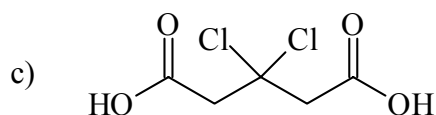
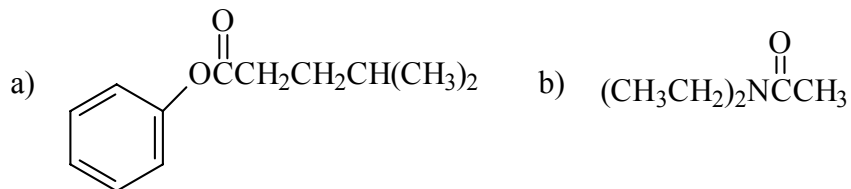


1.(12) Name the following compounds:

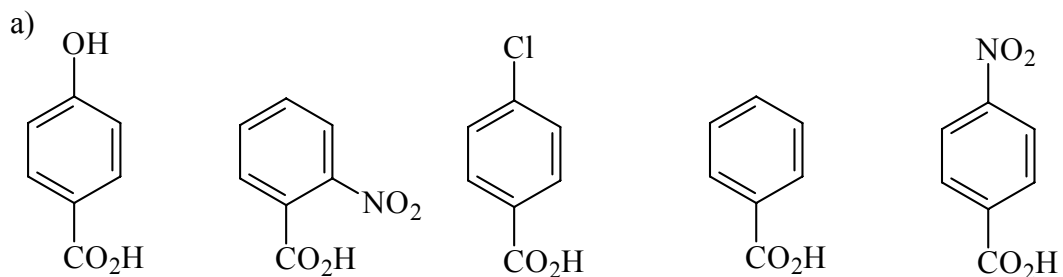


2.(8) Draw the following compounds:

a) (E) 2-pentenoyl chloride

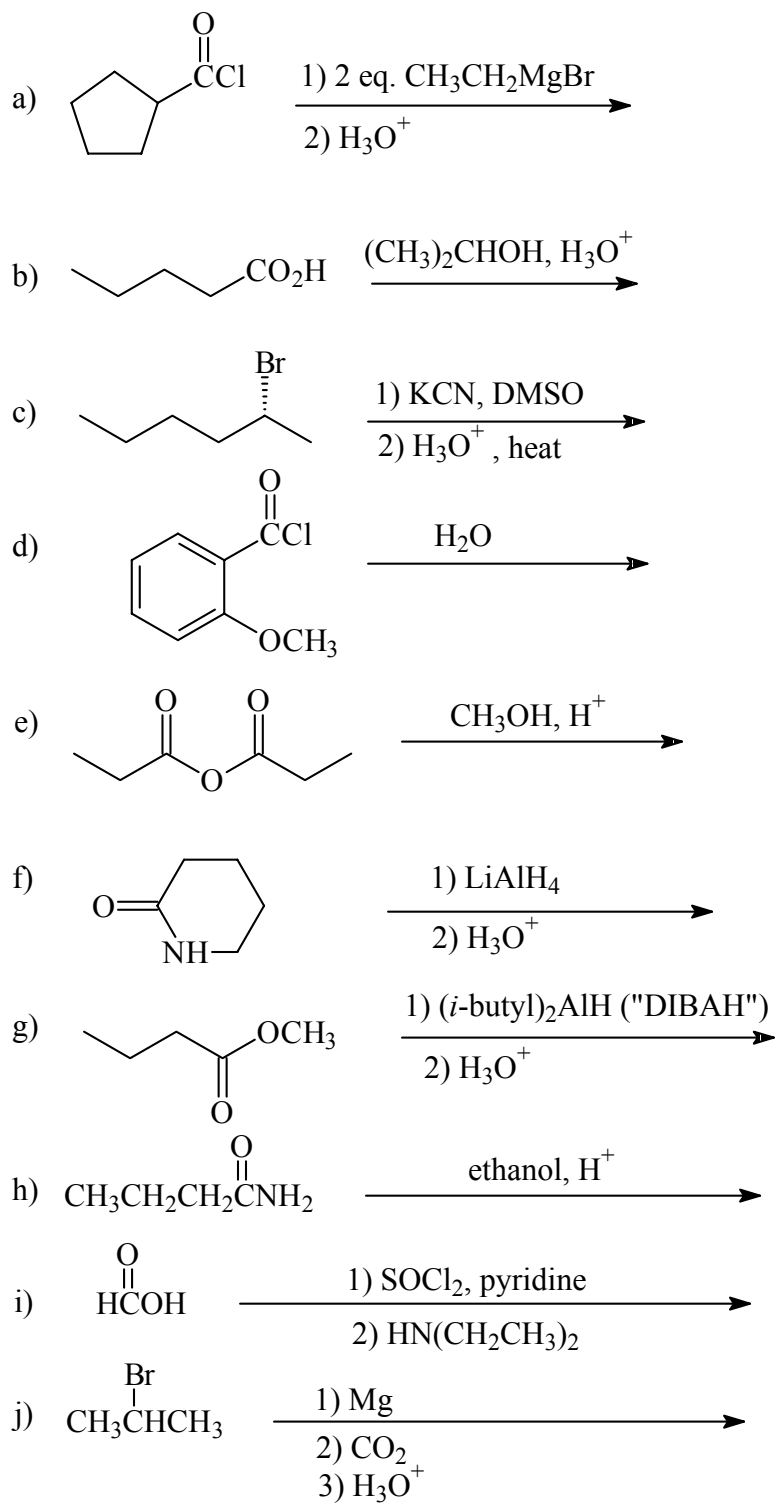
b) isopropyl cyclopropane carboxylate

3.(10) Arrange the following compounds in order of **increasing pKa** (1 = lowest pKa)

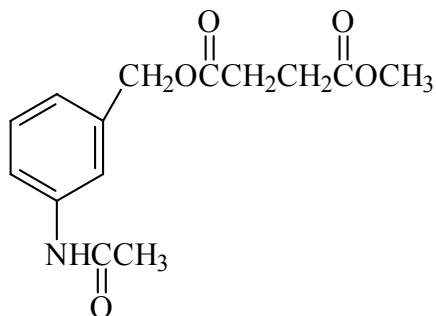


b) $\text{CH}_3\text{CH}_2\text{CO}_2\text{H}$, $\text{CCl}_3\text{CH}_2\text{CO}_2\text{H}$, $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$, $\text{CF}_3\text{CH}_2\text{CO}_2\text{H}$, HCl

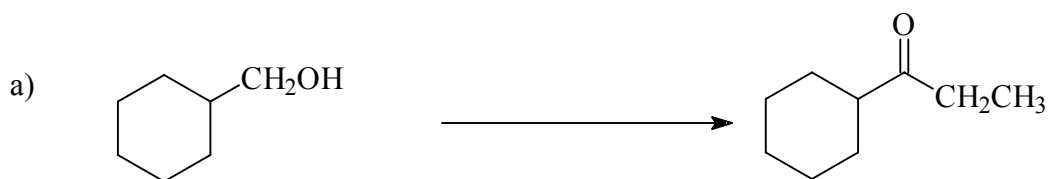
4.(40) Give the major products of the following reactions. Where 2 organic products are formed, draw them both.



5.(8) Draw all of the products that would result from the complete acid catalyzed *hydrolysis* of the following compound:



6.(12) Give the reagents in the proper order in order to carry out the following transformations.



7.(10) Provide a clear, coherent mechanism for the following transformation. Use only the reagents provided and show electron flow with arrows.

