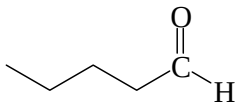
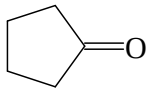
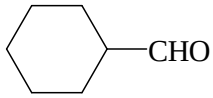
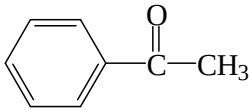
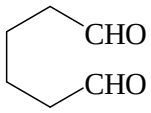
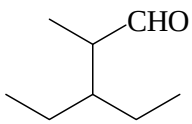
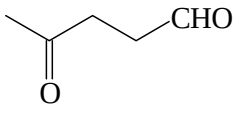
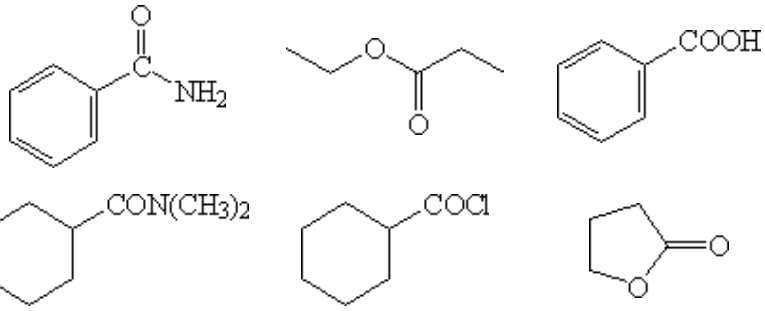
CHEM1002 Problem Sheet 6 (Week 7)

Work through the ChemCAL modules "*Nucleophilic Substitution Reactions*", "*Elimination and Electrophilic Addition Reactions*" and "*Nucleophilic Addition to Carbonyl Groups*"

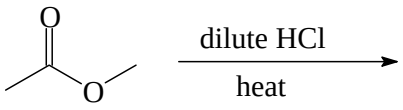
1. Identify each of the following compounds as an aldehyde or a ketone. Then draw the formula of the major organic products formed on oxidation with acidified potassium dichromate solution and reduction with sodium borohydride followed by aqueous acid. If there is no reaction, write "NR".

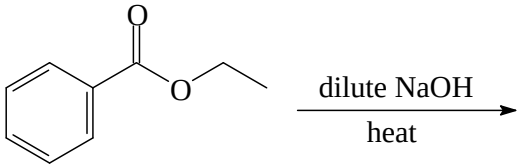
Starting Material	Functional Group	Oxidation Product	Reduction Product
			
			
			
			
			
			
			

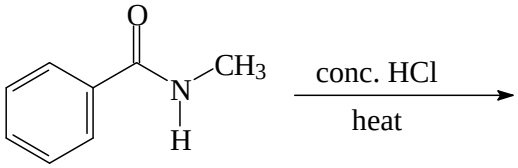
2. Identify the functional group in each of the carboxylic acid or acid derivatives below.

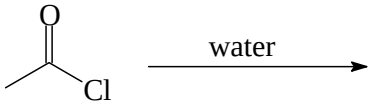


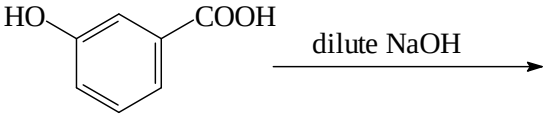
3. Give the constitutional formula of the major organic product(s) formed in the following reactions. If no reaction, write "NR".

(a) 

(b) 

(c) 

(d) 

(d) 

(e)