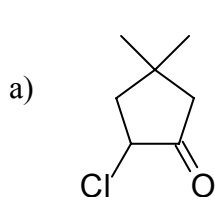
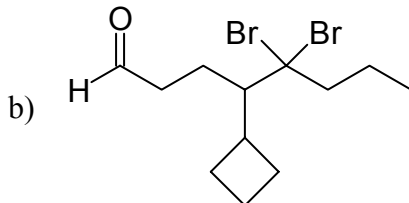


CHM 202 practice problems from Dr. Price's archives
CH 17-18 (& 19 nomenclature)

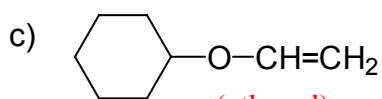
1.(12) Name the following compounds:



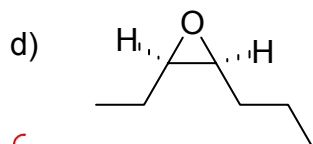
2-chloro-4,4-dimethylcyclopentanone



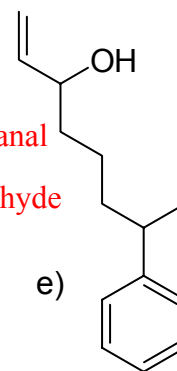
5,5-dibromo-4-cyclobutyl octanal
 or
 δ,δ-dibromo-γ-cyclobutylcaprylaldehyde



(ethenyl)
 cyclohexyl vinyl ether
 (ethenyl)
 vinyloxycyclohexane



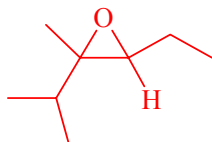
cis { (Z) 3-heptene oxide
 (Z) 2-ethyl-3-propyloxirane
 (Z) 3,4-epoxyheptane



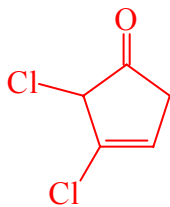
7-phenyl-1-octen-3-ol

2.(8) Draw the following compounds. Be sure to show stereochemistry where appropriate:

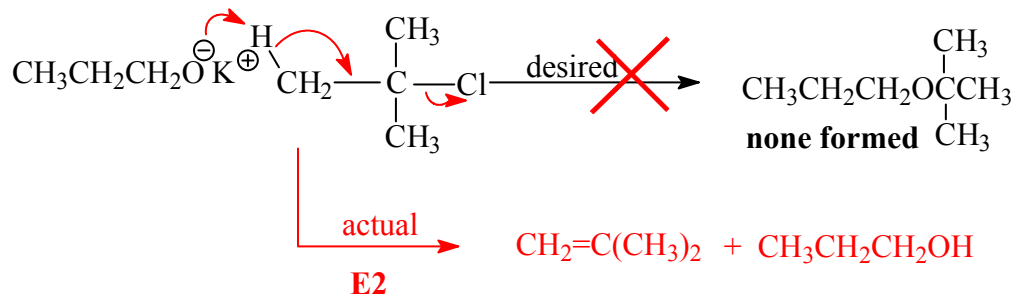
a) (*E*) 2,3-dimethyl-3,4-epoxyhexane



b) 4,5-dichloro-2-isopropyl-3-cyclopentenone



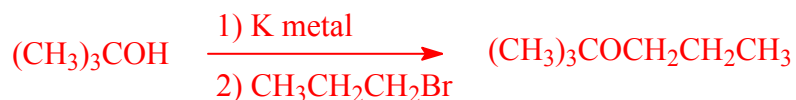
3.(10) A chemist attempted to synthesize **t-butyl propyl ether** by treating t-butyl chloride with potassium propoxide as shown below. *A reaction occurred but gave none of the desired product.* Instead she isolated a compound with a formula of **C₄H₈** and **an alcohol**. Explain what happened (*show what C₄H₈ is and how it forms – show the mechanism*). How should she design her reaction in order to isolate the ether?



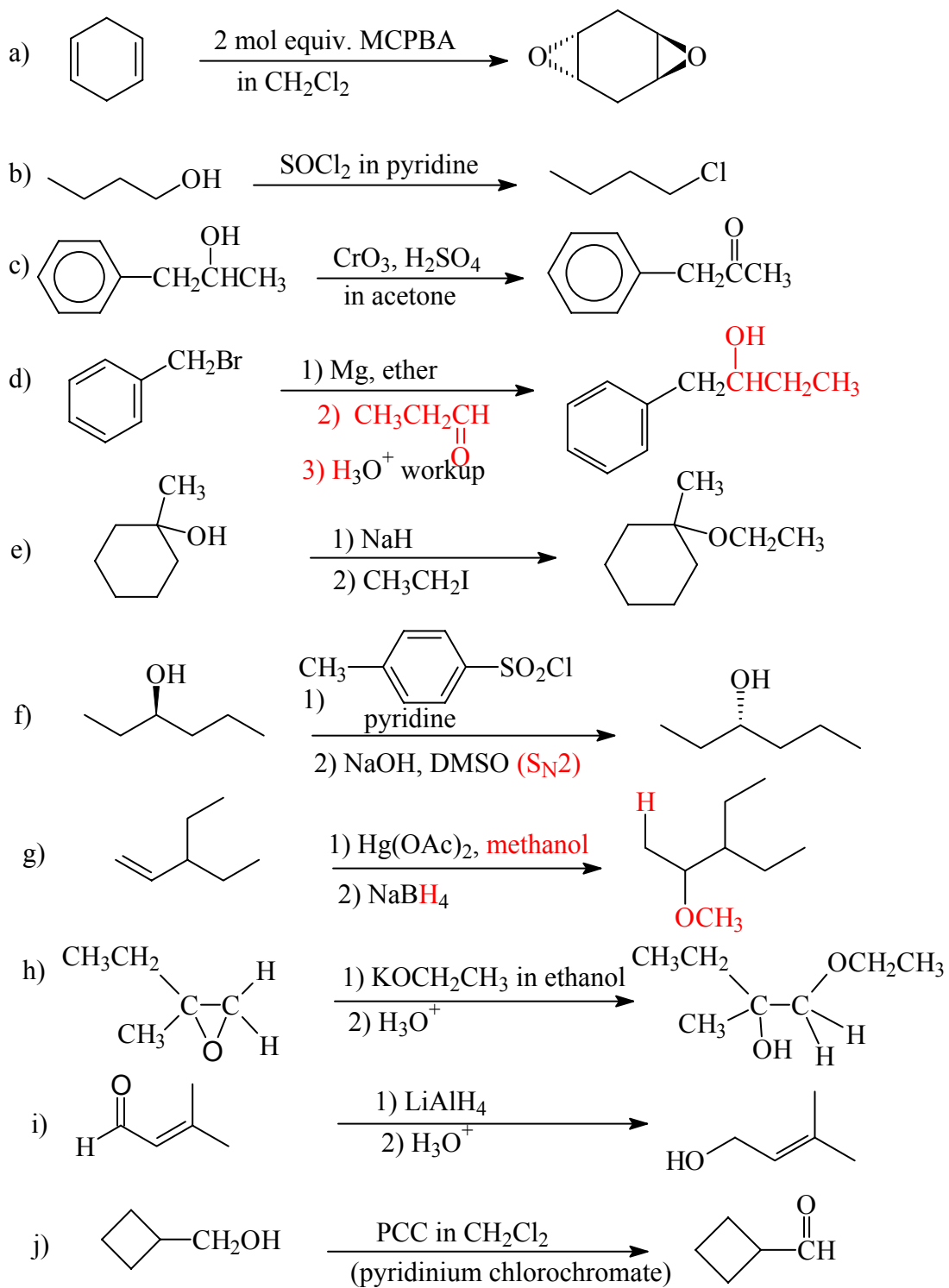
C₄H₈ + an alcohol

draw the reaction she should have run here ↓

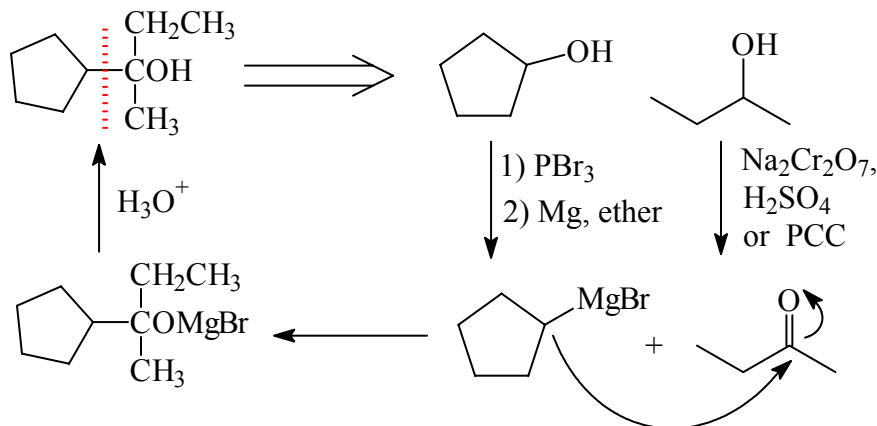
She should use a primary alkyl halide and a tertiary alkoxide to get the Williamson ether synthesis to work (S_N2).



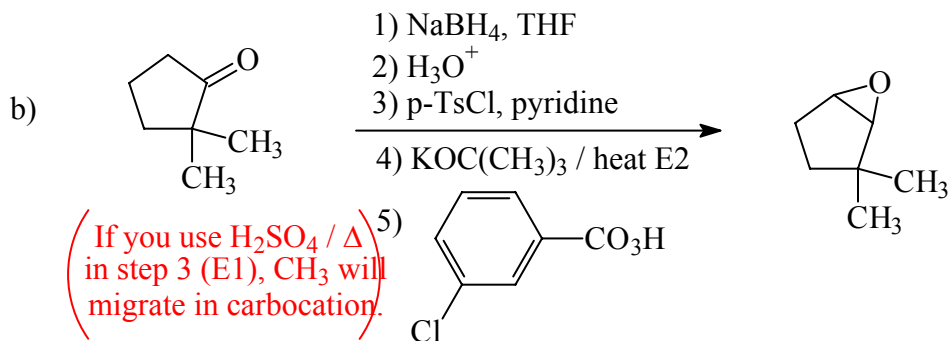
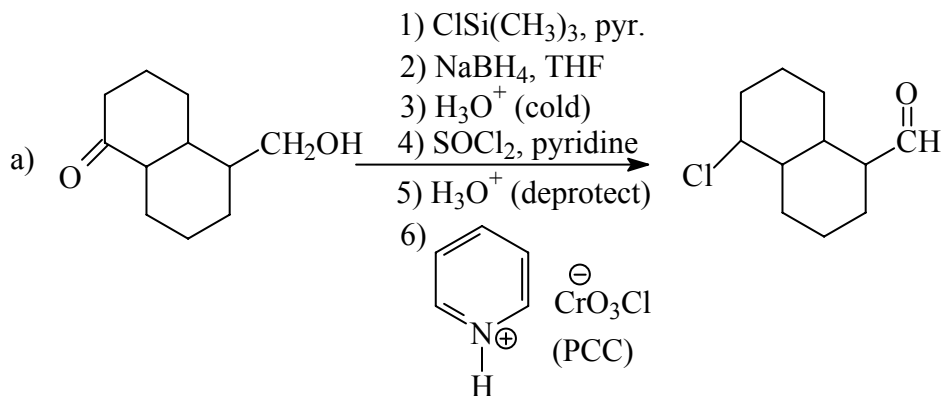
4.(40) Give the major product for each of the following reactions.



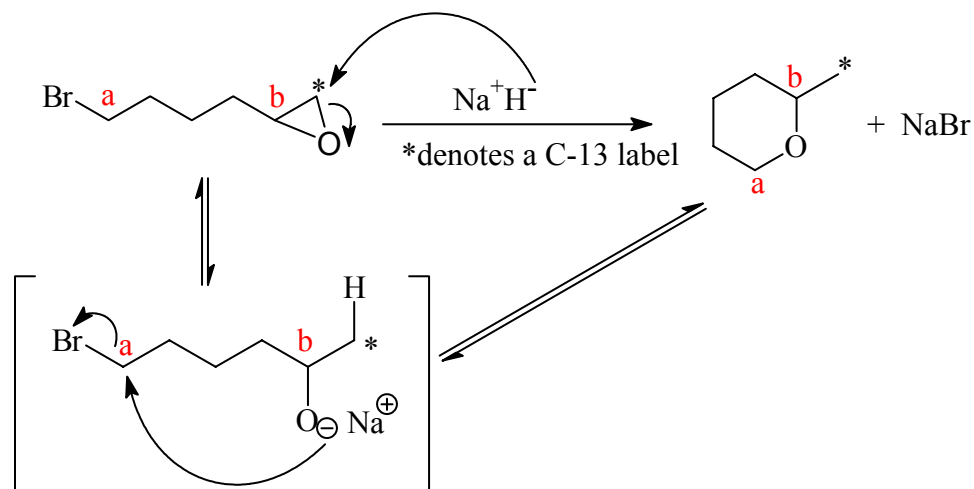
5.(10) Starting with **alcohols** of 5 carbons or less as your only source of carbon and any other reagents, show how the following alcohol could be prepared.



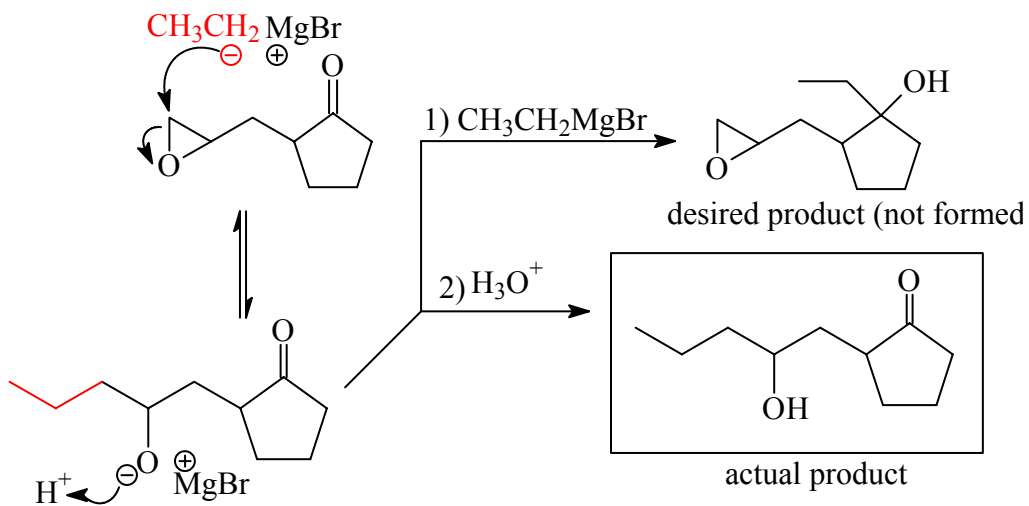
6.(14) Provide the reagents necessary (in the proper order) to carry out the following reactions:



7.(10) Propose clear mechanism to account for the following transformations. Use only the reagents provided, show all intermediates and indicate electron flow with arrows.



8.(8) A student attempted to carry out a Grignard reaction of the ketone shown below in the attempt of isolating the 3° alcohol shown. Instead, she synthesized a 2° alcohol and the ketone was still intact. Explain. Propose structure for the product of the reaction.



9.(14) Propose a sequence of chemical steps in the proper order that facilitates the following transformations.

