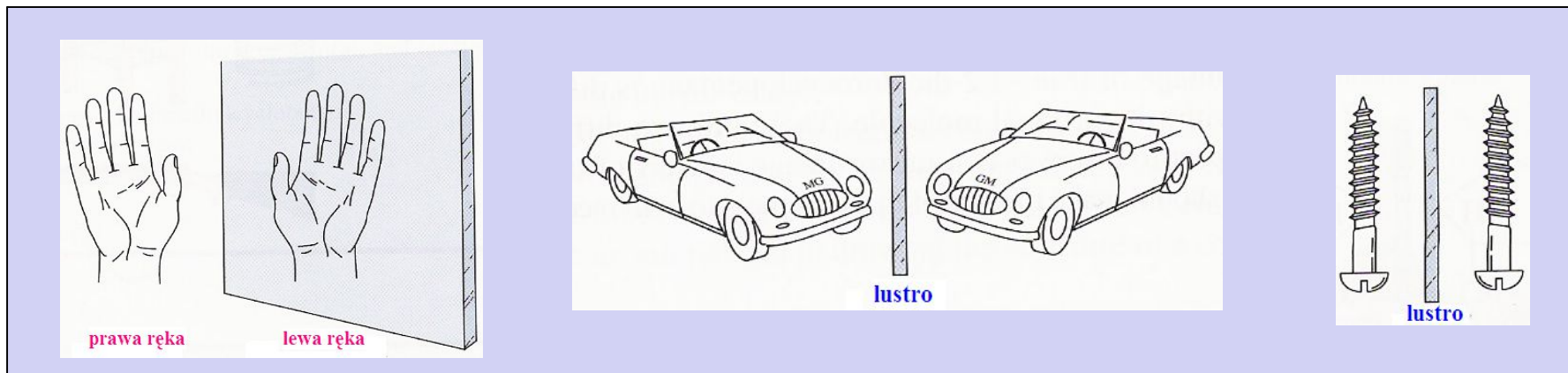
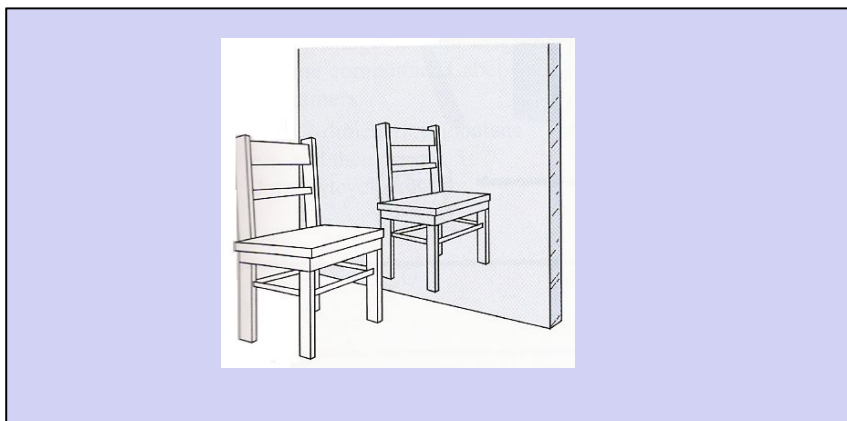


STEREOIZOMERIA – a pojęcie chiralności

CHIRALNOŚĆ -



obiekty chiralne

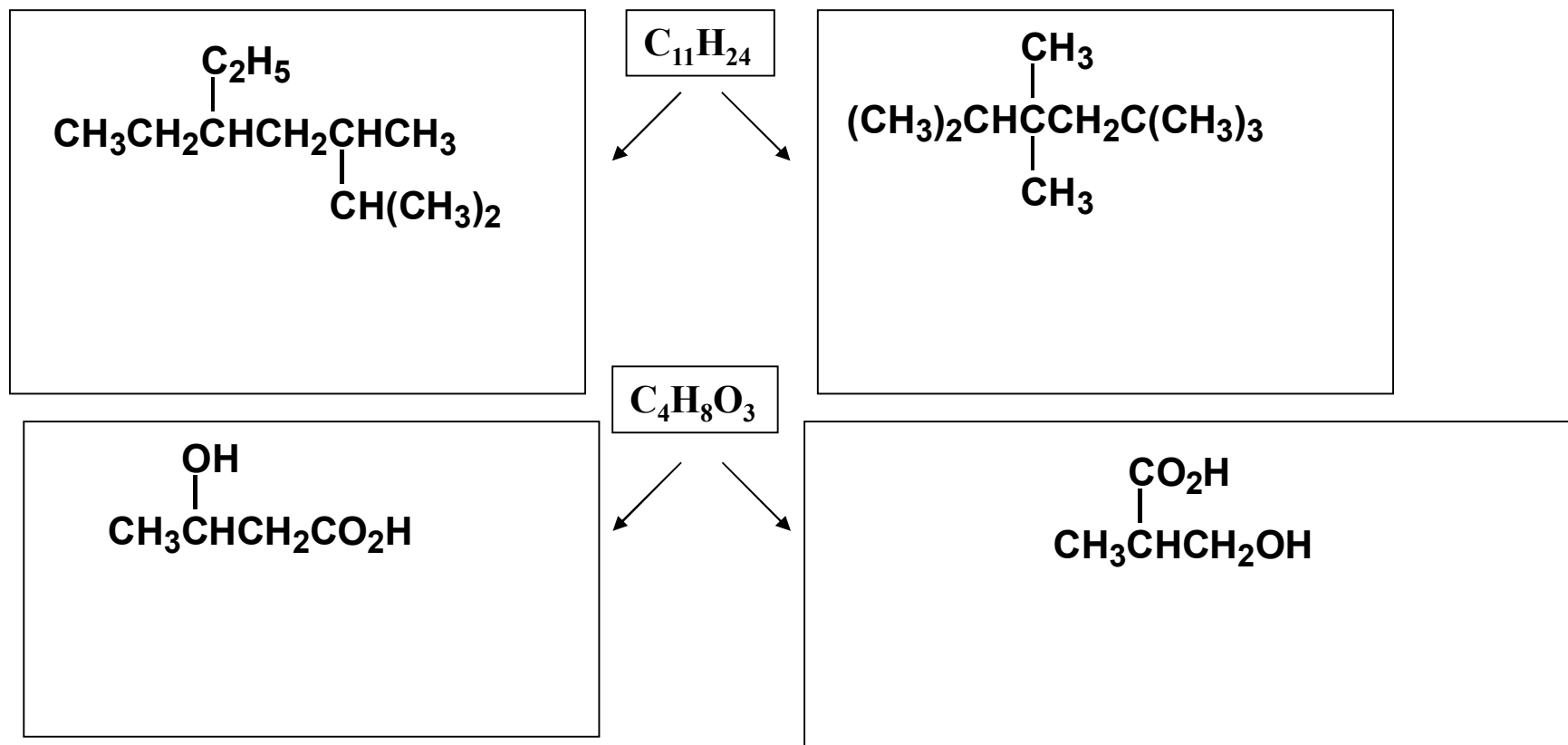


obiekty achiralne

STEREOIZOMERIA

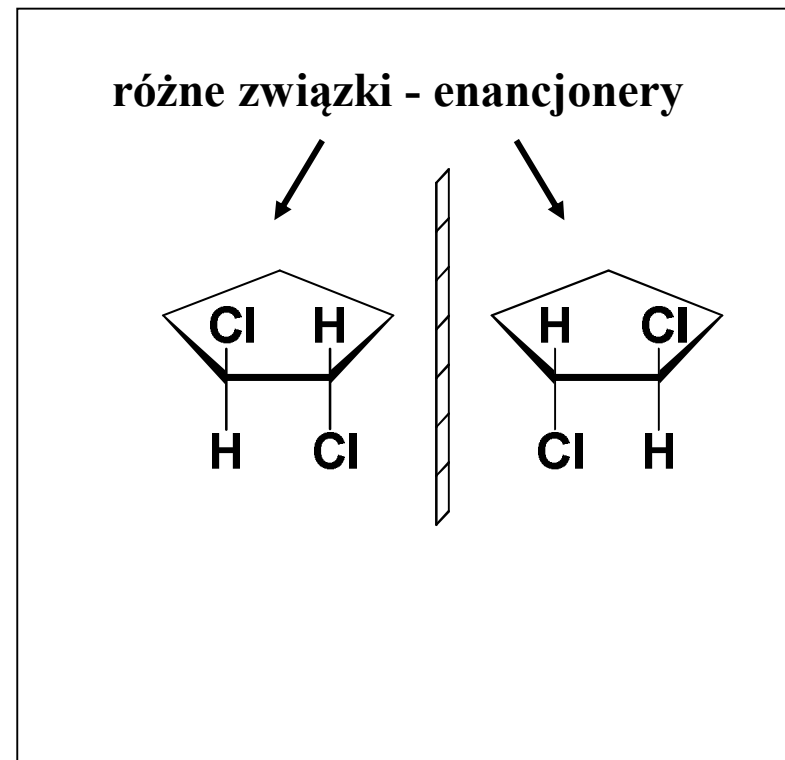
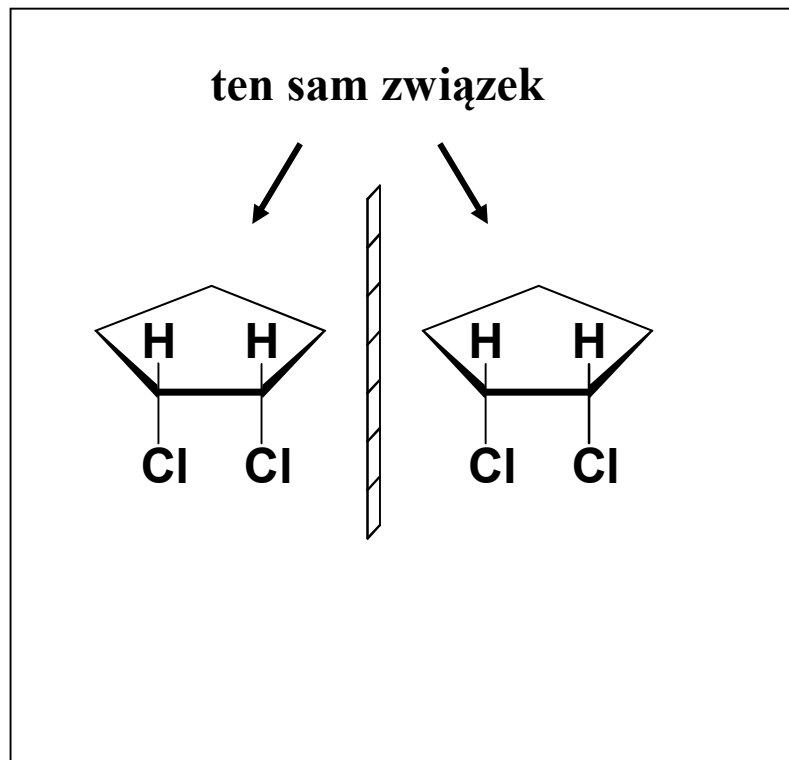
1. IZOMERY-

1.1 Izomery konstytucyjne

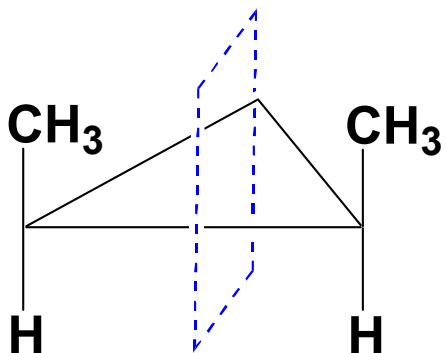


CHIRALNOŚĆ I ENANCJOMERIA W ZWIĄZKACH ORGANICZNYCH

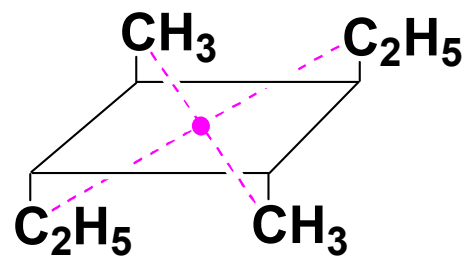
1.2 Izomery geometryczne *cis-trans*



ELEMENTY SYMETRII WYSTĘPUJĄCE W CZĄSTECZKACH ACHIRALNYCH

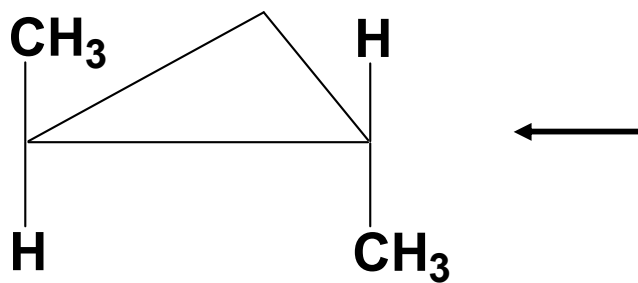


płaszczyzna symetrii



środek symetrii

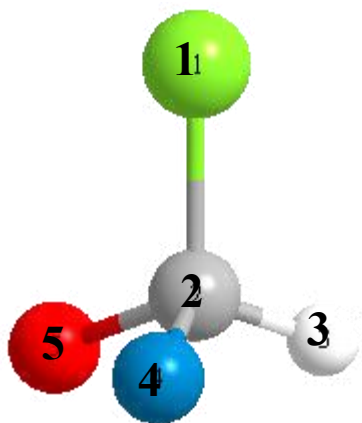
Ale:



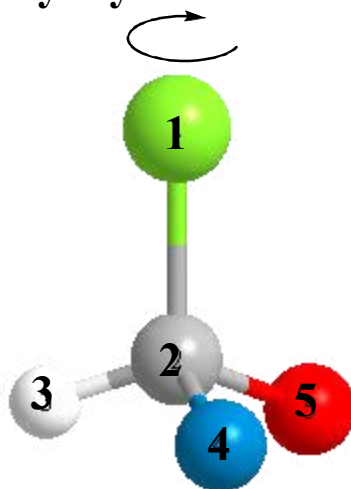
POJĘCIE ASYMETRYCZNEGO ATOMU WĘGLA

Asymetryczny atom węgla (C*) -

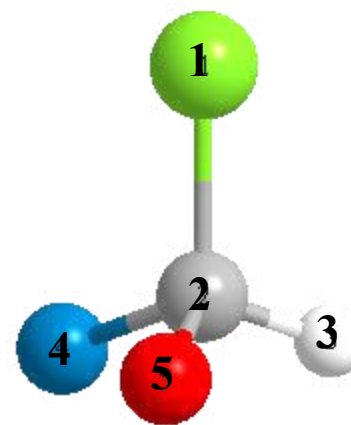
Odbicie cząsteczki
względem płaszczyzny



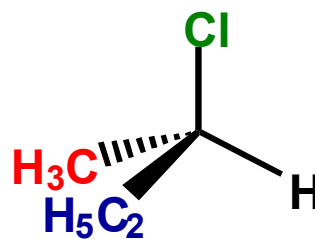
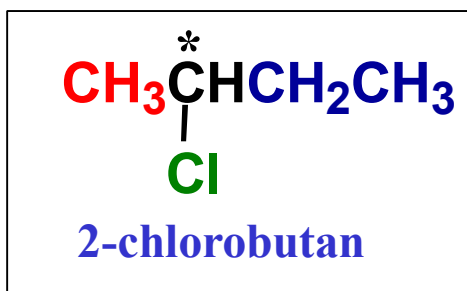
Cząsteczka



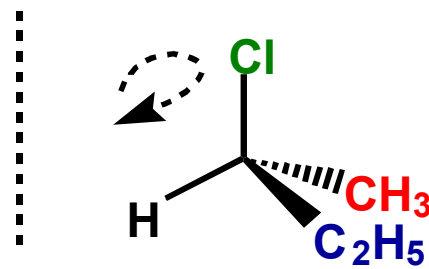
Odbicie



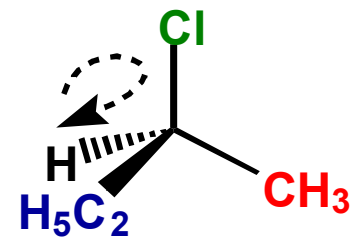
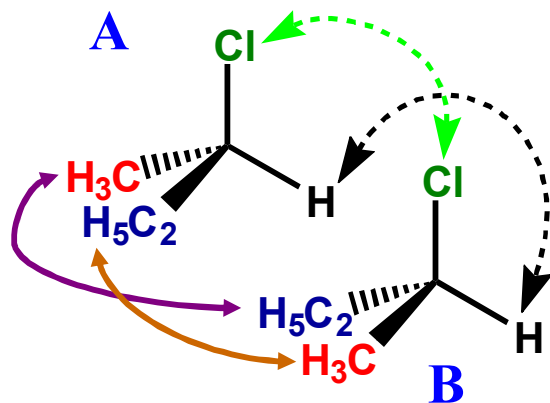
Odbicie po obrocie



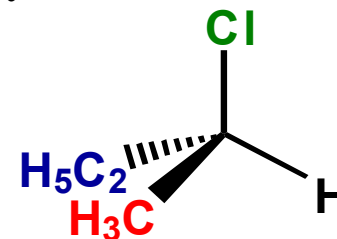
A (związek macierzysty)



B (odbicie lustrzane)



B po obrocie wokół
wiązania C-Cl



B po obrocie wokół
wiązania C-Cl

Wniosek – ...

1.3. Stereoizomery -

Podział stereoizomerów:

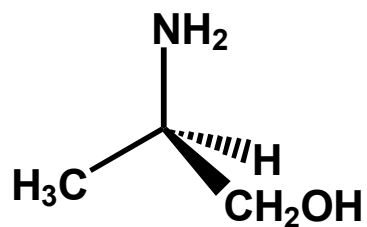
Enancjomery

Diastereoizomery

Stereoizomery często wykazują **czynność optyczną...**

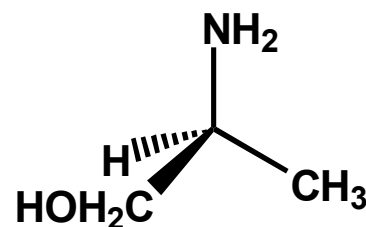
Czynność optyczna

PRZYKŁADY ENANCJOMERÓW WYBRANYCH ZWIĄZKÓW ORGANICZNYCH



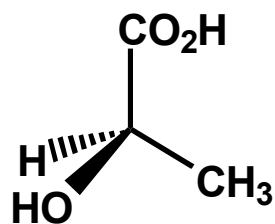
(-)-2-aminopropan-1-ol

$$[\alpha]_D^{20} = -22^\circ$$



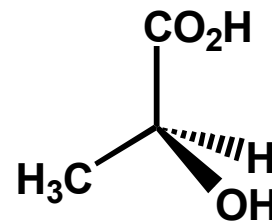
(+)-2-aminopropan-1-ol

$$[\alpha]_D^{20} = +22^\circ$$



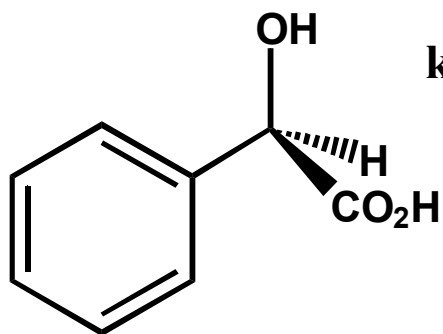
kwask (-)-mlekowy

$$[\alpha]_D^{20} = -33^\circ$$



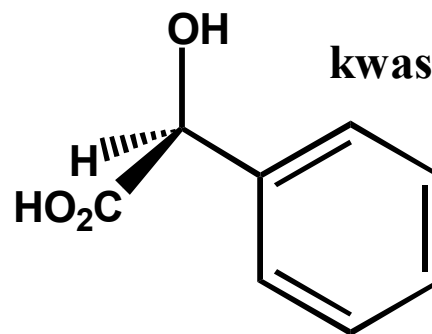
kwask (+)-mlekowy

$$[\alpha]_D^{20} = +33^\circ$$



kwask (-)-migdałowy

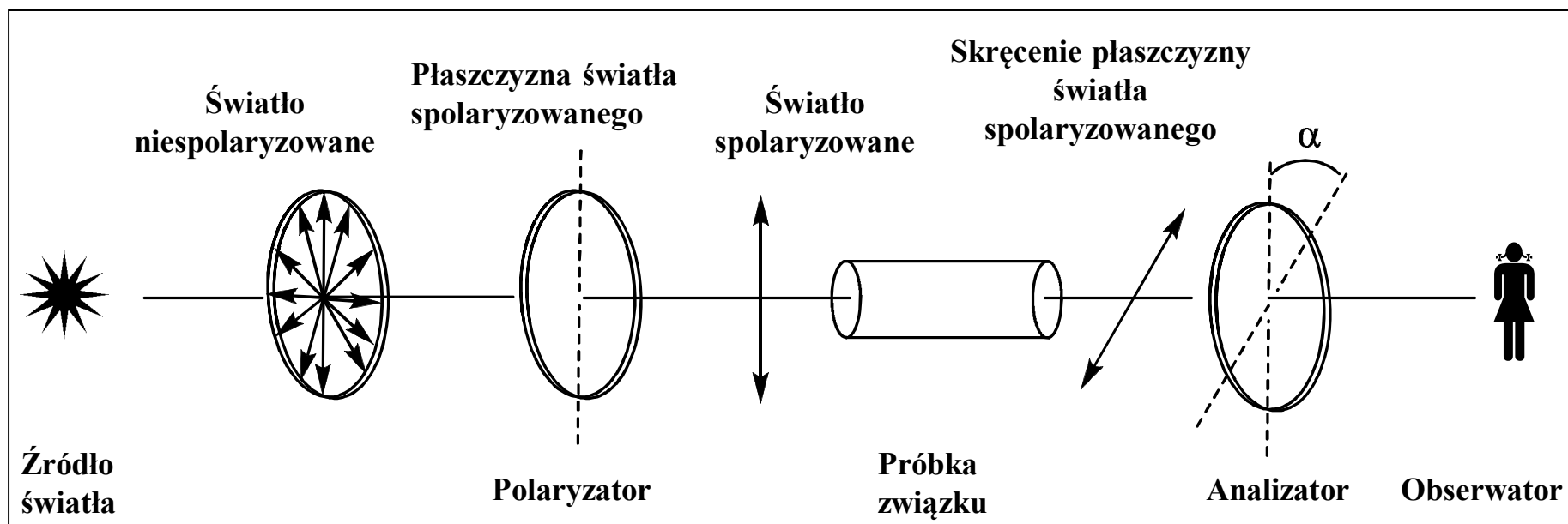
$$[\alpha]_D^{20} = -155^\circ$$



kwask (+)-migdałowy

$$[\alpha]_D^{20} = +155^\circ$$

ZASADA DZIAŁANIA POLARYMETRU



α –

POLARYMETRY - współczesne

polarymetry automatyczne



polarymetr kołowy



ATAGO



Anton Paar



Bellingham and Stanley

Enancjomer prawoskrętny:

Enancjomer lewoskrętny:

Enancjomery ...

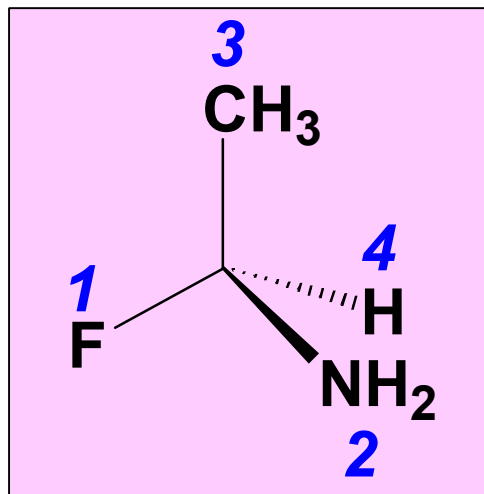
racemat

KONFIGURACJA ABSOLUTNA

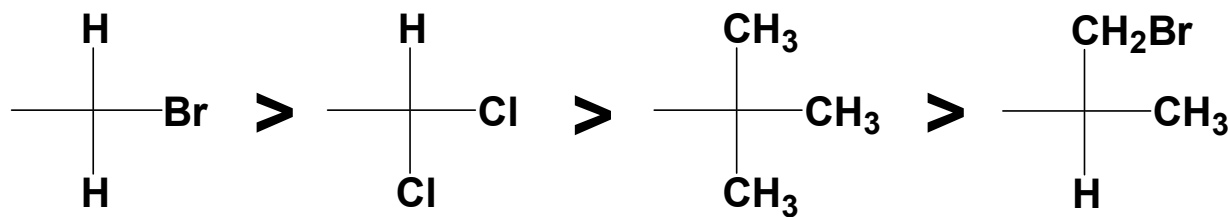
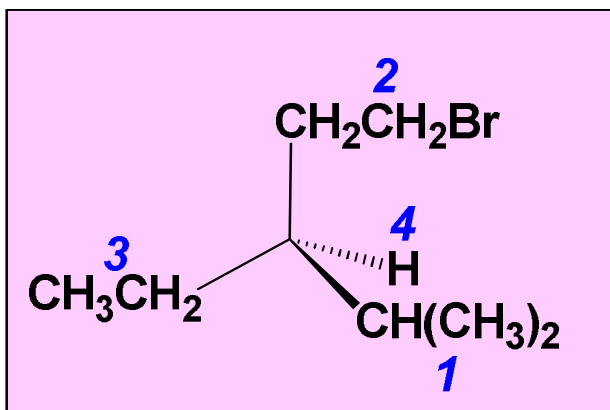
Sposób określania konfiguracji absolutnej opracowany przez Cahna, Ingolda i Preloga:

Krok 1:

- Reguła 1.**

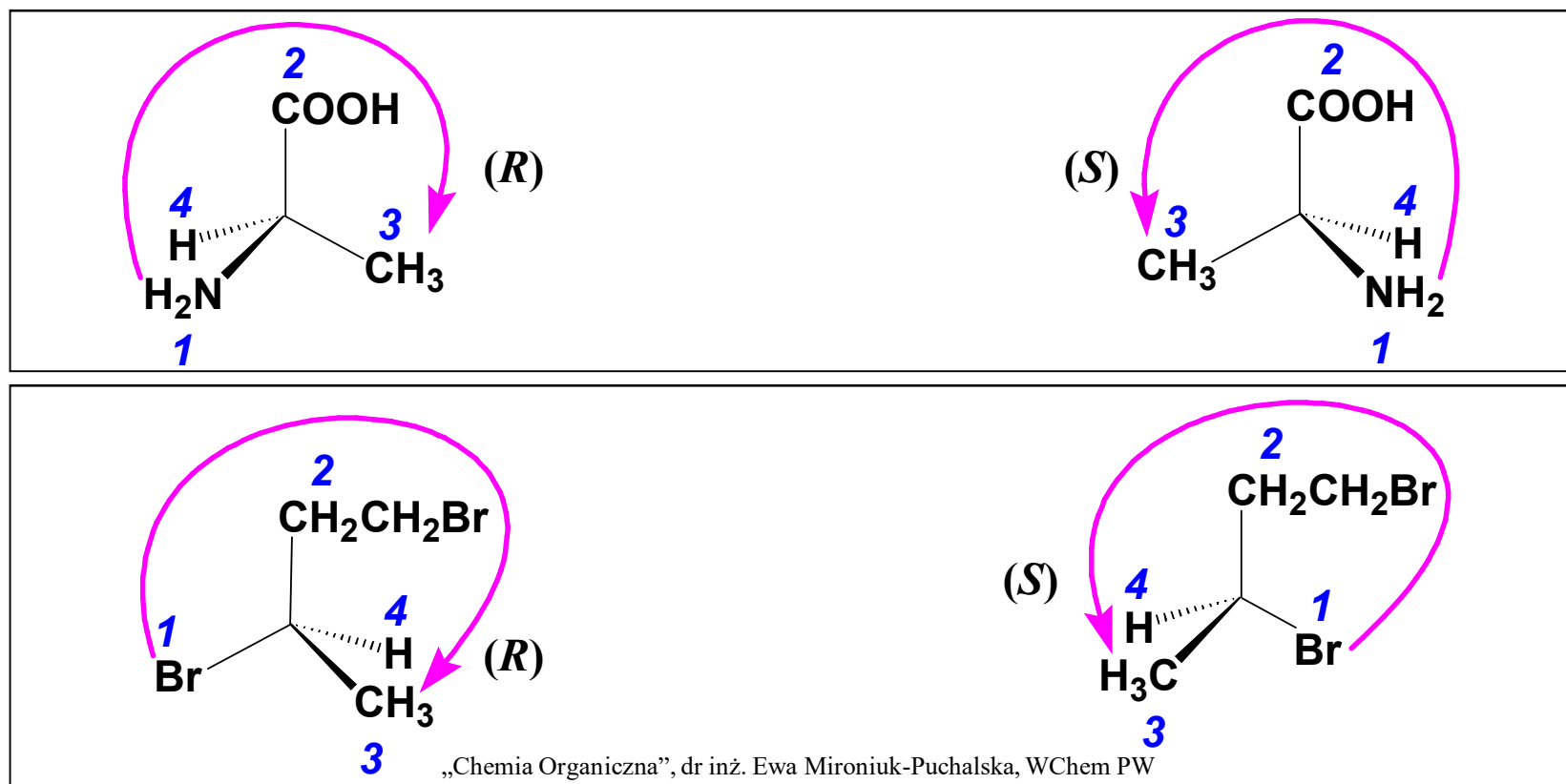


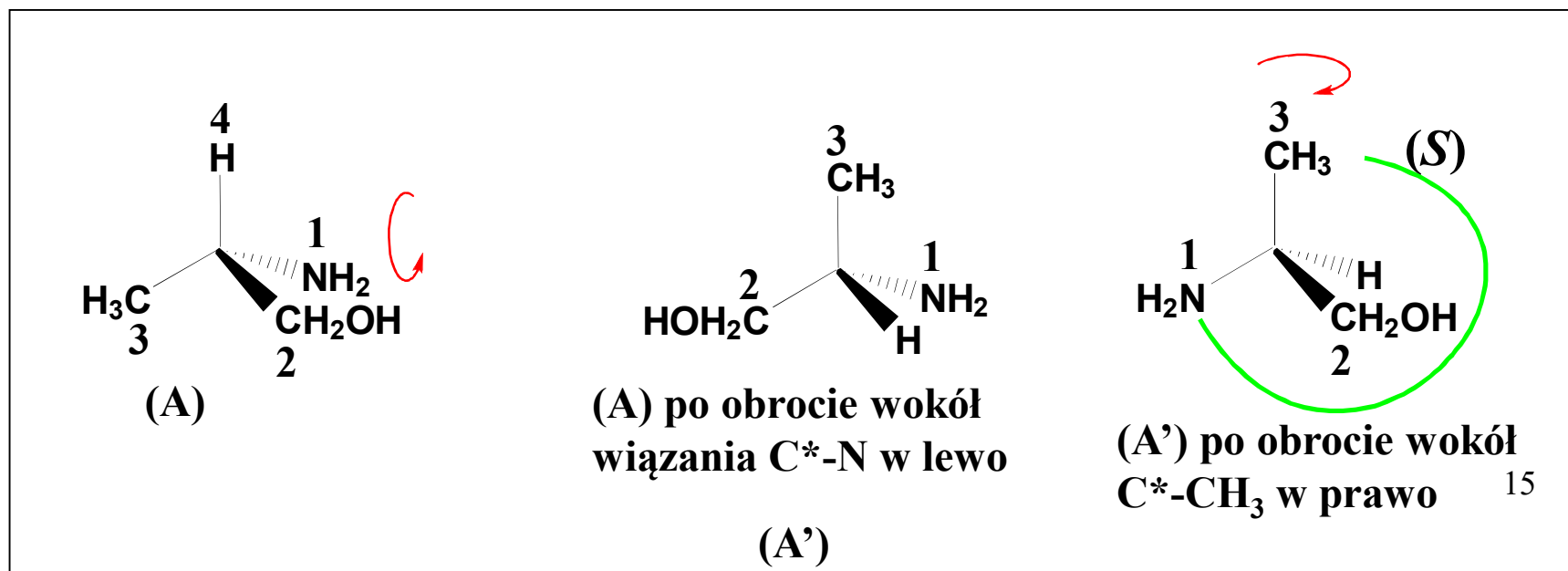
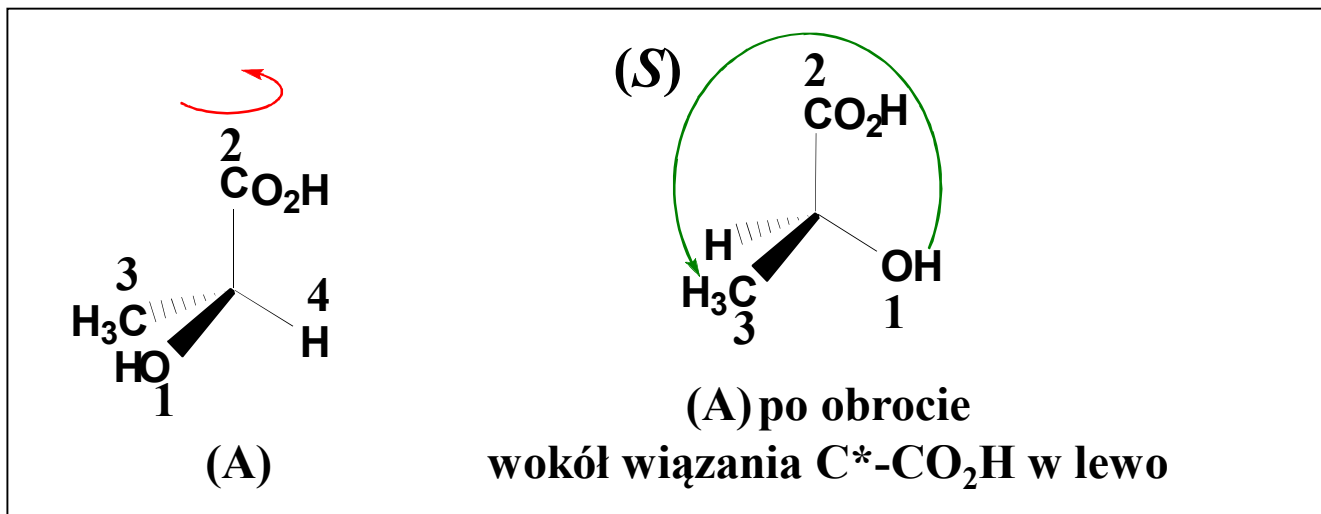
- Reguła 2.**



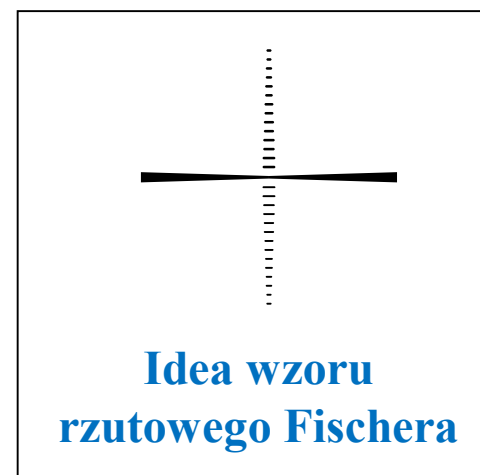
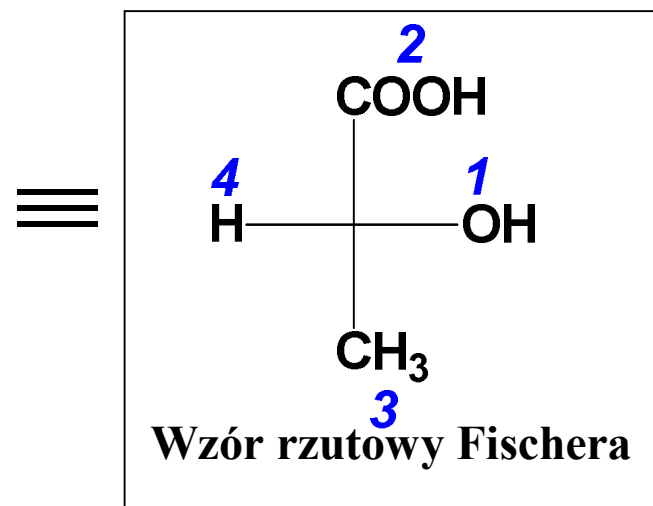
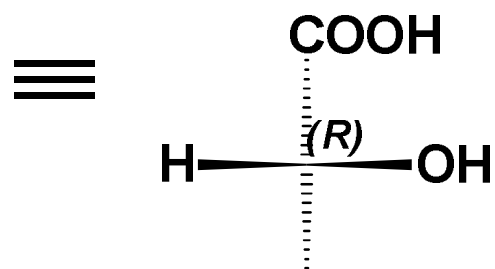
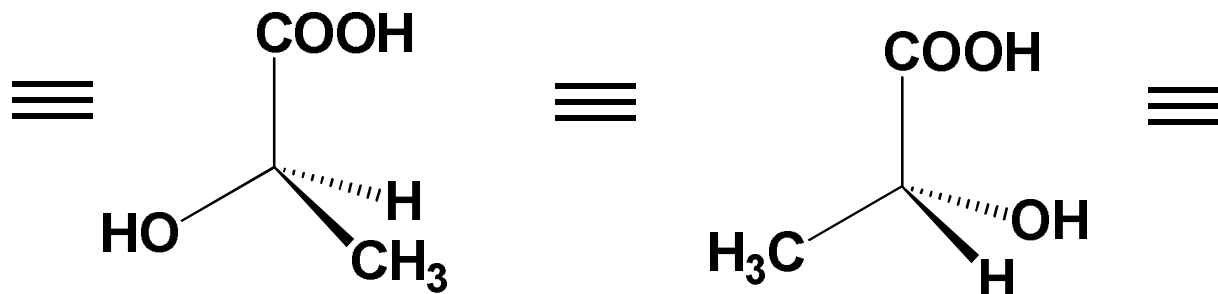
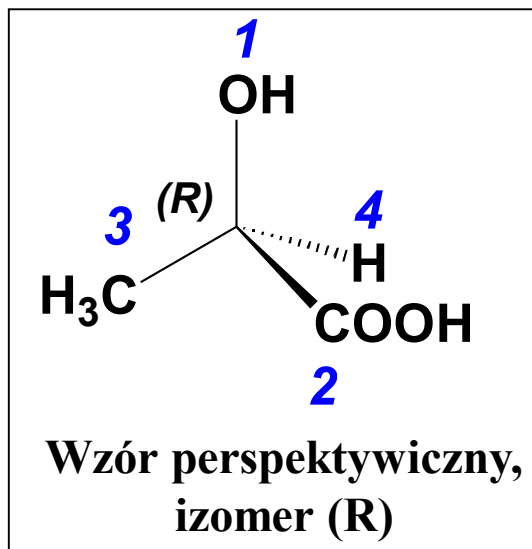
przykładowy szereg pierwszeństwa podstawników

Krok 2:

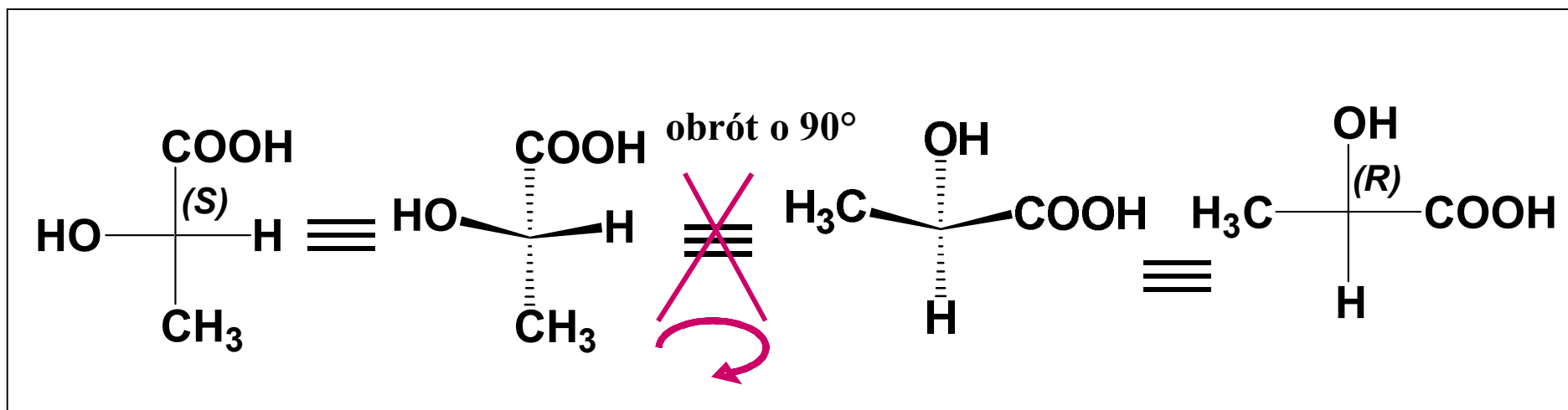
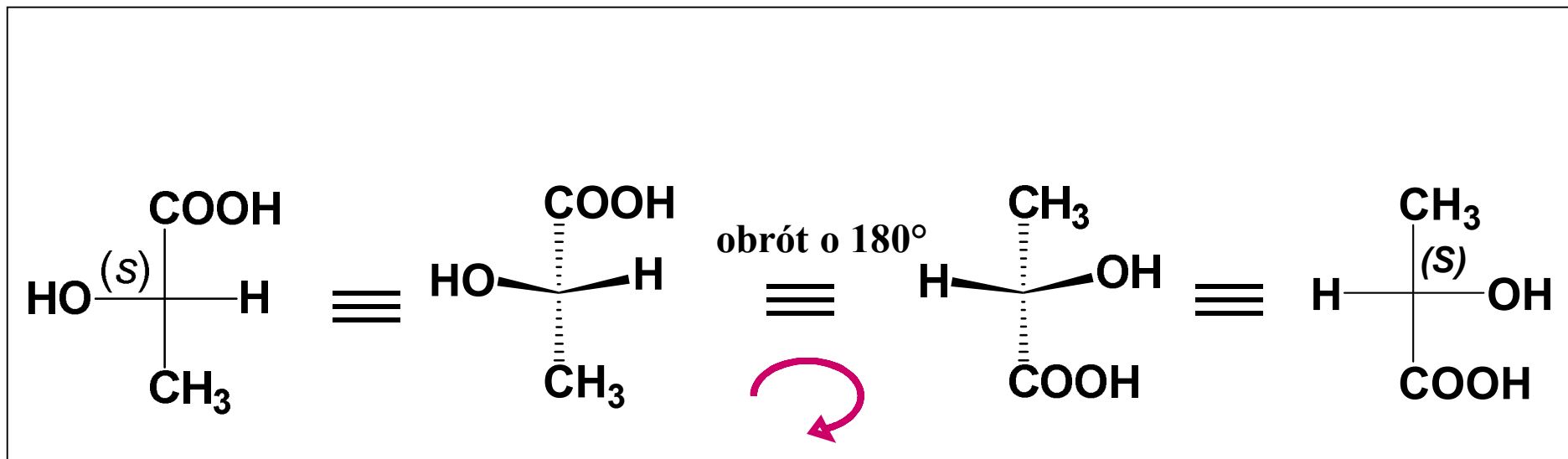




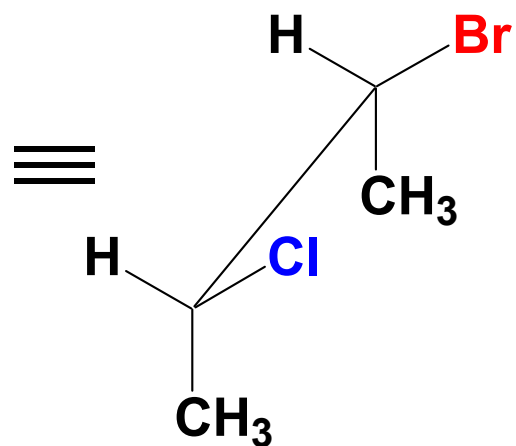
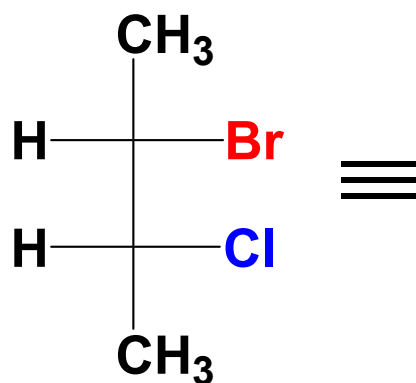
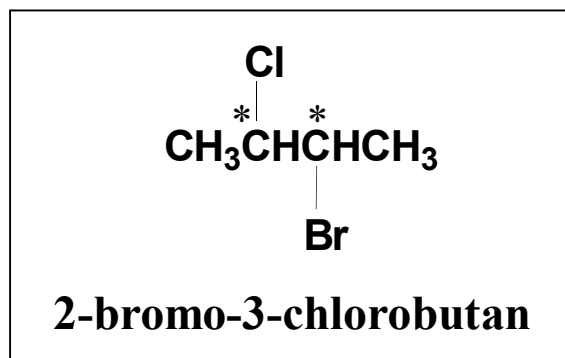
Prezentacja konfiguracji absolutnej za pomocą wzorów rzutowych Fischera



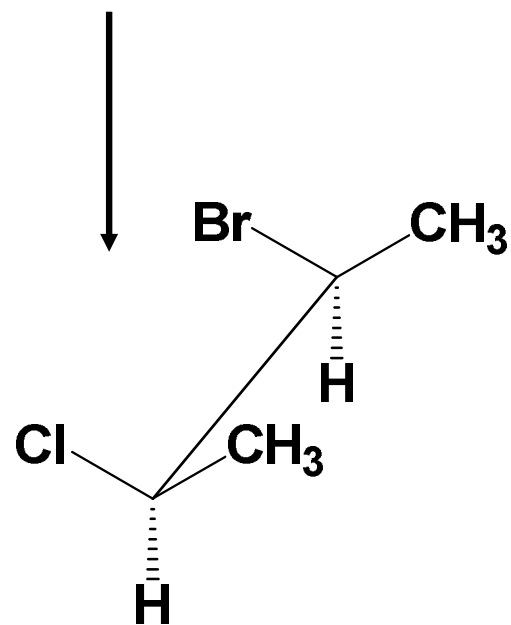
Zastrzeżenia co do obrotu wzoru rzutowego Fischera

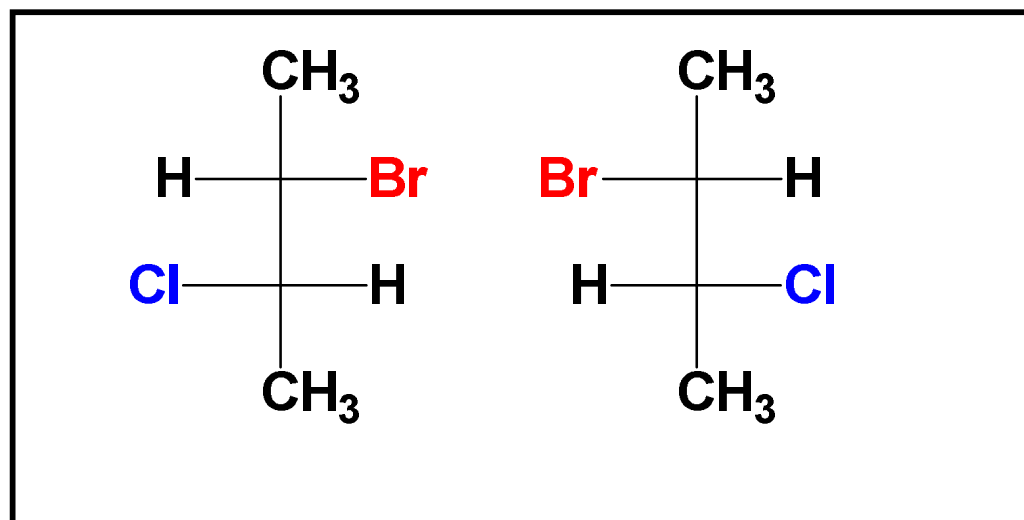
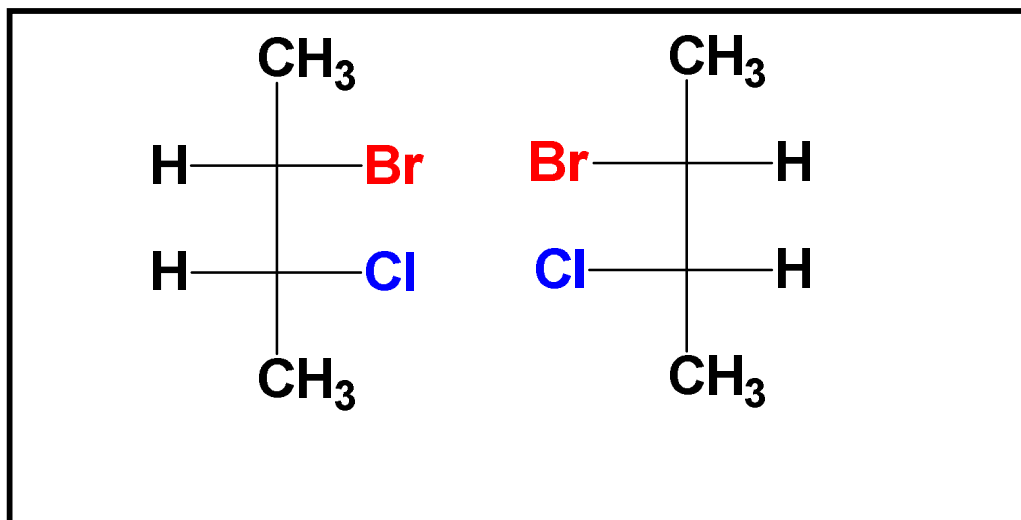


ZWIĄZKI CHIRALNE POSIADAJĄCE DWA ASYMETRYCZNE ATOMY WĘGLA

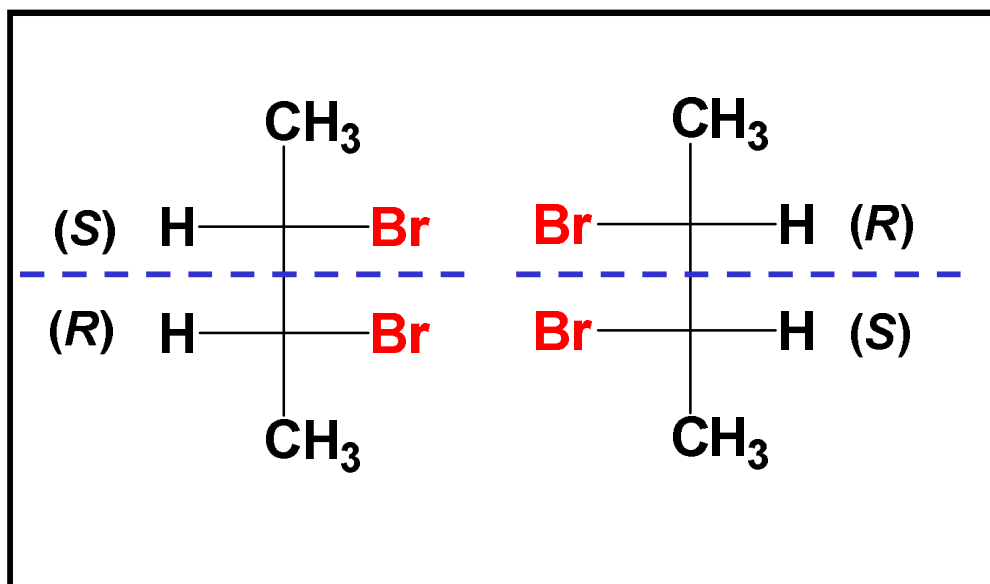
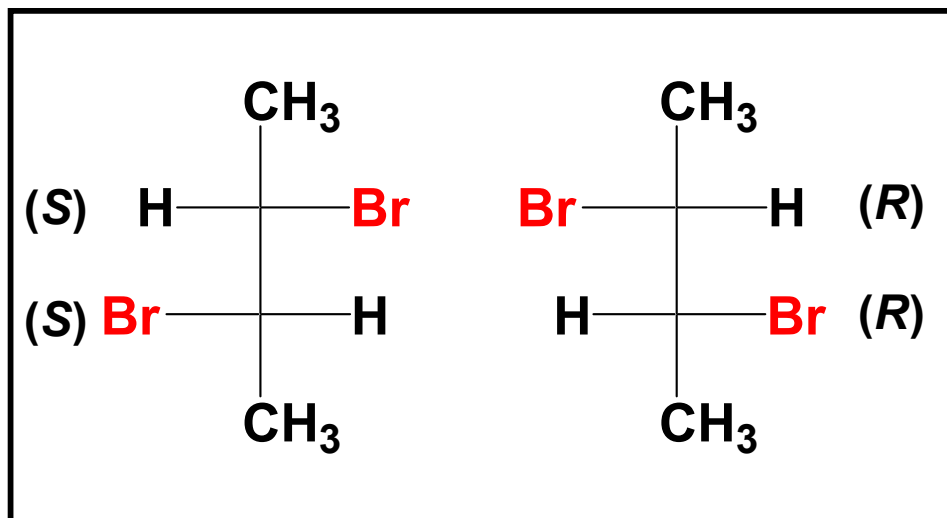


≡

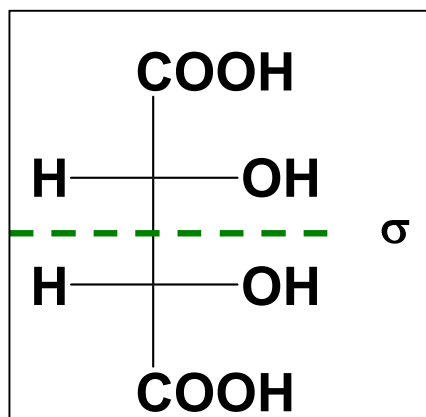
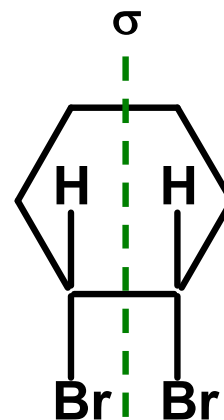
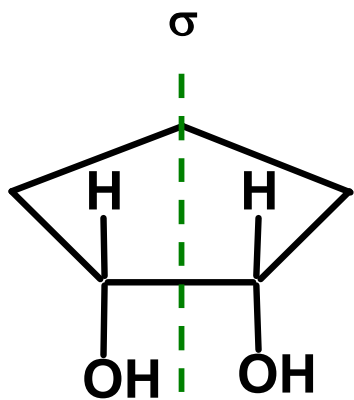




Forma mezo –



Przykłady związków *mezo*



σ – płaszczyzna symetrii