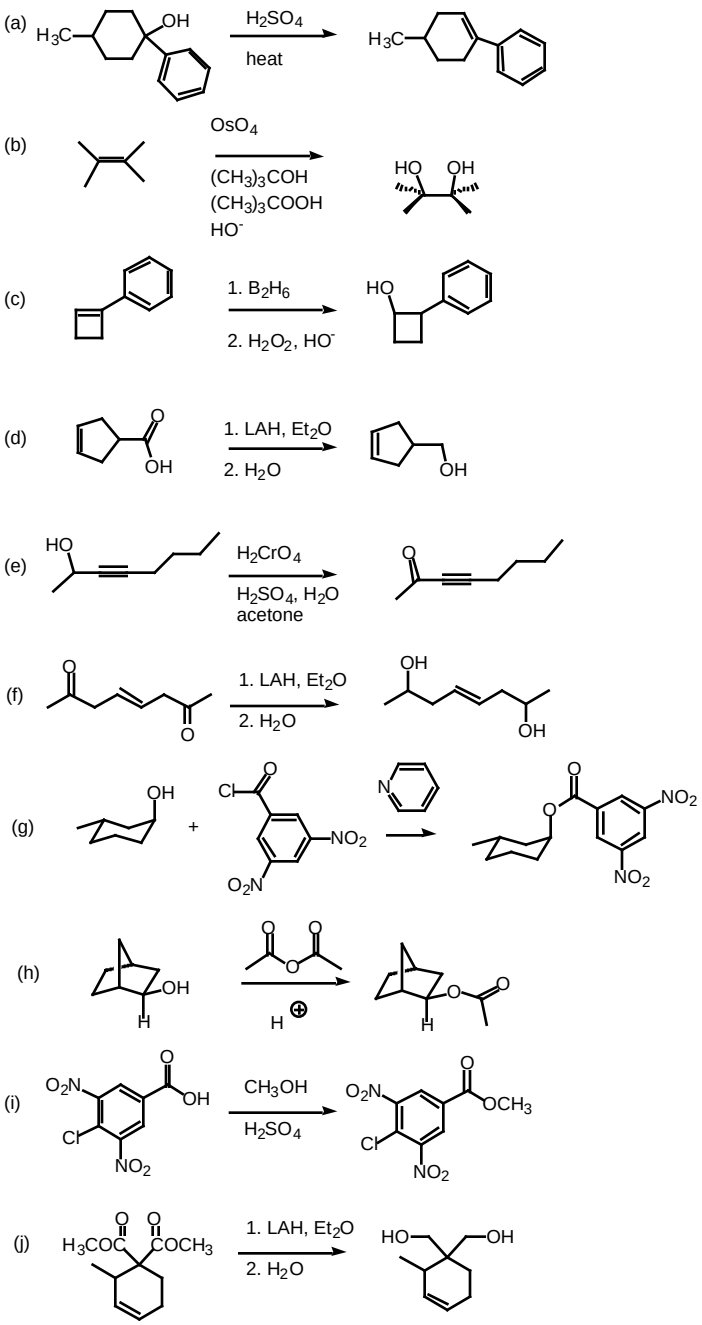
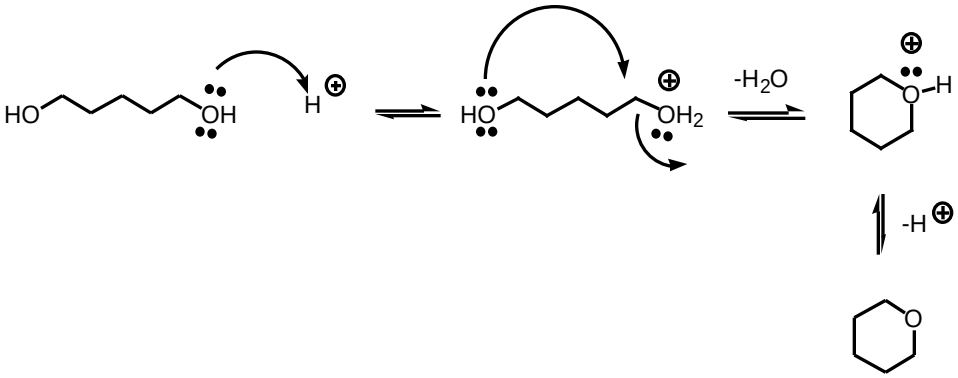
**CHE 173**
**Winter, 2005** **Name**_____
**Quiz 8 Answer Key** **Section: 201 202 203 204 205 206**
M T W Th F Th nt.
*(circle one)*

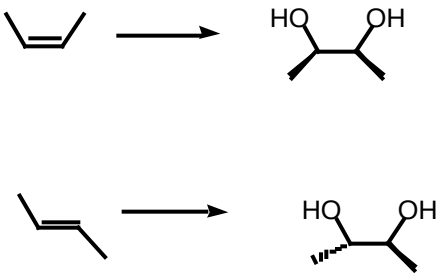
1. Each of the following reactions has been reported in the chemical literature. Predict the product in each case, showing stereochemistry where appropriate. (10 pts)



2. Write a stepwise mechanism for the formation of oxane from 1,5-pentanediol. (10 pts)

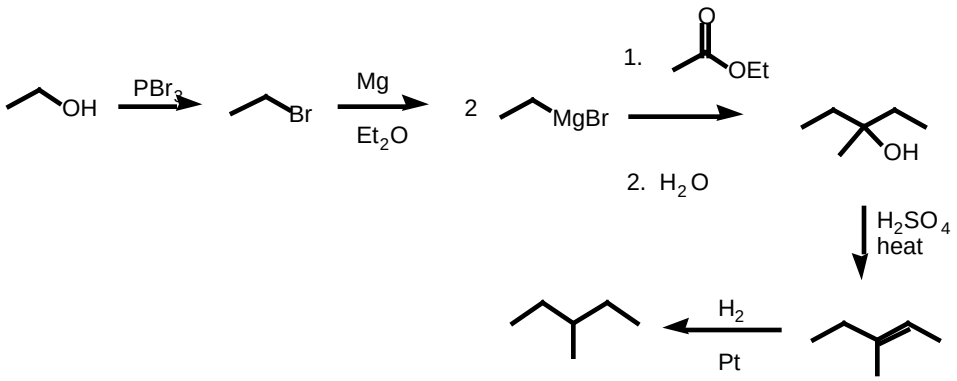



3. Give the structures, including stereochemistry, for the diols obtained by hydroxylation of *cis*-2-butene and *trans*-2-butene. (10 pts)




4. Show by a series of equations how you could prepare 3-methylpentane from ethanol and any necessary inorganic reagents. (10 pts)

*For example:*



5. Outline practical syntheses of each of the following compounds from alcohols containing no more than four carbon atoms and any other organic or inorganic reagents. (10 pts)

(a) 1-hexanol (b) hexanal ($CH_3(CH_2)_4CH{=}O$) (c) 2-hexanone

(d) 2,2-dimethylpropanal ($(CH_3)_3CCH{=}O$) (e) ethylhexanoate