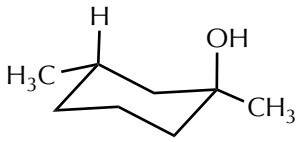
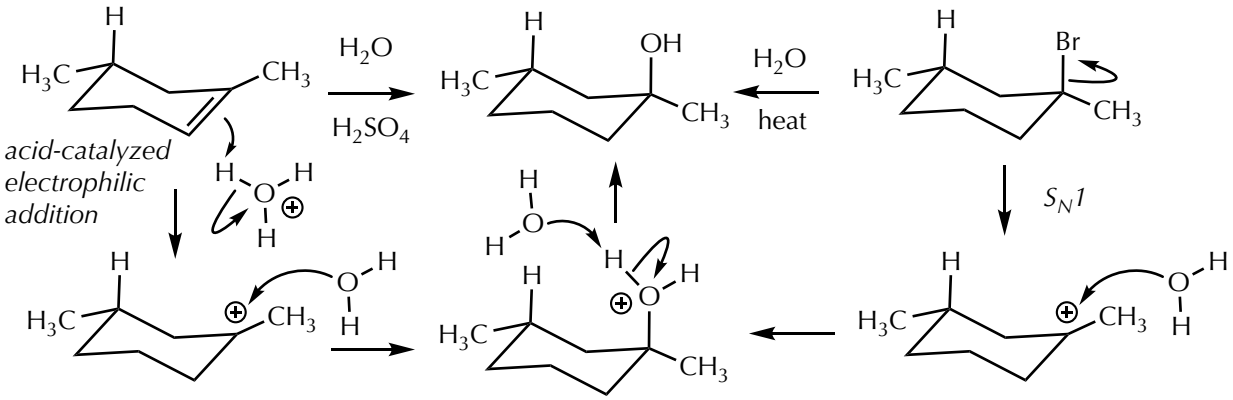
Problem of the Day 01
CH 1-10
CHEM 210
Given: $C_8H_{16}O$.

This is a quite open-ended question with plenty of answers that are consistent with the given conditions (and lots more that are inconsistent) - you are strongly encouraged to work with others, share and critique your collective answers and explanations.

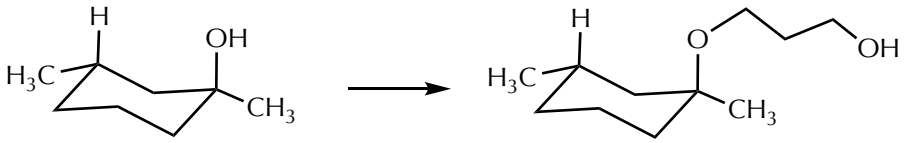
I. Draw the most stable conformation of a chiral cyclohexanol (C) whose alcohol group is tertiary.



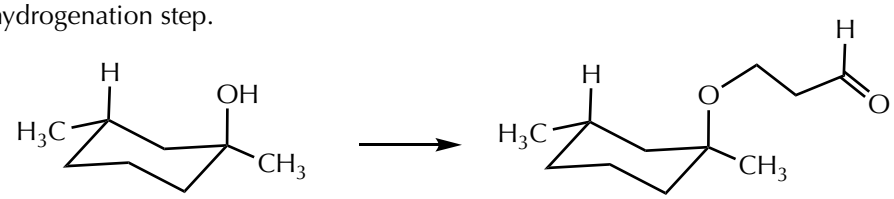
II. Draw an alkene (A) and an alkyl halide (B) that could give (C) as the major reaction product. Provide the reactions conditions for how to do A-to-C and B-to-C, as well as the mechanisms.



III. Draw the product from reacting C using the following sequence: (1) sodium hydride, (2) propargyl iodide (3-iodo-1-propyne), (3) hydrogenation using a poisoned catalyst, and (4) hydroboration-oxidation.



IV. Draw the product from reacting C using the same sequence as in part III, but minus the hydrogenation step.



V. Draw the product from reacting C using the same sequence as in part III but replaces the hydroboration-oxidation step with an ozonolysis step that includes the oxidative workup.