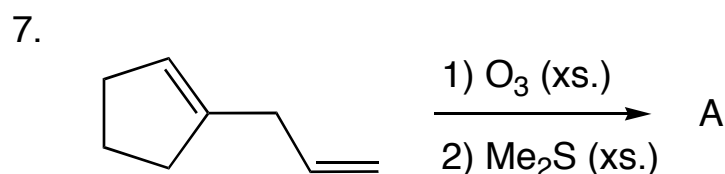
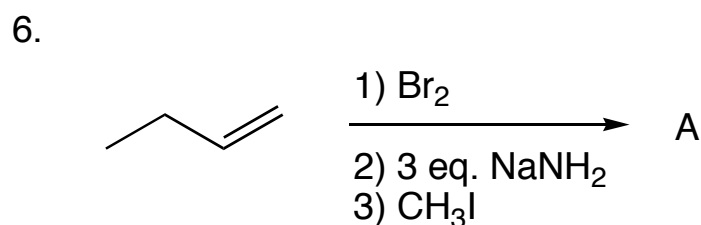
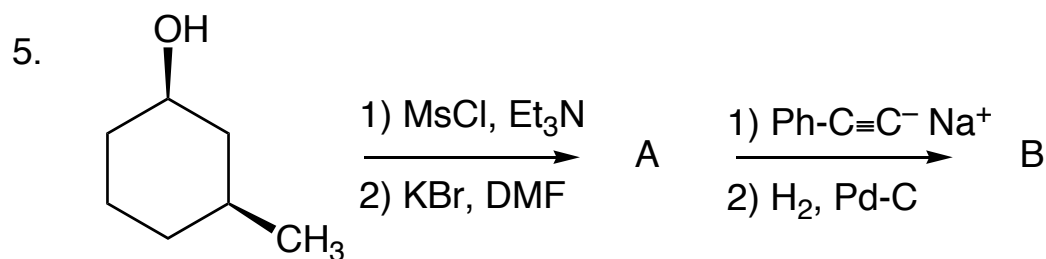
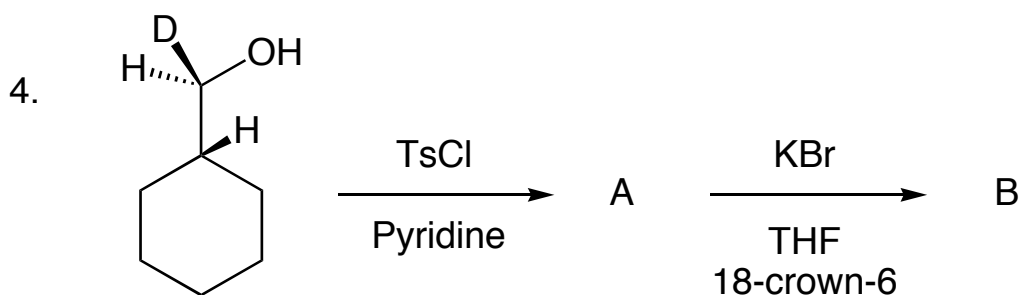
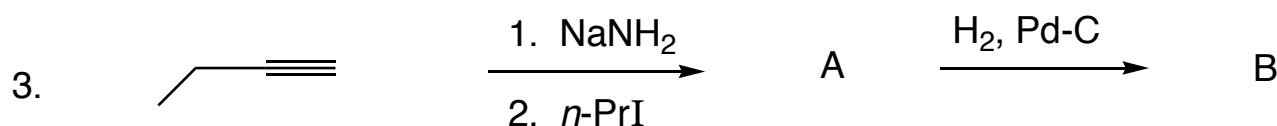
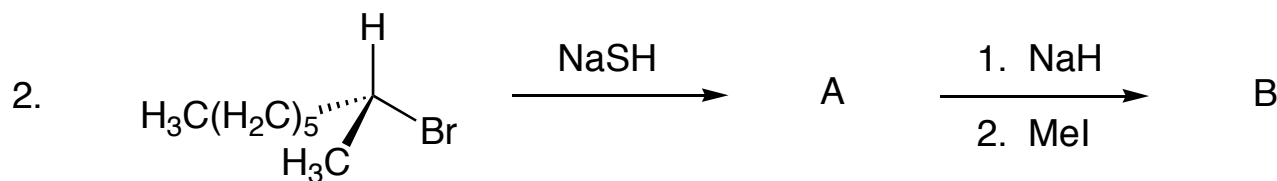
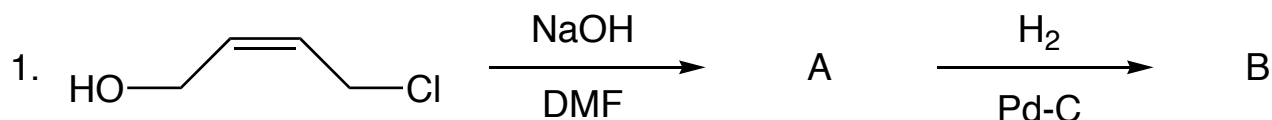


**Chem 30C, Prof. Yves Rubin
Supplemental Problems Series 4**


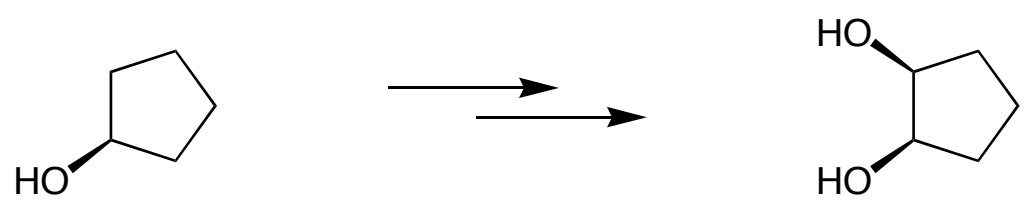
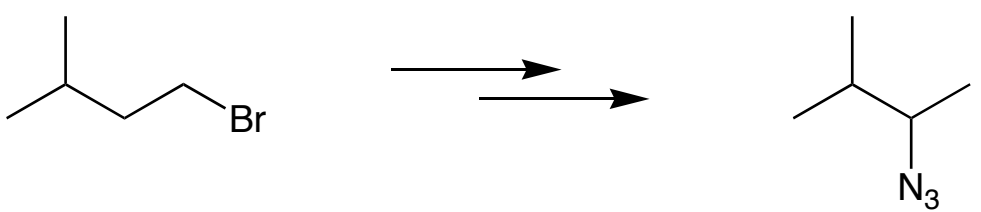
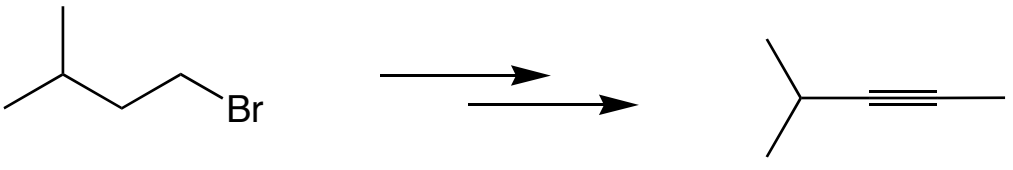
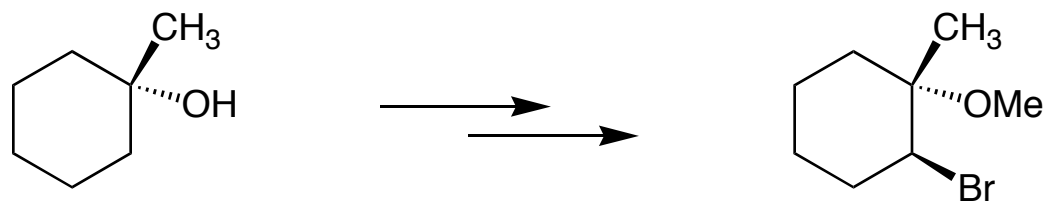
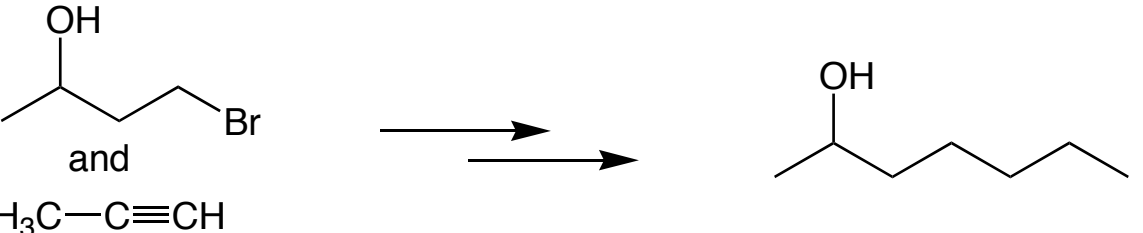
I. Give the major product expected for each of the following transformations.



NOTE: these problems have parts of Ch. 10 included, this will be covered in lecture within Nucleophilic Substitution Chapter. Anything with R-CCH deprotonation has to do with Nu substitution, and TsCl or MsCl are used to make better leaving groups of alcohols. This reaction is described in the small section of Ch. 9.5.D

The purpose of the following problems is to exercise some of the reactions with which you should be familiar. Some are meant to be very challenging, so remember to work backwards toward the starting material. You should first try to memorize the reactions before attempting the problems and use the book or handouts as a last resort (see my handout of essential reactions). In memorizing the reactions it may be helpful to use "flash" cards which have the reaction on one side and the product on the other side. This will help you exercise product prediction (by looking at the reaction side first) and synthesis skills (by looking at the product side first and then supplying the starting material and reagents needed). Remember to count carbons and pay attention to stereochemistry. If you have difficulty or get stuck on a few of the problems *don't get too discouraged*, do the the best you can and ask Professor Rubin or your TAs for help. That's what we are here for!

II. Propose syntheses from common reagents for the following transformations

1.  several steps
2. 
3. 
4. 
5. 
6. 
and
 $\text{H}_3\text{C}-\text{C}\equiv\text{CH}$