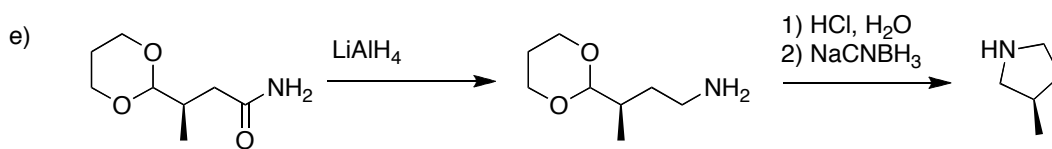
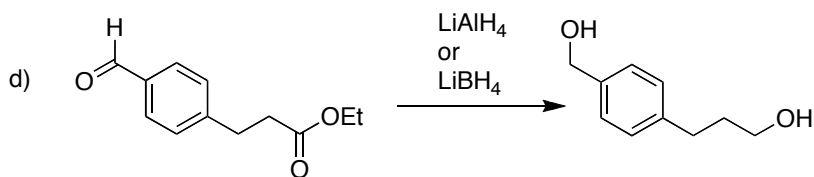
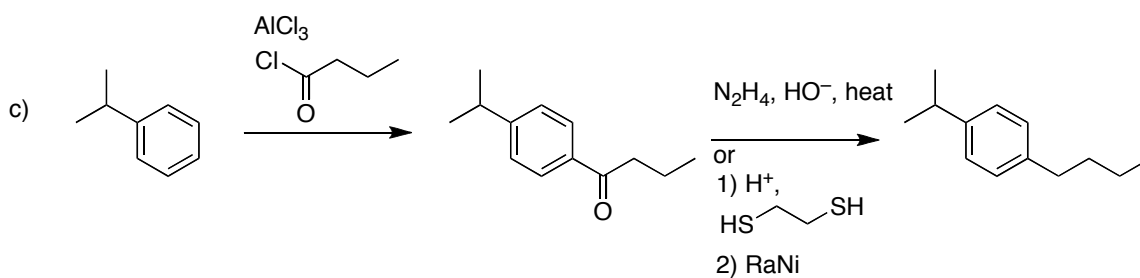
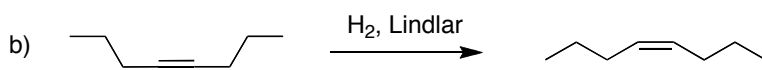
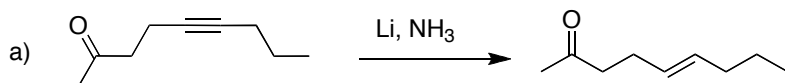
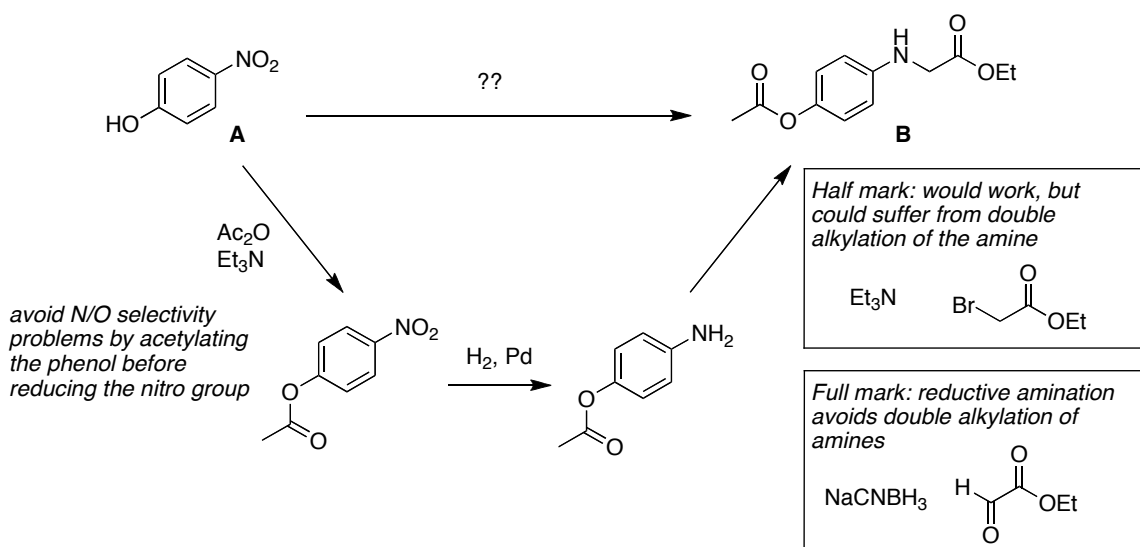
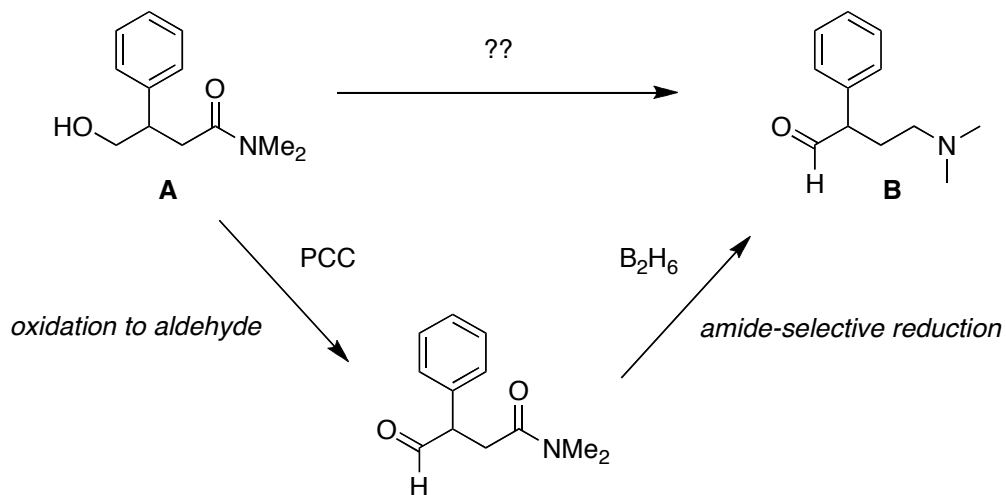


2010 — Problem set 1 ANSWERS
Chapter 24.

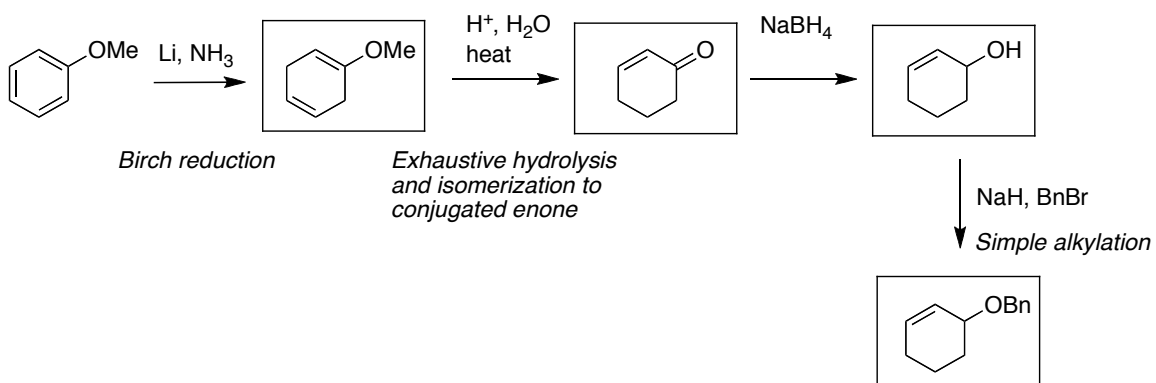
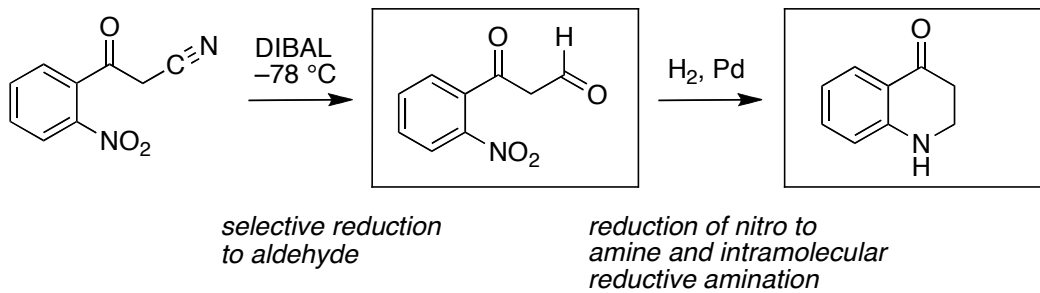
1) Fill in the details of reagents and conditions above each arrow.



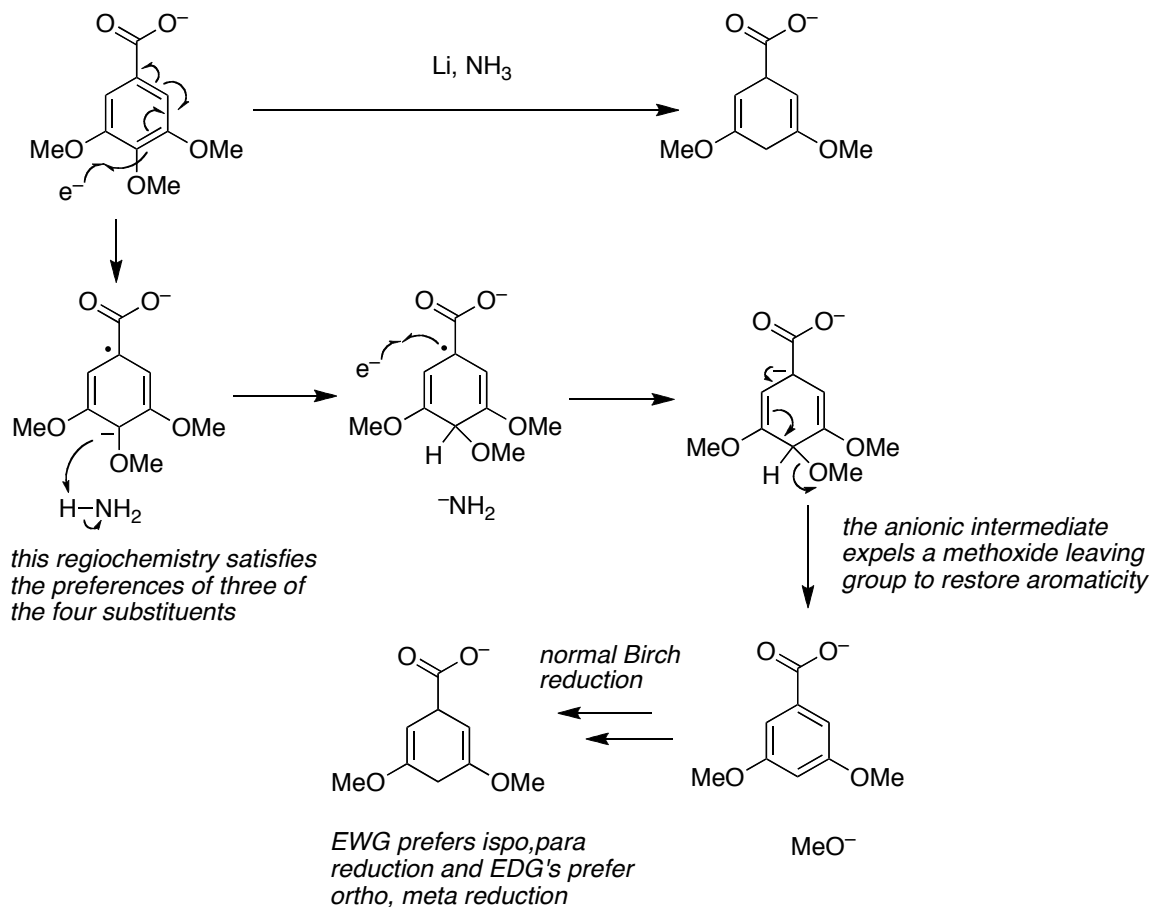
2) How would you make **B** from **A**? Show all reaction conditions and intermediates in the space below each reaction.



3) Draw the structures of the products formed by each reaction.

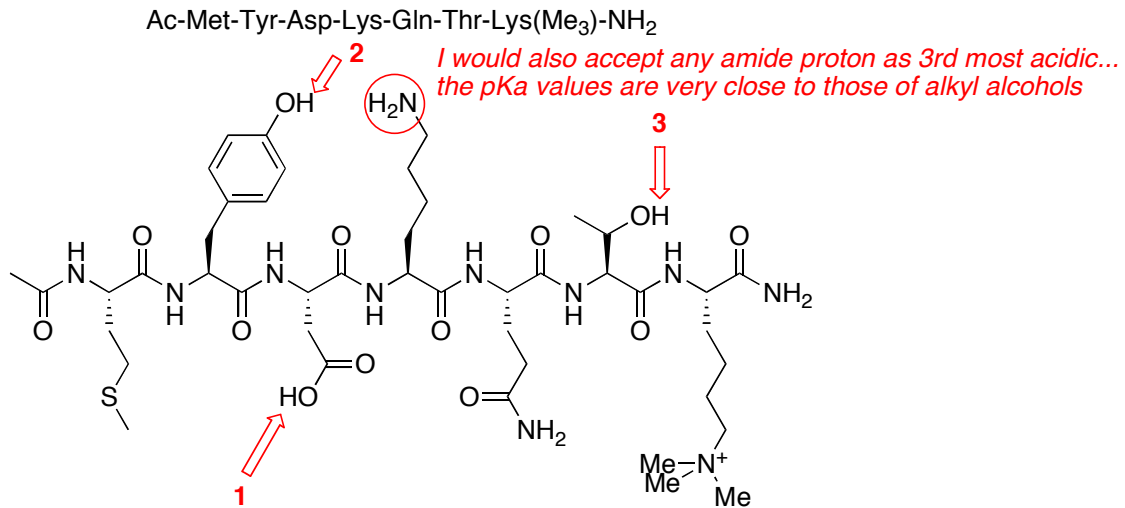


4) Birch reduction of 3,4,5-trimethoxybenzoic acid gives a 94% yield of the dihydrobenzoic acid pictured below that bears only *two* methoxy groups. Based on the mechanism of the Birch reduction, explain the formation of this unexpected product.



5) The peptide below is a fragment of an alcohol dehydrogenase (the family of enzymes that convert alcohol in your bloodstream to acetaldehyde).

a) Most acidic protons...



b) The amine on lysine (circled above) is the most nucleophilic atom, and so it will react with the electrophile FITC.