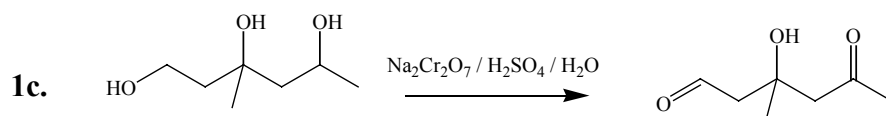
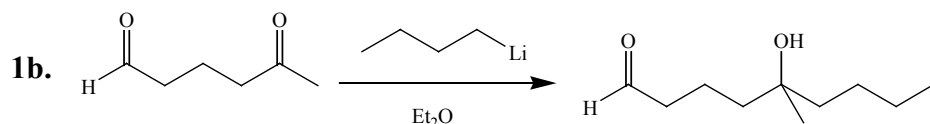
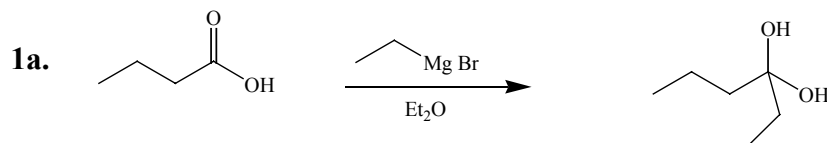
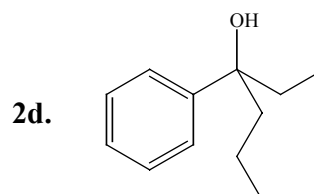
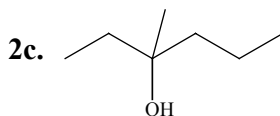
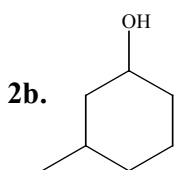
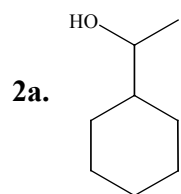


Whittier College  
**Organic Chemistry: CHEM 231B**  
**Problem Set # 1**  
 40 Points Total  
 Due at 9:00am on Wednesday, Feb 19, 2002

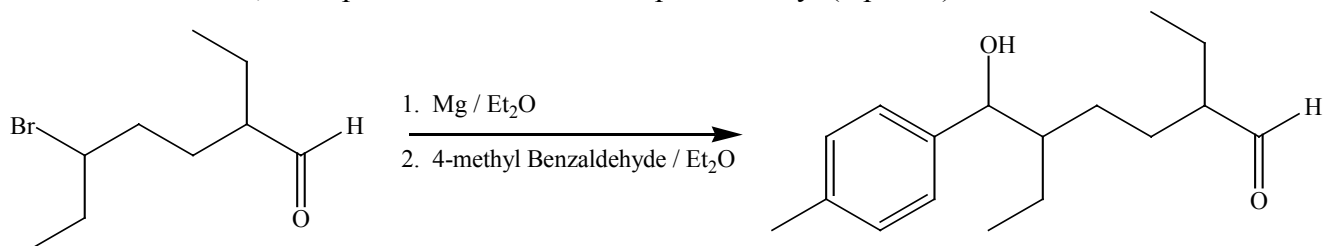
1. Predict whether the following reactions will occur as drawn. Propose a proper product for the reaction if it does not occur as drawn. Explain your rationale: (9 points)



2. Specify all of the possible retrosynthetic disconnections to carbonyl compounds and grignard reagents for the following compounds: (12 points)



3. Perform a retrosynthetic analysis and show the best synthesis for 1-methylcyclopentene. The starting material may be any substituted cyclopentanone compound. This synthesis contains more than two steps. The retrosynthetic analysis must include at least three different synthetic pathways. (10 points)
4. Bob wanted to conduct the following reaction. Based on the following experimental data, did he succeed? If not, what product did he form? Explain briefly. (9 points)



**NMR Data of Product:**

Chemical Shift:	Integration:	Coupling:
0.91 ppm	18 mm	triplet
1.22 ppm	11 mm	quintet
1.25 ppm	12 mm	doublet
1.78 ppm	6 mm	sextet
3.81 ppm	3 mm	triplet

**IR Data:**

**Main peaks:**  
 3545 – 3275 cm<sup>-1</sup> (Strong, Broad)  
 1175 cm<sup>-1</sup> (strong)  
**GC-MSD Data:**  
 1 main peak in Chromatogram  
 molecular ion m/z = 142