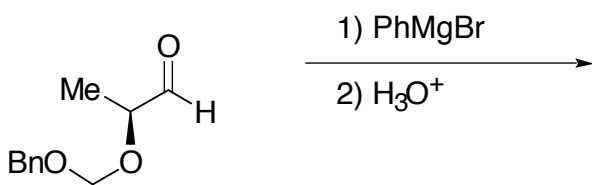
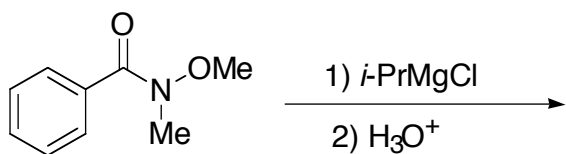
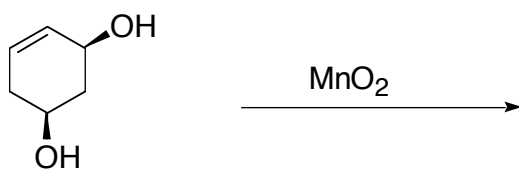
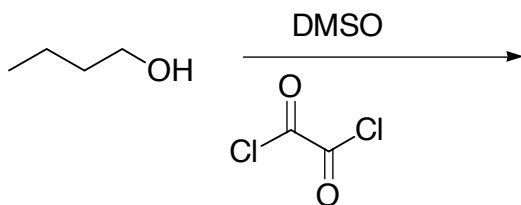
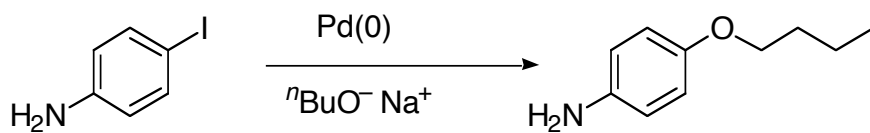
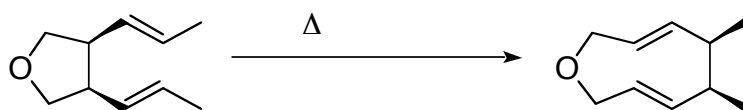
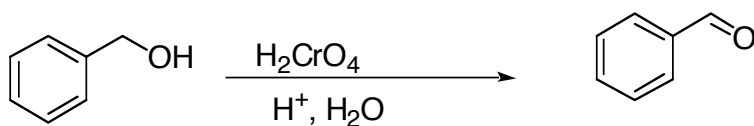
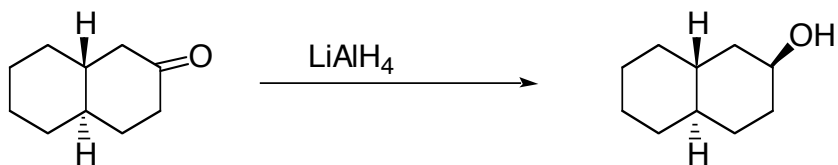


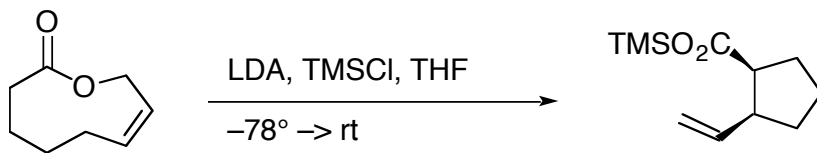
1. Provide structures of the expected products of the following reactions. (5 points each)



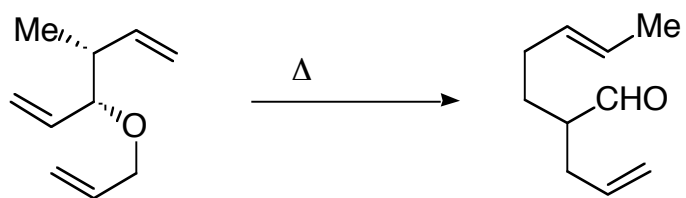
2. The following reactions would NOT proceed as follows. Provide a detailed explanation, and show exactly what would happen. (5 points each)



3. Provide a mechanism that explains the stereochemical outcome of the following reaction. Your answer must include a detailed transition state model. (20 points)



4. Provide a detailed arrow pushing mechanism. Be sure that your answer includes a detailed model that explains the double bond stereochemistry. (20 points)



5. Outline a multistep synthesis (20 points)

