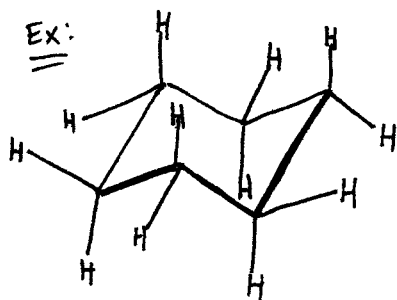
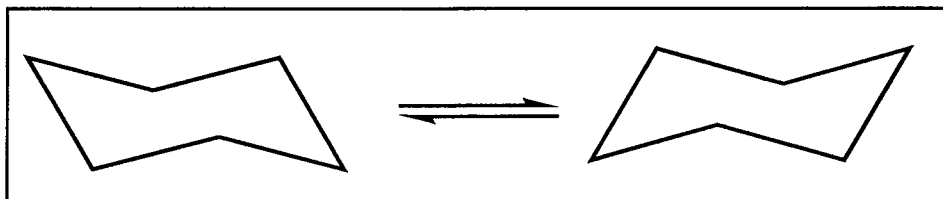


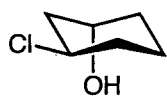
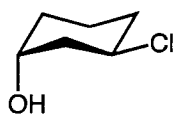
Conformational Analysis
Week 3 Problem Set
susanp@chem.ucla.edu

1. Draw each chair 5 times each. Include all axial and equatorial hydrogens.

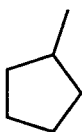
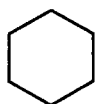


2. Identify each pair as *structural*, *conformational*, *same*, or *unrelated* structures.

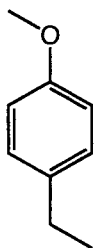
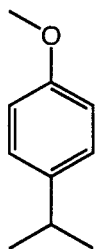
(a)



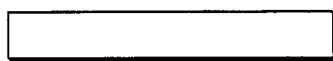
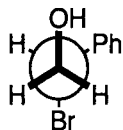
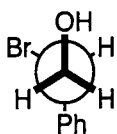
(b)



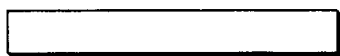
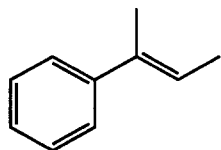
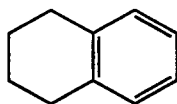
(c)



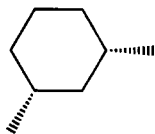
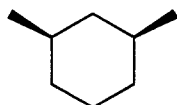
(d)



(e)

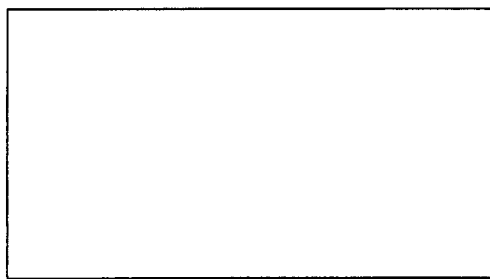
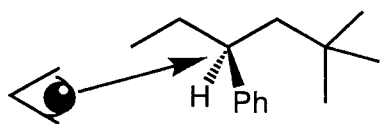


(f)

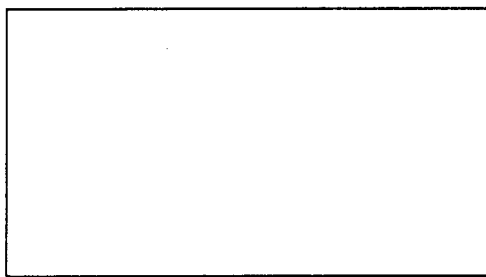
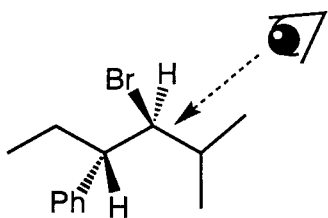


3. Draw a Newman projection of the most stable staggered conformation of the structures below from the viewpoint of the eye.

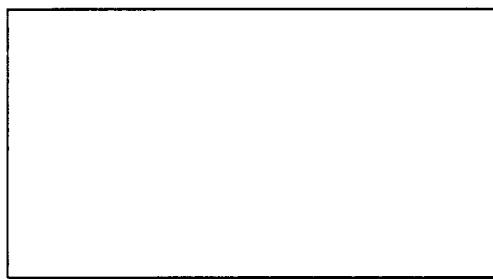
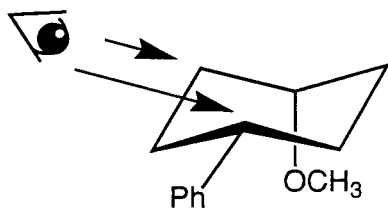
(a)



(b)

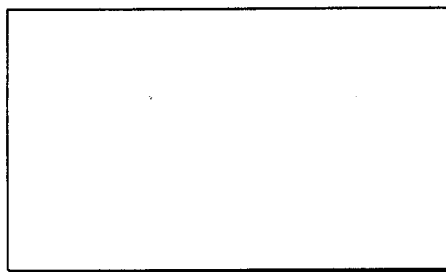
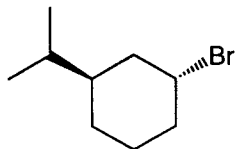


(c)

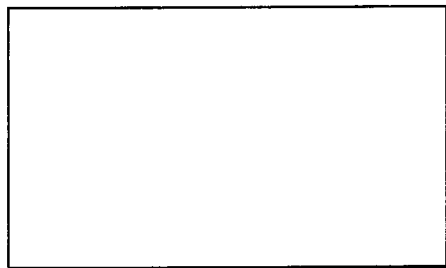
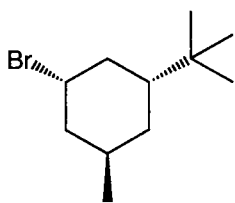


4. Draw the following substituted cyclohexanes in the *most stable* chair conformations.

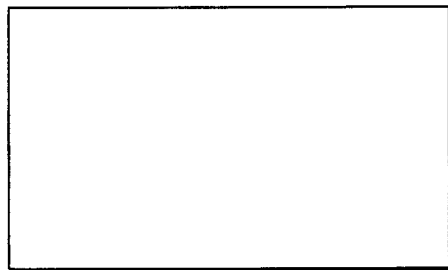
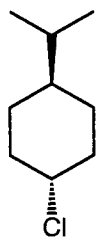
(a)



(b)



(c)



5. The substituted cyclohexane **A** has an equatorial tert-butyl group and an axial methyl substituent in its lowest energy conformation. The 1,3-dioxane **B** has an axial tert-butyl group and an equatorial methyl group in its lowest energy conformation. Rationalize why **B** is different from **A**. *Hint: draw all hydrogens.*

