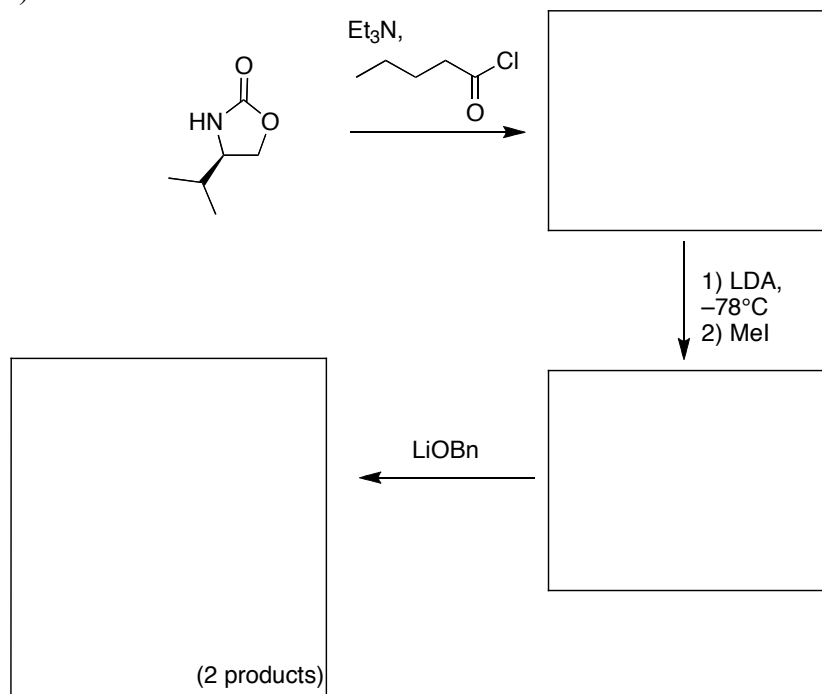


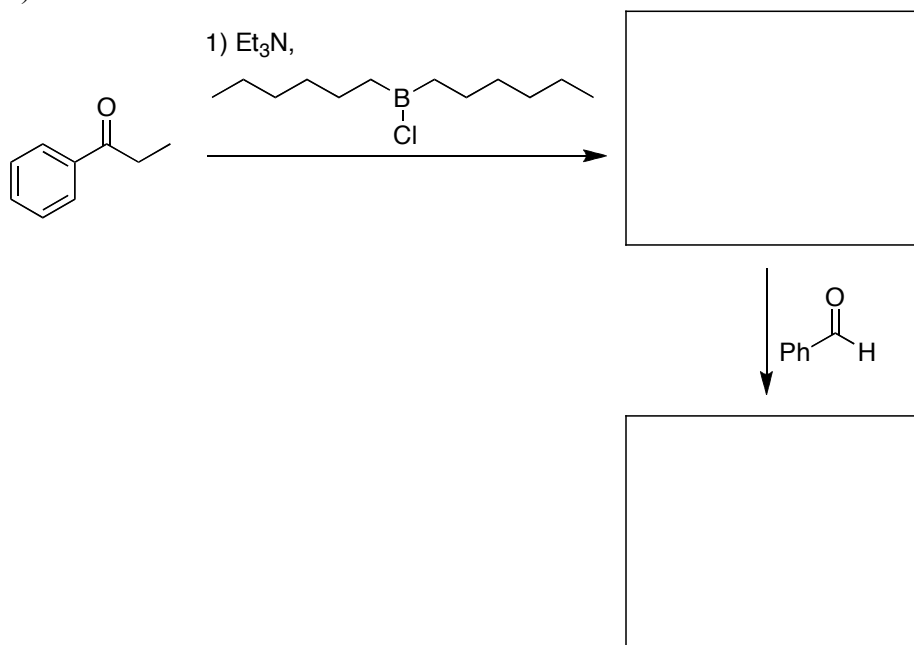
Problem set 7
Chapter 45.

1. Fill in the boxes with the reagents required to produce the stereoisomer shown, or with the MAJOR stereoisomer produced by the reaction conditions given. If an empty box contains a name instead of a compound, give the structure of the compound. For **all structures**, indicate whether the structure is achiral, a single enantiomer, or racemic.

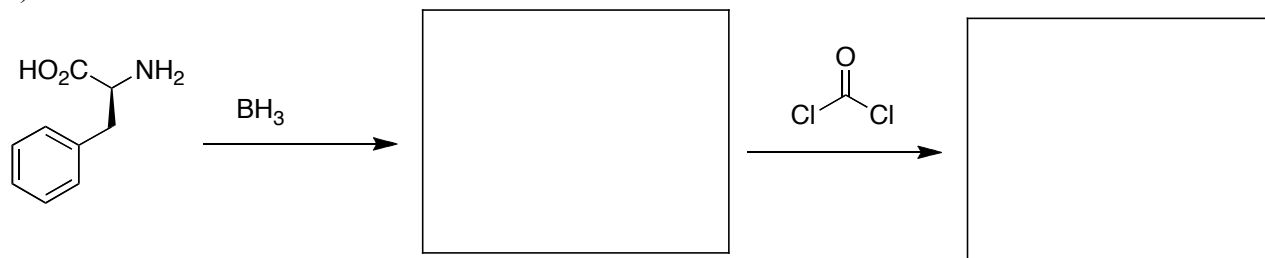
a)



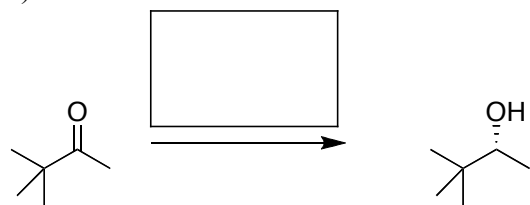
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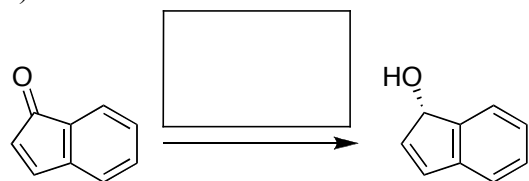
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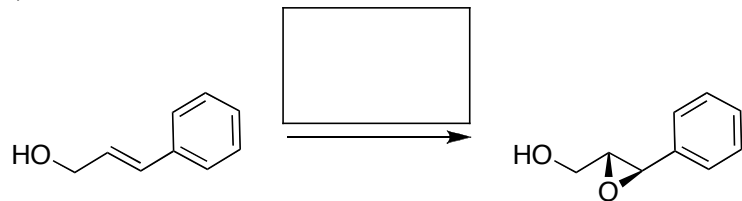
d)



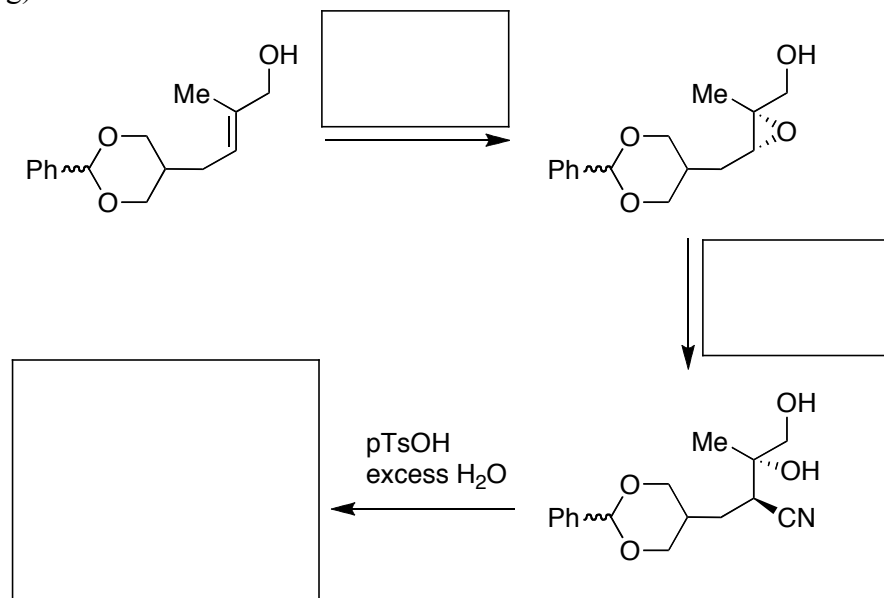
e)



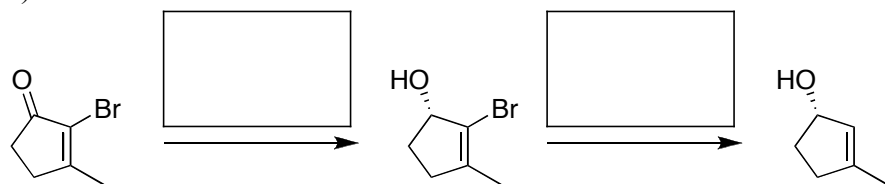
f)



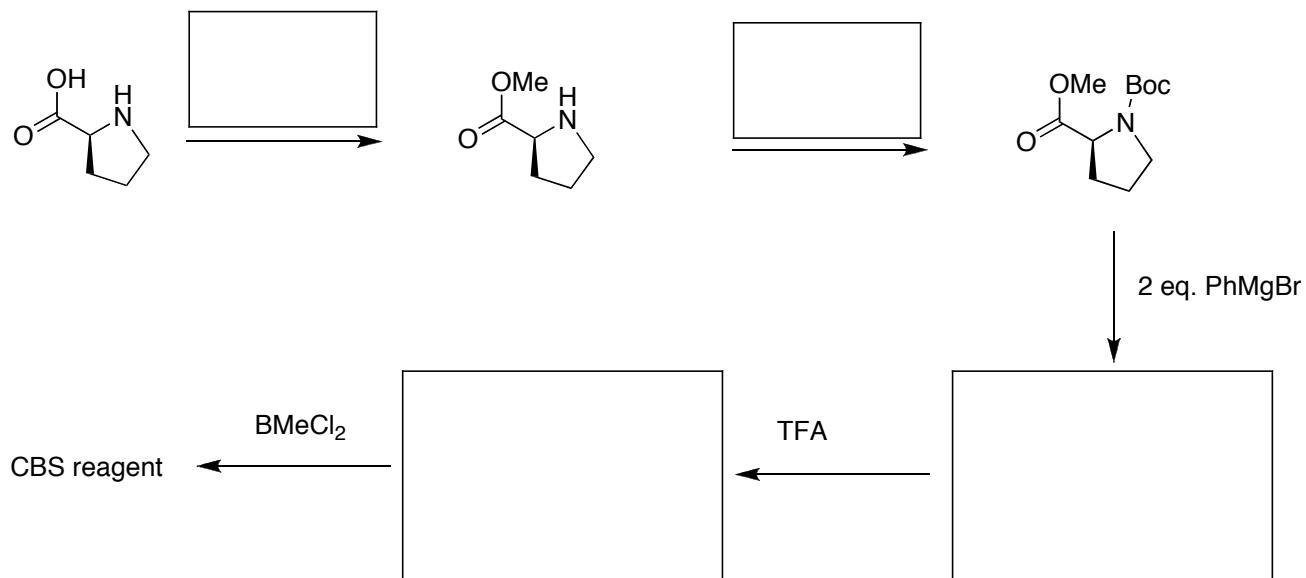
g)



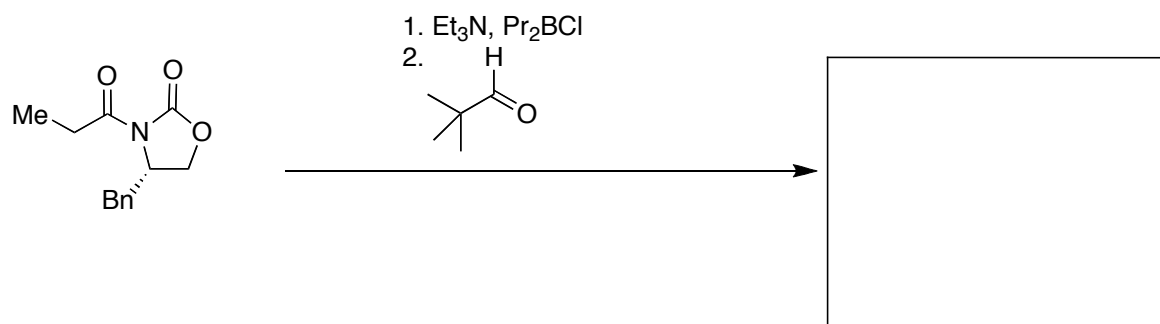
h)



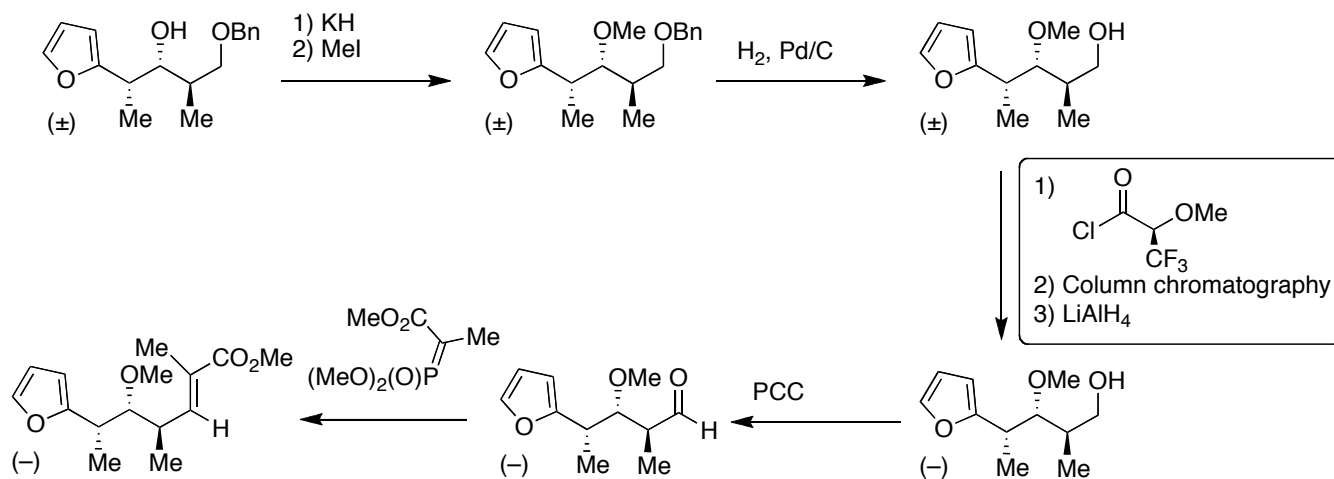
i)



2. Give the product of the following reaction. Predict the stereochemistry at all new stereocenters, and explain the origin of the observed stereoselectivity at each center.



3. The following reaction sequence was used in the synthesis of Monensin. The steps highlighted in the box are especially interesting. Give the structure of the product of each of these three steps, and explain in detail why these steps were carried out.



4. Give a definition and an example of chiral induction. Include the structures of starting materials and products, and make the source of the induction clear using a 3D diagram.

END