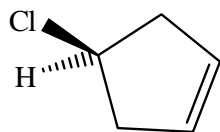
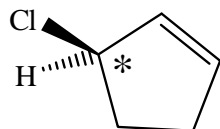


1. Mark each stereogenic centre in the following compounds with an asterisk (\*).



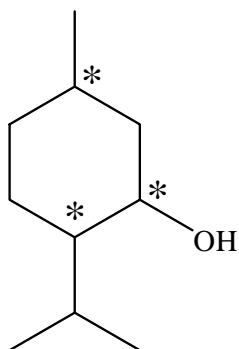
**No stereogenic centre - ring is symmetrical about substituted carbon**

4-chlorocyclopent-1-ene



**One stereogenic centre - ring is unsymmetrical about substituted carbon**

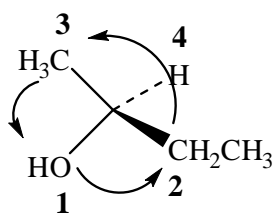
(*R*)-3-chlorocyclopent-1-ene



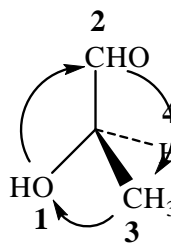
**Three stereogenic centres – each has a hydrogen and three different groups around it. These hydrogens are not drawn in the stick representation.**

2-isopropyl-5-methylcyclohexanol

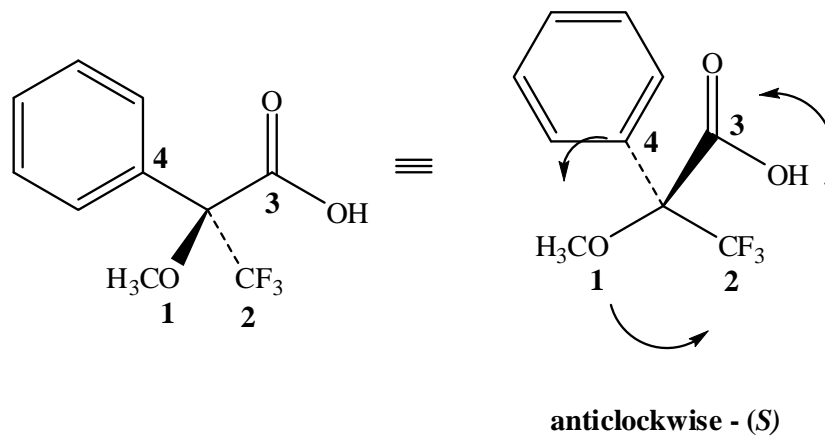
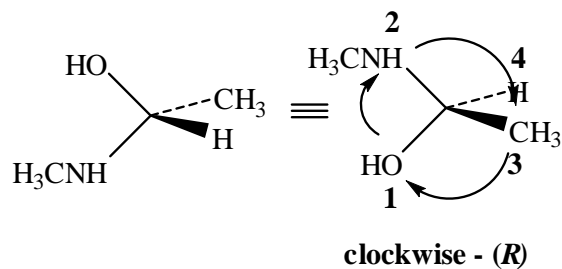
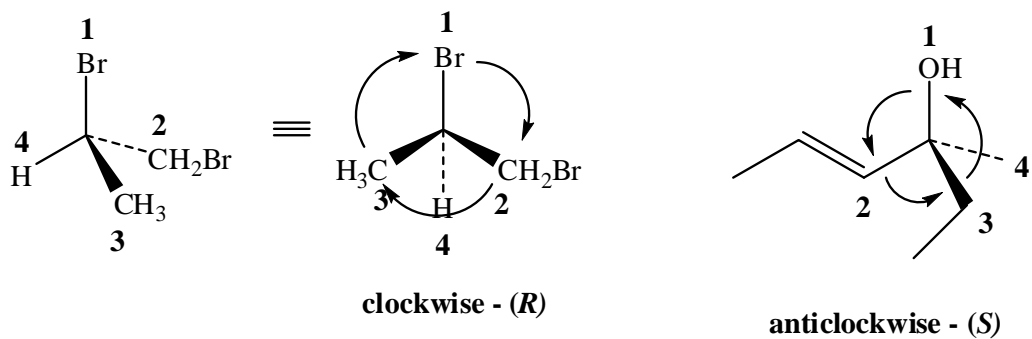
- 2.



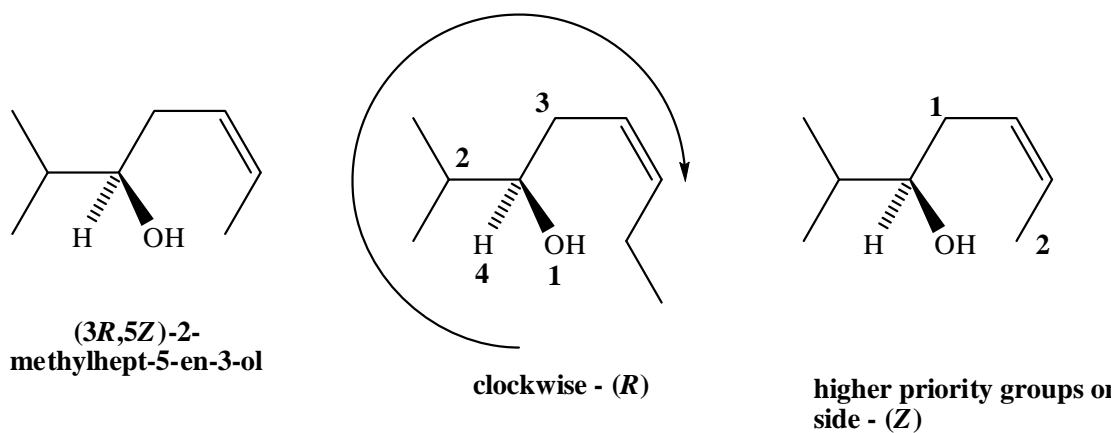
**anticlockwise - (*S*)**



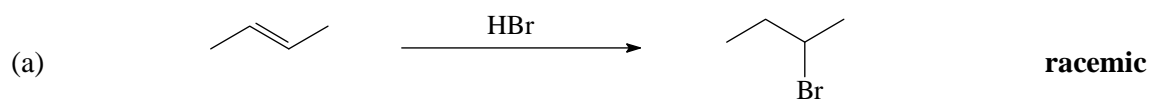
**clockwise - (*R*)**

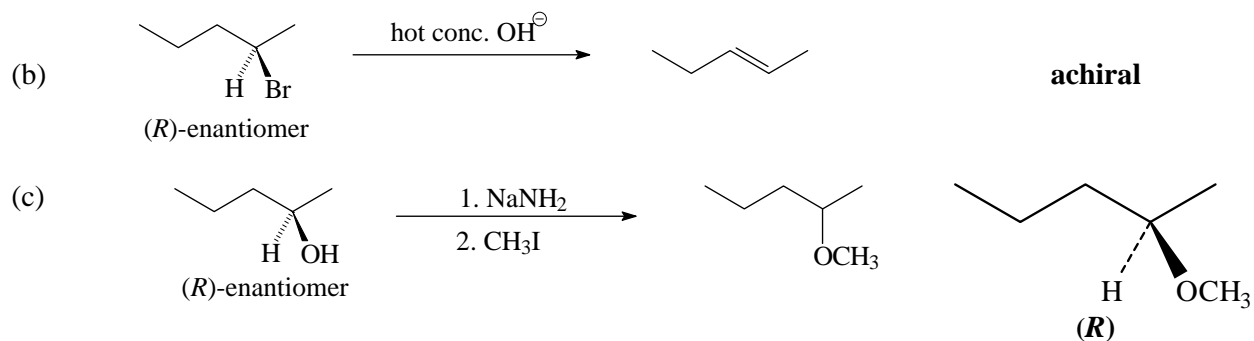


3.



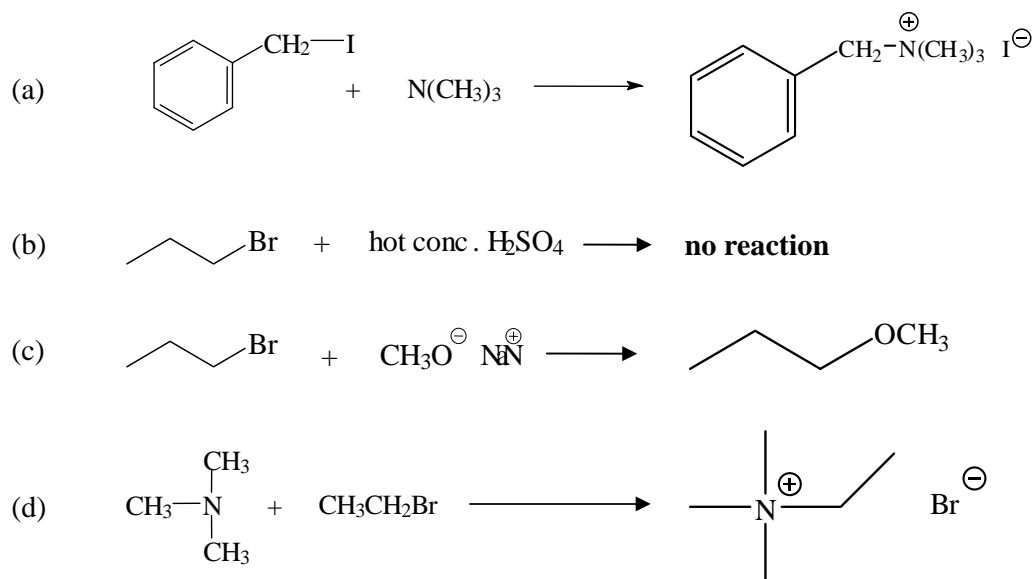
4.





Reaction proceeds via  $\text{NH}_2^-$  ion removing  $\text{H}^+$  from  $-\text{OH}$  group so chiral centre is not affected.

5.



6.

