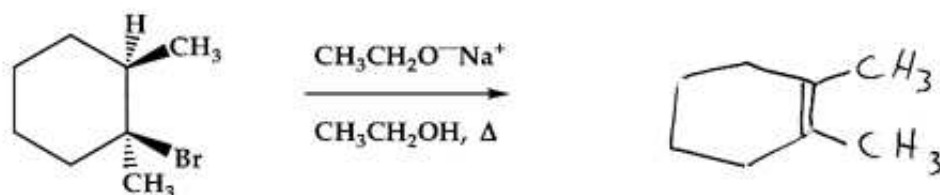
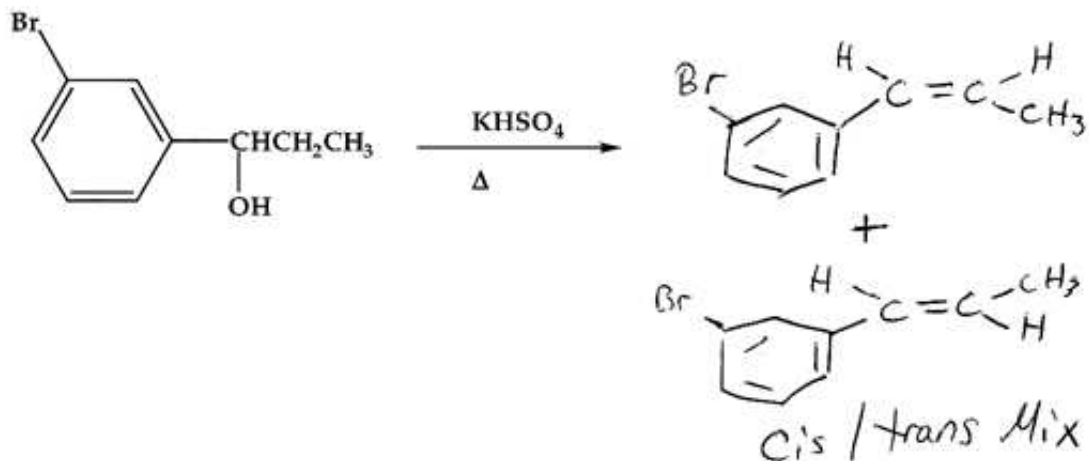


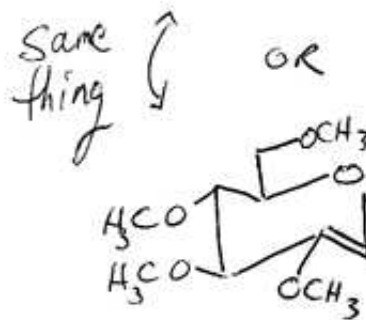
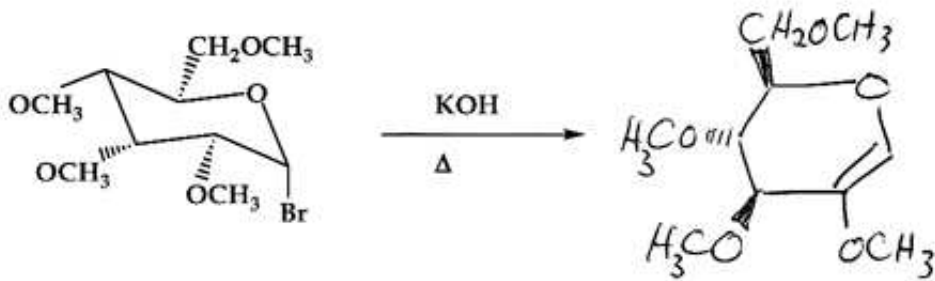
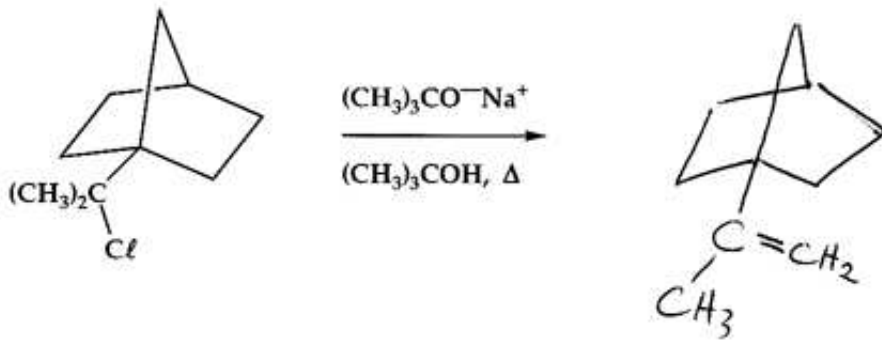
name:

Chemistry 3311-100  
Organic Chemistry/Dr. Barney Ellison  
Thursday: March 13<sup>th</sup> @ 7:00pm → 9:00/2<sup>nd</sup> Exam/Math 100

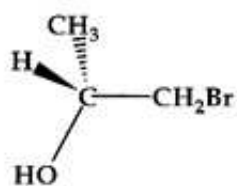
Name: KEY (please print)

1. (20 pts) Predict the major product for the following reactions.

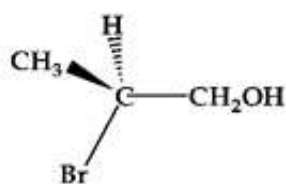




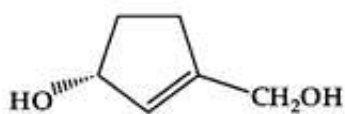
2. (15 pts) Identify the relationship in each of the following pairs; are they stereoisomers, enantiomers, diastereomers, or just different ways of drawing the same compound?



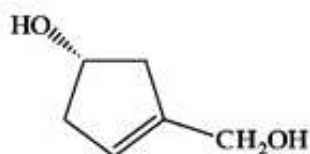
and



*Constitutional isomers*



and



*Constitutional isomers*

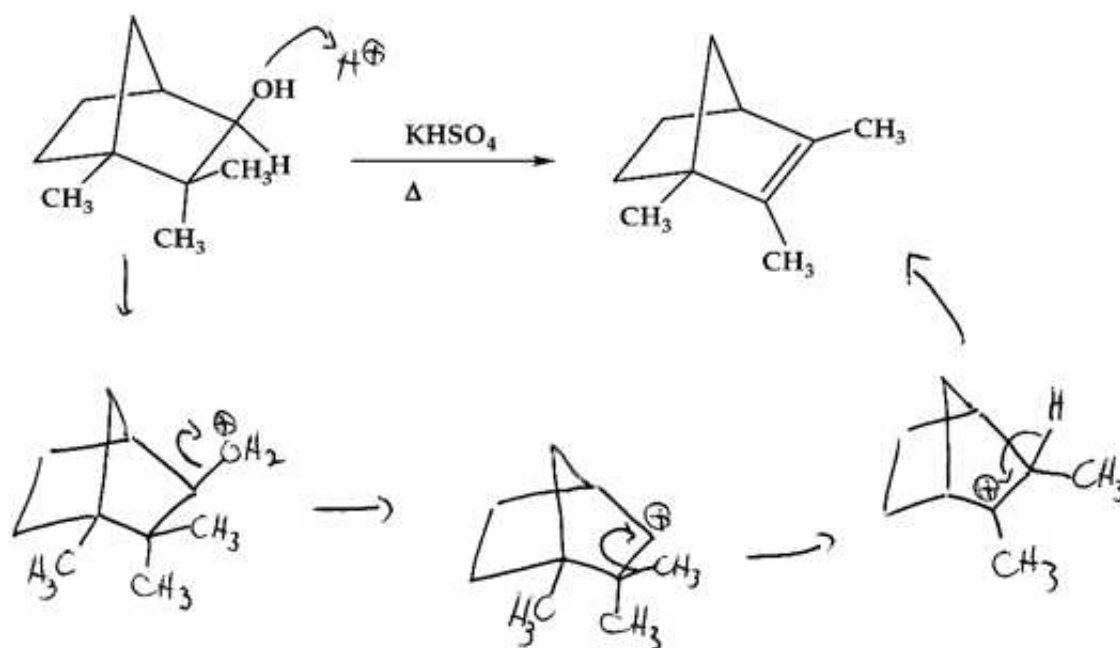
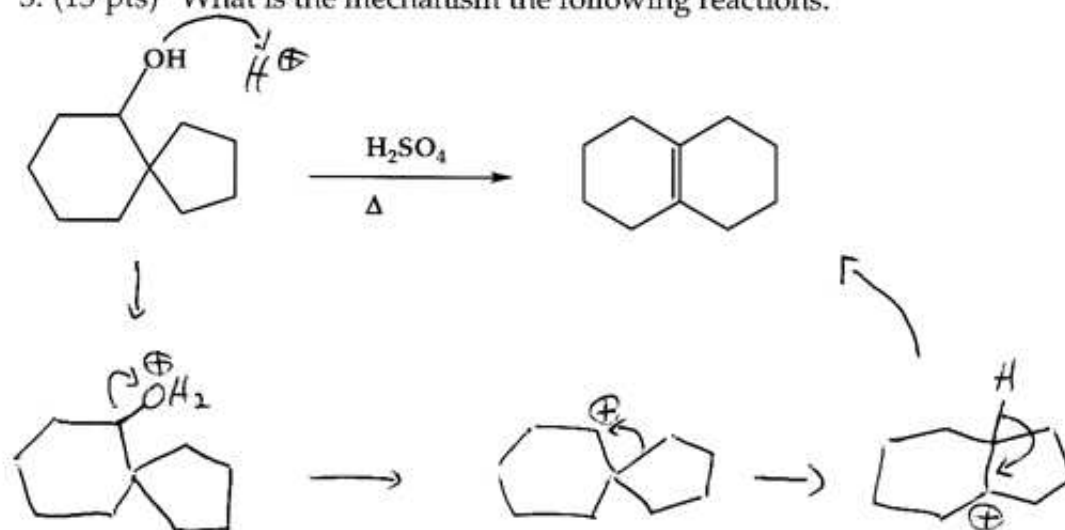


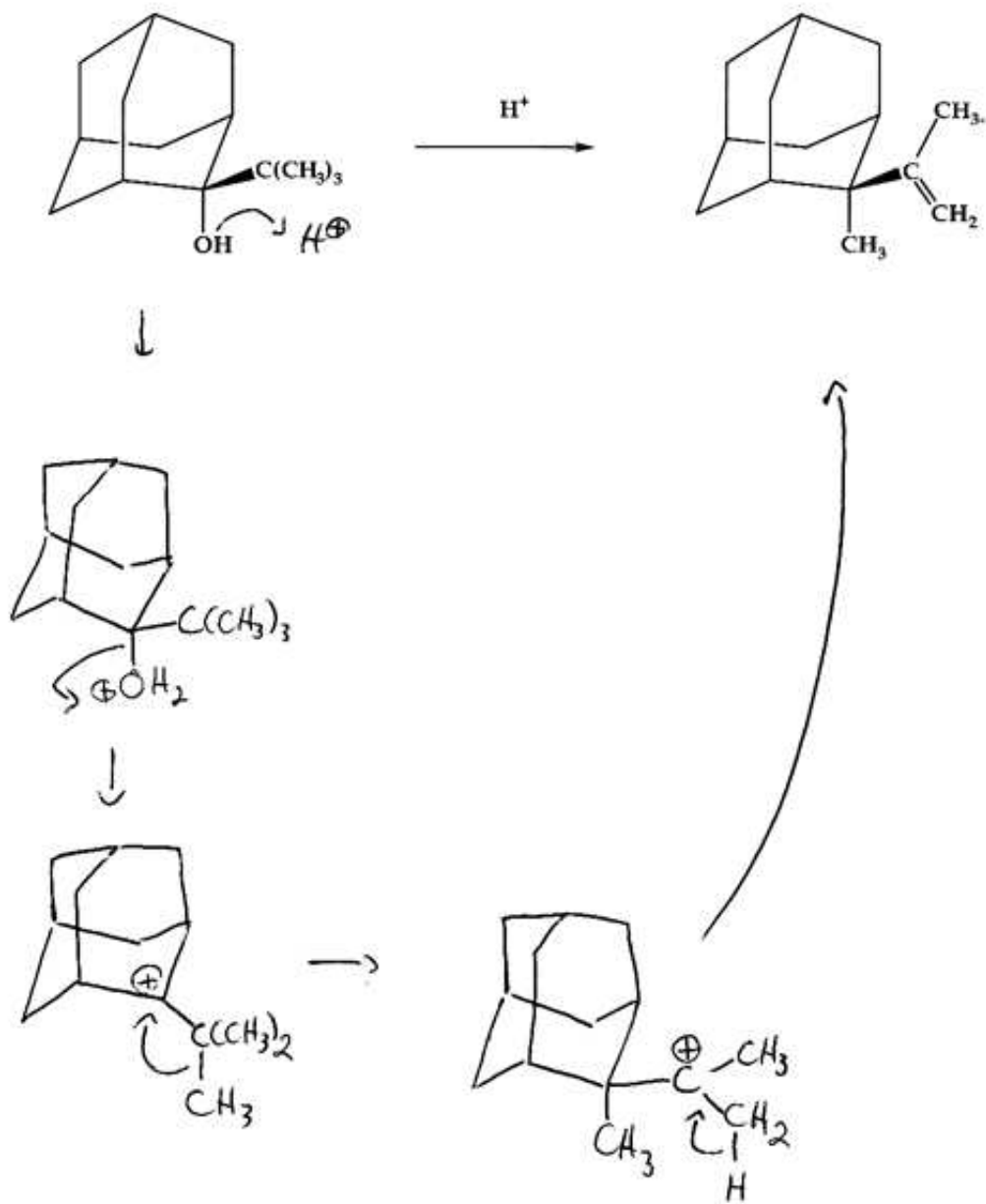
and



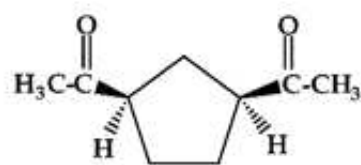
*Diastereomers*

3. (15 pts) What is the mechanism the following reactions.

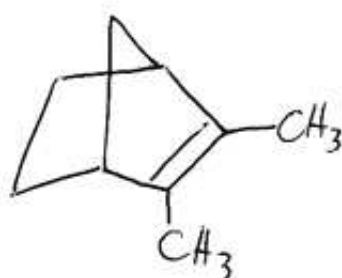




4. (10 pts) There is an interesting hydrocarbon called *santene* ( $C_9H_{14}$ ). Ozonolysis of santene followed by hydrolysis gives compound A. What is the structure of santene?

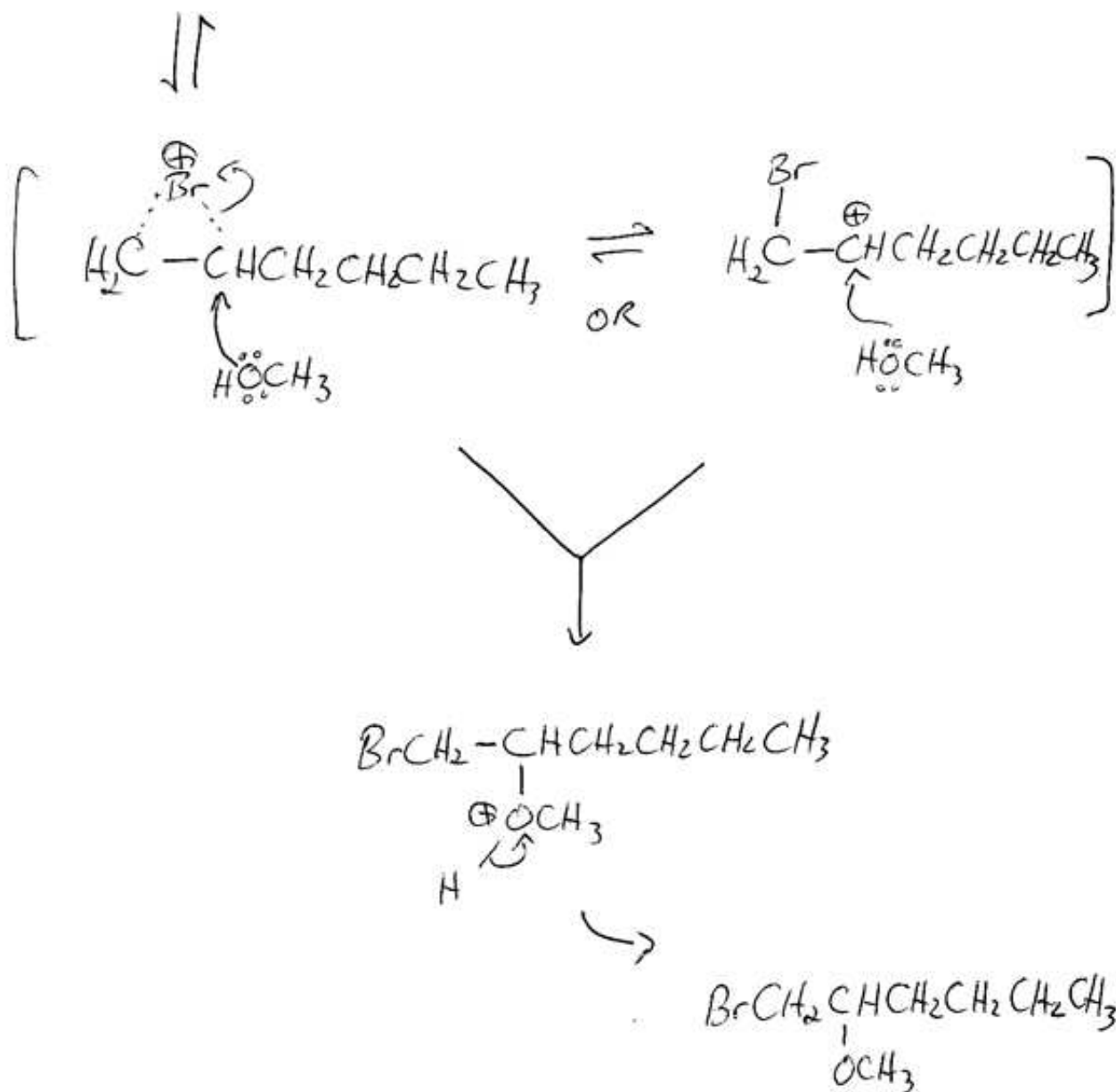
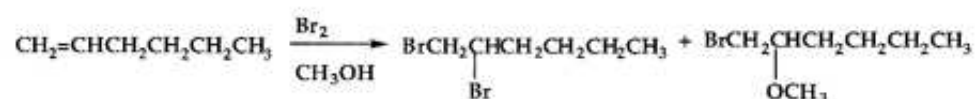


compound A

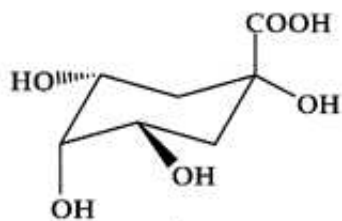


Santene

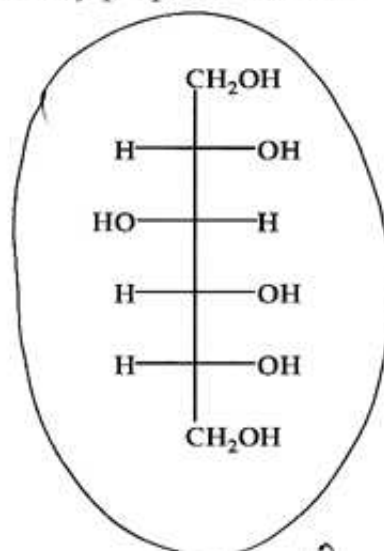
5. (10 pts) When bromine is added to a solution of 1-hexene in methanol, the major products of the reaction are shown. What is the mechanism for the formation of 1-bromo-2-methoxyhexane?



6. (10 pts) A certain natural product having  $[\alpha]_D + 40.3^\circ$  was isolated. Two structures have been independently proposed for this compound. Which one is correct? Why?



or



Meso  
(Achiral)  
Note: Plane of Symmetry

Chiral



7. (20 pts) A compound ( $C_6H_{10}$ ) contains a five-membered ring. When  $Br_2$  adds to it (in  $CCl_4$  solvent), two diastereomeric dibromides are formed. Suggest reasonable structures for the compound and the two dibromides. What is the mechanism for this reaction?

