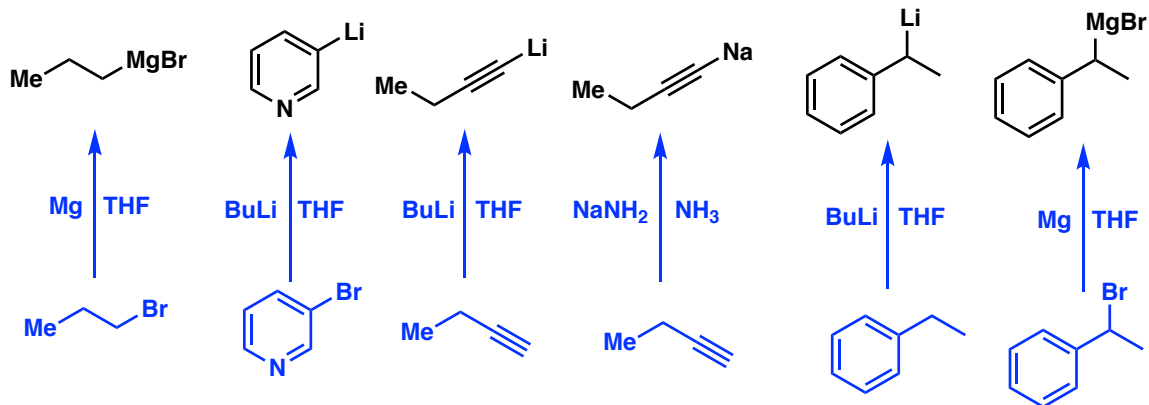
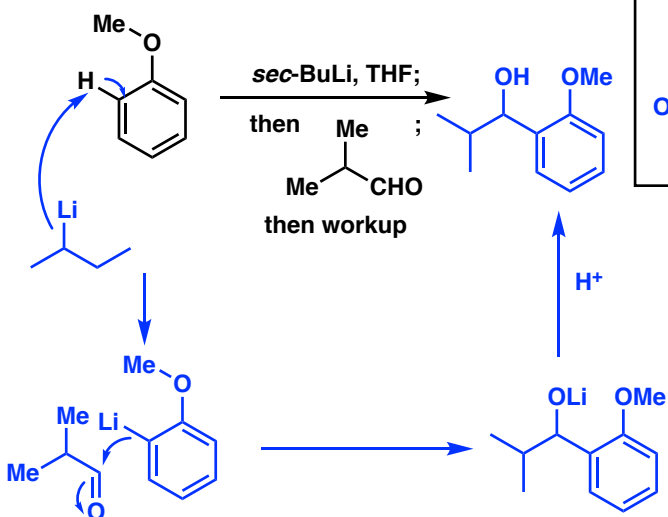
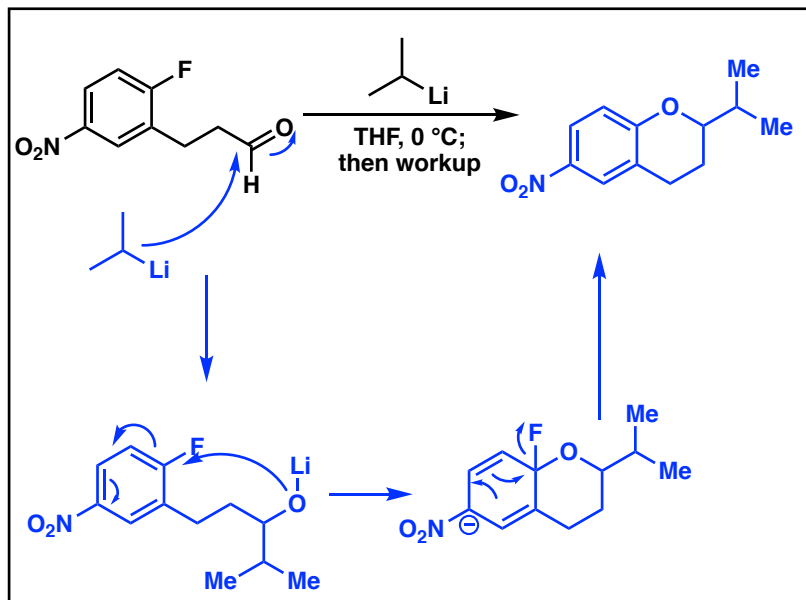
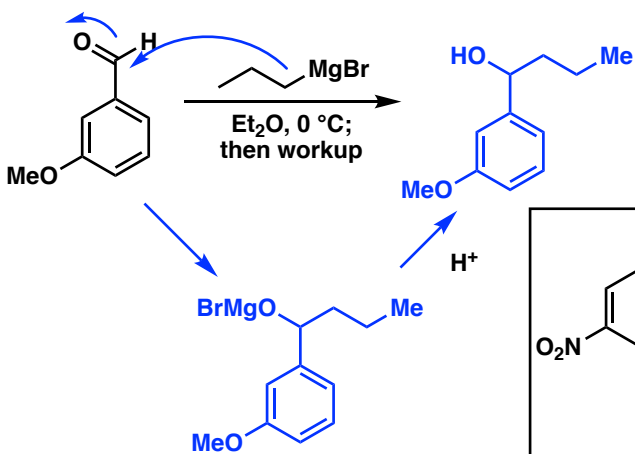


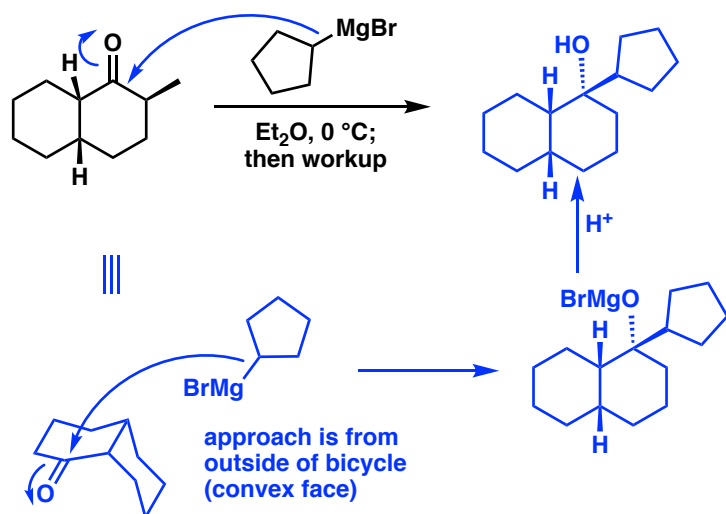
Problem Set 6 Answer Key
CHM 2211

1. a. Suggest suitable starting materials and reagents to form the following organometallic intermediates.

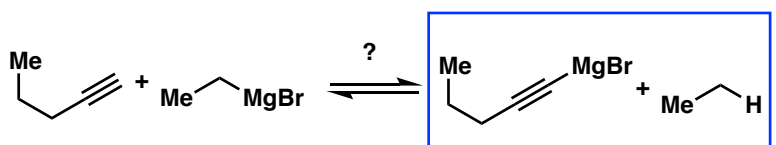


b. Organometallic compounds can be used to produce alcohols of all kinds through a reaction called the Grignard reaction. Provide a mechanism and predict the product in each of the reactions below.

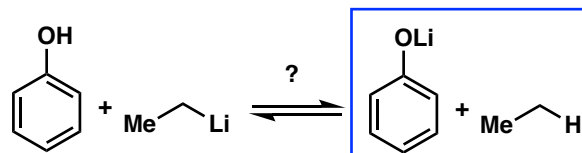




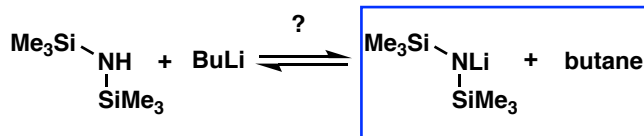
2. Some Grignard reagents and/or bases can be generated from other Grignard reagents. In the following scenarios, decide where the equilibrium lies and explain your answer.



equilibrium lies this direction b/c pKa of alkyne is 25 and pKa of ethane is ~ 50

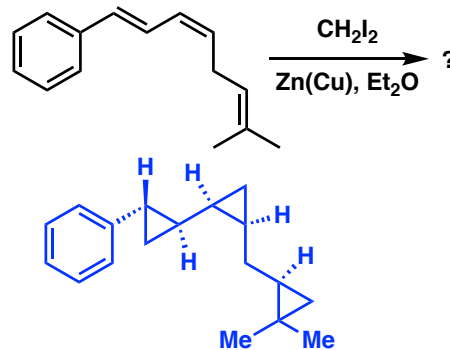
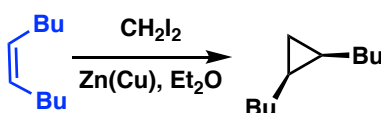
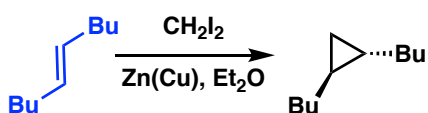


equilibrium lies this direction b/c pKa of phenol is 9 and pKa of ethane is ~ 50

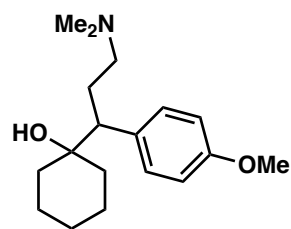
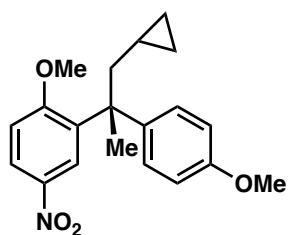


equilibrium lies this direction b/c pKa of HMDS (the amine) is 40 and pKa of butane is 62

3. Cyclopropanes are the smallest possible carbocycles. Their synthesis and manipulation is important in the field of organic synthesis. Provide either the starting material or product in the following transformations. Keep stereochemistry in mind!



4. Provide a forward synthesis of the following compounds from anisole and units of 3 carbons or fewer (a retrosynthesis will help you!!).



Effexor XR (Pfeizer Antidepressant)

