes are characterized by a Alkanes are and Alkanes always end with ''	carbon-carbon bond. d contained no double or triple bonds.

* Fill in the Blanks Here

1)Identify the number of carbons.

2) Use the appropriate IUPAC prefix with the ending _____.

1)Draw the number	of
identified by the IUPAC prefix. Attach	
them each by a $_$	bond.
2)	_ each carbon using

а

EXAMPLES

Name: CH₃ - CH₂ - CH₃

CH3 - CH2 - CH2 - CH2 - CH2 - CH3

octane

pentane

EXAMPLES

• Alkanes are characterized by a _____ carbon-carbon bond.

Alkanes are ______ and contained no double or triple bonds.

Alkanes always end with '____

Alkenes

* These are straight open chains of hydrogen and carbon made up of at least one carbon-carbon double bonds.

* Alkenes are considered to be unsaturated.

* Fill in the Blanks Here

 1)Identify the number of carbons. 2) Use the appropriate IUPAC prefix with the ending 	 1)Draw the number of
Examples Name: CH ₃ - CH ₂	EXAMPLES Draw: pentane
CH3 - CH2 - CH2 - CH2 - CH2 - CH3	octane
Alkanes are characterized by a Alkanes are and Alkanes always end with ''	i carbon-carbon bond. carbon-carbon bond. d contained no double or triple bonds.

Naming Alkenes

- * Identify the number of carbons.
- * Use the appropriate IUPAC prefix with the ending ENE.
- * Use a number to identify the location of the double bond directly in front of ENE separated by dashes. (ex: pent-2-ene)
- * Name any additional <u>side chains</u> with the same numbering system.



***** CH₃ - CH = CH - CH - CH₂ - CH₃

CH3



hept-3-ene

CH3

* $CH_3 - CH = CH - CH - CH_2 - CH_3$

* Fill in the Blanks Here

 1)Identify the number of carbons. 2) Use the appropriate IUPAC prefix with the ending 	 identified by the IUPAC prefix. Attach them each by a bond. 2) each carbon using a
Examples	Examples
Name:	Draw:
CH ₃ - CH ₂ - CH ₃	pentane
CH3 - CH2 - CH2 - CH2 - CH2 - CH3	octane
Alkanes are characterized by a	carbon-carbon bond.
Alkanes are and contained no double or triple bonds.	

Alkanes always end with '_____

Drawing Alkenes

- Praw the number of <u>carbons</u> identified by the IUPAC prefix. Attach them each by a single bond.
- * Praw the <u>double bond</u> as identified.
- * Add any additional side chains.
- * Saturate each carbon using a hydrogen.



4-ethyloct-2-ene

Examples but-2-ene

 $CH_3 - CH = CH - CH_3$

4-ethyloct-2-ene

CH3 I CH3 - CH = CH - CH - CH2 - CH2 - CH2 - CH3



* Fill in the Blanks Here

1) Identify the longest continuous chain.

2)Use ANE ending.

- 3)Name the side chains according to number of carbons with an YL ending. Place them in alphabetical order.
- 4)Use di(2), tri(3), tetra(4) to identify more then one of the same type of side chain.
- 5) Number side chains using the lowest numbering system.

using the prefix in front of 'ane'2) Add any side chains based on the location indicated by the number proceeding it.3) For each side chain, draw the

1) Start by drawing the base chain

- number of carbons identified in by the prefix in front of the YL ending.
- Saturate each carbon with the appropriate number of hydrogens.

EXAMPLES

Draw:

Name:

EXAMPLES

CH₃ I CH₃ - CH - CH - CH₃ I CH₃

2-methylhexane

3, 4 - dimethylheptane

CH₂ - CH₃ I CH₃ - CH - CH₂ - CH - CH₂ - CH₂ - CH₃ I CH₂ - CH₃

CH₃

• These are alkanes that contain branches or _

_____: Compounds with the same molecular formula.

but a different _____

Branched Alkynes

* These are straight open chains of hydrogen and carbon made up of at least one carbon-carbon triple bonds.

* Alkynes are considered to be unsaturated.

* Fill in the Blanks Here

1) Identify the longest continuous chain.

2)Use ANE ending.

EXAMPLES

Name:

- 3)Name the side chains according to number of carbons with an YL ending. Place them in alphabetical order.
- 4)Use di(2), tri(3), tetra(4) to identify more then one of the same type of side chain.
- 5) Number side chains using the lowest numbering system.

using the prefix in front of 'ane'2) Add any side chains based on the location indicated by the number

1) Start by drawing the base chain

proceeding it. 3) For each side chain, draw the number of carbons identified in by the prefix in front of the YL ending.

 Saturate each carbon with the appropriate number of hydrogens.

CH₃ I CH₃ - CH - CH - CH₃ I CH₃ Draw:

EXAMPLES

2-methylhexane

3, 4 - dimethylheptane

 $\begin{array}{c} CH_2 - CH_3 \\ I \\ CH_3 - CH - CH_2 - CH - CH_2 - CH_2 - CH_3 \\ I \\ CH_2 - CH_3 \end{array}$

These are alkanes that contain branches or

_____: Compounds with the same molecular _

but a different _____ for

_ formula.

Naming Branched Alkynes

- * Identify the number of carbons.
- * Use the appropriate IUPAC prefix with the ending YNE.
- * Use a number to identify the location of the triple bond directly in front of YNE separated by dashes. (ex: pent-2-yne)
- * Name any additional side chains with the same numbering system.



*
$$CH_3 - C = C - CH_2 - CH_3$$

* $CH_3 - CH - CH - CH_2 - CH_2 - CH_2 - C = C - CH_3$



CH3

pent-2-ene

* $CH_3 - CH - CH - CH_2 - CH_2 - CH_2 - C = C - CH_3$

8-methylnon-2-ene

* Fill in the Blanks Here

1) Identify the longest continuous chain.

2)Use ANE ending.

- 3)Name the side chains according to number of carbons with an YL ending. Place them in alphabetical order.
- 4)Use di(2), tri(3), tetra(4) to identify more then one of the same type of side chain.
- 5) Number side chains using the lowest numbering system.

proceeding it.

EXAMPLES

Draw:

Name:

EXAMPLES

CH₃ I CH₃ - CH - CH - CH₃ I CH₃

2-methylhexane

3, 4 - dimethylheptane

1) Start by drawing the base chain

using the prefix in front of 'ane'

2) Add any side chains based on the

location indicated by the number

number of carbons identified in by

the prefix in front of the YL ending.

appropriate number of hydrogens.

3) For each side chain, draw the

4) Saturate each carbon with the

 $CH_2 - CH_3$ I $CH_3 - CH - CH_2 - CH - CH_2 - CH_2 - CH_3$ I $CH_2 - CH_3$

These are alkanes that contain branches or _______
. ____: Compounds with the same molecular ______:

but a different ______ formula.

Vrawing Branched Alkynes

- * Praw the number of <u>carbons</u> identified by the IUPAC prefix. Attach them each by a single bond.
- * Praw the triple bond as identified.
- * Add any additional <u>side chains</u>.
- * Saturate each carbon using a hydrogen.



5-methylhex-2-yne



$\begin{array}{c} CH_3\\ I\\ CH_3-C \equiv C-CH_2-CH-CH_3\end{array}$

non-4-yne

$CH_3 - CH_2 - CH_2 - C = C - CH_2 - CH_2 - CH_2 - CH_3$