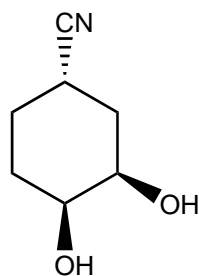
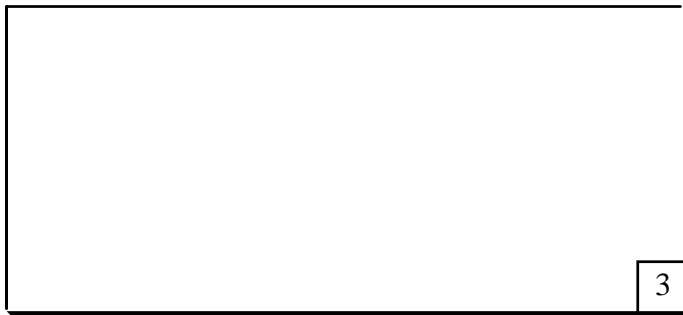


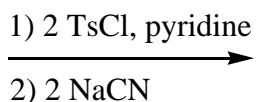
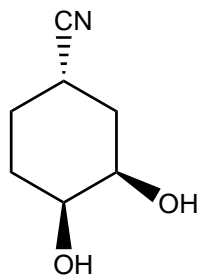
1. The following molecule was reported recently as an example of a new, stereoselective dihydroxylation catalyst (*Org. Biomol. Chem.* **2004**, 2, 1116-1124).



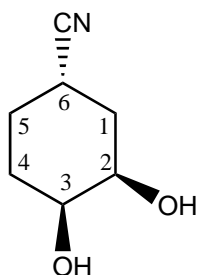
a) Draw the most stable chair conformation of this molecule.



b) What is the product of the following reaction?

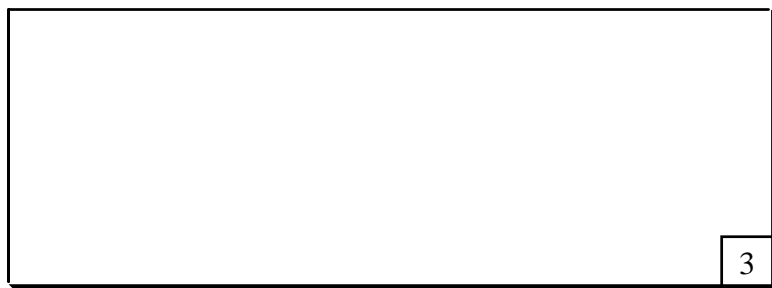


c) Give the stereochemical designation (*R*, *S*, or *none*) of each carbon on the cyclohexane ring: (4 pts.)



1	
2	
3	
4	
5	
6	

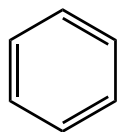
d) Draw the enantiomer of the molecule above.



continued on back...

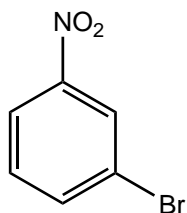
2. Complete the following syntheses:

a)

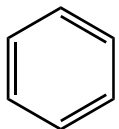


1)

2)

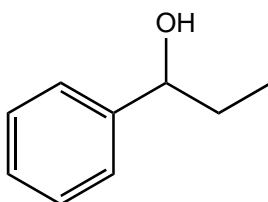


b)

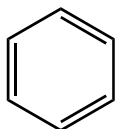


1)

2)



c)



1)

2)

3)

