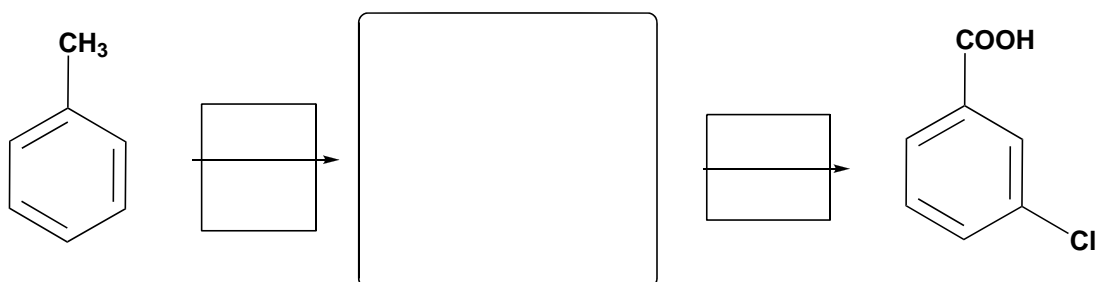
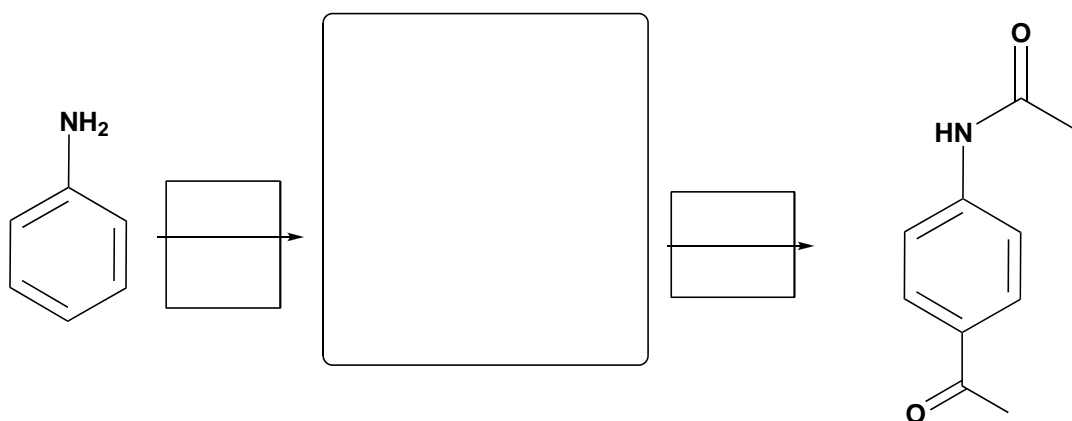
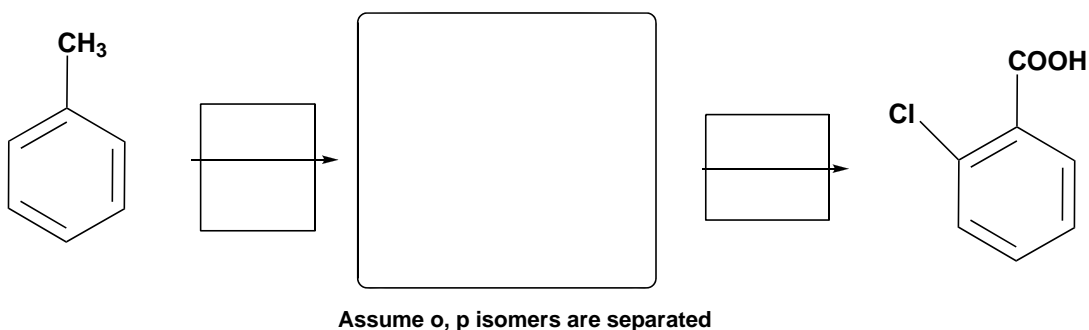
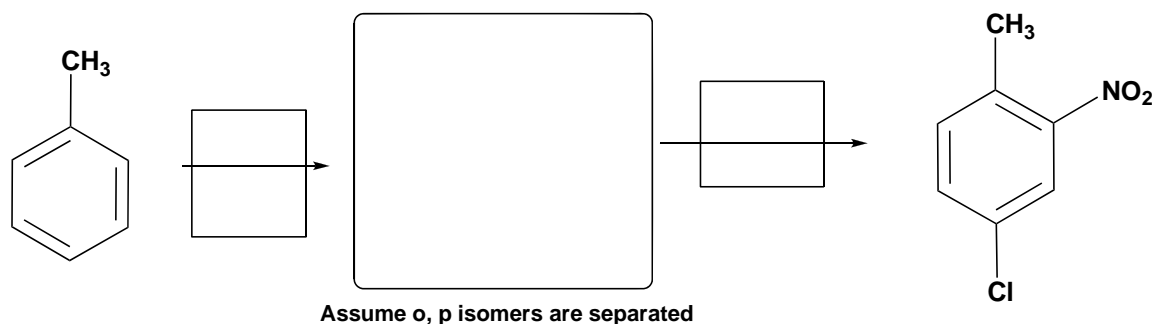
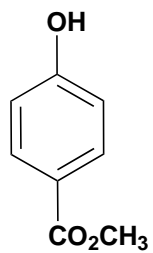


"Free Style" problem sets for O-Chem 2

1) Reactions: Each of the following compounds can be synthesized by two-step reactions. Indicate the reagents required for the reactions, the intermediate compound. Your pathway must address any regiochemistry in the products.

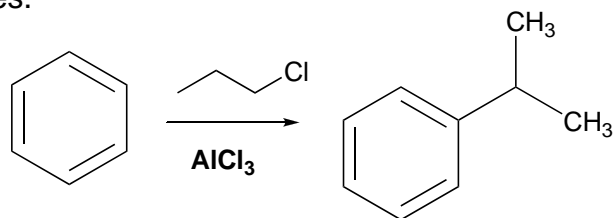


2) Resonance structures: Draw all of the resonance structures for the phenoxide of methyl-4-hydroxybenzoate and predict if it is more or less acidic than phenol.

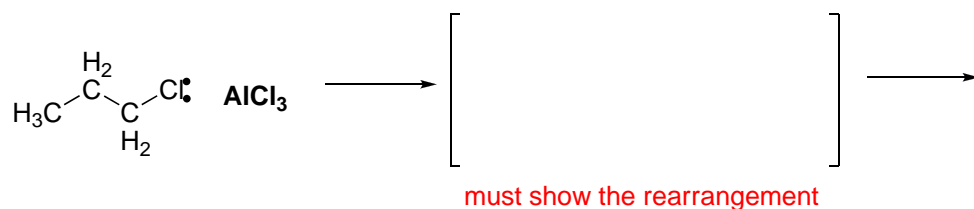


methyl 4-hydroxybenzoate

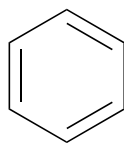
3) Mechanism: Provide the stepwise mechanism for the following Friedel-Crafts alkylation. Show all important flows of electrons, charges and intermediates. Follow the instructions for each of the stages.



Show the generation of the electrophile:



Show the carbon-carbon bond formation (the rate determining step):



Draw the family of resonance structures:



Show the last step-the loss of the proton:

