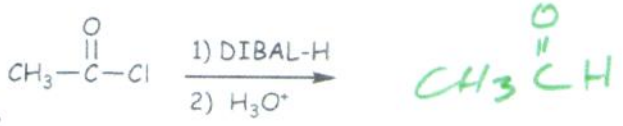
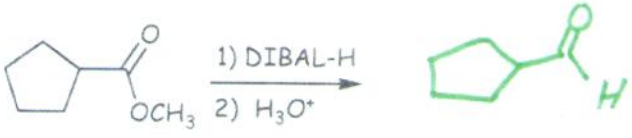
1. **Review of oxidation and reduction reagents:**

**a.**

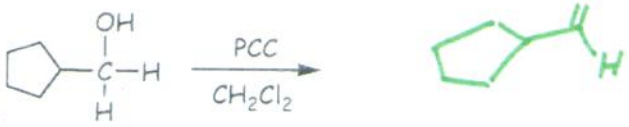



**b.**

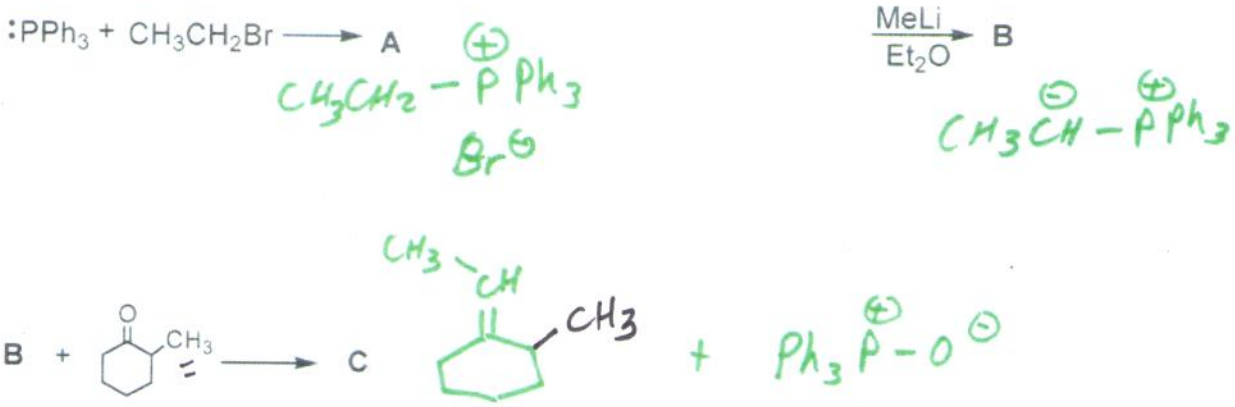

**c.**



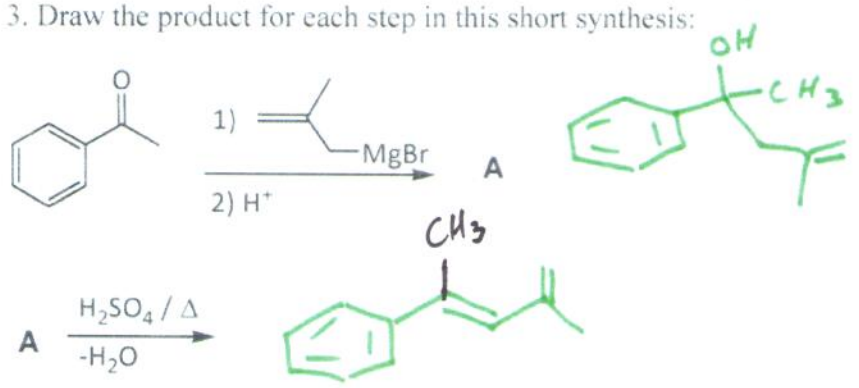

**d.**



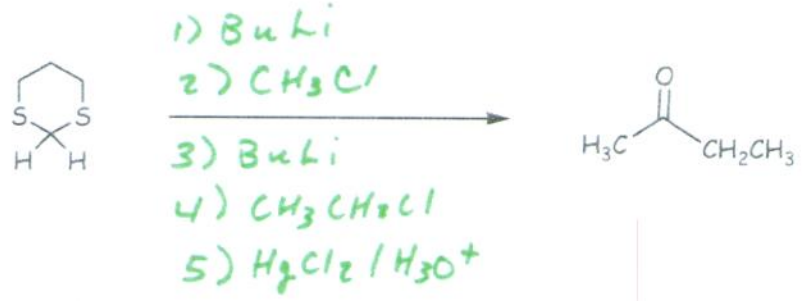

2. Show how a Wittig reagent is prepared and then use your Wittig reagent to synthesize the alkene (draw the structure for A, B and C).



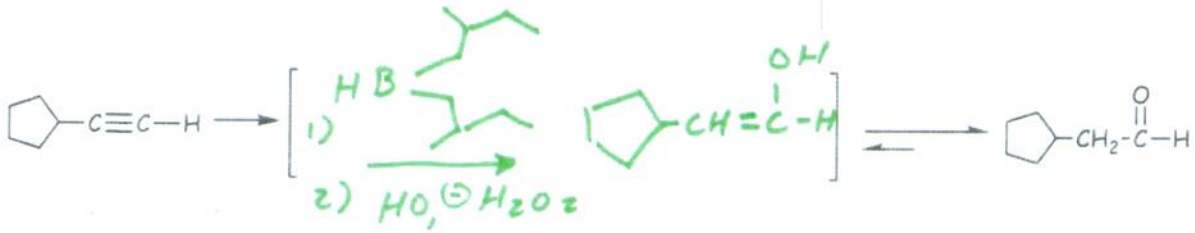
3. Draw the product for each step in this short synthesis:

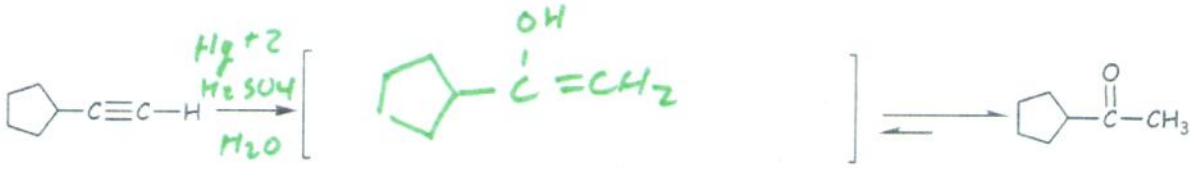



4. Show which reagents are needed to convert 1,3-dithiane to the ketone:

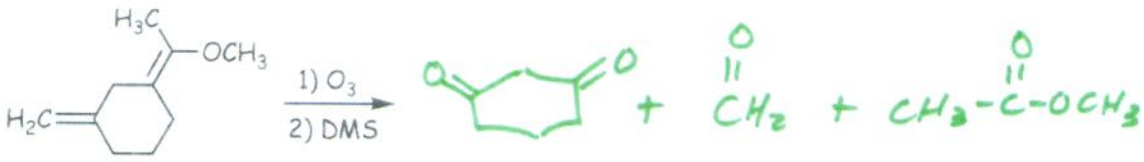



5. Write the correct reagents over reaction arrow and draw the structure of the intermediate:



6. Draw all products from ozonolysis of this diene:




7. Draw the product for the first step then draw the mechanism for the second step to illustrate formation of the final product, the cyclic hemiacetal.