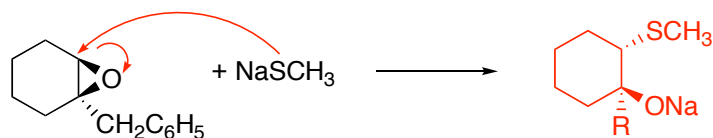
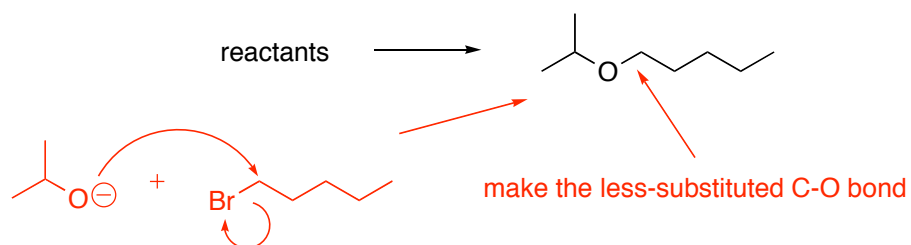


1. Show the mechanism and product with correct stereochemistry of sodium methanethiolate reacting with the epoxide below.



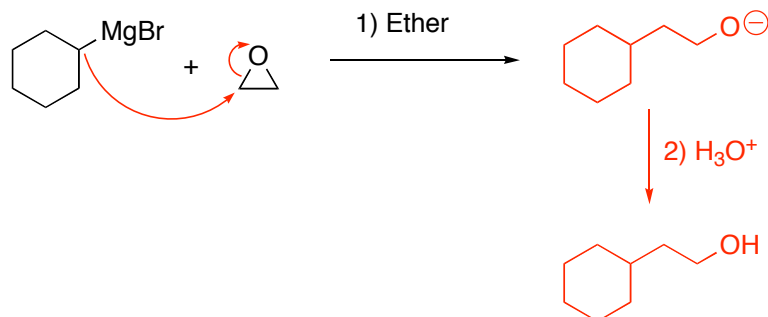
The methanethiolate ion attacks the epoxide at the less-hindered carbon (base-promoted) from *behind* the molecule. The nucleophile must approach from the opposite direction that the leaving group leaves. So, the nucleophile will be pointing back and the alkoxide ion will remain pointing forward.

2. Predict the best reactants for creating the ether below.



The Williamson ether synthesis works best when the leaving group is primary. So, the isopropyl alkoxide will readily react with 1-bromopentane to make the correct ether. You can remember this by simply trying to create the less-substituted C-O bond.

3. Draw the organic product for the reaction below.



Don't leave carbons out of the final product! Be sure the correct number has been added - count the carbons in reactants and products if you have to.

