Ethers/Reactions **Name:**_____

1. Predict the products of the following reactions.

   a) Sec-butyl isopropyl ether + conc HBr, heat

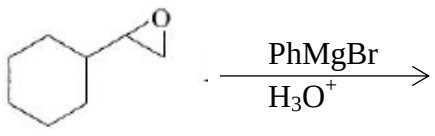
   b) Di t-butyl ether + conc HBr, heat

   c) 1,2-epoxyhexane + H^+, CH_3OH

   d) 2,3-epoxyoctane + H^+, H_2O

   e) Propylene oxide + methylamine (CH_3NH_2)

   f) Potassium t-butoxide + n-butylbromide

   g) 

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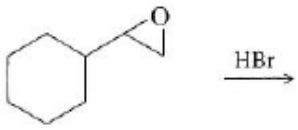
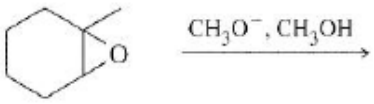
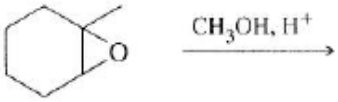
i) 

j) 

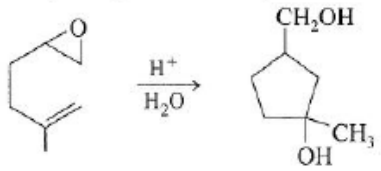
k) 

2. Show how you would accomplish the following synthetic transformations in good yield.
   a) 1-hexene ⟶ 1-phenyl-2-hexanol

   b) 1-hexene ⟶ 1-methoxy-2-hexanol

   c) 1-hexene ⟶ 2-methoxy-1-hexanol

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



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