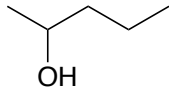
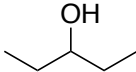
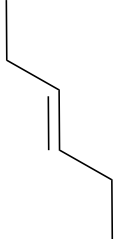
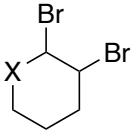


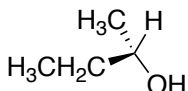
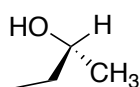
Name: _____

Lab Day/Time: _____

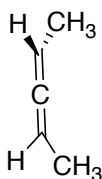
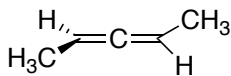
1. Build the following molecular models and compare with three friends by superimposing the models:

 Name of Friend: _____ _____ _____ Superimpose? Yes No Yes No Yes No	 Name of Friend: _____ _____ _____ Superimpose? Yes No Yes No Yes No
 Name of Friend: _____ _____ _____ Superimpose? Yes No Yes No Yes No	 Name of Friend: _____ _____ _____ Superimpose? Yes No Yes No Yes No

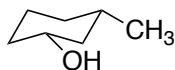
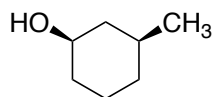
2. Build the following molecular models and compare. Are they identical, diastereomers, or enantiomers?



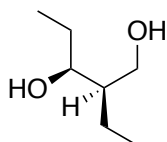
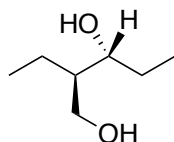
identical diastereomers enantiomers



identical diastereomers enantiomers



identical diastereomers enantiomers



identical diastereomers enantiomers

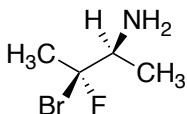
3. Build a model of the following: Compound A, named: (2*S*,3*S*)-3-bromo-3-fluorobutane-2-amine).

Put it in the conformation and orientation shown

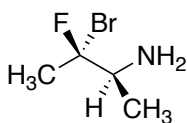
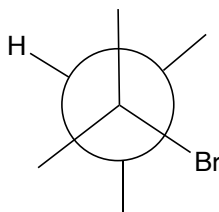
Complete the Newman projection for Conformation 1 with the appropriate groups

Rotate the bonds of the molecule (aka. change the conformation) to fit conformation 2.

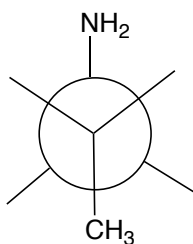
Complete the Newman projection for Conformation 2 with the appropriate groups



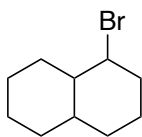
Compound A, Conformation 1



Compound A, Conformation 2

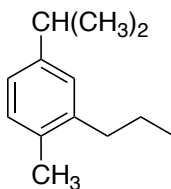


4. How many **tetrahedral stereocenters** in each of the molecules below? Also, how many stereoisomers (2^n rule) are possible for the compounds? Making models may help in a few of the cases.



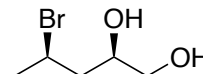
stereocenters _____

stereoisomers _____



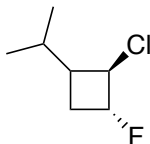
stereocenters _____

stereoisomers _____



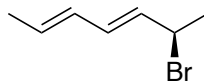
stereocenters _____

stereoisomers _____



stereocenters _____

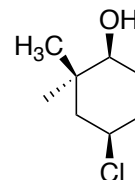
stereoisomers _____



stereocenters _____

stereoisomers _____

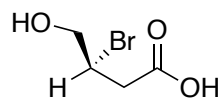
Review these 2
with your instructor
or TA before proceeding



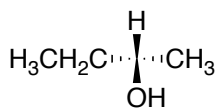
stereocenters _____

stereoisomers _____

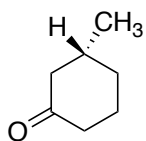
5. Assign the priorities to each of the groups attached to the chiral centers drawn



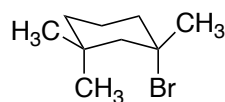
Compound 5a



Compound 5b



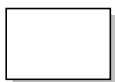
Compound 5c



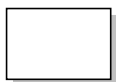
Compound 5d

6. Make models of each of the structures above. Using them, redraw the structures below so the 4th priority group is furthest from you.

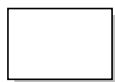
7. Assign the absolute stereochemistry to each of the compounds (i.e. write *R* or *S* in the boxes below)



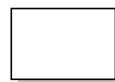
Compound 5a



Compound 5b



Compound 5c

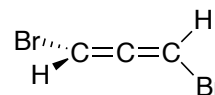
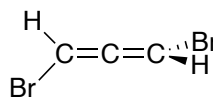
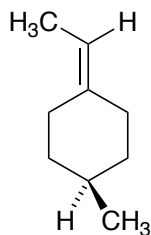
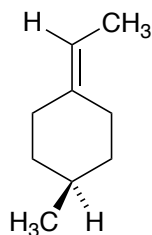
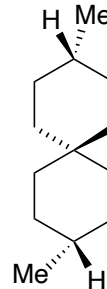
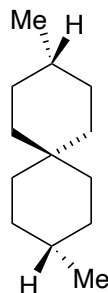
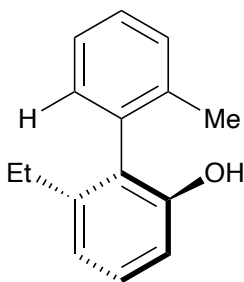
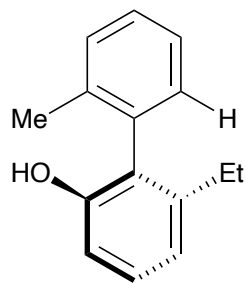


Compound 5d

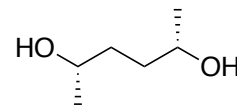
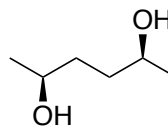
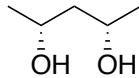
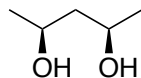
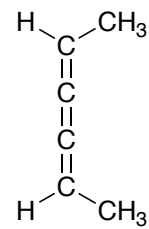
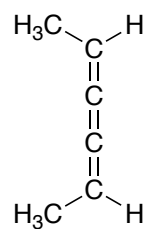
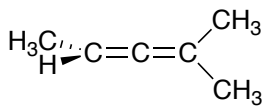
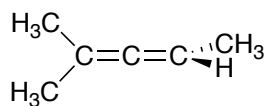
8. Draw the structure **(3*S*,5*S*)-5-bromo-3-methyloctane** below. Use models to check your assignment of the absolute stereochemistry then draw the compound a second time in a different conformation.

If time allows, complete the following exercises

9. With a friend or friends, build models of the following compounds and convince each other that the pairs are nonsuperimposable mirror images of each other and therefore enantiomers.



10. With a friend, build models of the following compounds and convince each other that the pair is identical.



11. Circle the one compound on this page that is a meso compound.