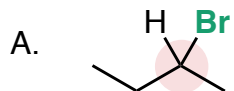


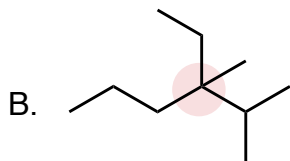
## Drawing Chiral Molecules and Defining Isomeric Relationships

1. Draw the (*R*) and (*S*) enantiomers of each molecule below, each containing only one chiral center (highlighted for you)



(*R*)-isomer

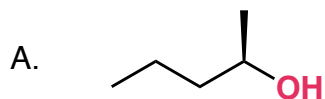
(*S*)-isomer



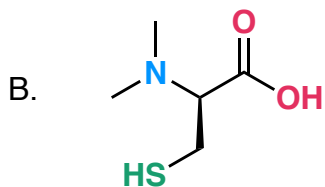
(*R*)-isomer

(*S*)-isomer

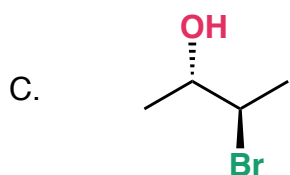
2. Draw the enantiomer of each chiral molecule below.



enantiomer

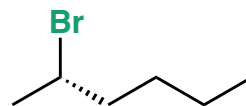
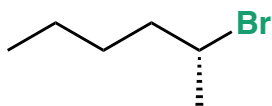
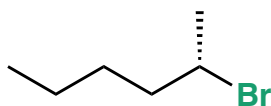
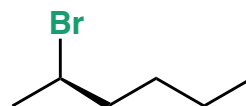
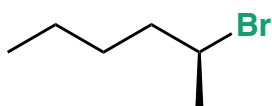
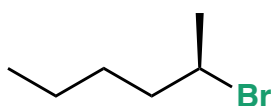
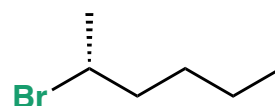
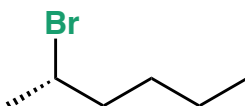
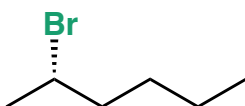
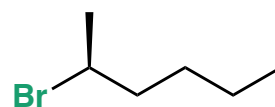
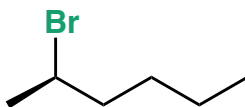
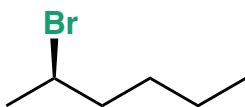


enantiomer

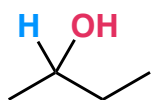


enantiomer

3. **Select all** of the molecules below that are (*R*)-2-bromohexane.



4. Draw **three different orientations** of (*S*)-2-butanol

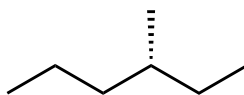
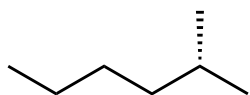


2-butanol

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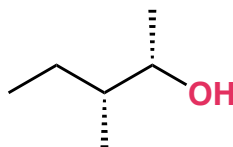
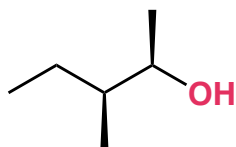
5. Use the flowchart to determine the relationship between the pairs of molecules below.

A.



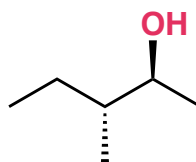
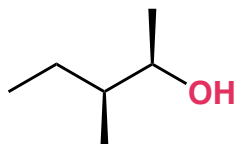
- ☐ constitutional isomers
- ☐ enantiomers
- ☐ diastereomers
- ☐ conformers

B.



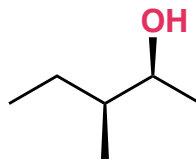
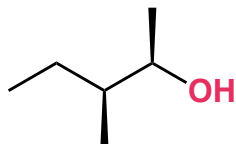
- ☐ constitutional isomers
- ☐ enantiomers
- ☐ diastereomers
- ☐ conformers

C.



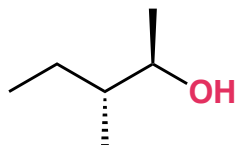
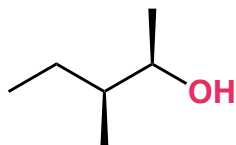
- ☐ constitutional isomers
- ☐ enantiomers
- ☐ diastereomers
- ☐ conformers

D.



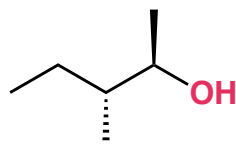
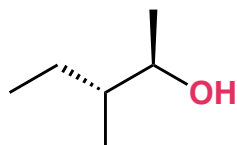
- ☐ constitutional isomers
- ☐ enantiomers
- ☐ diastereomers
- ☐ conformers

E.



- ☐ constitutional isomers
- ☐ enantiomers
- ☐ diastereomers
- ☐ conformers

F.



- ☐ constitutional isomers
- ☐ enantiomers
- ☐ diastereomers
- ☐ conformers