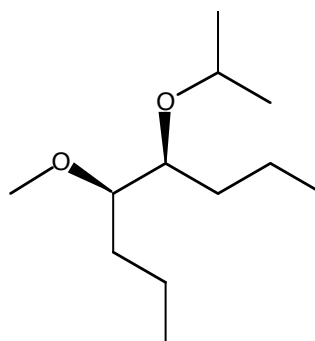
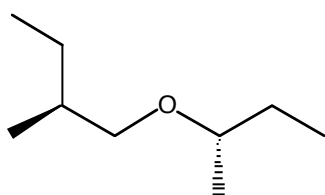
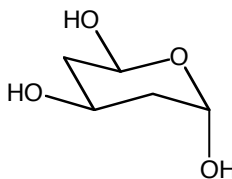
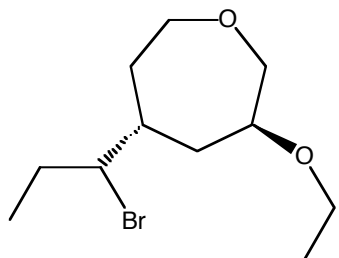
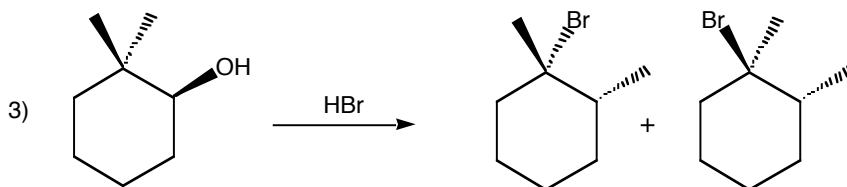
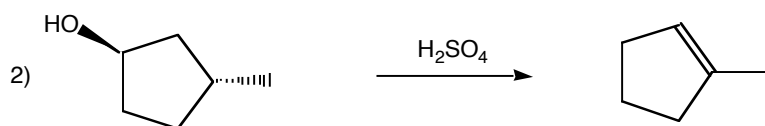
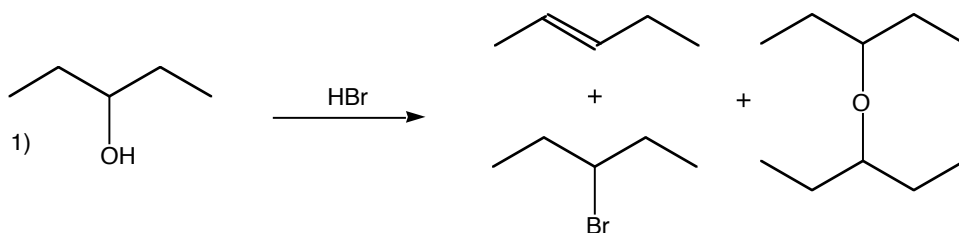


Chemistry 212 – Problem set 1 – Due Friday 23th at 5:00 PM

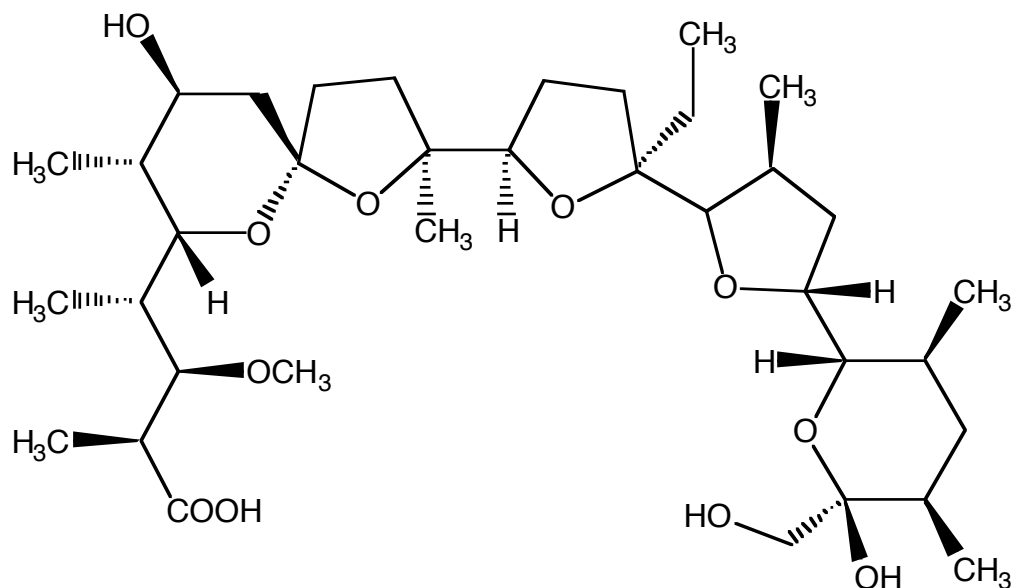
- 1) (20 points) Name the following compounds. Make sure to provide the configuration for all chiral carbons in the final names.



- 2) (20 points) Provide detailed mechanisms for the following conversions. In cases where more than one product is obtained, make sure to specify the mechanism for the formation of each product from the starting material given.

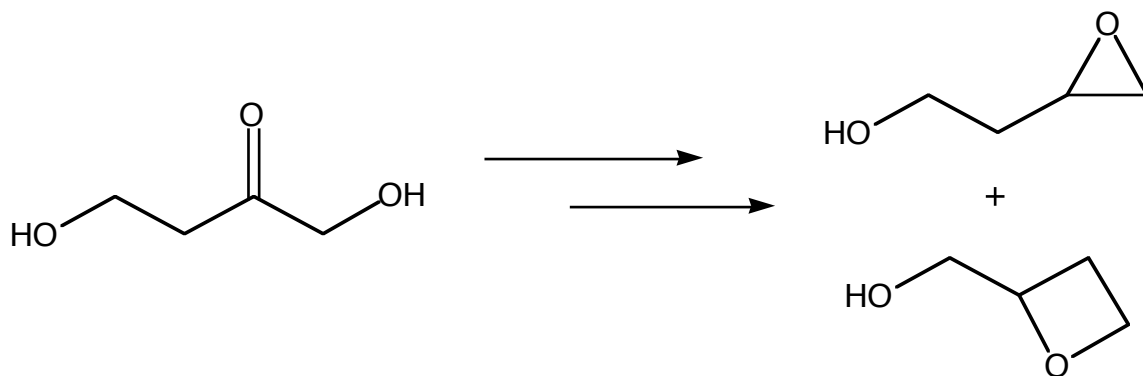


- 3) (20 points) The structure of monensin, a powerful antibiotic obtained from *Streptomyces* spp. is shown below:



This antibiotic works by disrupting the ion transport across membranes in several pathogenic bacteria. Can you explain how monensin does this? Base your answer on the structure of the molecule.

- 4) (20 points) Propose a reasonable synthetic route for the preparation of the hydroxy oxacycloalkanes drawn to the right starting from the dihydroxy ketone presented on the left. You can use any of the reagents and reaction conditions you have learned so far. For each step, provide the mechanism for the reaction.



Which one will be obtained in higher yield? Explain clearly...