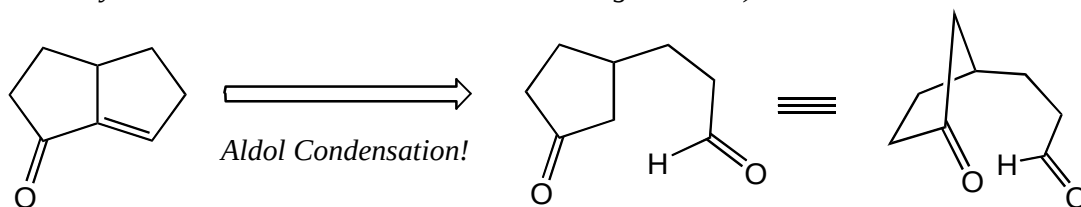


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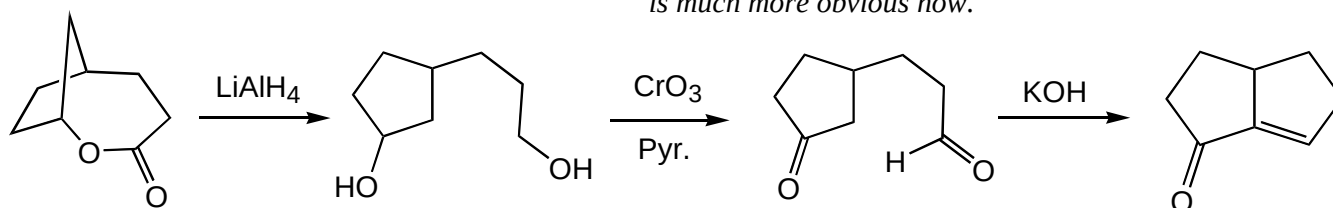
Problem Set 6 - Answer Key

1. Propose a synthesis to accomplish the following transformation:

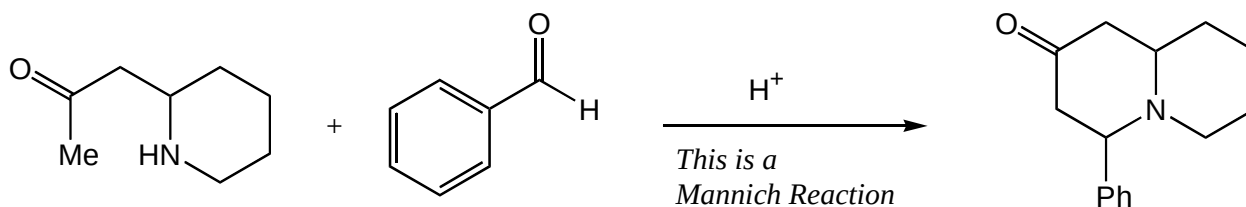
(Hint: Work backwards from the product one step. Then try to find similarities in the carbon atom connectivity between that intermediate and the starting material.)



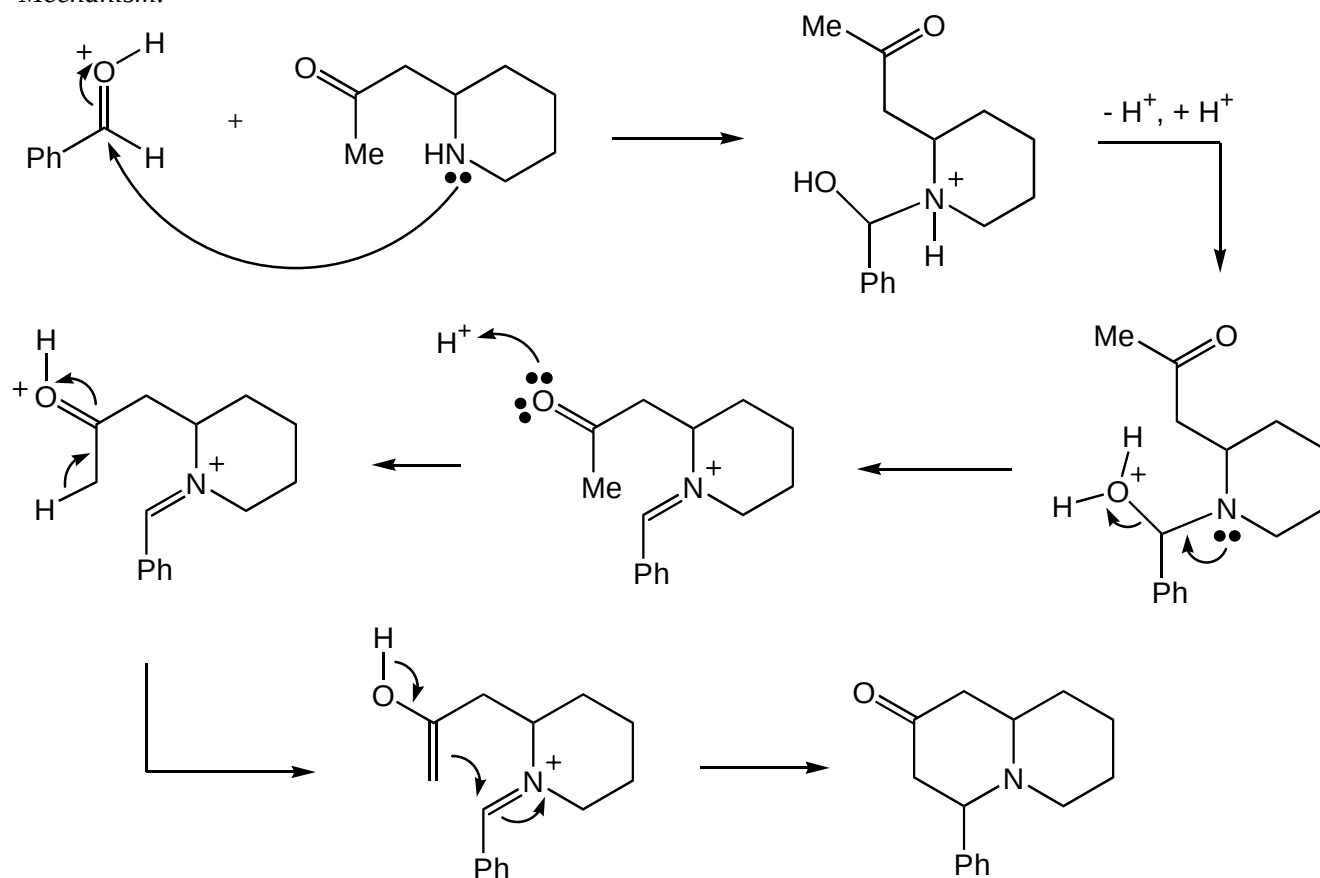
Relationship to the starting compound is much more obvious now.



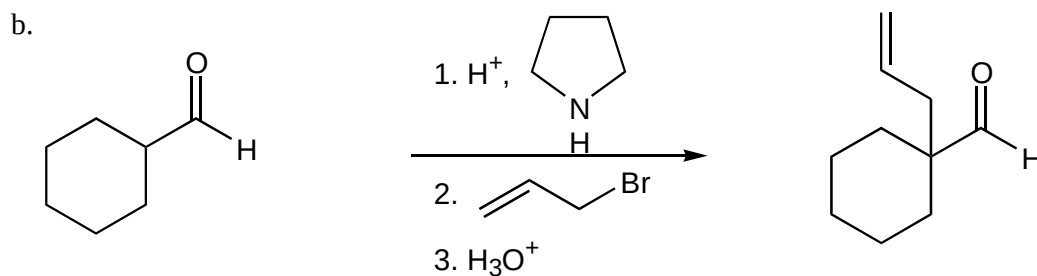
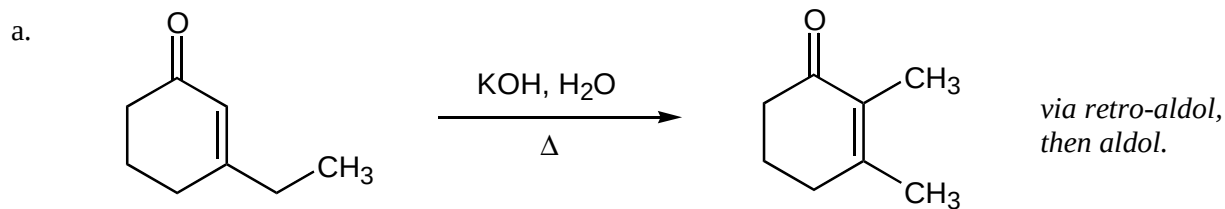
2. Write out a mechanism for, and predict the product of the following reaction:



Mechanism:

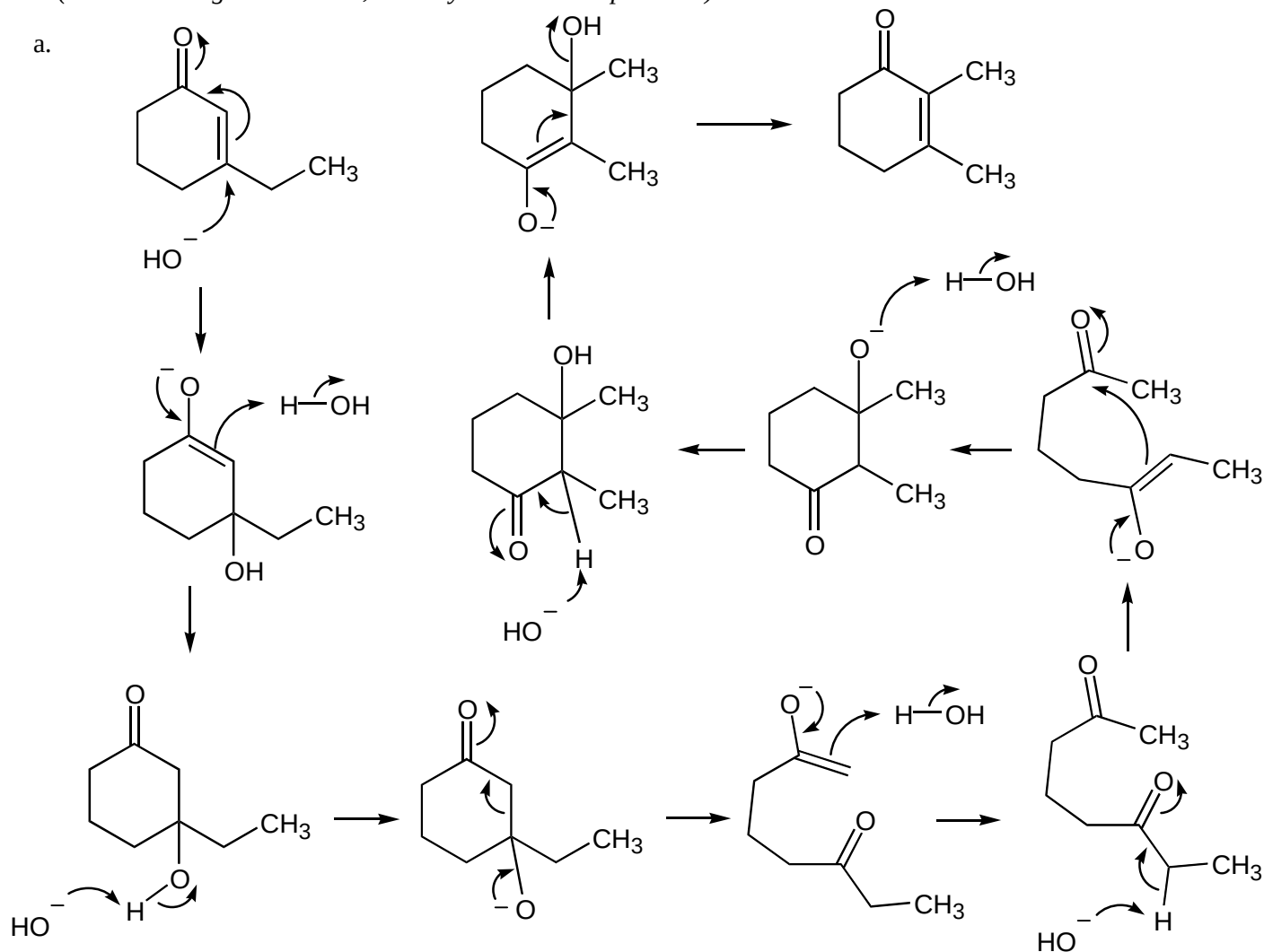


3. Predict the product of the following reactions:



You could try to do a one step reaction by attempting to form the enolate of the aldehyde and then alkylating it with allyl bromide. Unfortunately, it is difficult to do clean enolate chemistry with aldehydes. Although it is more steps, this enamine-based method is far more reliable.

4. Write out mechanisms for both of the reactions in problem 3 above.
(These are long mechanisms, but they are excellent practice.)



4. b.

