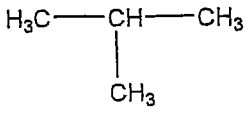
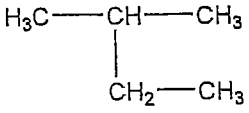
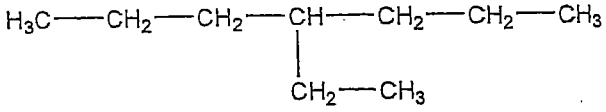
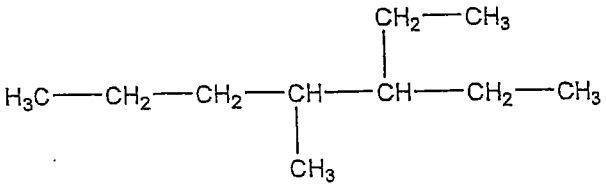
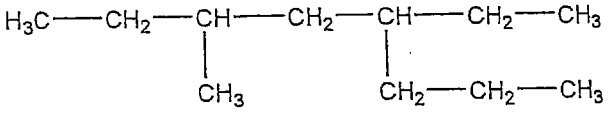
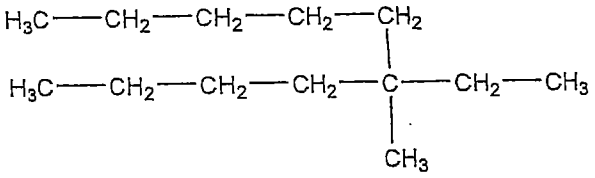
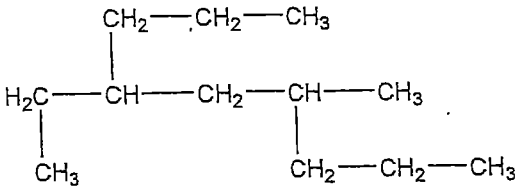
Name _____ Period _____

Naming Alkanes – Worksheet #1

Name the following branched alkanes:

1.		
2.		
3.		
4.		
5.		
6.		
7.		

(over)

Draw structural formulas 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.

8. 4-ethyl-octane

9. 2-methyl-nonane

10. 2-methyl-2-ethyl-butane

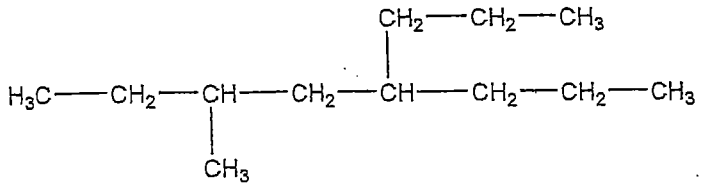
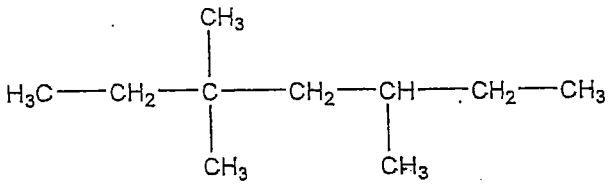
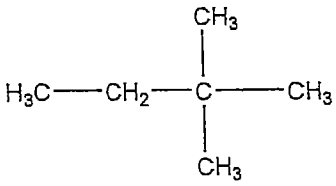
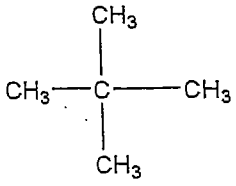
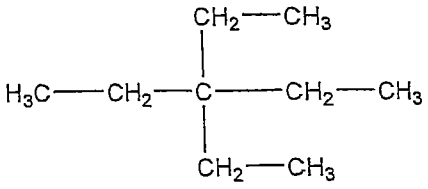
11. 3-ethyl-pentane

12. 2-methyl-3-ethyl-heptane

Name _____ Period _____

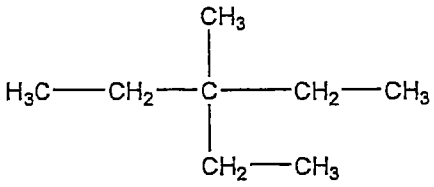
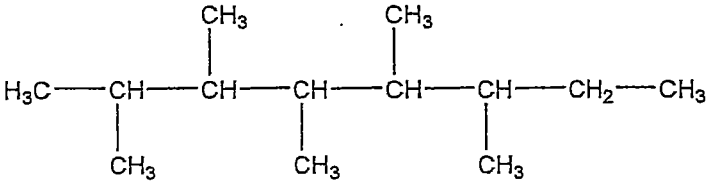
Naming Alkanes – Worksheet #2

Name the following branched alkanes:

1.		
2.		
3.		
4.		
5.		

(over)

24

6.		
7.		

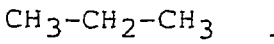
Draw structural formulas for the following molecules:

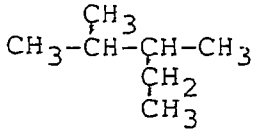
8. 2,2,3-trimethyl-butane

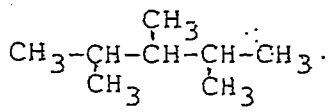
9. 3-ethyl-2,2-dimethyl-hexane

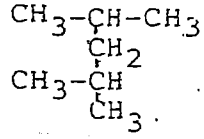
10. 2,3,4,5,6,7-hexamethyl-octane

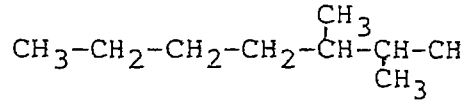
ALKANES I

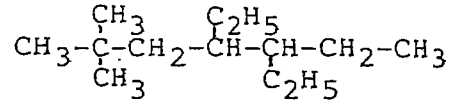
(1) 

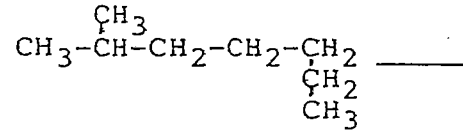
(2) 

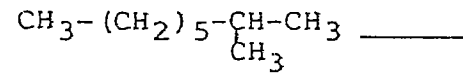
(3) 

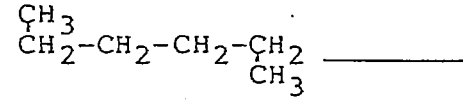
(4) 

(5) 

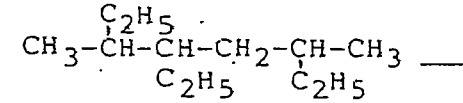
(6) 

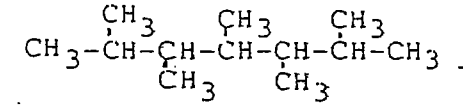
(7) 

(8) 

(9) 

(10) $CH_3CH_2CH_2CH_2CH_3$

(11) 

(12) 

ALKANES II

(1) heptane _____

(2) 3,4-dimethyloctane _____

(3) 4,4-diethyldecane _____

(4) 2,2-dimethyloctane _____

(5) 2-methylbutane _____

(6) 2,2-dimethyl-4-ethylhexane _____

(7) 2,5,5-trimethyl-3-ethylheptane _____

(8) 5-methyl-3,3-diethylhexane _____

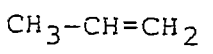
(9) 2,2,3,3-tetramethylpentane _____

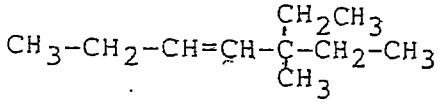
(10) 3,4-diethylhexane _____

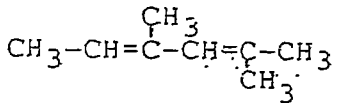
(11) methylpropane _____

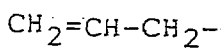
(12) 3-ethylpentane _____

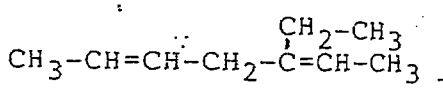
ALKENES I

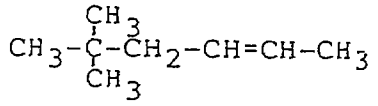
(1) 

(2) 

(3) 

(4) 

(5) 

(6) 

7) 2,3-dimethyl-2-butene _____

(8) 1,4-hexadiene _____

(9) 2-hexene _____

(10) 2,3,4-trimethyl-4-ethyl-1-heptene _____

(11) 2,4-dimethyl-1-pentene _____

'2) cyclohexene _____

ALKENES I

(1) $CH_3-CH=CH_2$ _____

(2) $CH_3-CH_2-CH=CH-\overset{\overset{CH_2CH_3}{|}}{\underset{\underset{CH_3}{|}}{C}}-CH_2-CH_3$ _____

(3) $CH_3-CH=\overset{\overset{CH_3}{|}}{C}-CH=\underset{\underset{CH_3}{|}}{C}-CH_3$ _____

(4) $CH_2=CH-CH_2-CH_3$ _____

(5) $CH_3-CH=CH-CH_2-\overset{\overset{CH_2-CH_3}{|}}{C}=CH-CH_3$ _____

(6) $CH_3-\overset{\overset{CH_3}{|}}{\underset{\underset{CH_3}{|}}{C}}-CH_2-CH=CH-CH_3$ _____

(7) 2,3-dimethyl-2-butene _____

(8) 1,4-hexadiene _____

(9) 2-hexene _____

(10) 2,3,4-trimethyl-4-ethyl-1-heptene _____

(11) 2,4-dimethyl-1-pentene _____

(12) cyclohexene _____

ALKYNES

(1) $CH{\equiv}C-CH_3$ _____

(2) $CH_3C{\equiv}C-\underset{\displaystyle CH_3}{\underset{|}{C}}H-CH_3$ _____

(3) $CH_3-\underset{\displaystyle CH_3}{\underset{|}{C}}H-\underset{\displaystyle CH_3}{\underset{|}{C}}H-C{\equiv}CH$ _____

(4) $CH{\equiv}C-\underset{\displaystyle CH_3}{\underset{|}{C}}H-C{\equiv}C-CH_3$ _____

(5) $CH_3-\underset{\displaystyle CH_2CH_3}{\underset{|}{C}}H-CH_2-C{\equiv}C-CH_3$ _____

(6) 2-butyne _____

(7) 4-methyl-2-pentyne _____

(8) 4-ethyl-2,5-heptadiyne _____

(9) 3-methyl-1-butyne _____

(10) 3,4-dimethyl-1-pentyne _____

ALKYNES

(1) $CH{\equiv}C{-}CH_3$ _____

(2) $CH_3C{\equiv}C{-}\underset{\displaystyle CH_3}{\underset{|}{CH}}{-}CH_3$ _____

(3) $CH_3{-}\underset{\displaystyle CH_3}{\underset{|}{CH}}{-}\underset{\displaystyle CH_3}{\underset{|}{CH}}{-}C{\equiv}CH$ _____

(4) $CH{\equiv}C{-}\underset{\displaystyle CH_3}{\underset{|}{CH}}{-}C{\equiv}C{-}CH_3$ _____

(5) $CH_3{-}\underset{\displaystyle CH_2CH_3}{\underset{|}{CH}}{-}CH_2{-}C{\equiv}C{-}CH_3$ _____

(6) 2-butyne _____

(7) 4-methyl-2-pentyne _____

(8) 4-ethyl-2,5-heptadiyne _____

(9) 3-methyl-1-butyne _____

(10) 3,4-dimethyl-1-pentyne _____

Name:_____ Block:_____ Date:_____

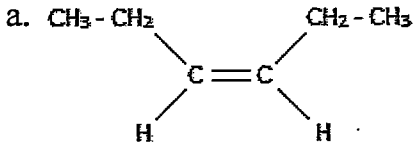
Chemistry 11 **Cis-Trans Isomerization Worksheet** Assignment

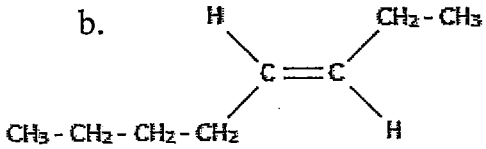
Complete the following questions on a separate piece of paper.

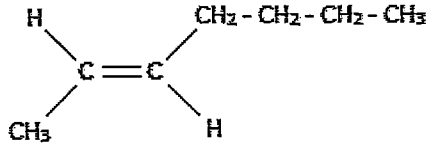
1) Draw the actual shape of the following molecules using condensed structures:
   a. trans-2-hexene
   b. 3-hexyne
   c. cis-3-octene
   d. trans-4-decene
   e. 2-butyne
   f. 4-methyl-cis-2-pentene

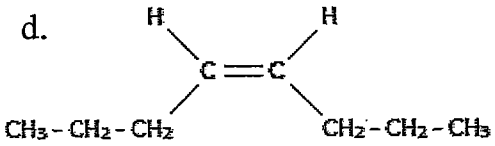
2) Which of the following molecules can exhibit cis-trans isomerism?
   a. 1-butene
   b. 3-hexene
   c. 4-heptyne
   d. 2-octene
   e. 3-ethyl-3-hexene
   f. 2,5-dimthyloctane

3) Name the following as "cis" or "trans" isomers.

a. 

b. 

c. 

d. 

FUNCTIONAL GROUPS

Name _____

Classify each of the organic compounds below as an alcohol, carboxylic acid, aldehyde, ketone, ether or ester, and draw its structural formula.

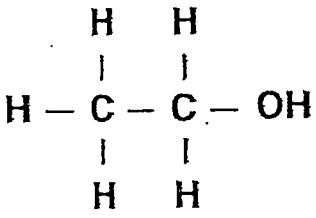
1. CH_3COOH	6. $CH_3CH(OH)CH_3$
2. CH_3COCH_3	7. CH_3CH_2COOH
3. CH_3CH_2OH	8. $CH_3CH_2COOCH_3$
4. $CH_3CH_2OCH_3$	9. $CH_3CH_2COCH_3$
5. CH_3CH_2CHO	10. CH_3OCH_3

NAMING OTHER ORGANIC COMPOUNDS

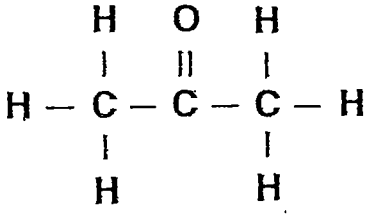
Name _____

Name the compounds below.

1.



2.



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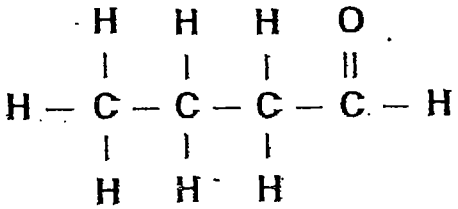

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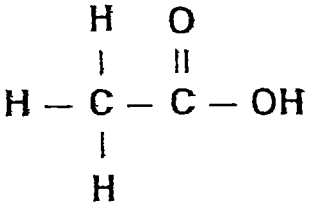

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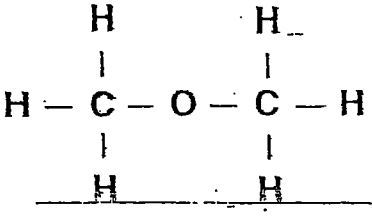

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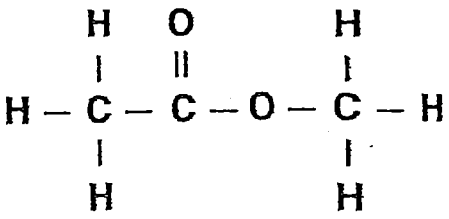

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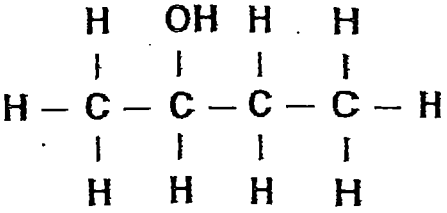

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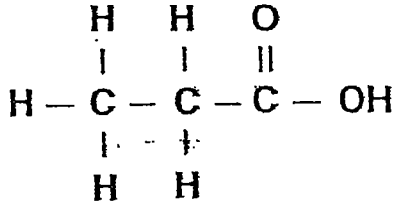
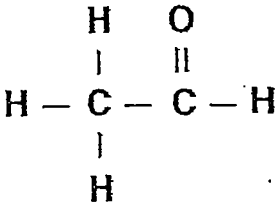
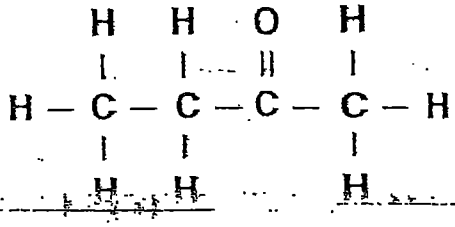


9.



10.



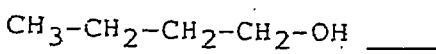
STRUCTURES OF OTHER ORGANIC COMPOUNDS

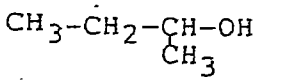
Name _____

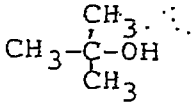
Draw the structures of the compounds below.

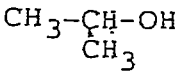
1. butanoic acid	6. methylmethanoate (methyl formate)
2. methanal	7. 3-pentanol
3. methanol	8. methanoic acid (formic acid)
4. butanone	9. propanal
5. diethyl ether	10. 2-pentanone

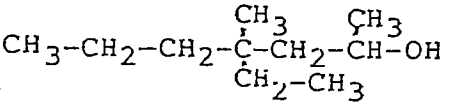
ALCOHOL I

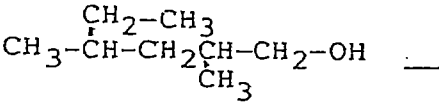
(1)  _____

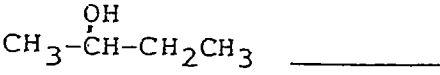
(2)  _____

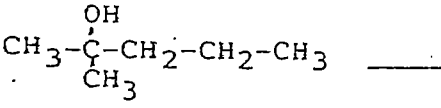
(3)  _____

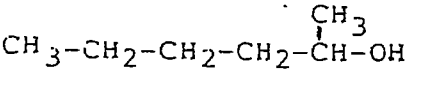
(4)  _____

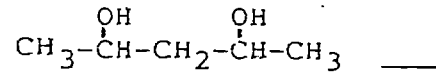
(5)  _____

(6)  _____

(7)  _____

(8)  _____

(9)  _____

(10)  _____

ALCOHOL II :

1) 2-methylpropanol _____

(2) 3,4-diethylheptanol _____

(3) 1,4-hexanediol _____

(4) 2-hexanol _____

(5) 2-methyl-2-heptanol _____

(6) heptanol _____

(7) ethanol _____

(8) 2-methyl-4-ethyl-1-octanol _____

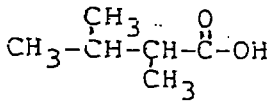
(9) 2-butanol _____

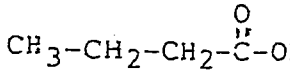
(10) 3-propylhexanol _____

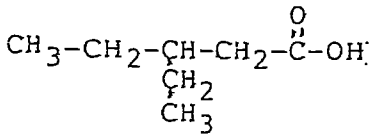
(11) 3-pentanol _____

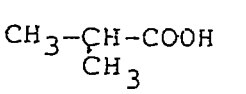
(12) cyclohexanol

ACIDS

(1)  _____

(2)  _____

(3)  _____

(4)  _____

(5) CHOOH _____

(6) 2-methylpentanoic acid _____

(7) 2,3,4-trimethylhexanoic acid _____

(8) ethanoic acid (acetic acid) _____

(9) 6-methylheptanoic acid _____

(10) 3-ethylheptanoic acid _____