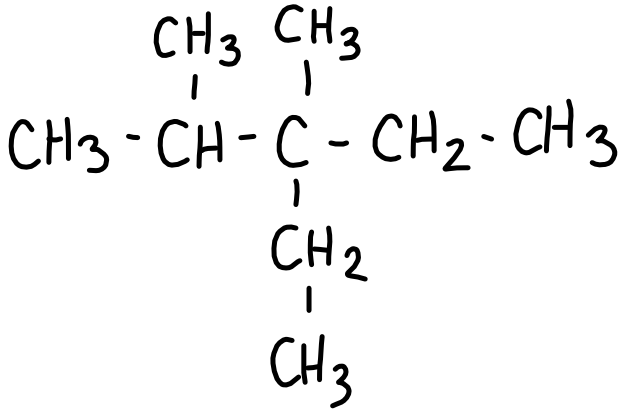
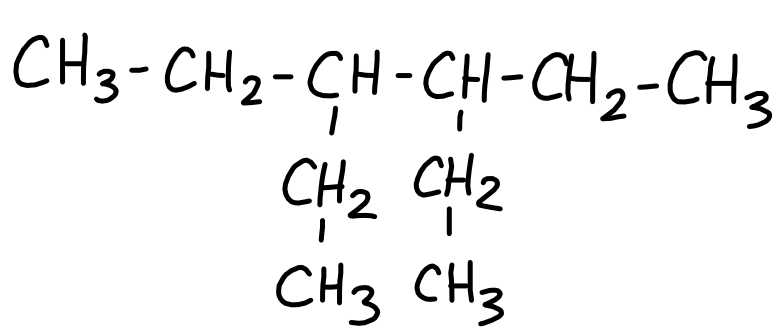
22.1

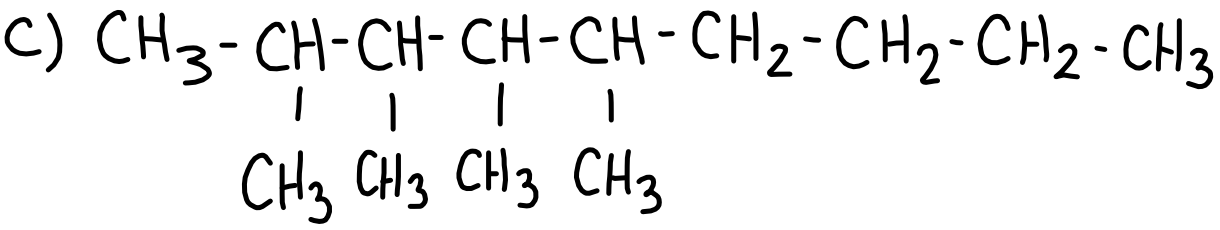
1. 5-ethyl-3,3,5-trimethyloctane

(2) 3-ethyl-2,3,5,5-tetramethylheptane

(3) a)



b) 

c) 

May 30-1:21 PM

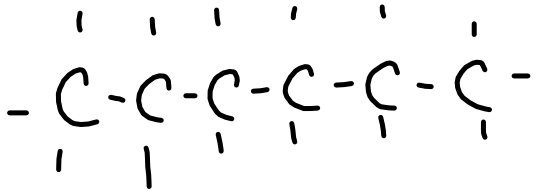
(4) 7 carbons = heptane

$CH_3(CH_2)_5CH_3$

8 carbons = octane

$CH_3(CH_2)_6CH_3$

(5) 19



May 30-1:27 PM

22.2

1) 2,4-dimethyl-2-hexene

2) 3,4-dimethyl-1-pentyne

3) a) $CH \equiv C-CH_2-CH_2-CH_3$ 1-pentyne

b) $CH_3-C \equiv C-CH_2-CH_3$ 2-pentyne

c) $CH \equiv C-\underset{\underset{CH_3}{|}}{CH}-CH_3$ 3-methyl-1-butyne

④ a) $CH_2=CH-\underset{\displaystyle CH_3}{\underset{|}{CH}}-CH_2-\underset{\displaystyle CH_3}{\underset{|}{CH}}-CH_3$

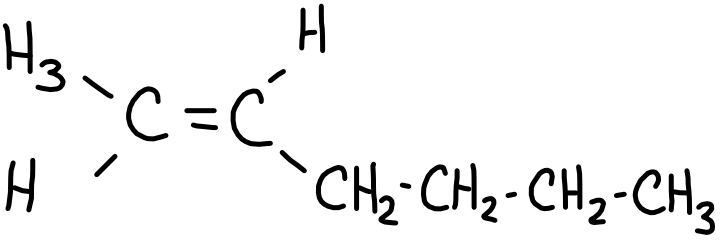
b) $CH_2=CH-CH_2-\underset{\displaystyle CH_3}{\underset{|}{CH}}-CH_3$

c) $CH\equiv C-\underset{\displaystyle CH_3}{\overset{\displaystyle CH_3}{\overset{|}{\underset{|}{C}}}}-CH_3$

22.3

1. cis-2-pentene

2. trans-6-methyl-3-heptene

3. 

4. a, d

5. carbon 3

6. a, c

May 30-1:38 PM

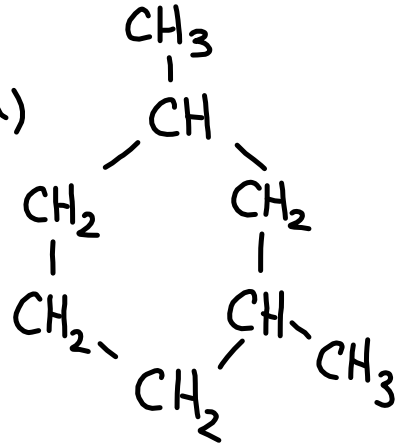
22.4

1. 1-ethyl-3-methylbenzene

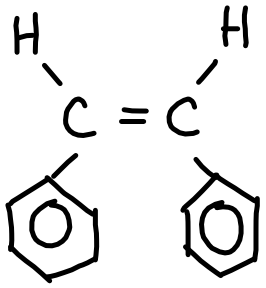
2. 5-phenyl-2-hexene

3.

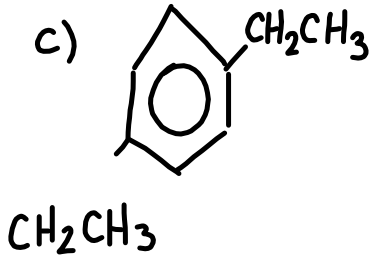
a)



b)



c)



22.5

1. $CH_3-\underset{\displaystyle CH_3}{\underset{|}{CH}}-CH_2-CH_2-CH_2-CH_3$

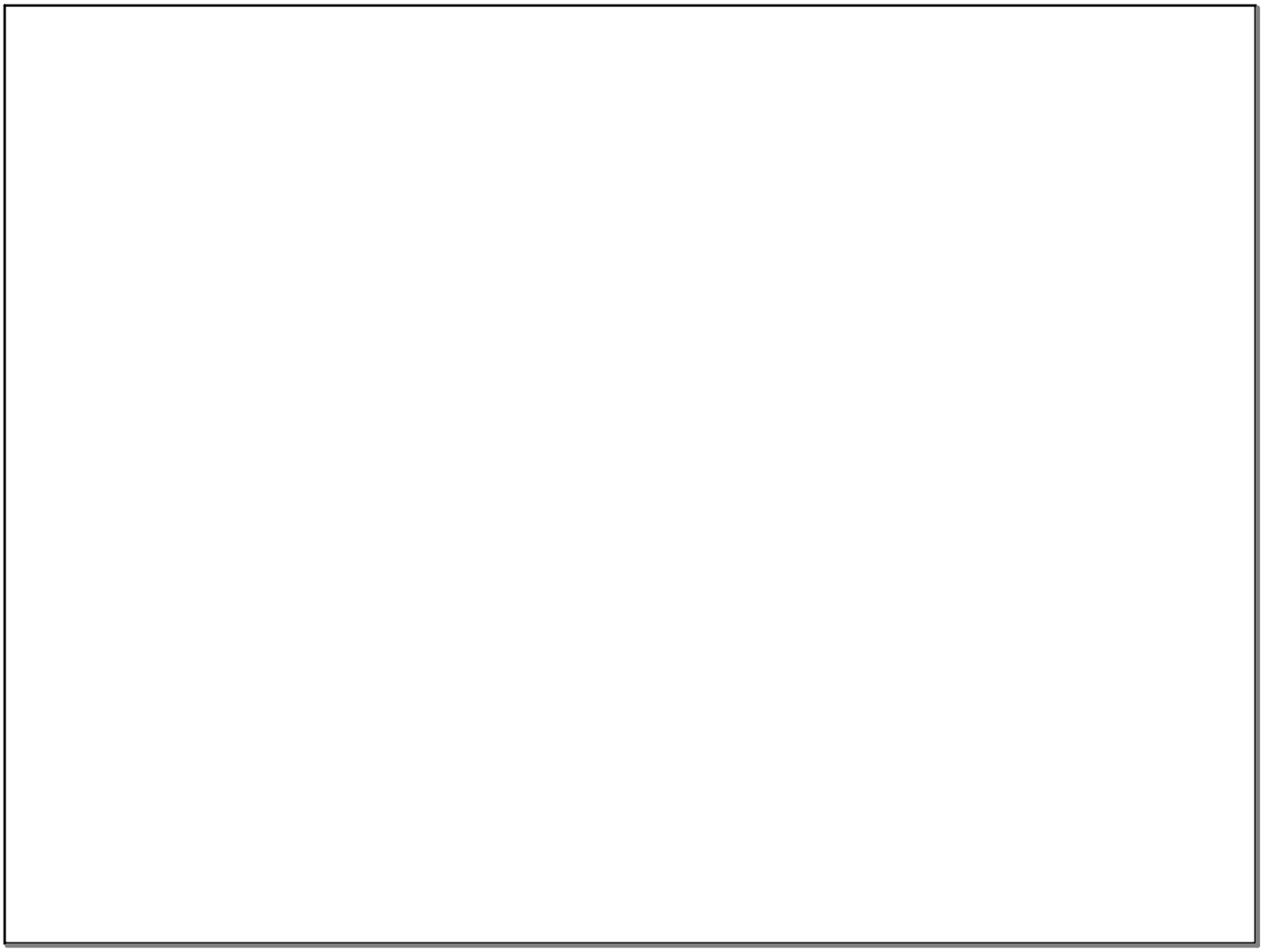
$2\,C_8H_{18} + 25\,O_2 \rightarrow 16\,CO_2 + 18\,H_2O$

2. natural gas - low molar mass (CH_4, C_2H_6)

methane, ethane, propane, butane: straight-chain alkanes

gasoline: 5-12 carbon chains

kerosene: 12-15 C's



Jan 9-4:59 PM