(17) **Today**

Section 3.4
Nomenclature

Section 3.5 - 3.7 Properties and
Conformations of Alkanes

Next Class (18)

Section 3.5 - 3.7 Properties and
Conformations of Alkanes

Chap 4 Cycloalkanes

(19) **Second Class from Today**

Chap 4 Cycloalkanes

Third Class from Today (20)

Chap 4 Cycloalkanes

Today's Office Hours Postponed to Thursday. Thursday's office hours 11:15 to 12:45.

Reworked Test 1's due Wednesday, Oct. 23.

On a separate piece of paper, provide answers for any question for which you did not receive full credit. I do NOT need the test itself back.

Nomenclature of Alkanes

position#-**stuff hanging off longest chain****longest chain of C atoms****functional group ending**

longest chain: tie between 2 chains,
7 green chain has 3 substituents
~~red chain has 2 substituents~~

parent alkane name:

heptane

functional group (?) and position:

alkane... so no # necessary

substituent names:

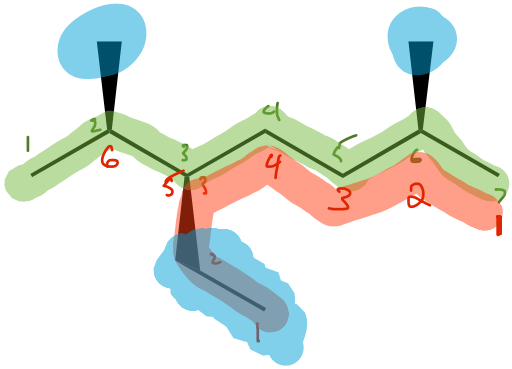
CH_3
CH_3 } methane - dimethyl

CH_2-CH_3: ethyl

substituent positions:

2,6 +3

2,6 +5



3-ethyl-2,6-dimethylheptane

Nomenclature of Alkanes

halogen makes this an alkyl halide

position#-**stuff hanging off longest chain****longest chain of C atoms****functional group ending**

longest chain: tie between 2 chains

7 green chain has 3 substituents

~~red chain has 2 substituents~~

parent alkane name:

heptane

functional group (?) and position:

alkane... so no # necessary

substituent names:

6 2 CH_3 : methane - methyl

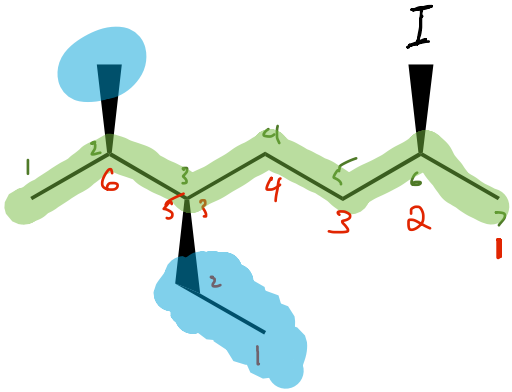
2 6 I : iodo

5 3 CH_2-CH_3 : ethyl

substituent positions:

2,6 +3

2,6 +5



3-ethyl-6-iodo-2-methylheptane

alkyl halide Iodine = Iodo

halogen ending removed and replaced with O

Nomenclature of Alkanes

ethers have a C–O–C linkage

position#-**stuff hanging off longest chain****longest chain of C atoms****functional group ending**

longest chain: tie between 2 chains,
7 green chain has 3 substituents
~~red chain has 2 substituents~~

parent alkane name:

heptane

functional group (?) and position:

alkane... so no # necessary

substituent names:

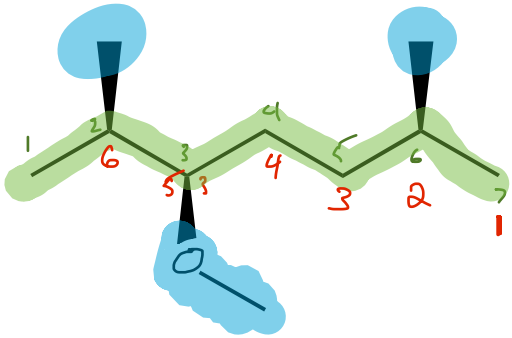
CH_3
CH_3 } methane ⇒ dimethyl

$O-CH_3$: methane ⇒ methoxy

substituent positions:

2,6 +3

2,6 +5



3-methoxy-2,6-dimethylheptane

ether substituent based on longest string of C atoms in the substituent

Nomenclature of Alkanes

position#-**stuff hanging off longest chain** **longest chain of C atoms** **functional group ending**

longest chain:

6

parent alkane name:

hexane

functional group (?) ~~and position~~:

alkane

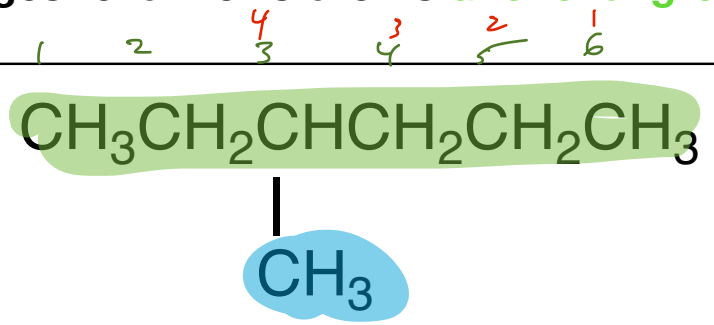
substituent names:

CH_3 – methyl

substituent positions:

3

4



name: 3-methylhexane

Nomenclature of Alkanes

position#-**stuff hanging off longest chain** **longest chain of C atoms** **functional group ending**

longest chain:

7

parent alkane name:

heptane

functional group (?) and position:

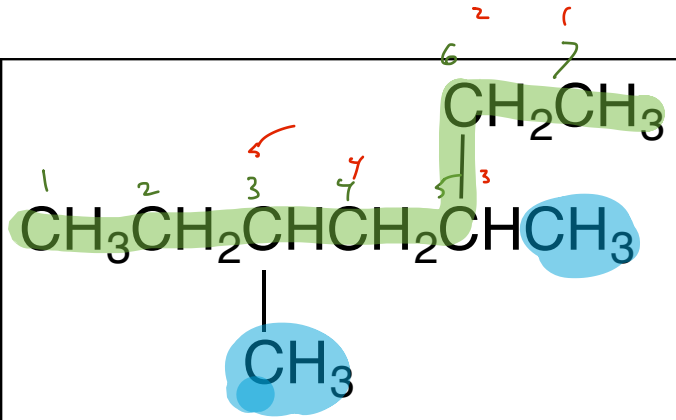
alkane

substituent names:

CH_3 } dimethyl
CH_3 }

substituent positions:

3, 5
3, 5



name:

3,5-dimethylheptane

Nomenclature of Alkyl Halides

position#-**stuff hanging off longest chain****longest chain of C atoms**functional group ending

longest chain:

8

parent alkane name:

octane

functional group (?) and position:

alkane ... no position # needed

substituent names:

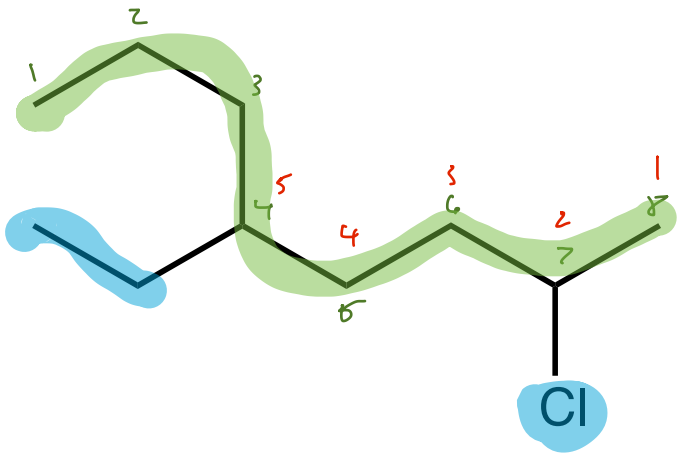
Cl: chloro

CH_2-CH_3: ethyl

substituent positions:

4 , 7

5 , 2



2-chloro-5-ethyloctane

Nomenclature of Alkyl Halides and Ethers

position#-**stuff hanging off longest chain** **longest chain of C atoms** **functional group ending**

longest chain:

7

parent alkane name:

heptane

functional group ~~(?) and position~~:

still an alkane

substituent names:

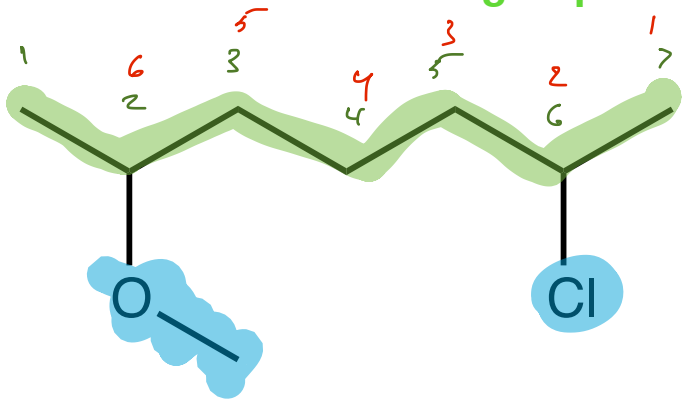
Cl - chloro

OCH_3 - methoxy

substituent positions:

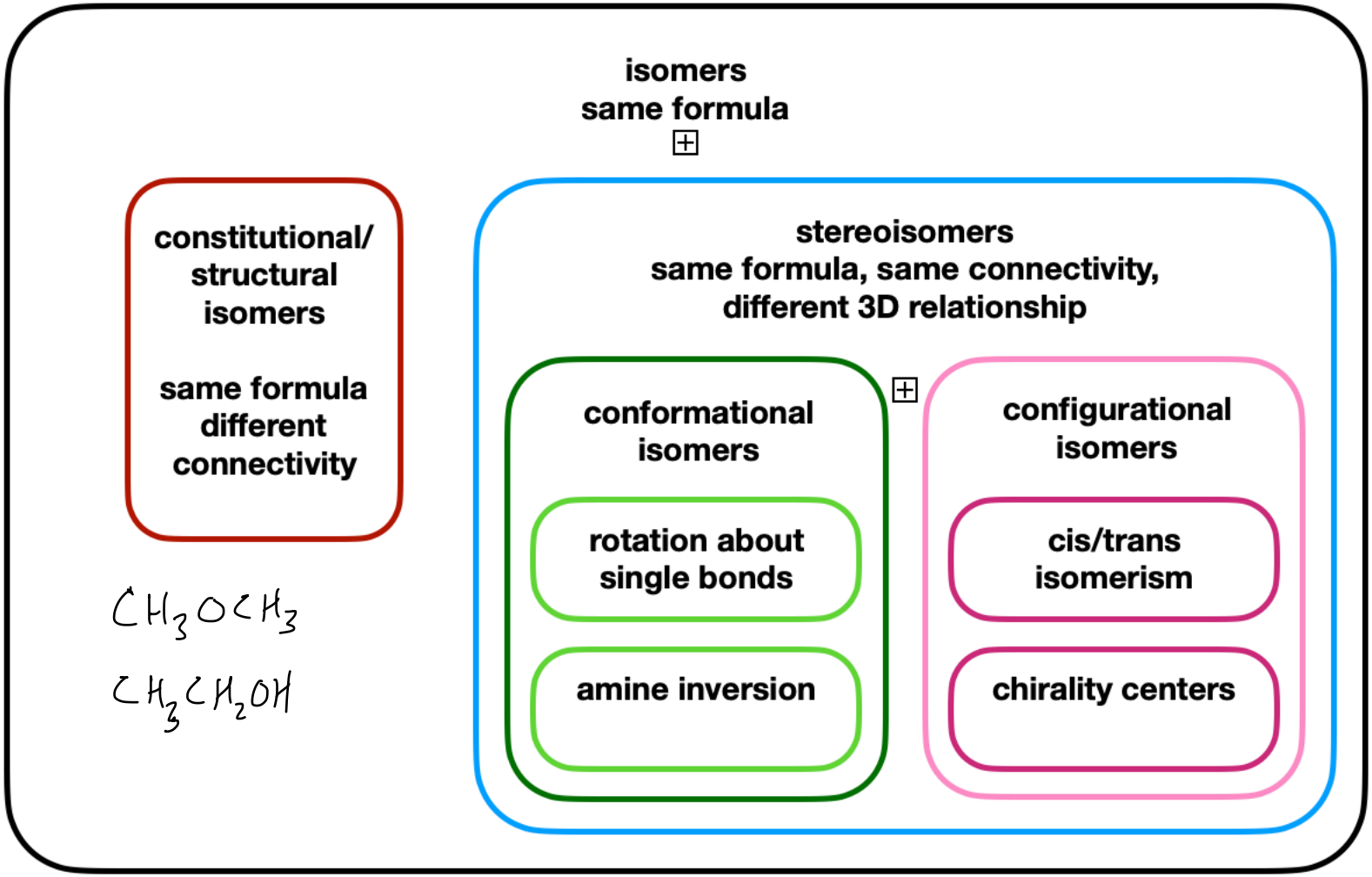
2, 6

6, 2



2-chloro-6-methoxy heptane

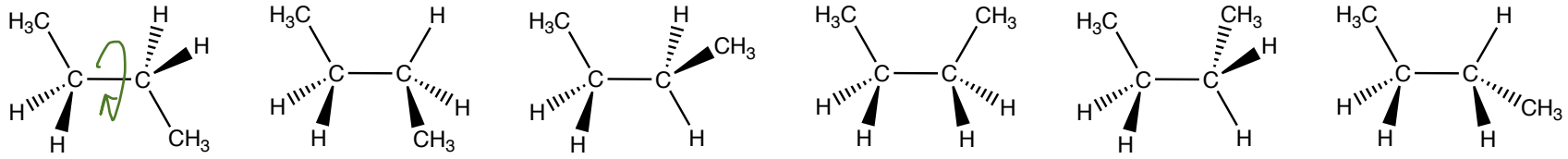
Isomers



CH_3OCH_3

CH_3CH_2OH

rotamers



https://www.westfield.ma.edu/cmasi/organic/newman/newman-plain.html