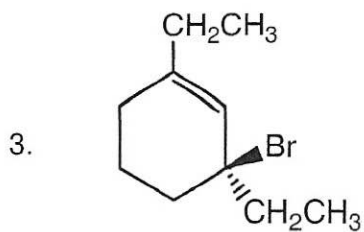
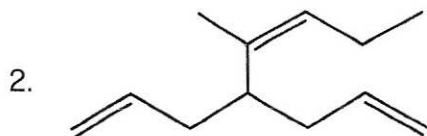
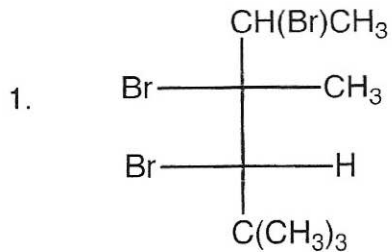


Fall Exam 2 B

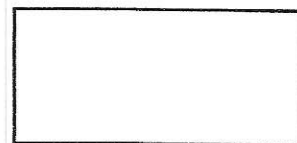
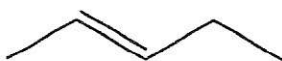
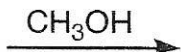
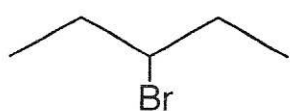
A. Nomenclature: (15 points)

Give an acceptable IUPAC name for each of the compounds. Be sure to indicate the **stereochemistry** where appropriate.

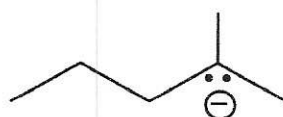
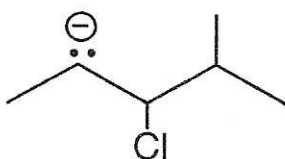


Facts: Total points = 29

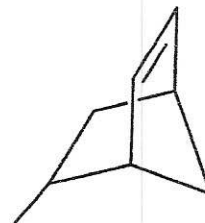
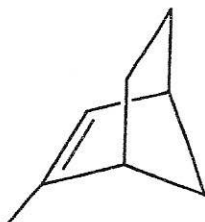
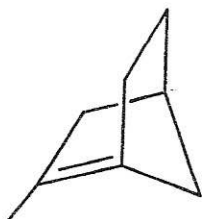
1. Consider the reaction below. In the box, draw the transition state for the rate determining step. (3pts.)



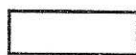
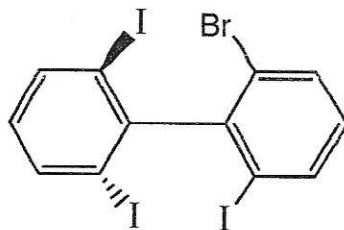
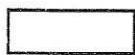
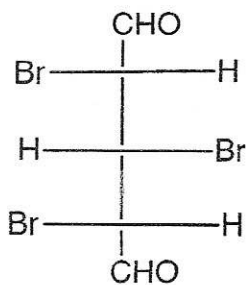
2. Place the following carbanions in order of increasing stability. (1=least stable, 3=most stable) (3 pts.)



3. Place the following alkenes in order of increasing stability. (1=least stable, 3=most stable) (3 pts.)



4. Label each of the compounds below as chiral or achiral (4 pts.)



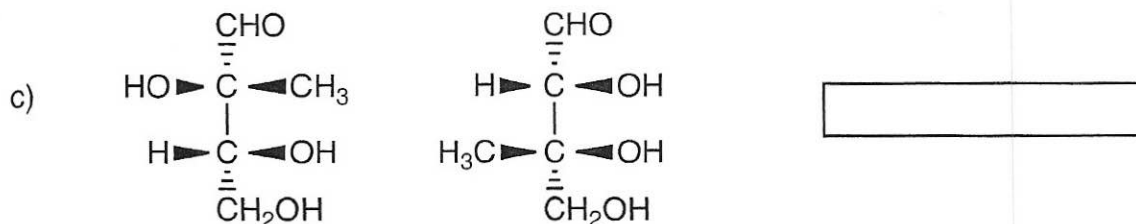
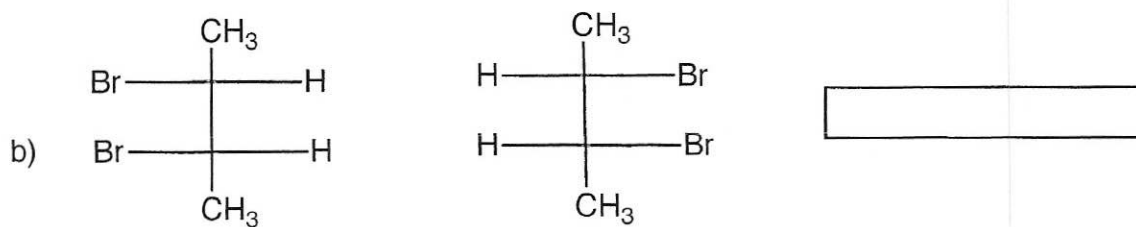
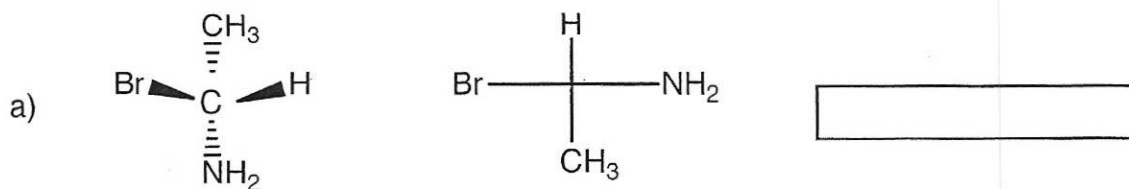
5. In the box provided, place the letter of the reaction with the faster rate. If the rate is the same, write **S** for "same" in the box. (3 pts.)



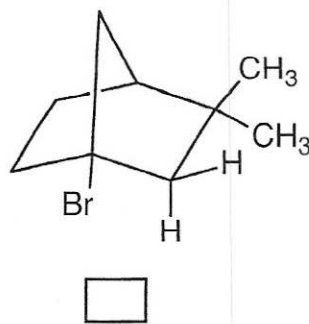
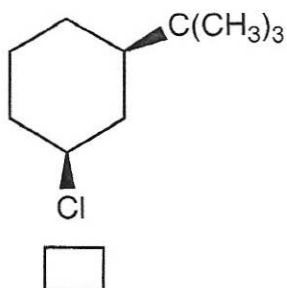
Answer:



6. Label each of the following pairs as identical, structural isomers, conformational isomers, enantiomers or diastereomers. (9 pts.)

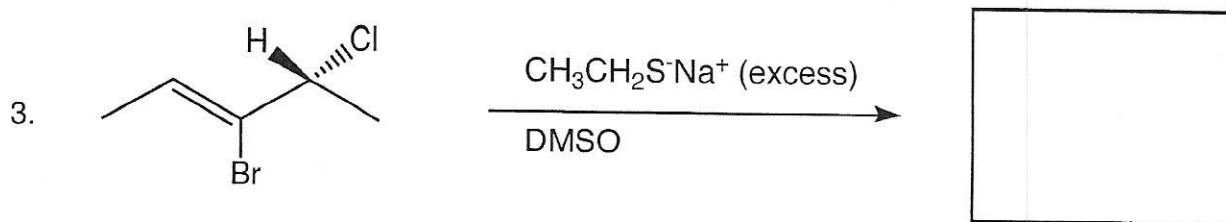
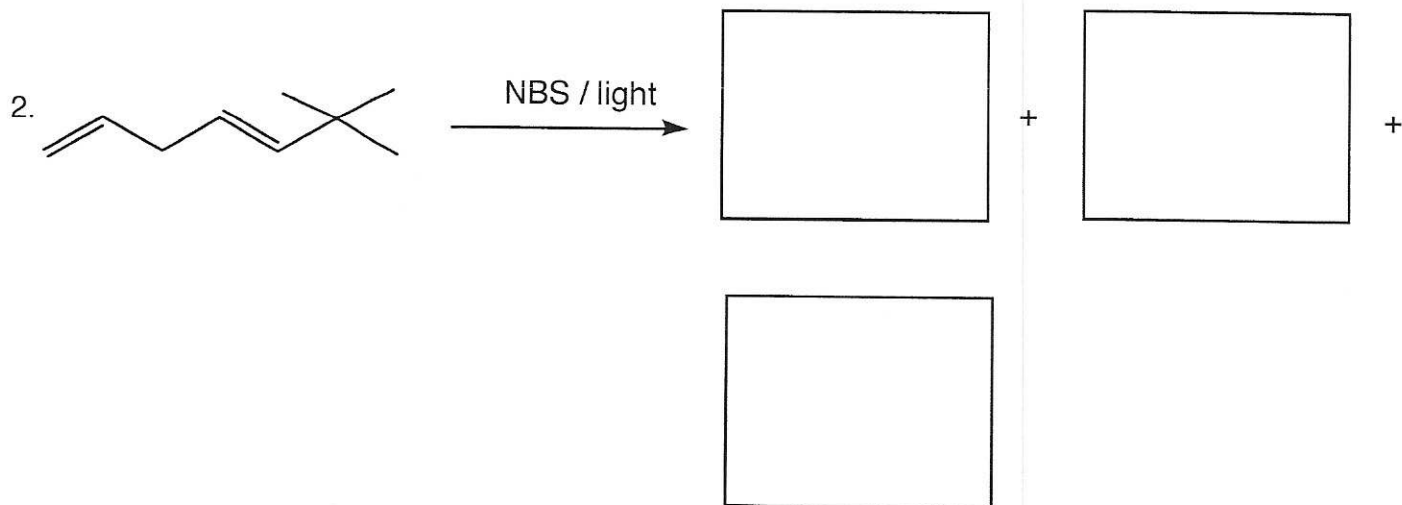
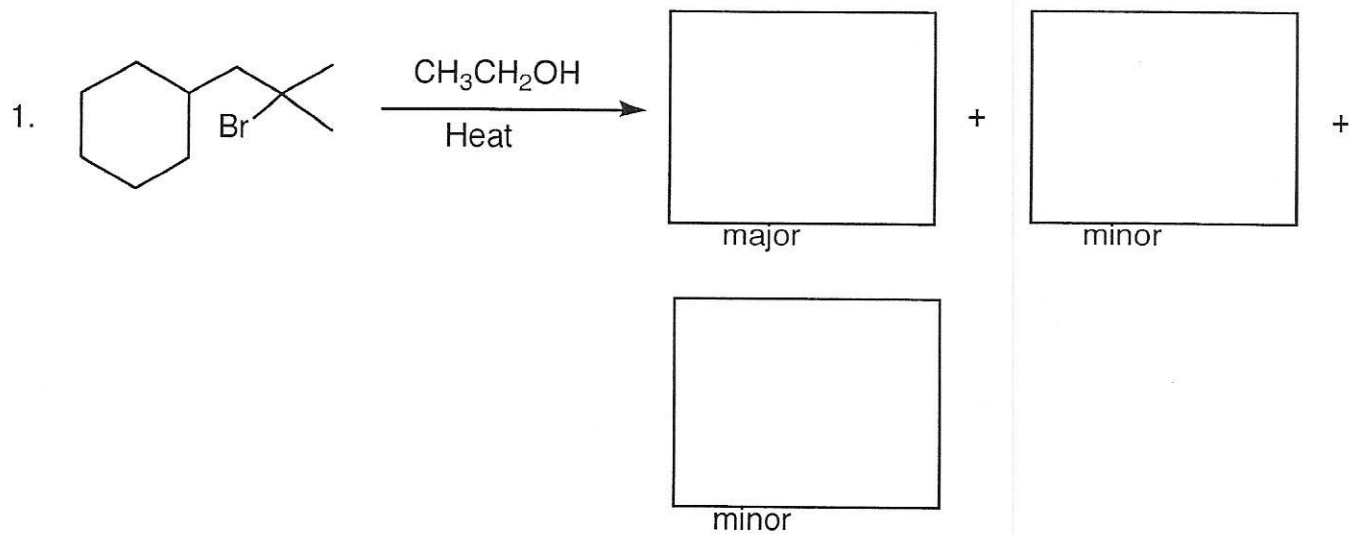


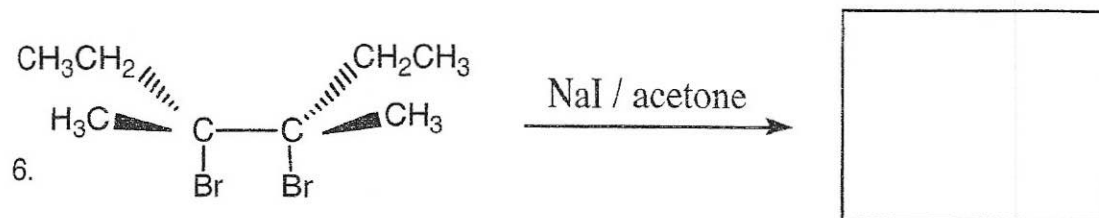
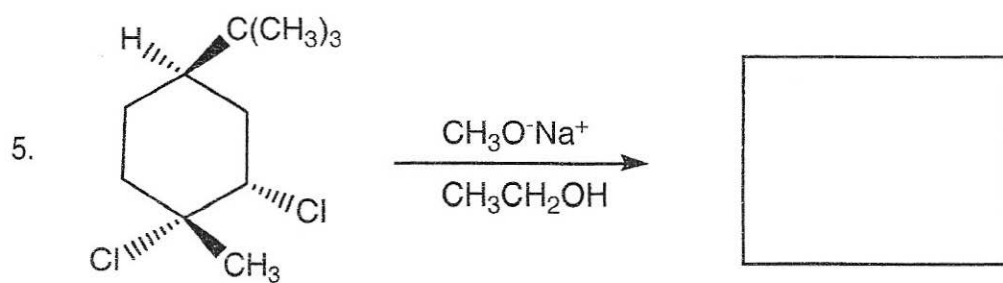
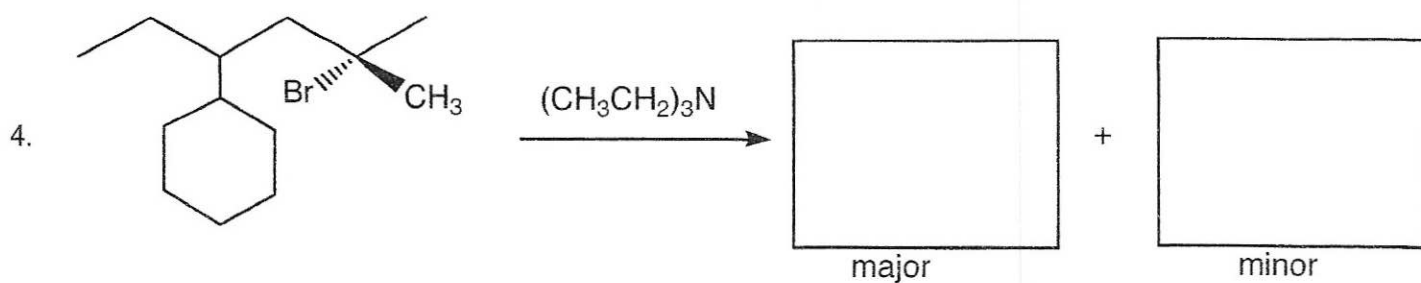
7. If the compound below will rapidly undergo E2, place **Y** for yes in the box. If the compound will not, place **N** for no in the box. (4 pts.)



C. Reactions: Total = 36 points

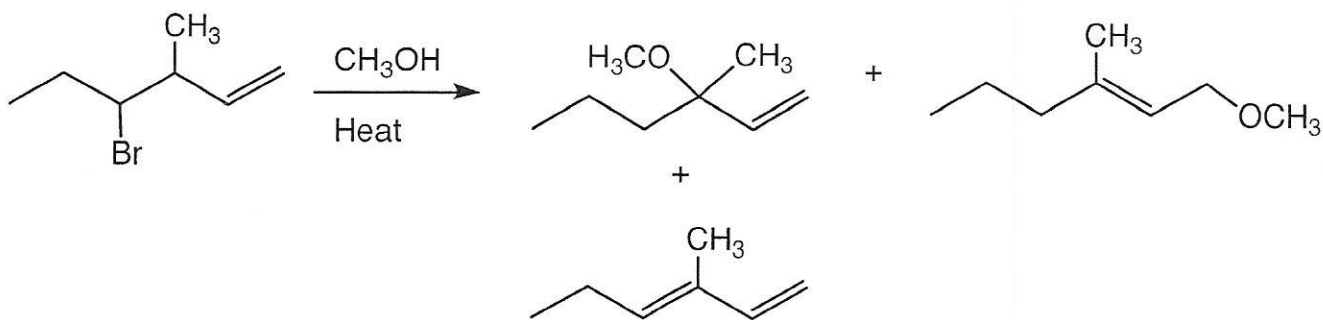
Please provide an organic product in each answer box. If only one box is provided, give the major product. Be sure your drawing indicates stereochemistry if applicable.





D. Mechanism: (10 points)

The reaction presented below produces several products. Provide clear mechanisms to explain the formation of the two products shown. Use curved arrows to indicate "electron flow". Remember to show only one step at a time. **Show all intermediates and all formal charges.** **Please do not show transition states.**



E. Synthesis: (10 points)

Synthesize the molecule below from alkanes of four carbons or less, and any inorganic reagents.
(Please do not include mechanisms!)

