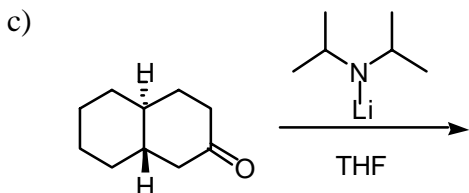
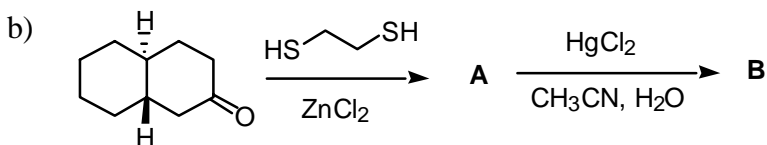
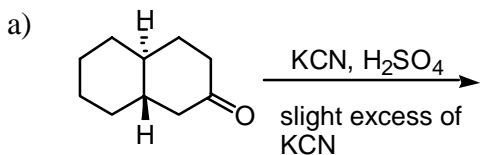
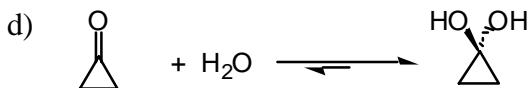
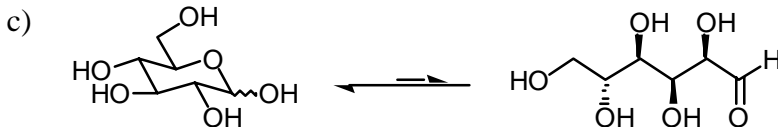
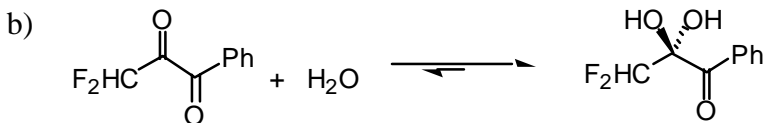
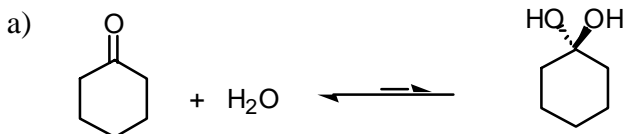


## Problem Set 6

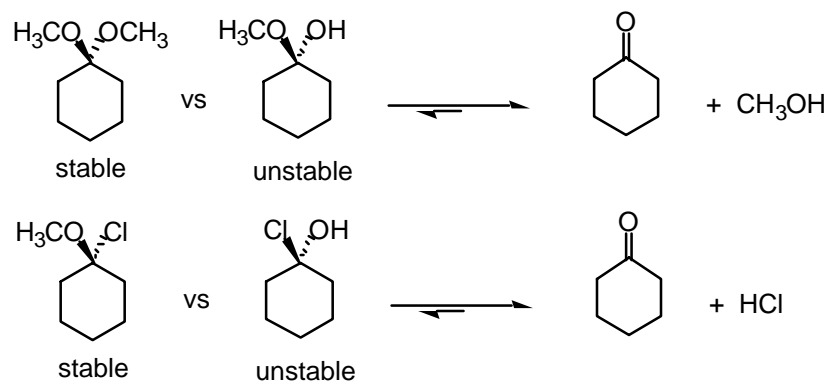
1. Draw products of the following reactions.



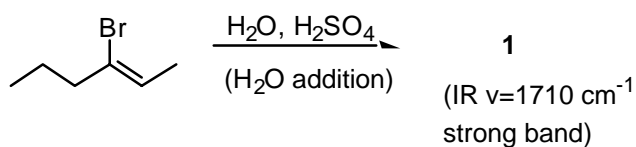
2. Explain the following observations.



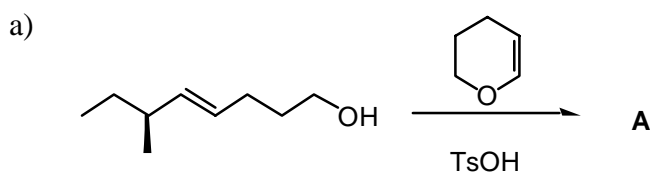
3. Attempt to explain the following facts. These are not simple questions and you may not find the answers in any textbook. Think!



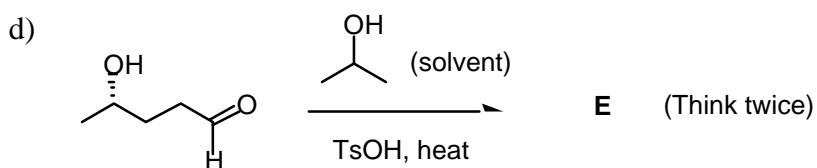
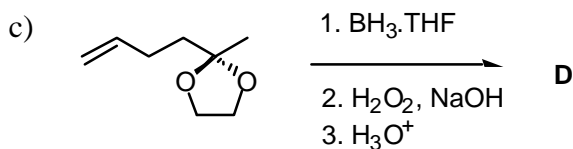
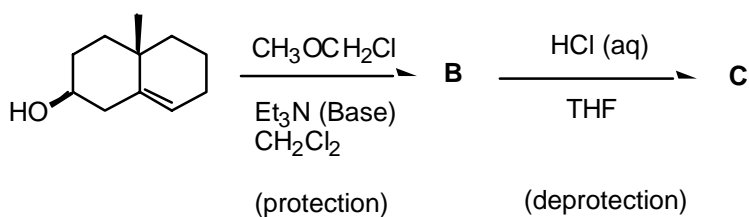
4. Draw the product of this transformation and explain.



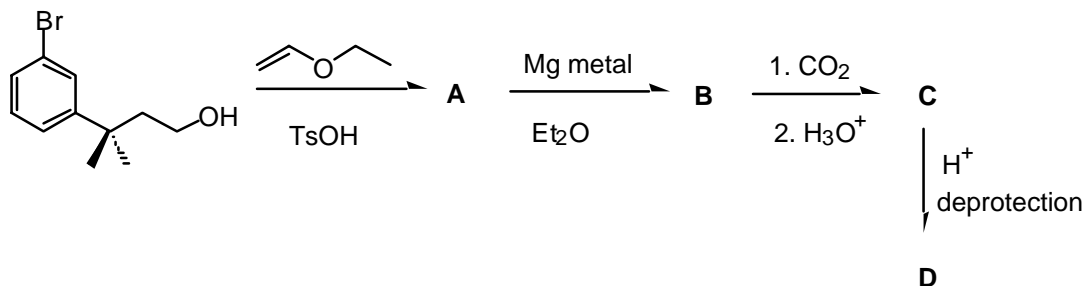
5. Draw the products of the following reactions.



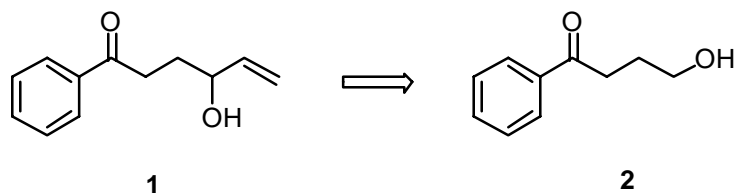
b) CH<sub>3</sub>OCH<sub>2</sub>Cl methoxy methyl chloride (MOM-Cl) is also used as an alcohol protecting group. Explain in detail the mechanisms of both reactions (protection & deprotection)



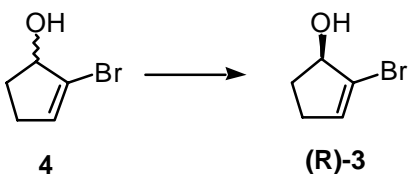
6. Complete the following synthetic sequence.



7. Synthesize hydroxy ketone **1** from **2**. Racemic product is OK, but extra credit for optically pure product.



8. Prepare R-enantiomer of **4** from a racemic mixture.



9. Propose an enantioselective synthesis of intermediate **5** from the given starting material.

