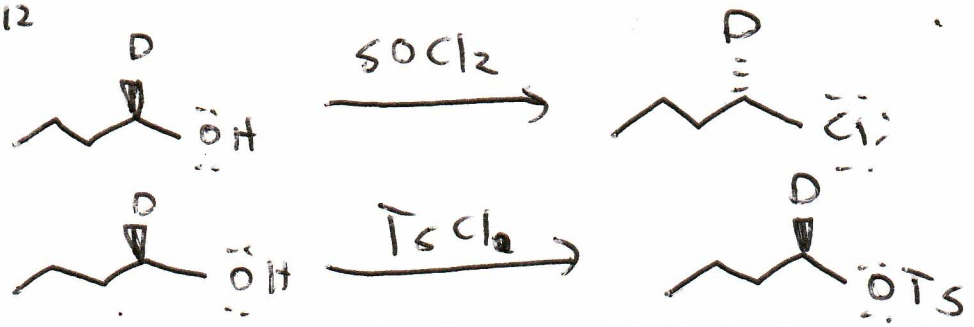
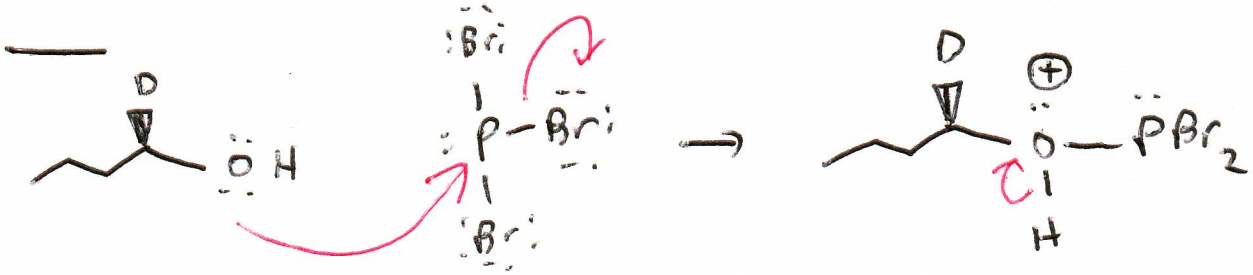
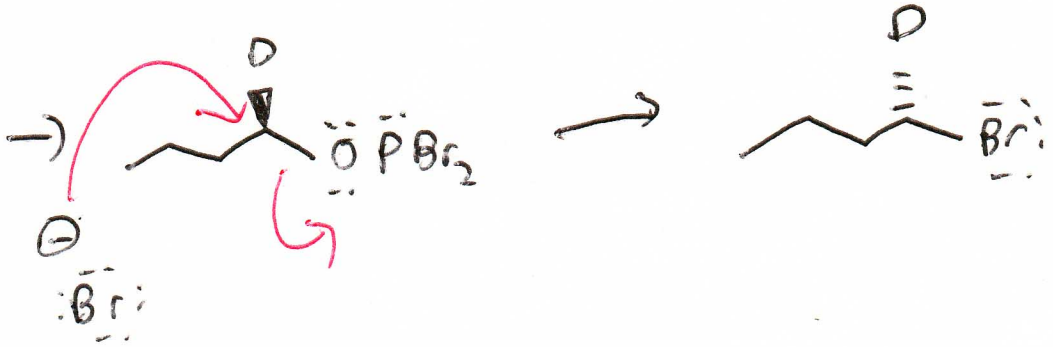
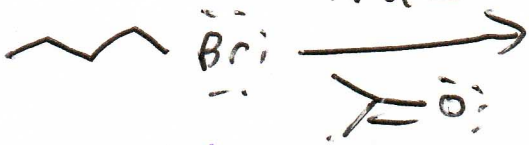






Finkelstein rxn



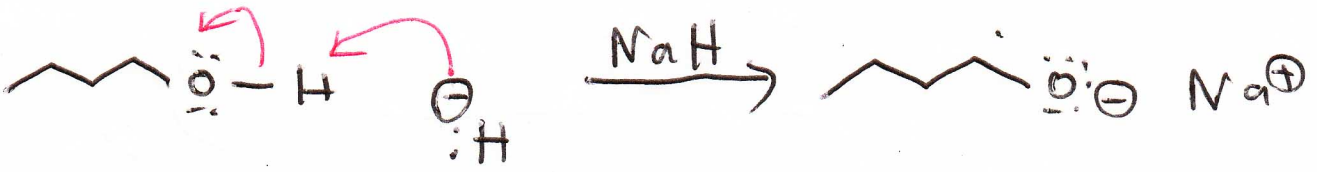
S_N2

NaI is soluble in acetone, while NaBr and NaCl are not. As this rxn proceeds, NaBr (or NaCl) precipitate out of soln, which prevents Br^- (or Cl^-) from re-attacking the alkyl iodide as it's formed.

Alkylation

Williamson ether synthesis

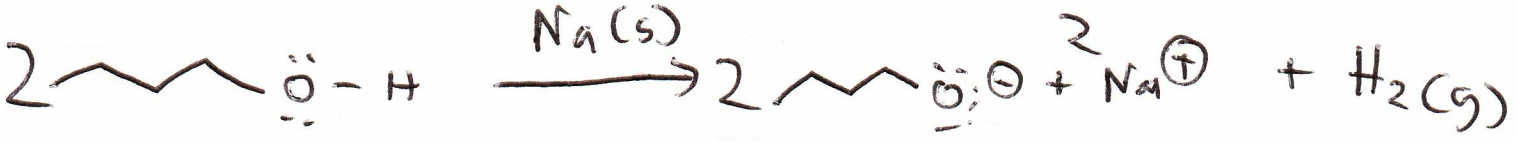
S_N2

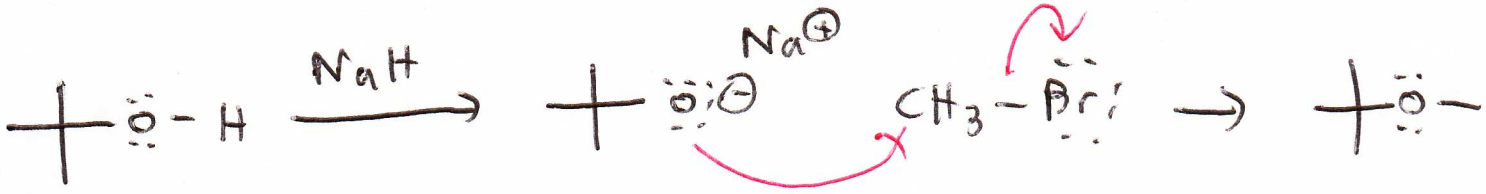


RO^- alkoxide

CH_3O^- methoxide


ethoxide

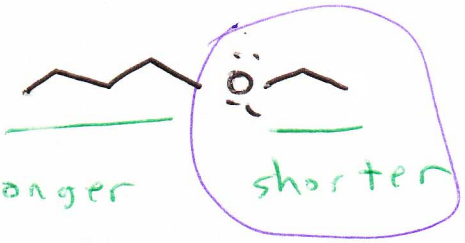




Ether nomenclature

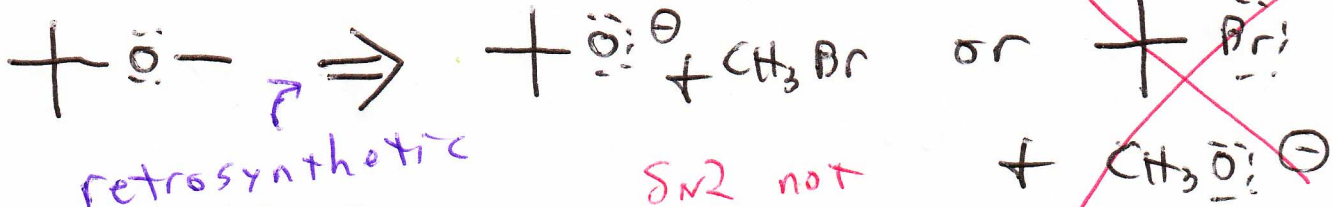
common:  diethyl ether

methyl ethyl ether

systematic: 

1-ethoxy butane

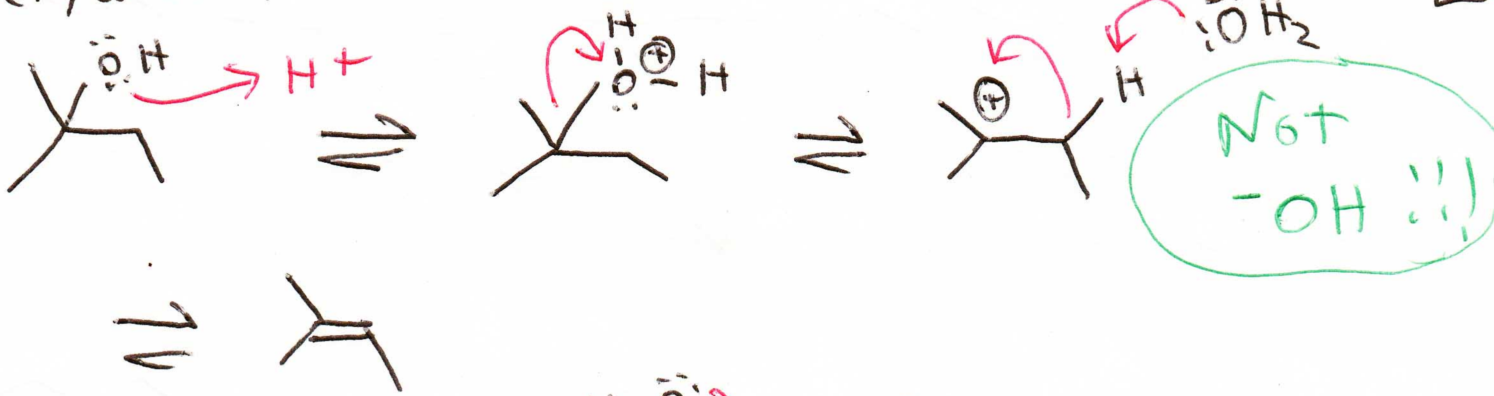
Synthesis strategy ⟶ retrosynthesis



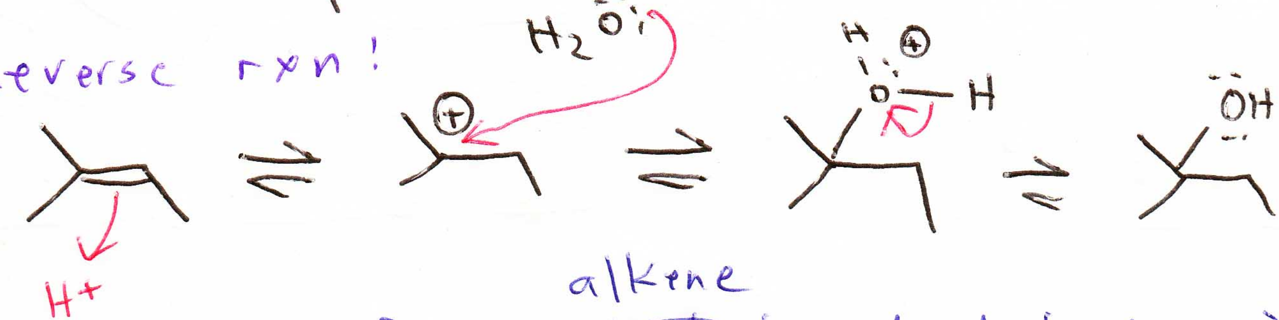
retrosynthetic arrow

S_N2 not possible for 3° substrates, so this method is not possible

Dehydration of alcohols



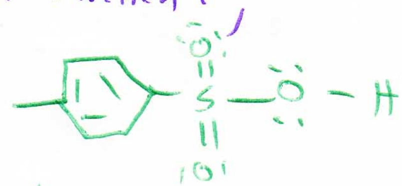
Reverse rxn!

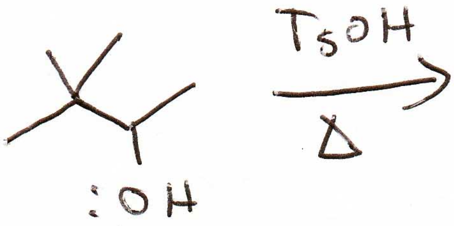


Hydration of an ~~alcohol~~ alkene and dehydration of an alcohol are just reverse rxns of each other. Dehydration is favored by high temperatures + removal of water (Le Châtelier's). Hydration is favored by adding water. Both rxns involve an acid catalyst.

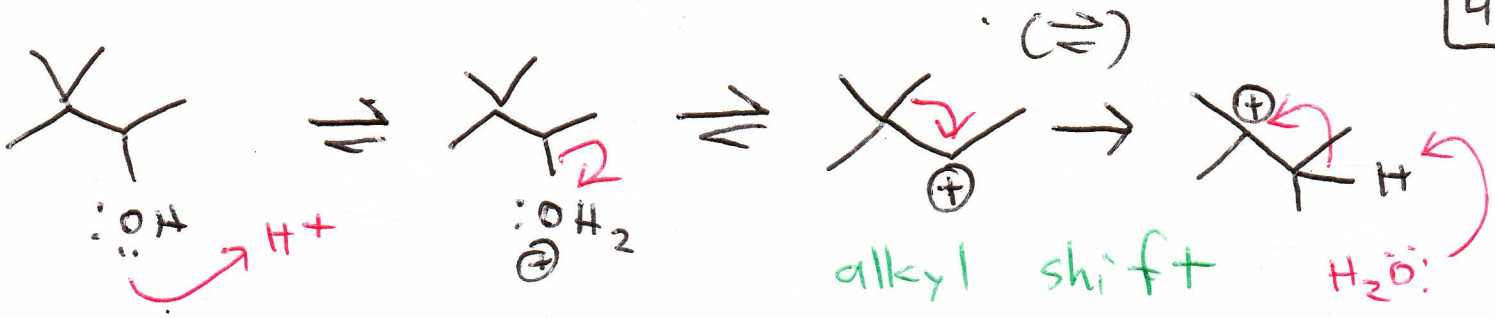
(Dean-Stark Trap)

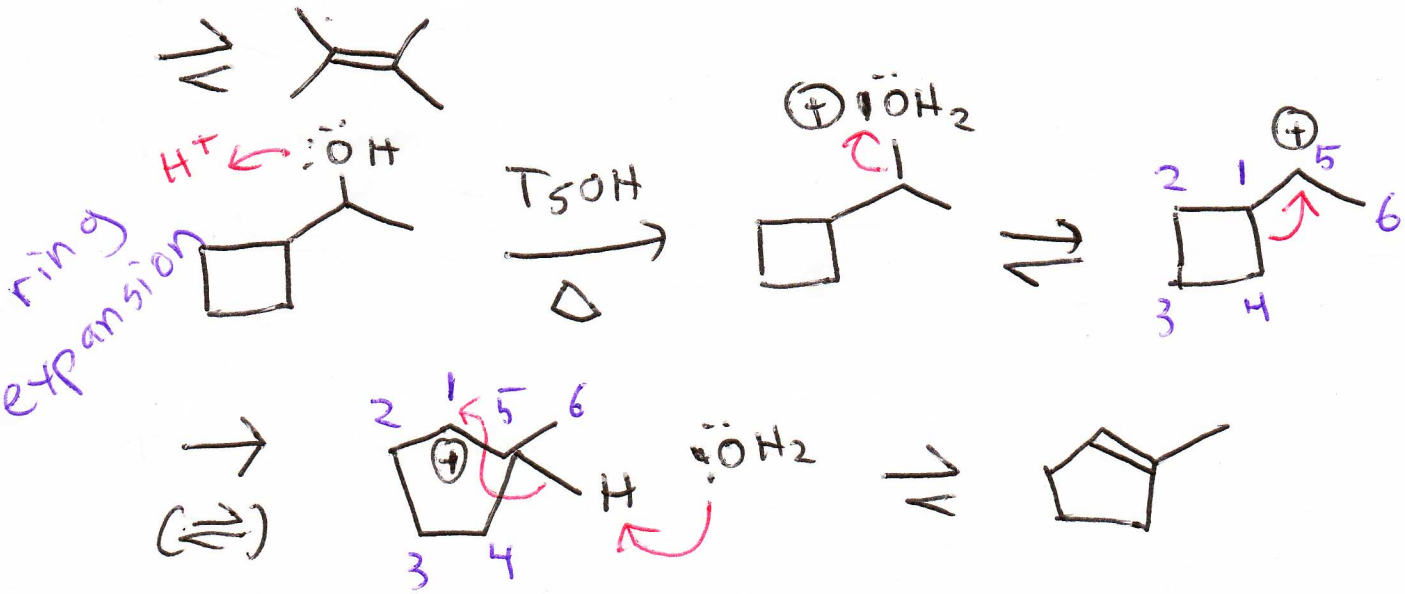
Acid-catalyzed dehydration normally favors the more thermodynamically stable alkene (most substituents; internal vs terminal; trans vs cis)

TsOH = 

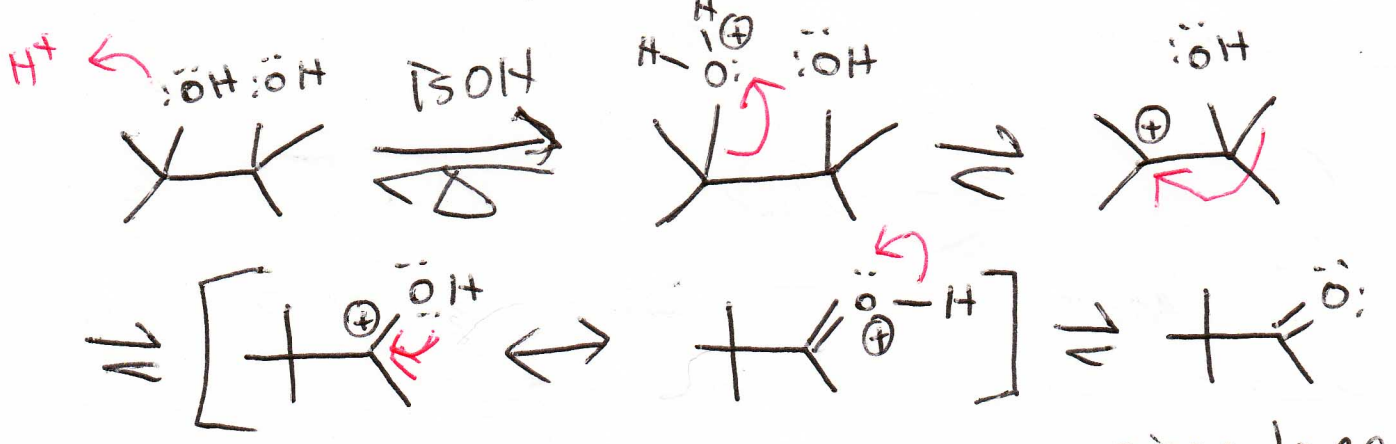


Great catalyst:
- cheap solid
- strong acid
- conjugate is non-nucleophilic





Pinacol rearrangement



pinacolone