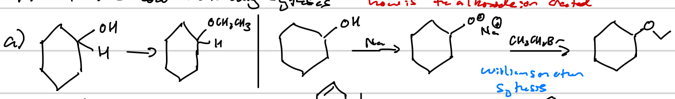
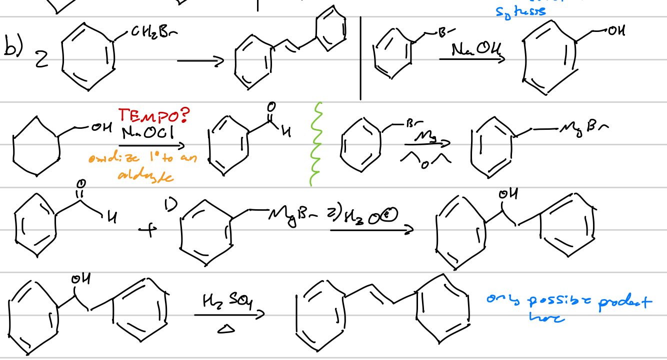
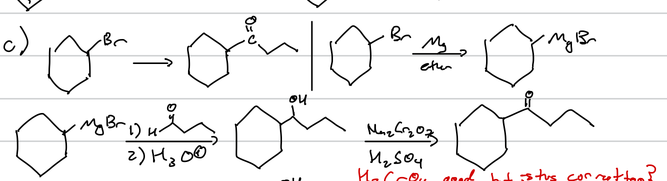
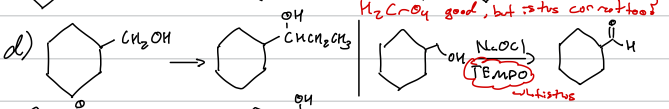
Ch11 HW - 11-42; 11-46; 11-47; 11-48c, e; 11-49b, e; 11-50; 11-52; 11-54; 11-55c, 11-56a, b

11-42) Show the following Syntheses — how is the alkoxide ion created

a)


b)


c)


d)


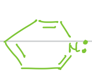
Look into what TEMPO was and what to use on exam from S1

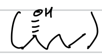
Recall ch5

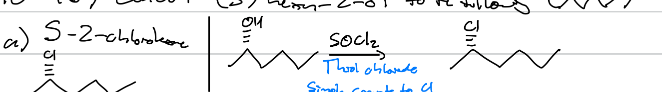
R = clockwise

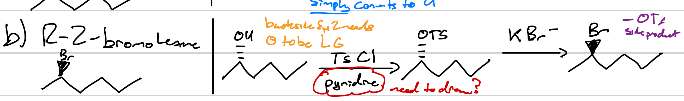
S = counterclockwise

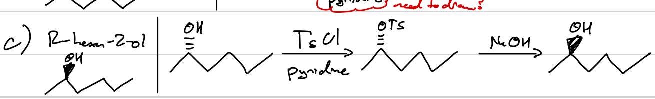
Pyridine

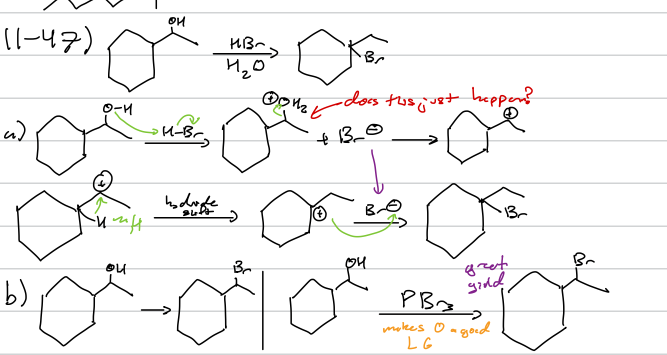


10-46) Convert (S) hexan-2-ol to the following


a) S-2-chlorohexane


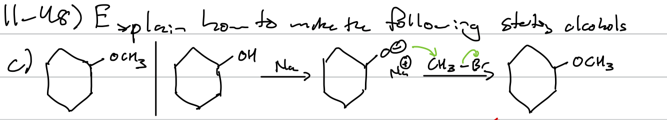
b) R-2-bromohexane


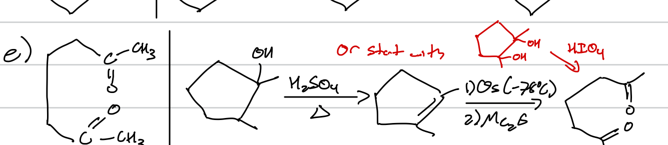
c) R-hexan-2-ol


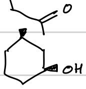
11-47)


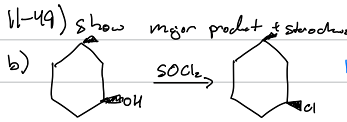
PBr_3 uses displacement and S_N2 to replace Br

11-48) Explain how to make the following stuff alcohols

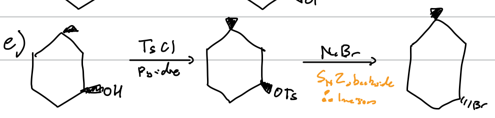
c)


e)


11-49) Show major product + stereochemistry when reacting with


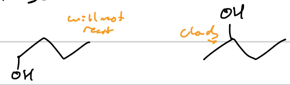
b)


Direct replacement and stereochemistry is retained so as stays

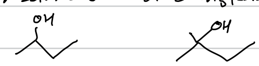
e)


Because Trans due to S_N2 mechanism

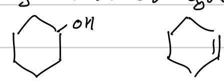
11-50) Show how to distinguish between these in each pair

a) butan-1-ol and butan-2-ol


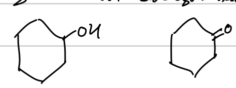
I will use the Lucas Test as 1° alcohols will not react at all with $ZnCl_2$ in HCl.

b) butan-2-ol and 2-methylbutan-2-ol


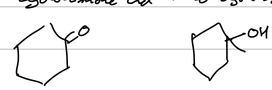
I will use the lucas test. 3° react instantly (quick), 2° react slower (1-5 min)

c) cyclohexanol and cyclohexene


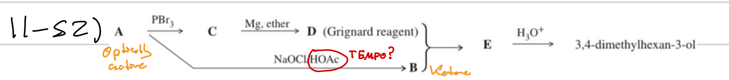
I will use the lucas test. 2° alcohol will react slowly (1-5 min) but alkene will not react at all.

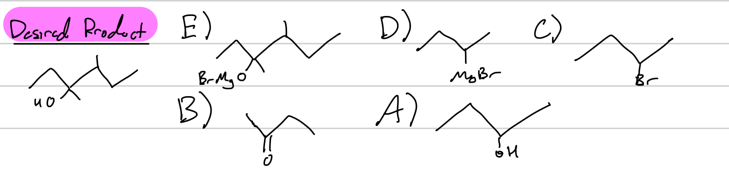
d) cyclohexanol and cyclohexanone


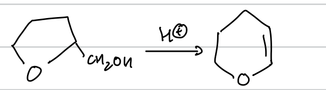
I will use the lucas test. 2° alcohol will react slowly (1-5 min) but ketone will not react at all.

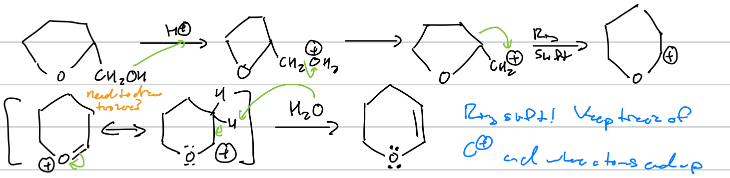
e) cyclohexanone and 1-methylcyclohexanol


I will use the lucas test. 3° alcohol will react quickly (1 min) but ketone will not react at all.

11-52)


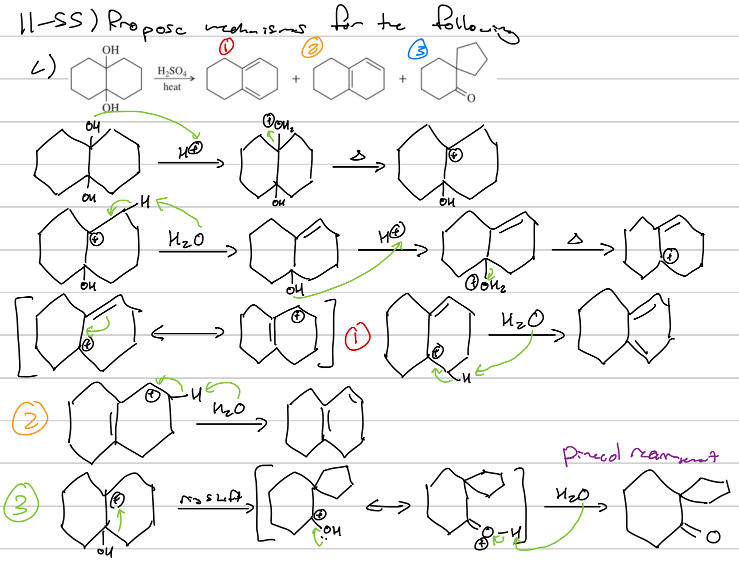
Desired Product


11-54) Propose a mechanism for:




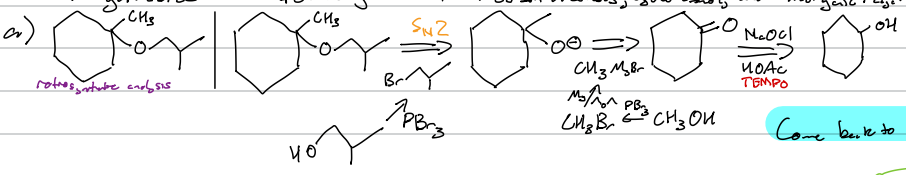
Ring shift! Keep track of C⊕ and where it ends up

11-55) Propose mechanisms for the following

c)


11-56) Synthesize the following from ≤4 carbon alkanes, cycloalkanes and inorganic reagents/solvents

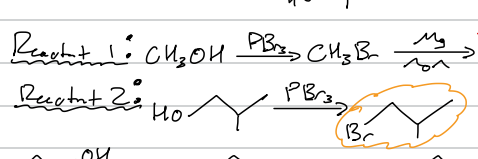
a)



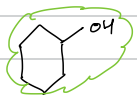
Come back to this for more synthesis practice

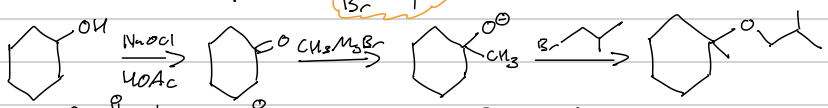
Reactant 1: $CH_3OH \xrightarrow{PBr_3} CH_3Br \xrightarrow[Et_2O]{Mg} CH_3MgBr$

Reactant 2:

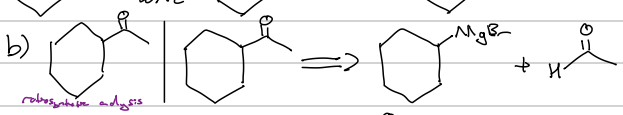


Starting Material:





b)



Reactant: $CH_3CH_2OH \xrightarrow[HOAc]{NaOCl} CH_3C(=O)H$ $-H_2O$ (TEMPO)