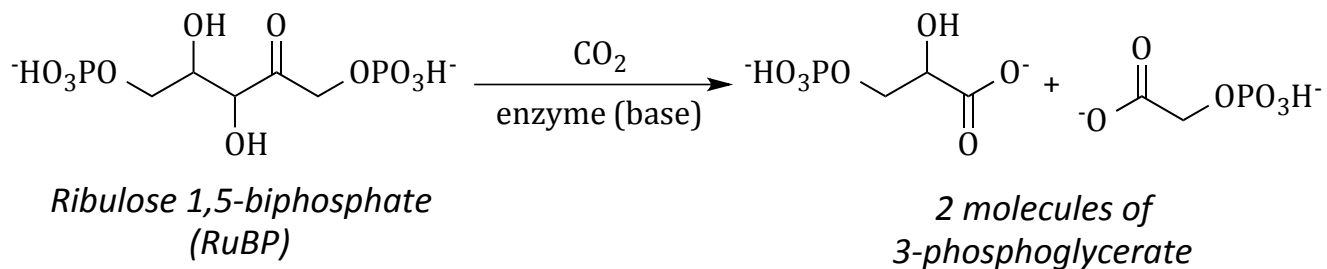


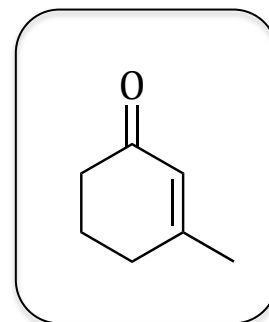
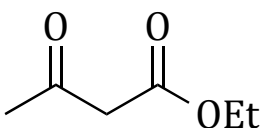
The Most Important C-C Bond Formation on the Planet

Provide a complete curved-arrow mechanism for the following transformation. Why is this reaction important?

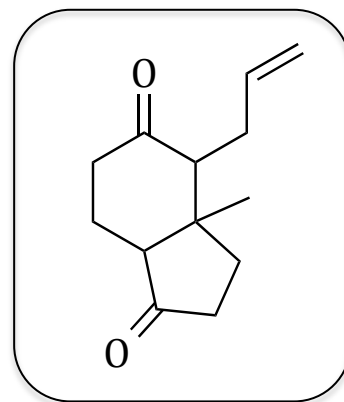
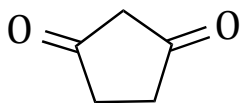


Synthesis: Test Yourself Now

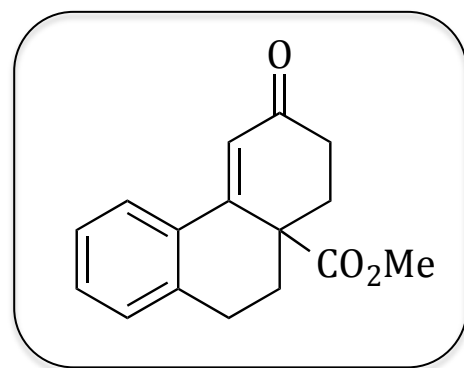
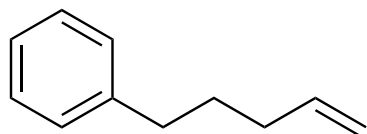
Provide a multi-step synthesis; you may use *any* organic or inorganic reagents, as long as the starting material is incorporated into the synthetic route.



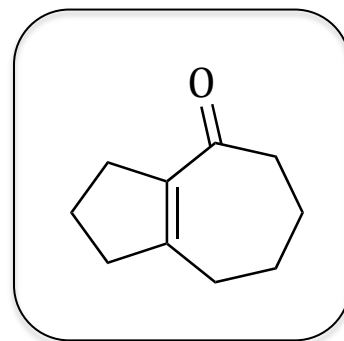
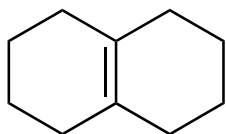
Provide a multi-step synthesis; you may use **ACYCLIC** organic or inorganic reagents, as long as the starting material is incorporated into the synthetic route. The best answer will require **five or fewer steps**. You may neglect stereochemistry.



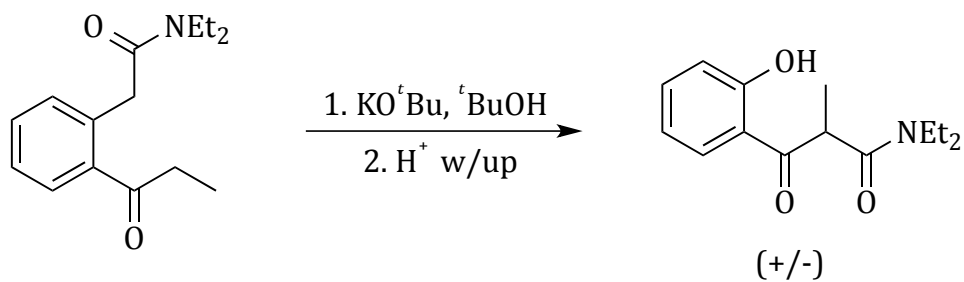
Provide a multi-step synthesis; you may use **ACYCLIC** organic or inorganic reagents, as long as the starting material is incorporated into the synthetic route. The best answer will require **seven or fewer steps**. You may neglect stereochemistry.



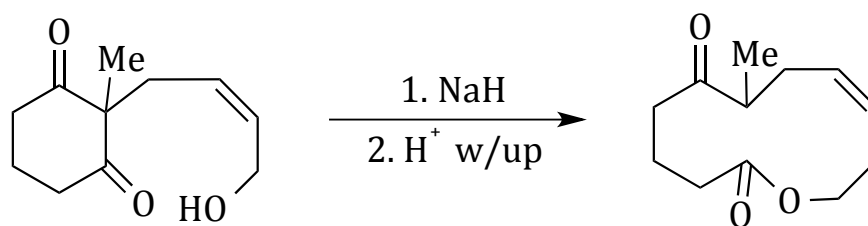
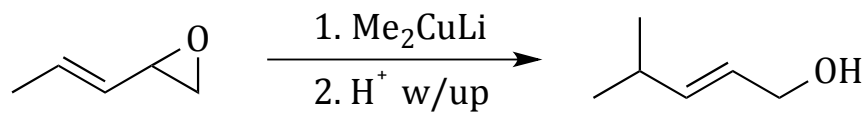
Provide a multi-step synthesis for the desired product from the indicated starting material. All of the carbon atoms from the starting material must end up in the product. You may use any organic or inorganic reagents. The best answer will require **five or fewer steps**. You may neglect stereochemistry.



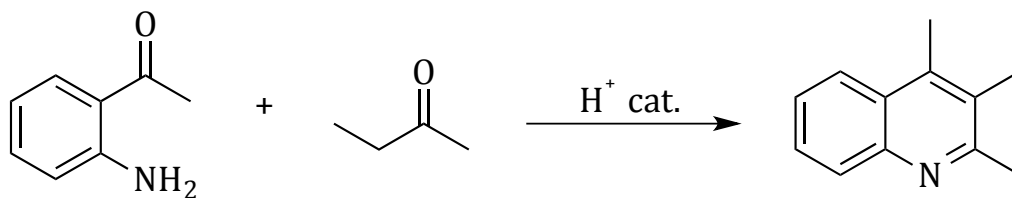
Provide a complete curved-arrow mechanism for all steps in the following transformation.



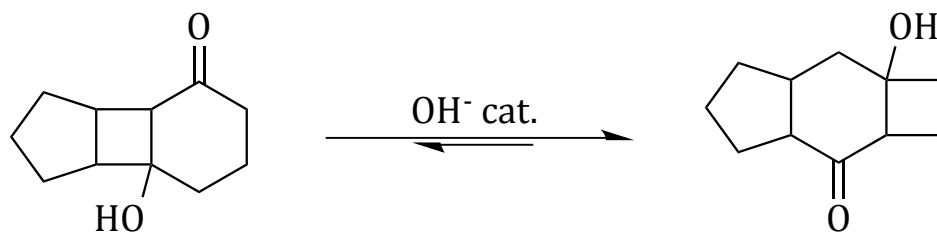
Provide a complete curved-arrow mechanism for all steps in the following transformations.



Provide a complete curved-arrow mechanism for all steps in the following transformation.



Provide a complete curved-arrow mechanism the following transformation.
(Hint: the transformation is reversible.)



Provide a complete curved-arrow mechanism the following transformation.
(Hint: the transformation is reversible.)

