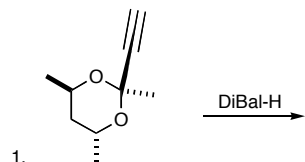


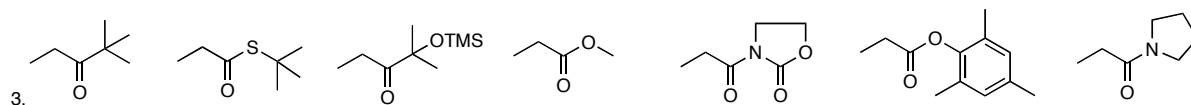
Problem set 1, due Monday Jan. 19, 2004.

CR 1989, 1841-1860. What is the product? Explain how it is formed.

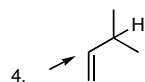


2. *J. Am. Chem. Soc.* **1957**, 79, 1920. What metal was first reported in Zimmerman and Traxler's transition state. Assuming metal transport, ranking the selectivity of the transition states containing the following metals (Li, Zr, B, Al, Na). What are the M-O bond lengths for these metals?

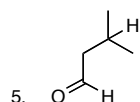
Tetrahedron Lett. **1981**, 4119-4122. Draw the preferred enolate upon deprotonation of the following compounds with LDA at -78 °C. Explain why each enolate is preferred and be sure to show the likely position of the metal ion.



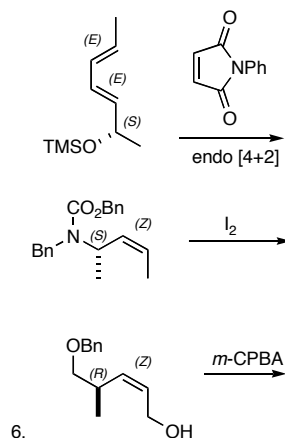
Chem., Rev. **1989**, 89, 1841-1860. Draw the following compounds in the three most stable conformations in 3D and then in the three most stable conformations as Newman projections down the bond drawn.



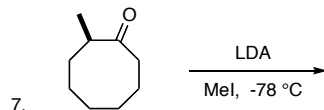
Chem., Rev. **1989**, 89, 1841-1860. Assuming the above is true then draw the following compound in the two most stable conformations.



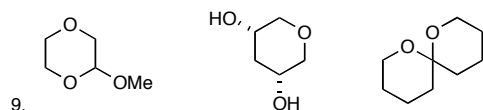
Chem., Rev. **1989**, 89, 1841-1860. Draw TSs that predict the predominate product that is formed in following reactions



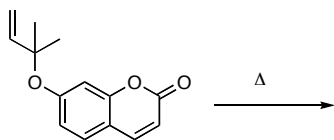
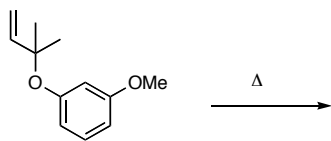
Tetrahedron **1981**, 3981. Draw the product and explain its formation.



Pure & Applied Chem. **1971**, 25, 517-540. Draw 3D depiction of how the following compounds exist in CDCl₃ and H₂O. Justify your answers.

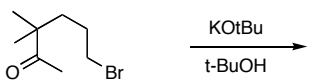
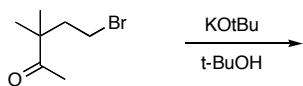


JCS Chem Comm **1982**, 1333-1336. Use your understanding of sterics and electrons to predict and explain the products formed from the following reaction.

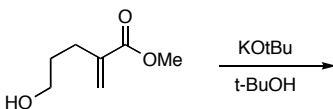


10.

Acc. Chem. Res. **1993**, 26, 476. Explain the outcome in the following reactions.

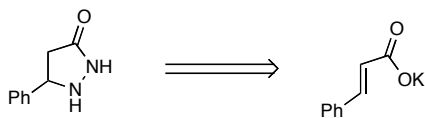


11.

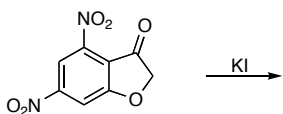


Propose a synthesis of the following compound starting from the material shown.

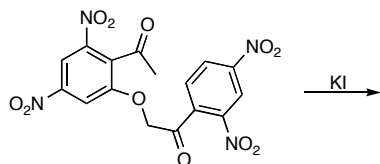
12.



Draw the product and explain which reaction is fastest.



13.



Chem.. Rev. **1989**, 89, 1841-1860. Draw the product and explain its formation.

14.

