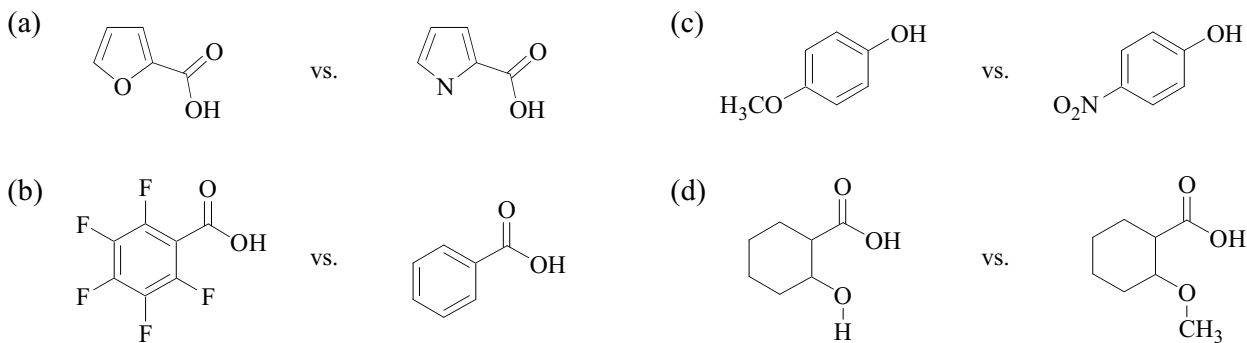
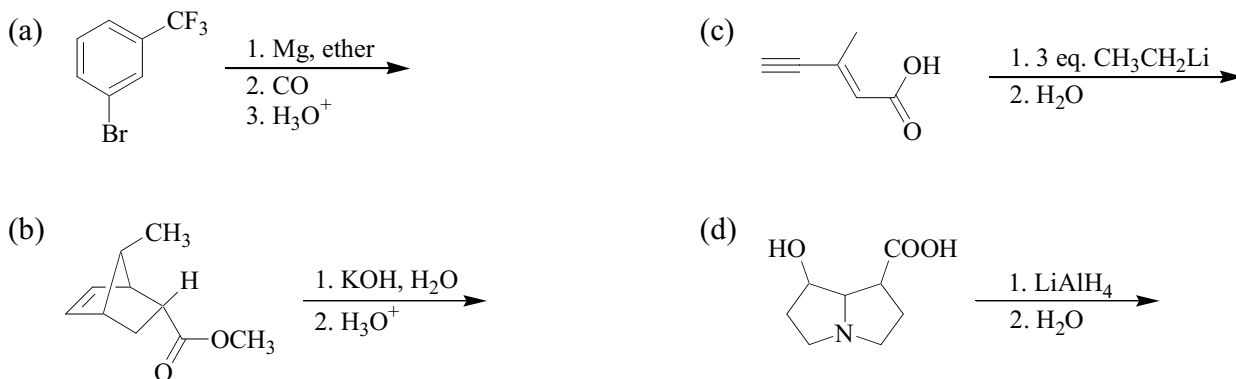


Problem Set #11
 Chemistry 3231
 November 13, 2001

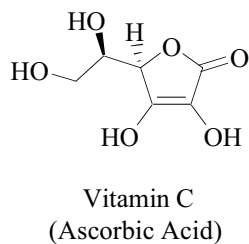
1. Identify the most acidic site in each of the following pairs of molecules, and tell which molecule in each pair is the stronger acid. Explain your reasoning.



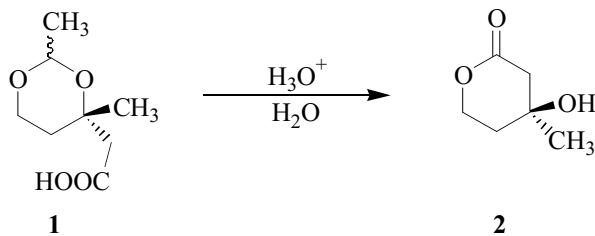
2. Give the products of each of the following organic transformations:



3. The most acidic hydrogen in Vitamin C has a $\text{p}K_a = 4.2$. Identify this hydrogen and explain why it is so readily lost as H^+ .

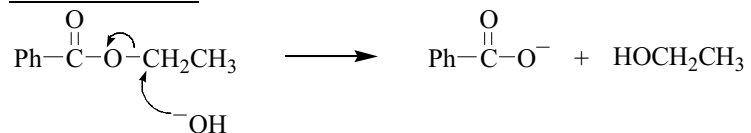


4. Provide a detailed mechanism for the conversion of acetal **1** to lactone **2**.



5. The mechanism of base-catalyzed hydrolysis of esters (saponification) has been elucidated through the use of ^{18}O -labeled esters. Explain how you could use this strategy to differentiate between the following possible mechanisms. Be specific.

Mechanism A:



Mechanism B:

