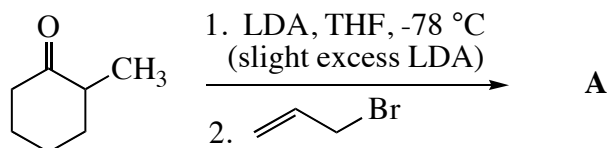


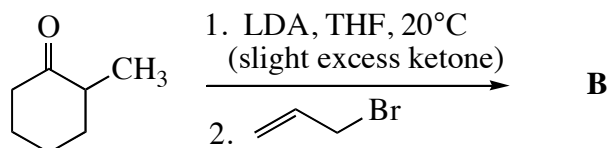
51C Practice Problems 8
Spring, 2019

1. a. Predict the major product in the following reaction:

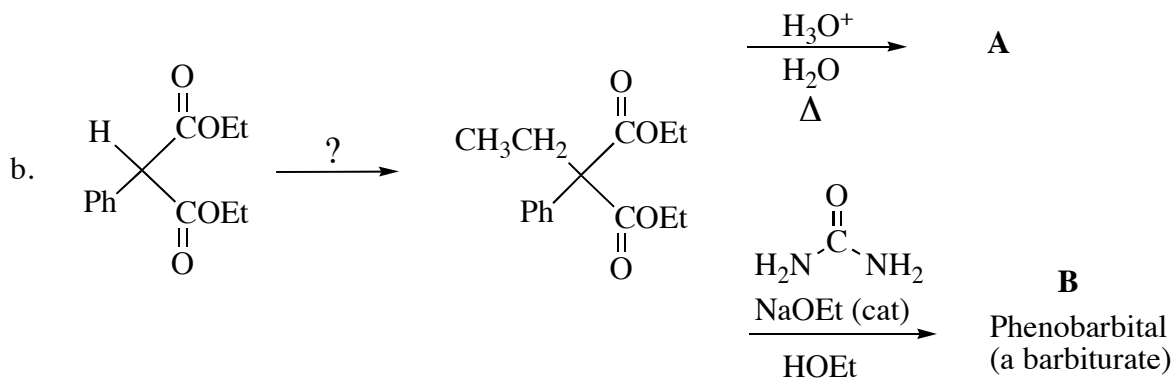
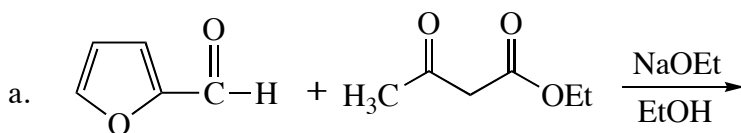


- b. The reaction in **part a** is expected to be a low yielding reaction. Provide an alternate strategy that would provide better yields.

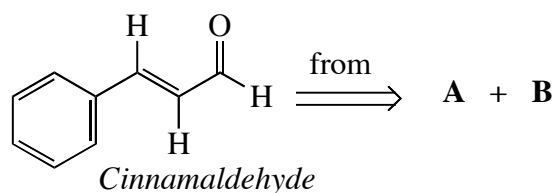
- c. How the product in **part a** change if the temperature is raised and slight excess of ketone is used?



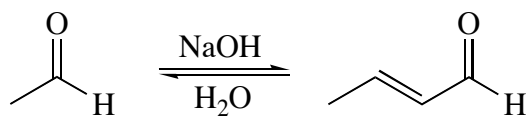
2. Fill in the reagents and products in the following syntheses:



3. Show the two organic starting materials that would be used to synthesize cinnamaldehyde by a crossed-aldol reaction. Give conditions for this synthesis.



4. a. Provide a mechanism for the following aldol condensation::



b. NaOH/H₂O is the same reagent that is used to make a hydrate of an aldehyde. Why doesn't hydrate formation occur instead?

e. What product would you isolate if Na¹⁸OD in D₂¹⁸O was used instead?