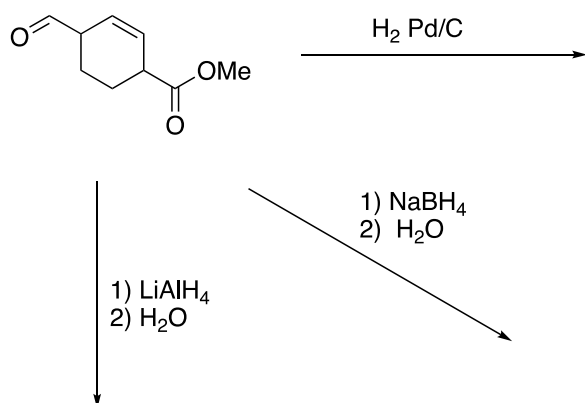
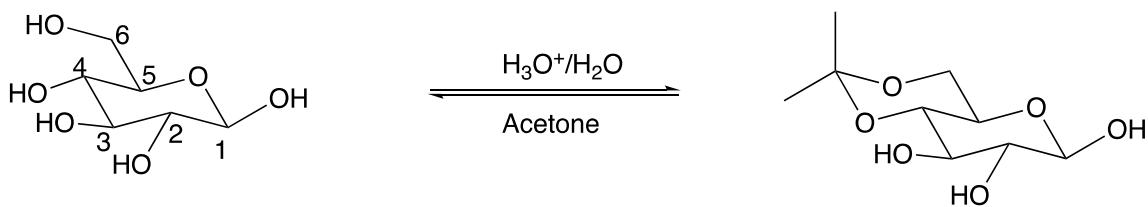


14.3 Predict the products of the following reactions from the same starting material:



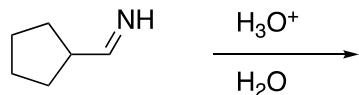
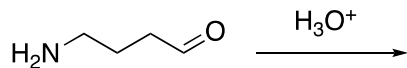
## 15 Acetals & Hemiacetals

15.1 A challenge in carbohydrate chemistry is selectively functionalizing hydroxyl groups, there many and have similar reactivity and reactions can result in complex mixtures with the wrong regiochemistry. One common strategy is to protect the 6-OH and 4-OH by forming a ketal with acetone in acidic conditions. With two of the OH groups protected as a ketal, chemistry can be done on the other positions and the number of possible regioisomers is reduced. Draw the mechanism for the formation of a ketal using acetone, and the 4-OH and 6-OH of glucose.



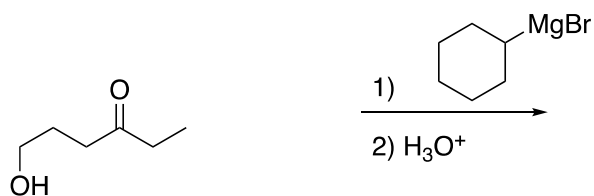
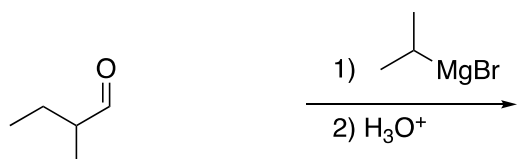
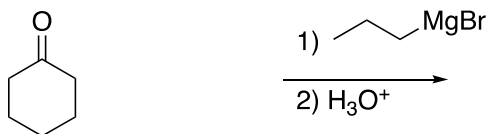
## 16 Imines & Reductive Amination

16.1 Predict the products and then draw the mechanisms for the following two reactions:

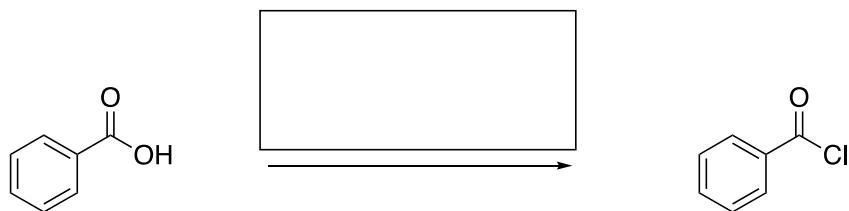
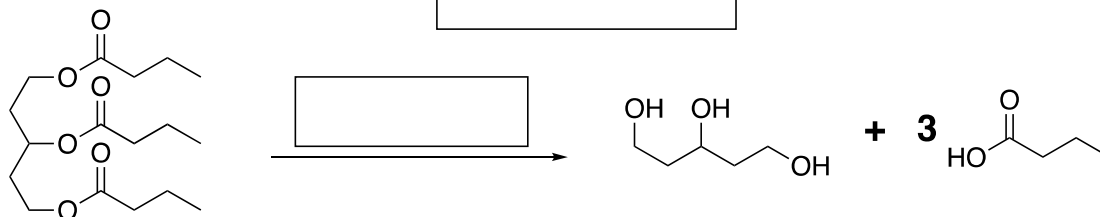
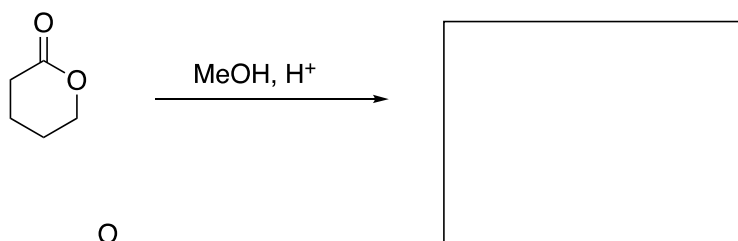
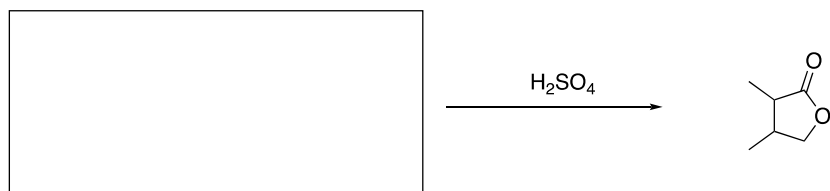
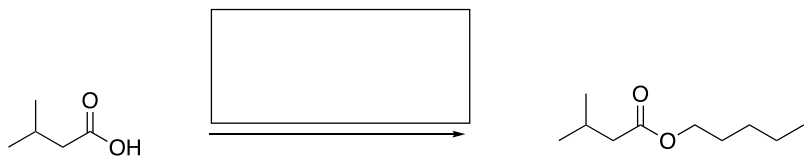
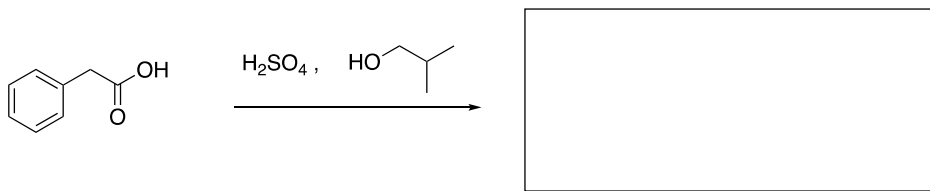


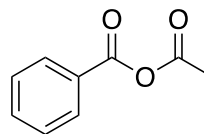
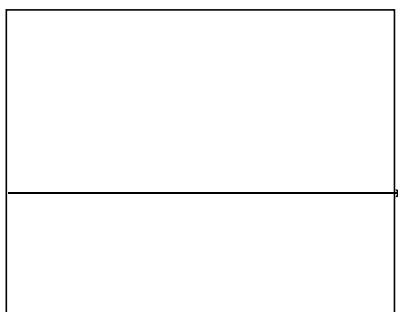
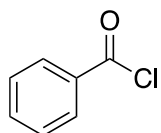
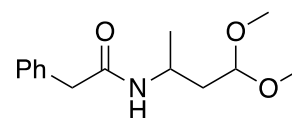
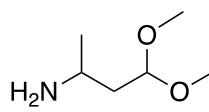
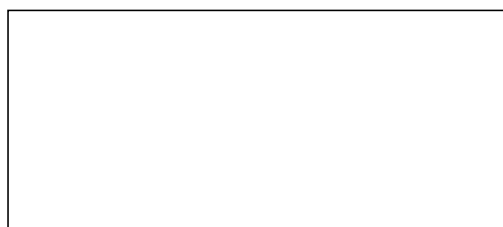
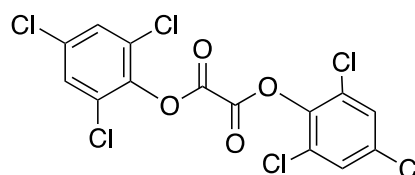
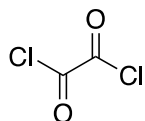
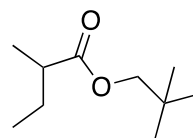
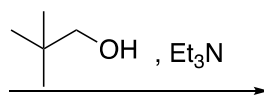
## 17 Carbonyl Reactions

17.1 Identify the Nucleophile and the Electrophile and THEN predict the products of the rxn:

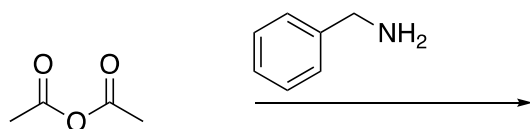
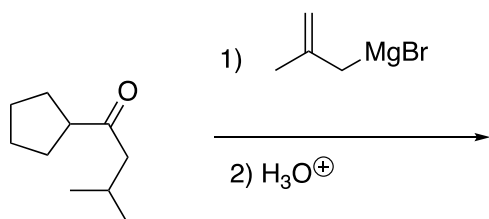


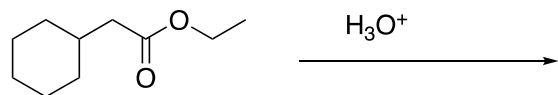
17.2 Identify the missing Reactant, Reagent or Product in the following reactions:





17.3 Predict the product *and* provide the mechanism for the following reactions:





## 18 Enolate/Aldol

18.1 Draw the mechanism to find the product

