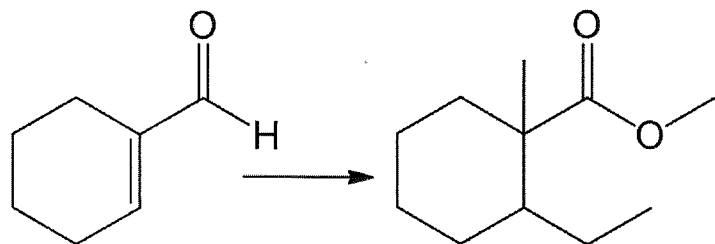
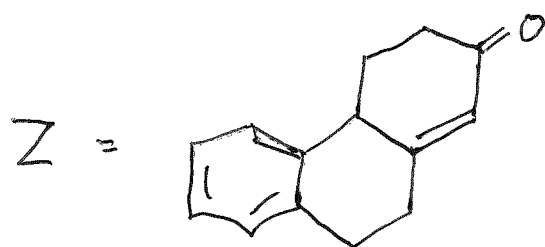
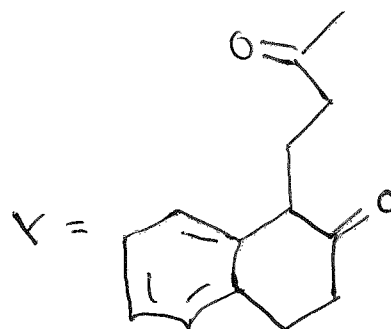
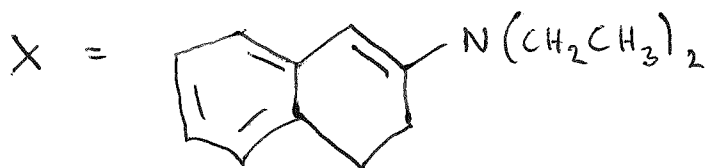
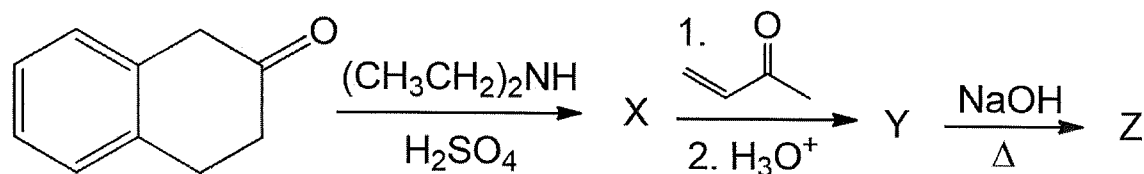


1) What reagents are needed to carry out the conversion shown?



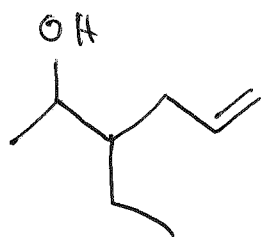
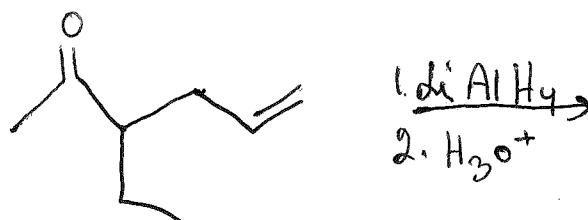
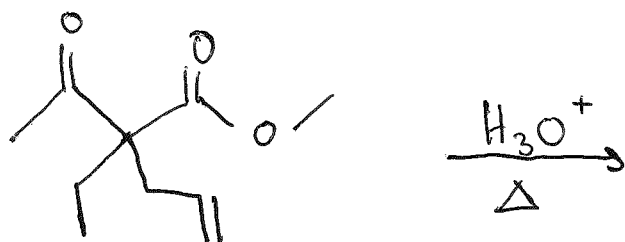
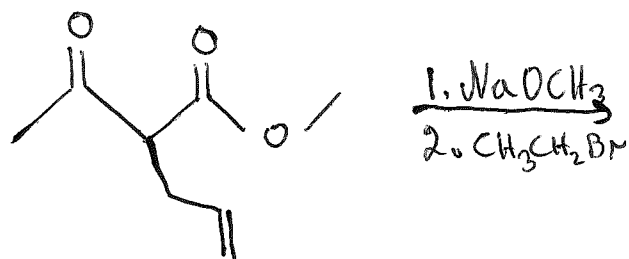
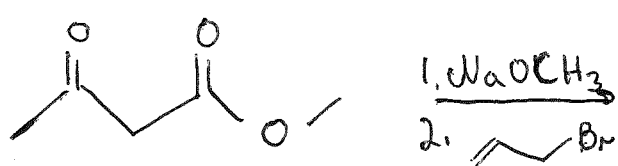
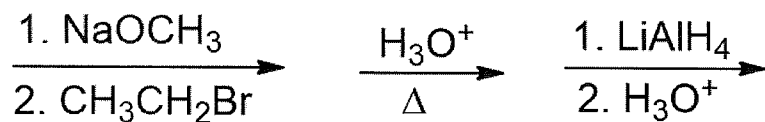
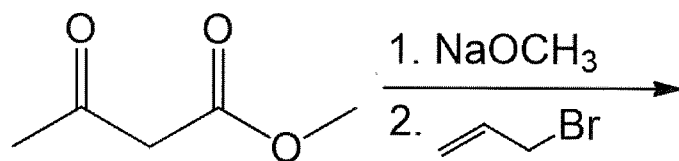
I. $(\text{CH}_3\text{CH}_2)_2\text{C=O}$, II. CH_3I , III. $\text{NaOAc}/\text{H}_2\text{SO}_4/\text{H}_2\text{O}$
~~IV~~ IV. $\text{CH}_3\text{OH}/\text{H}_2\text{SO}_4$

2) What are the structures of the intermediates and the final product in the reaction sequence shown?

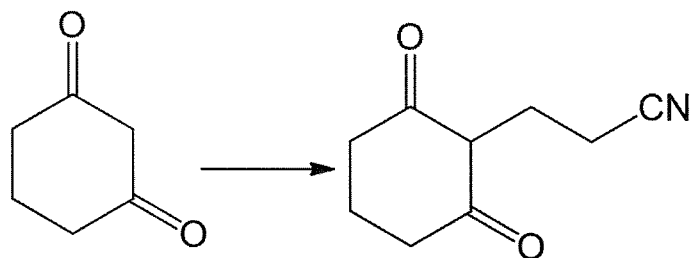



STORK ENAMINE SYNTHESIS
 + ROBINSON ANNUATION

3) What is the predicted product of the reaction shown?

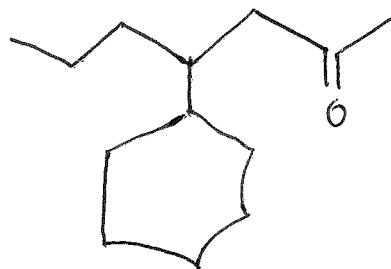
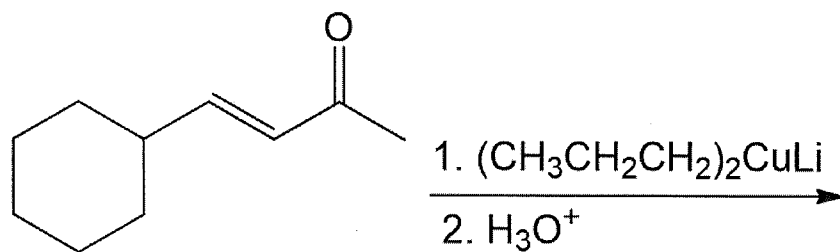


4) What reagents are needed to carry out the conversion shown?

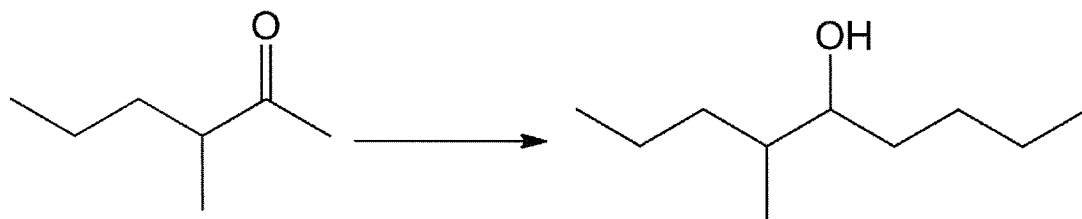


I. LDA , II.  , III. H₃O⁺

5) What is(are) the predicted product(s) of the reaction shown?

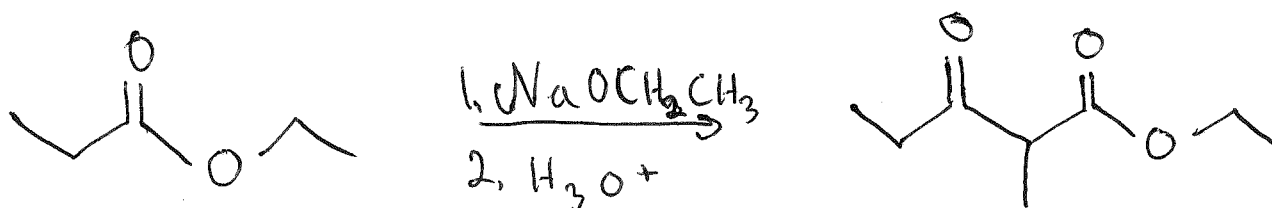
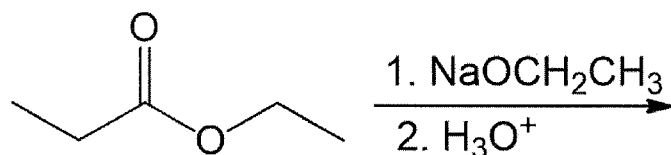


8) What reagents are needed to carry out the conversion shown?



I. LDA , II. $\text{CH}_3\text{CH}_2\text{CH}_2\text{Br}$, III. $\text{NaBH}_4 / \text{CH}_3\text{OH}$

9) What is the major predicted product of the reaction shown?



CLAISEN CONDENSATION