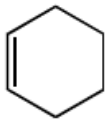
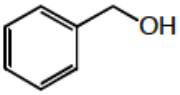
(8 pts)

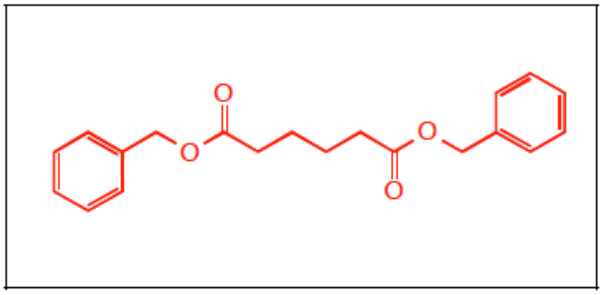


1) O_3
2) $(CH_3)_2S$

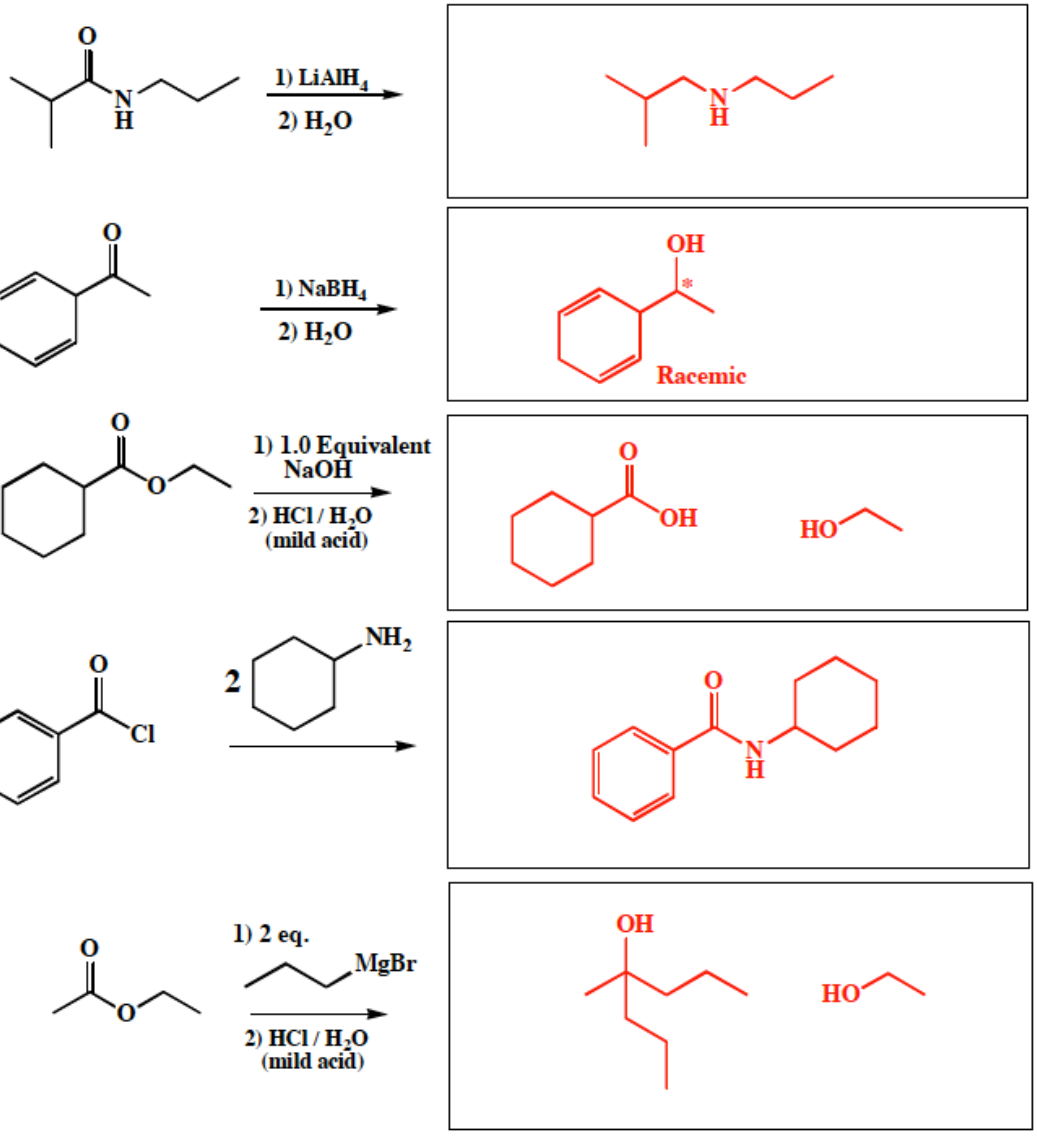
3) Excess H_2CrO_4

4) 2 $SOCl_2$

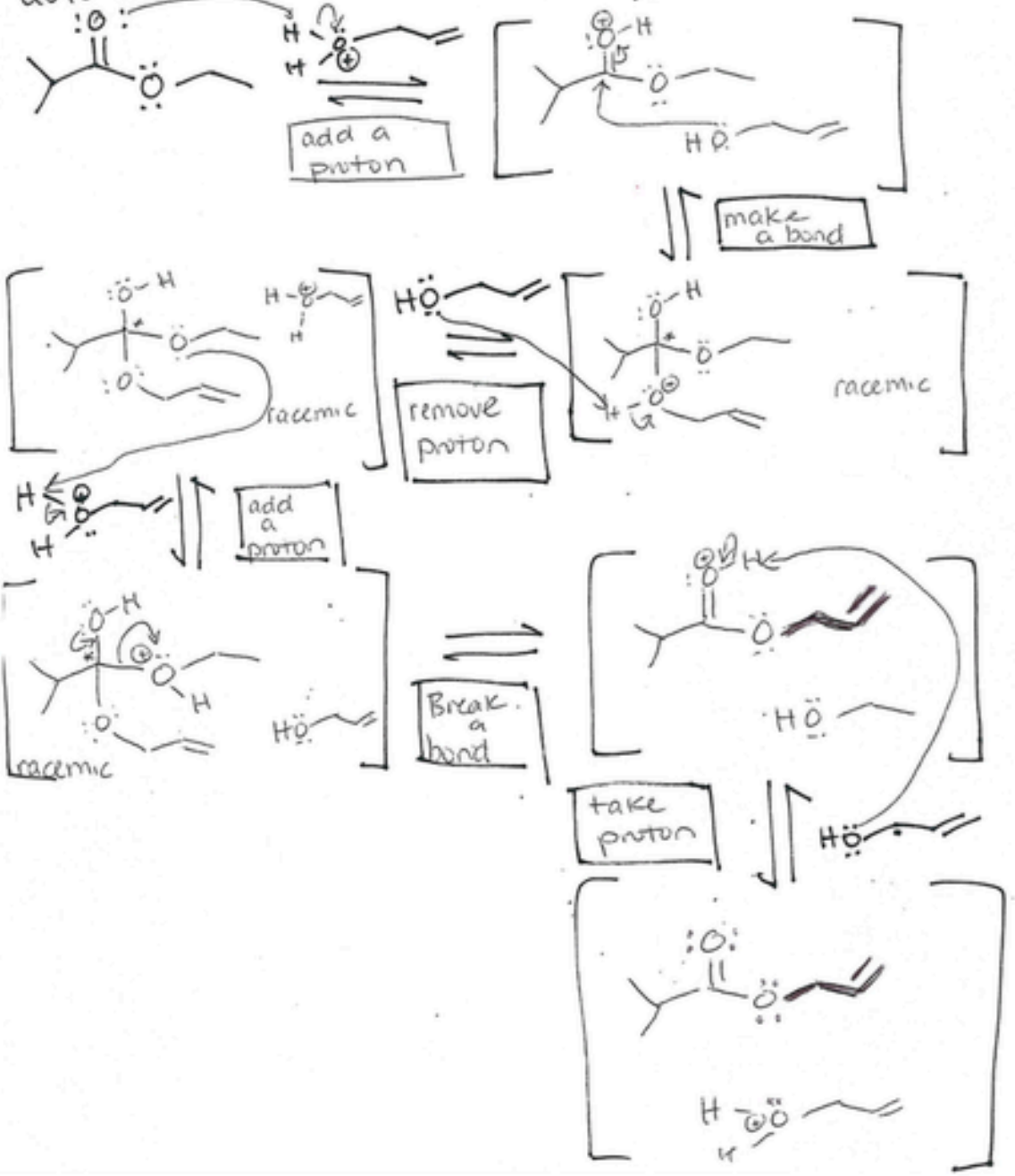
5) 2 



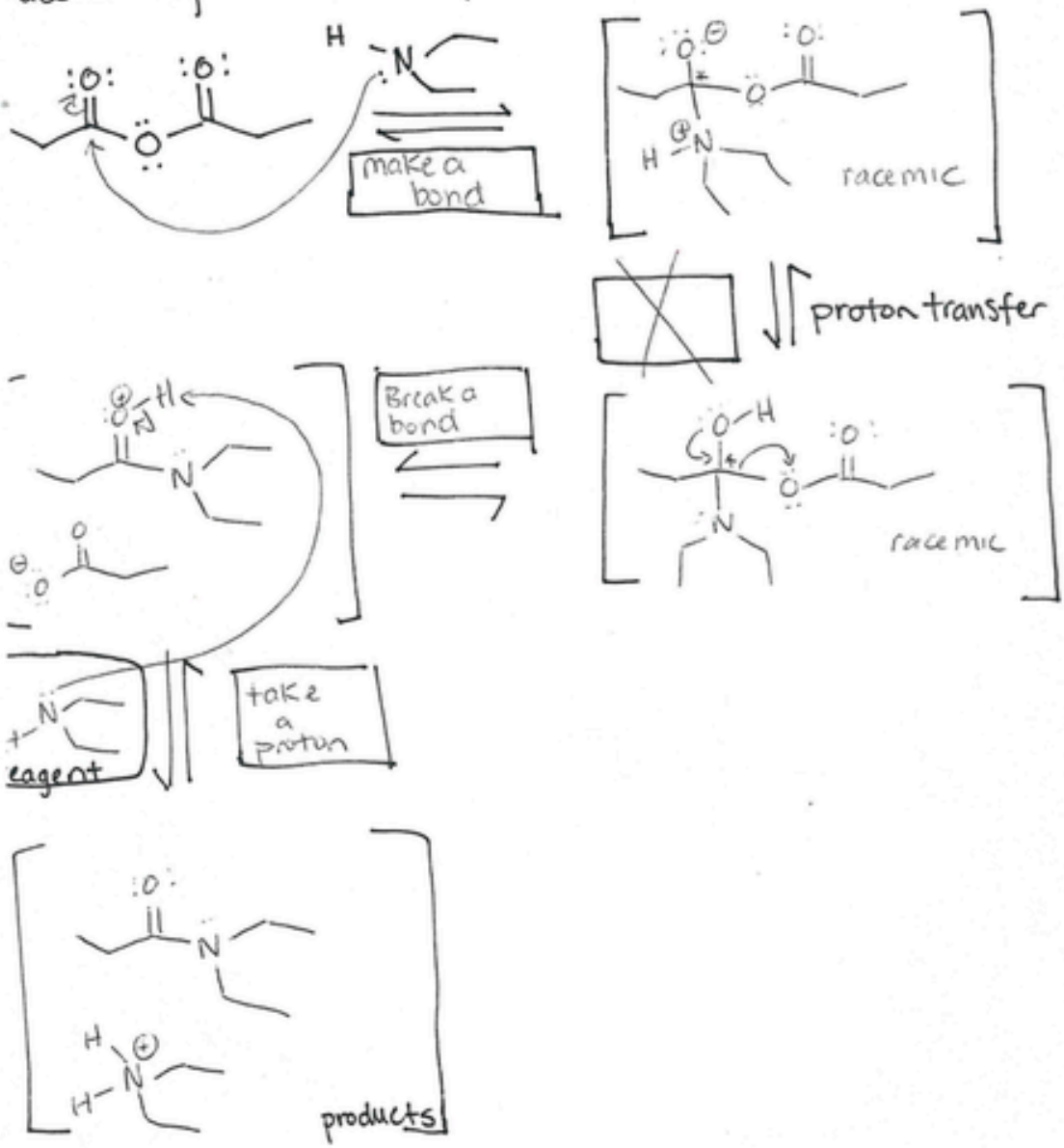
15. (3 or 5 pts.) Write the predominant carbon containing product or products that will occur for each transformation. If there are two carbon containing products, WRITE THEM BOTH. If a new chiral center is created and a racemic mixture is formed, label the chiral center with an asterisk (*) and write racemic. No need for wedges and dashes.



Write the mechanism for the following transformation
Include mechanistic steps, Label chiral centers w/
astensk + label as racemic if applicable



Write the mechanism for the following transformation. Include the mechanistic steps, and asterisk / label as racemic any chiral centers you create (as applicable).

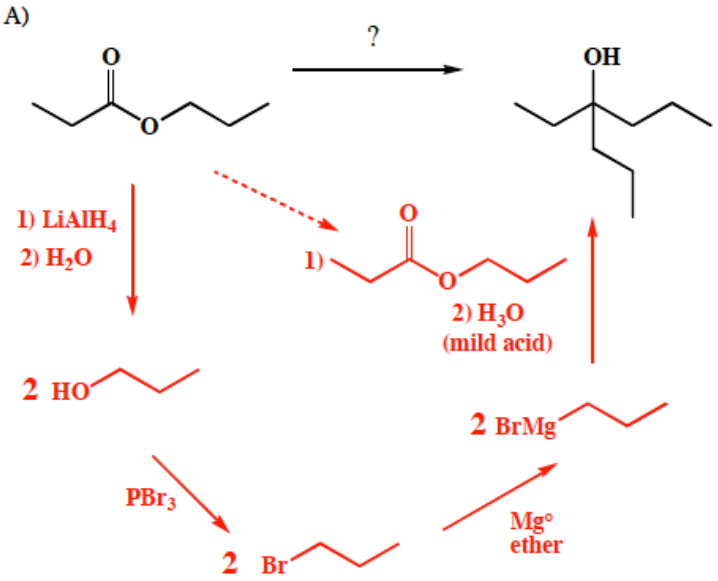


17. Using any reagents turn the starting material into the indicated product. All carbon atoms inthe product must come from the starting material. Draw all molecules synthesized along the way. When in doubt, draw the molecule! Label all chiral centers with an asterisk (*) and make sure to right "Racemic" where appropriate. Hint: this should look familiar as a homework problem.

Remember, all of the carbons of the product must come from the given starting material.

(10 pts)

A)



17. Using any reagents turn the starting material into the indicated product. All carbon atoms in the product must come from the starting material. Draw all molecules synthesized along the way. When in doubt, draw the molecule! Label all chiral centers with an asterisk (*) and make sure to right "Racemic" where appropriate. Hint: this should look familiar as a homework problem.

Remember, all of the carbons of the product must come from the given starting material.

(22 pts)

C)