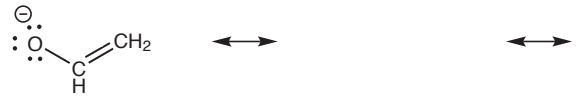
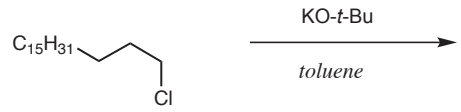
An ochem sampler. Print out these pages. Can you add the curved arrows and the missing structures? These are the same problems. These are only a slightly easier version of problems you would find in your textbook. This is what you are asked to complete without the additional steps of Parts A and B. If you cannot solve these problems that you practiced, how will you solve new problems? Students have reported they made the greatest number of copies of these pages. (*Continued, page 3)*

1.

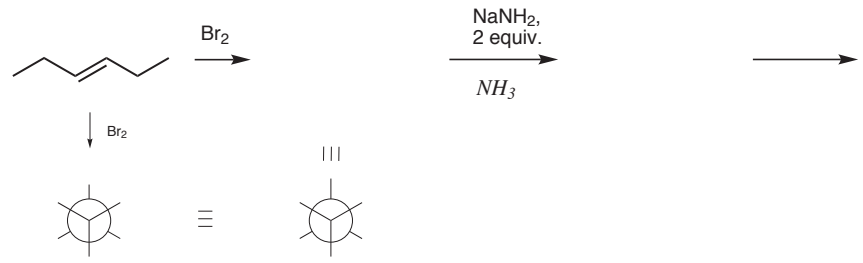


2. An S_N1 solvolysis reaction of *(R)*-(1-chloroethyl)benzene to give *rac*-1-phenylethanol.

3. An E2 elimination reaction of hydrogen chloride from 1-chlorooctadecane with potassium *t*-butoxide to give 1-octadecene. (See *Notes*.)



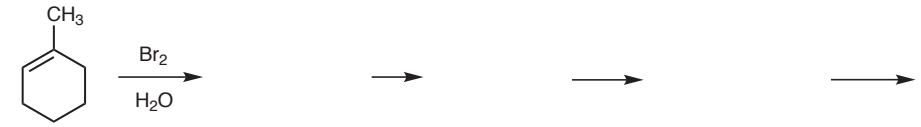
4. A synthesis of 3-hexyne from *trans*-3-hexene by bromination and two elimination reactions. (See *Notes*.)



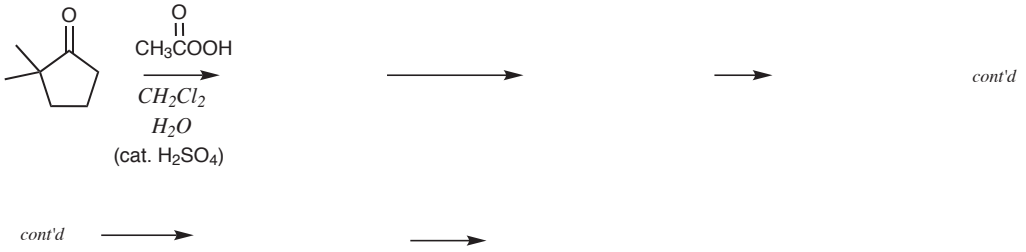
5. Addition of hydrogen bromide to propene to give 2-bromopropane. (See *Notes*.)

6. Addition of hydrogen bromide to 3-methyl-1-butene to give after rearrangement, 2-bromo-2-methylbutane. (See *Notes*.)

7. Bromination of methylcyclohexene to give (1*R*,2*R*)- and (1*S*,2*S*)-2-bromo-1-methylcyclohexanol.

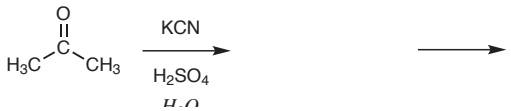


8. Acid catalyzed Baeyer-Villiger oxidation of 2,2-dimethylcyclopentanone with peracetic acid.

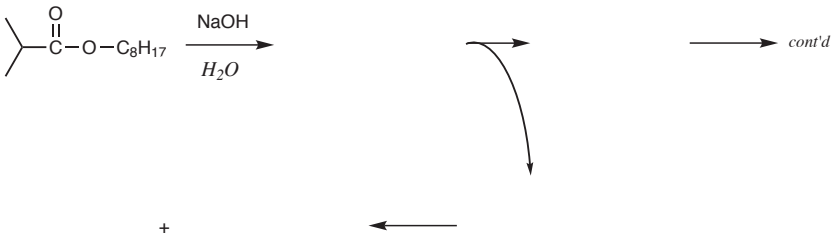


9. A reverse-forward Diels-Alder reaction between cyclopentadiene and maleic anhydride.

10. Formation of the cyanohydrin (2-hydroxy-2-methylpropanenitrile) from acetone. (See *Notes*.)

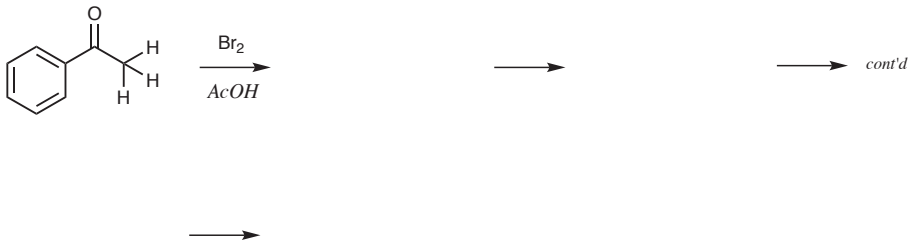


11. Base hydrolysis of octyl isobutyrate to give octanol and isobutyric acid. Step 1, treatment with base. (See *Notes*.)

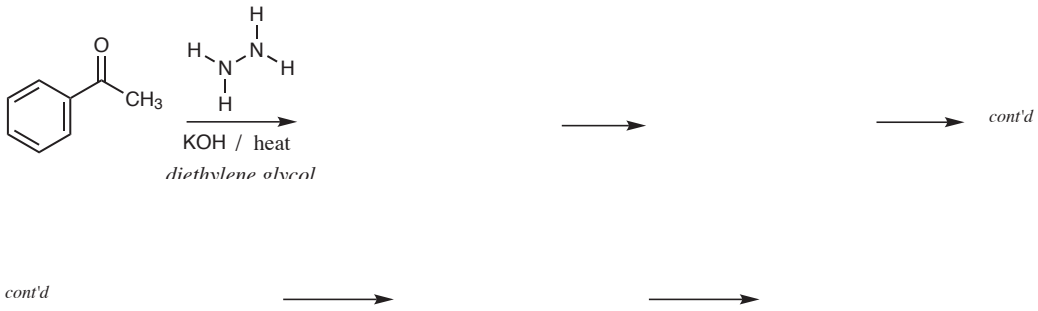


12. Oxidation of cyclohexanol to cyclohexanone with sodium hypochlorite (NaOCl, bleach).

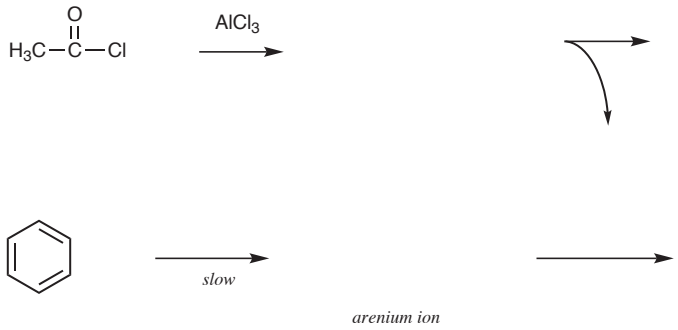
13. Acid catalyzed bromination of acetophenone to give α-bromoacetophenone. (See *Notes*.)



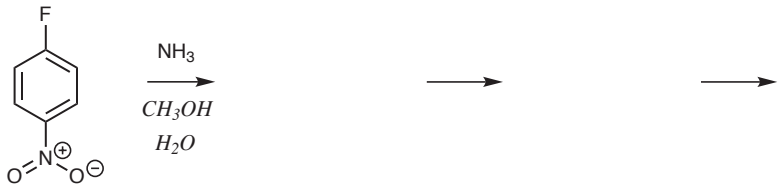
14. Reaction of the ketone with hydrazine under basic conditions to form the hydrazide.



15. Friedel Crafts acylation of benzene.



16. Nucleophilic aromatic substitution of 1-fluoro-4-nitrobenzene with ammonia to give 4-nitroaniline. (See *Notes*.)



In order to solve these problems, I created patterns that you could recognize and repeat. It is necessary for you to successfully write the solutions to these problems as the solutions are mental solutions. The degree in which you can "understand" the reactions will correspond to the extent to which you have used an organic chemistry memory and not a rote memory. Rote memory will provide a solution to the problem before you and an organic chemistry memory will provide a solution to any problem.