Chemistry 251
Worksheet 12

Name: _____

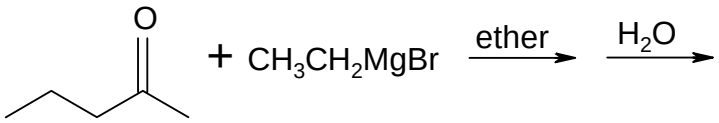
A. (1.0 pts.) Give the IUPAC name(structure) for each of the following.

1. cyclopentyllithium

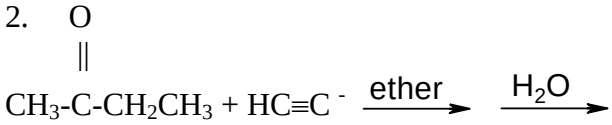
2. CH_3CH_2MgI

B. (4.0 pts.) Give the most likely product for each of the following reactions.

1.



2.



3. $(CH_3)_2CHLi + D_3O^+ \rightarrow$

4. $C_6H_5CH_2Cl + Mg/ether \rightarrow$

C. (5.0 pts.) Outline all steps in a possible laboratory synthesis of each of the following compounds from alcohols of four carbons of less and any needed inorganic reagents.

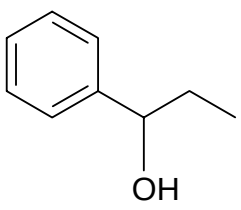
1. 1-pentanol

2. 2-methyl-3-hexanol

3. 3-methyl-1-pentanol

4. 1-hexene

5.



Bonus (1.0 pts.) A researcher needed a labeled compound for an NMR spectrum. Propose a synthesis that could be used to prepare the compound $CH_3CHDCH_2CH_3$ from any butanol and any needed inorganic reagents.