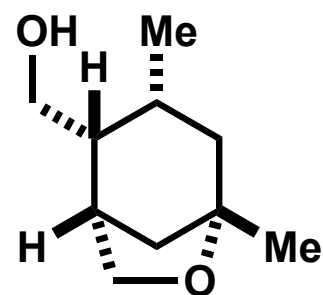


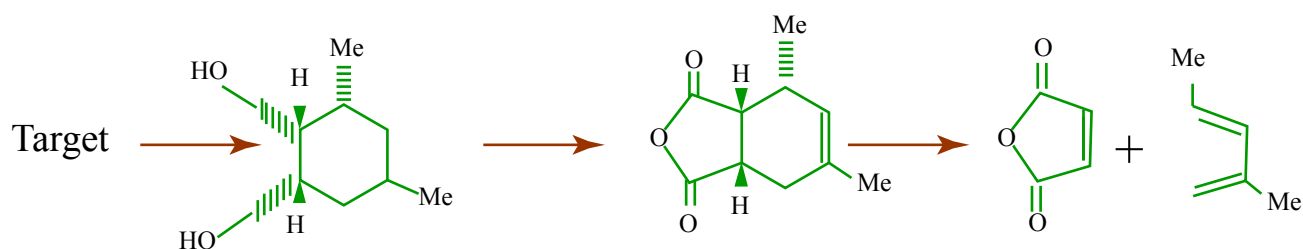
**3. (22 points total)** Using retrosynthetic analysis, propose a synthesis of the molecule to the right (**A**). You may use any reagents you wish, as long as your **starting materials** and any other reagent that is used to install a **carbon** that is found in the final product (target molecule **A**) have **no more than 6 carbon atoms**. For example, 1,3-butadiene and benzene would be acceptable, but benzyl bromide ( $\text{PhCH}_2\text{Br}$ ) would not be.



target molecule (**A**)

**Write your synthesis in the “forward” direction**, showing all Steps and reagents necessary. (You may include solvents, but you are not required to do so.) **Draw a box around or circle Your final synthesis.**

Hint: Use a Diels-Alder reaction.



Forward Synthesis:

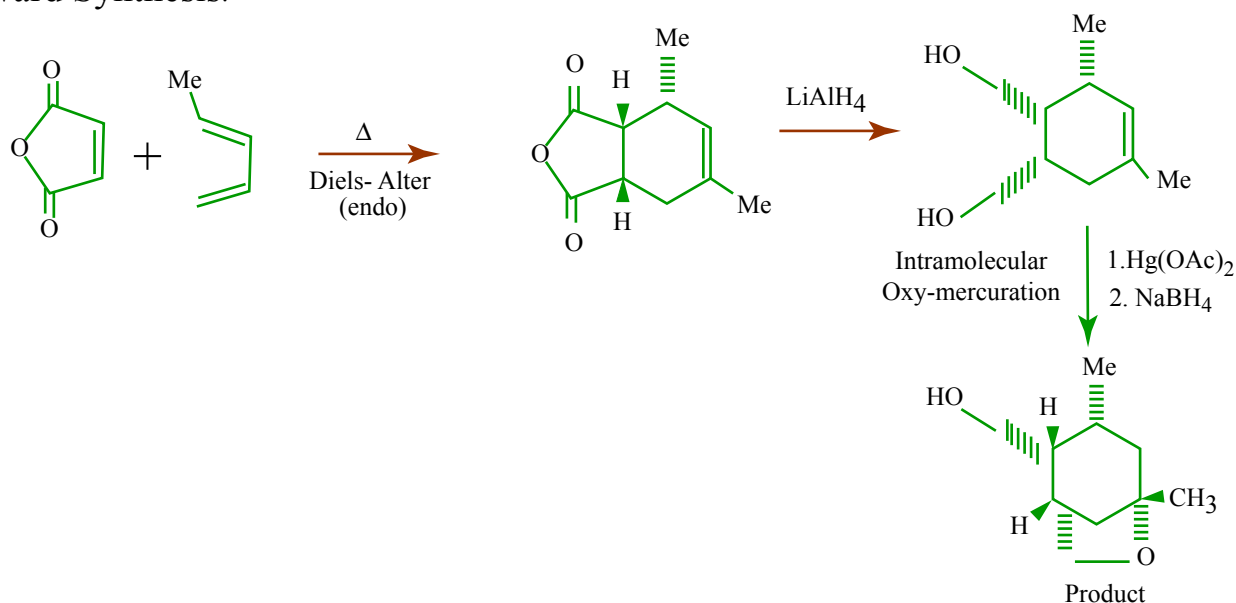


Figure by MIT OCW.