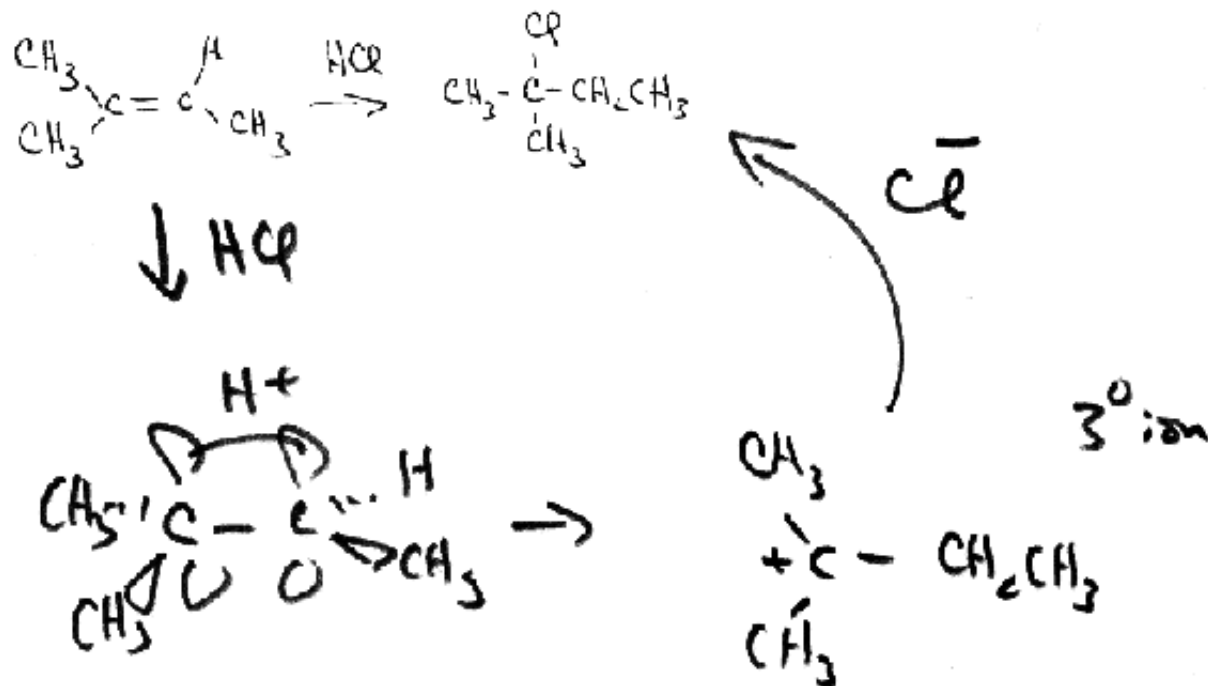


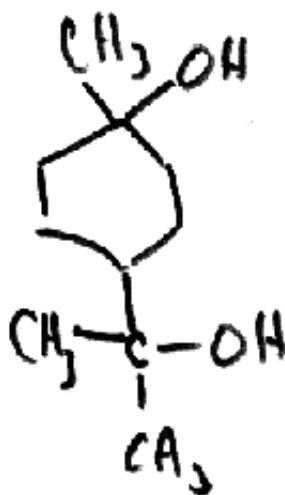
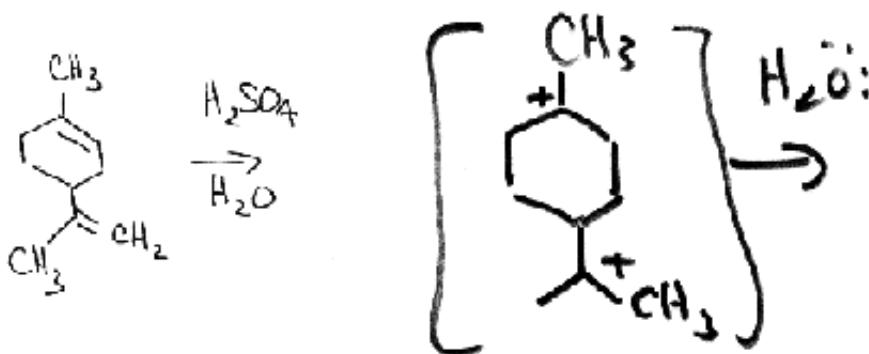
Chemistry 3311-100  
Organic Chemistry/Dr. Barney Ellison  
21.III.96 Thurs @ 19:00 → 20:30/2<sup>nd</sup> Exam

Name: Key (please print)

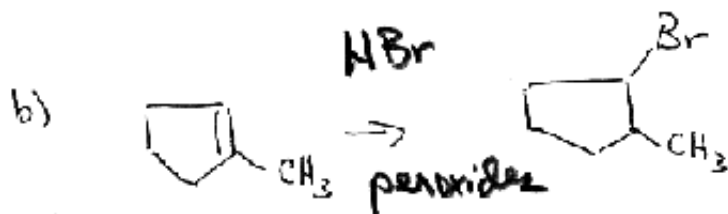
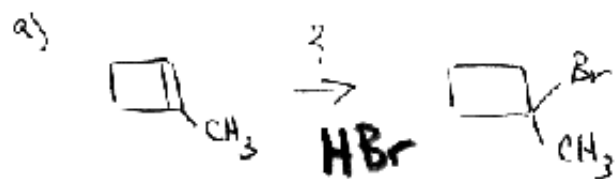
1. (10 pts) Write out the mechanism for the following transformation.



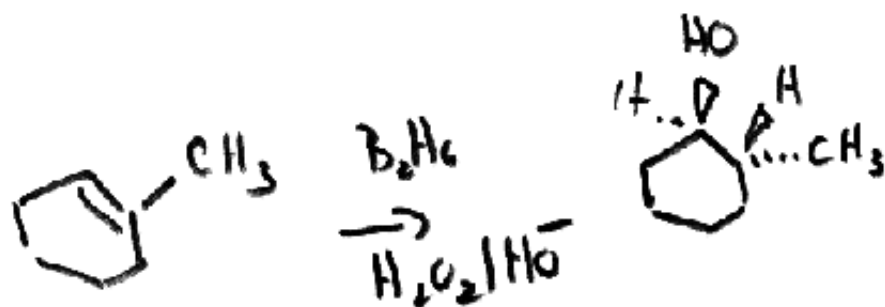
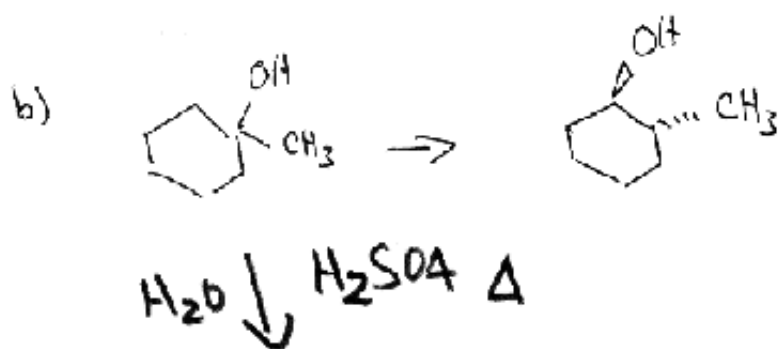
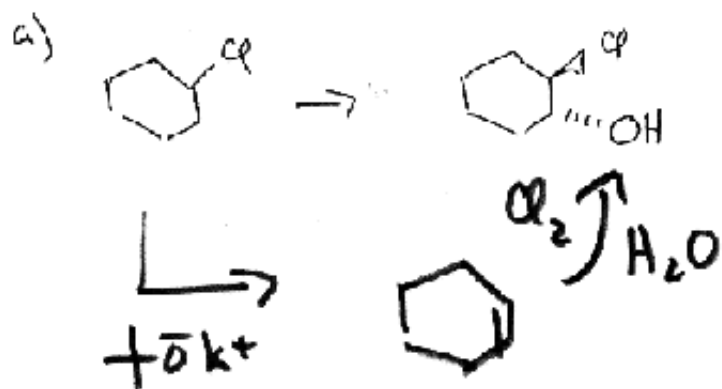
2. (10 pts) What product is formed in the following reaction?



3. (10 pts) Carry out the following transformations. Use any reagents you like.

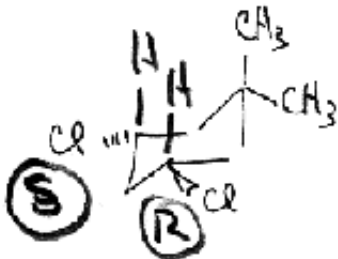
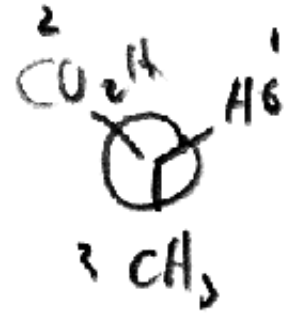
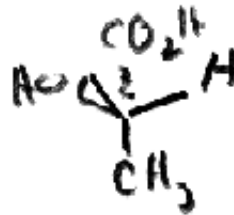
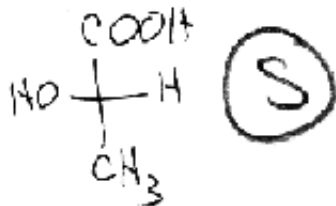
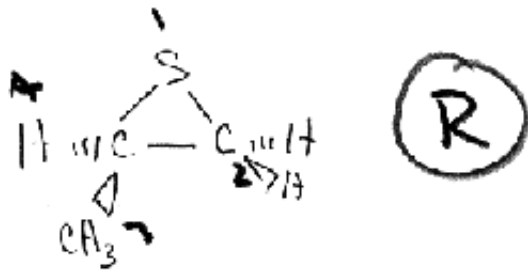
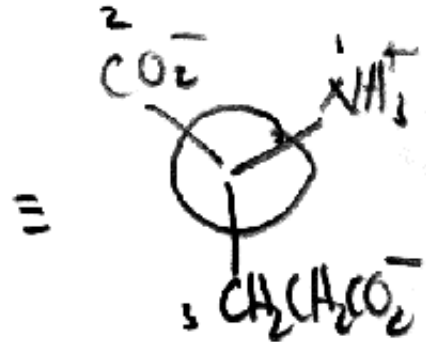
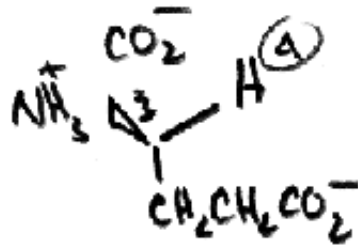
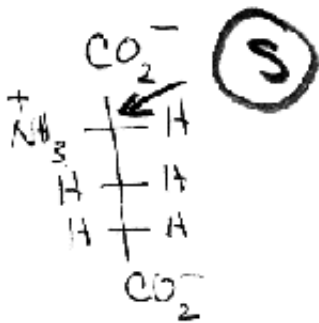
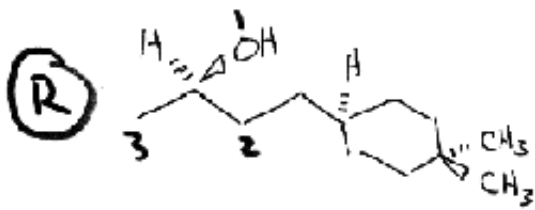


4. (10 pts) Carry out the following transformations. Use any reagents you like.



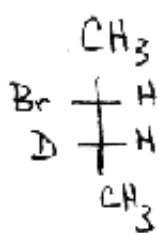


6. (10 pts) Specify the configuration as either R or S for each chiral center.

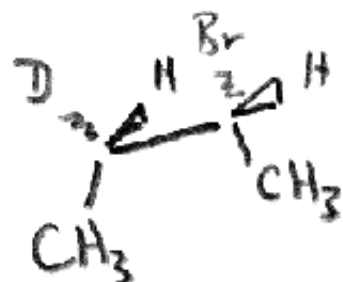


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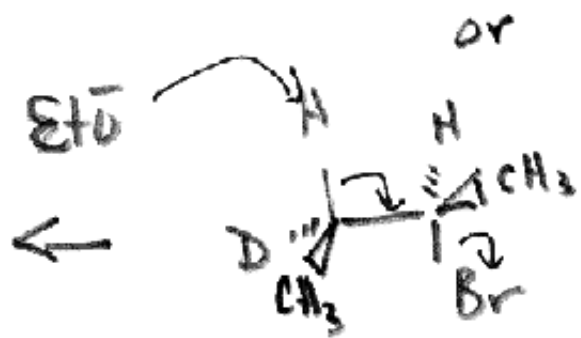
7. (10 pts) On being heated with  $\text{CH}_3\text{CH}_2\text{O}^-\text{K}^+$  in ethanol at  $70^\circ\text{C}$ , the deuterium-labeled alkyl bromide gave a mixture of 1-butene, *cis*-2-butene, and *trans*-2-butene. Which alkenes contained deuterium?



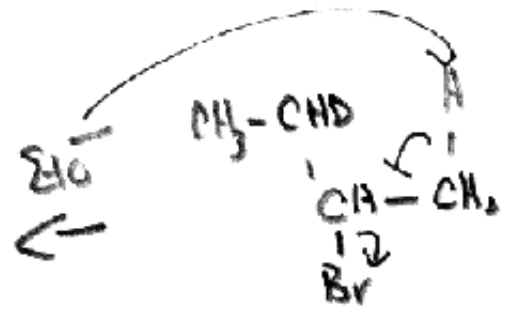
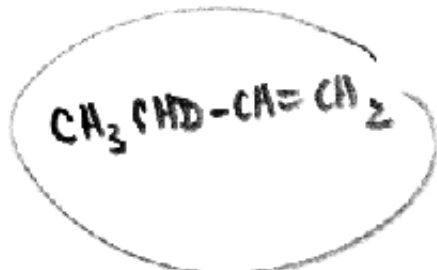
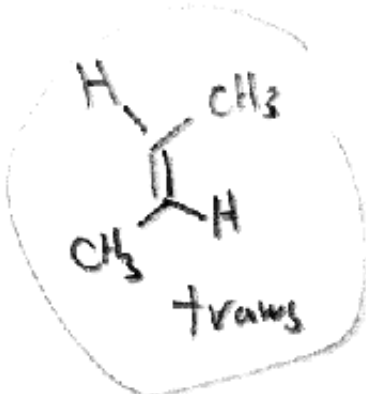
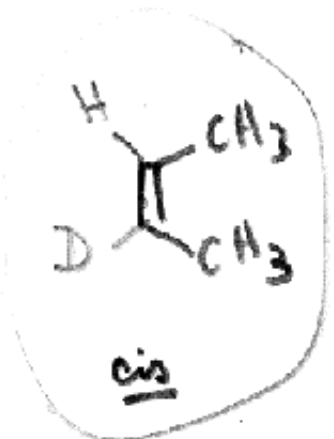
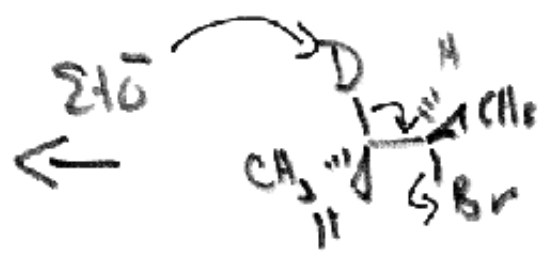
this is



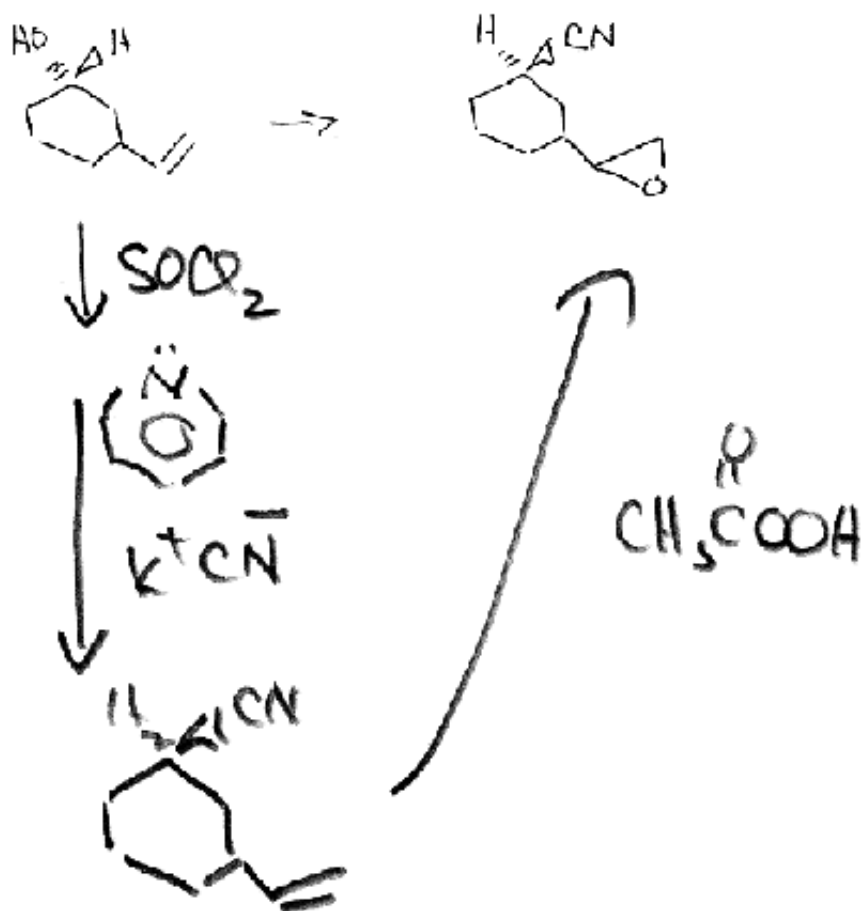
or



or

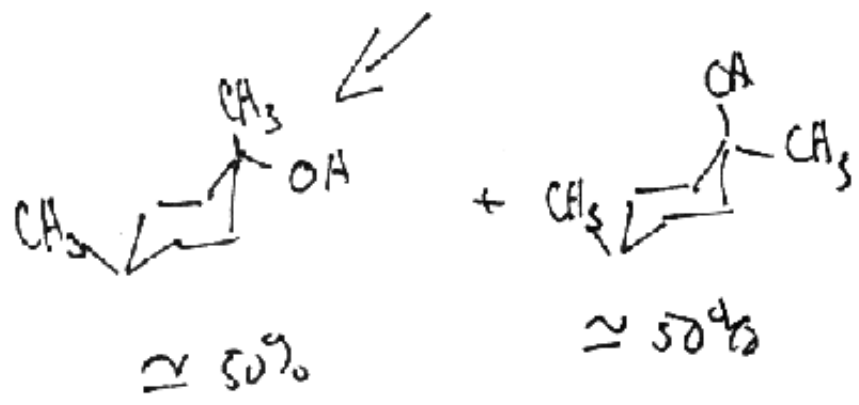
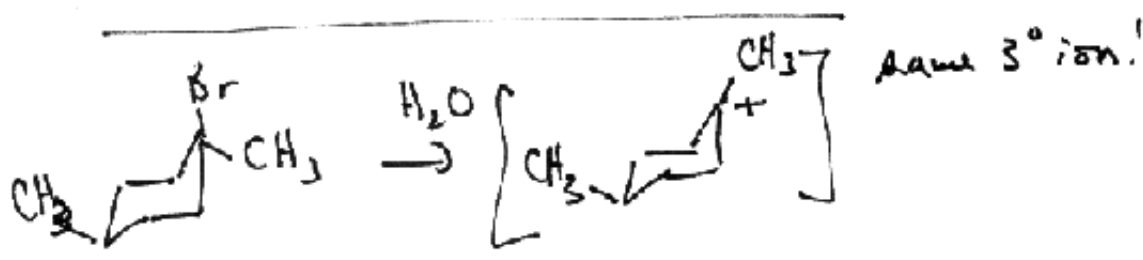
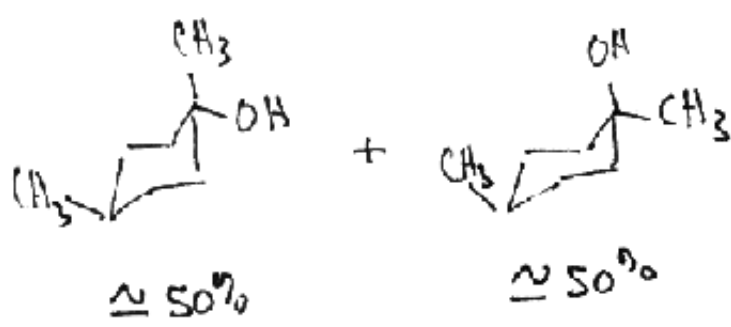
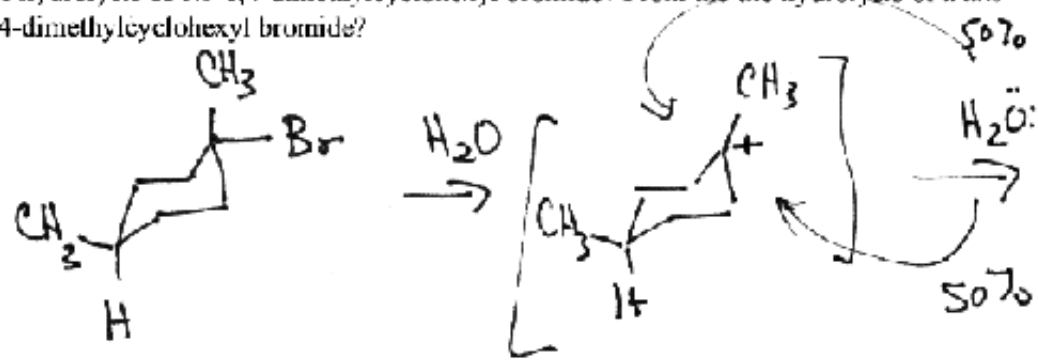


8. (10 pts) Carry out the following transformations. Use any reagents you like.

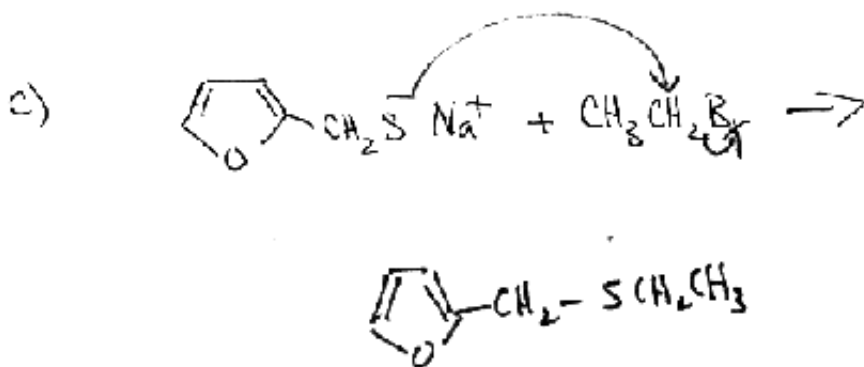
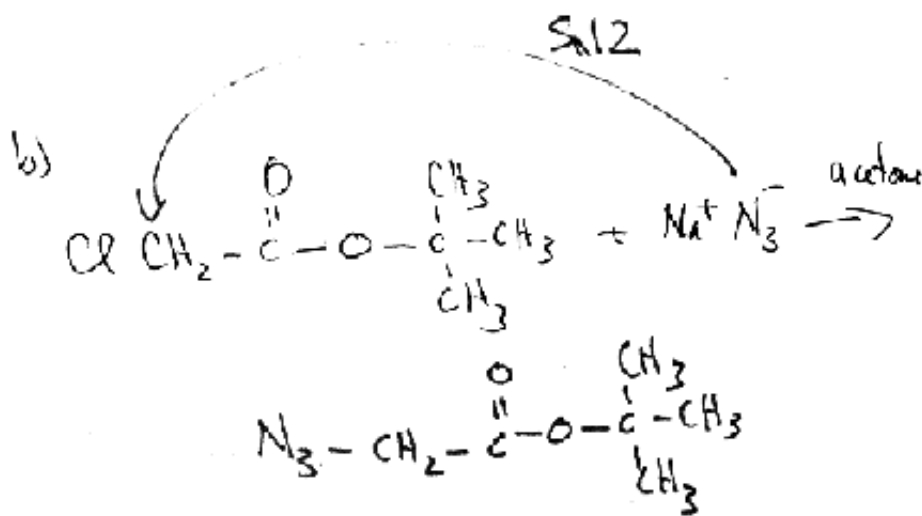
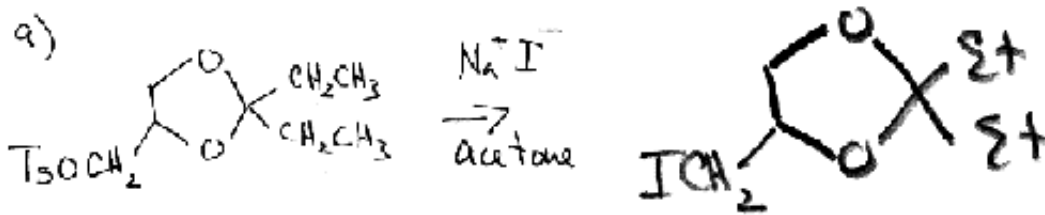


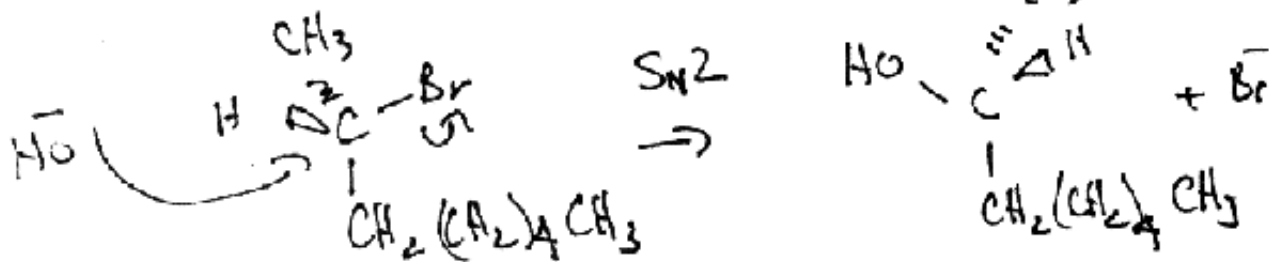
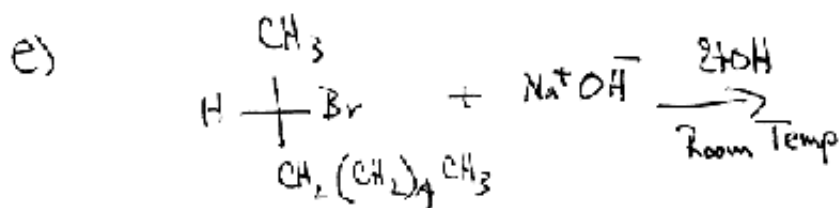
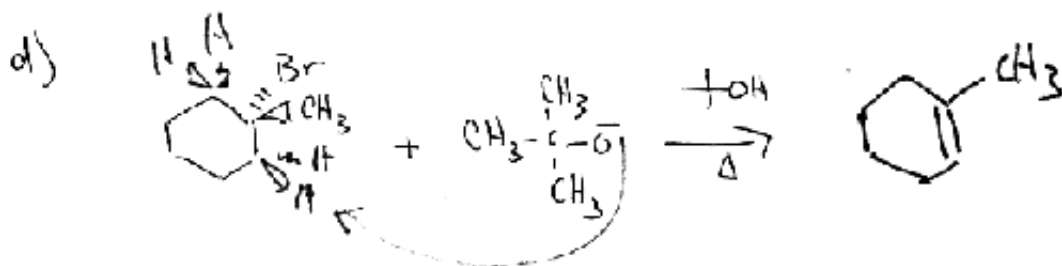


9. (10 pts) What two stereoisomeric substitution products would you expect to isolate from the hydrolysis of *cis*-1,4-dimethylcyclohexyl bromide? From the hydrolysis of *trans*-1,4-dimethylcyclohexyl bromide?



10. (10 pts) What reaction products do you expect in the following?





100% inversion