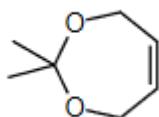


Practice problems:

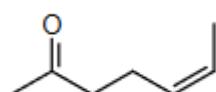
Propose a retrosynthetic analysis of the following molecules, showing your thinking and the reagents that would be employed in the forward synthesis. **Follow the individual note/clue** for each molecule.

1)



Note: Use acetylene as one of the starting materials

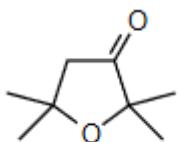
2)



Note: Use acetylene as one of the starting materials

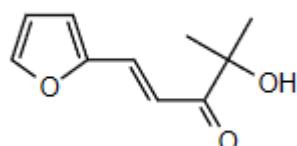
Clue: Get the *cis*-olefin through hydrogenation of alkyne.

3)



Note: Use acetylene as one of the starting materials

4)



Note: Use acetylene as one of the starting materials