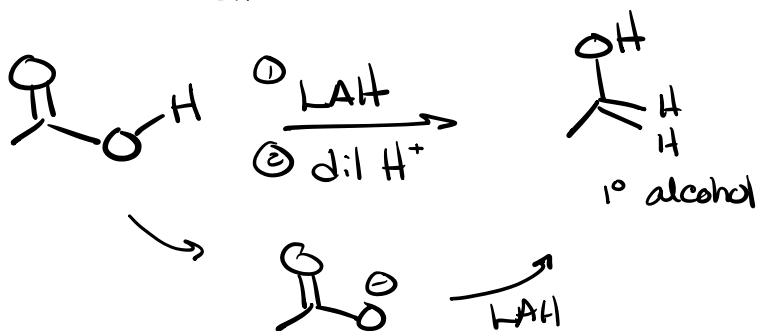
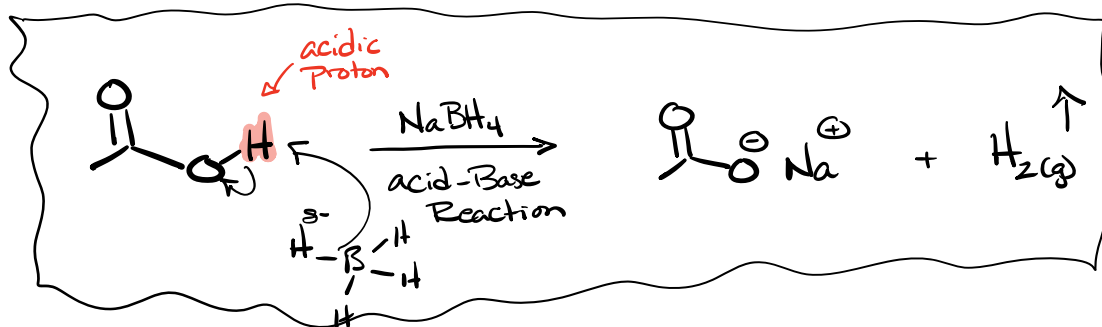
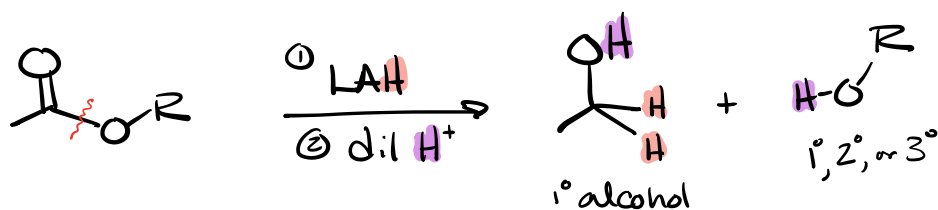
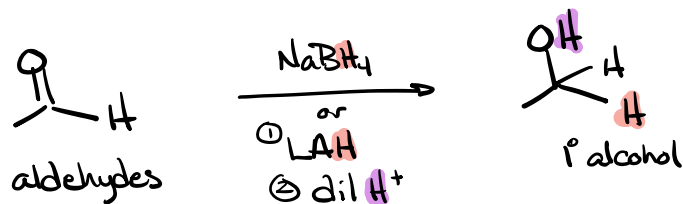
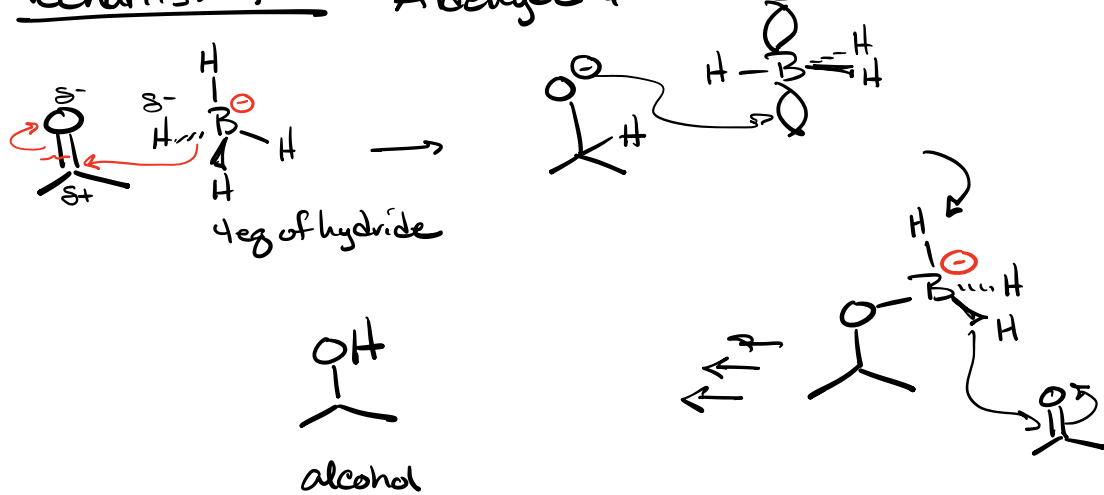


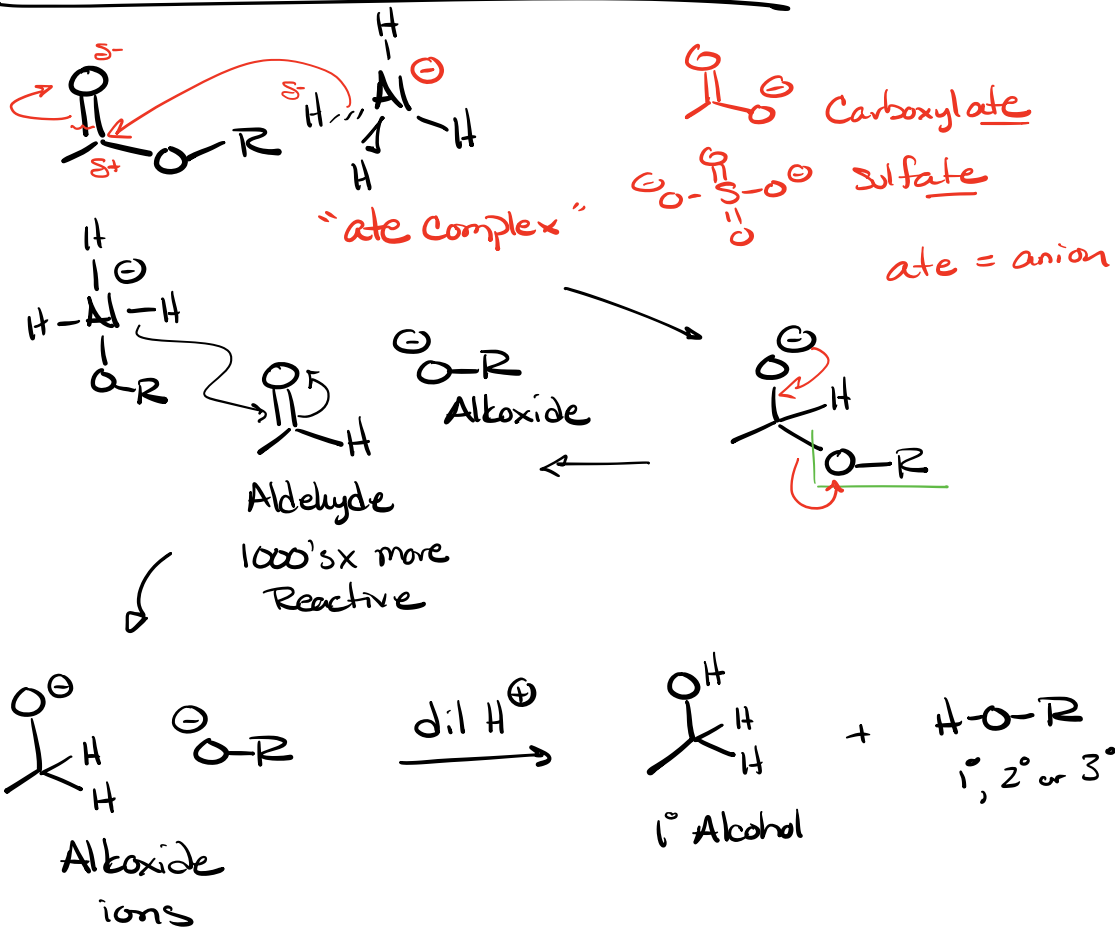
Synthesis of Alcohols by Reduction



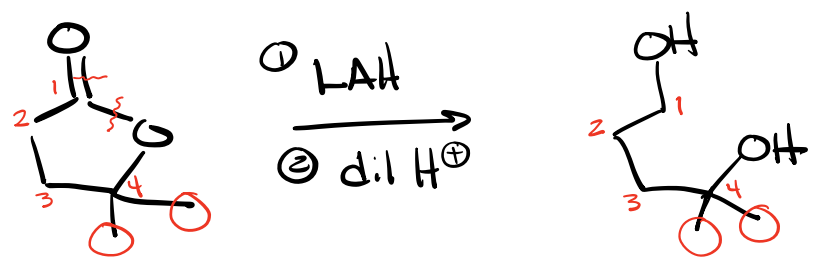
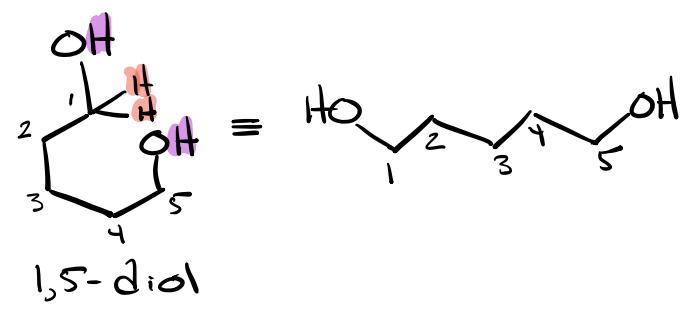
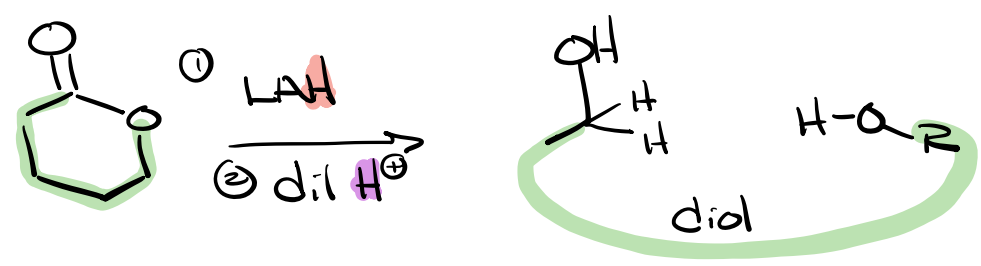
Mechanism Aldehyde & Ketone



Mechanism of Ester Reduction

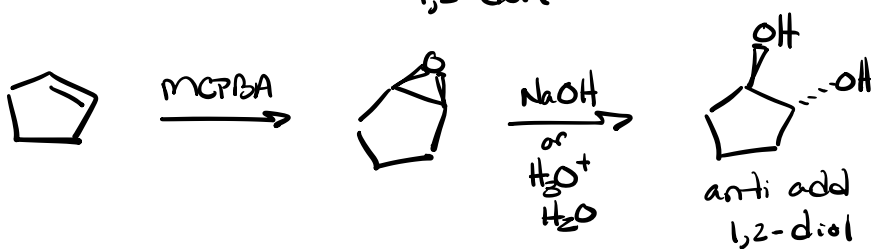
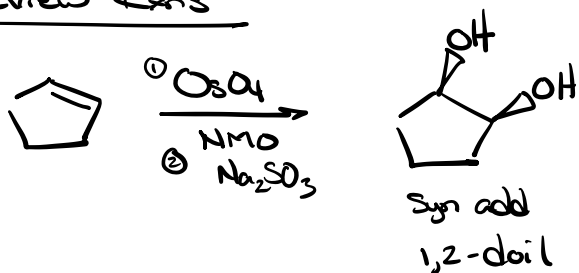


Lactone \rightarrow Cyclic Ester

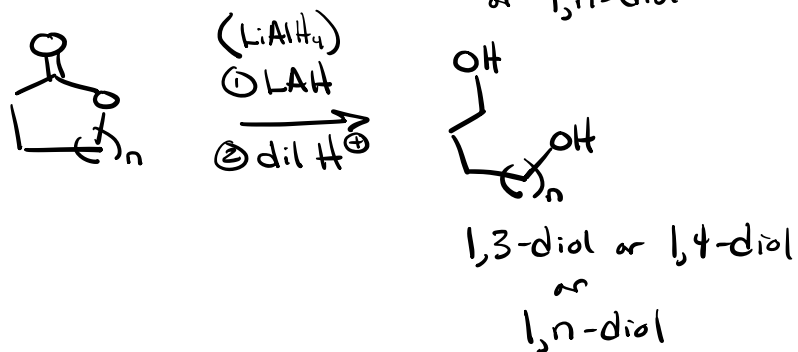
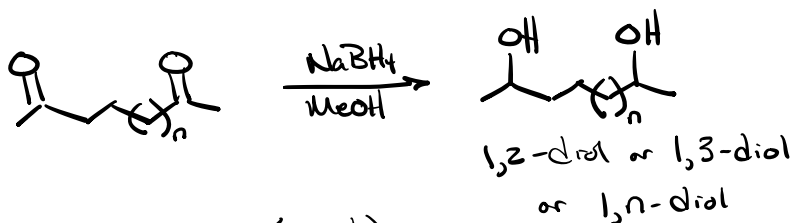
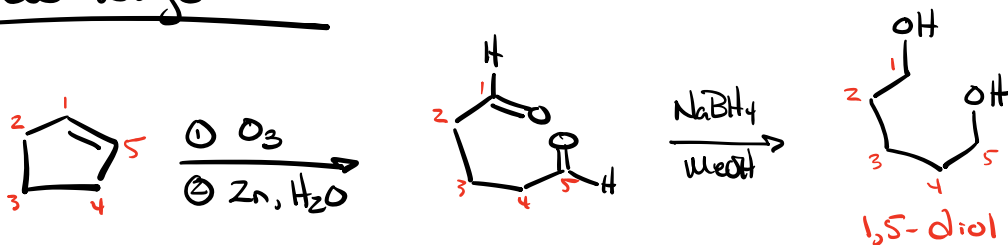


Formation of Diols

Review Rxns

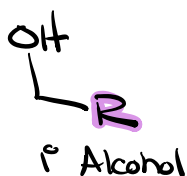
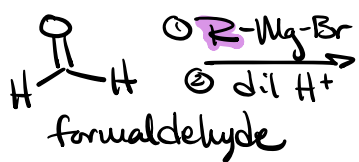


New ways



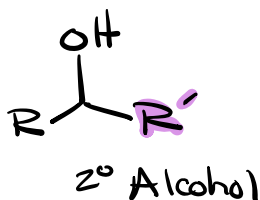
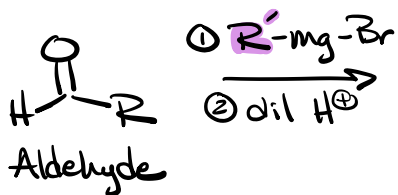
Organometallics

R-Mg-Br Grignards



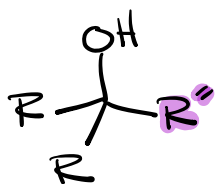
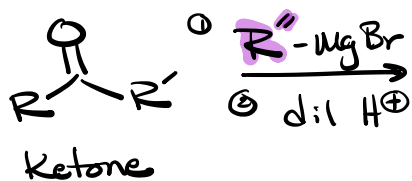
Add 1 Carbon

1° Alcohol



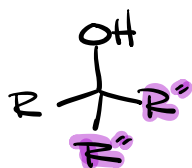
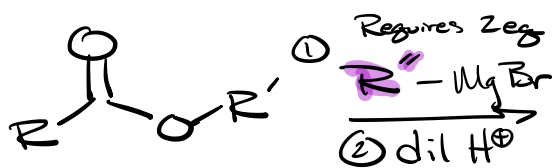
Adding mult Carbons

2° Alcohol



Adding mult Carbons

3° Alcohol

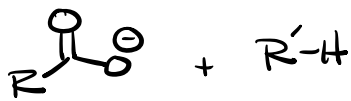
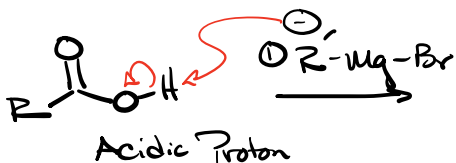


3° Alcohol

Two R'' groups added

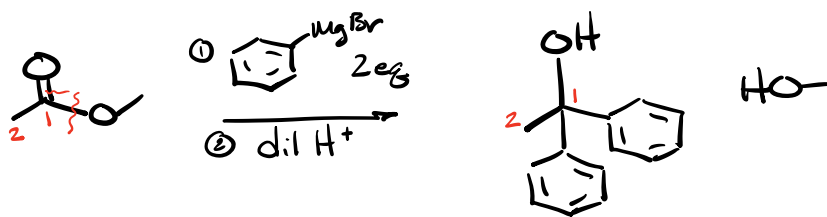
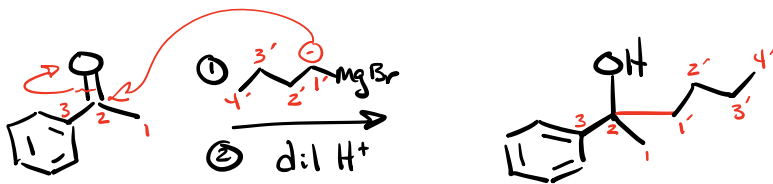
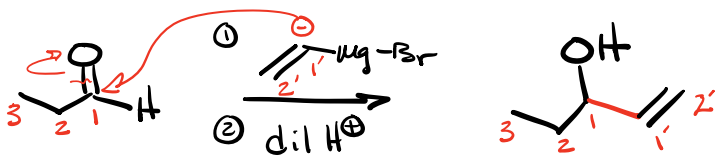
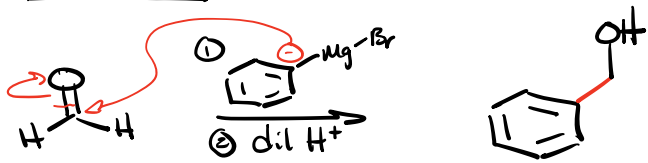


1°, 2°, or 3°

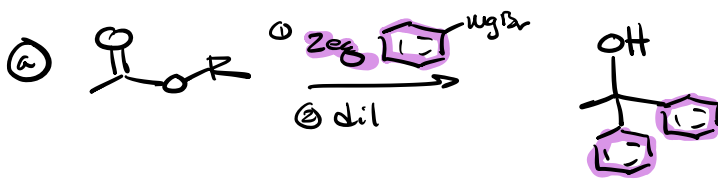
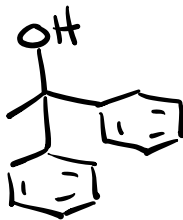


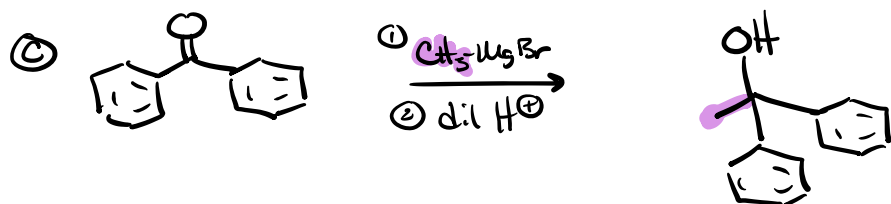
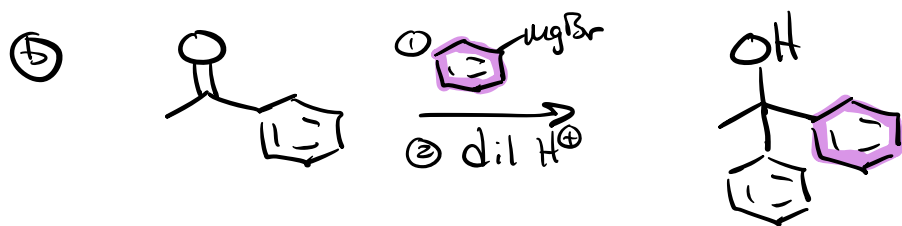
Acid/Base only

Examples

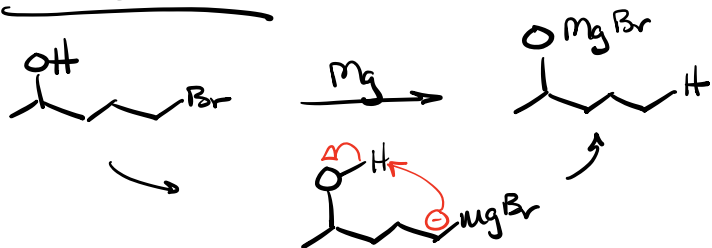


make
1,1-diphenylethanol





An Issue



Can't make or use a Grignard in presence of acidic proton! Gives Acid-Base Reaction

Protecting Group Strategy

A protecting group is a group that is chemically inert to the desired conditions.

Has high yield for addition & high yield for Removal
 > 90%



Protecting Groups for Alcohols

Type: Silyl ether

TMS Trimethyl silyl group —Si—

