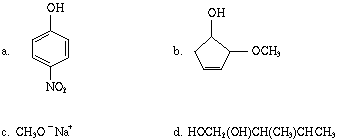
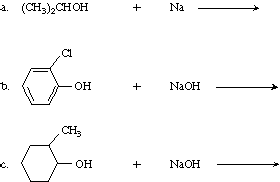
1. Write a structural formula for each of the following compounds:
   1. 2,3-dimethyl-2-pentanol
   2. 2-methyl-3-penten-1-ol
   3. m-nitrophenol
   4. potassium butoxide
2. Name each of the following compounds.



1. Arrange the following compounds in order of increasing acidity, and explain the reasons for your choice of order.
   1. 2,4-dinitrophenol
   2. phenol
   3. 2,4-difluorocyclohexanol
   4. cyclohexanol
2. Complete each of the following equations and name the products.



1. Show the structures of all possible acid-catalyzed dehydration products of the following. If more than one alkene is possible, predict which one will be formed in the largest amount.
   1. 2-methyl-2-butanol
   2. 1-methylcyclohexanol
2. Write an equation for each of the following reactions:
   1. propanol + PBr3 figure
   2. 2-butanol + CrO3, H+ figure
   3. 2-methyl-1-pentanol + HCl figure
   4. 1-butanol + SOCl2 figure
   5. 1-butanol + aqueous NaOH figure
3. Treatment of 3-hexene-2-ol with concentrated HCl gives a mixture of two products, 2-chloro-3-hexene and 4-chloro-2-hexene. Write a reaction mechanism that explains how both products are formed.
4. Write an equation for the two-step synthesis, 1-pentene to 2-pentanone.