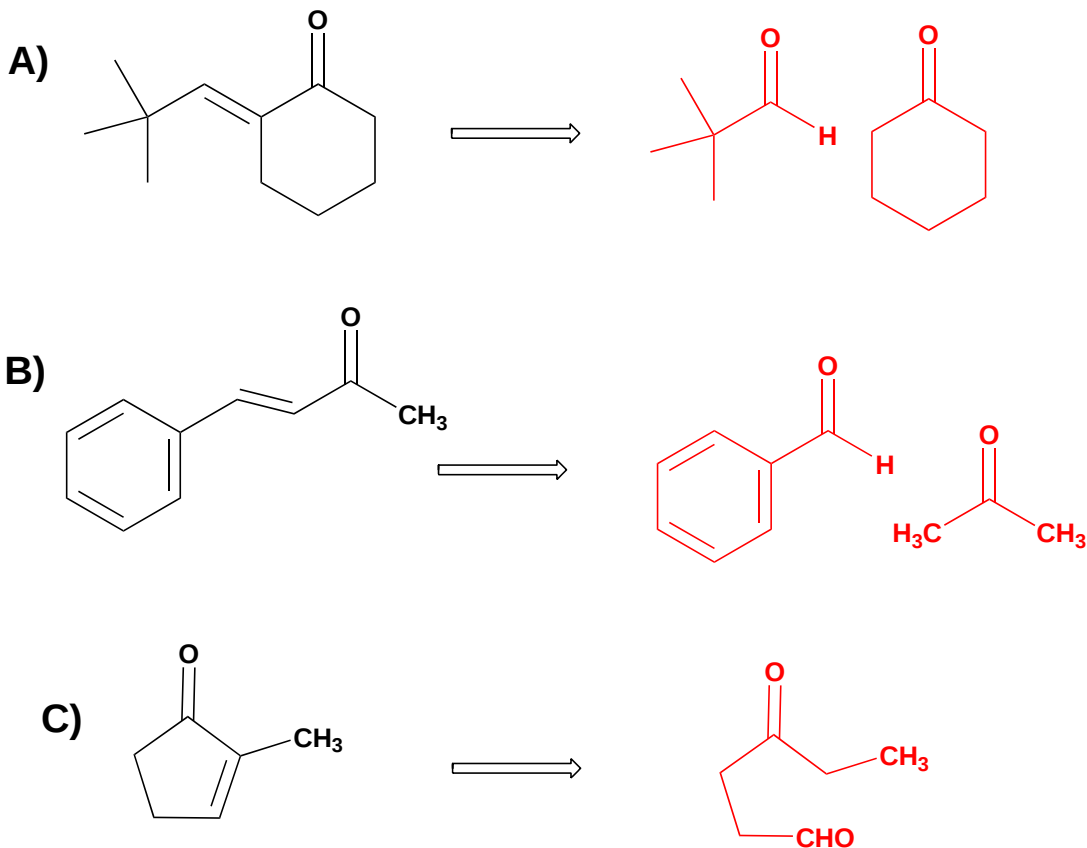
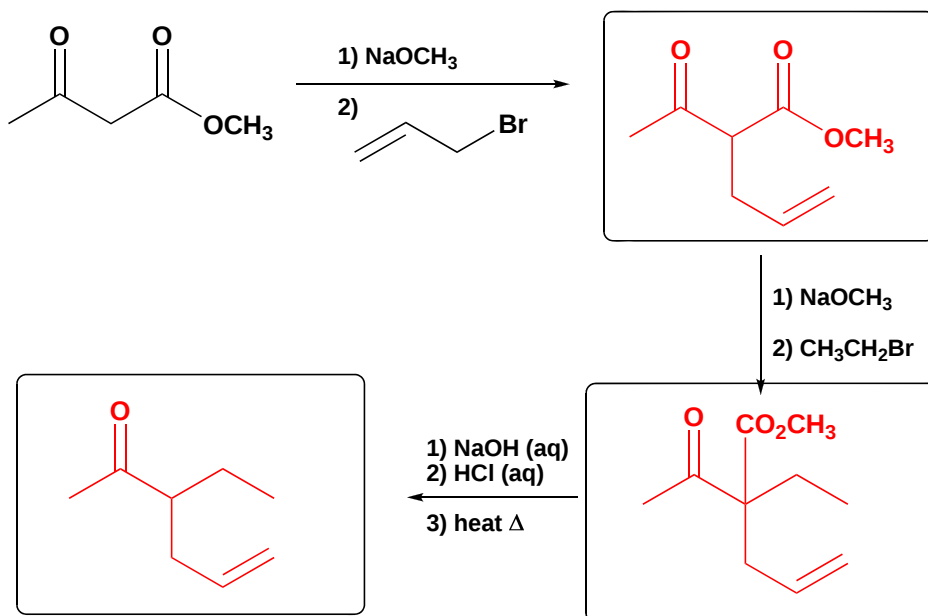


"Free Style" problem sets for O-Chem 2

1) Retrosynthesis: Each of the following α,β -unsaturated ketones can be produced from an aldol condensation-dehydration reaction. Provide the starting material(s) for the preparation of each compound.

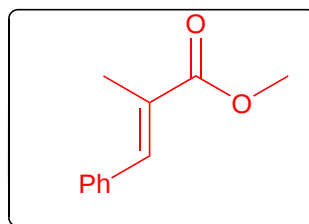
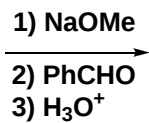
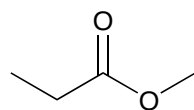


2) Multi-step synthesis: Provide products or the reagents for the following sequence of reactions. Draw each product or reagent in the box provided.

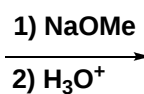
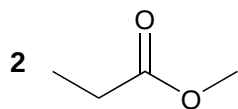


3) Reactions: Draw the structure of the products of the following reactions. Include any stereo or regiochemistry, if necessary.

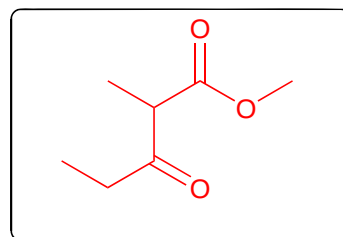
A)



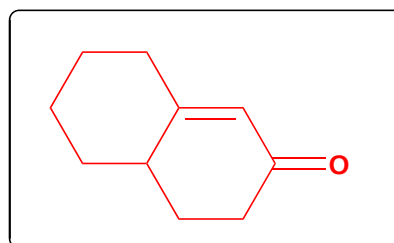
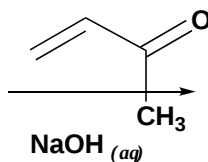
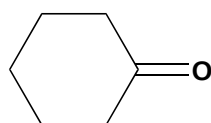
B)



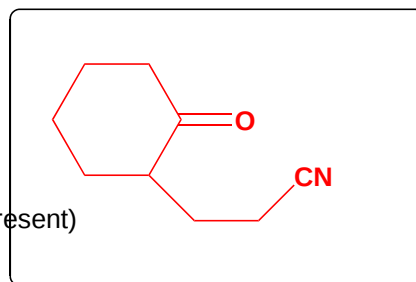
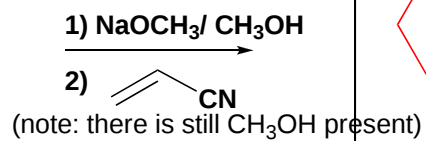
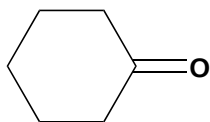
(It reacts with itself)



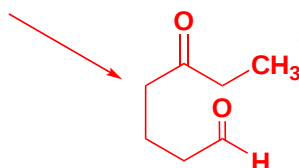
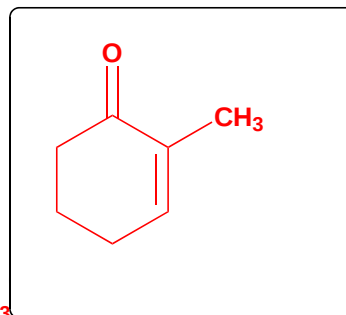
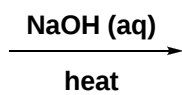
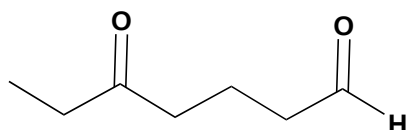
C)



D)



E)



4) Mechanism: Provide a mechanism for the following transformation. Show all important flows of electrons, charges and intermediates. Where indicated, (in the structure-n-a- box)- draw the intermediates.

