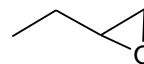
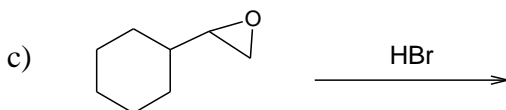
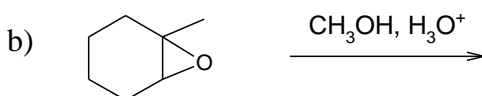


1. Show two different ways to synthesize 1,2-epoxybutane (shown on the right).



2. Predict the products of the following reactions.



d) 2,3-epoxyoctane +  $\text{H}^+$ ,  $\text{H}_2\text{O}$

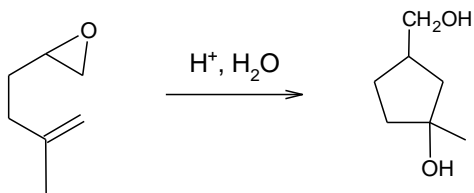
3. Show how you would accomplish the following synthetic transformations in good yield.

a) 1-hexene  $\longrightarrow$  1-phenyl-2-hexanol

b) 1-hexene  $\longrightarrow$  1-methoxy-2-hexanol

c) 1-hexene  $\longrightarrow$  2-methoxy-1-hexanol

4. The following reaction resembles the acid-catalyzed cyclization of squalene oxide. Propose a mechanism for this reaction.



5. Give the structures of intermediates A through H in the following synthesis of trans-1-cyclohexyl-2-methoxycyclohexane from cyclohexanol.

