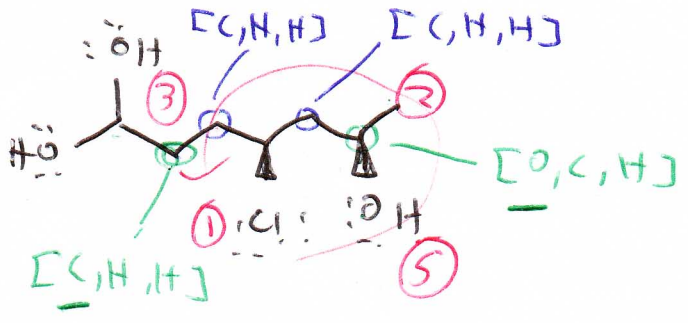
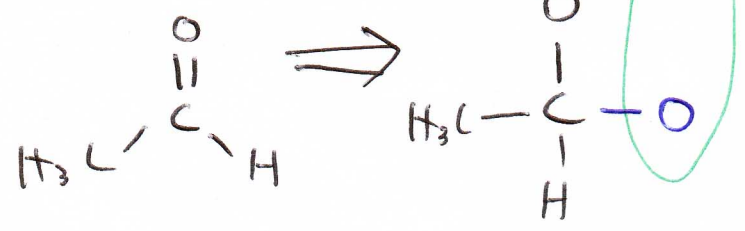


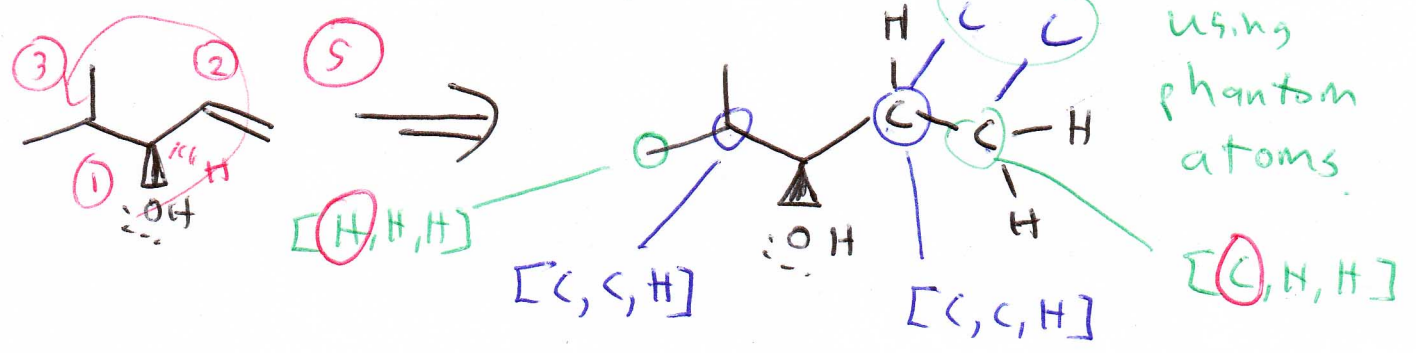
R or S???



Phantom (or Virtual) atoms

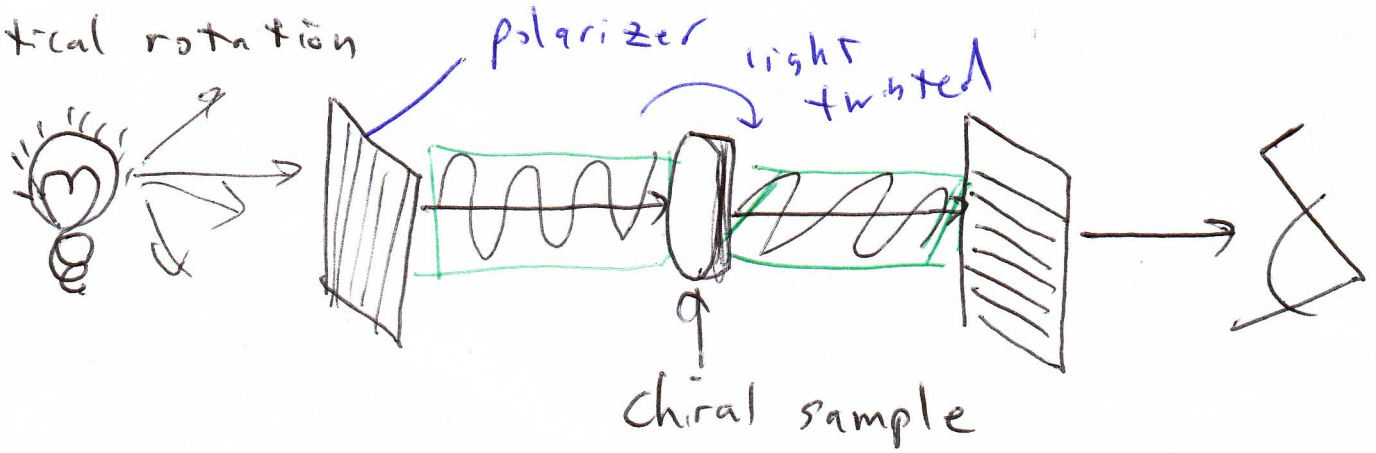


When determining priorities of double or triple bonds, the bonds are rewritten using multiple single bonds.



enantiomers, diastereomers, optical activity, racemization

optical rotation

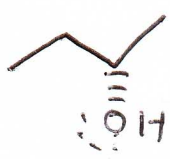


Optical rotation - a physical property of chiral compounds in which plane-polarized light (light oscillating in only one direction) is twisted as it passes through the compound.

\* Molecules that are mirror images will have equal but opposite optical rotation (clockwise versus counter clockwise)

\* There is no connection between R/S and +/-, except that mirror molecules have opposite rotation.

(S)-butan-2-ol



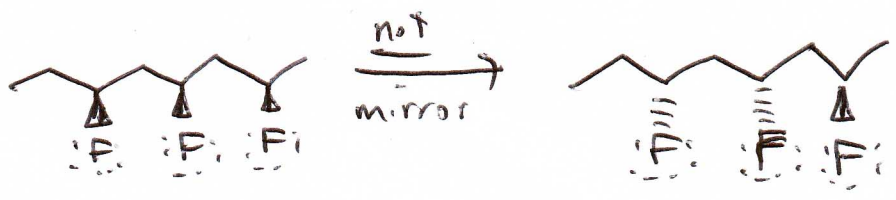
enantiomers - non-superimposable mirror images

All stereocenters are inverted



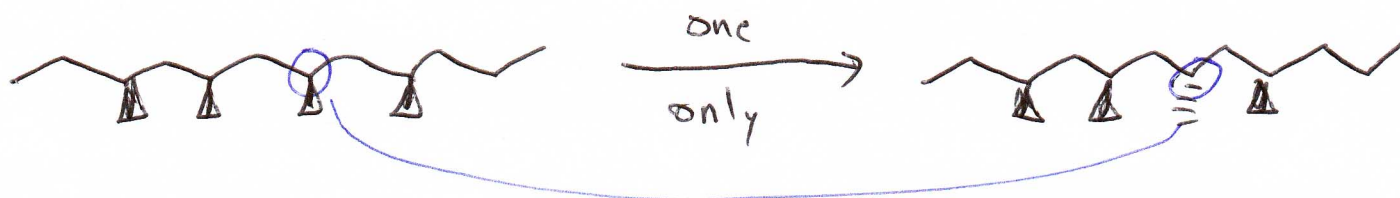
enantiomers - all physical properties are identical except optical rotation.

diastereomer - non-superimposable non-mirror image. Some stereocenters, but not all, are inverted

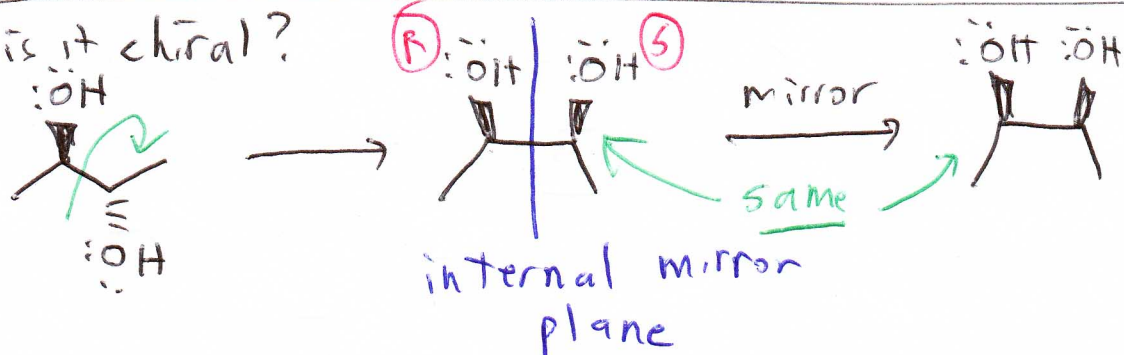


Diastereomers have different physical properties.

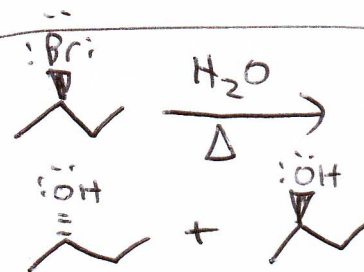
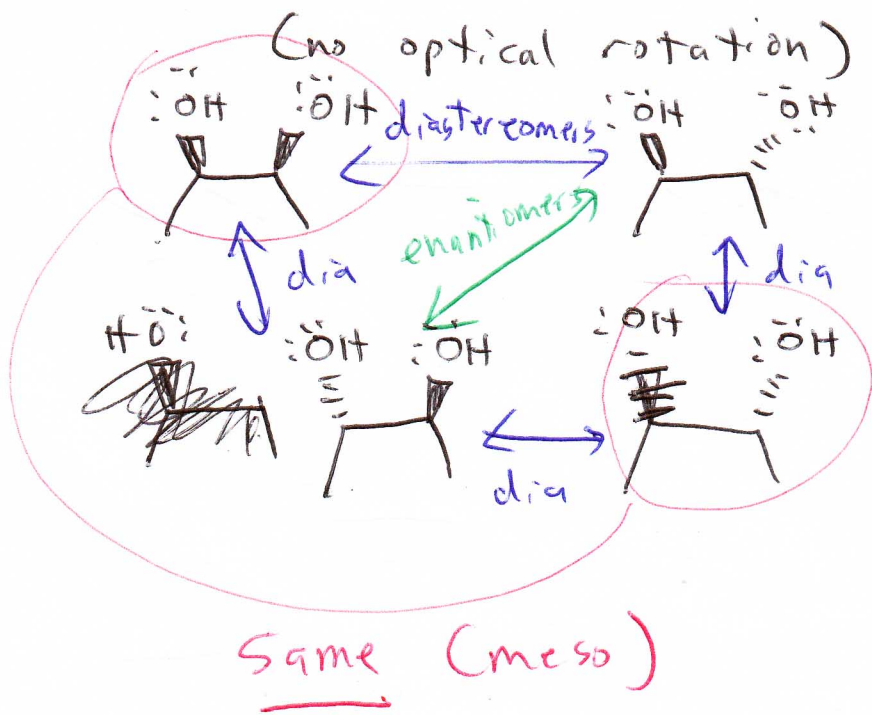
epimer - subset of diastereomer in which only one #3 configuration is different



is it chiral?



meso - a molecule that has stereocenters but is achiral. This occurs because there is an internal mirror plane of symmetry which causes the optical rotation of one half of the molecule to cancel the effect of the other half,



If enantiomers are present in equal quantities, the soln is called racemic,