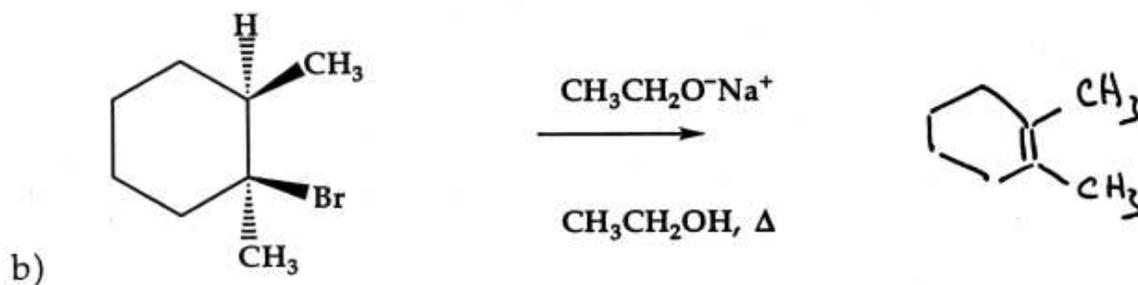
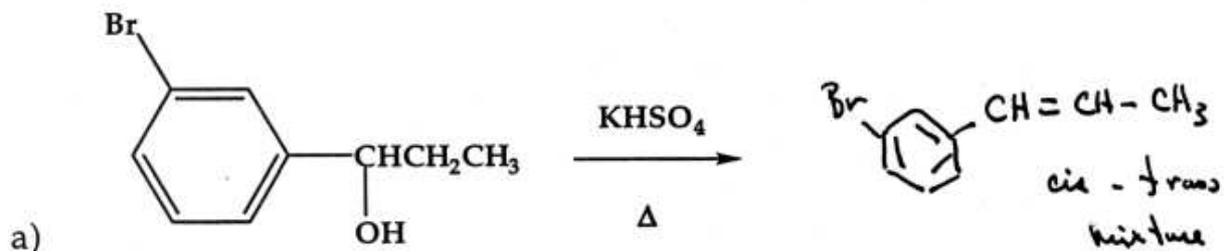
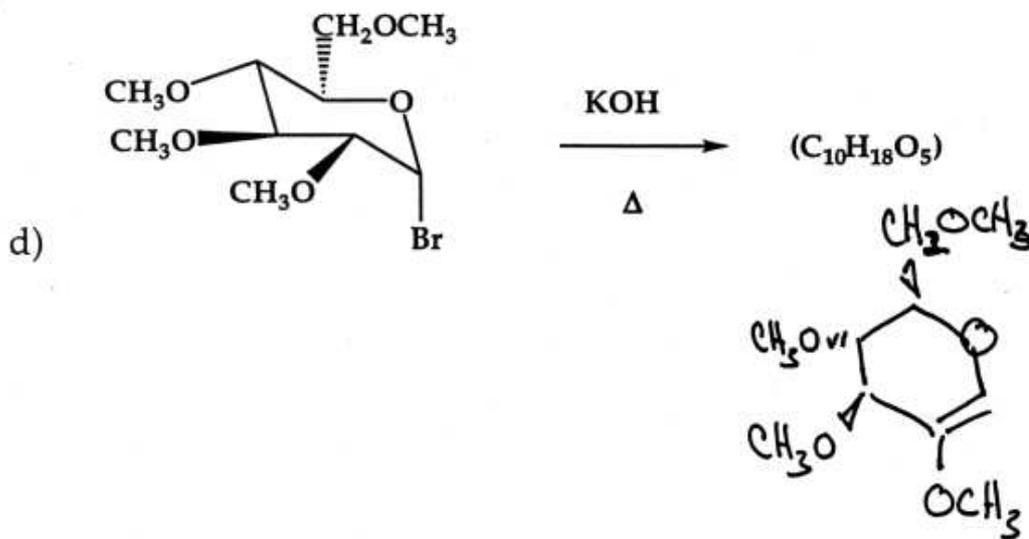
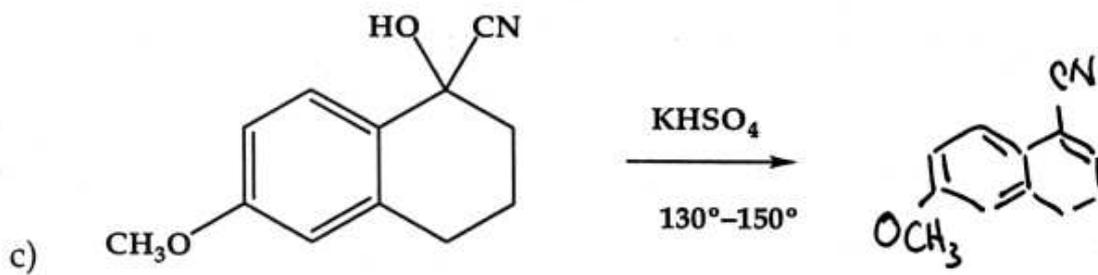


Chemistry 3311-100  
Organic Chemistry/Dr. Barney Ellison  
Thursday: March 14 @ 7:00pm → 9:00/1<sup>st</sup> Exam/Math 100

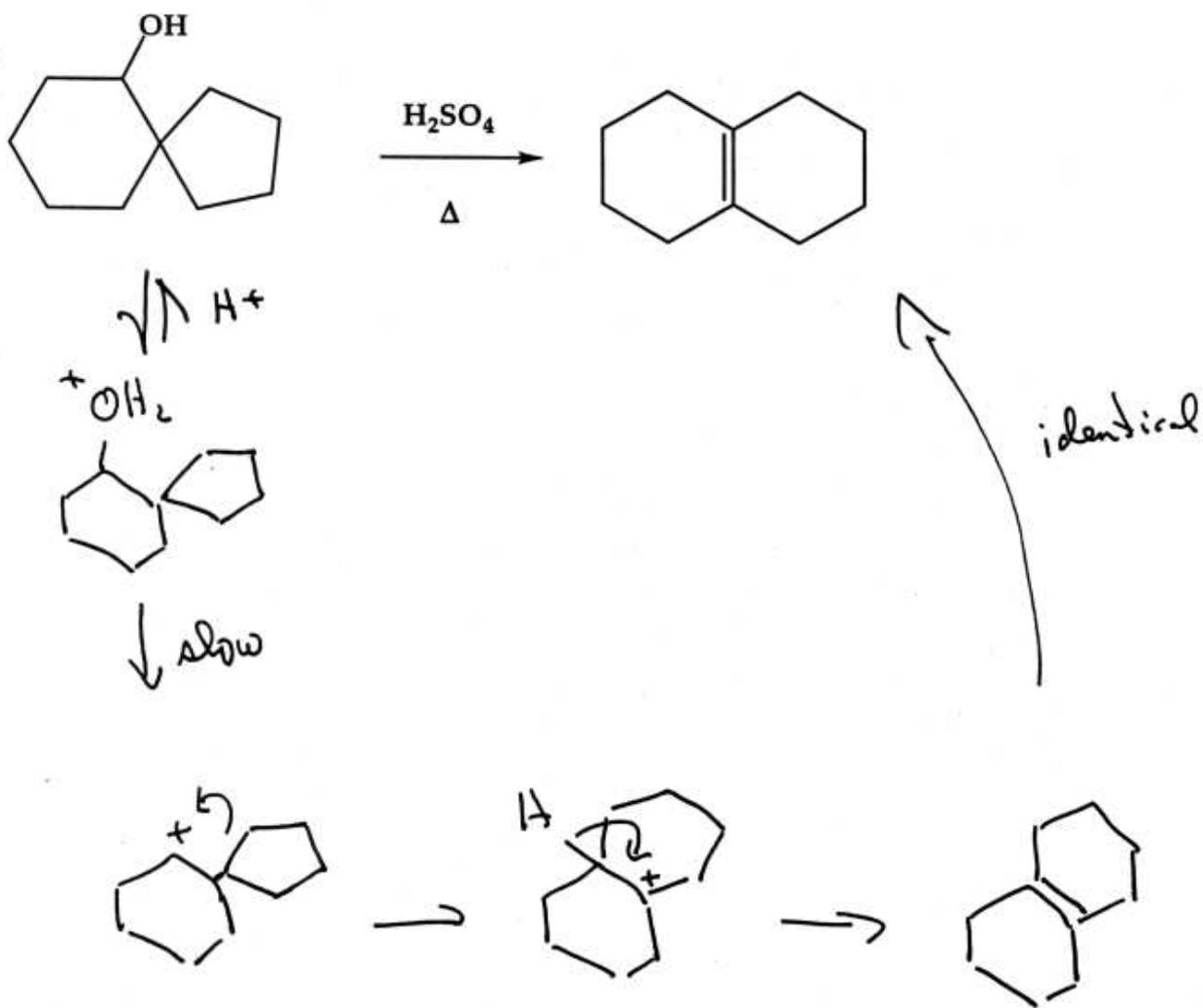
Name: Key (please print)

1. (20 pts) Predict the major organic product of each of the following reactions.

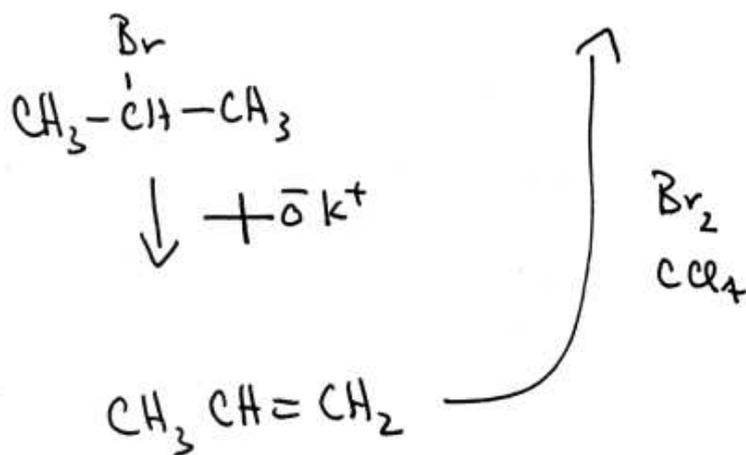
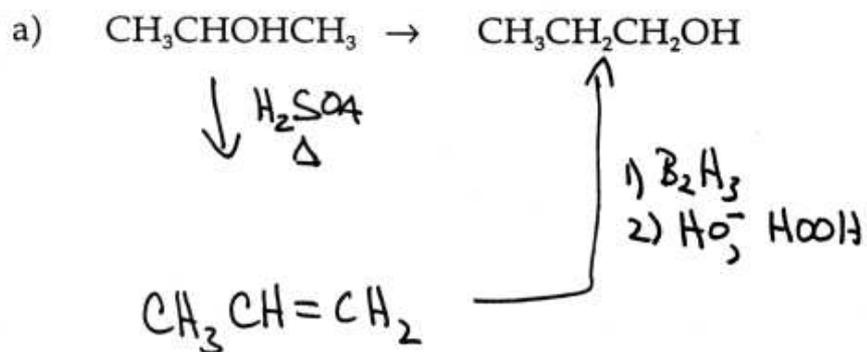




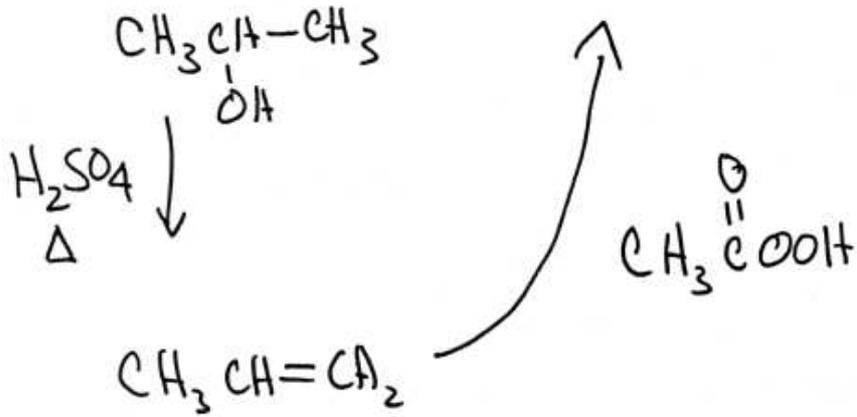
2. (10 pts) What is the mechanism for this transformation?



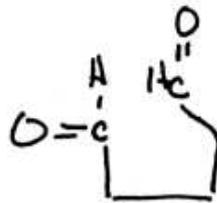
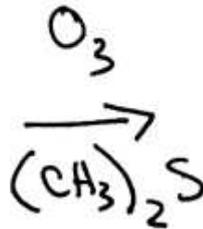
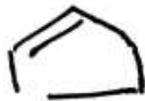
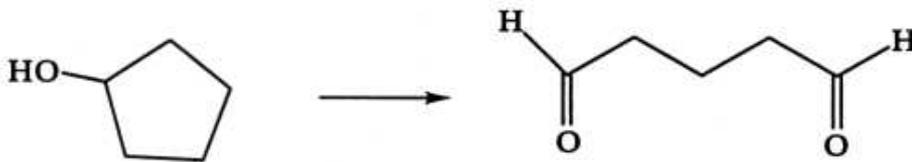
3. (20 pts) Suggest a synthesis for each of the following. Use any organic or inorganic reagents you like.



c) 2-propanol → 1,2 epoxypropane

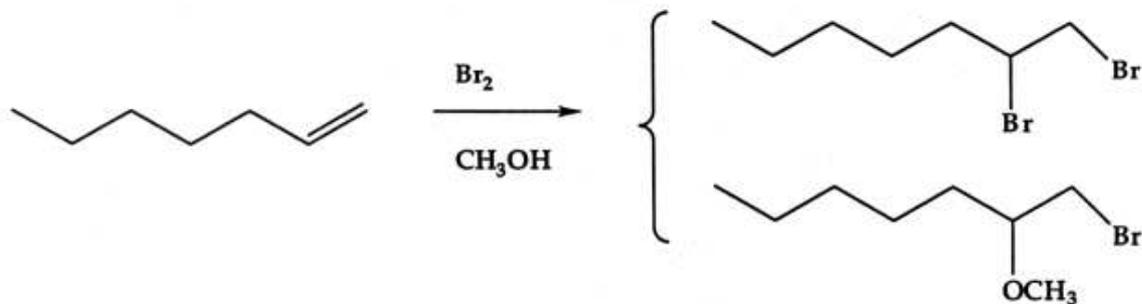


d)

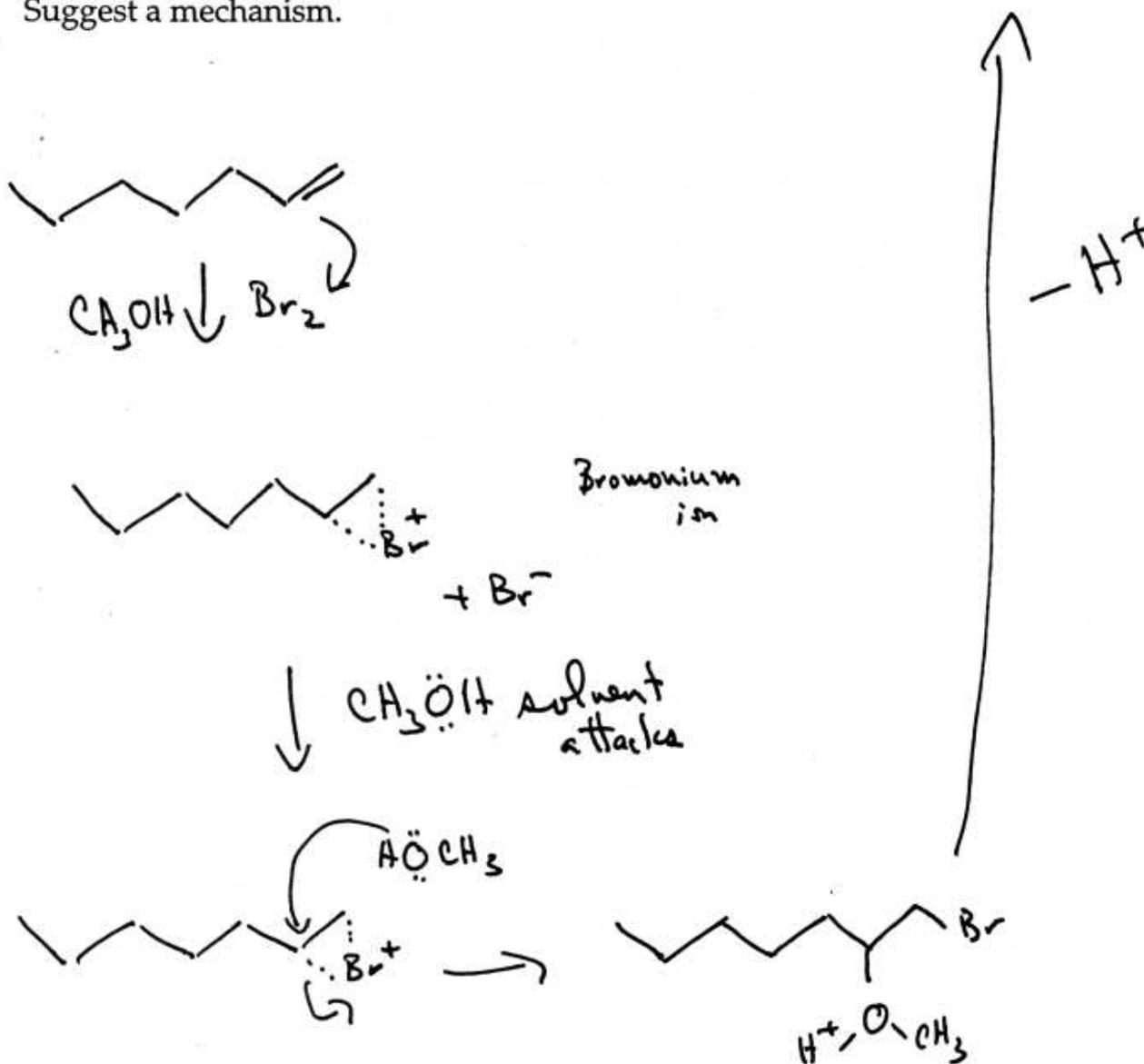


identical

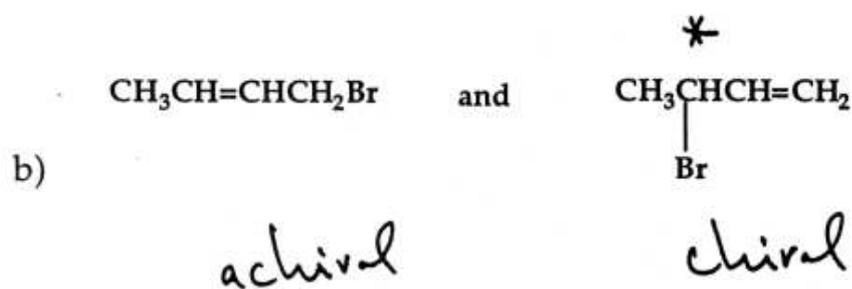
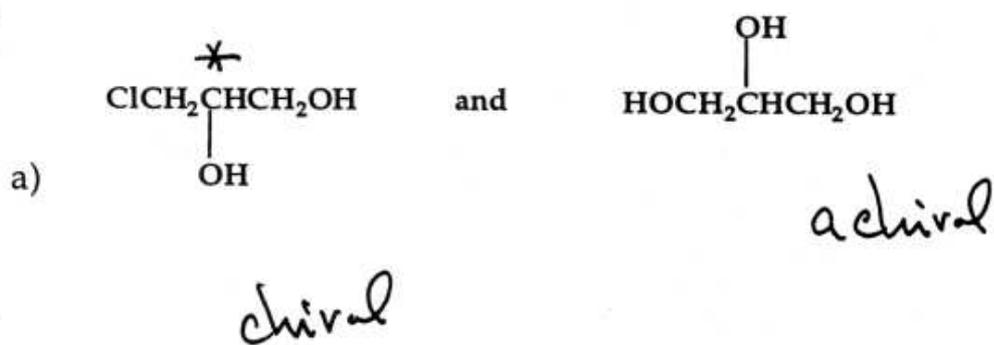
4. (10 pts) When  $\text{Br}_2$  is added to 1-hexene in  $\text{CH}_3\text{OH}$  solution, the major products are:

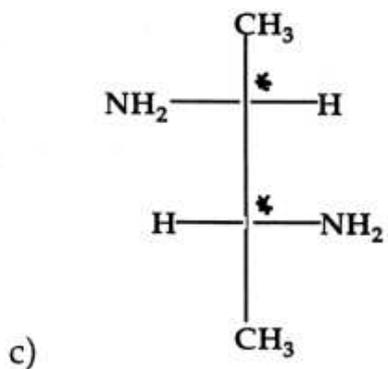


Suggest a mechanism.



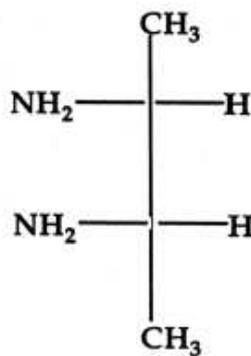
5. (20 pts) For each pair, one compound is chiral while the other is not. Identify each compound as chiral or achiral.



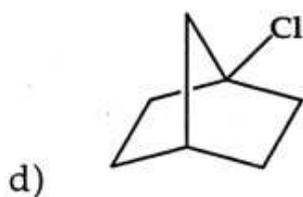


*chiral*

and



*achiral*



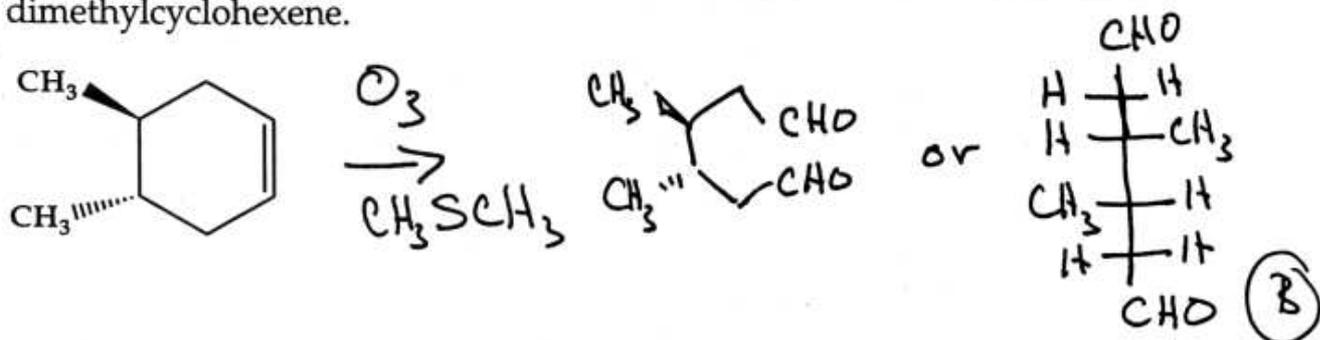
*achiral*

and

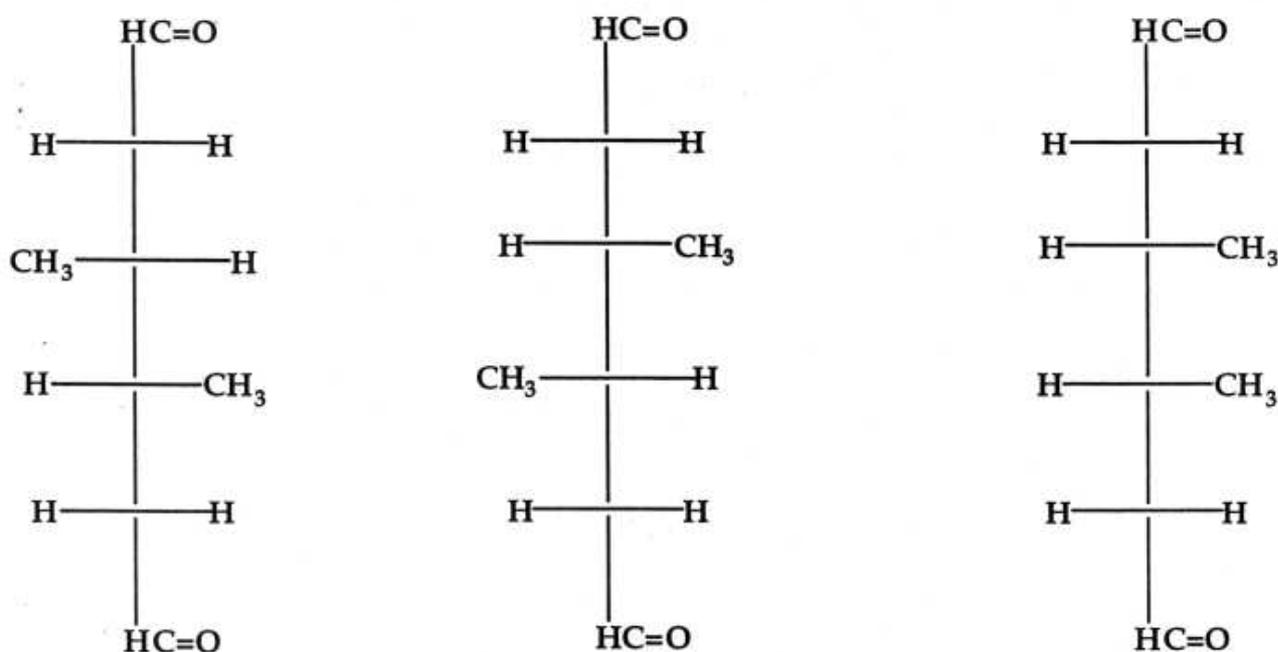


*chiral*

6. (20 pts) Consider the ozonolysis of *trans*-4,5-dimethylcyclohexene.



Structures A, B, and C are three stereoisomeric forms of the reaction product.



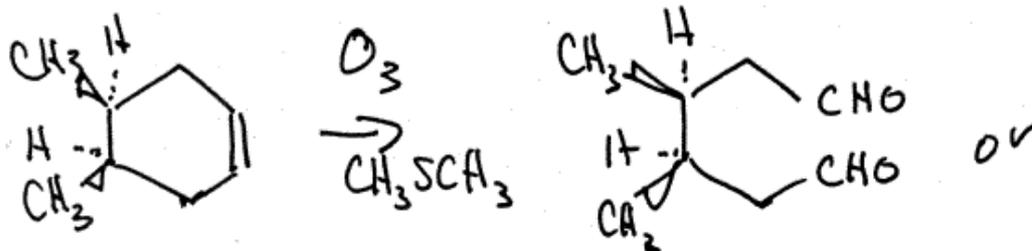
a) Which, if any, are chiral? A B C

(A) (B) are chiral.  
(C) is not chiral

b) Which product is formed in the reaction?

B

c) Which product would be formed if the methyl groups were *cis* to each other in the starting alkene?



C

