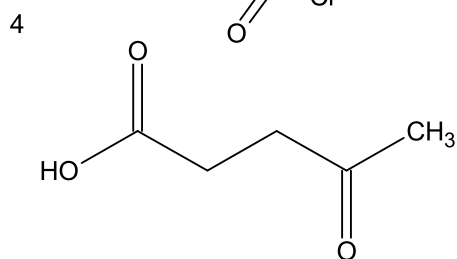
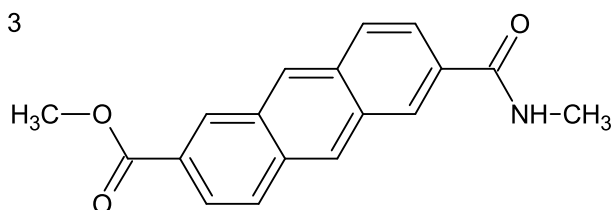
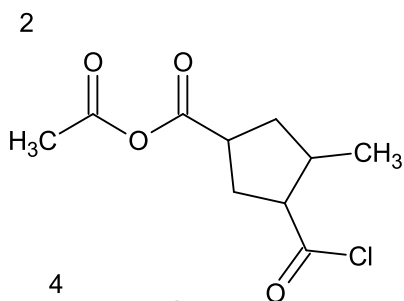
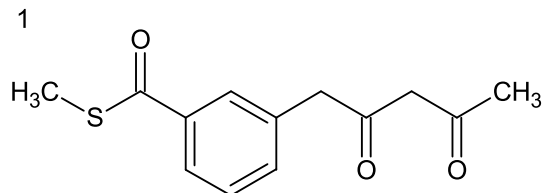
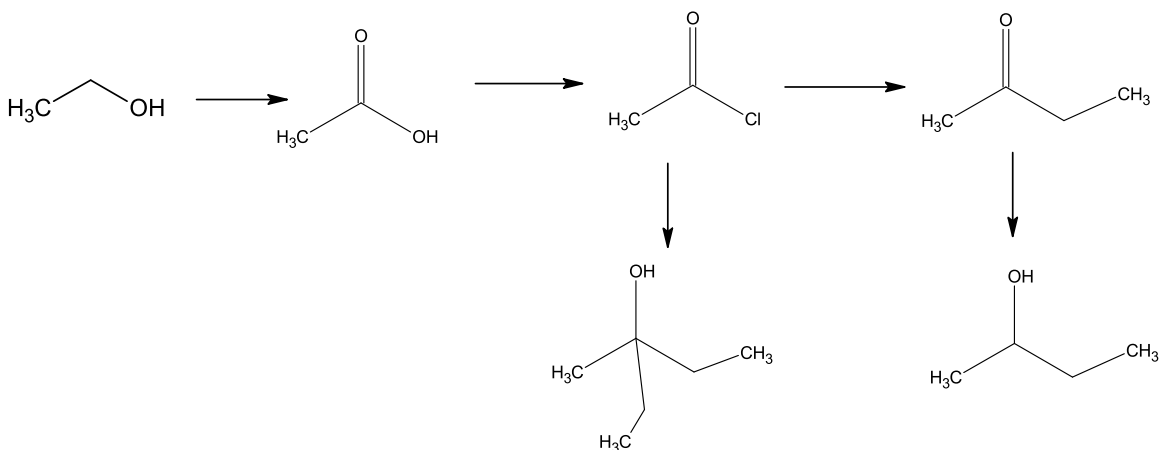


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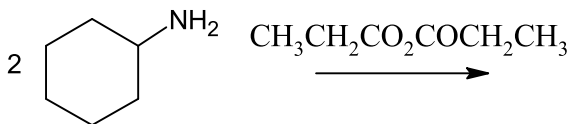
1) Identify the acid derivative functional groups in the following molecules:



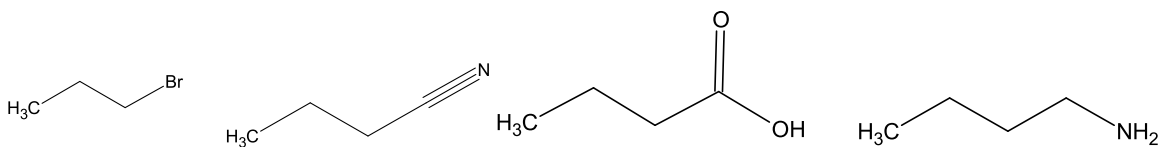
2) Give the necessary reagents for the following transitions:



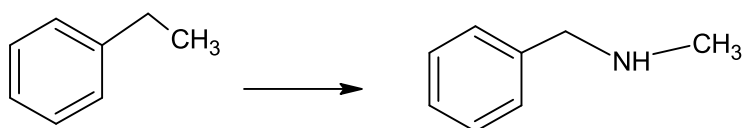
3) Predict the product for the following reaction:



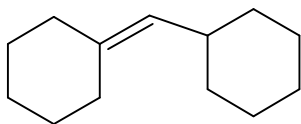
4) Starting with 1-propanol, make the following molecules:



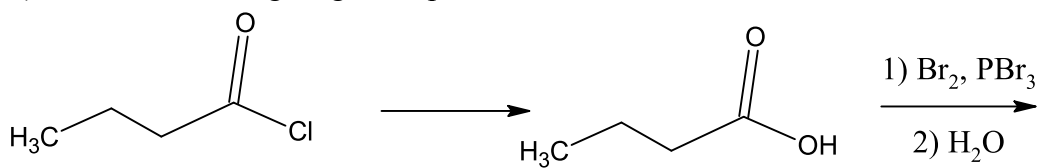
5) Propose a multi-step synthesis:



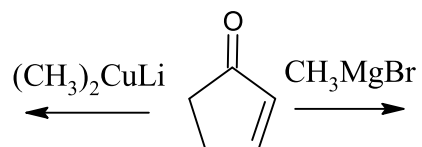
6) The following molecule was formed using the Wittig Reaction. Considering the formation of the phosphorous ylide, what were the best starting starting components?



7) Fill in the missing reagent or product:



8) Give the product for each reaction. Is there a different product for each? Why or why not?



9) Draw the product of each step in the following reaction:

