

**NAME (Print):** \_\_\_\_\_

**SIGNATURE:** \_\_\_\_\_

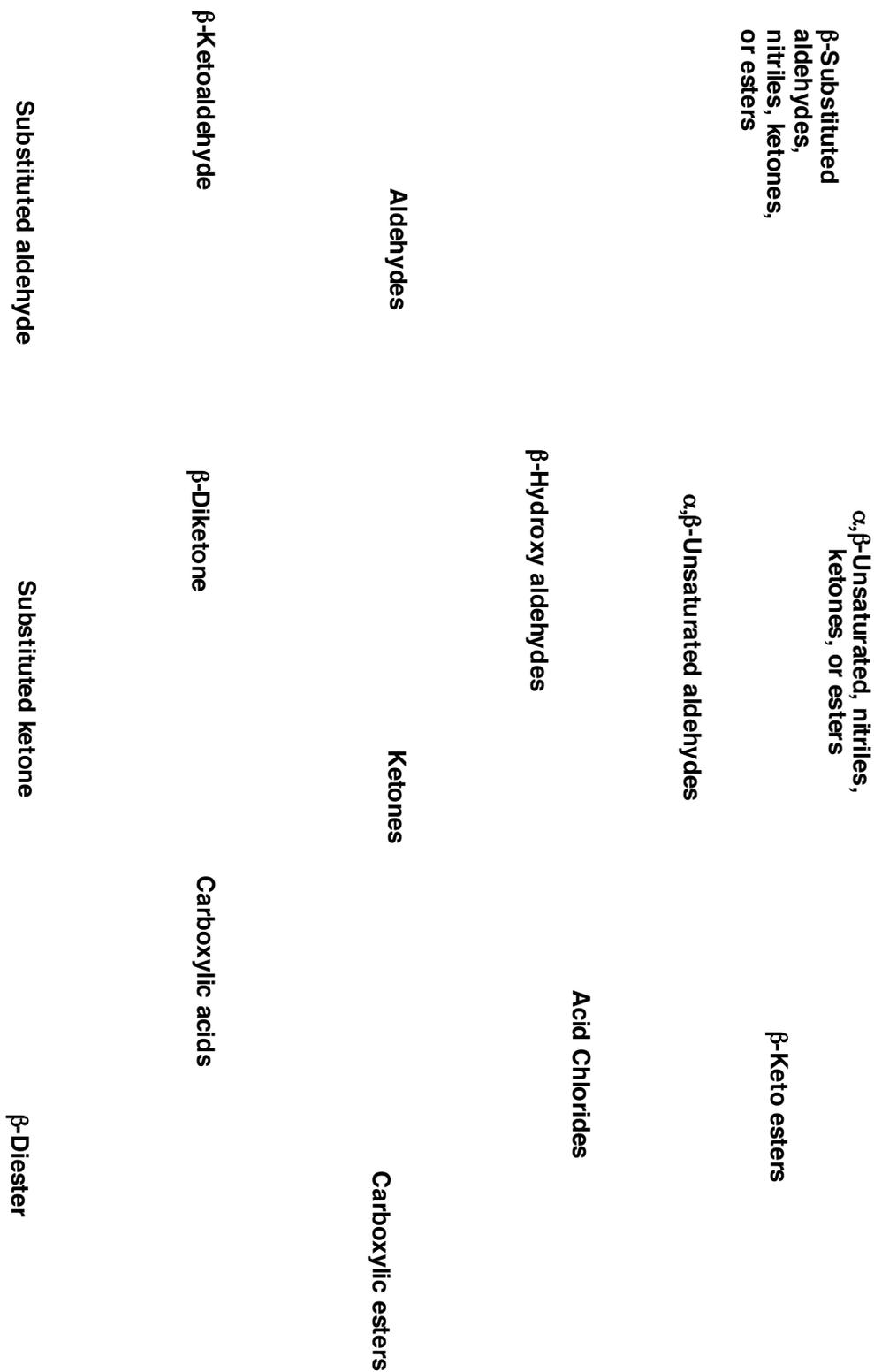
**Chemistry 310N  
Dr. Brent Iverson  
8th Homework  
April 2, 2008**

**Please print the  
first three letters  
of your last name  
in the three boxes**

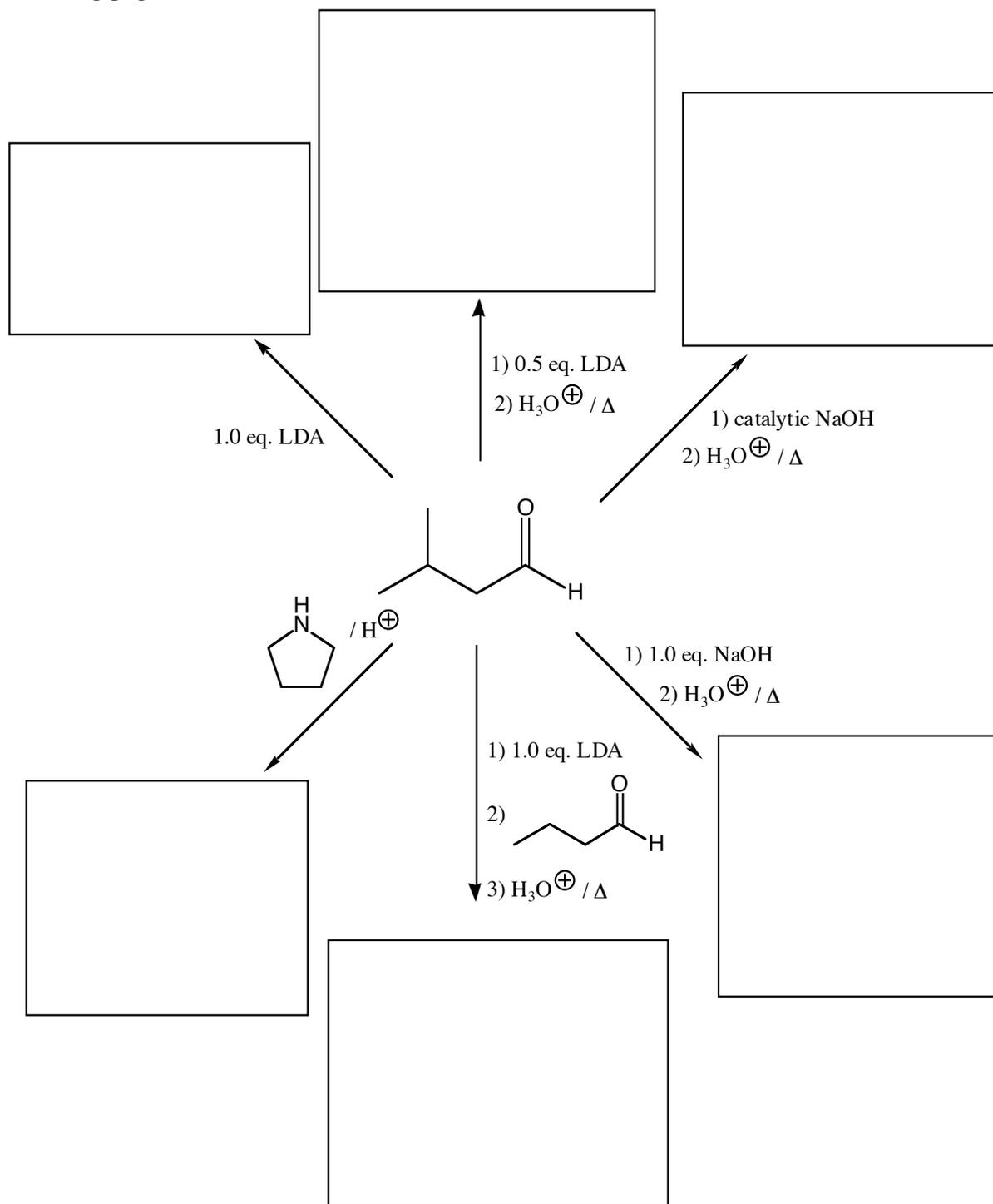
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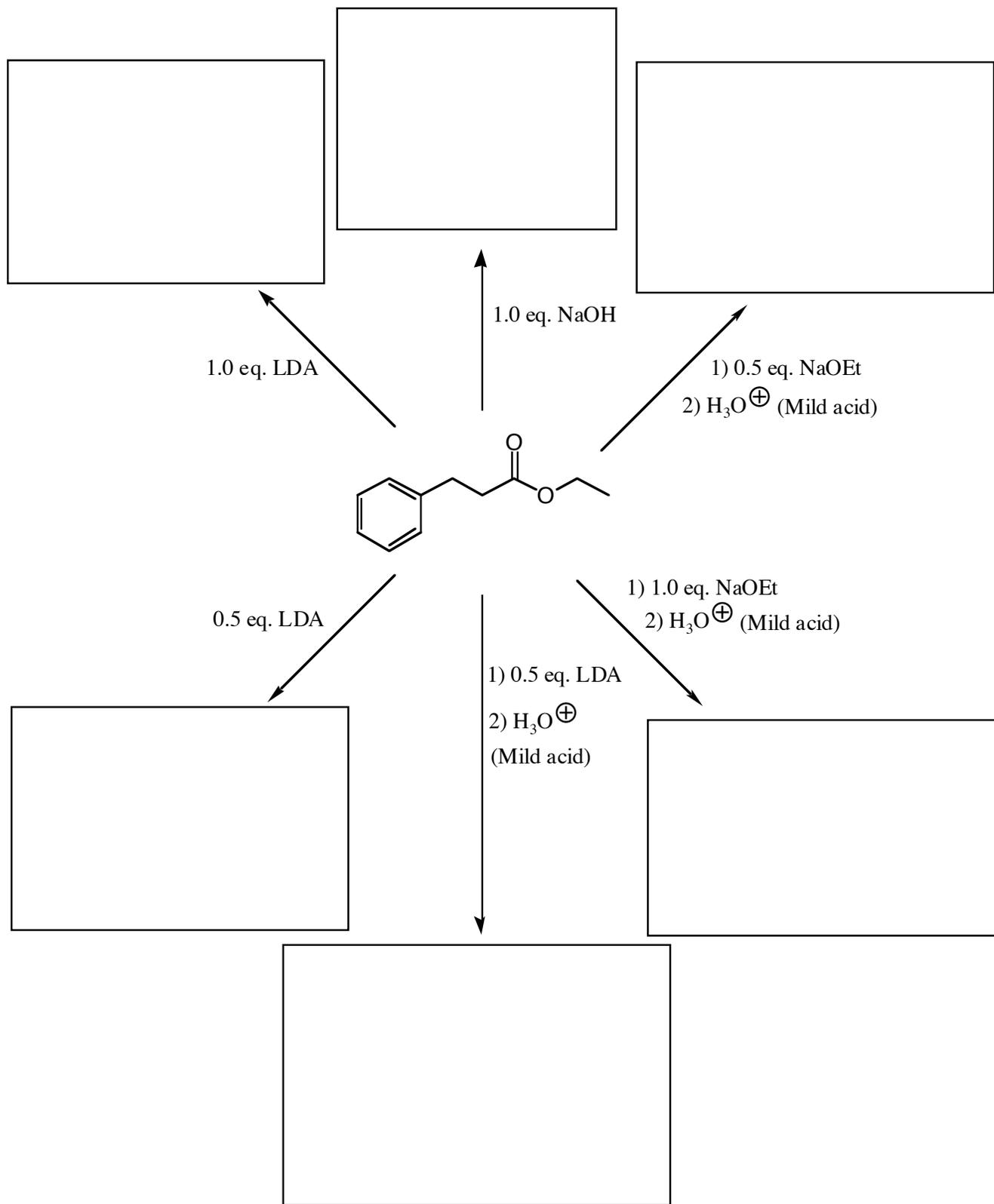
Score: \_\_\_\_\_

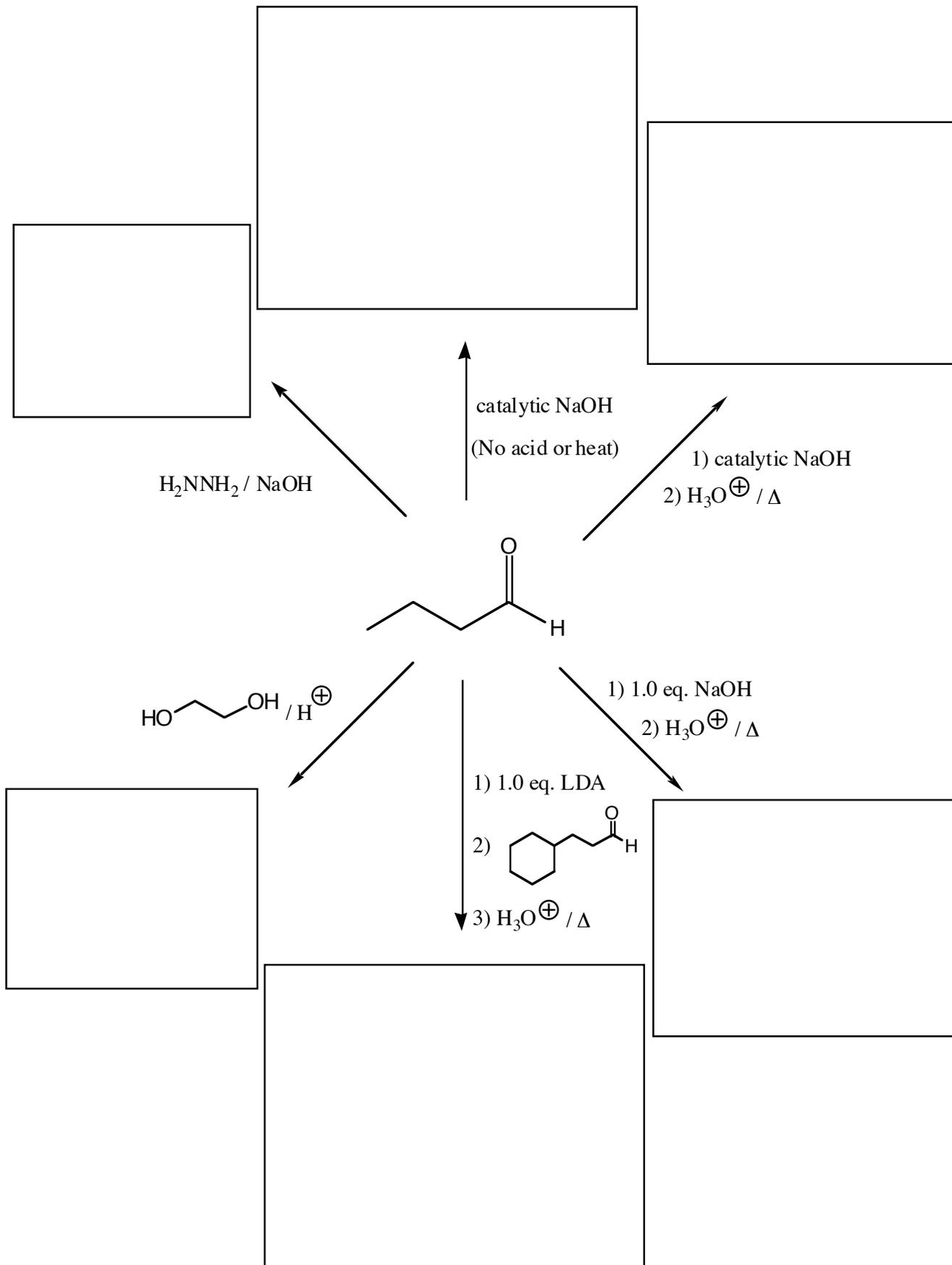
(20 Points) Fill in the missing arrows and reagents to complete this roadmap using all the reactions you have learned this semester that interconvert these types of molecules.

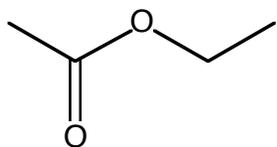


(3 or 5 pts each) Fill in the boxes with the appropriate structure or structures. Because these structures are getting complex, you **do not need to draw both enantiomers**. Instead, when a new chiral center is created, just mark it with an asterisk (\*) and label the product as “racemic”. No need to use wedges and dashes. Also, when an E,Z mixture is formed, only draw one and label it as “E,Z mixture”. Finally, the “ $\Delta$ ” sign means that heat is used in the reaction. These directions apply to all of the following pages as well.

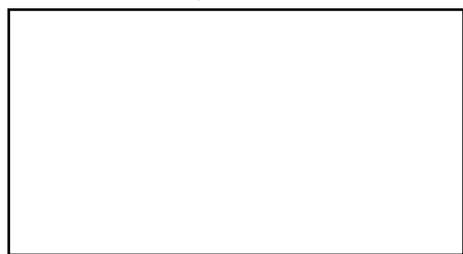




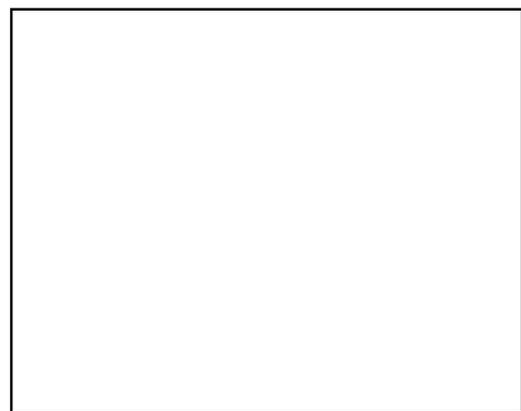
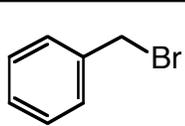
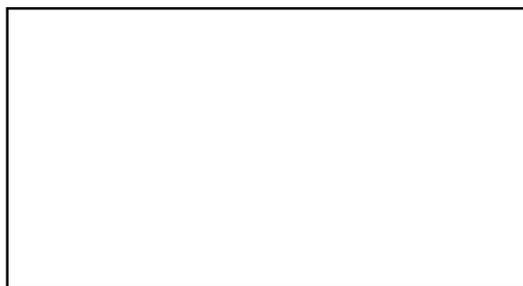
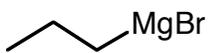


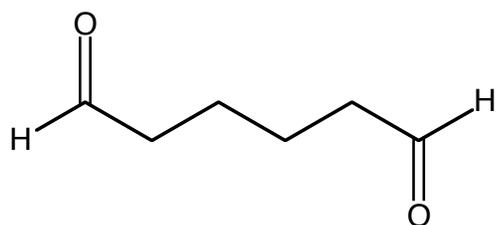


0.5 eq. NaOEt

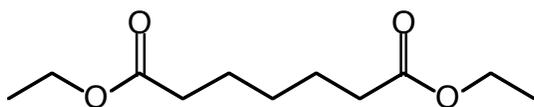
Mild  $\text{H}_3\text{O}^{\oplus}$ 

No heat

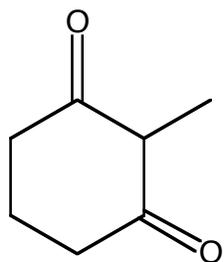
1) Strong  $\text{H}_3\text{O}^{\oplus}$ 2) Heat ( $\Delta$ )1)  MgBr2)  $\text{H}_3\text{O}^{\oplus}$ 



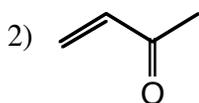
1) catalytic NaOH  
2)  $\text{H}_3\text{O}^+$  /  $\Delta$



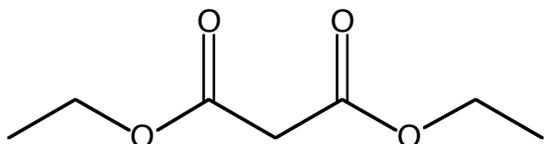
1) 1.0 eq. NaOEt  
2) mild  $\text{H}_3\text{O}^+$



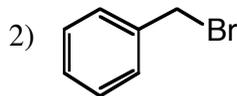
1) 1.0 eq. NaOEt



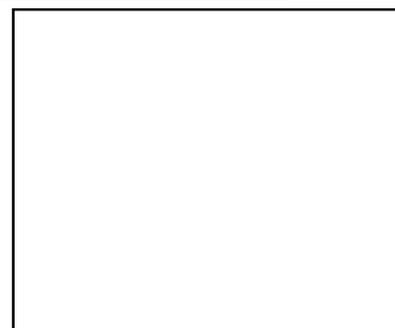
3)  $\text{H}_3\text{O}^+$  /  $\Delta$



1) 1.0 eq. NaOEt



3) Strong  $\text{H}_3\text{O}^+$  /  $\Delta$



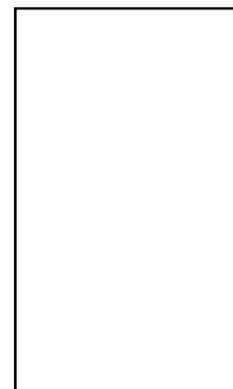
1)  $\text{O}_3$

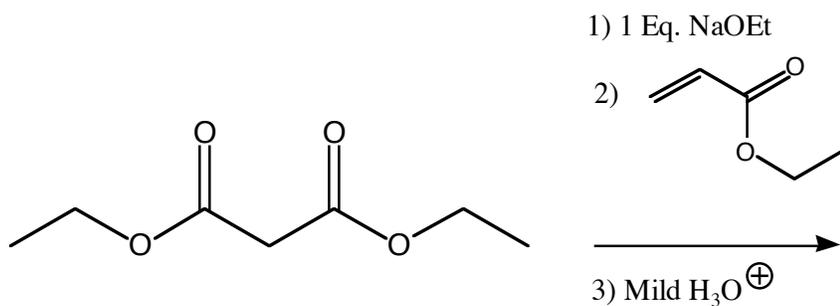
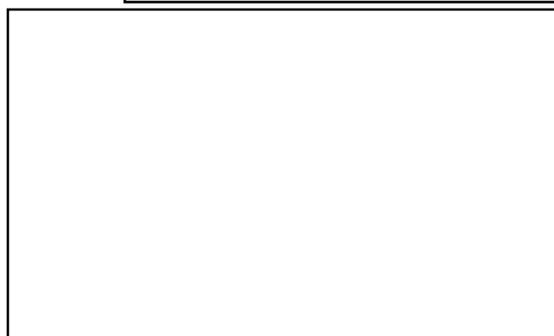
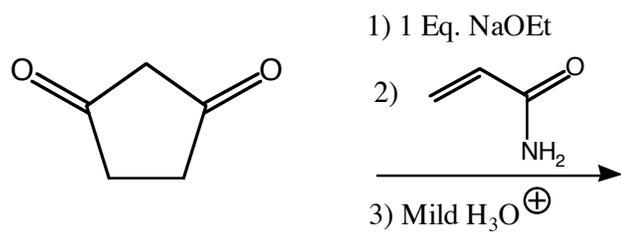
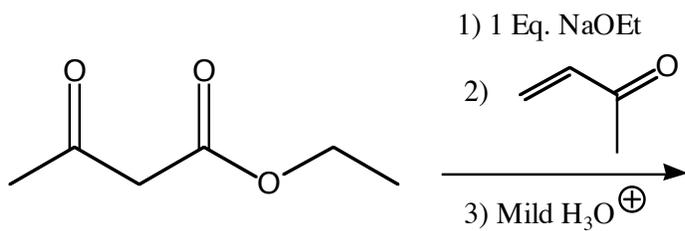
2)  $(\text{CH}_3)_2\text{S}$



1) catalytic NaOH

2)  $\text{H}_3\text{O}^+$  /  $\Delta$





3) Strong  $\text{H}_3\text{O}^{\oplus} / \Delta$



