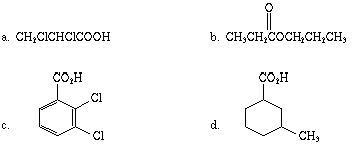
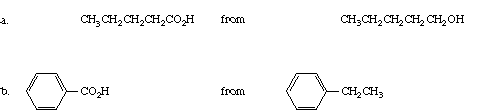
1. Write a structural formula for each of the following acids:
   1. 4-oxohexanoic acid
   2. 2-hydroxy-3-methylhexanoic acid
   3. 2-chloropentanedioic acid
   4. p-bromophenylacetic acid
2. Name each of the following acids.



1. In each of the following pairs of acids, which would be expected to be stronger, and why?
   1. CH2ClCH2CO2H or CH3CHClCO2H
   2. m-ClC6H4CO2H or p-ClC6H4CO2H
2. Give equations for the synthesis of



1. Write a structure for each of the following compounds:
   1. trichloromethyl formate
   2. 2-chlorophenyl acetate
   3. ethyl benzoate
   4. sodium butanoate
2. Write an equation for the reaction of phenyl propanoate with
   1. hot aqueous sodium hydroxide
   2. ammonia (heat)
   3. propylmagnesium bromide (two equivalents), then H3O+
   4. lithium aluminum hydride (two equivalents), then H3O+
3. Write out all the steps in the mechanism for
   1. saponification of ethyl benzoate
   2. ammonolysis of ethyl benzoate
4. Write an equation for
   1. esterification of propanoic acid with benzyl alcohol
   2. oxidation of toluene with potassium permanganate
   3. reduction of propylcyclopentane carboxylate with lithium aluminum hydride
5. Write an equation for saponification of glyceryl tripalmitate.
6. Write an equation for hydrogenation of glyceryl trioleate.