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<p>CEM 351 –Quiz 3</p> <p>Fall 2025</p>	
NAME	

Score		

1	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1
	2	2	2	2	2	2	2	2
	3	3	3	3	3	3	3	3
	4	4	4	4	4	4	4	4
	5	5	5	5	5	5	5	5
	6	6	6	6	6	6	6	6
	7	7	7	7	7	7	7	7
	8	8	8	8	8	8	8	8
	9	9	9	9	9	9	9	9

<input checked="" type="radio"/>	0	0
<input type="radio"/>	1	1
<input type="radio"/>	2	2
<input type="radio"/>	3	3
<input type="radio"/>	4	4
<input type="radio"/>	5	5
<input type="radio"/>	6	6
<input type="radio"/>	7	7
<input type="radio"/>	8	8
<input type="radio"/>	9	9

READ THIS!

Bubble in your PID in the space above. Write your answer for each question in the space provided.

LEAVE THIS COVER SHEET ATTACHED TO THE Quiz!

1. _____/19

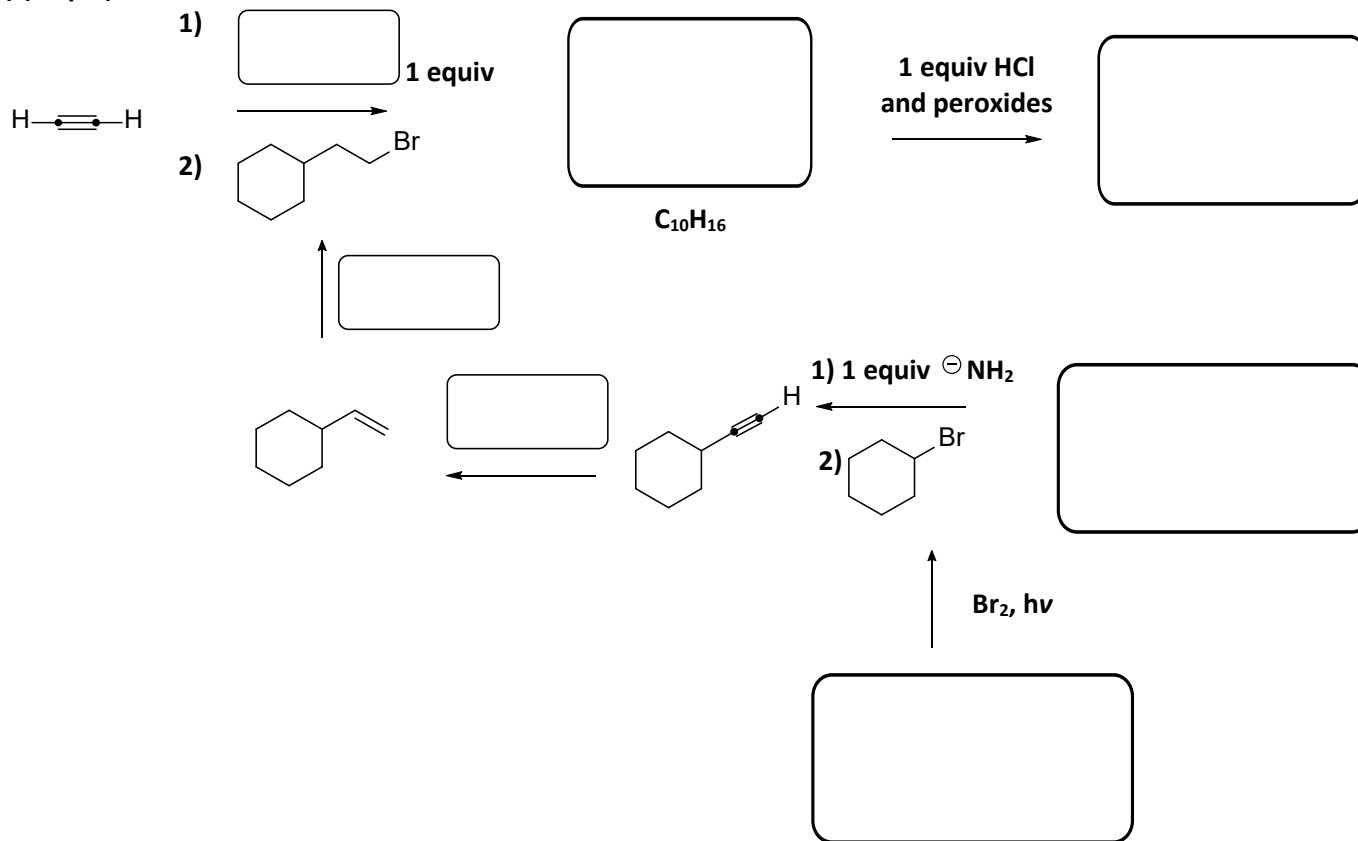
2. _____/16

3. _____/16

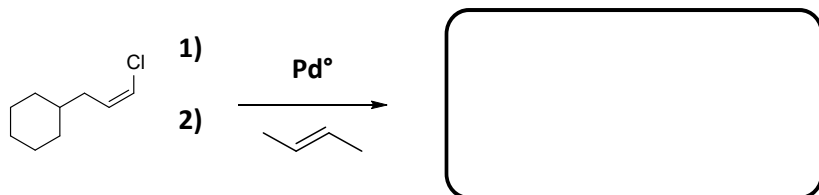
TOTAL: _____/ 51

Complete the reaction schemes as we practiced in class. Small boxes near rxn arrows (1 pt) include reactants used to complete the chemical transformation(s) of one organic molecule to another. Larger boxes (2 pts) contain *organic or organometallic molecules* along the pathway.

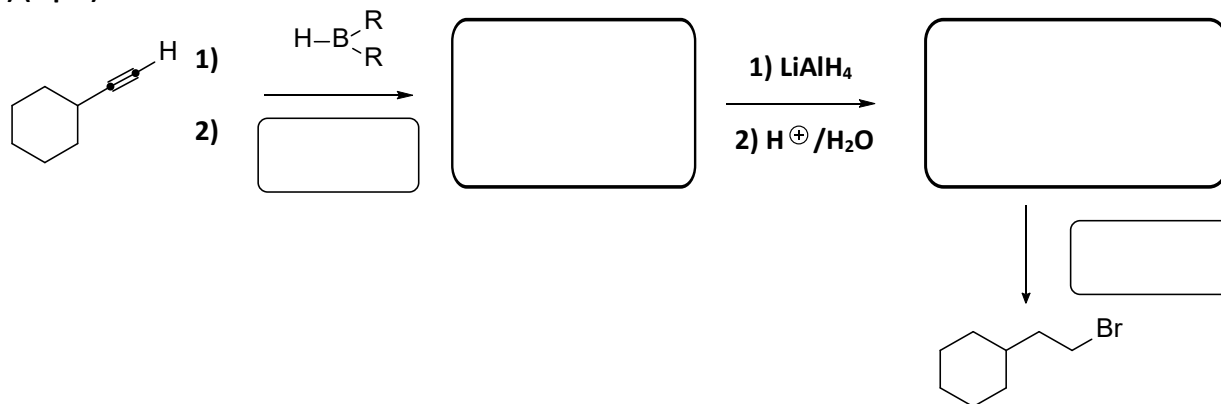
1) (11 pts)



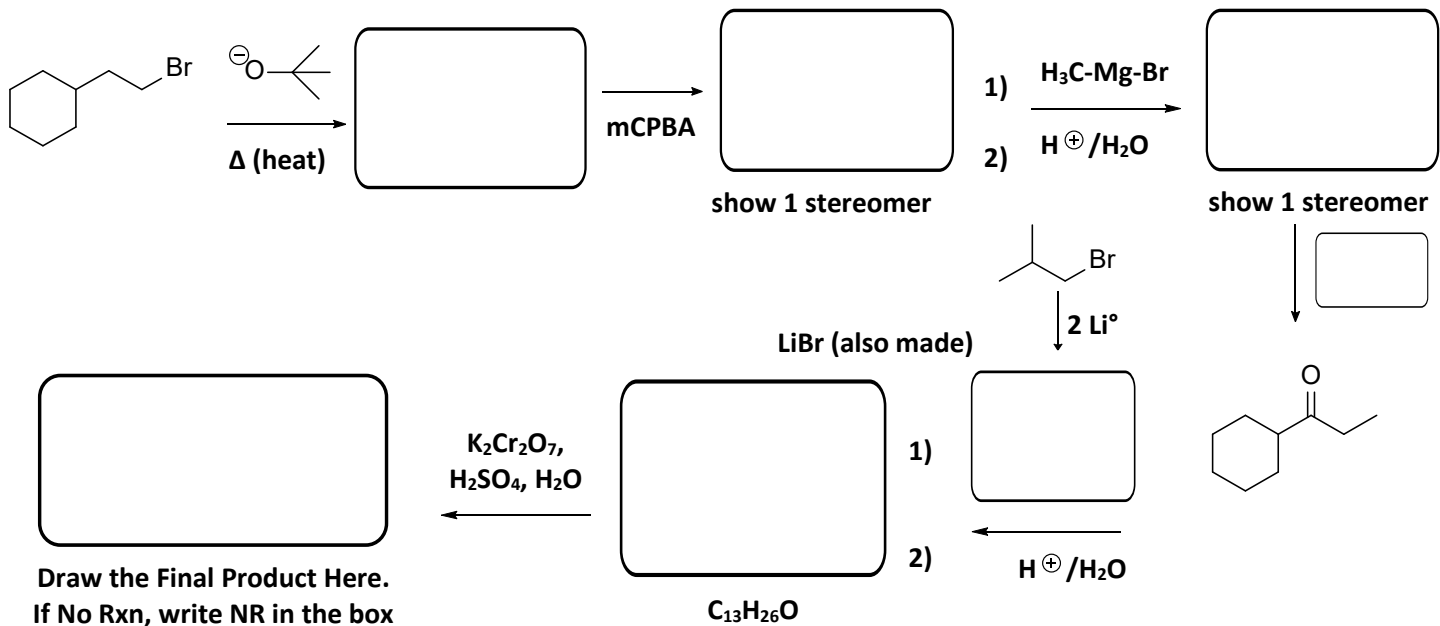
2) (2 pts)



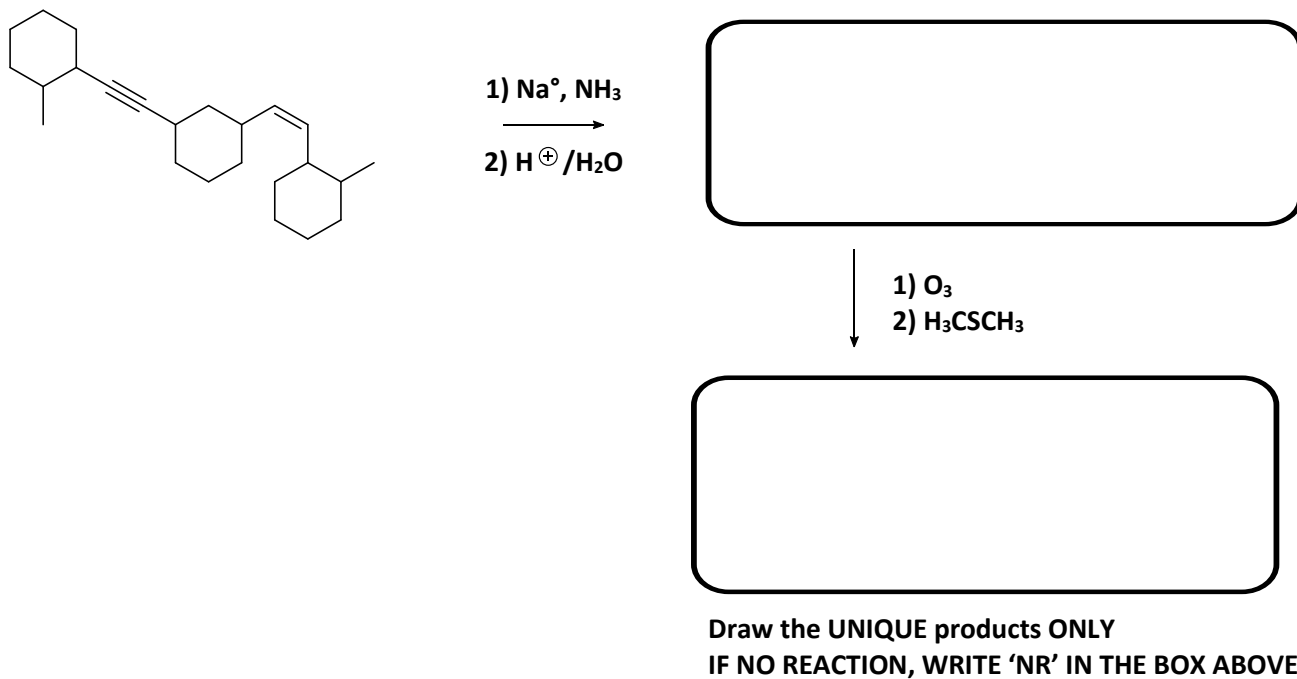
3) (6 pts)



4) (13 pts) mCPBA: meta-chloroperoxybenzoic acid



5) (3 pts)

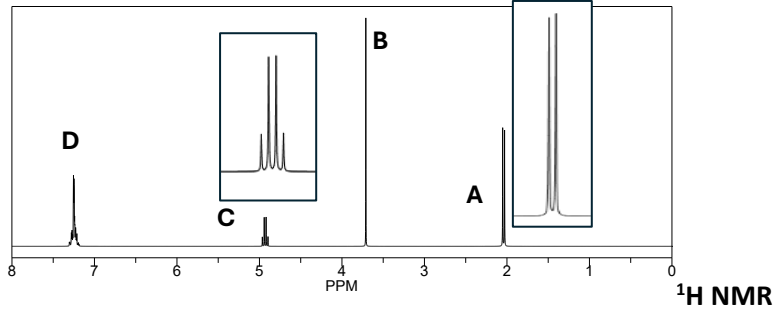


6) (16 points) $C_{10}H_{11}ClO$

Circle Hs on Observed Grps

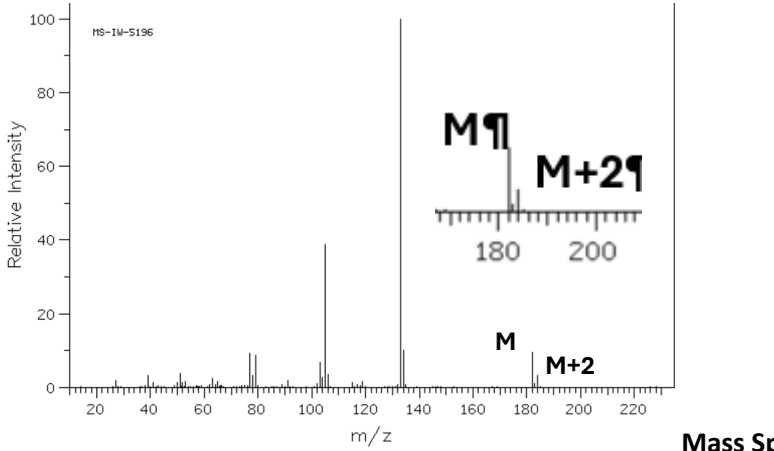
Draw attached groups

that explain splitting



	Integral	
Signal A:	<input type="text"/>	H
Signal B:	<input type="text"/>	H
Signal C:	<input type="text"/>	H
Signal D:	<input type="text"/>	H

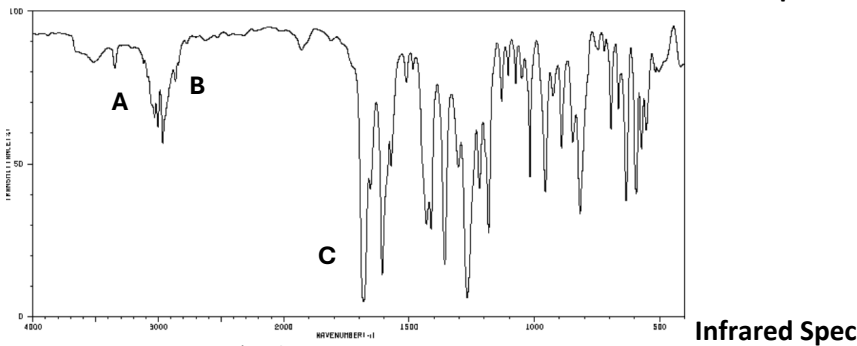
Short answer for Mass Spectrometry:
What do the M and M+2 peaks indicate?



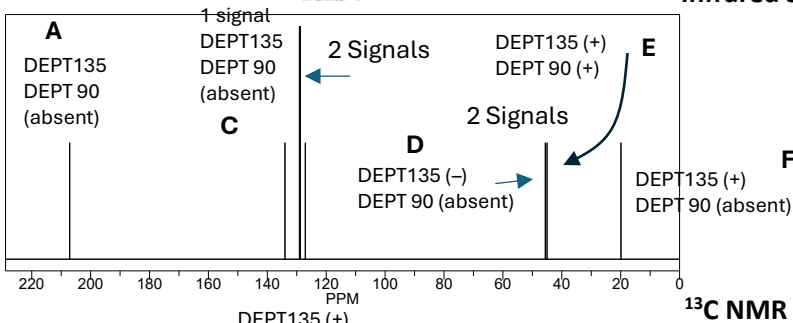
Mass Spec

IR Spectroscopy

A:	<input type="text"/>	stretches
B:	<input type="text"/>	stretches
C:	<input type="text"/>	stretch



Infrared Spec

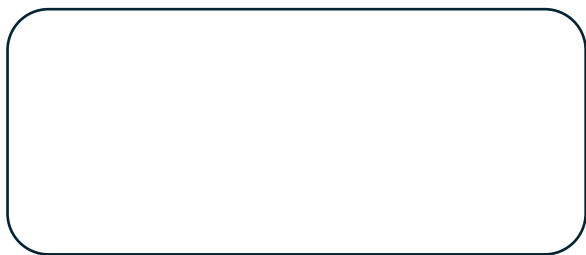


^{13}C NMR

^{13}C NMR

A:	<input type="text"/>	D:	<input type="text"/>
B:	<input type="text"/> X 3	E:	<input type="text"/>
C:	<input type="text"/>	F:	<input type="text"/>

How many sets of carbons are rendered identical due to symmetry?



Structure