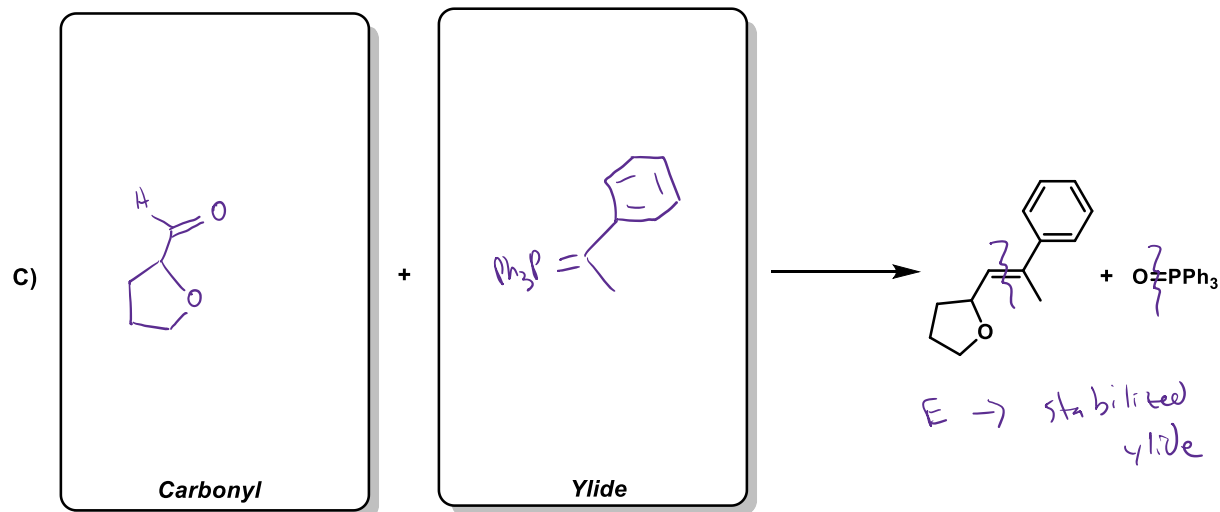
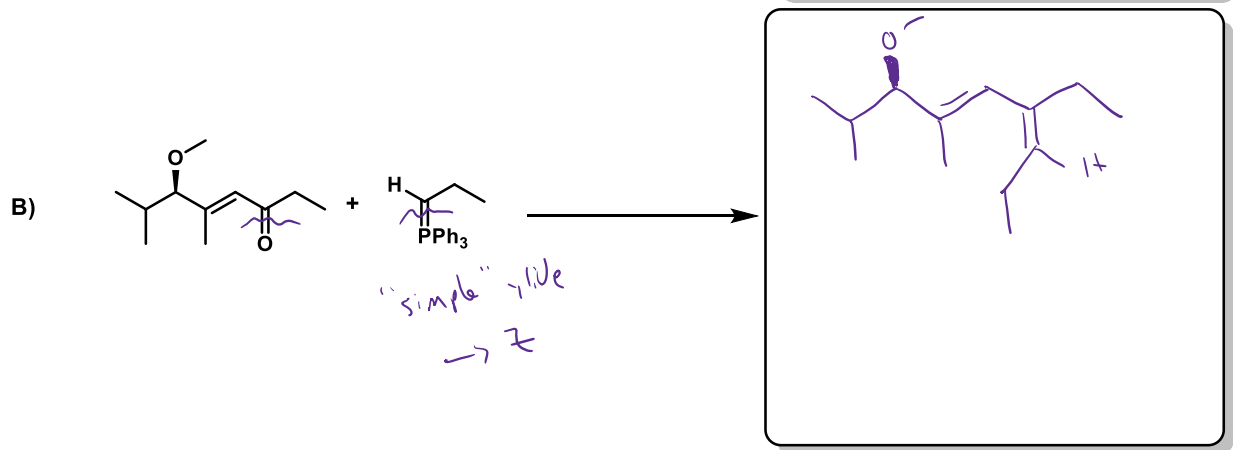
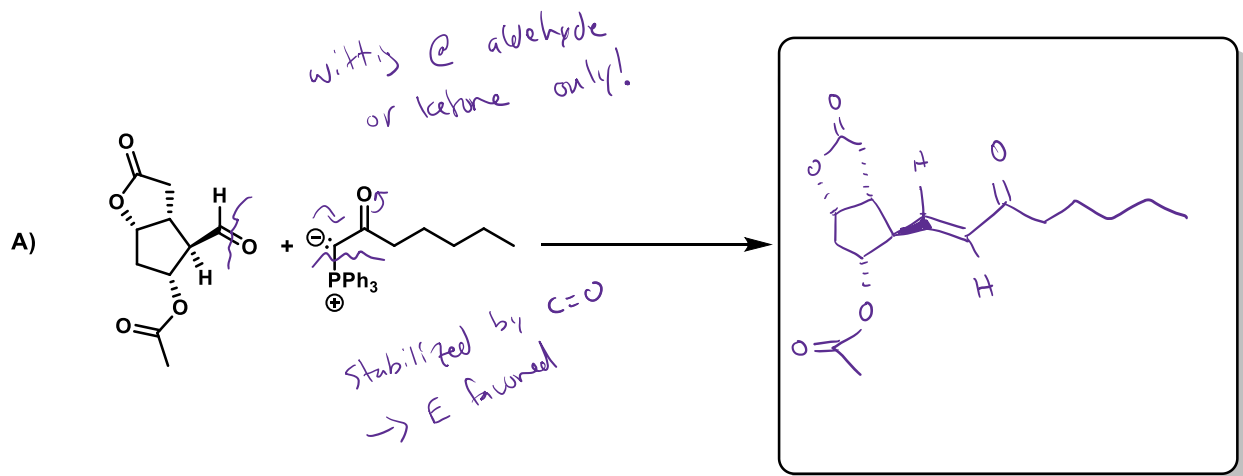
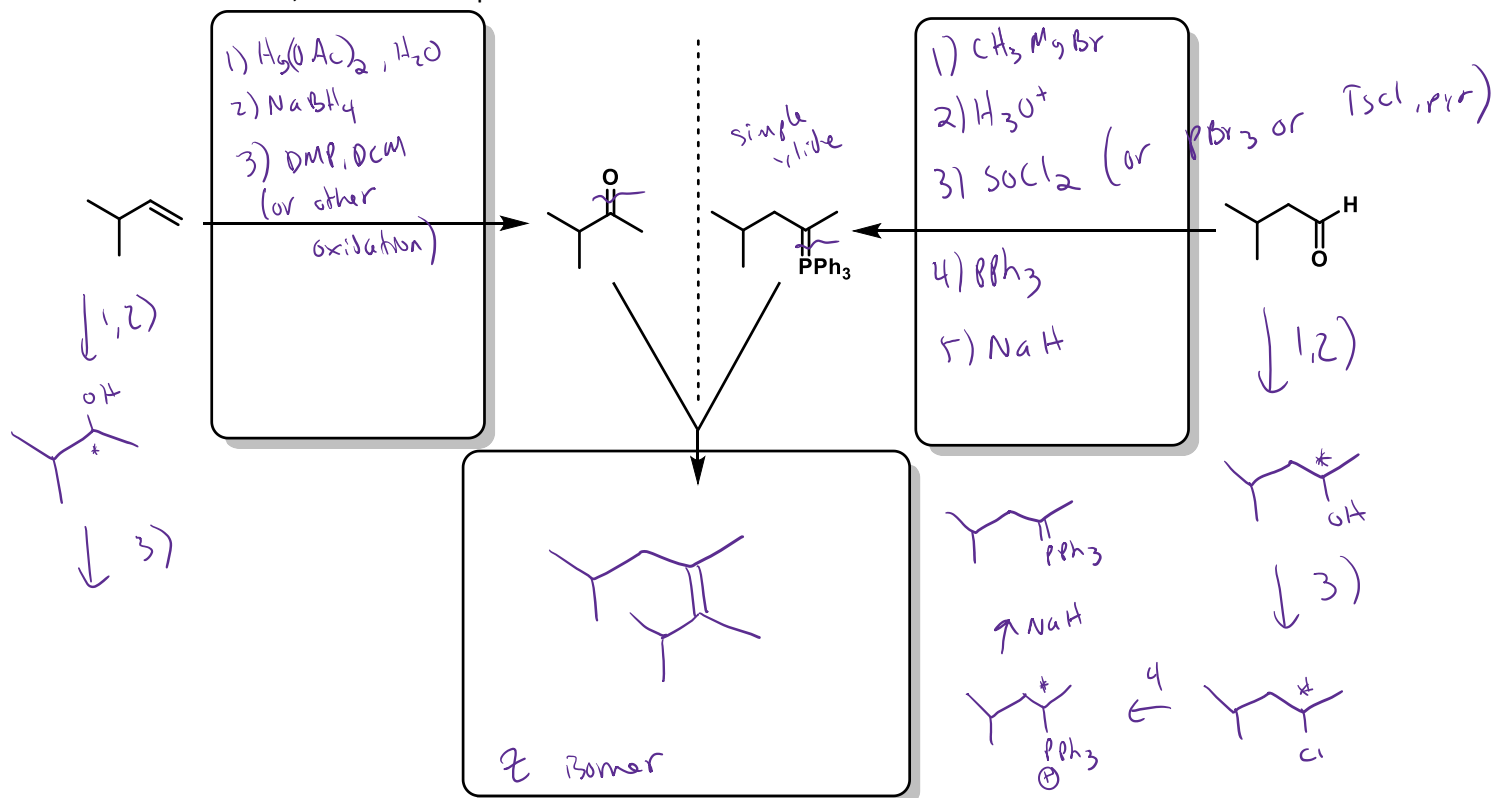


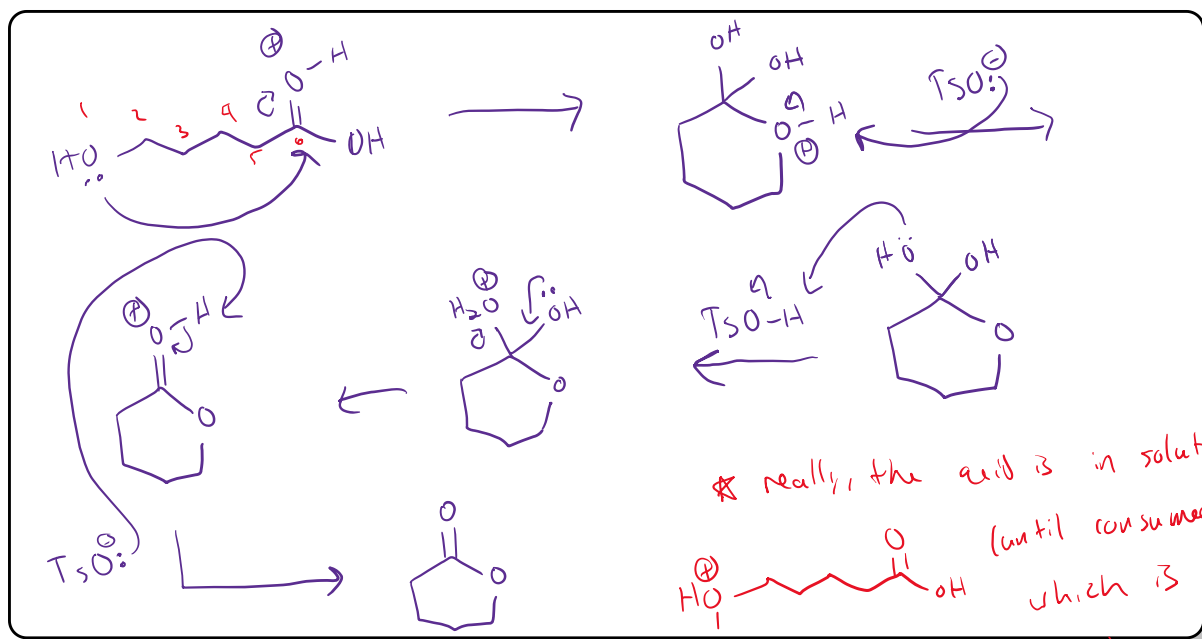
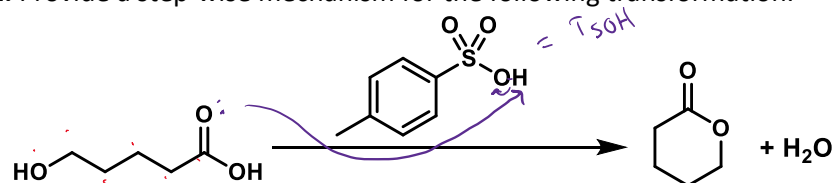
1. **Quick Synthesis.** In the boxes, fill in the correct reagent or product for the reactions given.



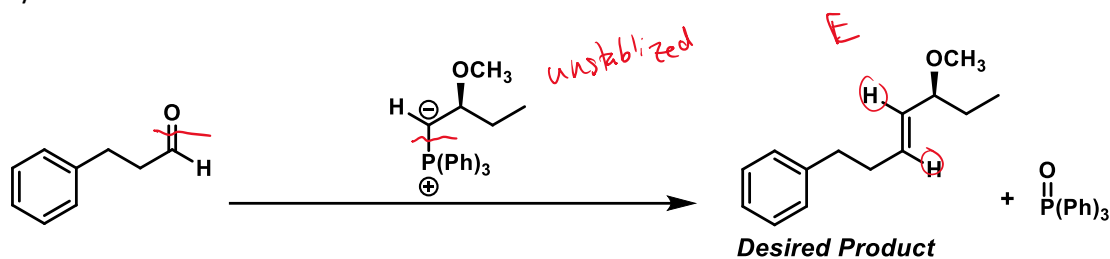
2. **Unguided Synthesis.** Fill in the reagents needed to complete the synthesis in the boxes over the arrows. Then, fill in the final product in the box at the bottom.



3. **Mechanism.** Provide a step-wise mechanism for the following transformation.



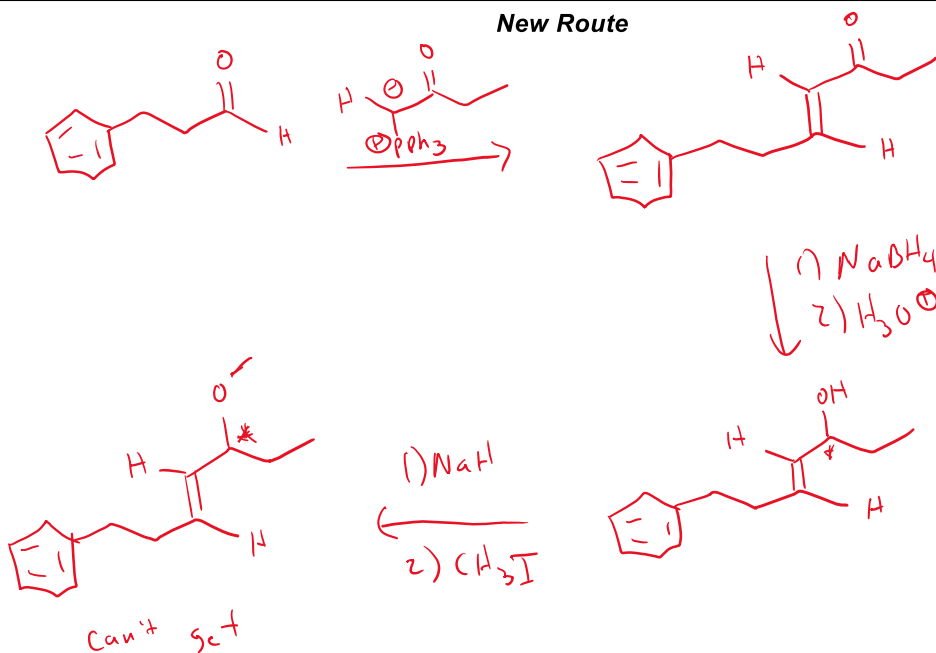
4. **Flawed Synthesis.** Below you will find a synthesis that will not ultimately lead to the **Desired Product**. In the first box, describe the flaw inherent in the synthetic route presented. In the second box, provide a new synthetic route that will lead to the **Desired Product**.



Synthetic Flaw

unstabilized ylide gives Z as major prod.

New Route



racemic mixture is
best we can do!