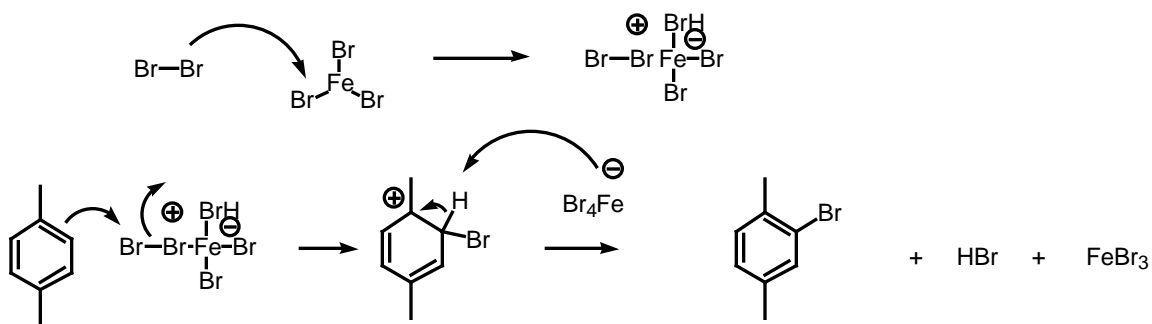
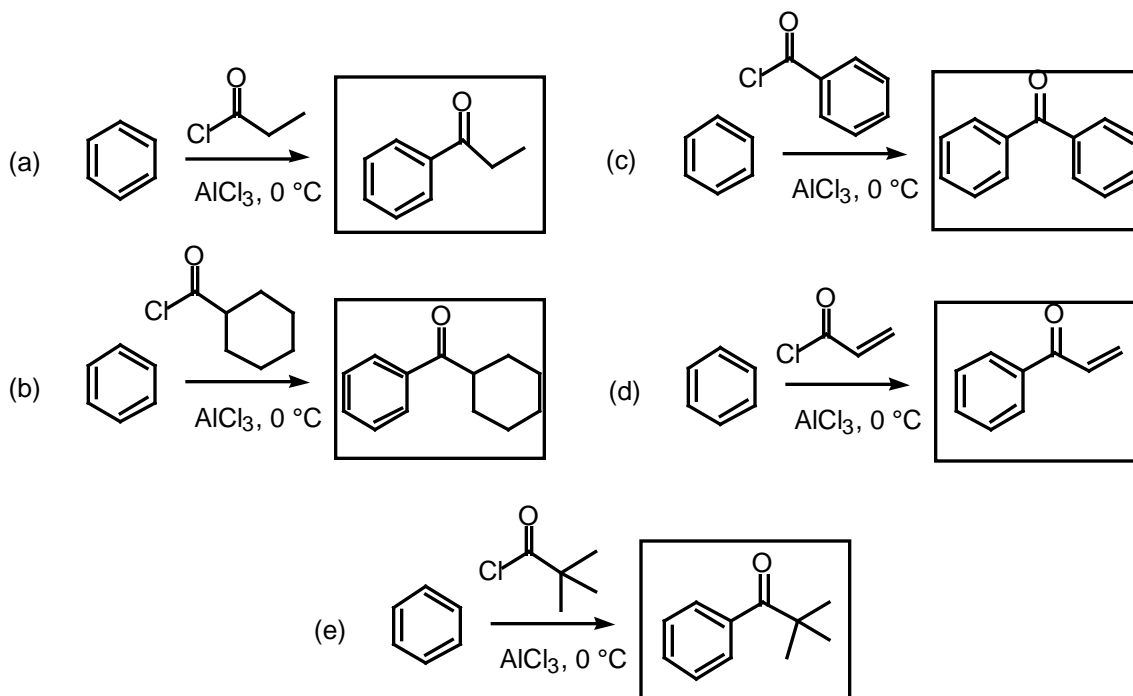


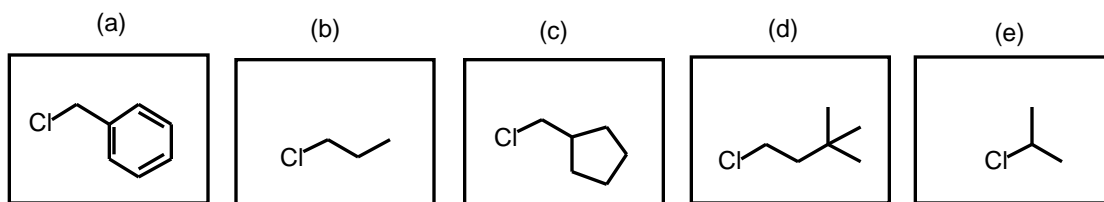
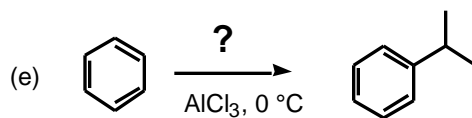
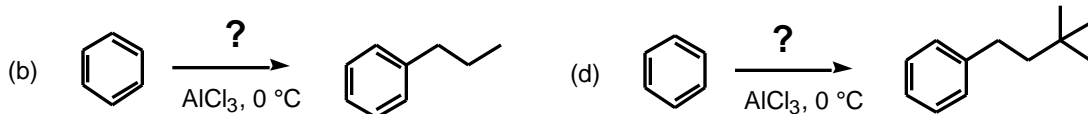
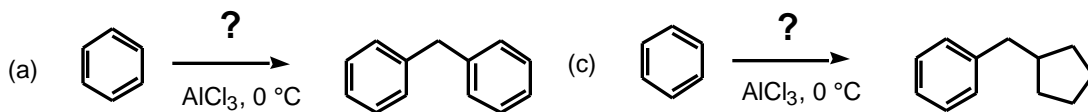
1. Show the mechanism of the reaction of p-xylene with bromine in the presence of a catalytic amount of iron-tribromide. (10 pts)



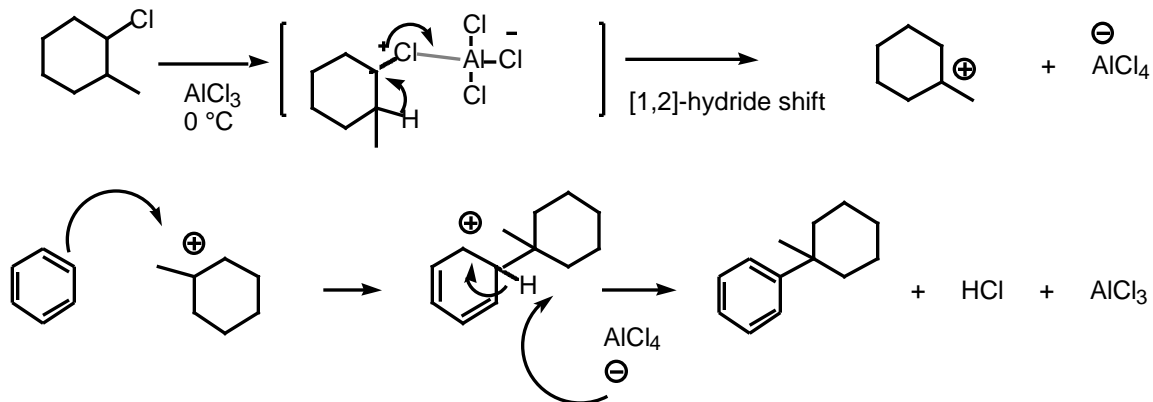
2. Predict the major organic product that will form from each of the following Friedel-Crafts acylation reactions with benzene: (10 pts)



3. Show the alkylchloride that would need to be used to effect each of the Friedel-Crafts alkylation reactions shown below:



4. Show a mechanism for the following reaction: (10 pts)



5. Show how you could carry out the following synthesis: (10 pts)  
(No need to show the mechanisms here, just the synthetic steps)

