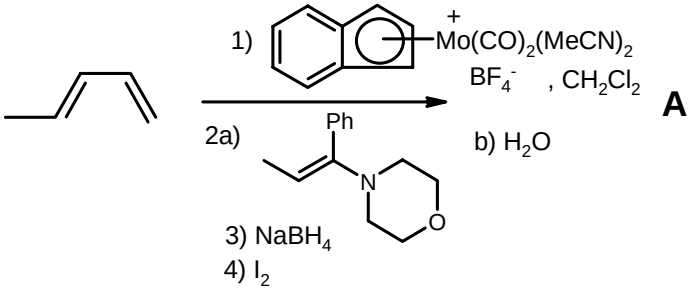
UNIVERSITY OF WINDSOR
SCHOOL OF PHYSICAL SCIECNES
DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY

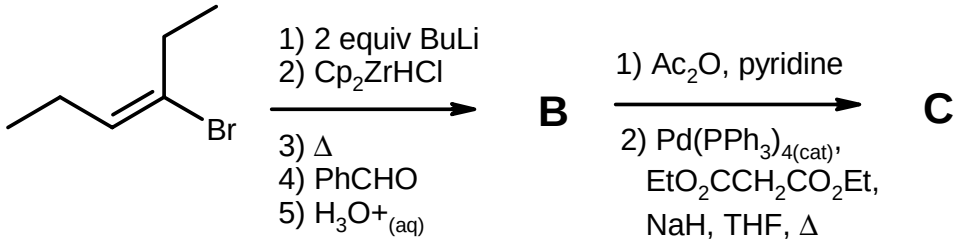
Chemistry 59-634 **Apr. 20, 2004**
Final Examination **Due. Apr. 21, 2004**

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.

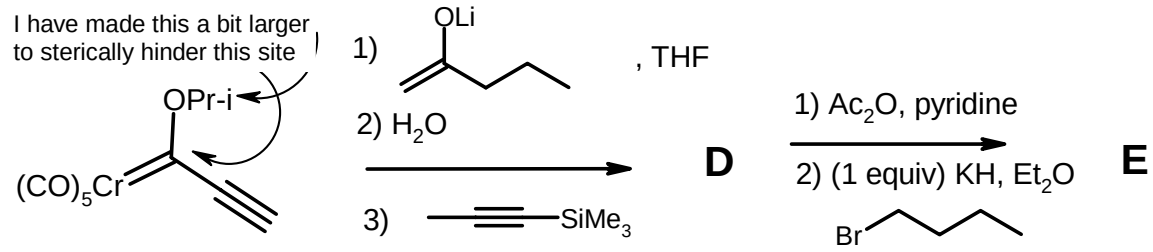
a)



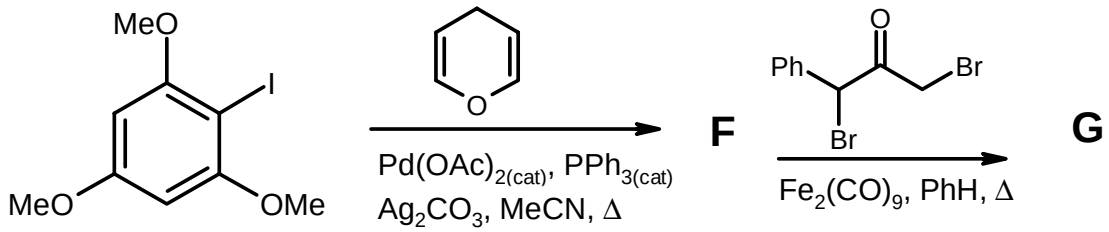
b)



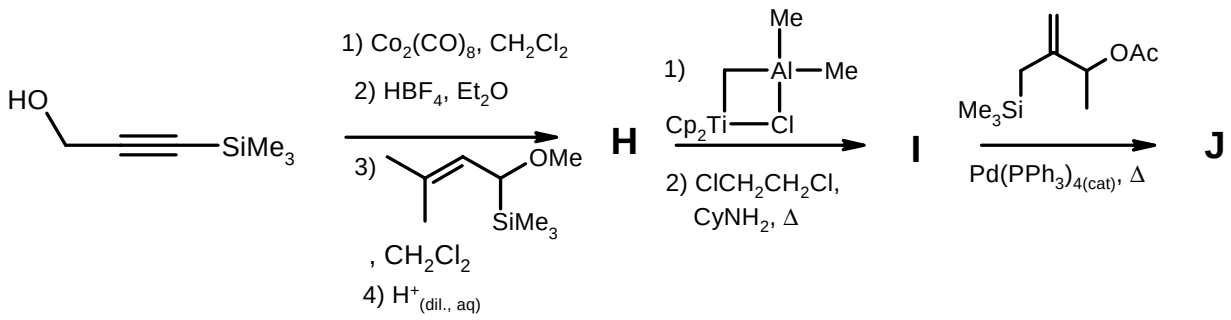
c)



d)

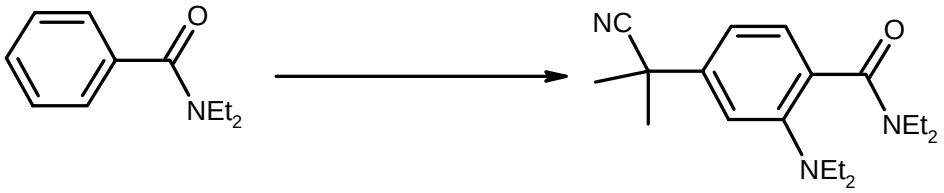


e)

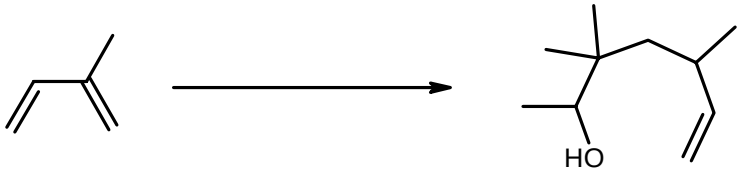


2. Show by equation how you would prepare the illustrated below from the given starting material. You may use any other reagents that you deem fit, but the intent is to focus on material learned in this course. Show all reagents, conditions, and intermediates. Mechanisms are not necessary, but may be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

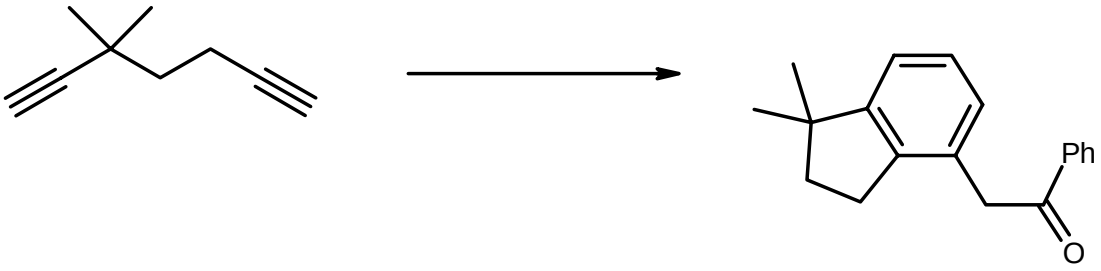
a)



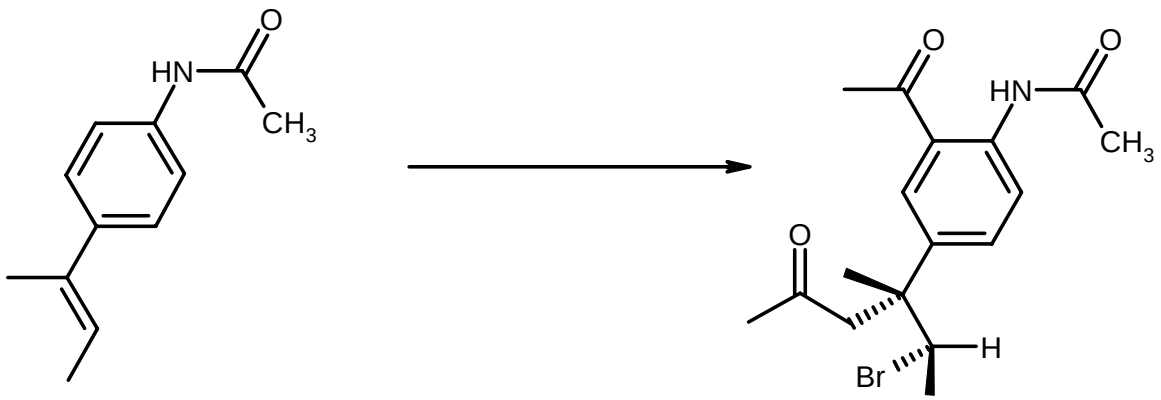
b)



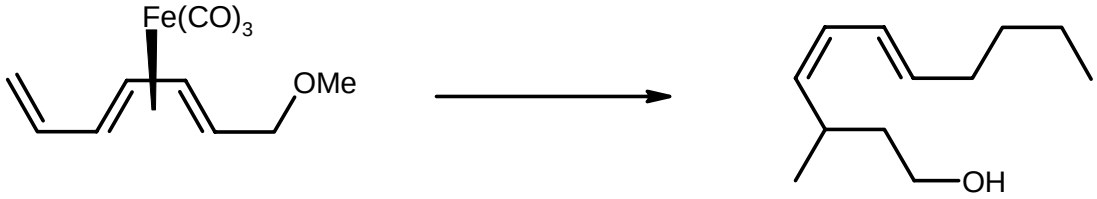
c)



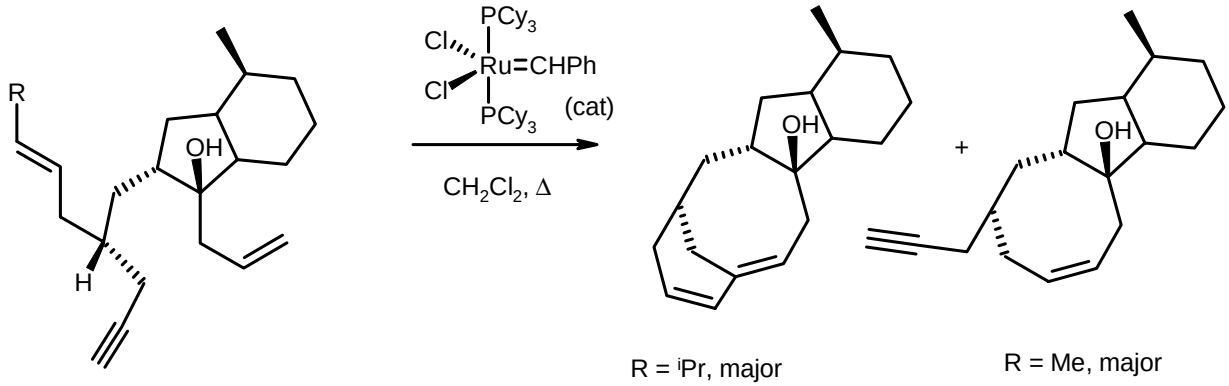
d)



e)



3. (**10 marks**) The following is both a synthetically and mechanistically interesting ring closing metathesis transformation recently reported. How is this reaction occurring? Why is it plausible to expect a change in product type with such a simple change in substrate?.



R = ^{i}Pr, major

R = Me, major