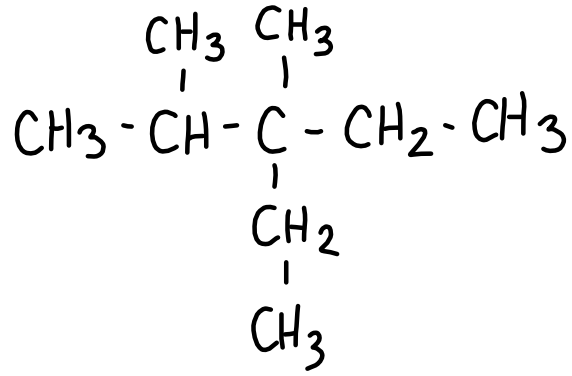
22.1

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

2. 3-ethyl-2,3,5,5-tetramethylheptane

3. a) 

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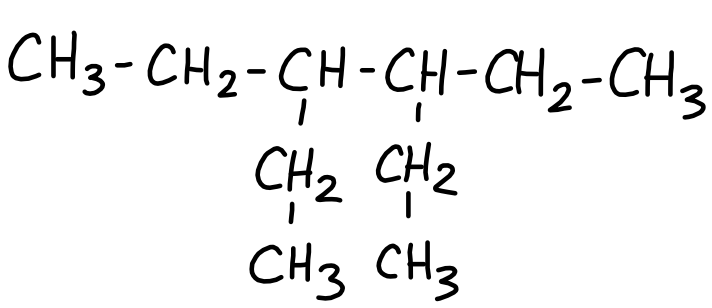
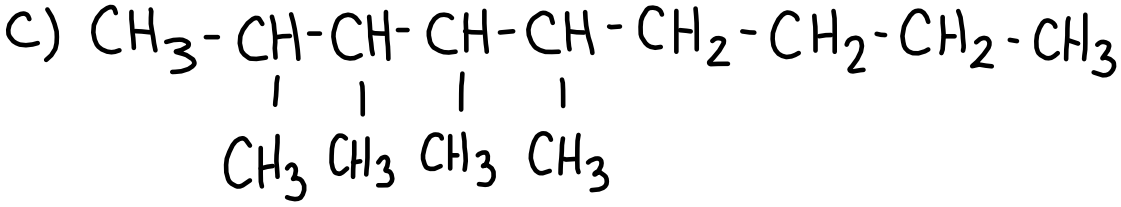
b) 

c) 

May 30-1:21 PM

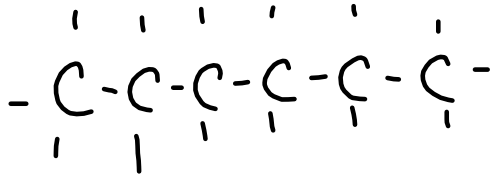
(4) 7 carbons = heptane

$CH_3(CH_2)_5CH_3$

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

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

May 30-1:35 PM

22.3

1. cis-2-pentene
2. trans-6-methyl-3-heptene
3. $CH_3-C(H)=C(H)-CH_2-CH_2-CH_2-CH_3$
4. a, d
5. carbon 3
6. a, c

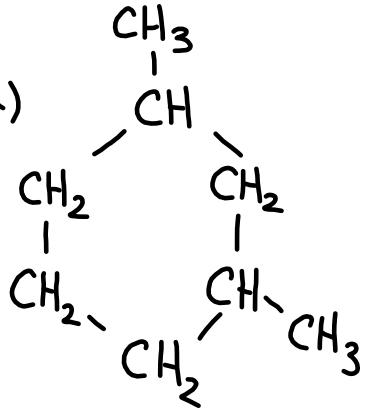
May 30-1:38 PM

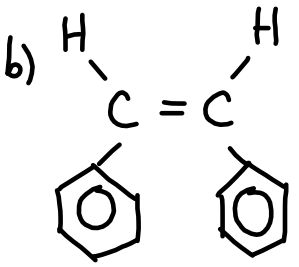
22.4

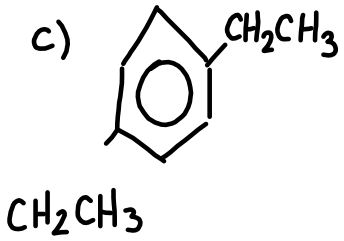
1. 1-ethyl-3-methylbenzene

2. 5-phenyl-2-hexene

3.

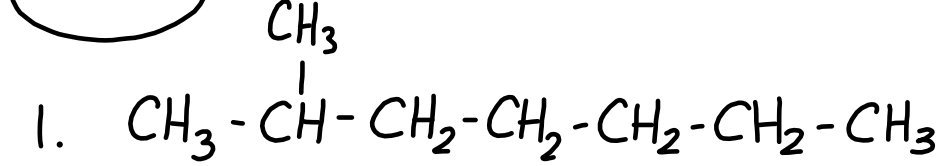
a) 

b) 

c) 

May 30-2:35 PM

22.5

1. 

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

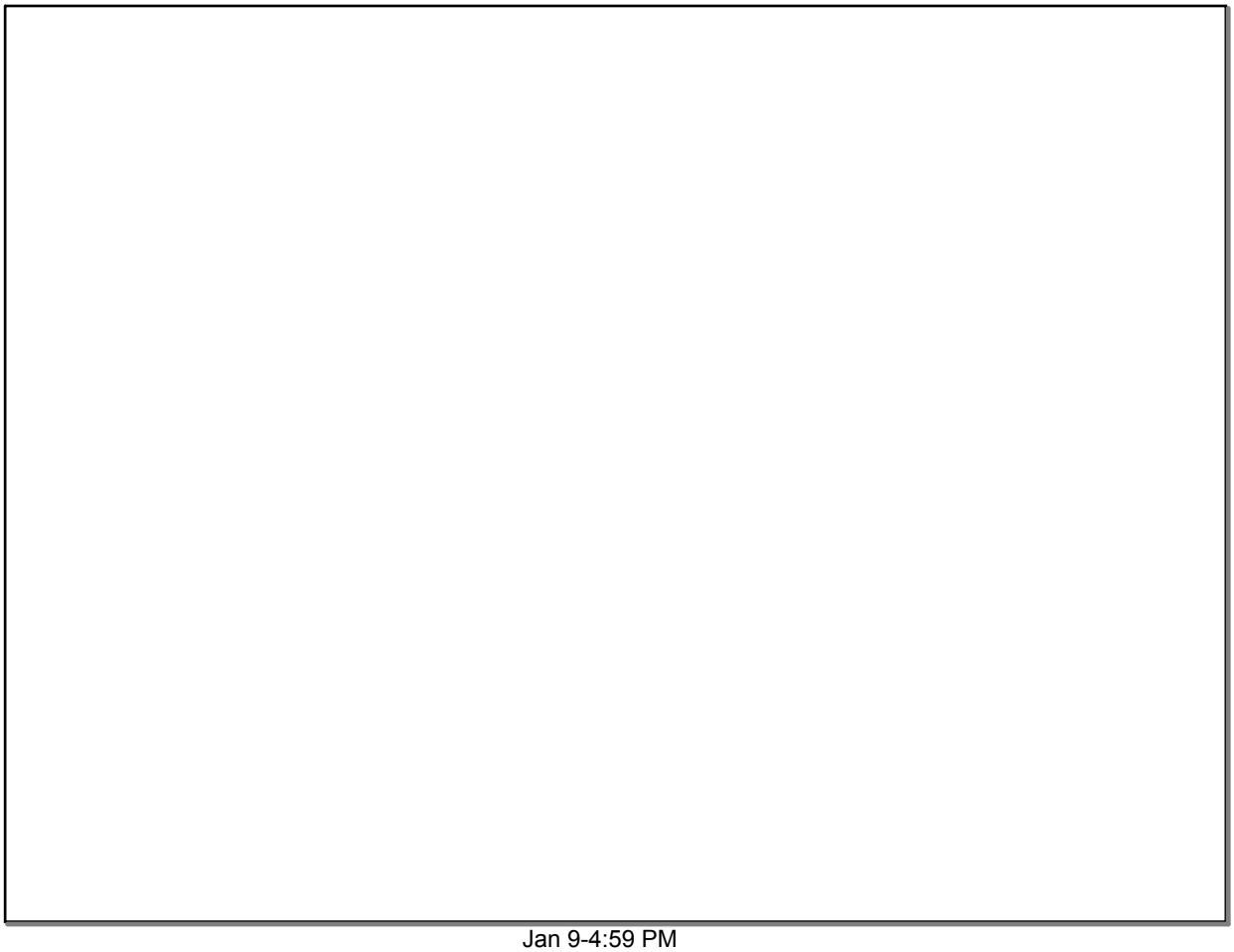
2. natural gas - low molar mass (CH_4, C_2H_6)

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

gasoline: 5-12 carbon chains

kerosene: 12-15 C's

May 30-2:37 PM



Jan 9-4:59 PM