

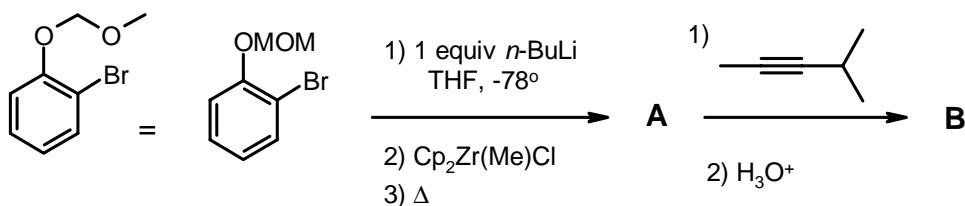
UNIVERSITY OF WINDSOR
SCHOOL OF PHYSICAL SCIENCES
DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY

Chemistry 59-634
Final Examination

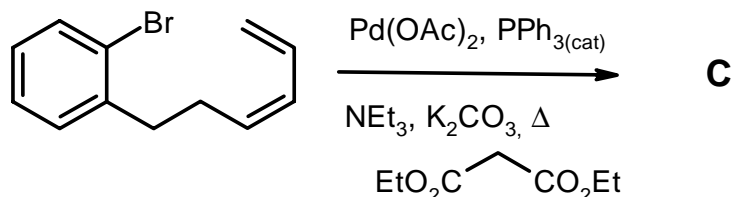
Dec. 12, 2001
Due. Dec. 13, 2001

1. (50 marks) Provide the major reaction product in each of the following transformations. Include stereochemical (relative and or absolute) information where it is relevant. Please show your work, i.e., intermediates and rationalizing the reasons for something occurring in the indicated manner.

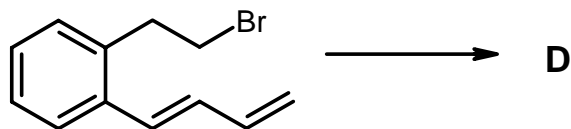
a)



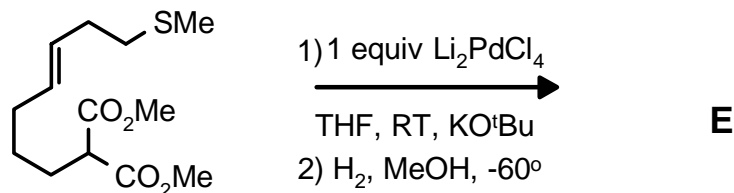
b)



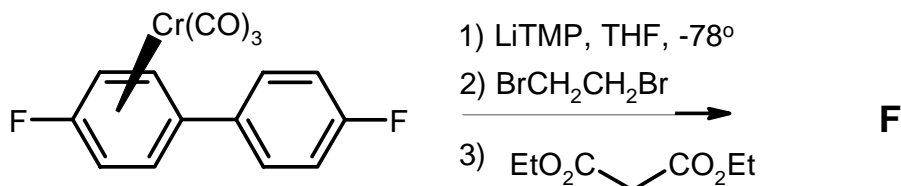
What would happen if you use this compound instead?



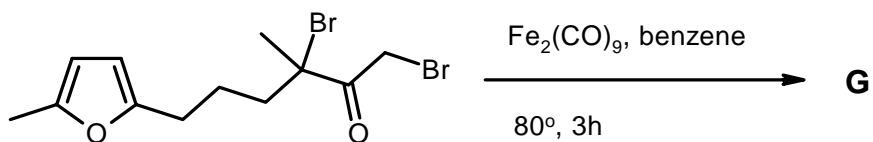
c)



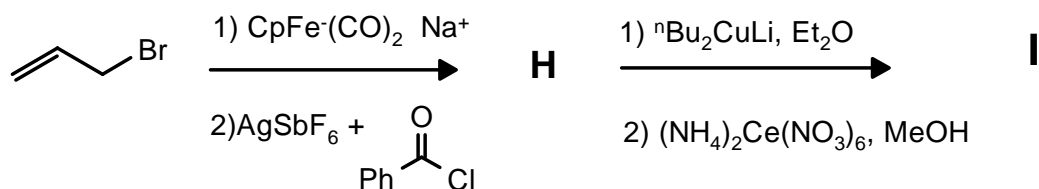
d)



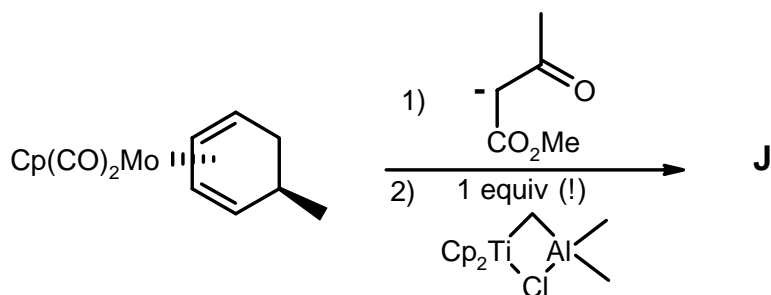
e)



f)

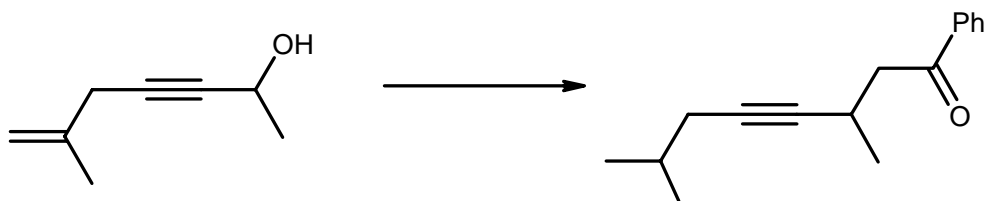


g)

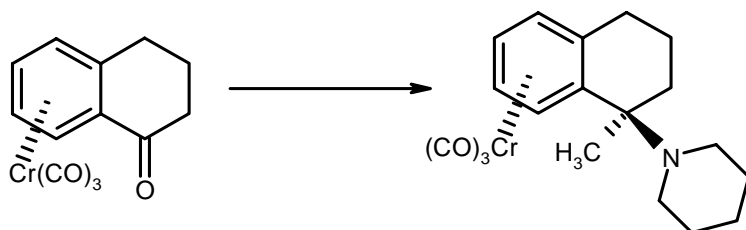


2. Show by equation how you would prepare the illustrated below from the given starting material. You may use any other reagents that you deem fit, but the intent is to focus on material learned in this course. Show all reagents, conditions, and intermediates. Mechanisms are not necessary, but may be a help. **(Total 50 marks)**

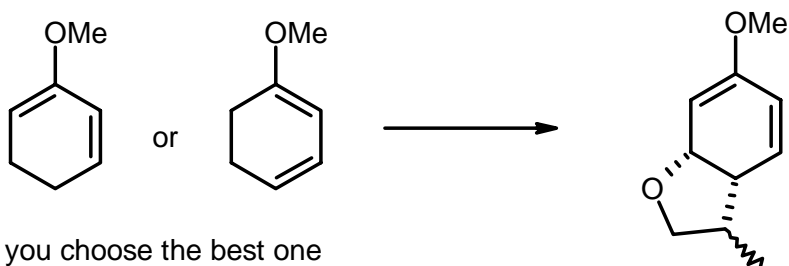
a)



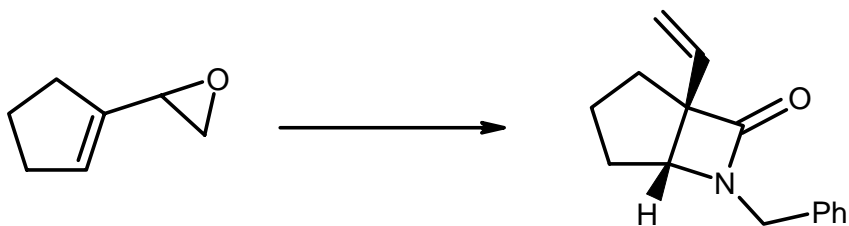
b)



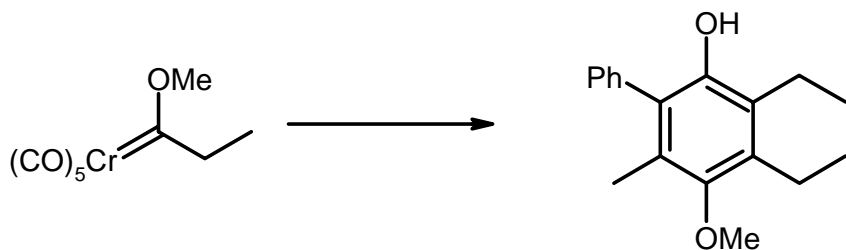
c)



d)



e)



3. (10 marks) The following is both a synthetically and mechanistically interesting transformation that is essentially a combination of reactions from this course. How is this reaction occurring? According to our notes, we would expect a slightly different (isomeric) product. What would that be and why does one normally expect that regiochemistry? Finally, anyone suggesting a plausible reason why this regiochemistry occurs could get a couple of bonus marks.

