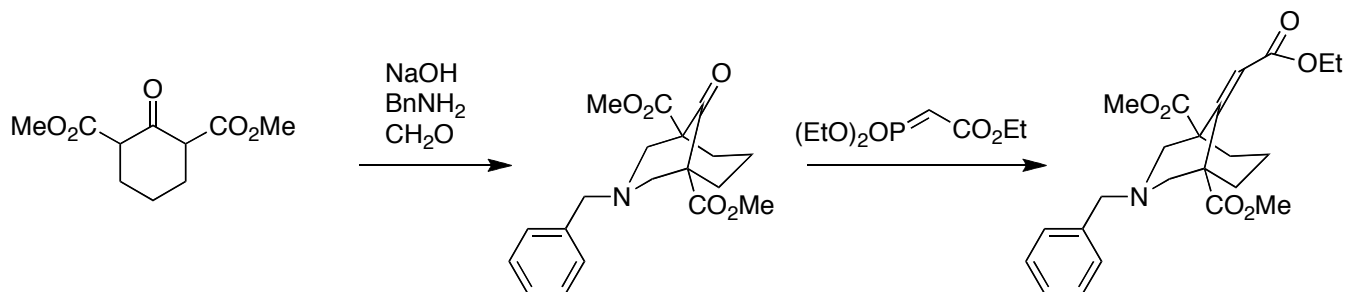
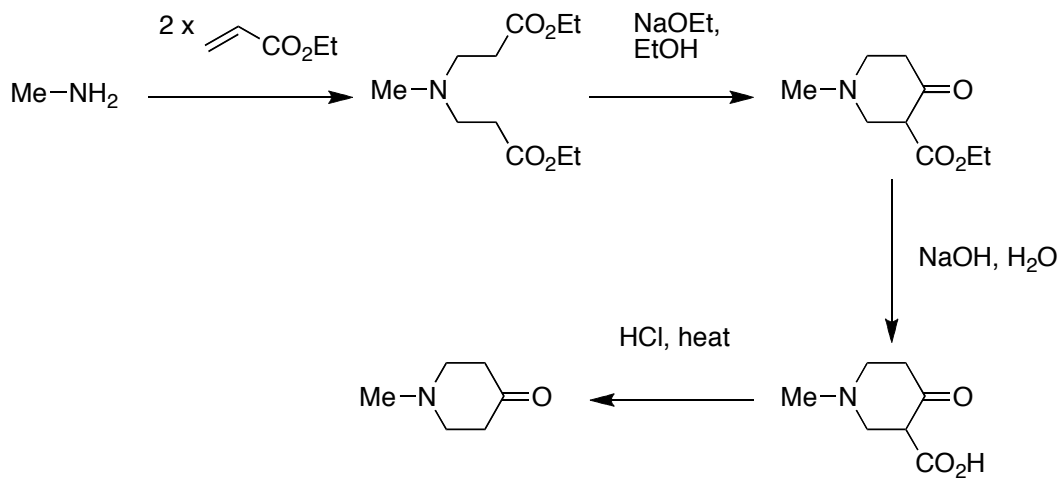
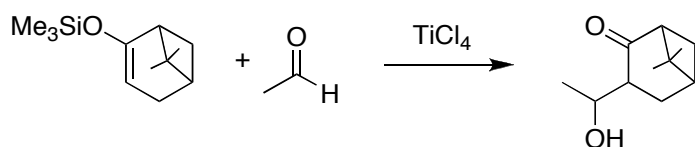
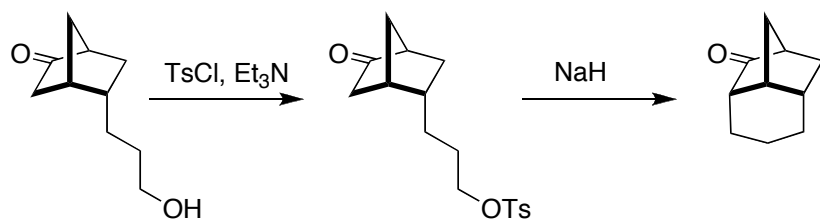
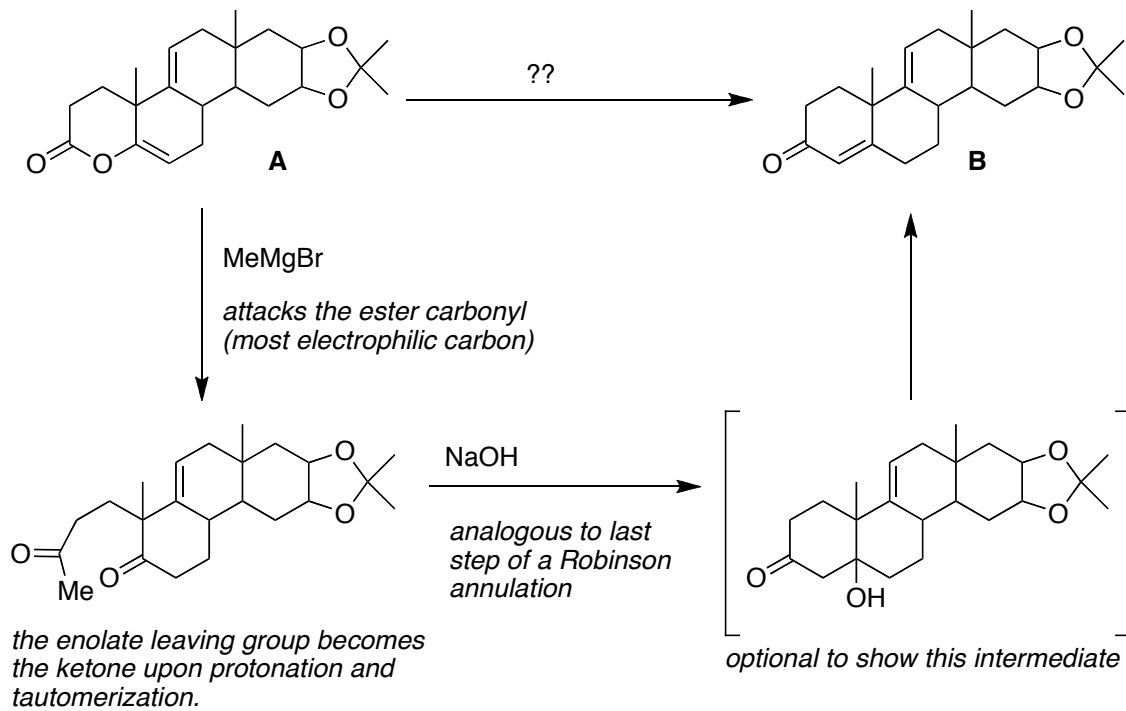
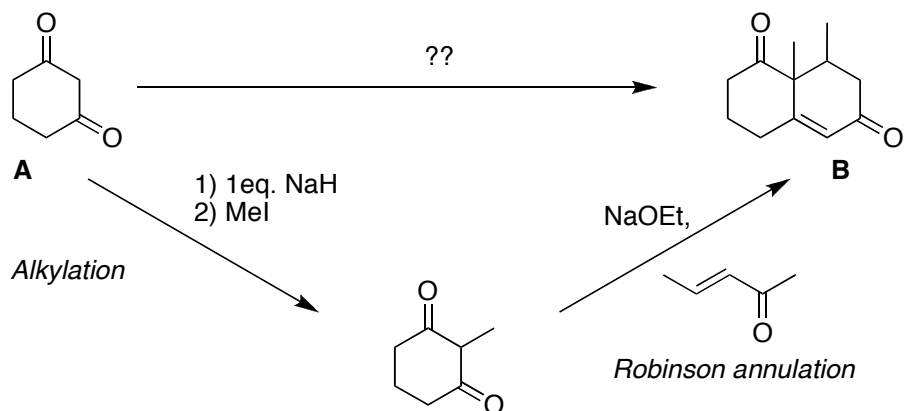


**Problem set 3 — ANSWERS**  
**Chapters 26–29. Advanced enol and enolate chemistry.**

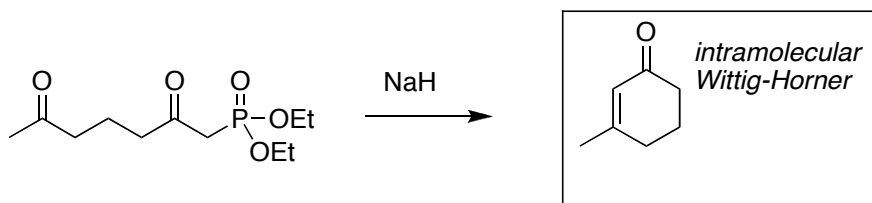
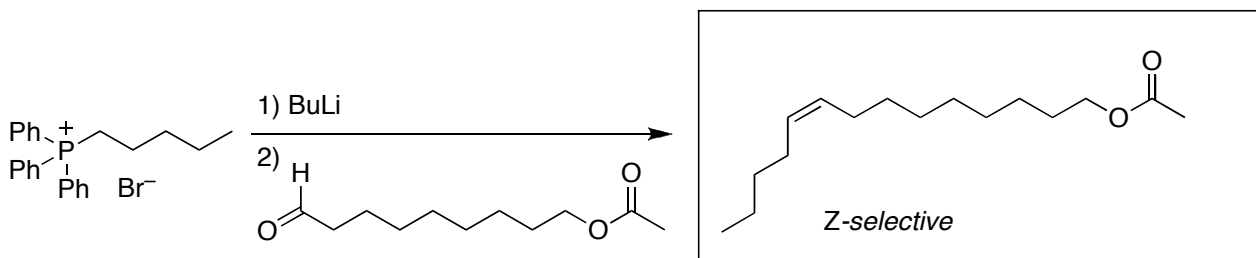
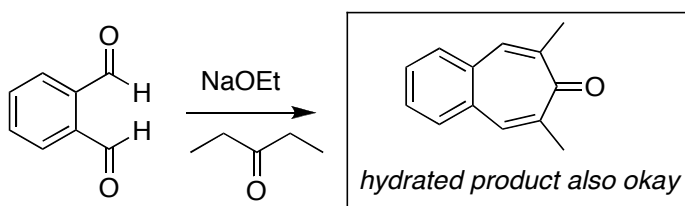
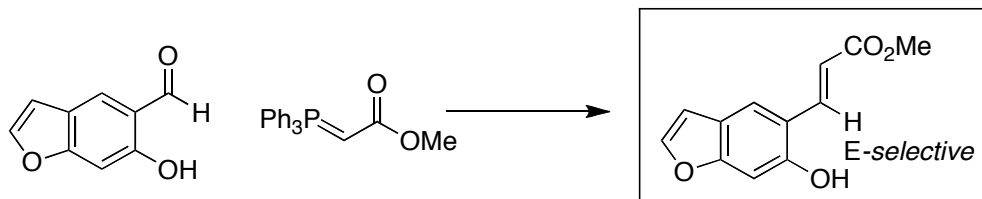
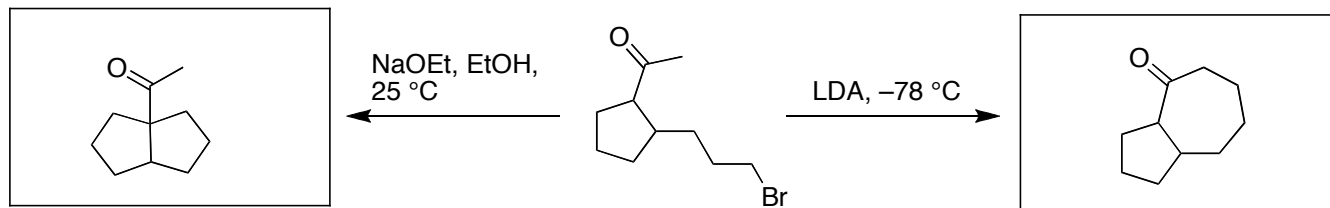
1) Fill in the details of reagents and conditions above each arrow. For some arrows, more than one step may be necessary.



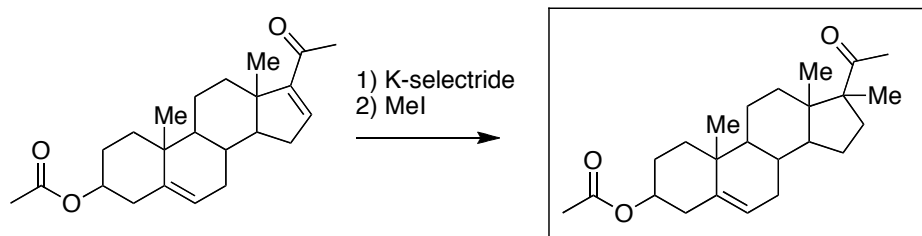
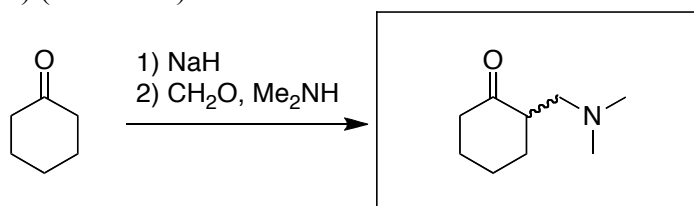
2) How would you make **B** from **A**? Show all reaction conditions and intermediates in the space below each reaction.



3) Draw the structures of the products formed by each reaction.

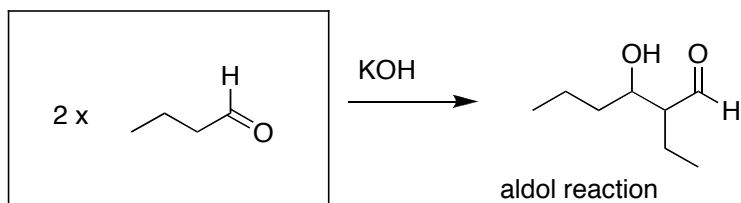
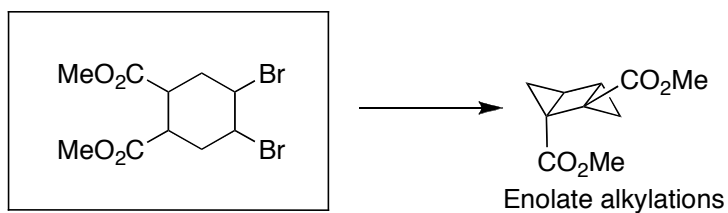
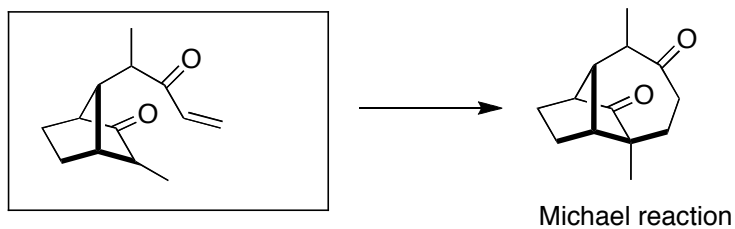


3) (continued)

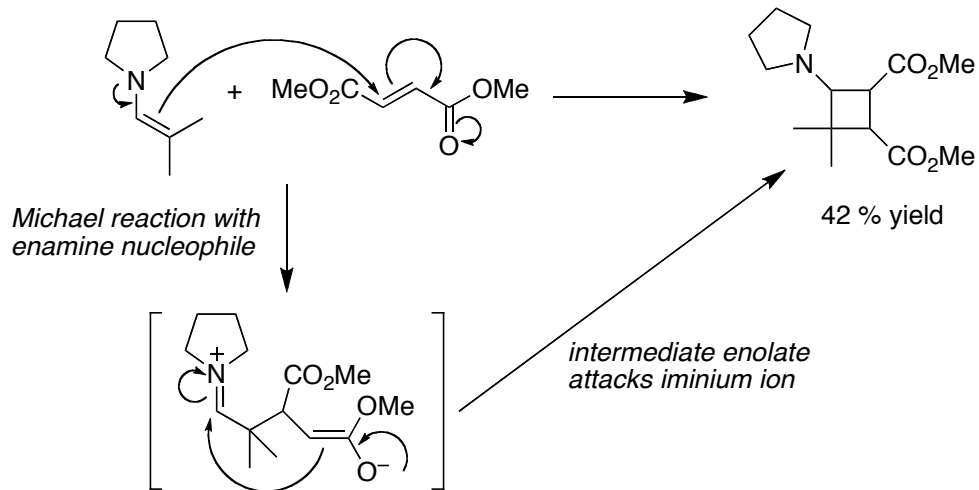
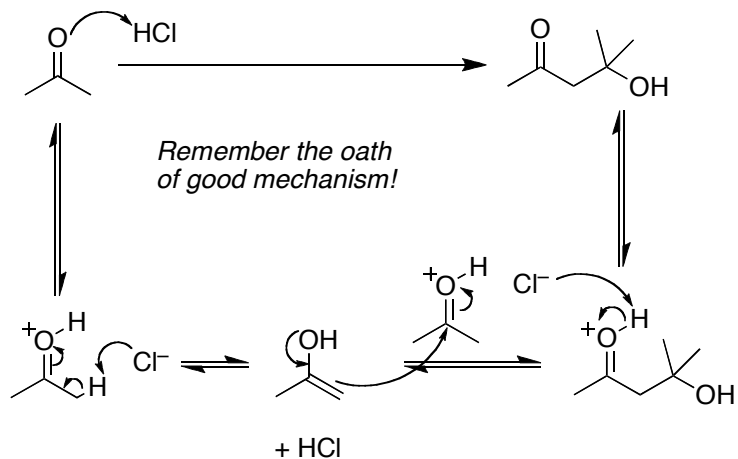


*Conjugate enone reduction by bulky hydride gives enolate intermediate. Alkylation gives alpha-methyl ketone.*

4) Draw the structure of a suitable precursor for the products shown at right that will take advantage of the reaction type shown.



5) Provide a detailed mechanism for the following transformations, showing all intermediates and proton transfers.



6) Clearly label the three most acidic protons on the following molecule (1 = most acidic, 3 = least acidic).

