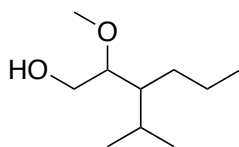
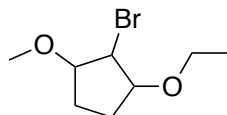
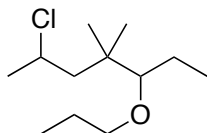
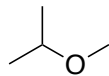
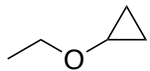


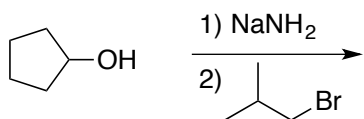
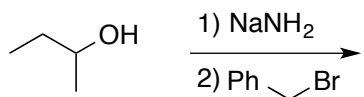
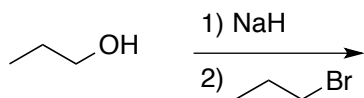
**Chemistry 234**  
**Chapter 18 Problem Set**

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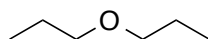
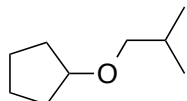
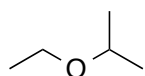
1. Write the IUPAC name for each ether-containing compound shown below. Where appropriate, also include the common name.



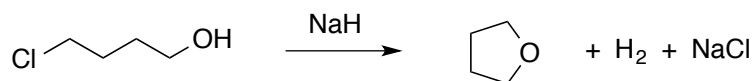
2. Predict the major organic product from each reaction below.



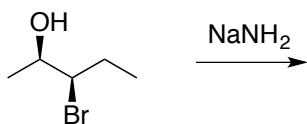
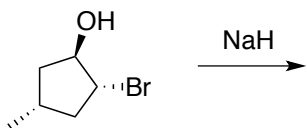
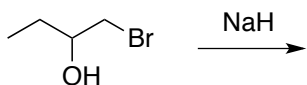
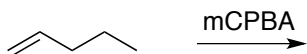
3. Determine two different routes to make each ether below using the Williamson ether synthesis. Indicate which route (if any) would be preferred.



4. Draw a complete electron pushing mechanism for the reaction shown below.



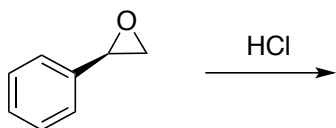
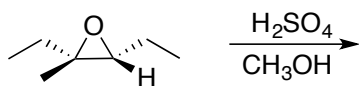
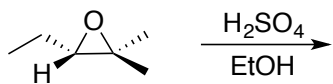
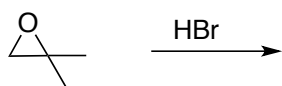
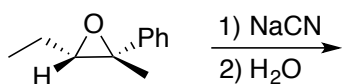
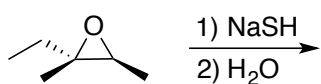
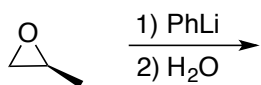
5. Predict the product for each epoxide preparation shown below.



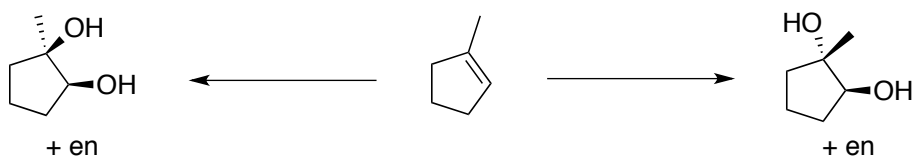
6. Provide the reagents necessary to carry out the following transformations.



7. Predict the product for each of the reactions shown below.

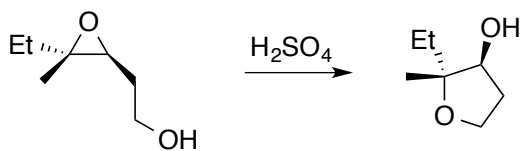


8. Provide the necessary reagents to prepare the syn diol and the anti diol shown below.

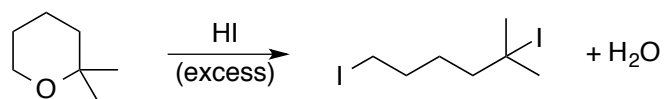


**Challenge Problems**

9. Propose an electron pushing mechanism for the reaction shown below.



10. Draw a complete electron pushing mechanism for the reaction shown below.



11. Provide reasonable synthetic routes to prepare the following from 2-methylbutane.

a. 1-methoxy-2-methyl-2-butanol

b. 1-methoxy-2-methylbutane