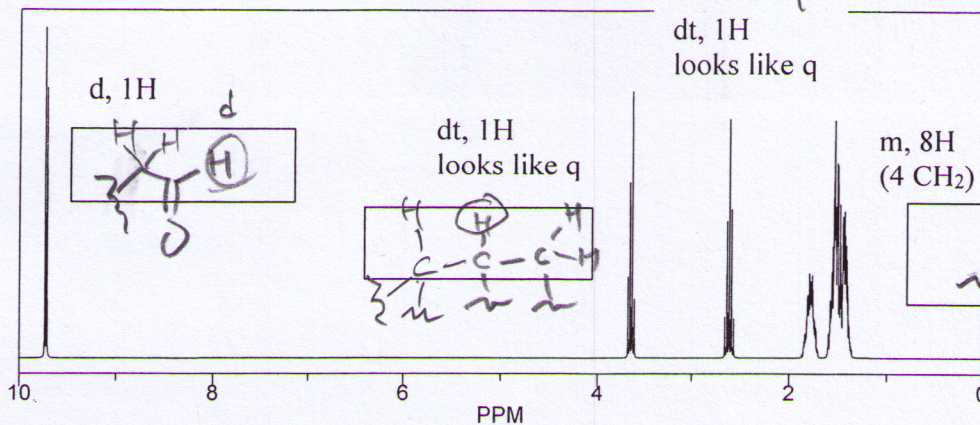
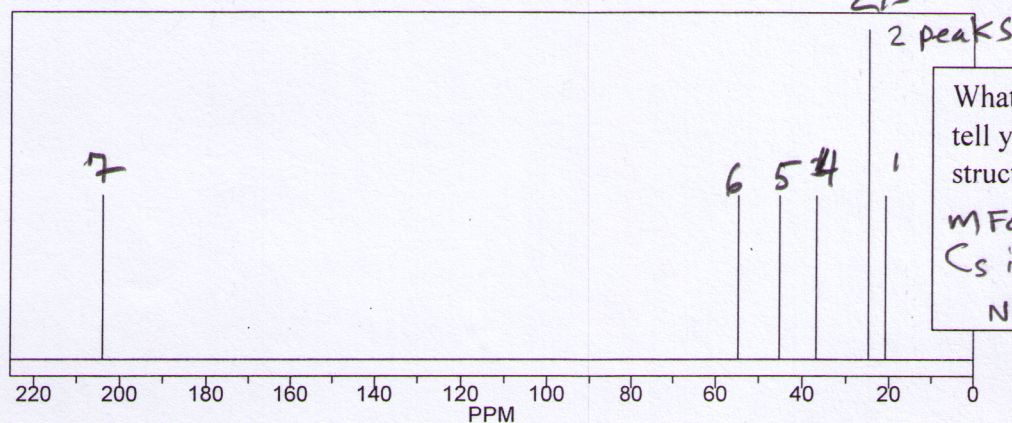


1H NMR

DOUS _____

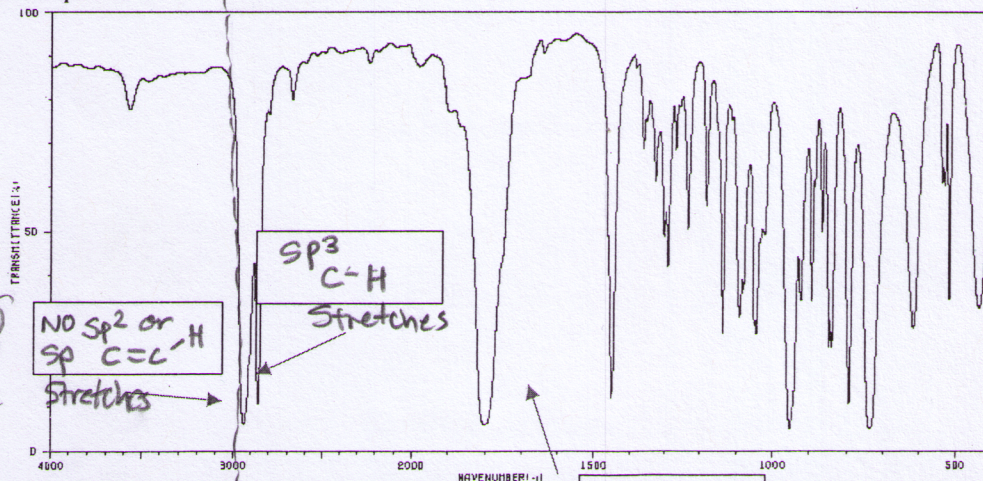


^{13}C NMR

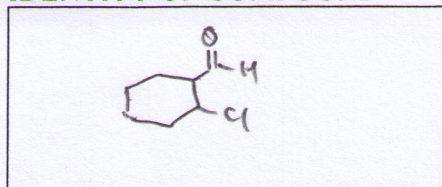


What does the ^{13}C NMR tell you about the structure? 7 C in formula a 7 unique Cs in ^{13}C NMR $\therefore$ NO symmetry

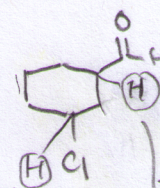
IR Spectrum



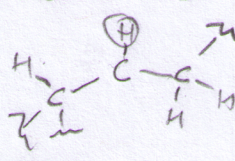
IDENTITY OF COMPOUND



1 DOUS

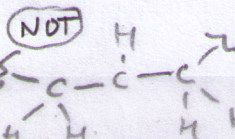


See 1H NMR



SHOULD BE THIS

MIS MATCH



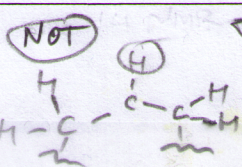
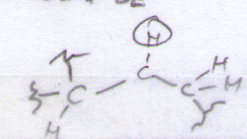
OKAY BUT

DOUS is not caused by π bond

NO sp^2 or sp C=C-H Stretches

sp^3 C-H Stretches

SHOULD BE



This is

Doublet of doublets that looks like a triplet

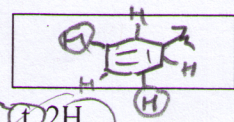
C_8H_8O
1H NMR

DOUS 5

C_8H_8
 $-C_8H_8$

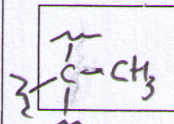
$$H_{10} \cdot \frac{1 \text{ DOUS}}{H_2} = 5 \text{ DOUS}$$

Table suggest Aromatic Ring



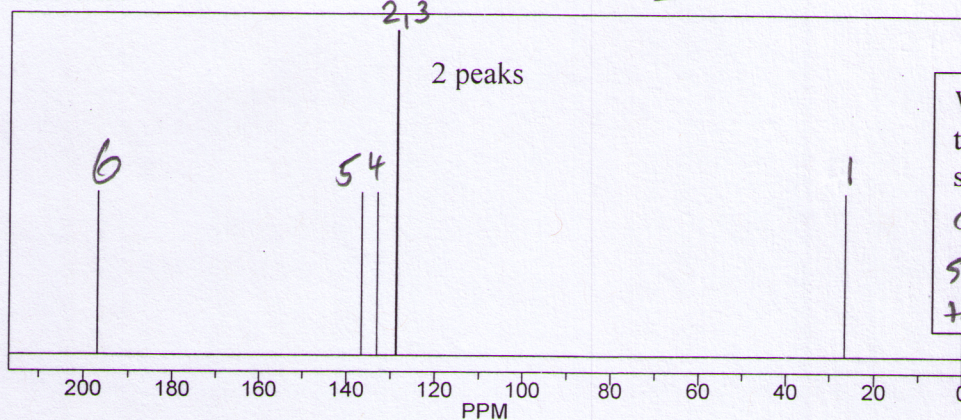
4 DOUS

s, 3H likely



13C NMR

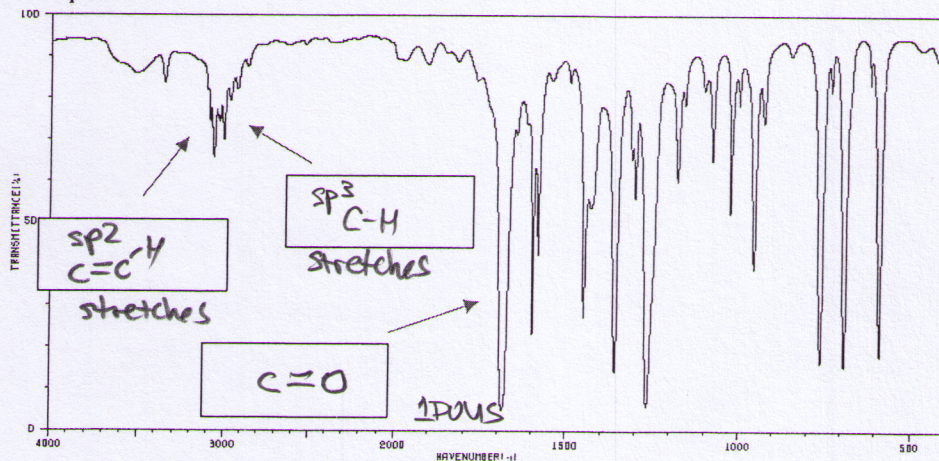
5H $\therefore$ monosubstituted ring



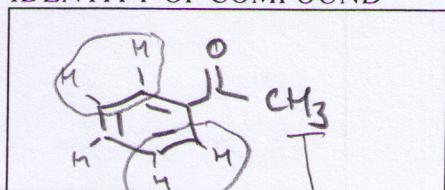
2 peaks

What does the ^{13}C NMR tell you about the structure? 6 C in ^{13}C NMR compared to 8 in MForm suggest 2 C are related to 2 others by symmetry

IR Spectrum



IDENTITY OF COMPOUND

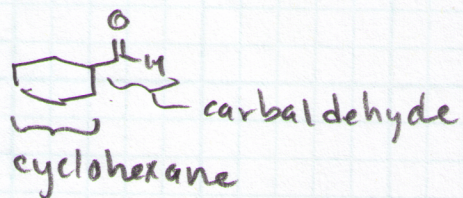


s, 3H

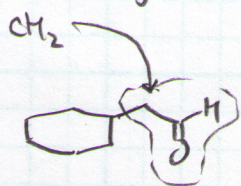
Symmetry

NOTE :

Naming
when $\text{R}-\text{CHO}$ is attached directly to a ring, use carbaldehyde



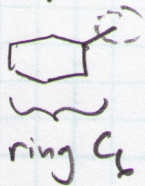
cyclohexanecarbaldehyde
one word



name as ethanal w/ cyclohexyl substituent

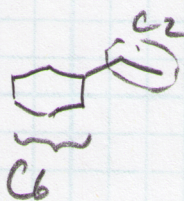
2-cyclohexylethanal

compare



substituent C_1

$\text{C}_6 > \text{C}_1 \therefore$ name as
cyclohexane
methylcyclohexane



$\text{C}_6 > \text{C}_2$
ethylcyclohexane

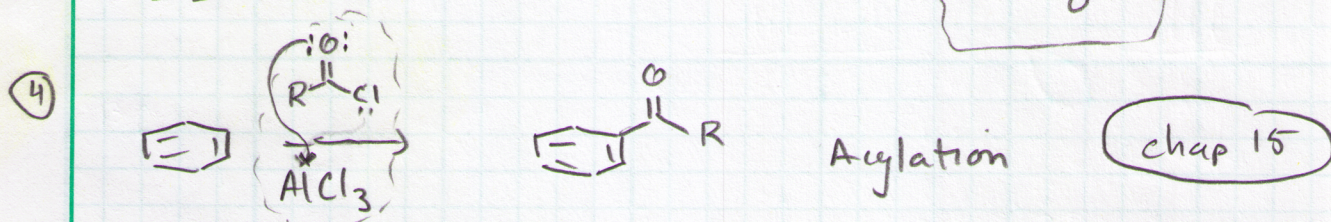
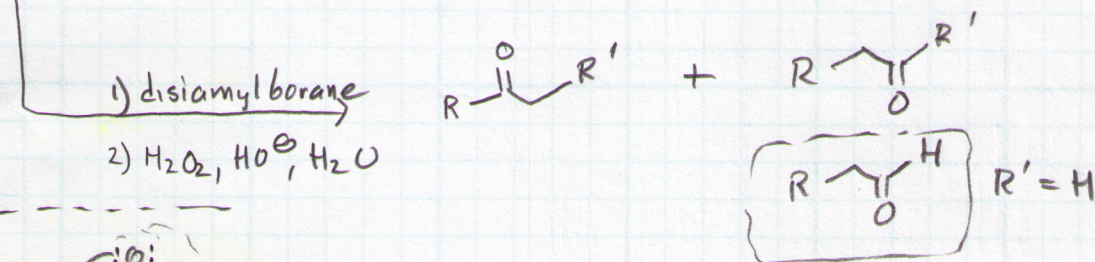
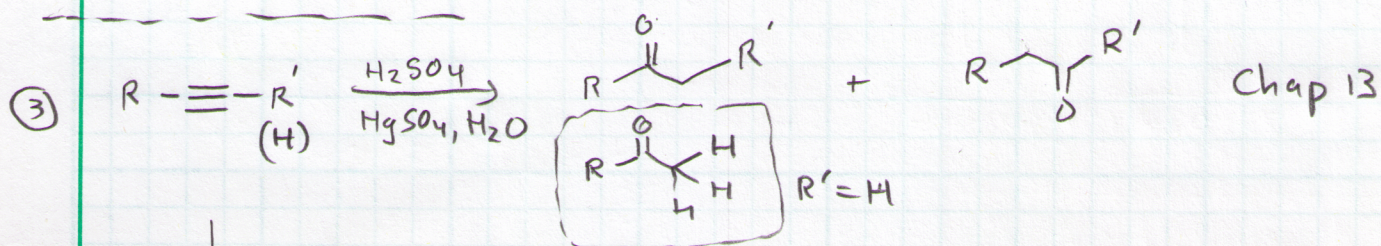
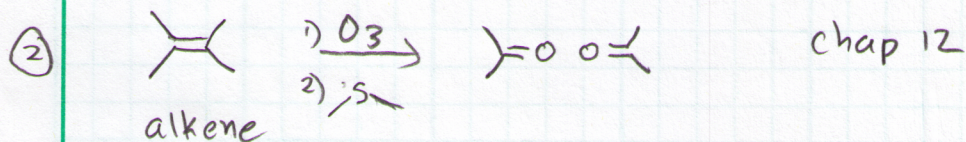
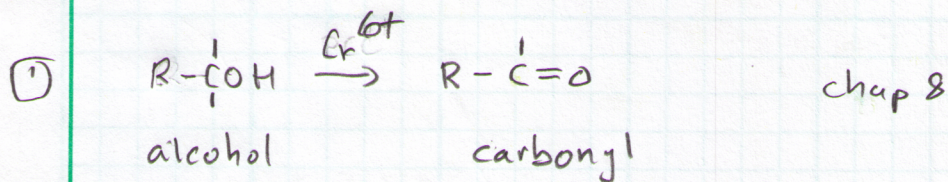
BUT



3-cyclohexylpropanal

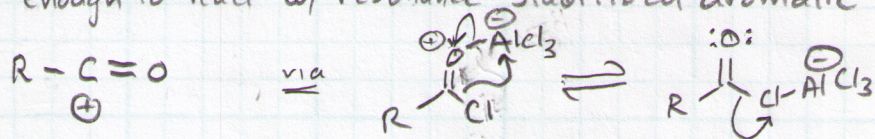
Preparation of Aldehydes/Ketones

Remember Chap 8? YES, OF COURSE!

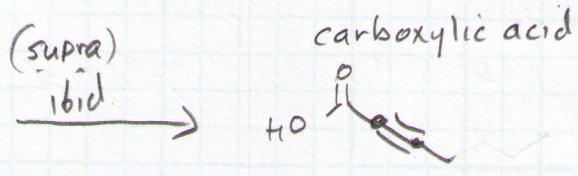
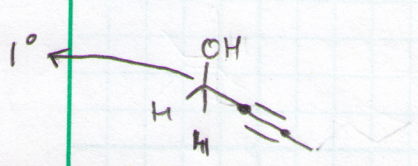
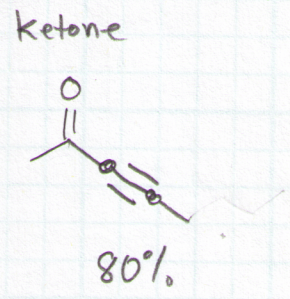
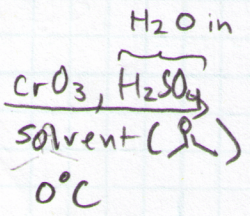
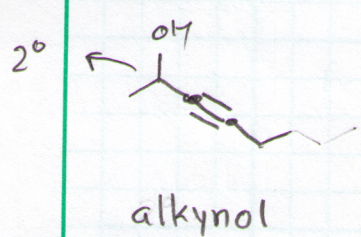


makes reactive intermediate -

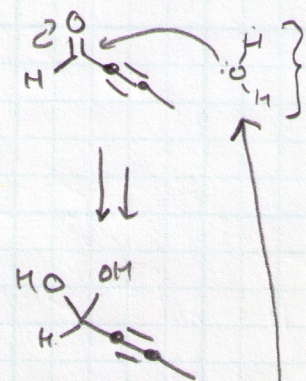
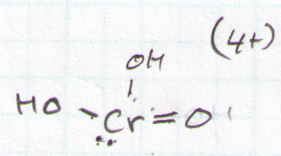
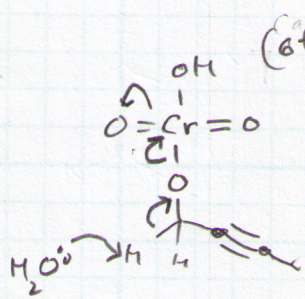
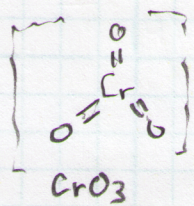
reactive enough to react w/ resonance stabilized aromatic



Review

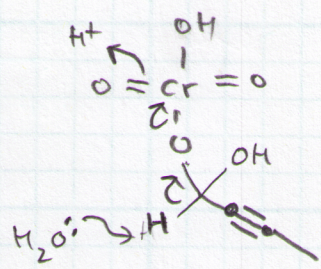
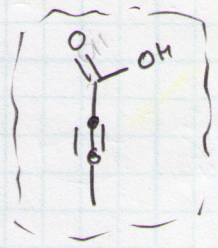


Mechanism in brief

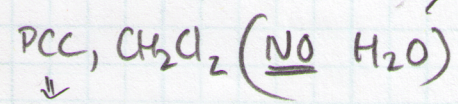


THIS IS KEY IN OVER RAN

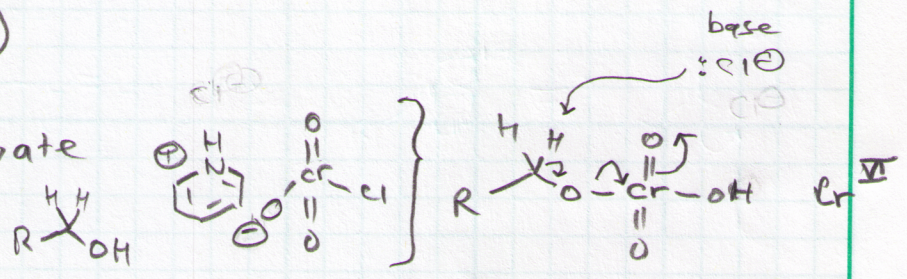
OVEROXIDIZED



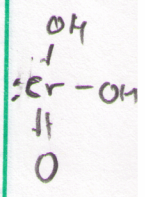
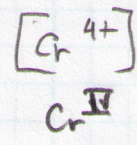
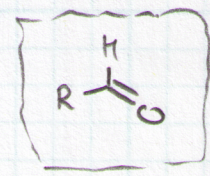
WON'T HAPPEN!



pyridinium chlorochromate

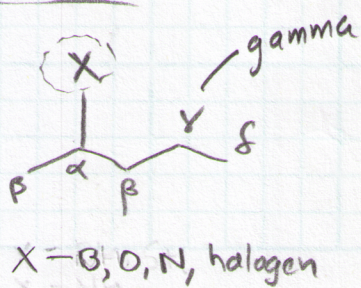
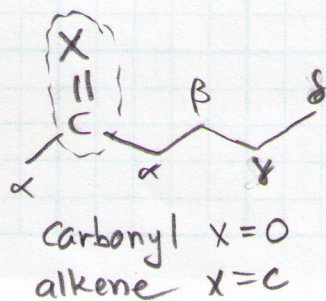
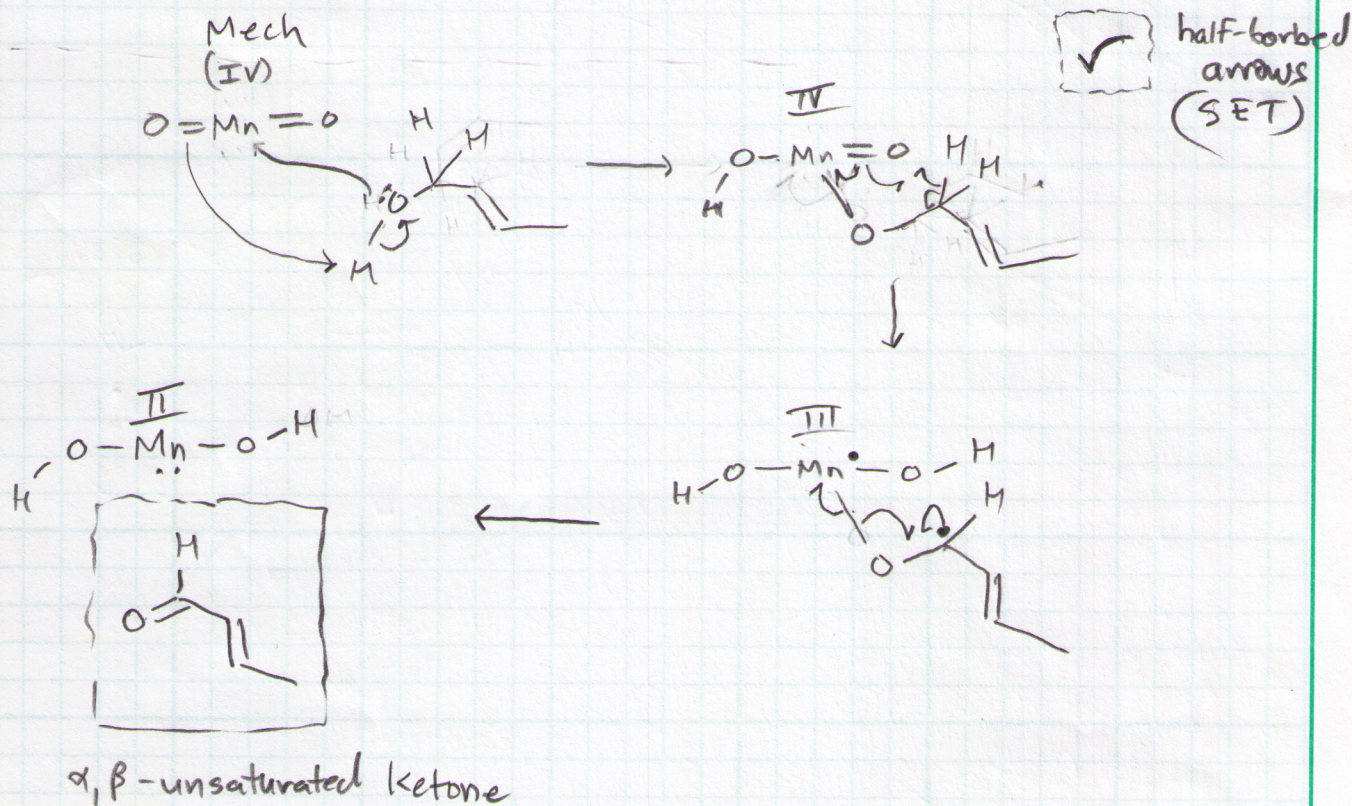
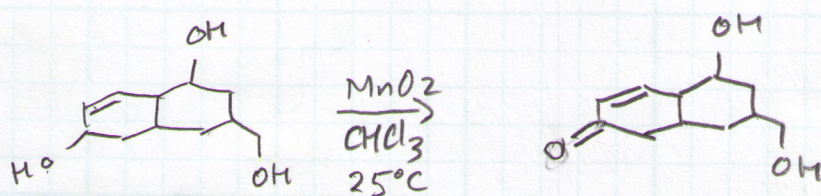
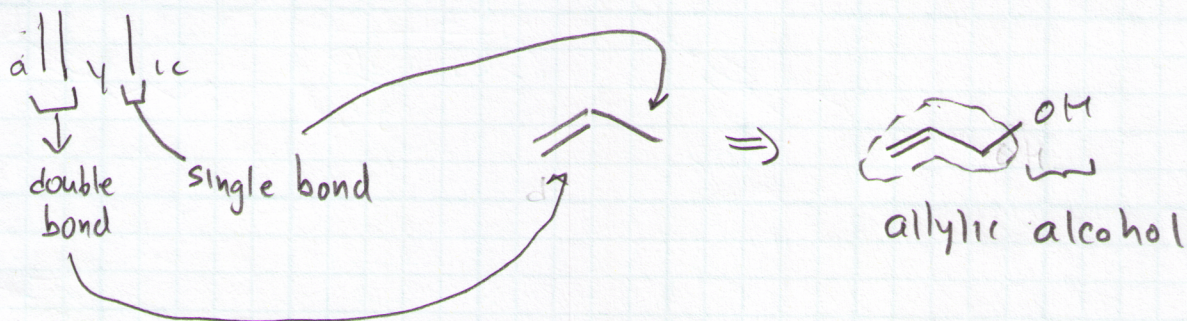


STOPS HERE:



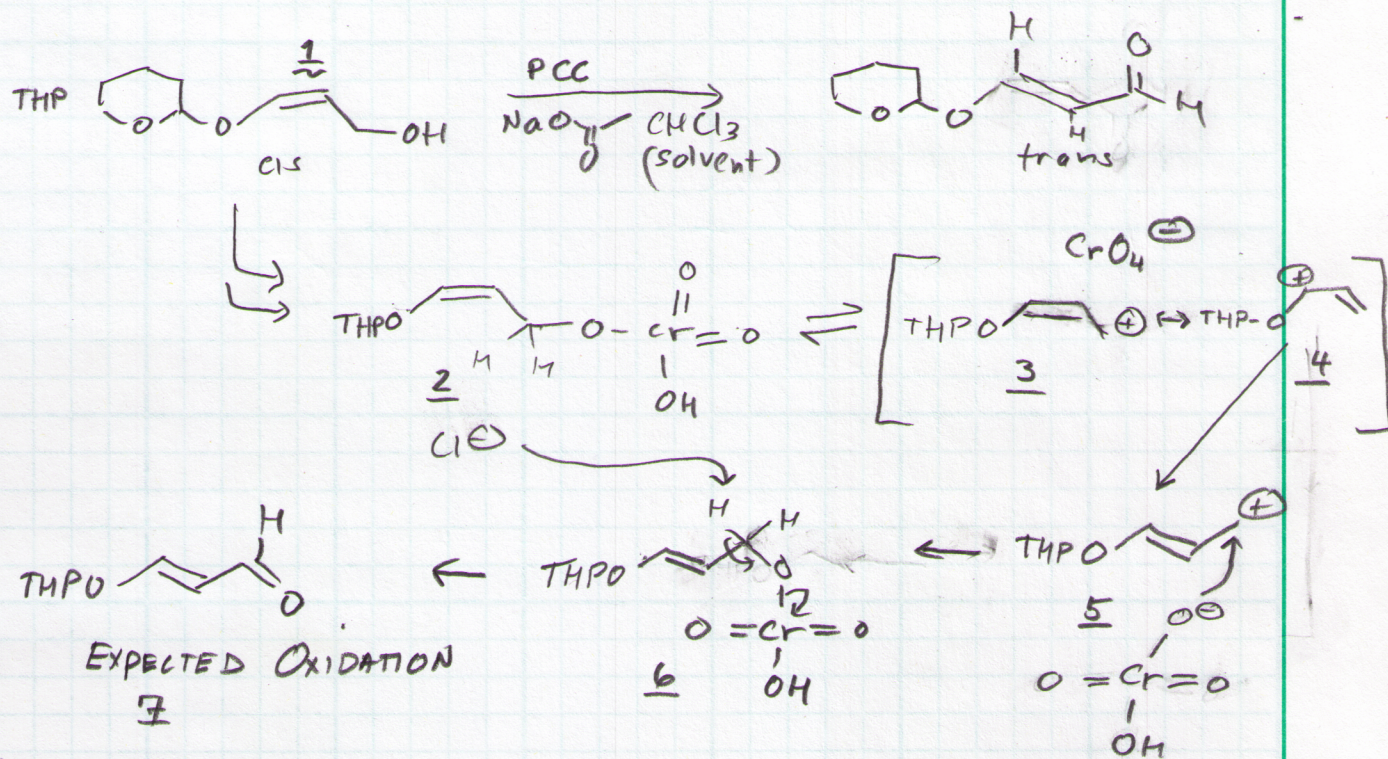
Manganese dioxide (MnO_2)

-oxidizes allylic alcohols not 1° or 2° alkanols



A question after class pertained to whether PCC could be used to oxidize an allylic alcohol like MnO_2 . My intuition, in the moment, was that $\text{C}=\text{C}$ rearr could occur

Ans. yes, some times but not all the time



REARRANGEMENT IS POSSIBLE (3,3 sigmatropic rearr)

From Cpd 6 above

