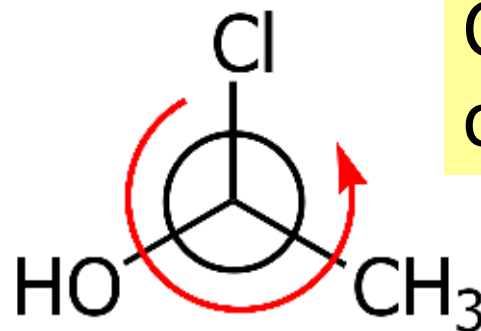
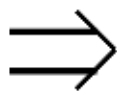
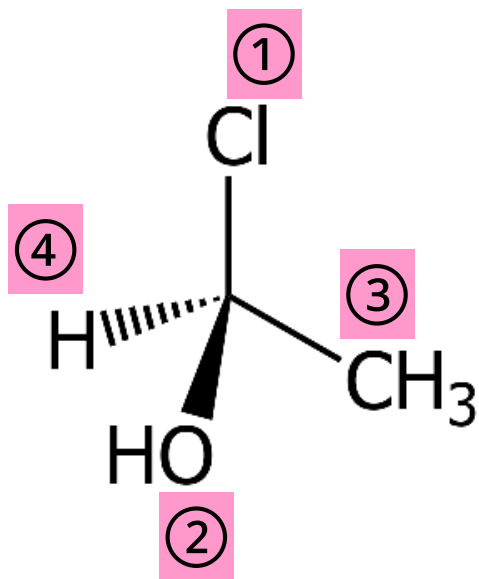
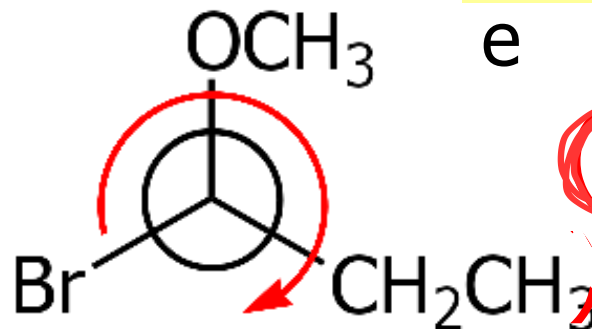
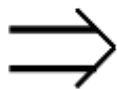
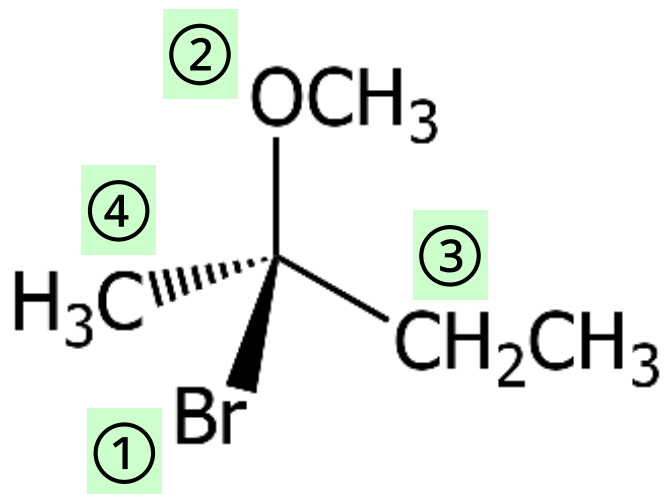


❖ Other examples



Counter-clockwise

S



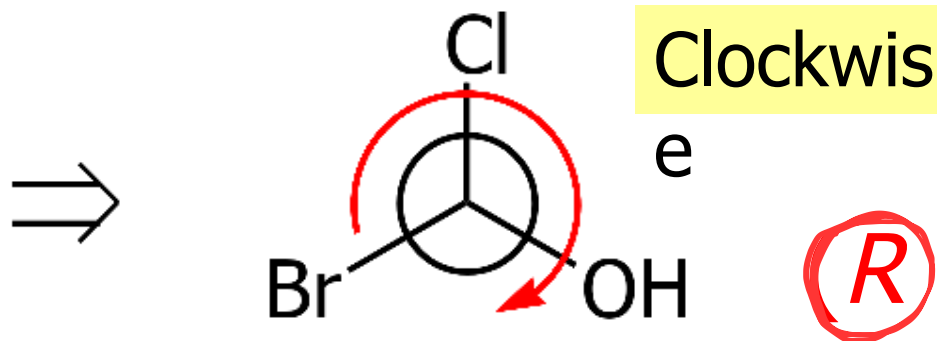
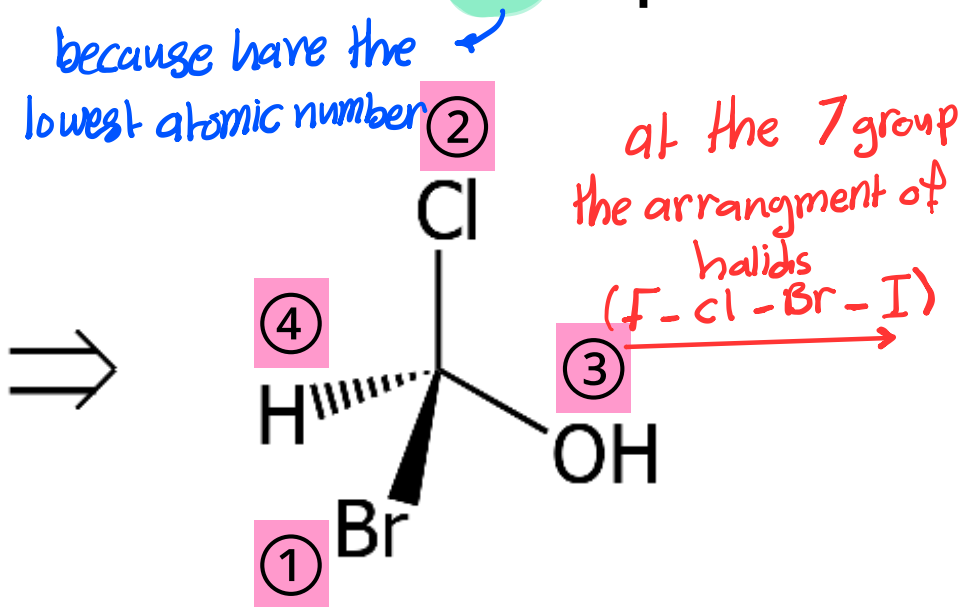
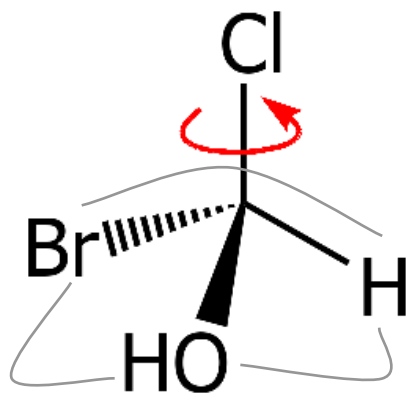
Clockwise

e

R

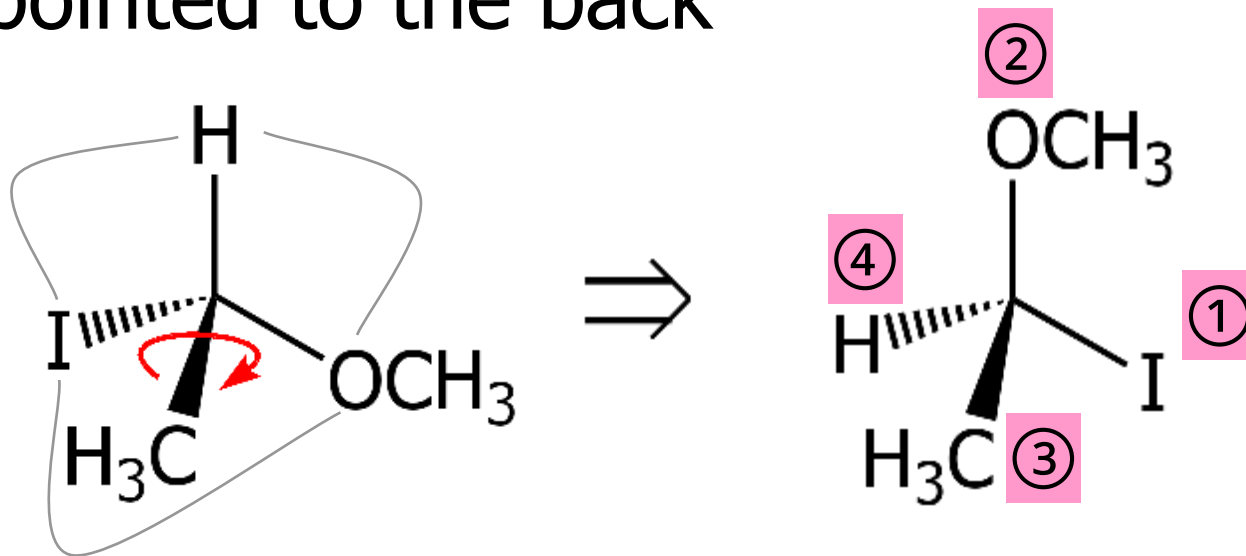
❖ Other examples

- Rotate C–Cl bond such that H is pointed to the back

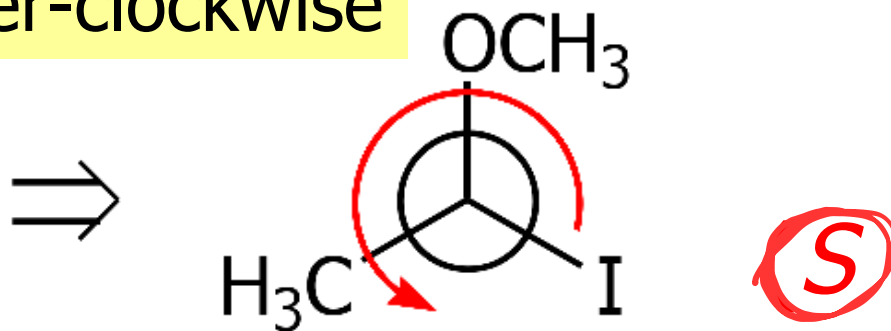


❖ Other examples

- Rotate C–CH₃ bond such that H is pointed to the back

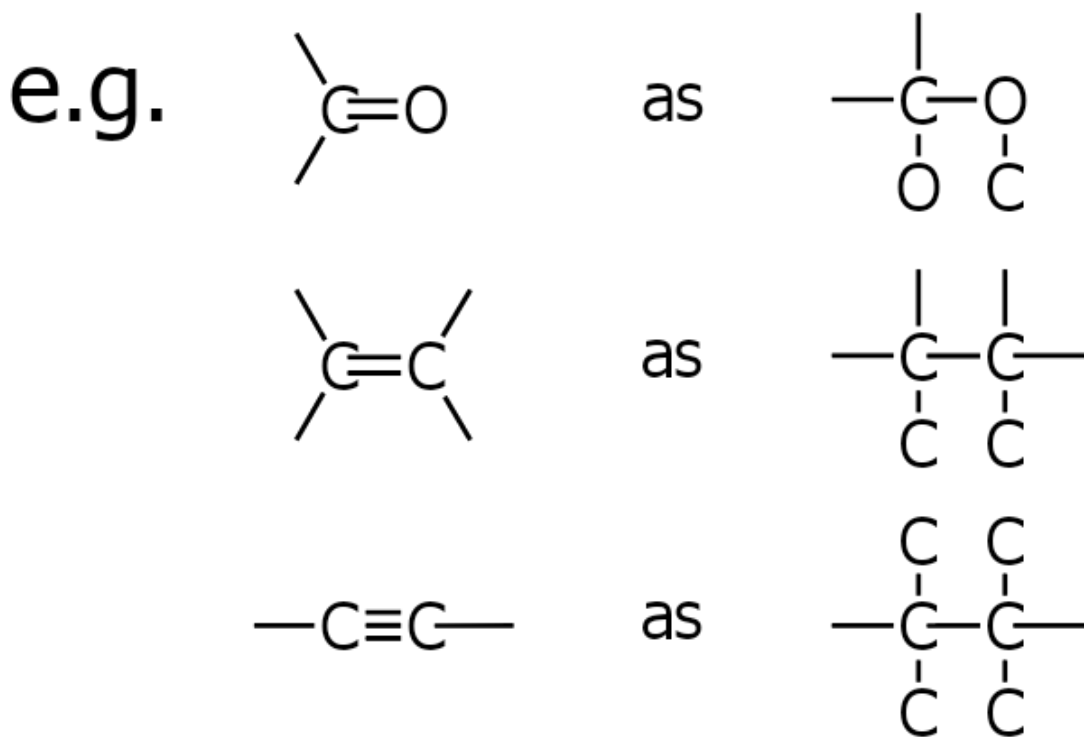


Counter-clockwise

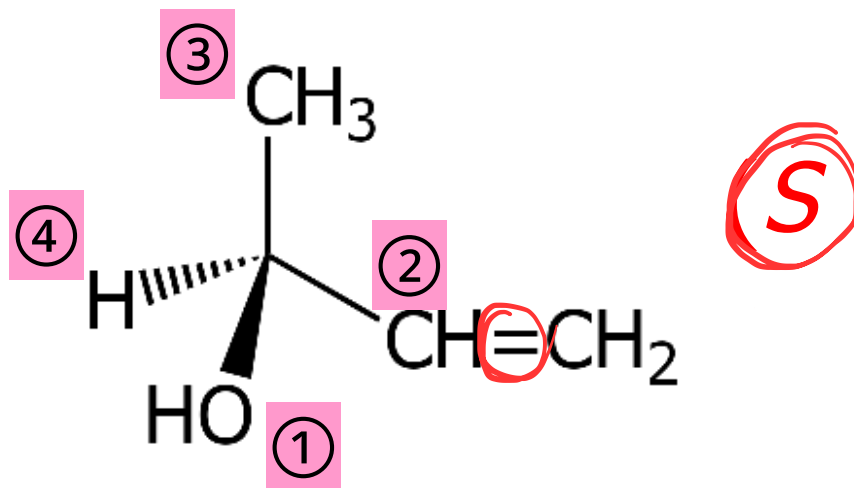


❖ Rule 4

- For groups containing double or triple bonds, assign priorities as if both atoms were duplicated or triplicated



❖ Example



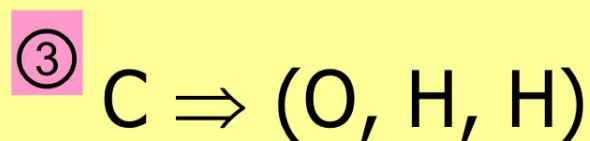
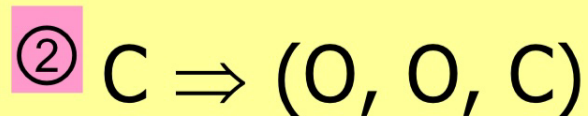
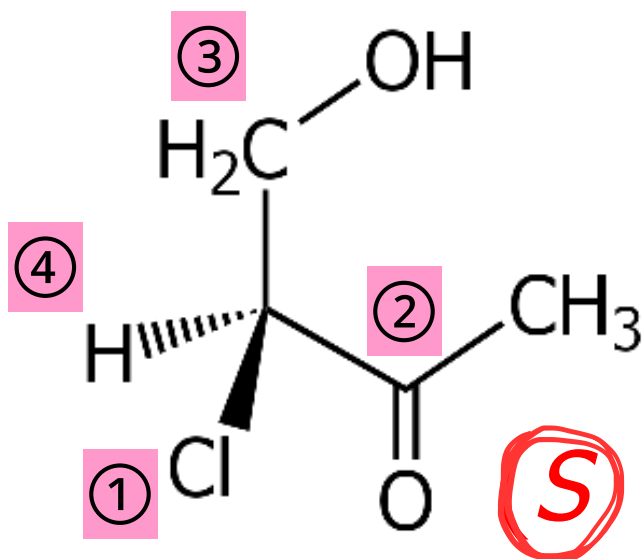
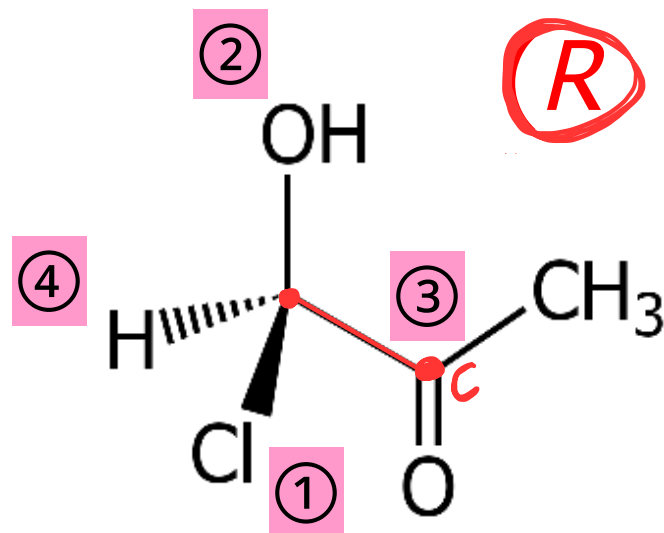
Compare —CH₃ & —CH=CH₂ :



Thus, —CH₃ $\Rightarrow$ (H, H, H)

—CH=CH₂ $\Rightarrow$ (C, C, H)

❖ Other examples

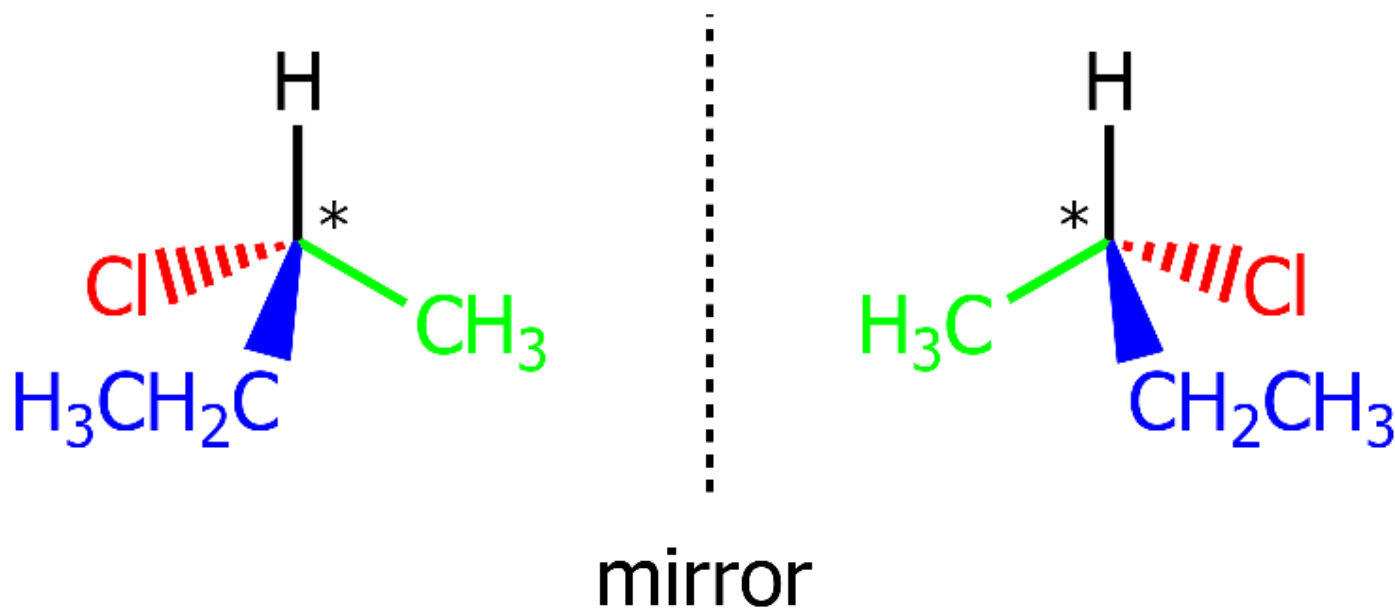


7. Properties of Enantiomers:

Optical Activity

❖ Enantiomers

- Mirror images that are not superposable



the optical activity

(physical property)

هي خاصية اخافة ضوء على ال Chiral

في ا حالة الطبيعة الضوء ينتشر في جميع الاتجاهات
والا مطلوب جميع الضوء في نقطة وحدة (polarized light)

يعني هو تعرض ال sample (enantiomers)
الضوء انحراف بزوايا معينة
have a chiral center

صاى الزاوية يمكن قياسها وهي ثابتة لكل enantiomers

اذا انحراف باتجاه اليمين (+) 1. اذا انحراف باتجاه الشمال (-) 2.

- ❖ Enantiomers have identical physical properties (e.g. melting point, boiling point, refractive index, solubility etc.)

Compound	bp (°C)	mp (°C)
(<i>R</i>)-2-Butanol	99.5	
(<i>S</i>)-2-Butanol	99.5	
(+)-(<i>R,R</i>)-Tartaric Acid		168 – 170
(-)-(<i>S,S</i>)-Tartaric Acid		168 – 170
(+/-)-Tartaric Acid		210 – 212

❖ Enantiomers

- Have the same chemical properties (except reaction/interactions with chiral substances)
- Show different behavior only when they interact with other chiral substances
- Turn plane-polarized light on opposite direction

❖ Optical activity

- The property possessed by chiral substances of rotating the plane of polarization of plane-polarized light