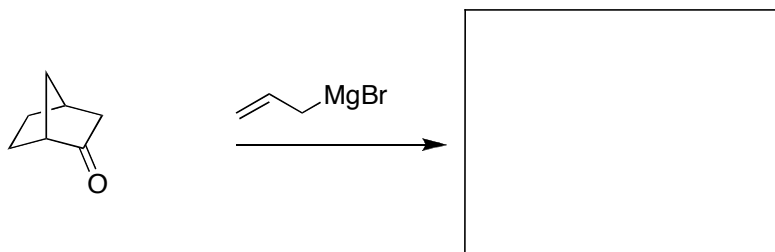
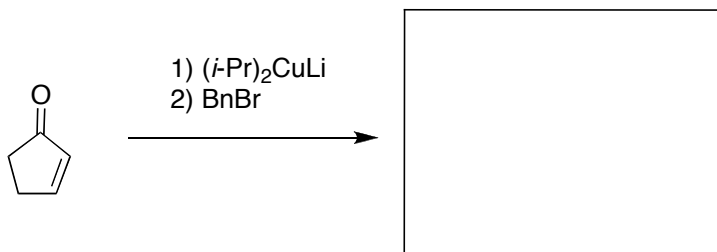
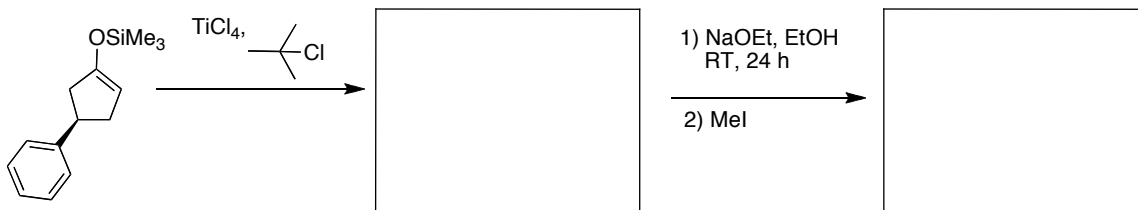
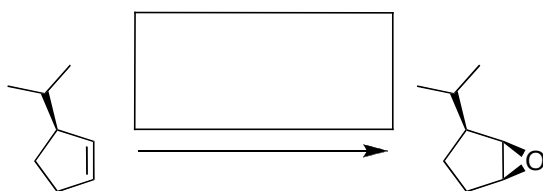
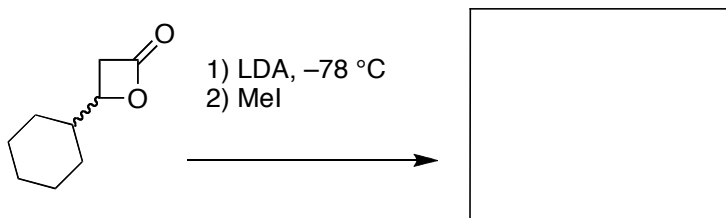
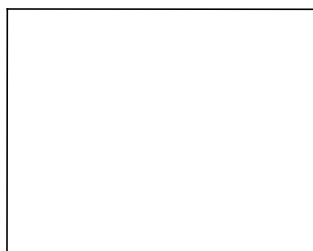
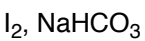
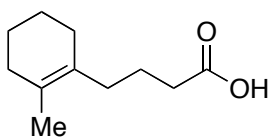
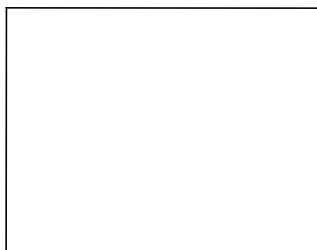
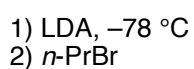
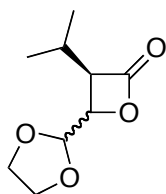
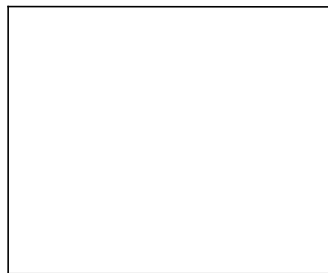
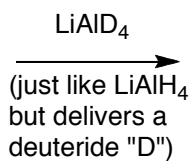
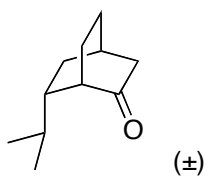


Problem set 4
Chapter 33.

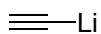
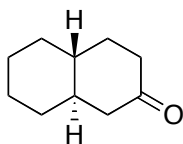
1. Fill in the boxes with the reagents required to produce the stereoisomer shown, or with the MAJOR stereoisomer produced by the reaction conditions given. *For all products, indicate whether the product is achiral, racemic, or a single enantiomer.*



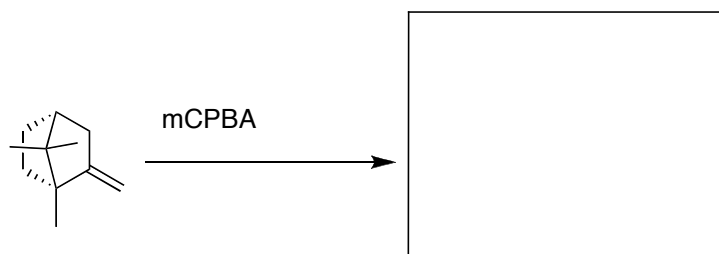


2. Give the product of the following reactions. In the space below each reaction, include stereochemical (3D) diagrams of starting materials and products that explain the observed stereoselectivity.

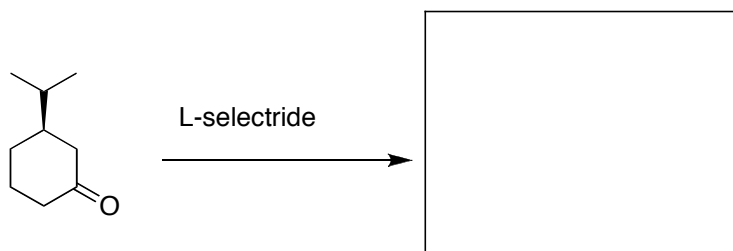
a)



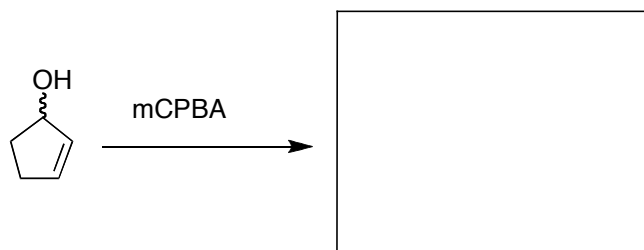
b)



c)



d)

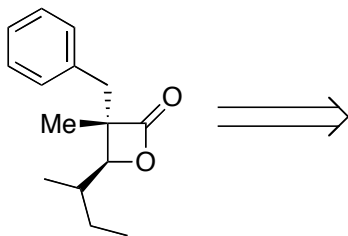


4. Plan a synthesis of the following compounds from materials following the rules given. Clearly indicate the bond(s) you are disconnecting in each step and indicate which reagents and conditions are required for the reaction(s) you are conducting.

a) Made from completely acyclic materials.



b) Made from materials with 7 or fewer carbon atoms.



c) Made from materials with 6 or fewer carbon atoms.

