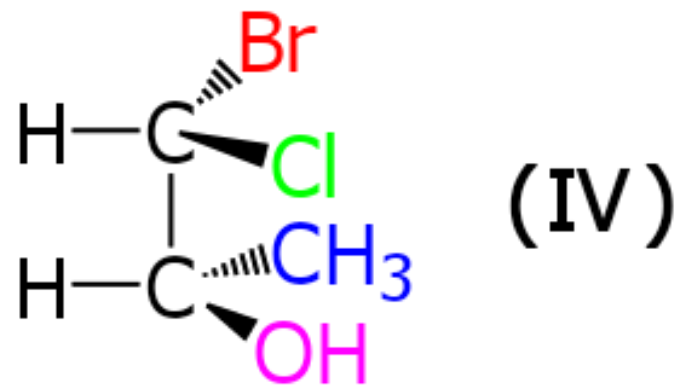
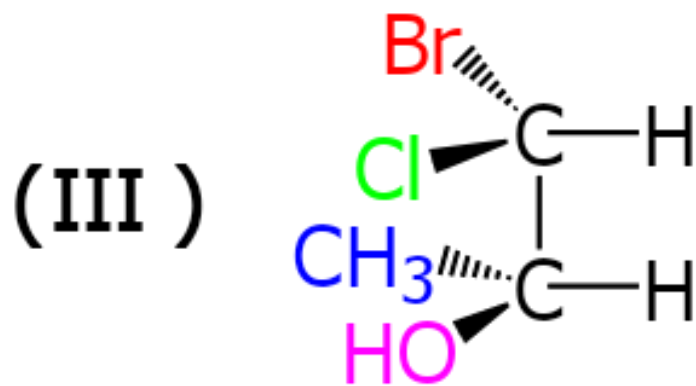
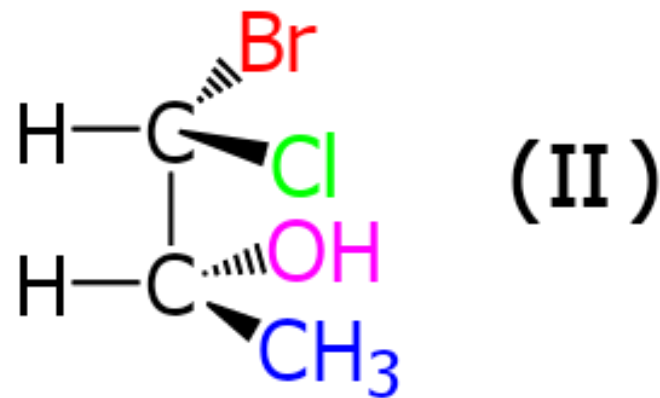
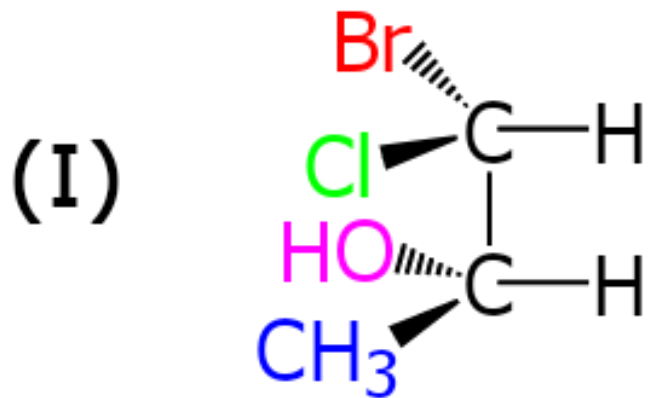
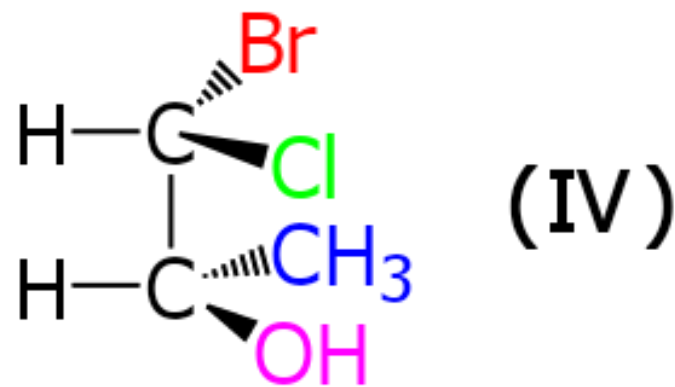
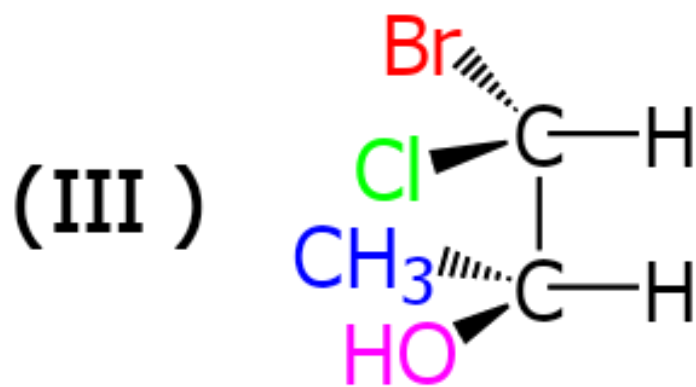
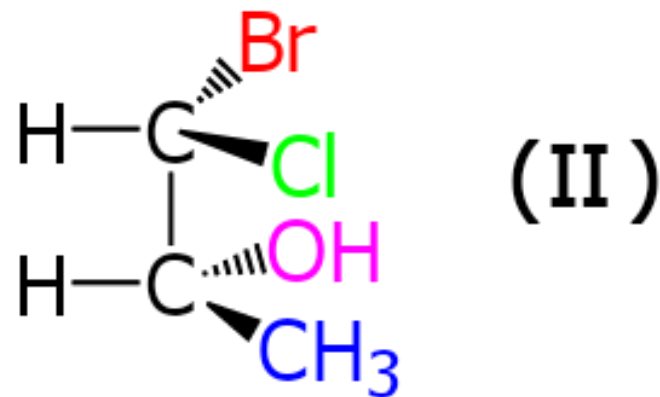
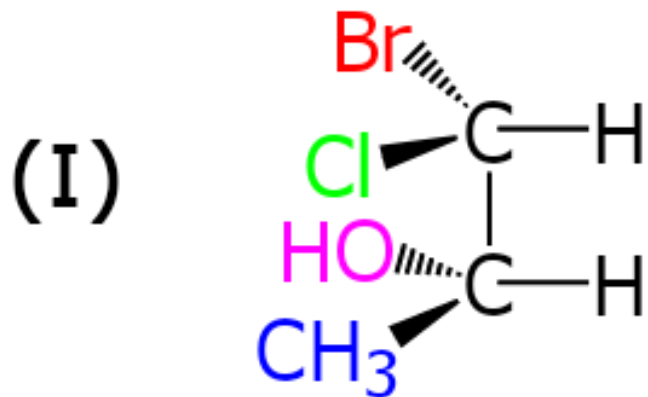




- ❖ (I) & (II) are enantiomers to each other
- ❖ (III) & (IV) are enantiomers to each other

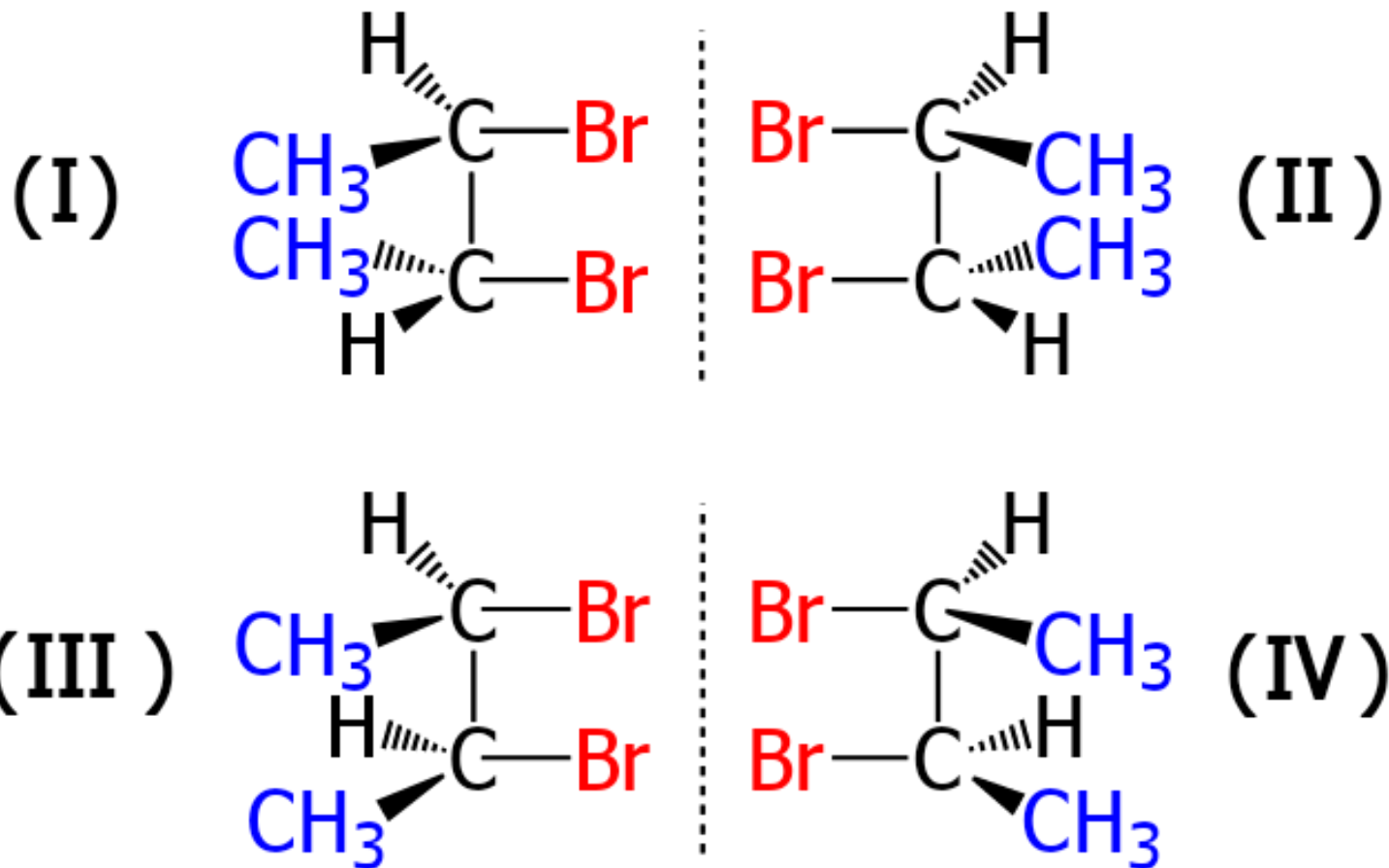


❖ Diastereomers to each other:

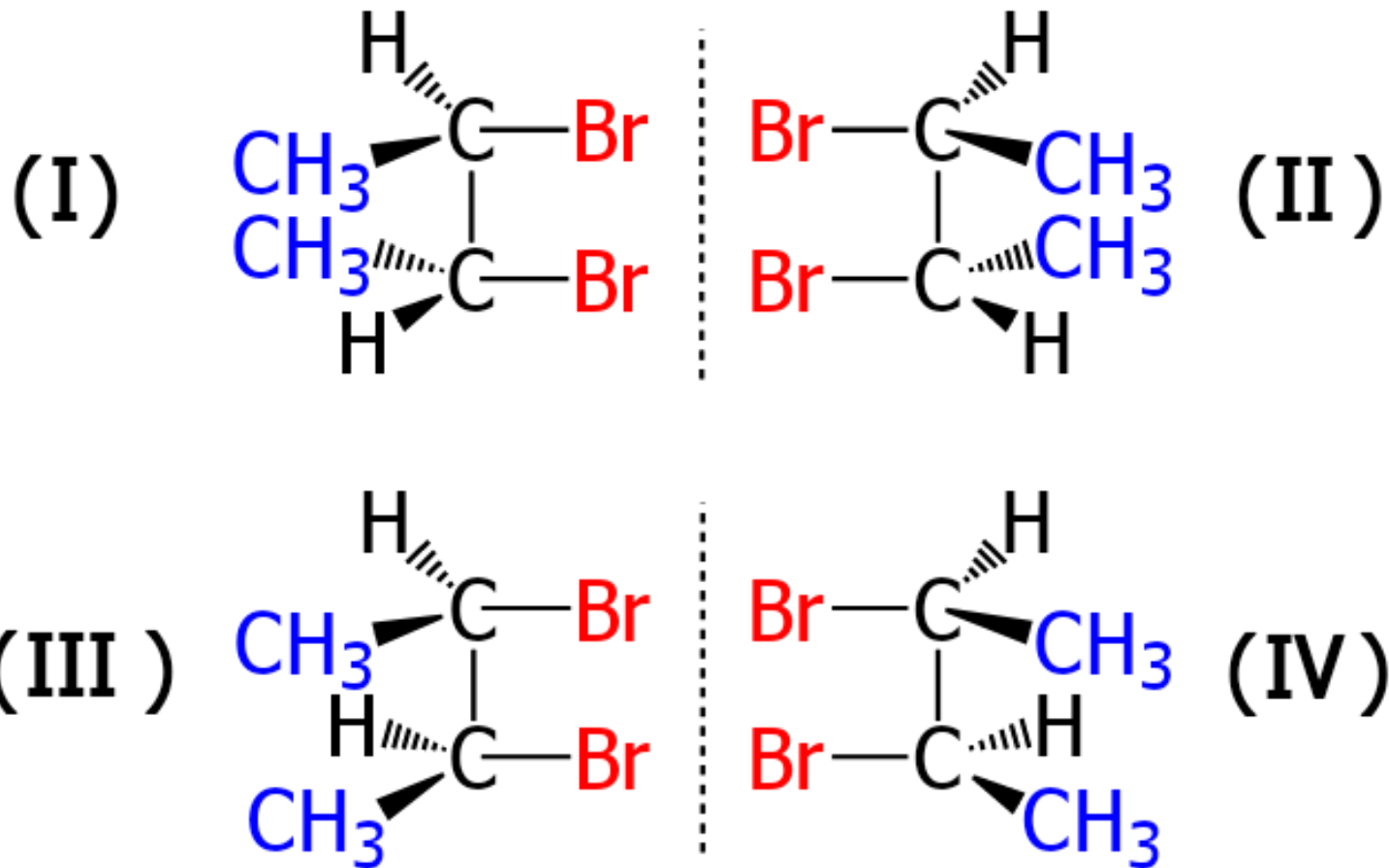
- (I) & (III), (I) & (IV), (II) & (III), (II) & (IV)

10A. Meso Compounds

- ❖ Compounds with two stereocenters do not always have four stereoisomers ($2^2 = 4$) since some molecules are achiral (not chiral), even though they contain stereocenters
- ❖ For example, 2,3-dichlorobutane has two stereocenters, but only has 3 stereoisomers (not 4)

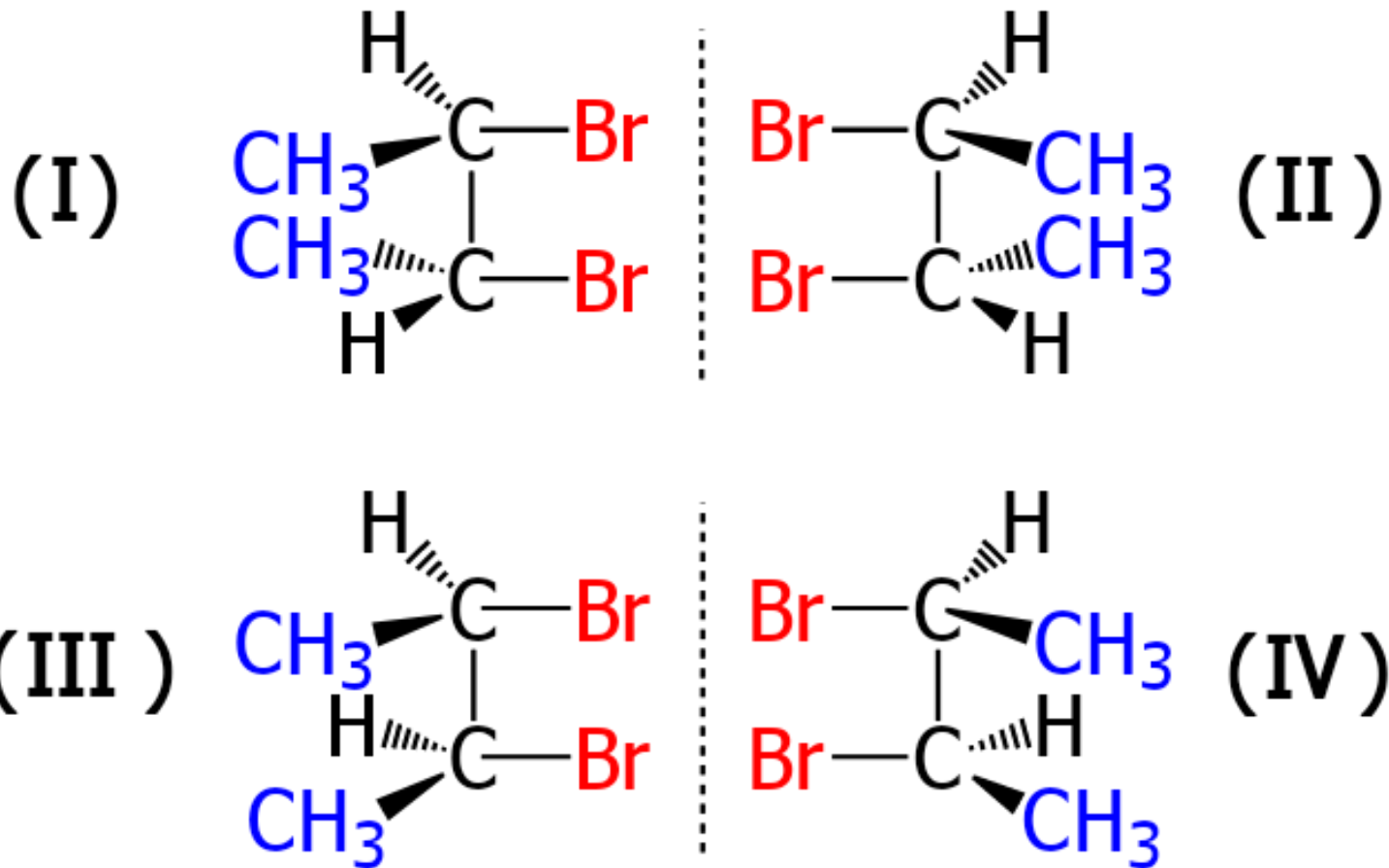


Note: (III) contains a plane of symmetry, is a meso compound, and is achiral ($[\alpha] = 0^\circ$).



⊗ (I) & (II) are enantiomers to each other and chiral

⊗ (III) & (IV) are identical and achiral

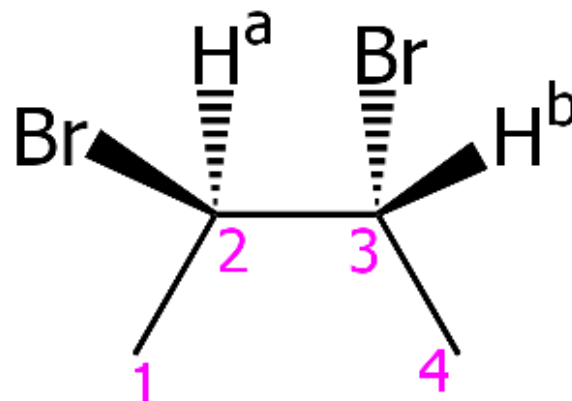


- ❖ (I) & (III), (II) & (III) are diastereomers
- ❖ Only 3 stereoisomers:
 - the same connectivity
 - the same molecular formula
 - they are not mirror image
 - (I) & (II) {enantiomers}, (III) {meso}
 - it's stere but not enantiomers

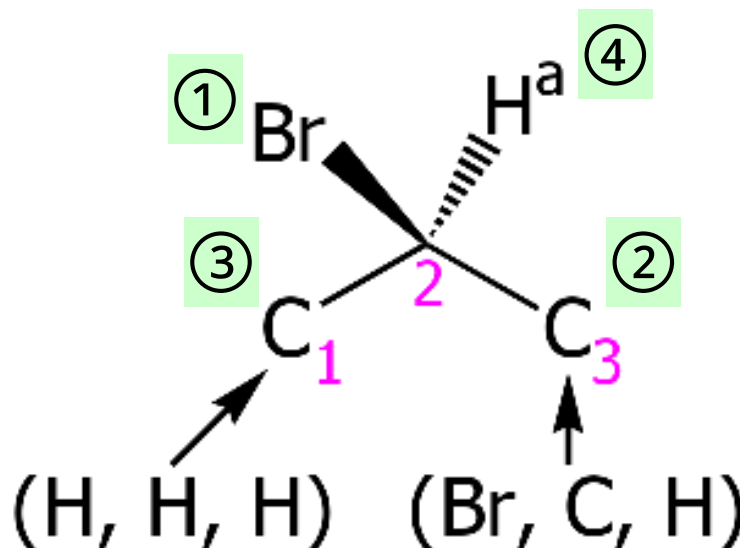
10B. How to Name Compounds with More than One Chirality Center

❖ 2,3-Dibromobutane

حدد ال S / R

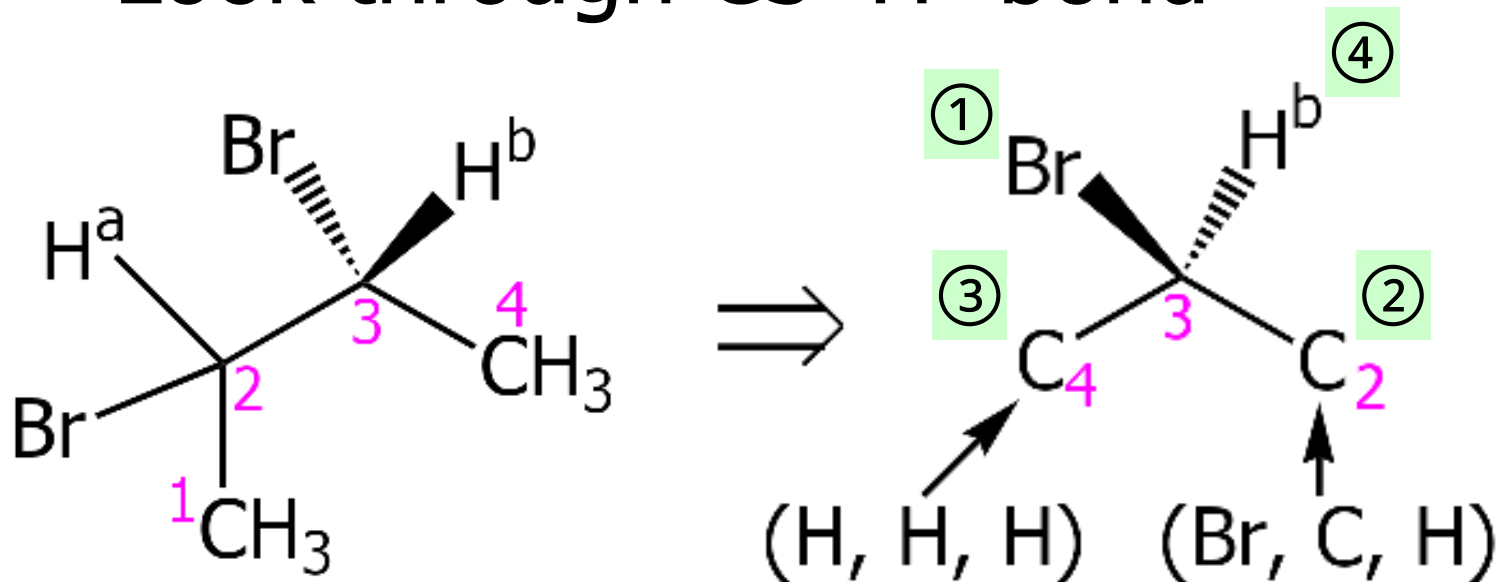


- Look through C2–H^a bond



C2: (R)
configuration

- Look through C3–H^b bond

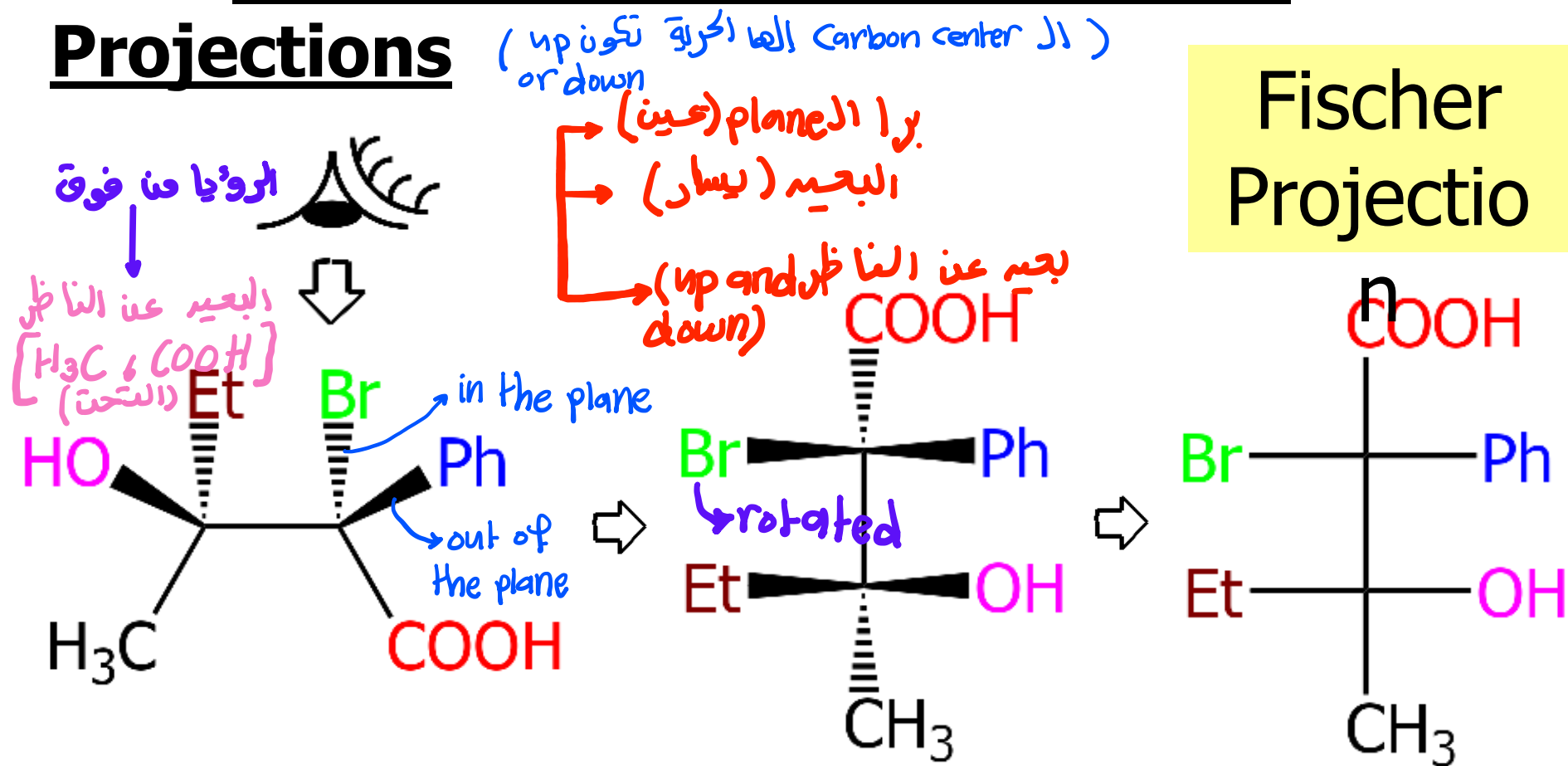


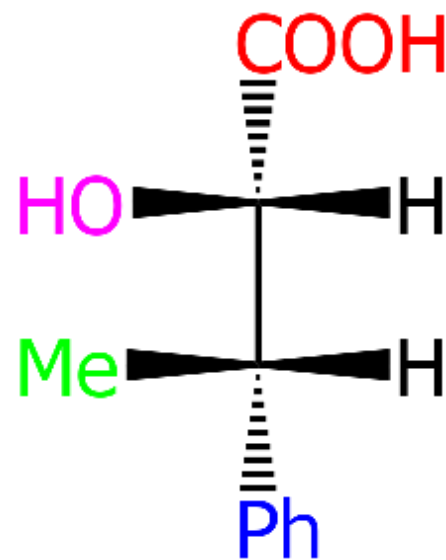
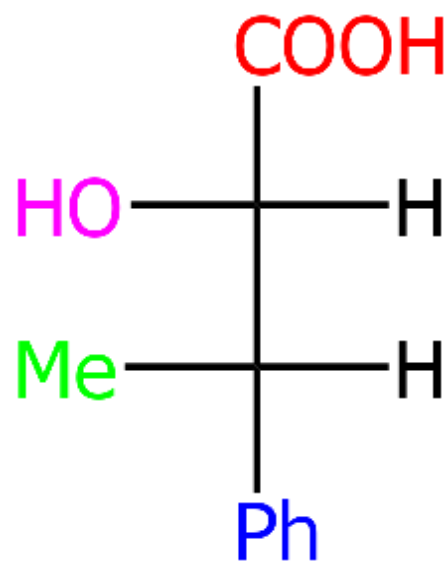
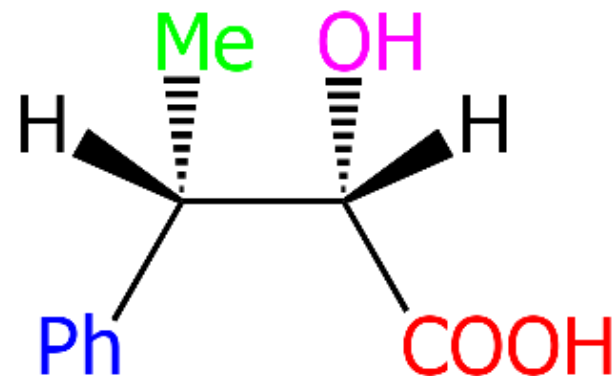
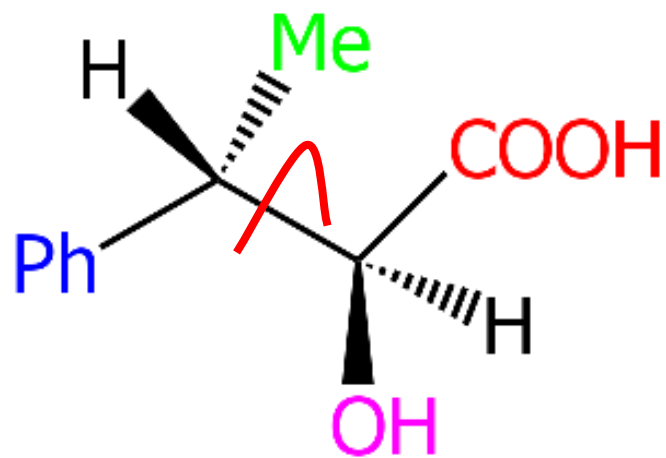
C3: (*R*)
configuration

- Full name:
 - ♦ (*2R, 3R*)-2,3-Dibromobutane

11. Fischer Projection Formulas

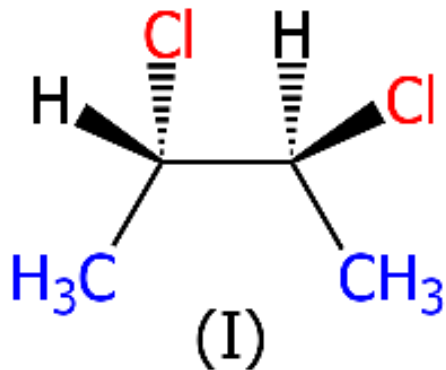
11A. How To Draw and Use Fischer Projections



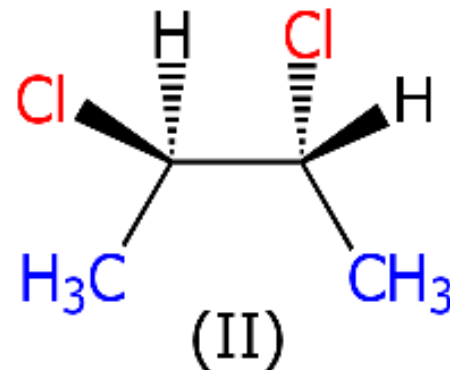


Fischer
Projectio

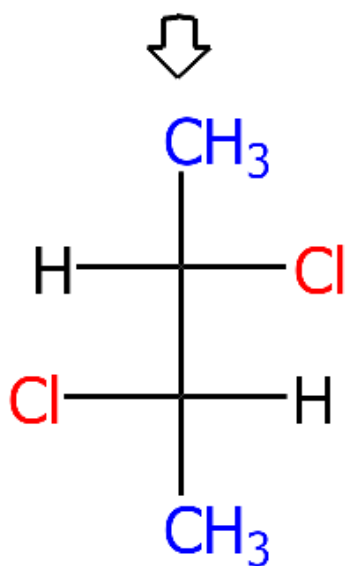
n



(2*S*, 3*S*)-Dichlorobutane

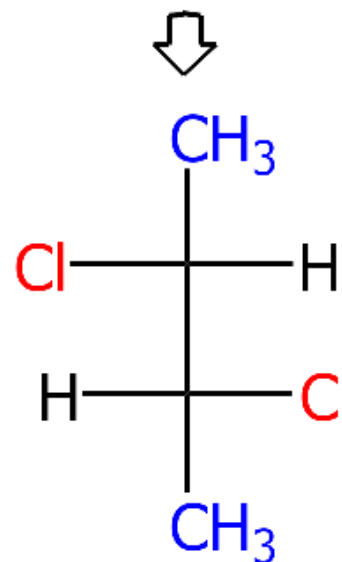


(2*R*, 3*R*)-Dichlorobutane



enantiomer

mirror



- ❖ (I) and (II) are both chiral and they are enantiomers with each other