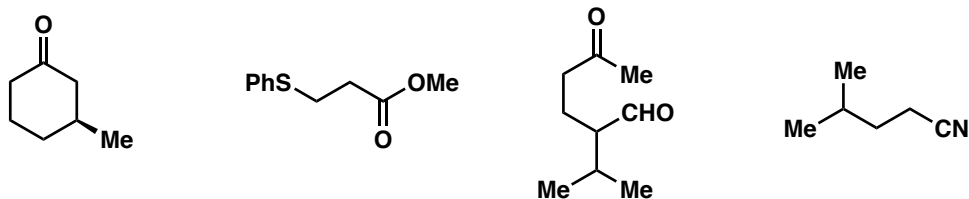
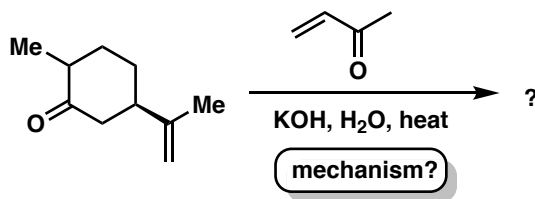


Problem Set 12
Chem 2211

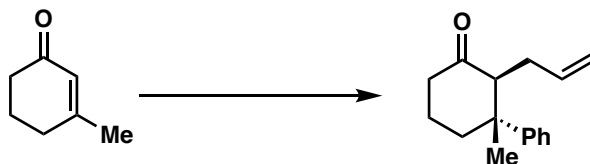
1. a. Provide 1,4 addition partners/precursors that would allow for the construction of the following molecules.



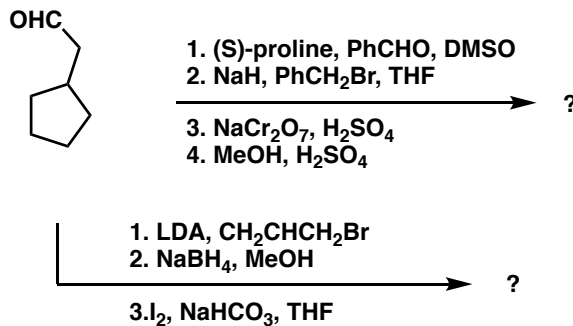
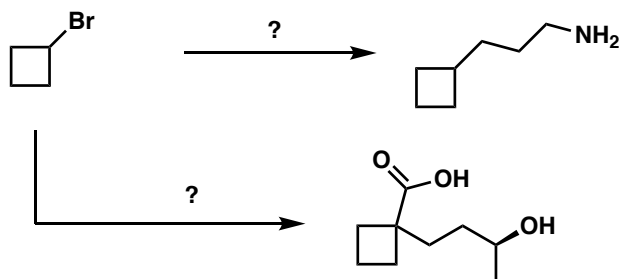
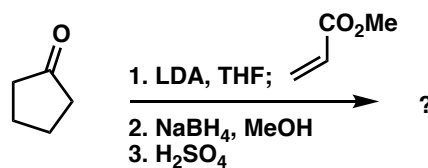
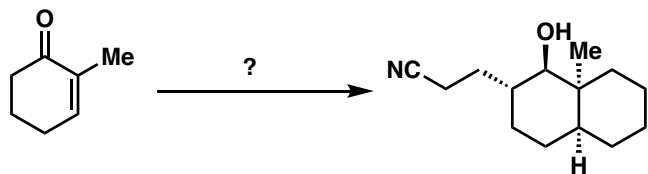
b. Predict the product of the following transformation and provide a mechanism explaining its formation



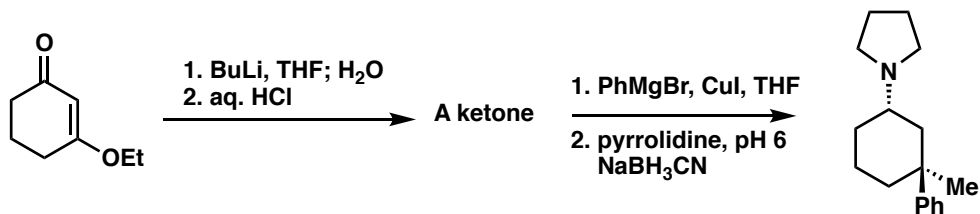
c. 1,4 additions can be utilized to perform an alkene difunctionalization. Give reagents for the following transformation that can be done in one step with multiple reagent additions.



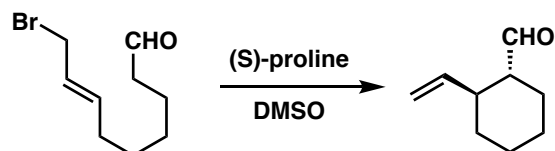
2. Provide reagents and/or products to the reactions below.



3. a. The sequential addition of organometallics to cyclic systems is a rapid way to build molecular complexity. Provide a mechanism for the reactions in the sequence below.



b. Show a mechanism for the following reaction.



4. Provide a forward synthesis of the following compounds from benzyl bromide or starting material **A**, and units of 3 carbons or fewer (a retrosynthesis will help you!!).

