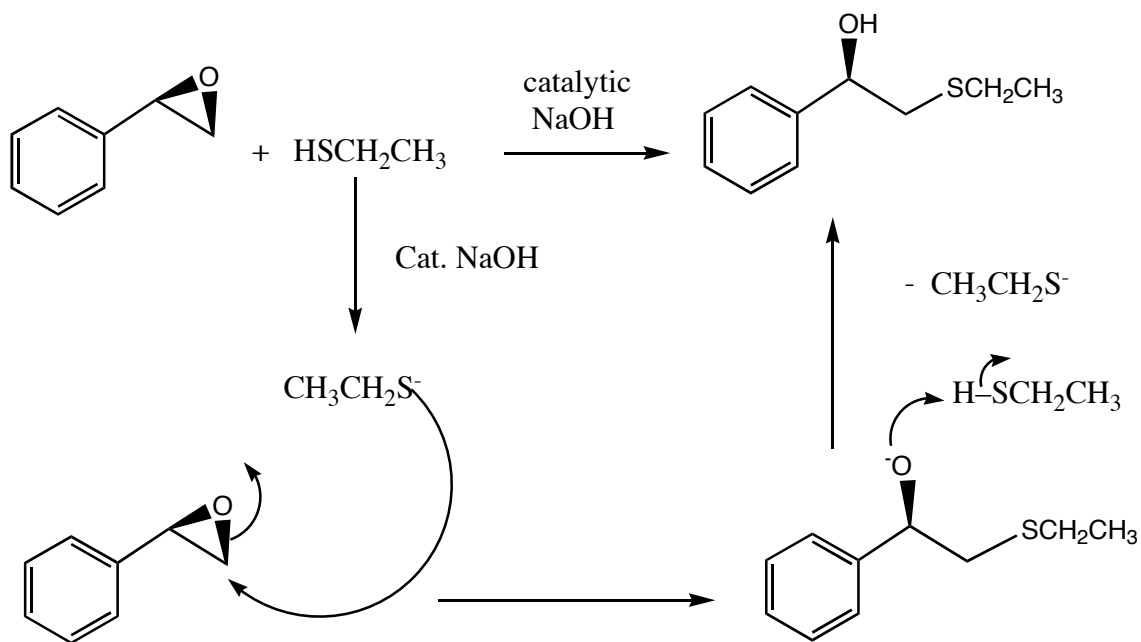


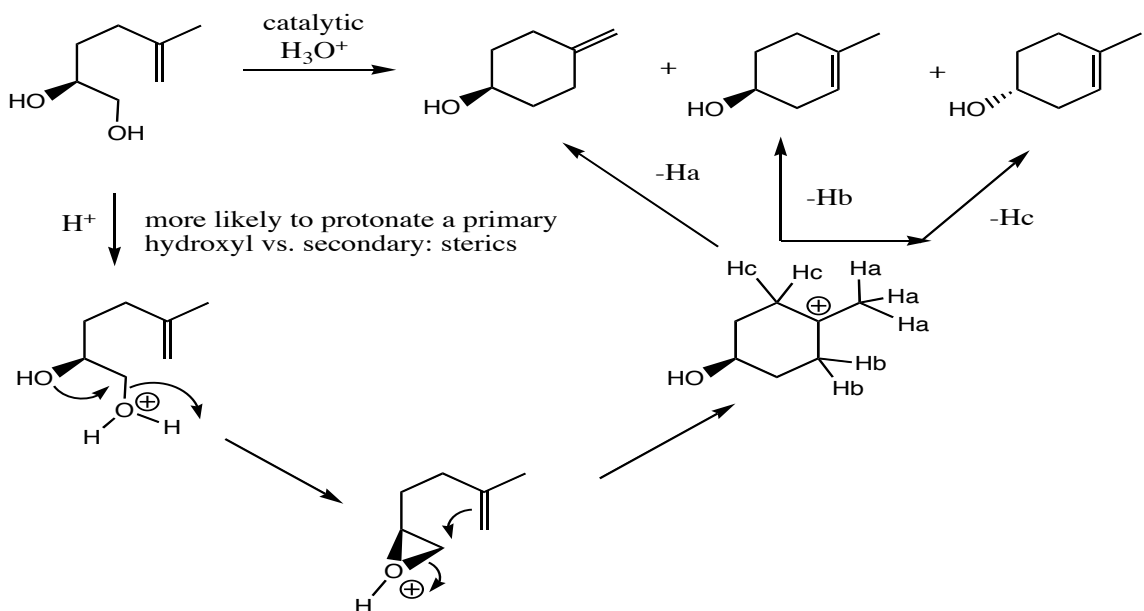
Additional Problems for practice:

1. Draw a mechanism for the following reaction, and rationalize the stereochemical outcome:



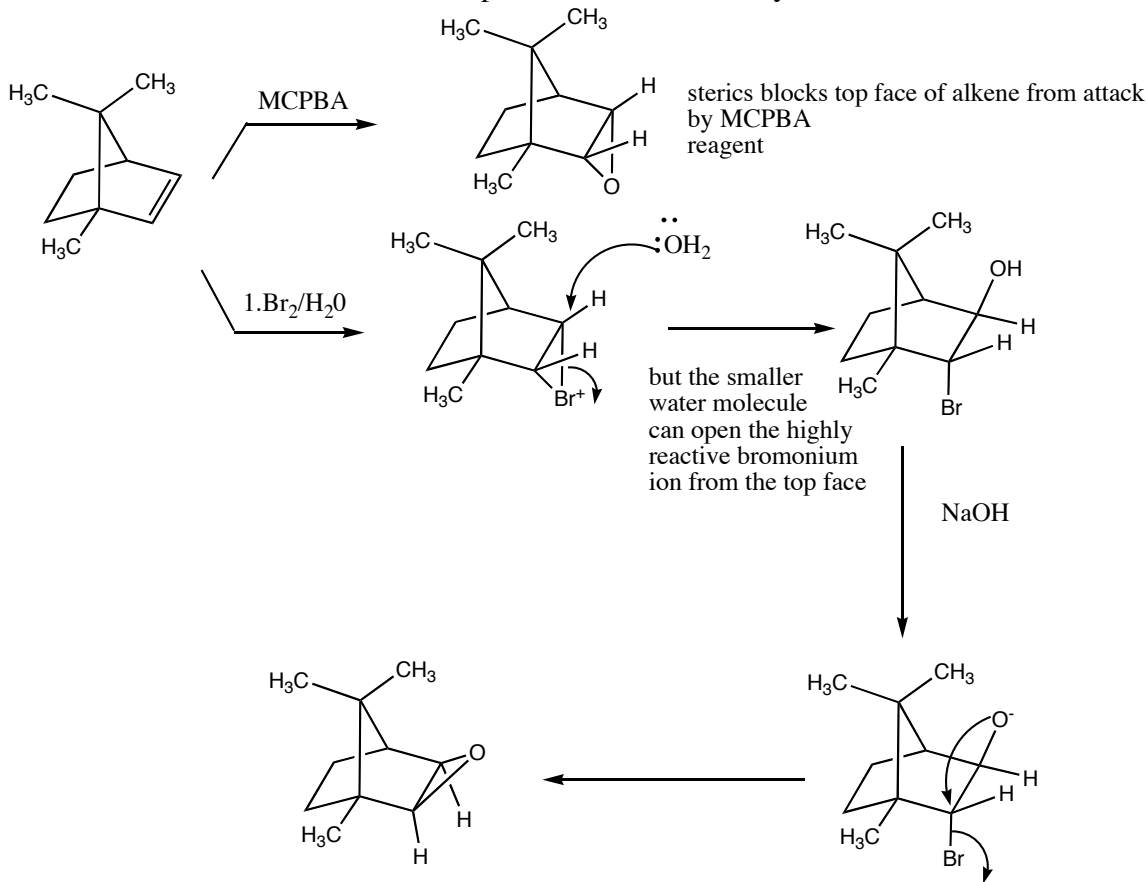
under basic conditions, the nucleophile will attack the less hindered carbon of the epoxide; note that catalytic  $\text{NaOH}$  can be used, since the nucleophile  $\text{CH}_3\text{CH}_2\text{S}^-$  is regenerated

2. Draw a likely mechanism for the following reaction, rationalizing the formation of all products:



note that loss of the proton to form the alkene (E1 mechanism) regenerates  $\text{H}^+$  in the medium thus only a catalytic quantity of  $\text{H}^+$  is needed for complete reaction

3. Two different epoxides, A and B are generated under the following conditions. Predict the structure of each epoxide and rationalize your result.



4. Treatment of 1,1 diphenyl-1,2-epoxyethane with aqueous acid yields diphenylacetaldehyde as the major product. Propose a mechanism to account for the reaction.

