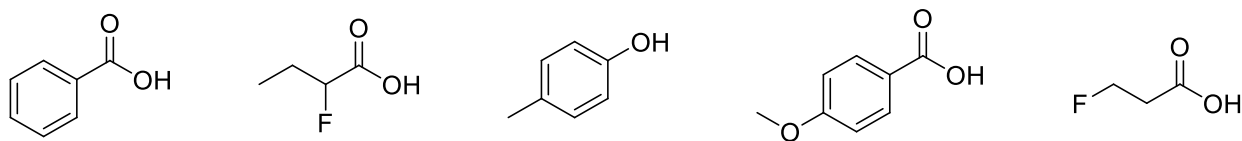
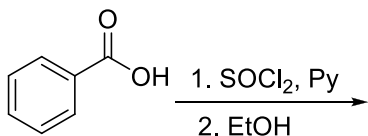
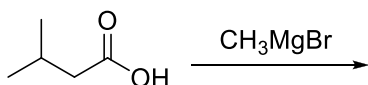
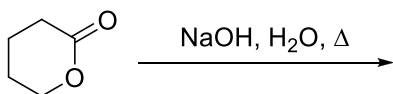
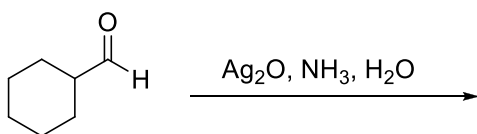
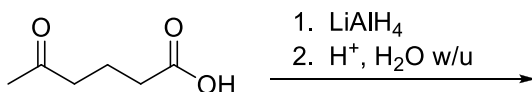
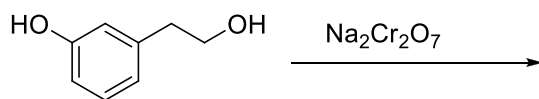
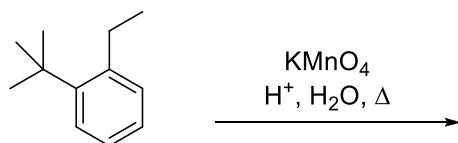
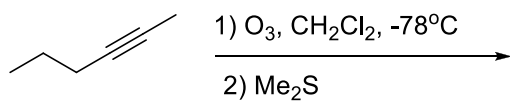


Carboxylic acids are commonly created either through oxidation of a functional group at a lower oxidation state or substitution on an acid derivative. We will be combining concepts from many chapters in this problem set.

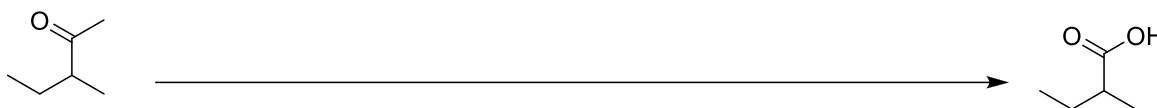
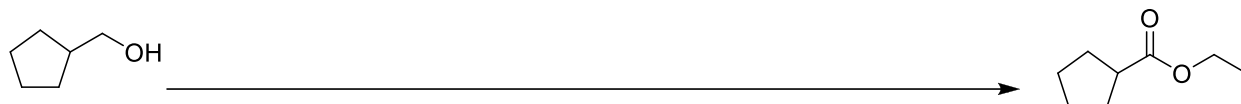
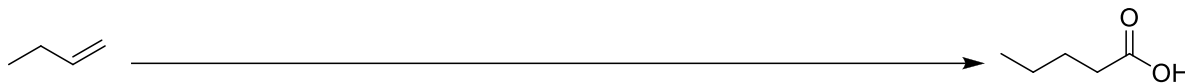
Rank the molecules below in order of increasing acidity. Make sure that you can explain your rankings.



Predict the major product(s) of the following reactions:



Give the reagents needed to accomplish the indicated transformations.



Write out the step-by-step mechanism for the reaction below. Include all intermediates, charges and curved arrows in your mechanism.

