Chemistry Department

University of Alberta

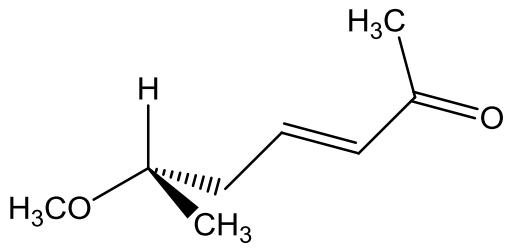
CHEM 263

Exam II

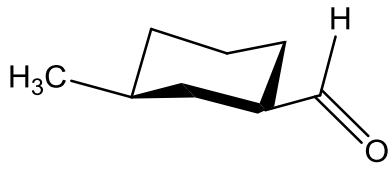
June 8, 2012

1. Name the following compounds:

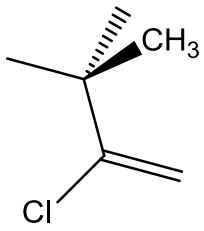
   a. (5 points)



   b. (3 points)

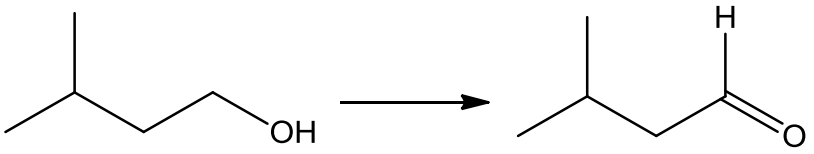


2. Complete the following partial structure of (Z,4S)-3-chloro-4-hydroxy-2-pentenal: (5 points)

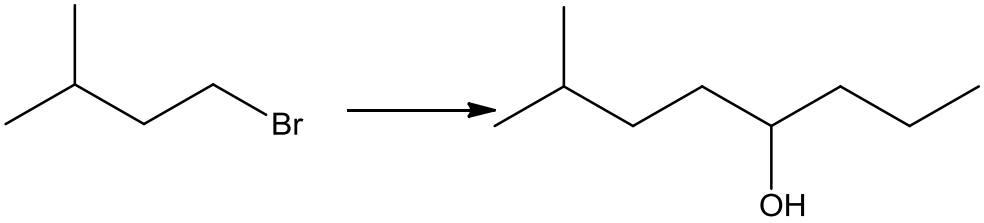


3. What reagents would you use to effect the following conversions? (15 points)

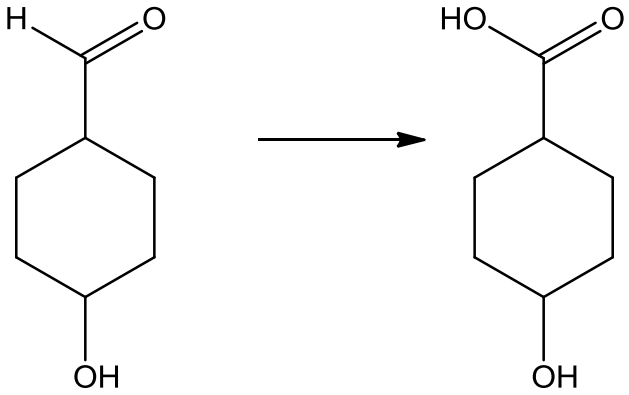
   a.



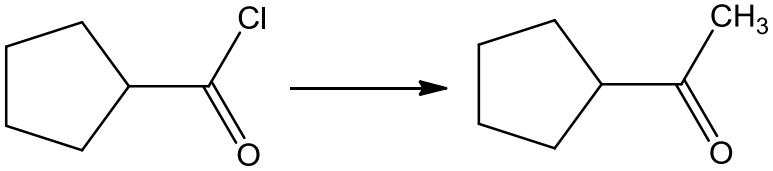
b.



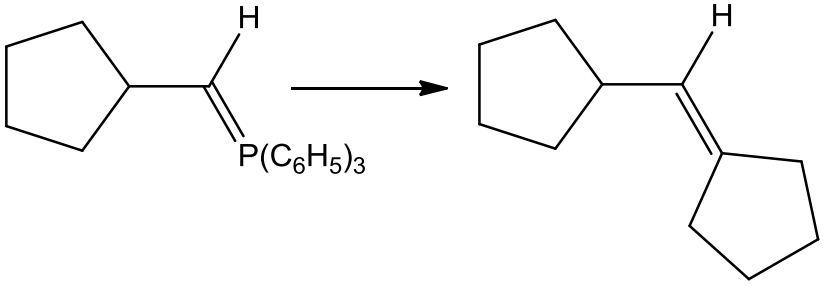
c.



d.

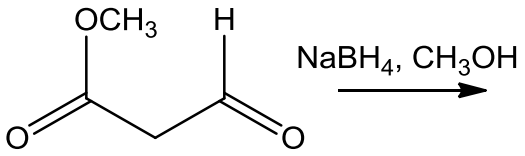


e.

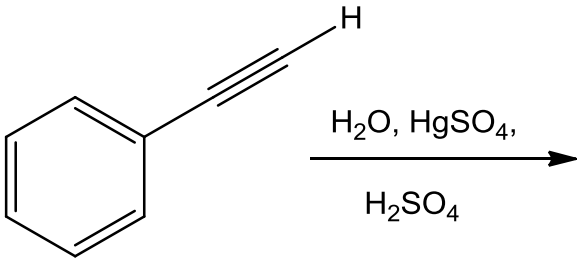


4. Give the structure(s) of the principle organic products of the following reactions: (12 points)

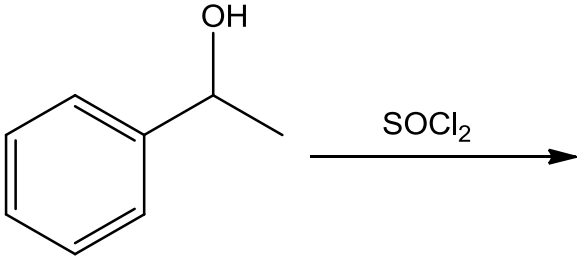
a.



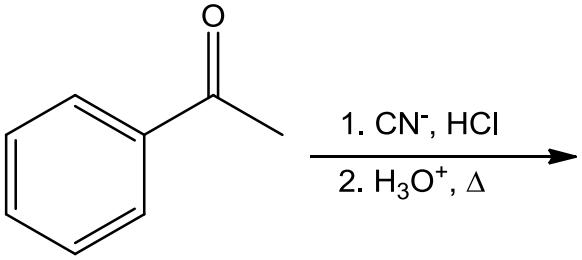
b.



c.

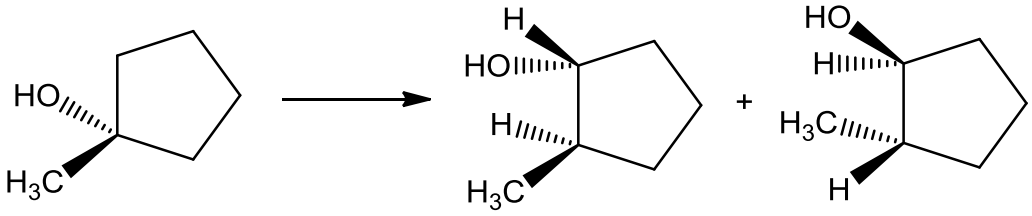


d.

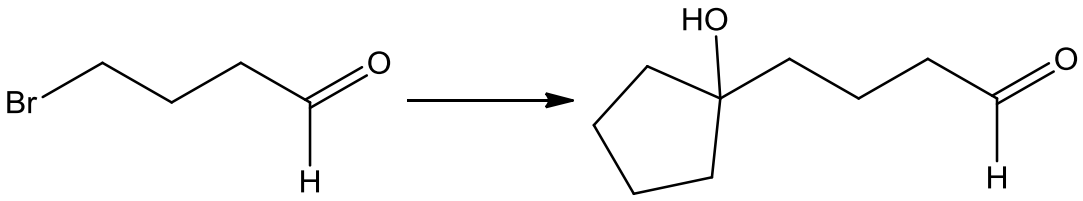


5. Provide a synthetic pathway for the following transformations: (27 points)

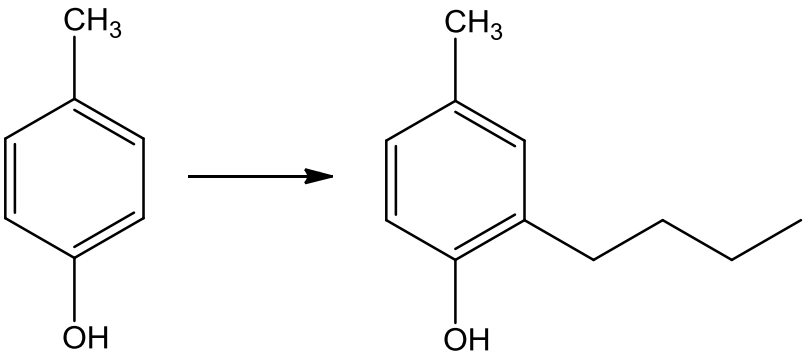
a.



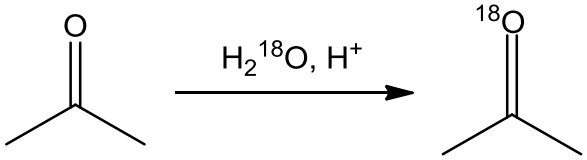
b.



c.



6. When acetone is dissolved in aqueous acid containing oxygen-18 labeled water, oxygen-18 becomes incorporated into the carbonyl group:



Draw a mechanism that explains this observation. (Do not forget the curved arrows!) (12 points)

7. Propose a mechanism for the following reaction: (10 points)