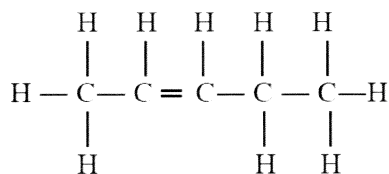


Naming and Drawing Alkenes Worksheet and Key

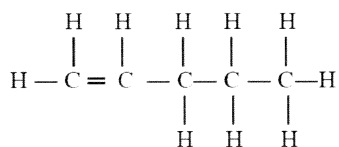
1) Draw and name the *cis* and *trans* condensed structure of:



<i>cis</i> condensed structure:	<i>trans</i> condensed structure:
name:	name:

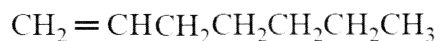
2. Name the following alkenes (include *cis*- or *trans*- for the alkenes that when appropriate)

a)



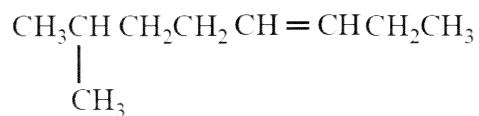
Name: _____

b)



Name: _____

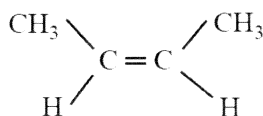
c)



Name: _____

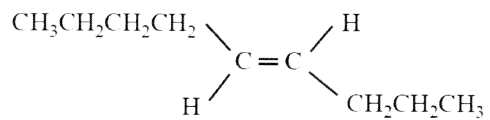
Be careful to correctly identify carbon #1.....

d)



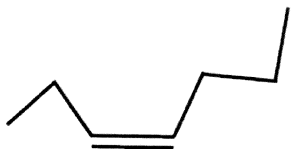
Name: _____

e)



Name: _____

f)



Name: _____

3. Draw the line bond, condensed, and skeletal structure of the following alkenes.

a) 1-hexene

line-bond structure	condensed structure	skeletal structure

b) 2-methyl-4-isopropyl-1-nonene

line-bond structure	condensed structure	skeletal structure

c) cis-2-hexene

line-bond structure	condensed structure	skeletal structure

d) trans-2-pentene

line-bond structure	condensed structure	skeletal structure

e) cis-2-methyl-3-hexene

line-bond structure	condensed structure	skeletal structure

Alkene WS II

Name: _____

1. Ethene is a gas with a slightly sweet odor; certain plants produce it naturally. It is found in petroleum and natural gas. It is one of the most important organic compounds in the chemical industry. It is used in the production of alcohol, solvents, plastics, antifreeze, detergents, synthetics, and it is used to hasten the ripening of fruit.

Write the formula for ethene and draw its structure.

2. Given the structural formulas, name the following compounds.

a. $\text{CH}_3\text{-CH=CH}_2$ _____

b. $\text{CH}_3\text{-CH=CH-CH}_3$ _____

c. $\text{CH}_3\text{-CH}_2\text{-CH}_2\text{-CH=CH-CH}_3$ _____

3. Draw the structural formulas for the following compounds.

a. 2-methyl-3-heptene

b. 2-pentene

c. 2,3-dimethyl-1-butene

d. 2-methyl-2-butene

4. Name the following branched alkene.



d) trans-2-pentene

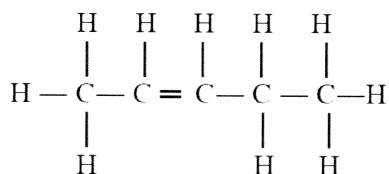
line-bond structure	condensed structure	skeletal structure

e) cis-2-methyl-3-hexene

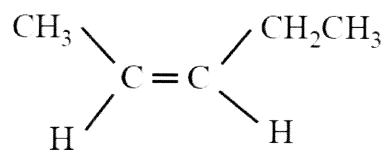
line-bond structure	condensed structure	skeletal structure

Key

1) Draw and name the *cis* and *trans* condensed structure of:

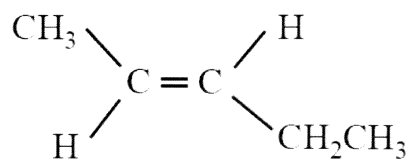


cis condensed structure:



name: *cis*-2-pentene

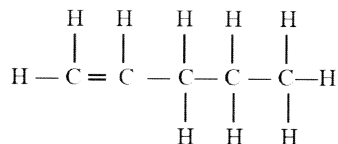
trans condensed structure:



name: *trans*-2-pentene

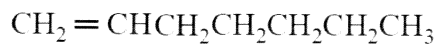
2. Name the following alkenes (include *cis*- or *trans*- for the alkenes that when appropriate)

a)



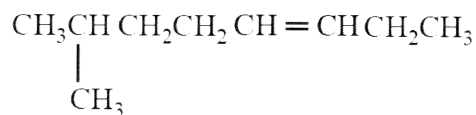
Name: 1-pentene

b)



Name: 1-heptene

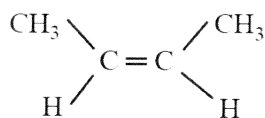
c)



Name: 7-methyl-3-octene

Note: Carbon #1 is the carbon nearest to the double bond

d)



Name: *cis*-2-butene

c) *cis*-2-hexene

line-bond structure	condensed structure	skeletal structure
$ \begin{array}{cccccc} & \text{H} & \text{H} & \text{H} & \text{H} & \text{H} & \text{H} \\ & & & & & & \\ \text{H} & - \text{C} & - \text{C} & = \text{C} & - \text{C} & - \text{C} & - \text{C} - \text{H} \\ & & & & & & \\ & \text{H} & & & \text{H} & \text{H} & \text{H} \end{array} $ <p>Note: <i>cis/trans</i> is not displayed in line-bond structures (only displayed in condensed and skeletal structures).</p>	$ \begin{array}{c} \text{CH}_3 \quad \quad \quad \text{CH}_2\text{CH}_2\text{CH}_3 \\ \quad \quad \quad \diagdown \quad \diagup \\ \quad \quad \quad \text{C} = \text{C} \\ \quad \quad \quad \diagup \quad \diagdown \\ \text{H} \quad \quad \quad \text{H} \end{array} $	

d) *trans*-2-pentene

line-bond structure	condensed structure	skeletal structure
$ \begin{array}{cccccc} & \text{H} & \text{H} & \text{H} & \text{H} & \text{H} \\ & & & & & \\ \text{H} & - \text{C} & - \text{C} & = \text{C} & - \text{C} & - \text{C} - \text{H} \\ & & & & & \\ & \text{H} & & & \text{H} & \text{H} \end{array} $ <p>Note: <i>cis/trans</i> is not displayed in line-bond structures (only displayed in condensed and skeletal structures).</p>	$ \begin{array}{c} \text{CH}_3 \quad \quad \quad \text{H} \\ \quad \quad \quad \diagdown \quad \diagup \\ \quad \quad \quad \text{C} = \text{C} \\ \quad \quad \quad \diagup \quad \diagdown \\ \text{H} \quad \quad \quad \text{CH}_2\text{CH}_3 \end{array} $	

e) *cis*-2-methyl-3-hexene

line-bond structure	condensed structure	skeletal structure
$ \begin{array}{cccccc} & & \text{H} & & & & \\ & & & & & & \\ & \text{H} & - \text{C} & - \text{H} & & & \\ & & & & & & \\ \text{H} & - \text{C} & - \text{C} & - \text{C} & = \text{C} & - \text{C} & - \text{C} - \text{H} \\ & & & & & & \\ & \text{H} & \text{H} & & & \text{H} & \text{H} \end{array} $	$ \begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_3\text{CH} \quad \quad \quad \text{CH}_2\text{CH}_3 \\ \quad \quad \quad \diagdown \quad \diagup \\ \quad \quad \quad \text{C} = \text{C} \\ \quad \quad \quad \diagup \quad \diagdown \\ \text{H} \quad \quad \quad \text{H} \end{array} $	