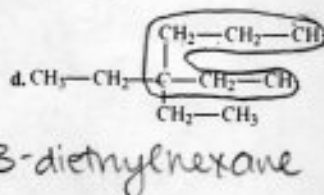
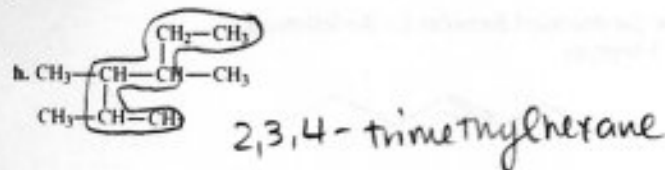
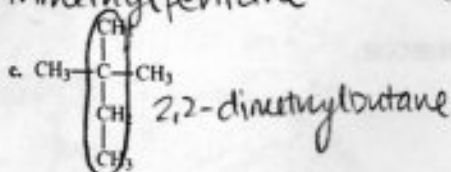
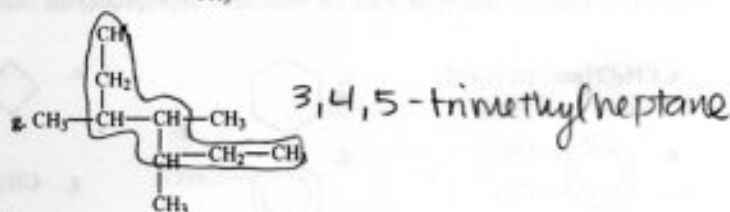
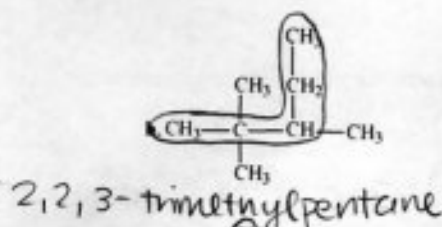
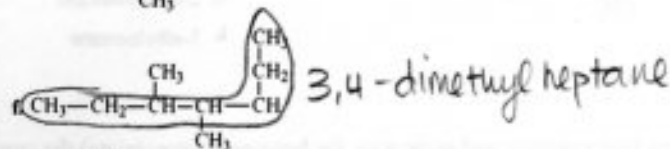
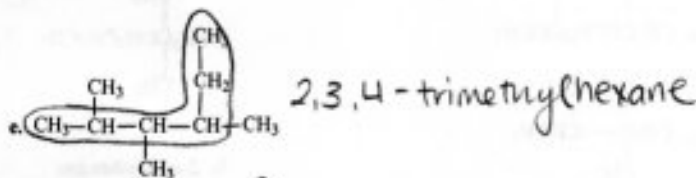
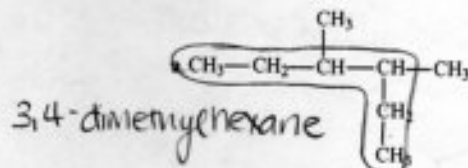


# The Complete Organic Chemistry Worksheet

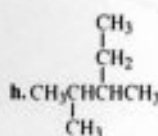
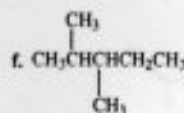
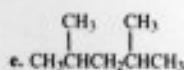
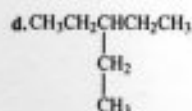
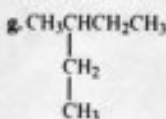
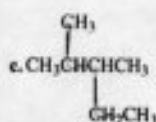
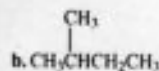
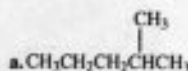
The Complete Organic Chemistry Worksheet.doc

Name \_\_\_\_\_  
Date \_\_\_\_\_  
Period \_\_\_\_\_

1. Name the following hydrocarbons.



2. Name the following hydrocarbons.



a) 2-methylpentane

b) 2-methylbutane

c) 2,3-dimethylpentane

d) 3-ethylpentane

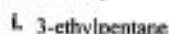
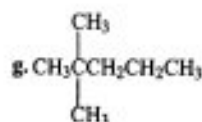
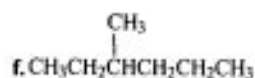
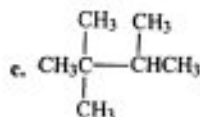
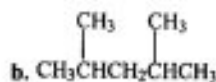
e) 2,4-dimethylpentane

f) 2,3-dimethylpentane

g) 2-ethylbutane

h) 2,3-dimethylpentane

3. Listed below are the condensed structural formulas or names of the nine isomers of heptane,  $C_7H_{16}$ . Write the formula ~~name~~ or name for each.



a) heptane

b) 2,4-dimethylpentane

c) 2,2,3-trimethylbutane

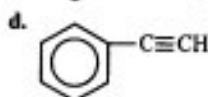
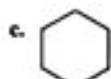
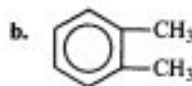
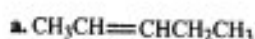
f) 3-methylhexane

g) 2,2-dimethylpentane

h)

i)

4. Name (use common and systematic for benzene if appropriate) the compounds represented by the following formulas.



a) 2-pentene

b) 1,2-dimethylbenzene

c) cyclohexane

d) 1-phenyl, 1-ethyne

e) cyclobutane

f) 1-propyne

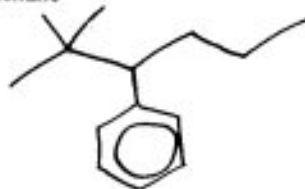
5. Draw the structural formulas for the following:

a. 3-heptyne



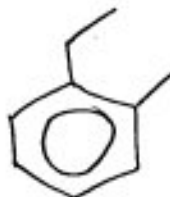
b. ~~cyclopentene~~

c. 3-phenyl-2,2-dimethylhexane

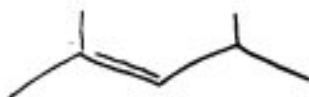


d. ~~1-phenyl-1-ethyne~~

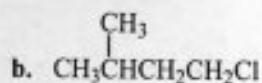
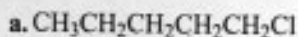
e. 1-ethyl-2-methylbenzene



f. 2,4-dimethyl-2-pentene



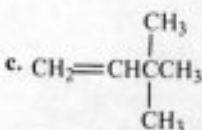
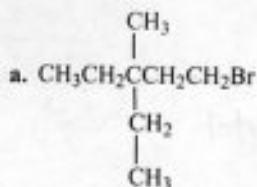
6. Listed below are the condensed structural formulas or the names for the eight isomers of  $C_3H_{11}Cl$ . Write ~~condensed structural~~ condensed structural and the name for each.



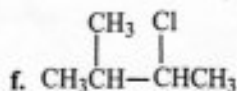
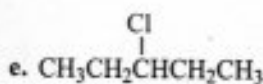
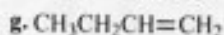
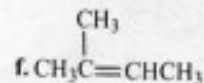
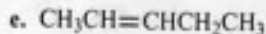
c. 2-chloropentane

d. 2-chloro-2-methylbutane

7. Name the following compounds.

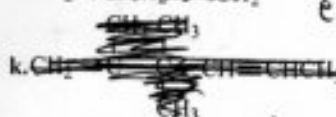
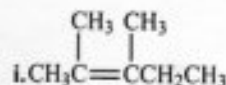
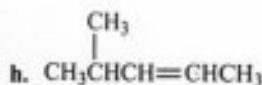


d. ~~Correct~~



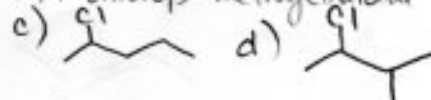
g. 1-chloro-2-methylbutane

**h.** 1-chloro-2, 2-dimethylpropane



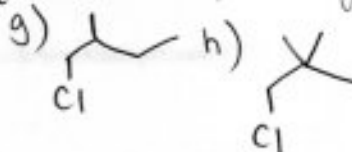
a) 1-chloropentane

b) 1-chloro, 3-methylbutane



e) 3-chlorohexane

f) 3-chloro, 2-methyl butane



a) 1-bromo, 3-ethyl, 3-methyl  
pentane

c) 3,3-dimethyl-1-butene

e) 2-pentene

→ f) 2-methyl-2-butene

g) 1-butene

h) 4-methyl-2-pentene

i) 2,3-dimethyl-2-pentene

8. Draw structural formulas for the following.

a. 3-heptene

b. ~~2-methylpropyl~~ene

c. trichloromethane

d. 2-chloro-3-phenylhexane

e. ~~1,3-cyclopentadiene~~

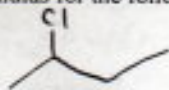
f. ~~to drive (in the business)~~

g. 1,4-dibromobenzene

h. 2-bromo-3-methyl-2-butene

9. Write structural formulas for the following compounds.

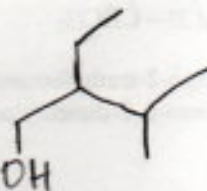
a. 2-chlorobutane



b. 2-butene



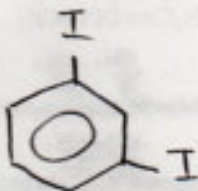
c. 2-ethyl-3-methyl-1-butanol



d. ~~3,3-dimethylbutanoic acid~~

e. ~~2,5,5-trimethyl-4-heptene~~

f. ~~1,3-dimethylcyclohexane~~



g. 1,3-diiodobenzene

h. ~~ethoxycyclohexane~~

i. 1-butanol

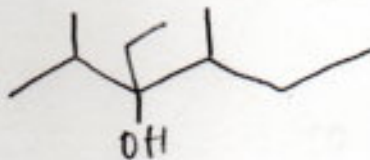


j. 3-methyl-2-pentene



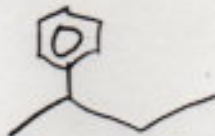
k. ~~2-ethyl-4-methylpentanal~~

l. 3-ethyl-2,4-dimethyl-3-hexanol



m. ~~5-chloro-3-ethyl-2-methylheptanoic acid~~

n. 2-phenylbutane

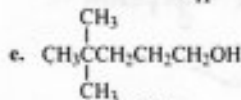
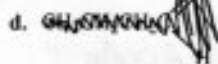
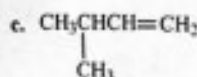
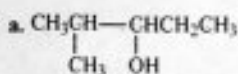


o. ~~2-bromo-2-naphthol~~

p. ~~4-bromobenzoic acid~~

5

10. Name the following organic compounds.

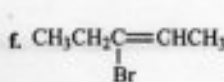
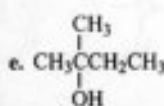
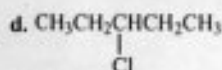
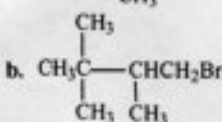
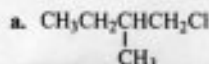


a) 4-methyl-3-pentanol

c) 3-methyl-3-butene

e) 4,4-dimethyl-1-pentanol

11. Name the following organic compounds.



a) 1-chloro, 2-methylbutane

b) 1-bromo, 2,3,3-trimethylbutane

c) 1-bromocyclopropane

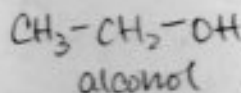
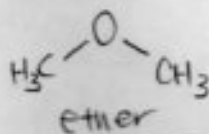
d) 3-chloropentane

e) 2-methyl-2-butanol

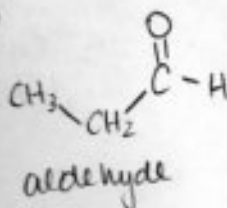
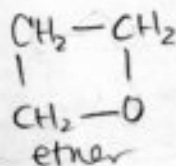
f) 3-bromo-2-pentene

12. Each of the following formulas can be written as two compounds with different functional groups. Write the structural formulas, name the compounds, and identify the functional groups.

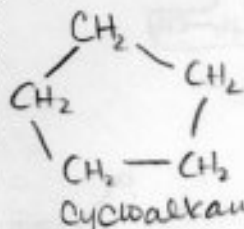
a.  $\text{C}_2\text{H}_6\text{O}$



b.  $\text{C}_3\text{H}_6\text{O}$

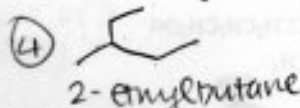
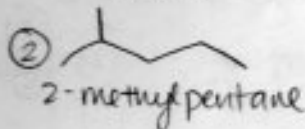
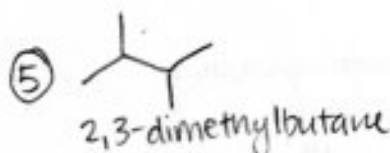
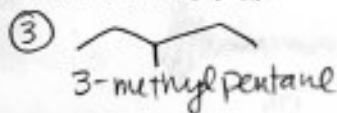
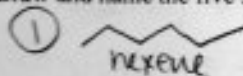


c.  $\text{C}_3\text{H}_6$



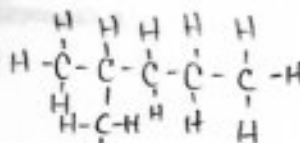
6

14. Draw and name the five structural isomers of hexane ( $C_6H_{14}$ )

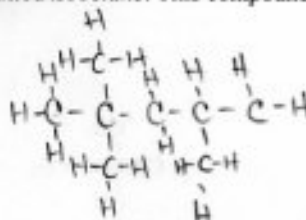


15. Draw the structural formula for each of the following.

a. 2-Methylpentane



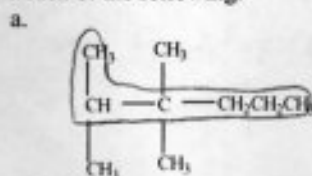
b. 2,2,4-Trimethylpentane, also called *isooctane*. This compound is the reference for octane ratings for gasoline.



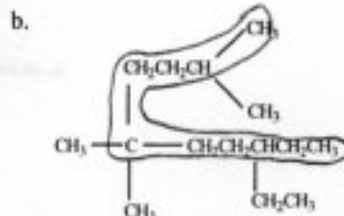
c. ~~2,2,4-Trimethylpentane~~

d. The name given in part c is incorrect. Give the correct name for this hydrocarbon.

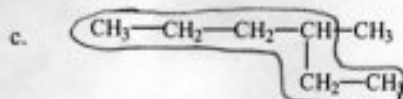
16. Name each of the following:



2,3,3-trimethylhexane

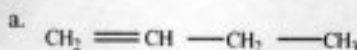


8-ethyl-2,5,5-trimethyldecane

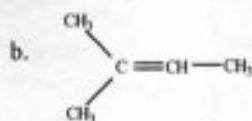


3-methylhexane

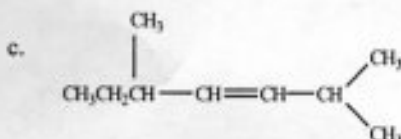
17. Name each of the following alkenes.



1-butene



2-methyl-2-butene



2,5-dimethyl-3-heptene