

Isomers

- Dbl bonds
- Single bonds.

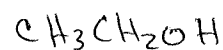
isomers

Stereoisomers

different arrangements in space.

Constitutional isomers

"different connections"



physical / Chem props change separated.

Conformational rapid interconversion

Configurational isomers

Bond Rotation

amine inversion

cis/trans

asymmetric center

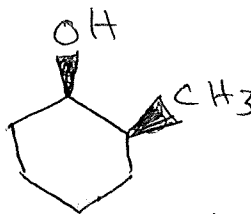
"can be separated"



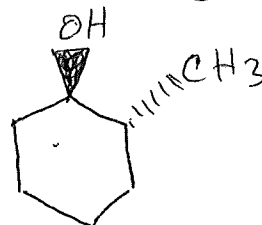
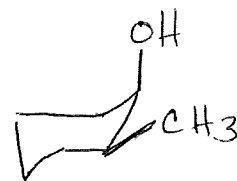
'can't separate

Restricted Rotation

NO interconversion break a bond.

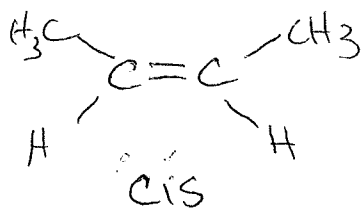


cis

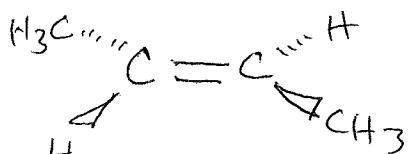
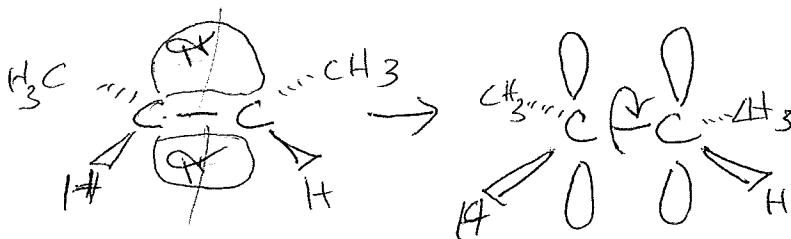


trans

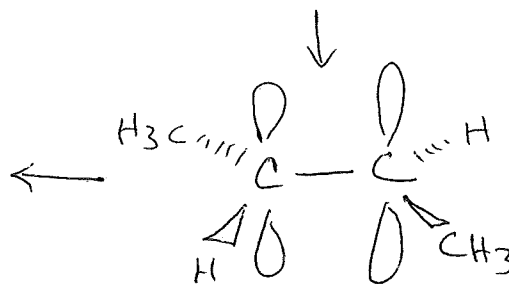




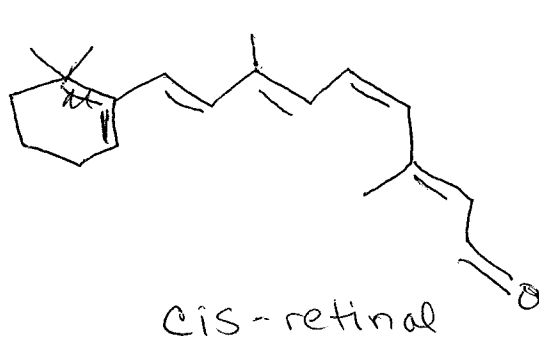
B.P. 3.7°C



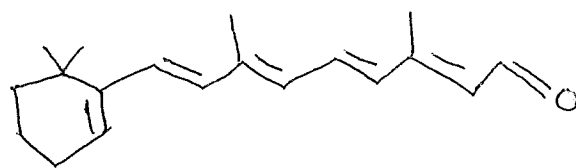
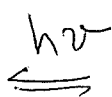
B.P. 0.9°C trans



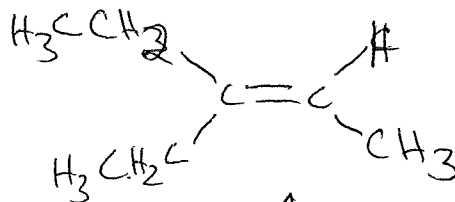
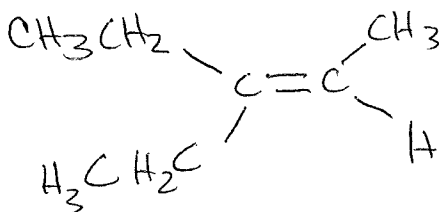
can be isolated from one another.



cis-retinal



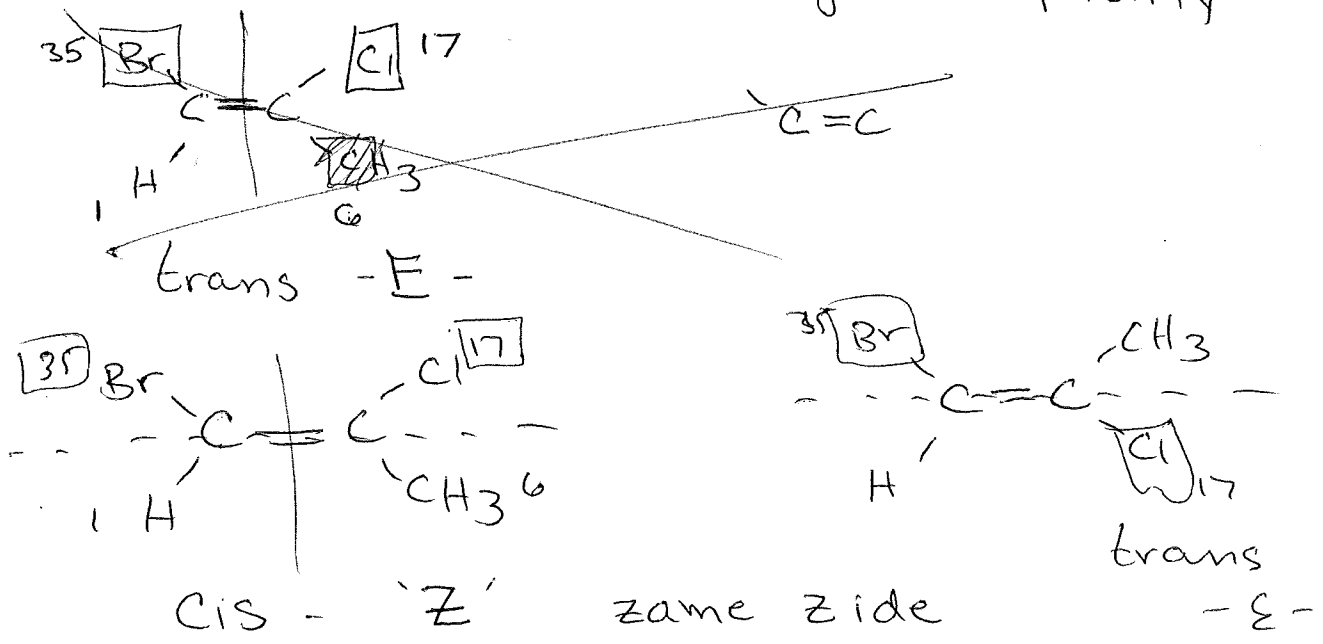
trans-retinal



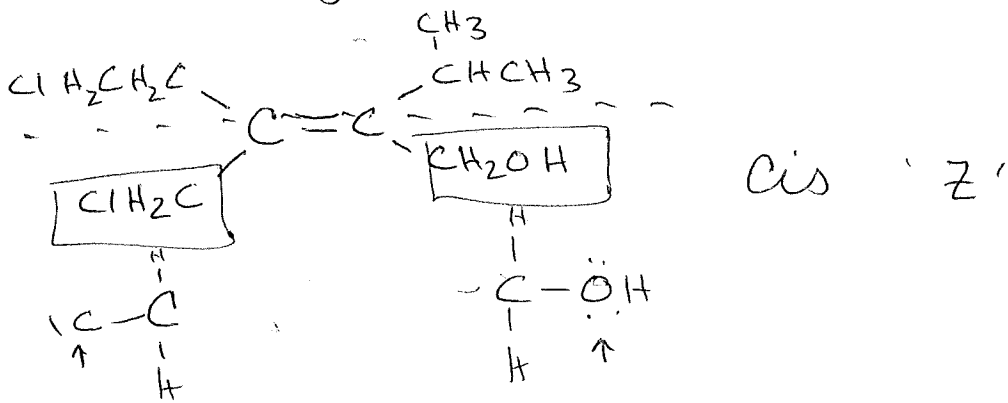
↑ same ↓  
not isomers / not different.

# Priorities

① Greater atomic number = greater priority



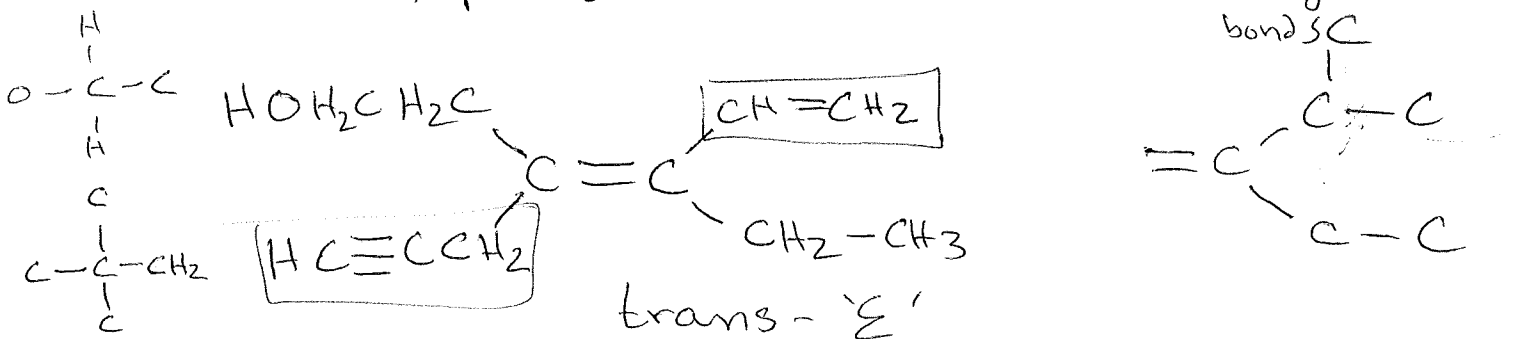
② Tie : go to the next atom



③ Ties multiple bonds = / ≡

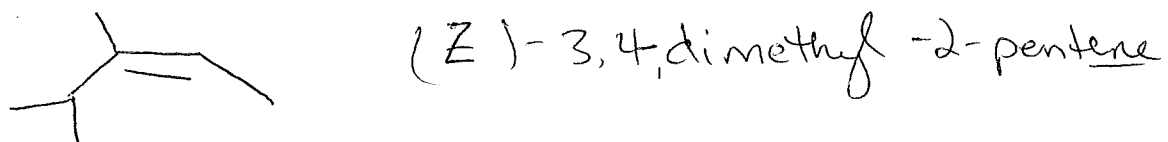
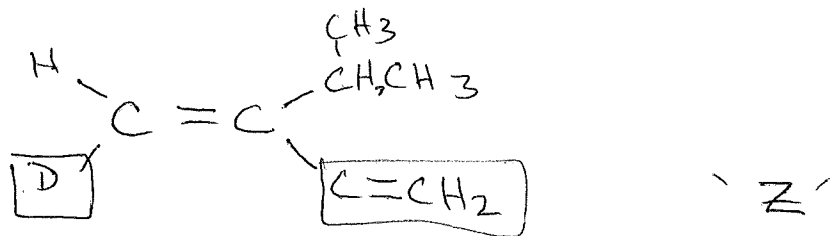
dbl bond is treated like 2 single bonds

trpl bond is treated like 3 single bonds



④

Two isotopes of same atom  
priority goes to the higher  
molecular mass.



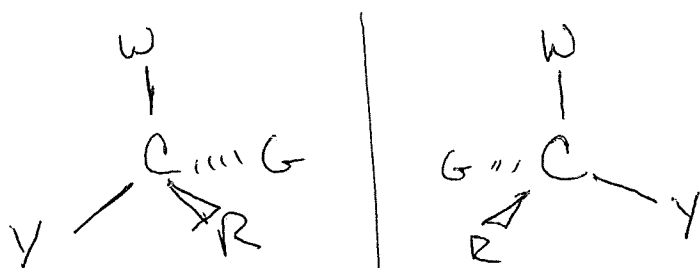
Restricted Rotation - Dbl Bonds.

Chiral centers - non-superimposable mirror  
images.

Chirality - an a symmetric center.

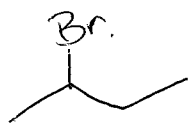
Pair of non-superimposable

Enantiomers

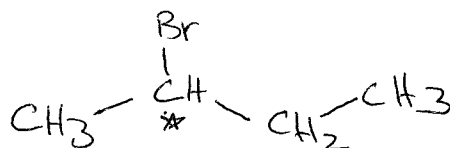


same physical  
Properties

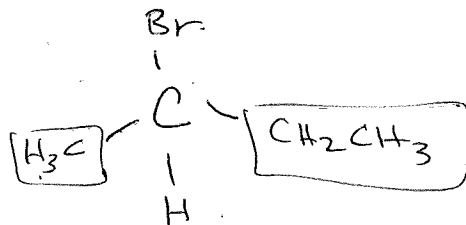
2-bromobutane



find the chiral center.

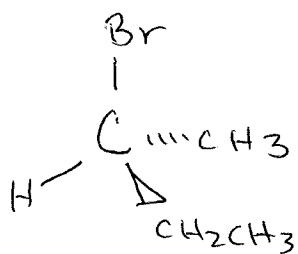


C - 4 different thing

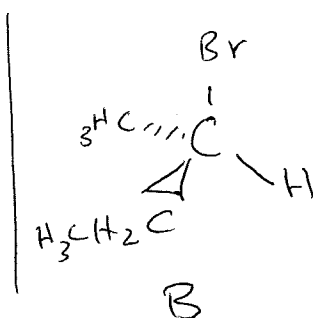


Chirality is a property of the molecule.

Thalidomide

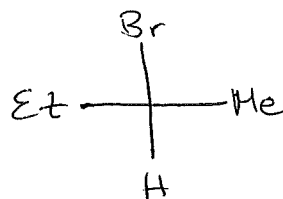


A

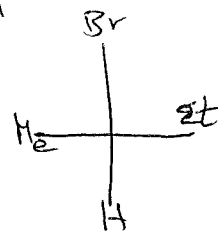


B

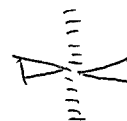
Fisher Projection



A

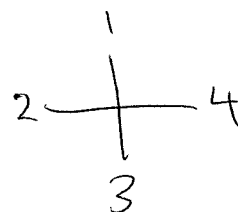
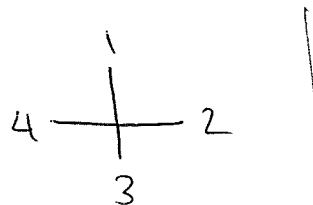


B



Drawing Fisher

① Any order is fine



② switch 2 of them CL/R or (T/B)

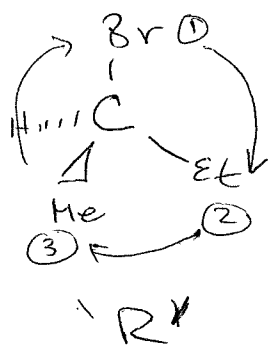
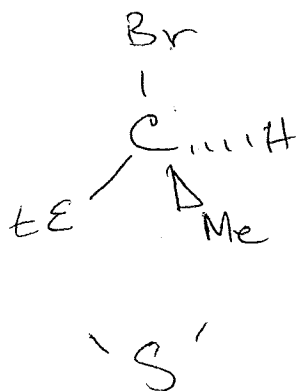
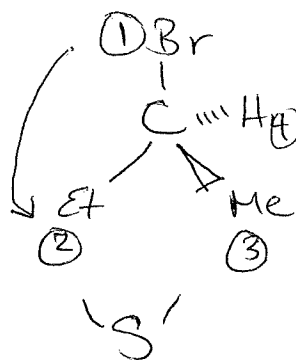
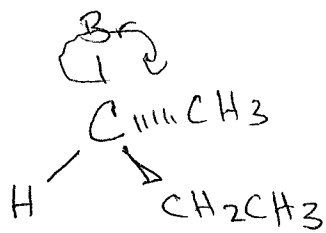
# R-S naming

# 2-bromobutane

1. Assign priorities
2. Give 4<sup>th</sup> (Lowest) the hashed wedge
3. Arrow connect  $1 \rightarrow 2 \rightarrow 3$

clockwise 'R' rectus

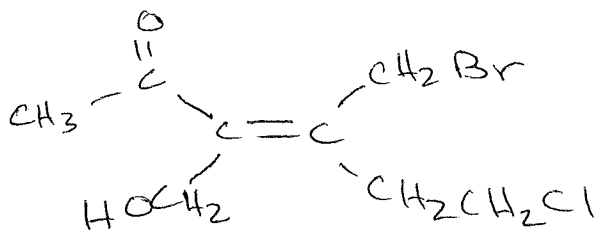
counter-clockwise 'S' sinister



S-2-bromobutane

R-2-bromobutane

E, Z



2-bromo -4 chloropentane  
Methyl  
both enantiomers