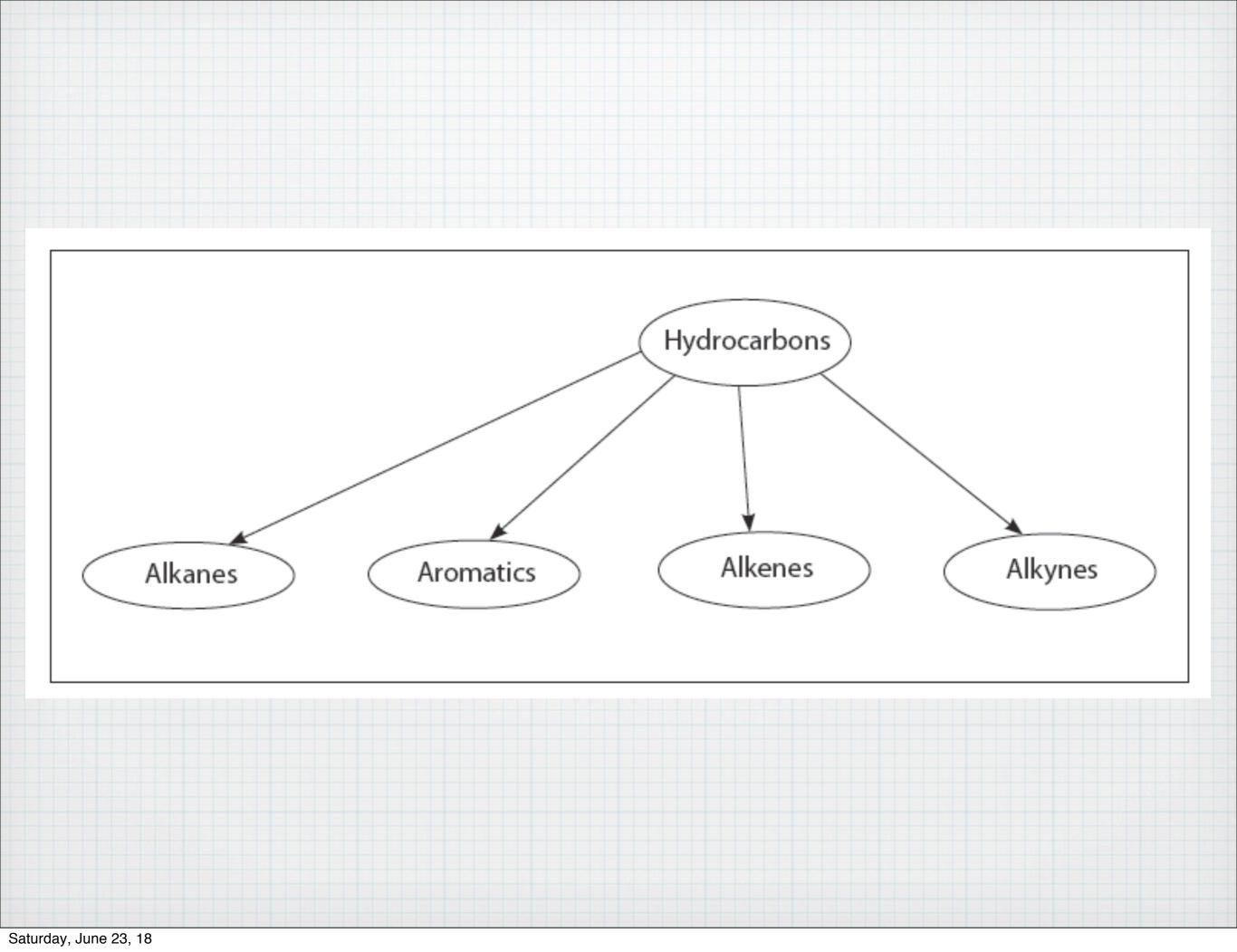




\* Hydrocarbons contain only two elements, carbon and hydrogen.

- Make up the vast majority of all organic chemicals.
- \* Many are used as fuels or raw materials.





<ol> <li>Identify the number of carbons.</li> <li>Use the appropriate IUPAC prefix with the ending</li> </ol>	<ul> <li>1)Draw the number of</li> <li>identified by the IUPAC prefix. Attach them each by a bond.</li> <li>2) each carbon using a</li> </ul>
Examples	Examples
Name: CH <sub>3</sub> - CH <sub>2</sub> - CH <sub>3</sub>	Draw: pentane
CH3 - CH2 - CH2 - CH2 - CH2 - CH3	octane

carbon-carbon bond. Alkanes are \_\_\_\_\_ and contained no double or triple bonds.

Alkanes always end with '\_\_\_\_

\* Cut Here

1)Identify the number of carbons.

2) Use the appropriate IUPAC prefix with the ending \_\_\_\_\_.

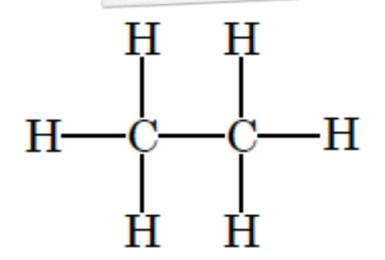
1)Draw the number	of
identified by the IUPAC prefix. Attach	
them each by a $\_$	bond.
0)	aach aarban uaing
2)	each carbon using
a	_



Examples	Examples
Name: CH <sub>3</sub> - CH <sub>2</sub> -	Draw: pentane octane
Alkanes are characterized by a     Alkanes are and     Alkanes always end with ''	

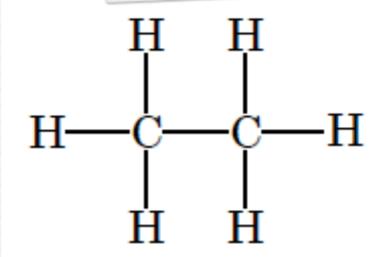
## Straight Chain Alkanes

- \* Alkanes are characterized by a single carbon-carbon bond.
- \* Alkanes are saturated and contained no double or triple bonds.



## Straight Chain Alkanes







<ol> <li>1)Identify the number of carbons.</li> <li>2) Use the appropriate IUPAC prefix with the ending</li> </ol>	<ul> <li>1)Draw the number of</li></ul>
Examples	Examples
Name: CH3 - CH2 - CH3	Draw: pentane
CH3 - CH2 - CH2 - CH2 - CH2 - CH3	octane
<ul> <li>Alkanes are characterized by a carbon-carbon bond.</li> <li>Alkanes are and contained no double or triple bonds.</li> <li>Alkanes always end with ''</li> </ul>	



#### \* Identify the number of carbons.

# \* Use the appropriate IUPAC prefix with the ending ANE.



#### \* $CH_3 - CH_2 - CH_2 - CH_2 - CH_2 - CH_3$

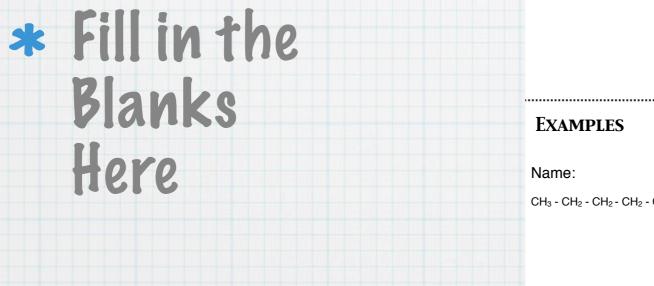




nonane



hexane



<ol> <li>1)Identify the number of carbons.</li> <li>2) Use the appropriate IUPAC prefix with the ending</li> </ol>	<ul> <li>identified by the IUPAC prefix. Attach them each by a bond.</li> <li>2) each carbon using a</li> </ul>
XAMPLES	Examples
ame: H₃ - CH₂ - CH₃	Draw: pentane
CH3 - CH2 - CH2 - CH2 - CH2 - CH3	octane
Alkanes are characterized by a     Alkanes are and     Alkanes always end with ''	carbon-carbon bond.

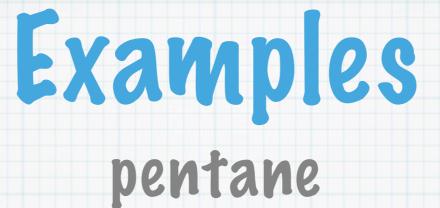
Blanks

Here



#### Praw the number of carbons identified by the IUPAC prefix. Attach them each by a single bond.

\* Saturate each carbon using a hydrogen.





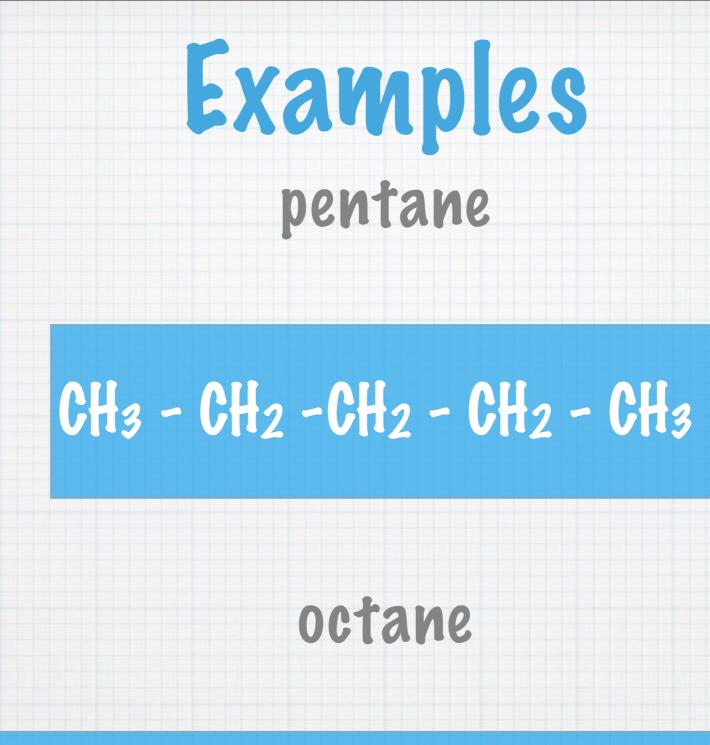
### Examples

pentane

H H H H H I I I I I H-C-C-C-C-C-H I I I I I H H H H H

octane

H H H H H H H H I I I I I I I I I H-C-C-C-C-C-C-C-C-H I I I I I I I I H H H H H H H H



$$CH_3 - CH_2 - CH_3$$



<ol> <li>Identify the longest continuous chain.</li> <li>Use ANE ending.</li> <li>Name the side chains according to number of carbons with an YL ending. Place them in alphabetical order.</li> <li>Use di(2), tri(3), tetra(4) to identify more then one of the same type of side chain.</li> <li>Number side chains using the lowest numbering system.</li> </ol>	<ol> <li>Start by drawing the base chain using the prefix in front of 'ane'</li> <li>Add any side chains based on the location indicated by the number proceeding it.</li> <li>For each side chain, draw the number of carbons identified in by the prefix in front of the YL ending.</li> <li>Saturate each carbon with the appropriate number of hydrogens.</li> </ol>
Examples	Examples
Name: $CH_3$ I $CH_3 - CH - CH - CH_3$ I $CH_2 - CH_3$ I $CH_2 - CH_3$ I $CH_2 - CH_2 - CH_2 - CH_2 - CH_3$ I $CH_2 - CH_2 - CH_2 - CH_3$	Draw: 2-methylhexane 3, 4 - dimethylheptane
These are alkanes that contain brand    : Compounds     but a different	with the same molecular

#### \* Fill in the Blanks Here

## Branched Alkanes



\* Structural Isomers: Compounds with the same molecular formula but a different structural formula.

2 3 4 5	<ol> <li>Identify the longest continuous chain.</li> <li>Use ANE ending.</li> <li>Name the side chains according to number of carbons with an YL ending. Place them in alphabetical order.</li> <li>Use di(2), tri(3), tetra(4) to identify more then one of the same type of side chain.</li> <li>Number side chains using the lowest numbering system.</li> </ol>	<ol> <li>Start by drawing the base chain using the prefix in front of 'ane'</li> <li>Add any side chains based on the location indicated by the number proceeding it.</li> <li>For each side chain, draw the number of carbons identified in by the prefix in front of the YL ending.</li> <li>Saturate each carbon with the appropriate number of hydrogens.</li> </ol>
	XAMPLES	Examples
Na	me: CH <sub>3</sub> I CH <sub>3</sub> - CH - CH - CH <sub>3</sub> I CH <sub>2</sub> - CH <sub>3</sub> CH <sub>2</sub> - CH <sub>3</sub> I CH <sub>2</sub> - CH <sub>3</sub> I CH <sub>2</sub> - CH <sub>2</sub> - CH <sub>2</sub> - CH <sub>2</sub> - CH <sub>3</sub>	Draw: 2-methylhexane 3, 4 - dimethylheptane
	These are alkanes that contain brand     Compounds	ches or with the same molecular
	but a different formula	



## Naming Branched Alkanes

- \* 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.



CH3 - CH - CH - CH3

#### CH3

#### $CH_2 - CH_3$

#### $CH_3 - CH - CH_2 - CH - CH_2 - CH_2 - CH_3$

$$CH_2 - CH_3$$

110

$$CH_3 - CH - CH - CH_3$$

CH3

#### CH2-CH3 5-ethyl-3-methyloctane

#### $CH_3 - CH - CH_2 - CH - CH_2 - CH_2 - CH_3$

$$CH_2 - CH_3$$

<ol> <li>Identify the longest continuous chain.</li> <li>Use ANE ending.</li> <li>Name the side chains according to number of carbons with an YL ending. Place them in alphabetical order.</li> <li>Use di(2), tri(3), tetra(4) to identify more then one of the same type of side chain.</li> <li>Number side chains using the lowest numbering system.</li> </ol>	<ol> <li>Start by drawing the base chain using the prefix in front of 'ane'</li> <li>Add any side chains based on the location indicated by the number proceeding it.</li> <li>For each side chain, draw the number of carbons identified in by the prefix in front of the YL ending.</li> <li>Saturate each carbon with the appropriate number of hydrogens.</li> </ol>
EXAMPLES Name:	Examples
CH₃	Draw:
I CH <sub>3</sub> - CH - CH <sub>3</sub> I CH <sub>3</sub>	2-methylhexane
	3, 4 - dimethylheptane
CH2 - CH3 I CH3 - CH - CH2 - CH2 - CH2 - CH3 I CH2 - CH3	
• These are alkanes that contain brance     •: Compounds     but a different	with the same molecular

#### \* Fill in the Blanks Here

## Prawing Branched Alkanes

- \* 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 proceeding it.
- \* 3) For each side chain, draw the number of carbons identified in by the prefix in front of the YL ending.
- \* 4) Saturate each carbon with the appropriate number of hydrogens.



#### 2-methylhexane

#### 3,4 - dimethylheptane





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

#### 3,4 - dimethylheptane

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