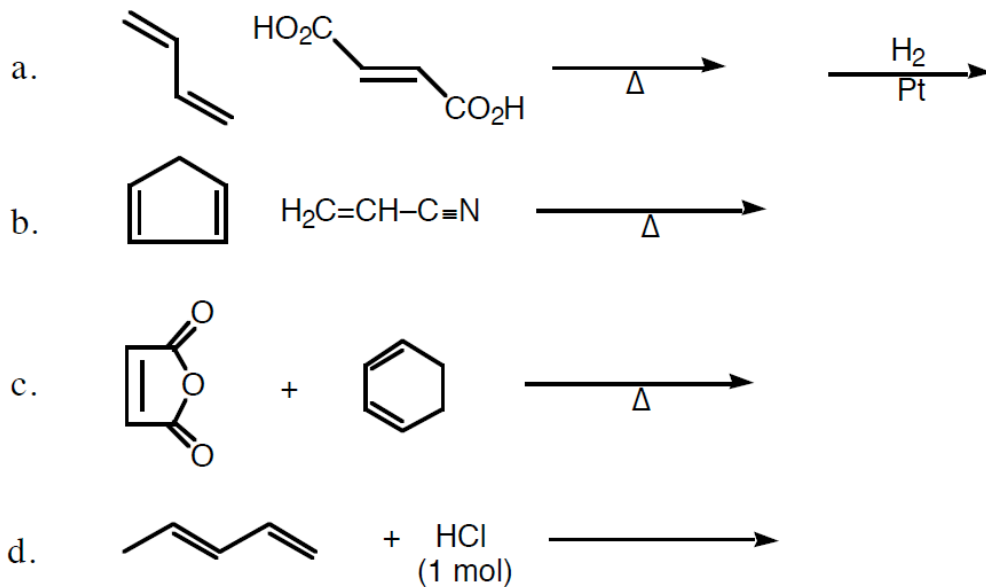


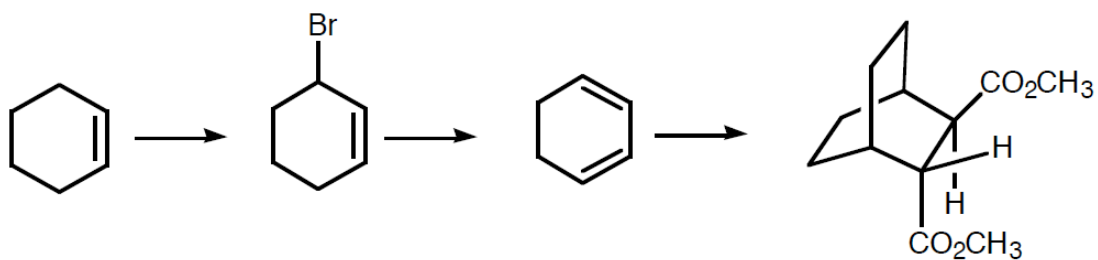
WORKSHOP for Chapter 10

Conjugation, Pericyclic Reactions

1. Give the products of the following reactions:



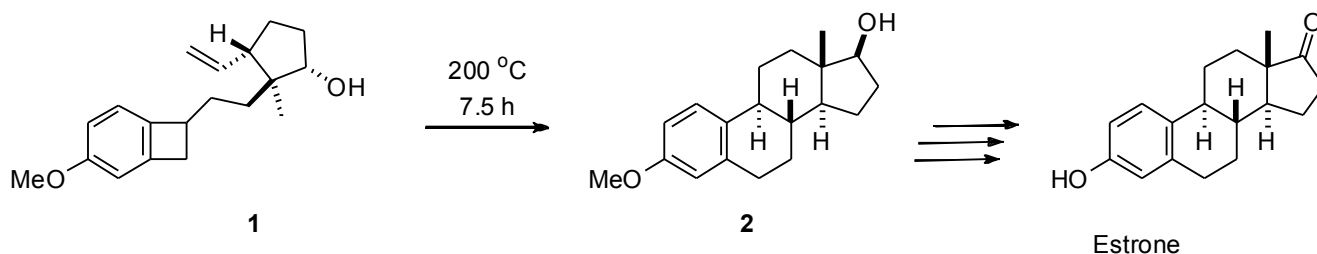
2. Specify the reagents, reactants and conditions you would use to carry out the following synthetic sequence.



3. a. What is the difference between kinetic control and thermodynamic control?
 b. Draw the energy diagrams for the kinetic and thermodynamic control of HBr addition to 1,3-butadiene.
 c. How does temperature affect kinetic vs thermodynamic control?

4. In 1980, Professor Grieco's (University of Pittsburgh) laboratory reported a total synthesis of estrone (an estrogenic hormone) using an intramolecular Diels-Alder approach.

Provide the complete mechanism of how **1** is converted to **2**.



5. a. Draw the complete MO diagram for 1,3-butadiene. Label the HOMO and the LUMO.
 b. Draw the complete MO diagram for hexa-1,3,5-triene. Label the HOMO and LUMO.