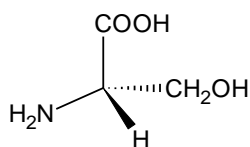
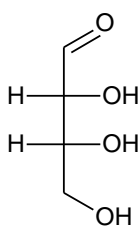


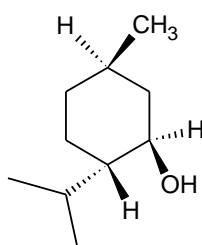
1. The following structures are naturally occurring optically active compounds. Star (*) the asymmetric/chiral carbon atoms in these structures.



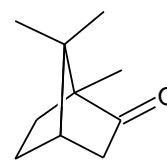
serine



erythrose

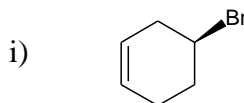
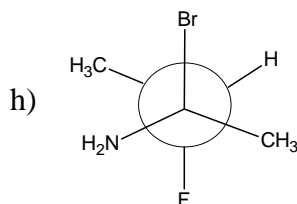
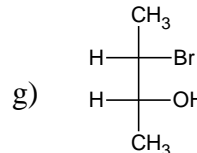
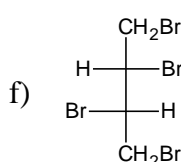
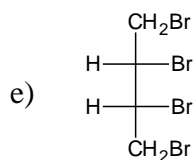
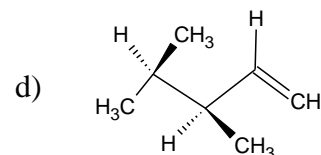
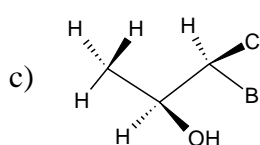
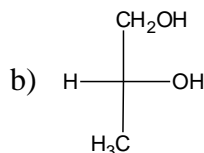
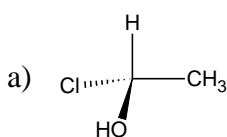


menthol

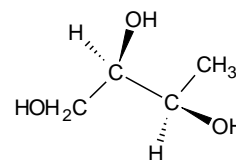
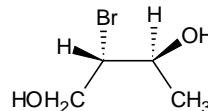
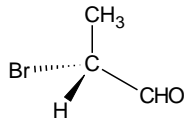
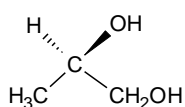


camphor

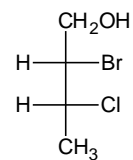
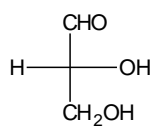
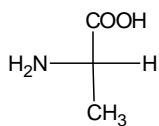
2. For each structure
- Star (*) any asymmetric/chiral carbon atoms.
 - Label each chiral carbon as R or S.
 - Draw any internal plane of symmetry.
 - Label the structure as chiral or achiral
 - Label any meso structure.



3. Convert the following perspective formulas to Fischer projections.



4. Convert the following Fischer projections to perspective formulas.



5. For each of the following compounds:

- Draw a three dimensional representation.
- Star (*) each chiral center.
- Draw any plane of symmetry.
- Draw any enantiomer.
- Draw any diastereomer.
- Label each structure as chiral or achiral.

(S)-2-chlorobutane

(R)-1,1,2-trimethylcyclohexane

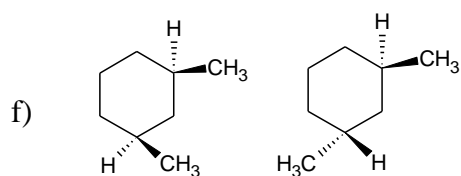
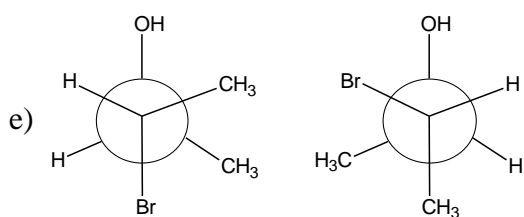
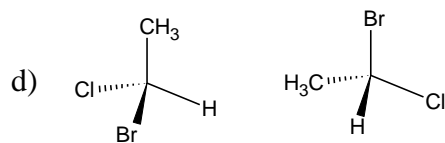
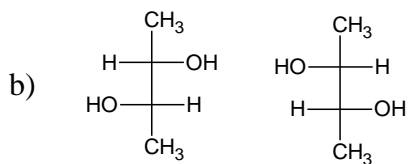
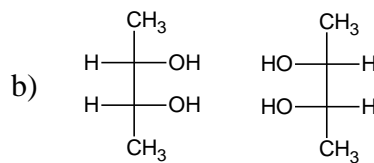
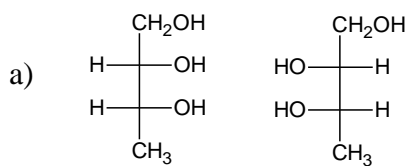
(2R, 3S)-2,3-dibromohexane

(1R, 2R)-1,2-dibromocyclohexane

Meso-hexane-3,4-diol
(CH₃CH₂CHOHCHOHCH₂CH₃)

(+/-)-hexane-3,4-diol

6. Give the stereochemical relationships between each pair of structures e.g. same compounds, constitutional isomers, enantiomers etc.



7. Draw the enantiomer, if any, for each structure.

