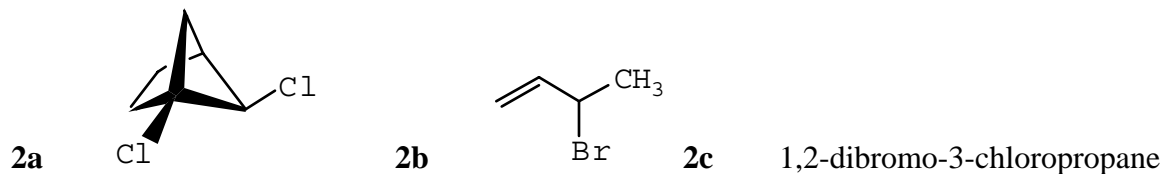
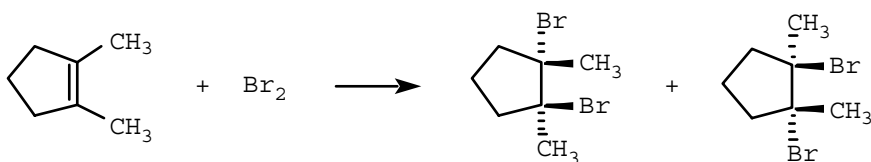


Answers

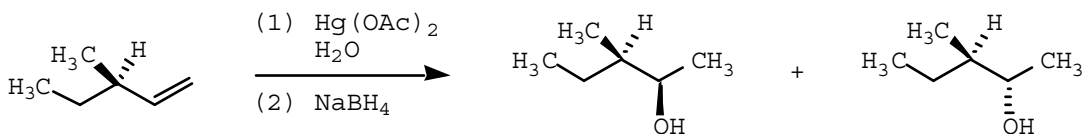
1a constitutional isomers **1b** enantiomers **1c** diastereomers **1d** different ways of drawing the same molecule **1e** enantiomers **1f** diastereomers



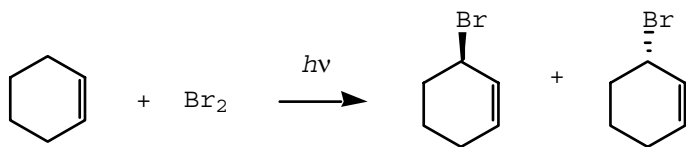
3a mixture of enantiomers



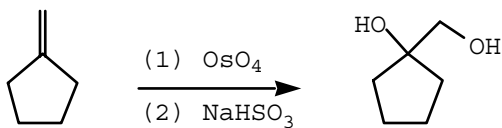
3b mixture of diastereomers



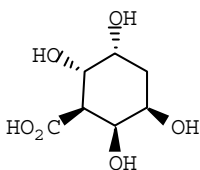
3c mixture of enantiomers



3d a single compound

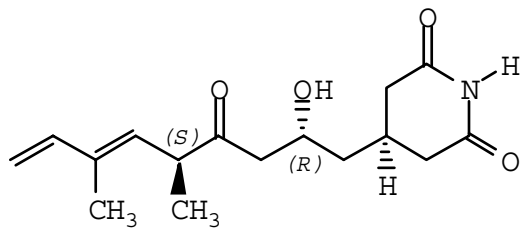


4

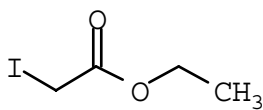


All of the other compounds are achiral and would not exhibit optical activity.

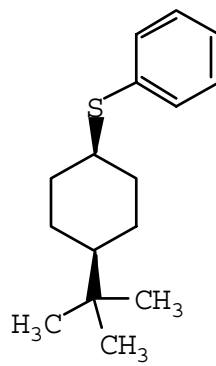
5



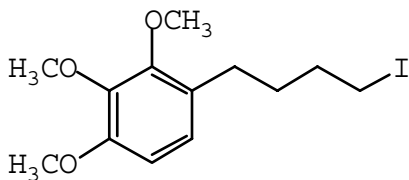
6a



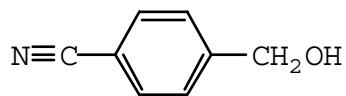
6b



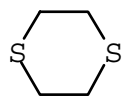
6c



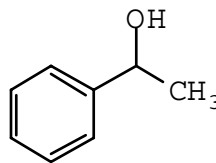
6d



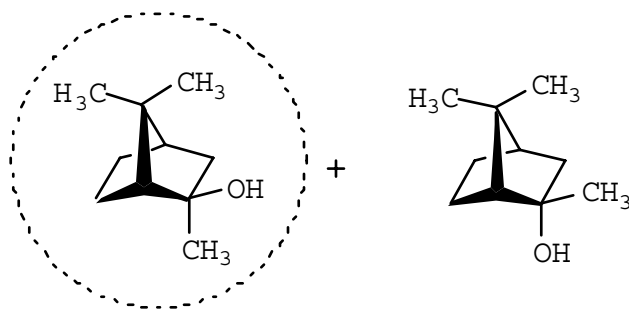
6e

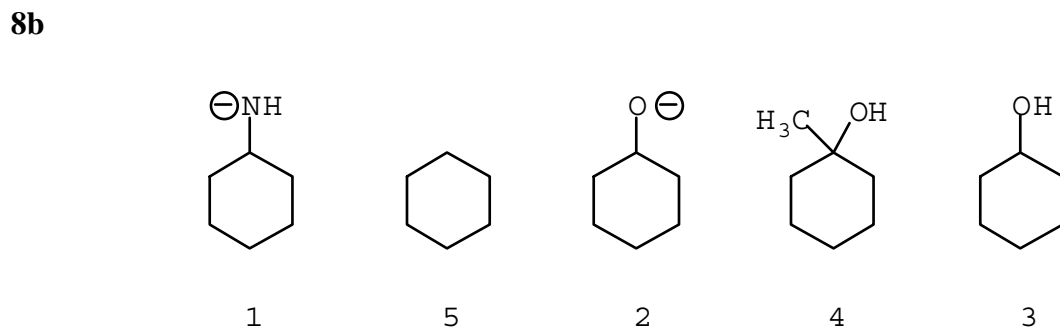
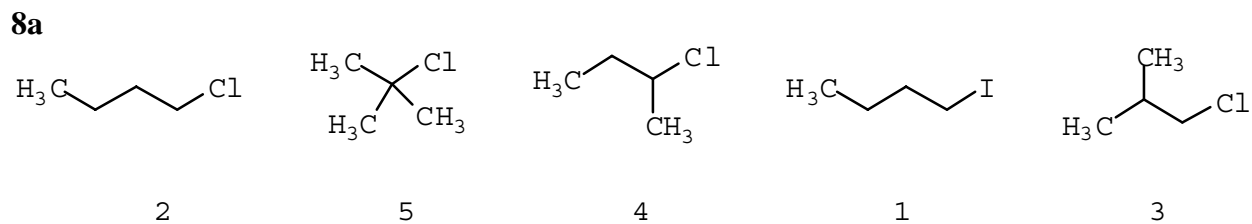
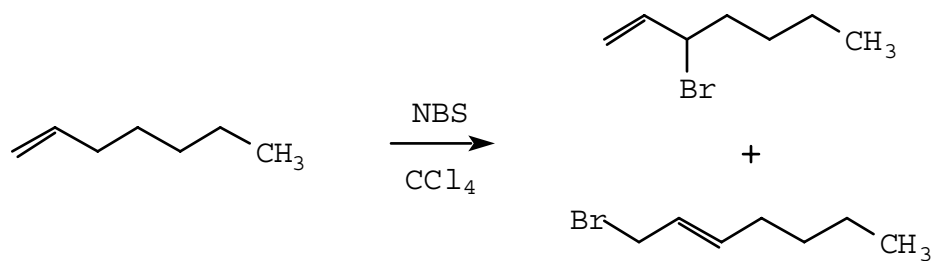
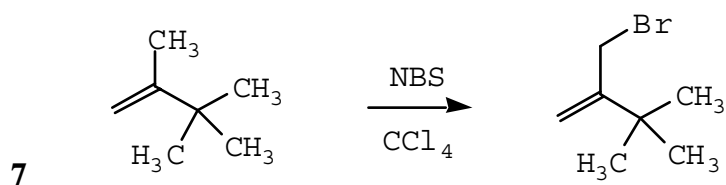
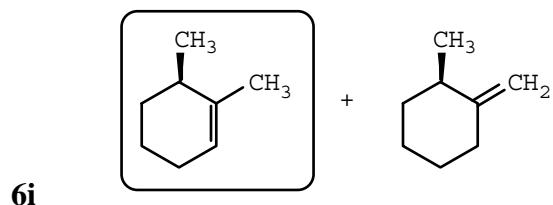
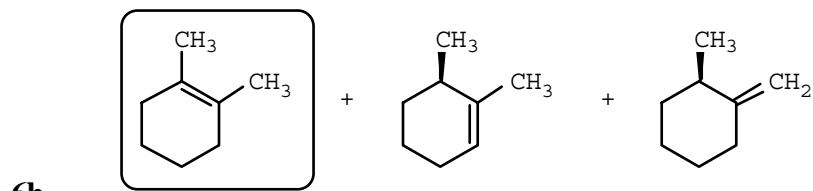


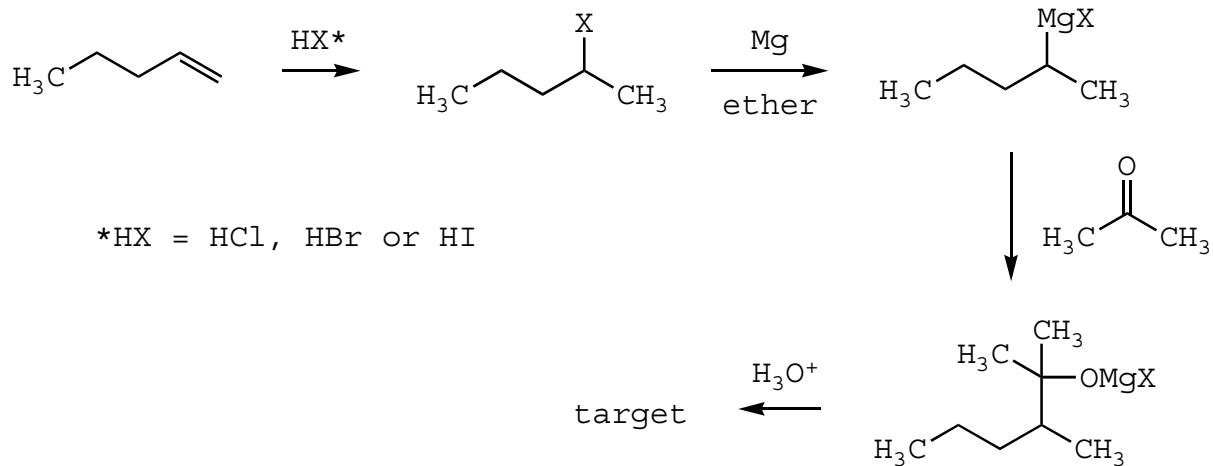
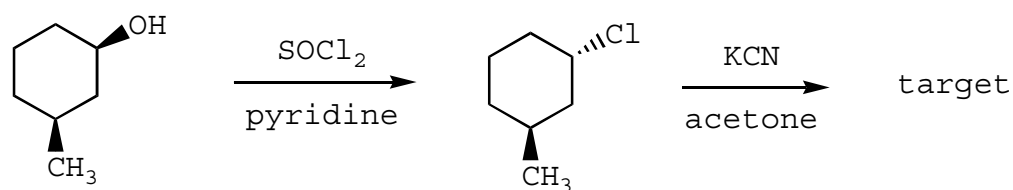
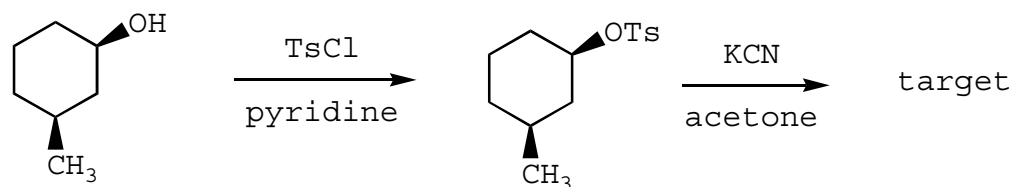
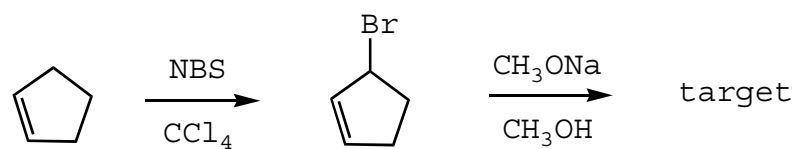
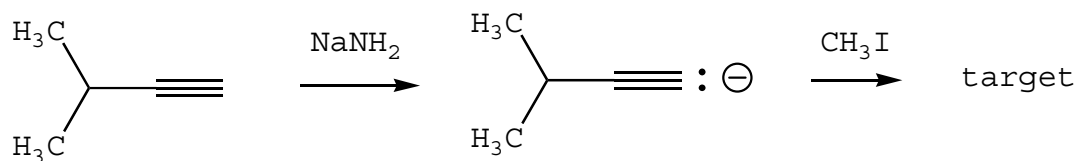
6f



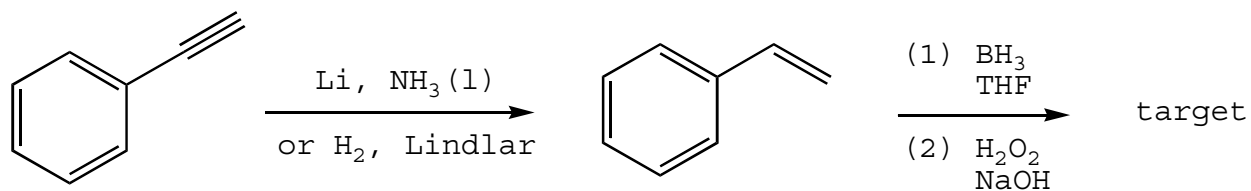
6g



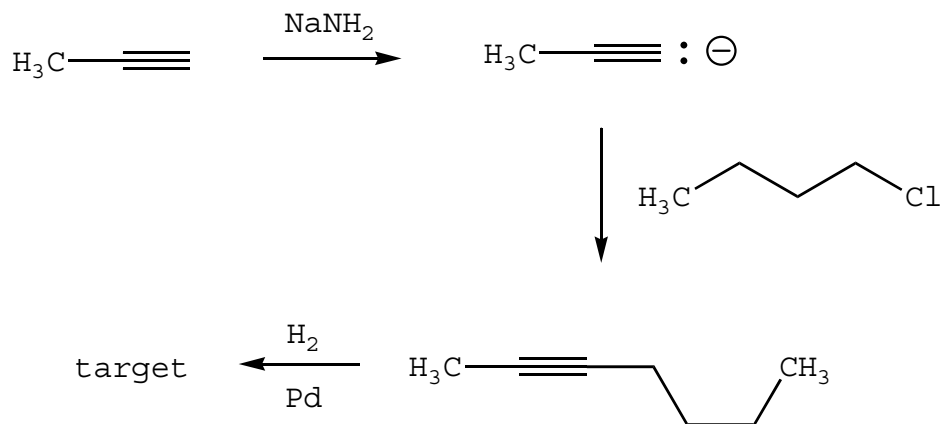


9a

9b

9c

9d

9e


9f



9g



10 Iodide (I^-) is a good nucleophile and a good leaving group. Iodide initially displaces bromide to afford 1-iodopentane. Iodide is then displaced by cyanide to afford the product. The rate enhancement is due to the fact that iodide is a much better leaving group than bromide.

