1								

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CEM 351 –Quiz 3

Fall 2025

NAME	

Score		

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

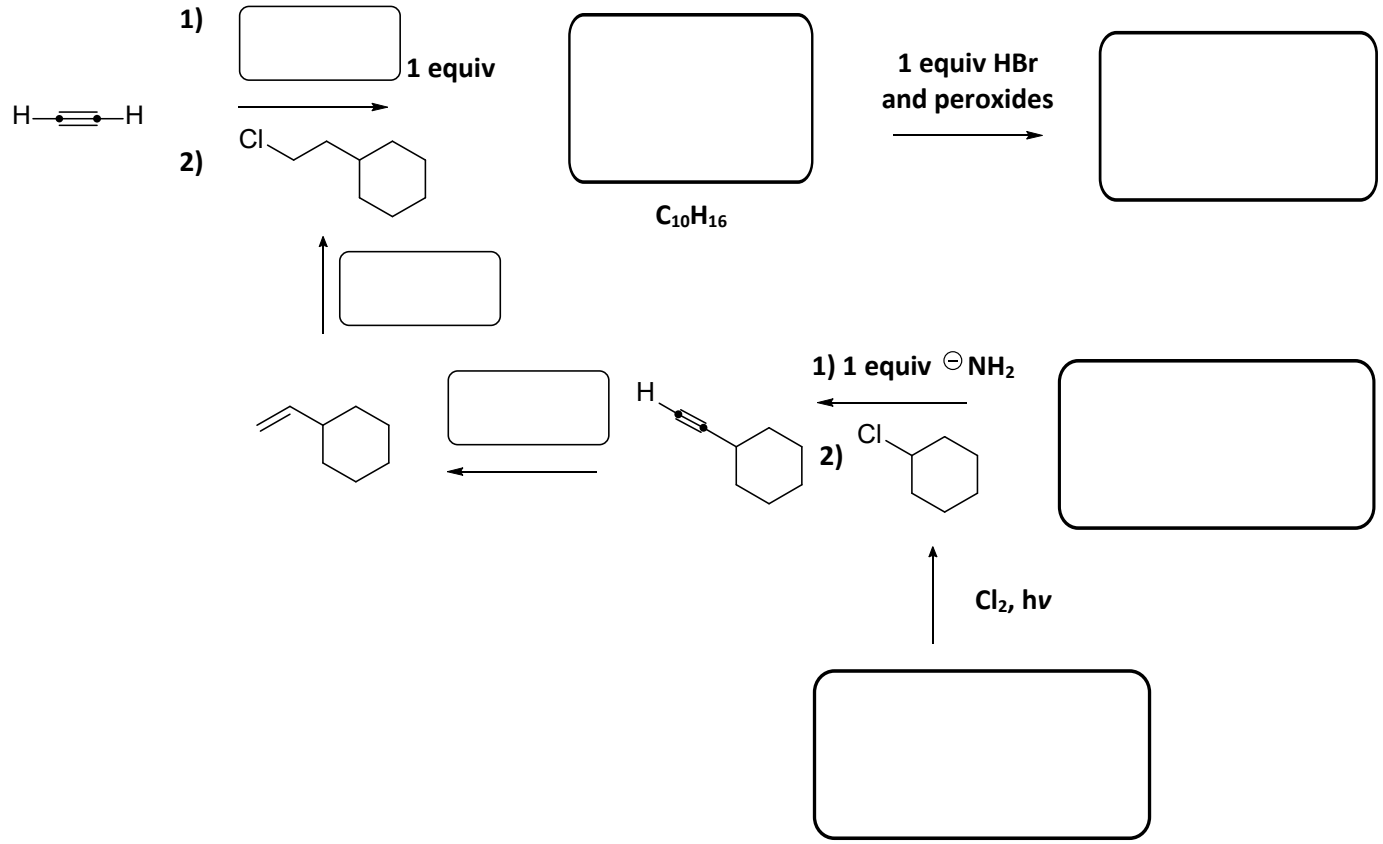
2. _____/16

3. _____/16

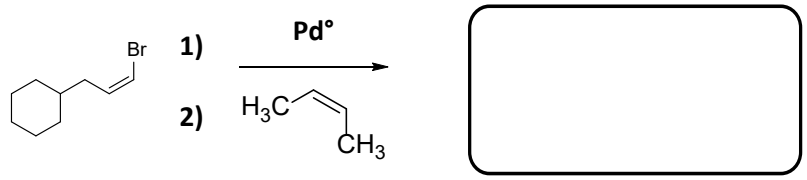
TOTAL:_____/ 51

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.

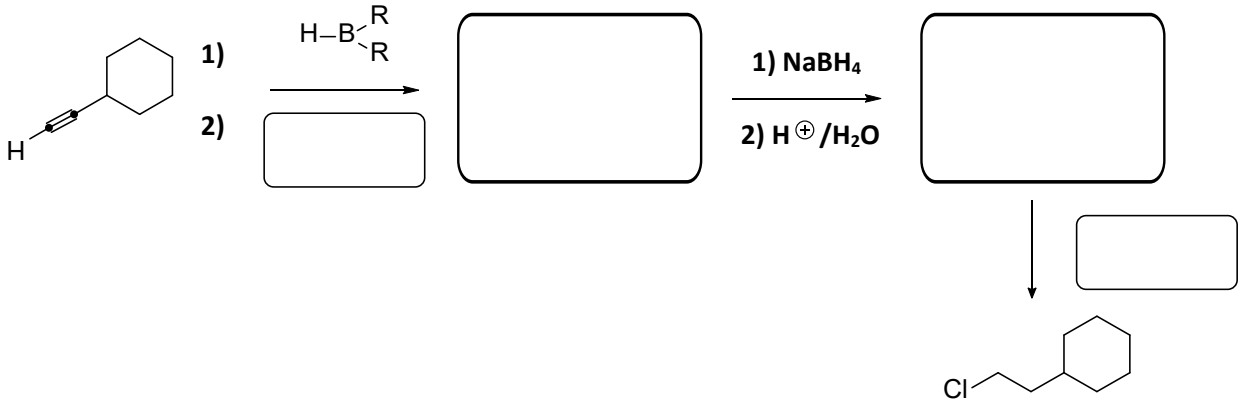
1) (11 pts)



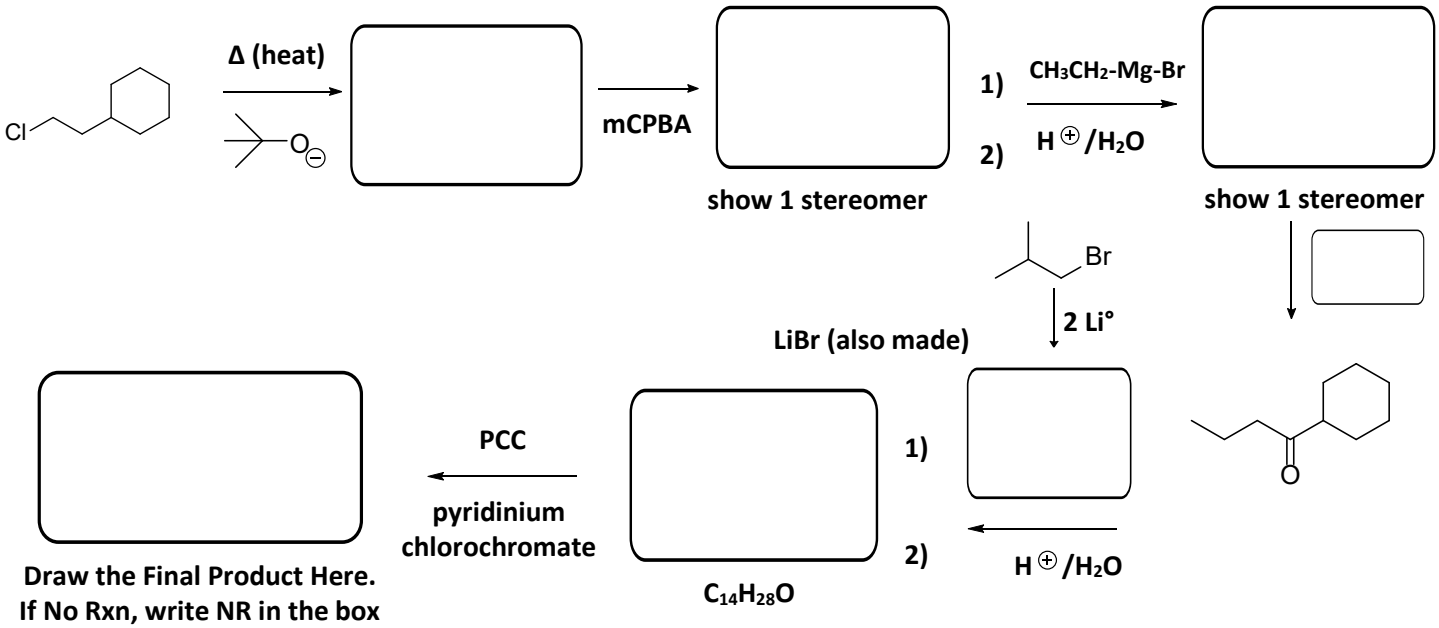
2) (2 pts)



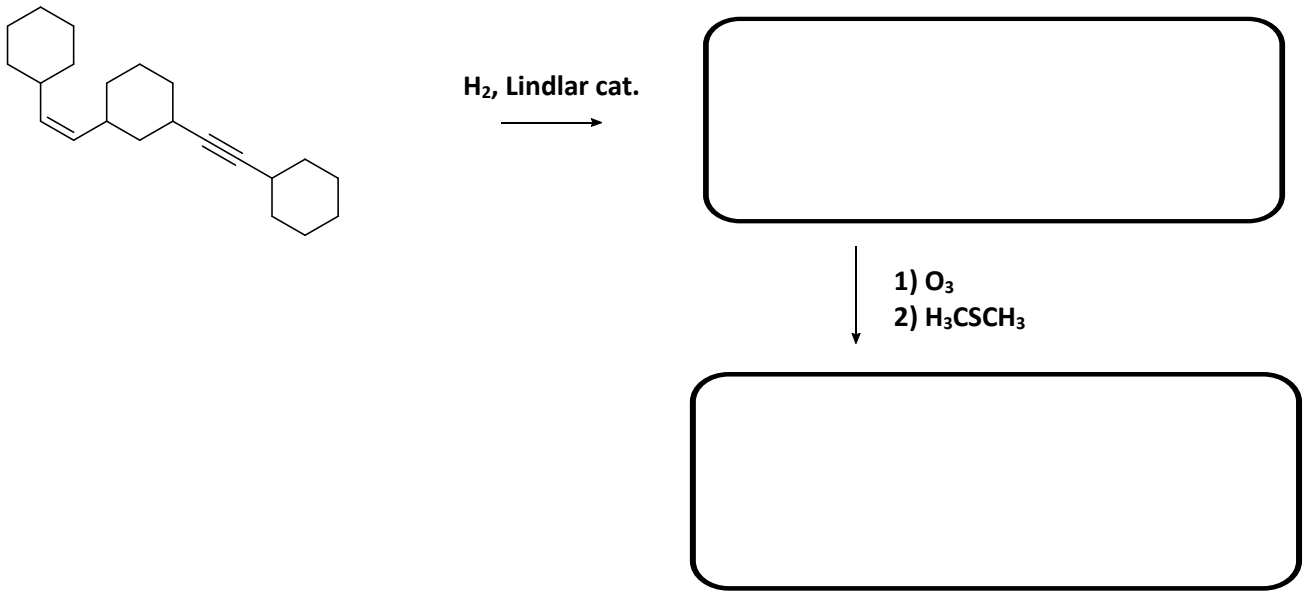
3) (6 pts)



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



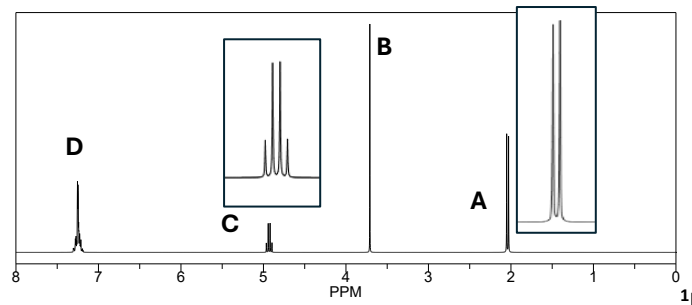
5) (3 pts)



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

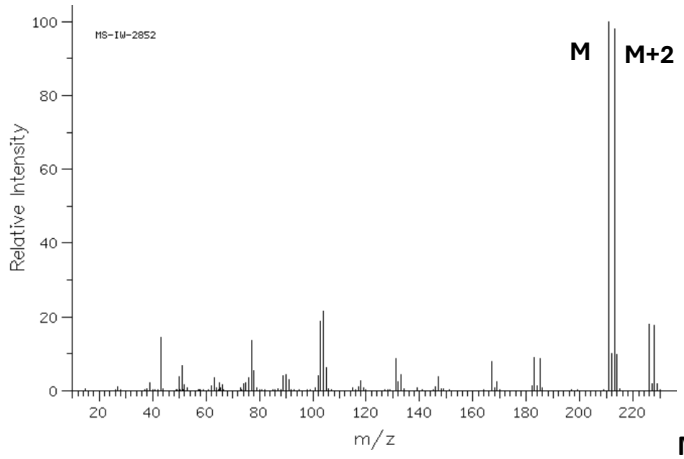
Circle Hs on Observed Grps
Draw attached groups

	Integral	that explain splitting
Signal A:	☐ H	
Signal B:	☐ H	
Signal C:	☐ H	
Signal D:	☐ H	



^{1}H NMR

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



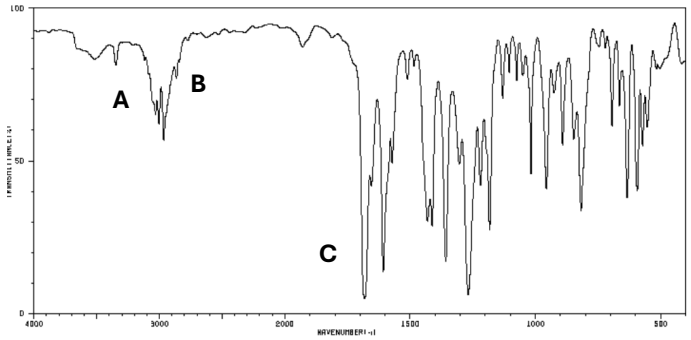
Mass Spec

IR Spectroscopy

A: ☐ **stretches**

B: ☐ **stretches**

C: ☐ **stretch**



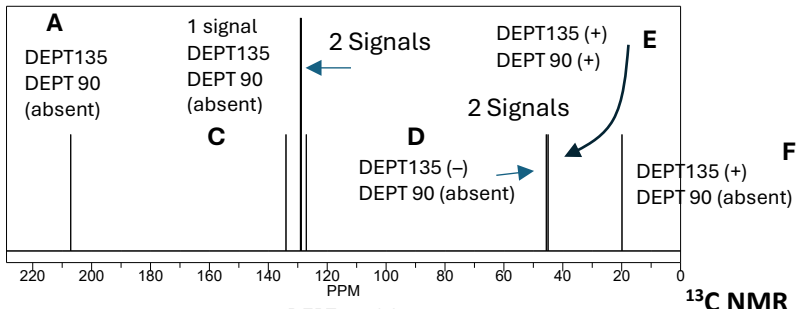
Infrared Spec

13C NMR

A: ☐ **D:** ☐

B: ☐ **X 3** **E:** ☐

C: ☐ **F:** ☐



^{13}C NMR

B DEPT135 (+)
DEPT 90 (+)
3 signals above

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

☐

☐

Structure