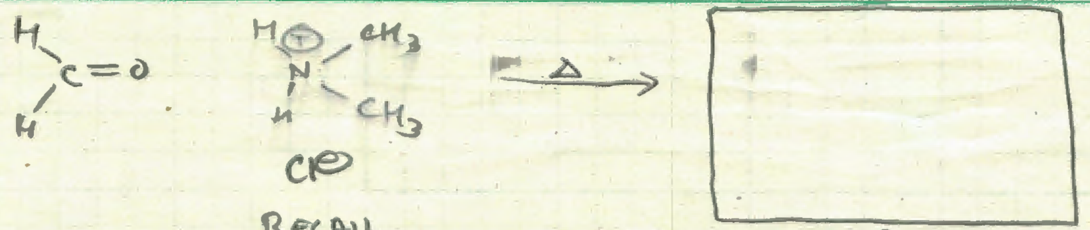
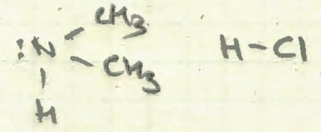
Review



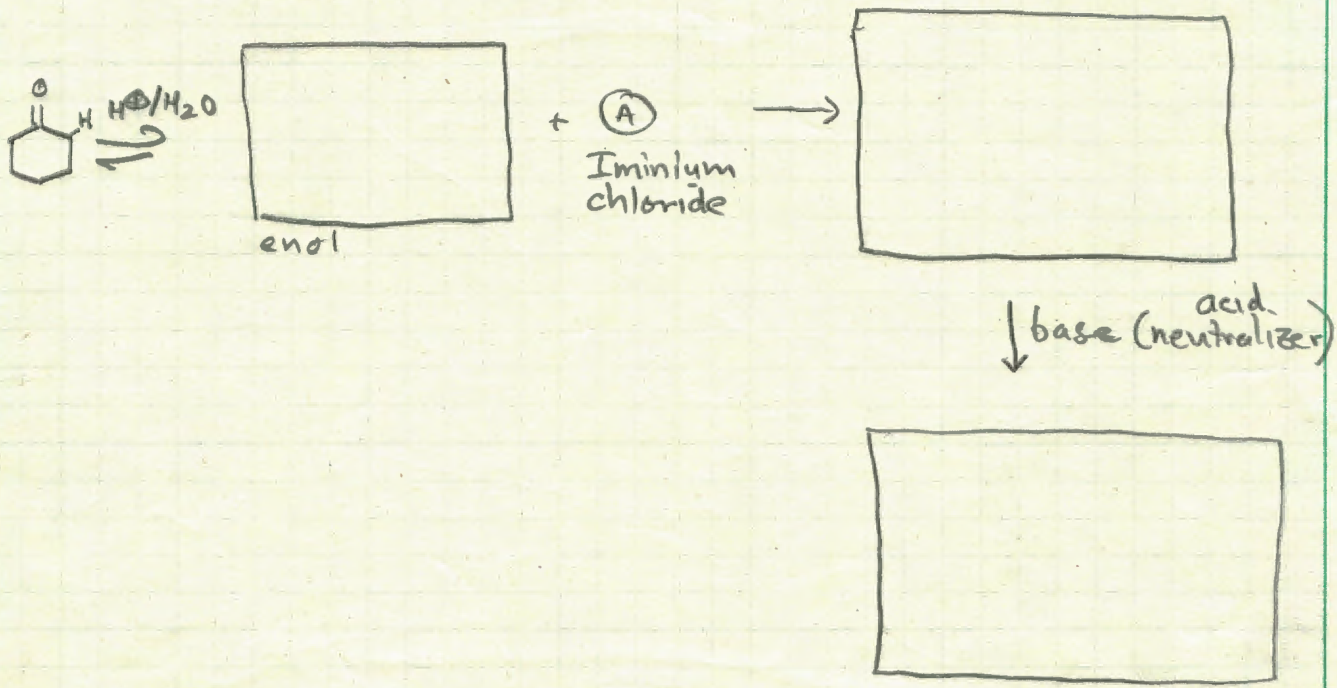
Ⓐ

RECALL
1L equilibrium

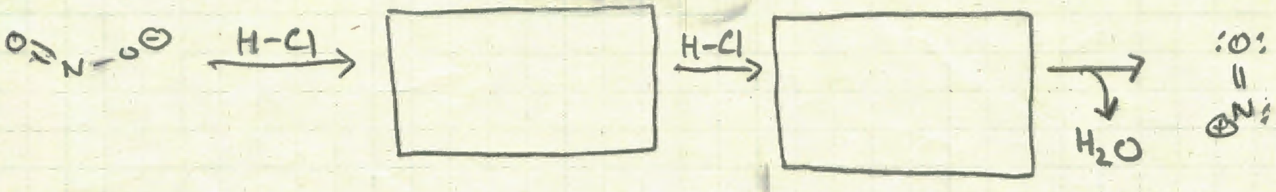
Mannich

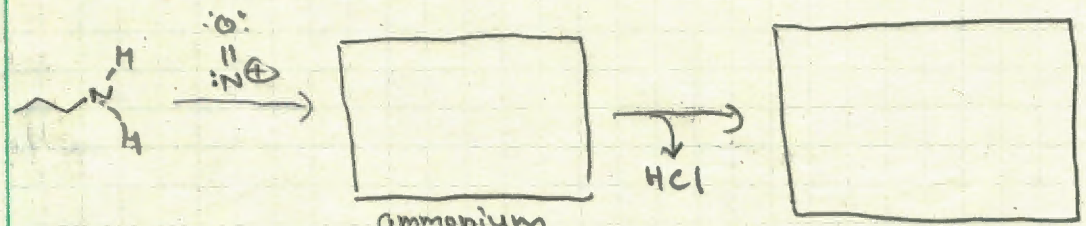


HINT



neutral compound





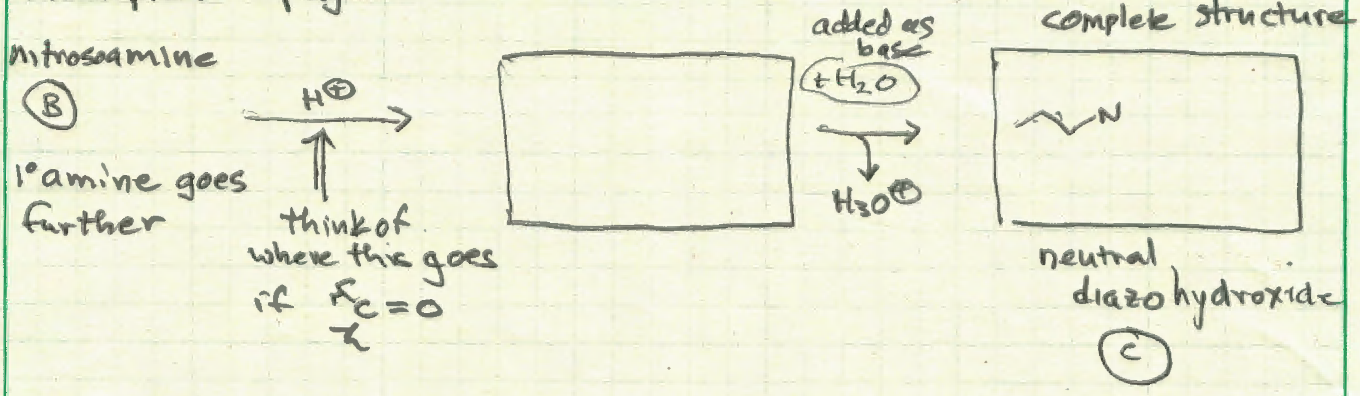
ammonium cation chloride salt

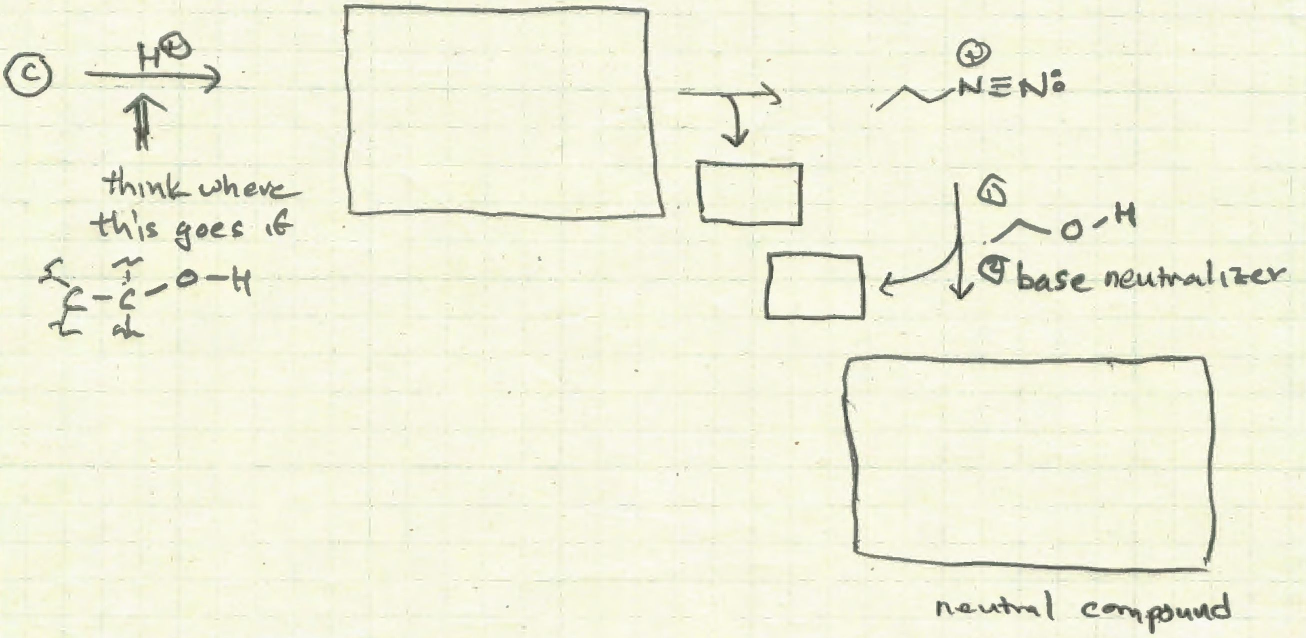
a nitrosoamine

Ⓑ

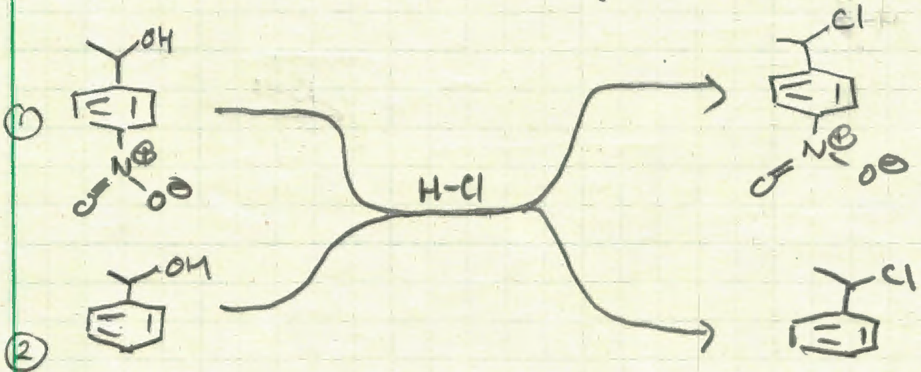
a 2° amine would stop here

From previous page



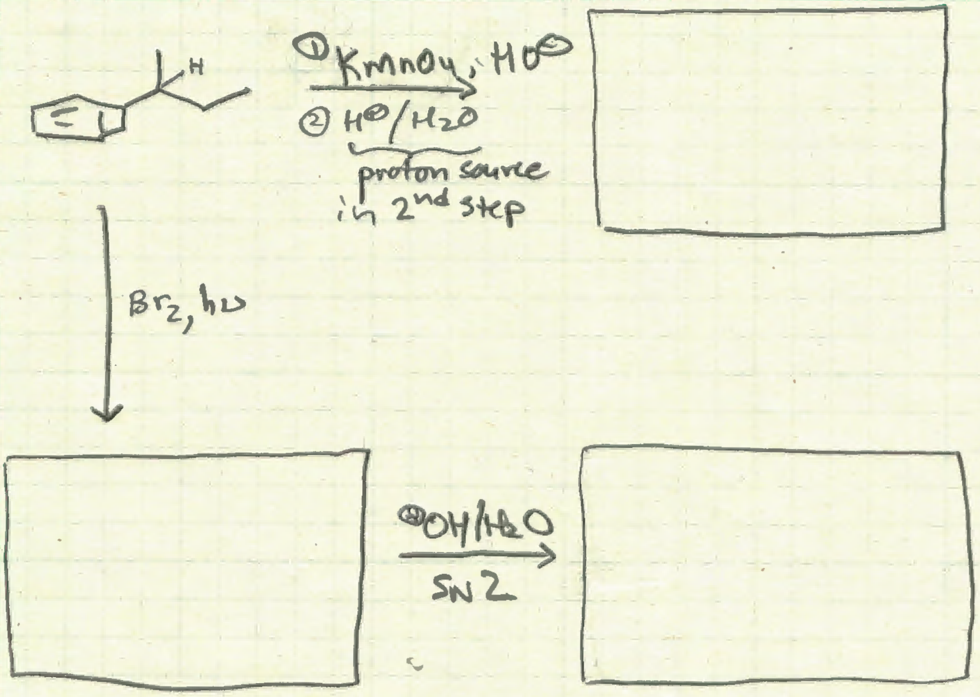


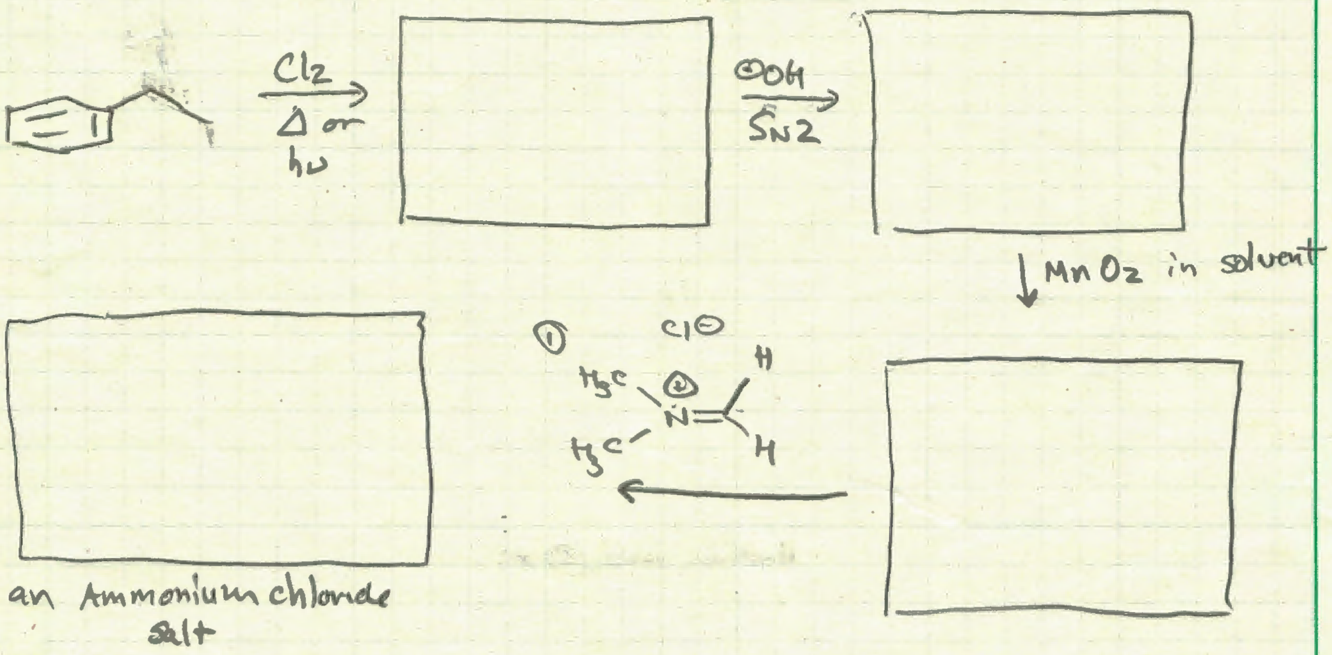
which Rxn is Faster and why?



why? be specific

describe the specific electronic property that supports your answer

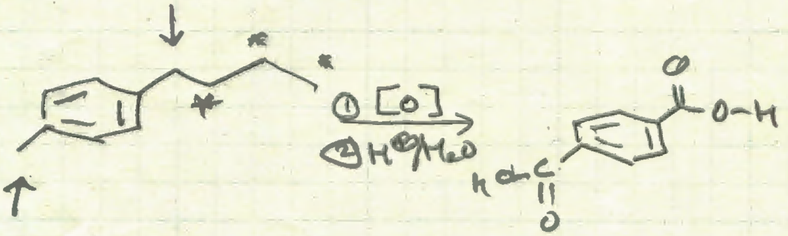

H
① KMnO4, HO⊖
② H⊕/H2O
proton source in 2nd step
Br2, hν
⊖OH/H2O
SN2

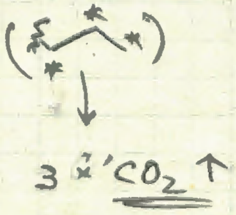

Cl2
Δ or hν
⊖OH
SN2
MnO2 in solvent
①
Cl⊖
H3C
⊕
N
H
H3C
H
an Ammonium chloride salt

oxidation at benzylic sites with strong oxidants

$KMnO_4$, $HO^{\ominus}$, Δ

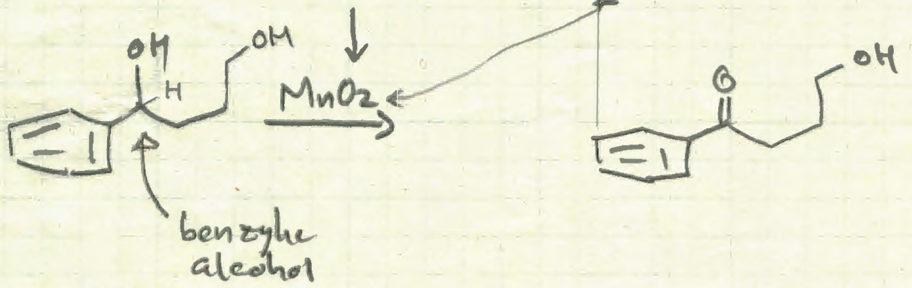
$NaCr_2O_4$



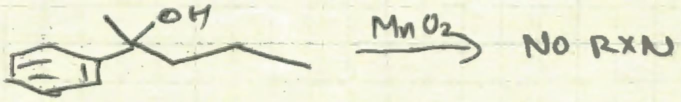


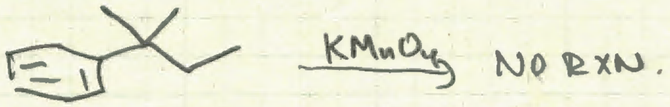
via radical oxidath steps and [MnO]$_n$ addn.

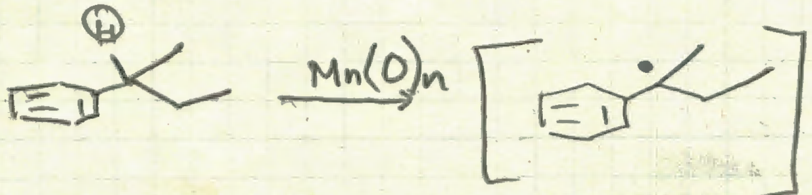
milder vs $MnO_4^{\ominus}$



NOTE: these oxidatn Rxns need AT LEAST 1 H ON THE BENZYLIC C.





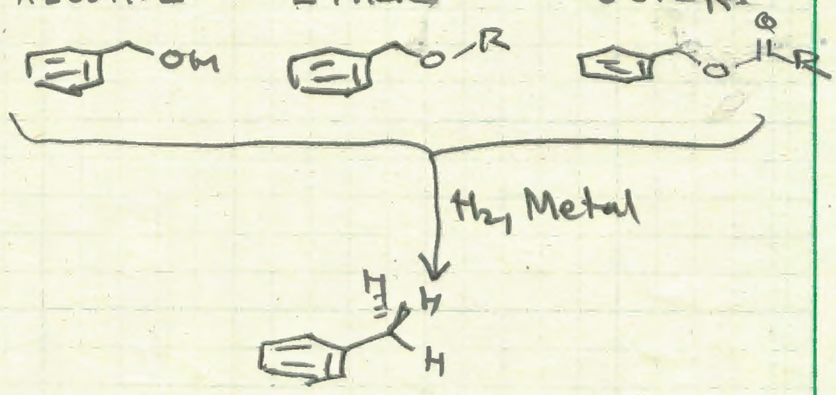


RADICAL INTERMEDIATE STARTS REDOX SEQUENCE

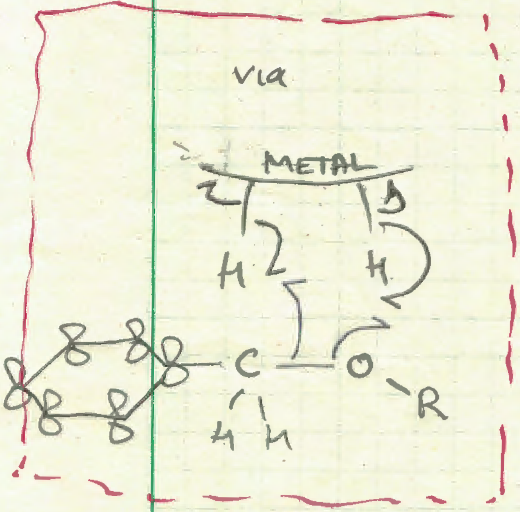
↓

Reduction/Oxidatn

Reduction of BENZYLIC ALCOHOL ETHERS ESTERS



via



convert

① What is lost?
one carbon

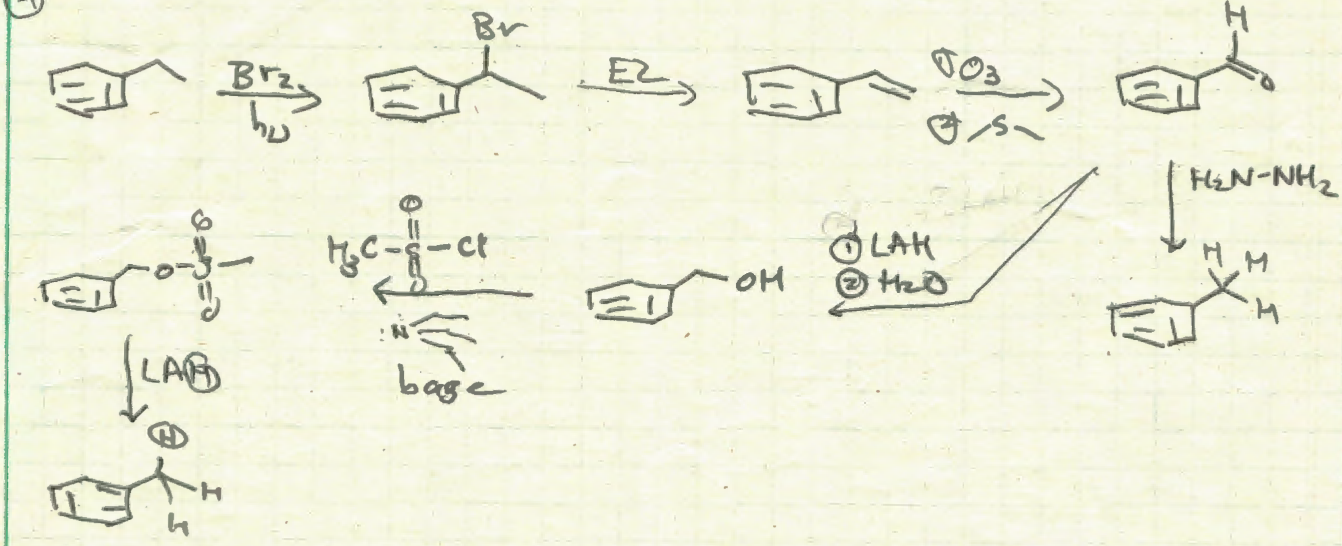
② What are some ways to do
C–C bond cleavage?

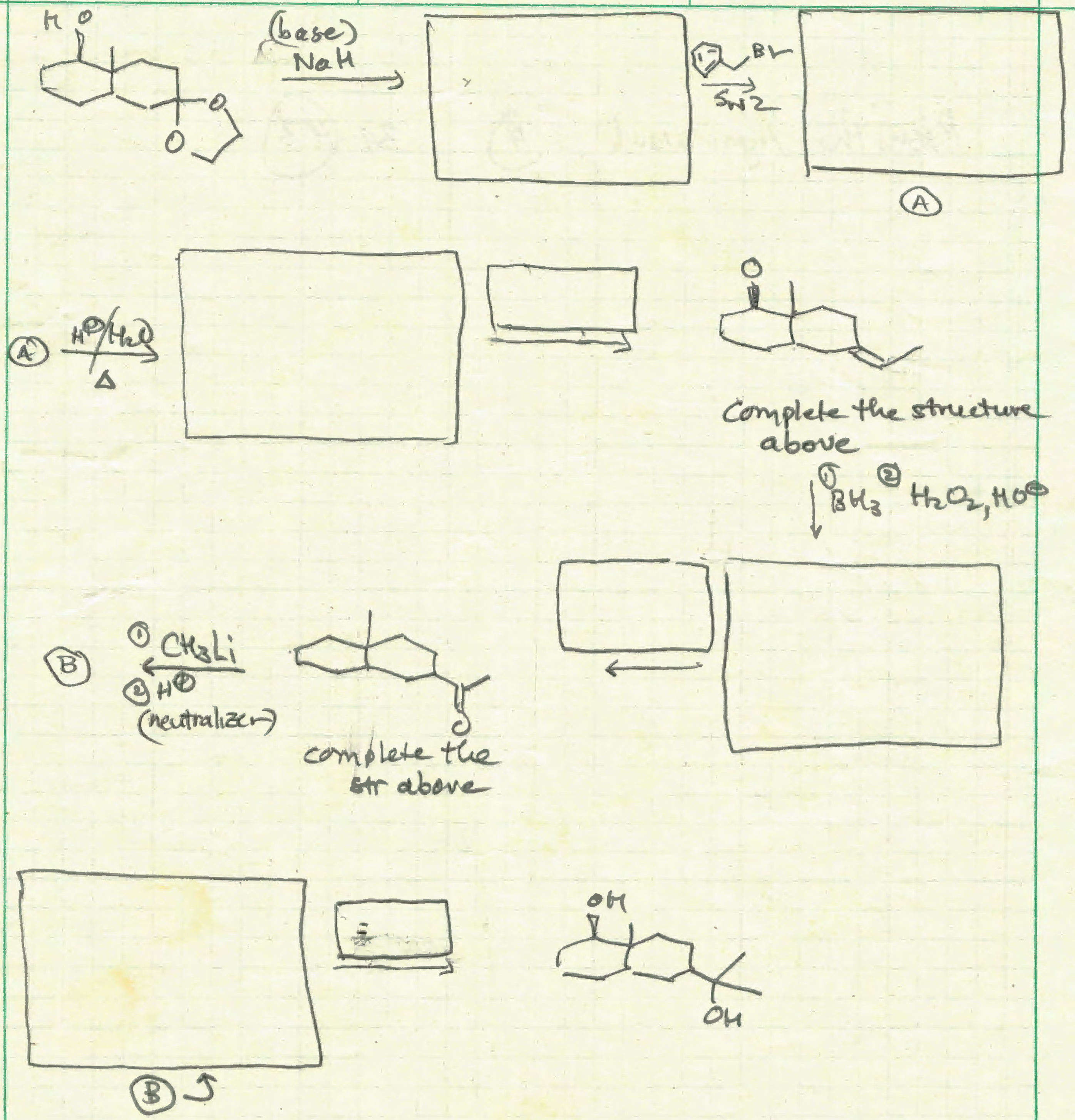
Ⓐ ① O_3, Zn ② /S\

OR

Ⓑ $KMnO_4$, $HO^{\ominus}$

Ⓐ





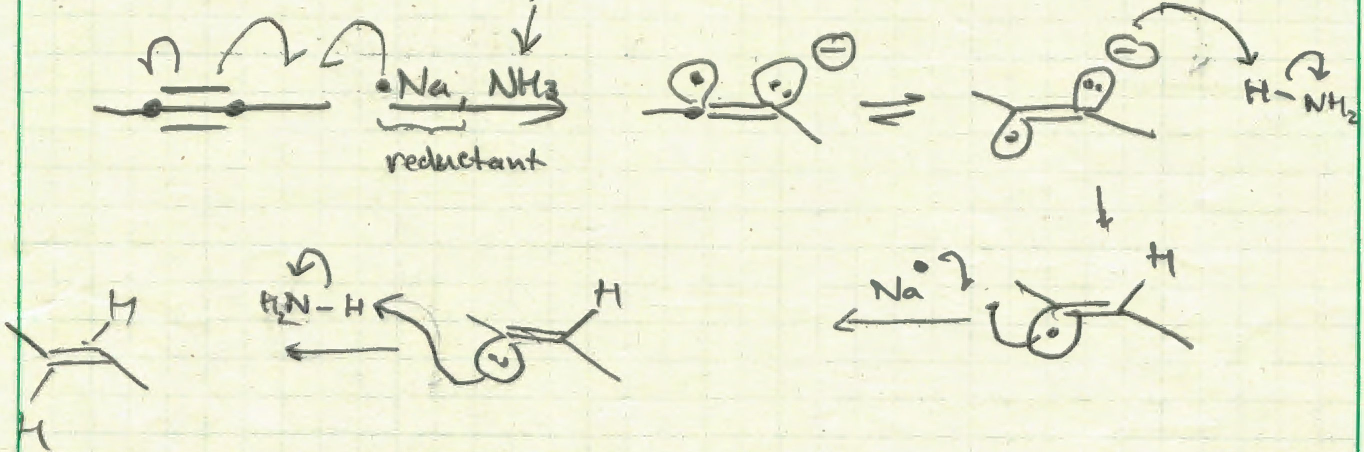
Complete the structure above

complete the str above

Birch Reduction of an Aromatic RING

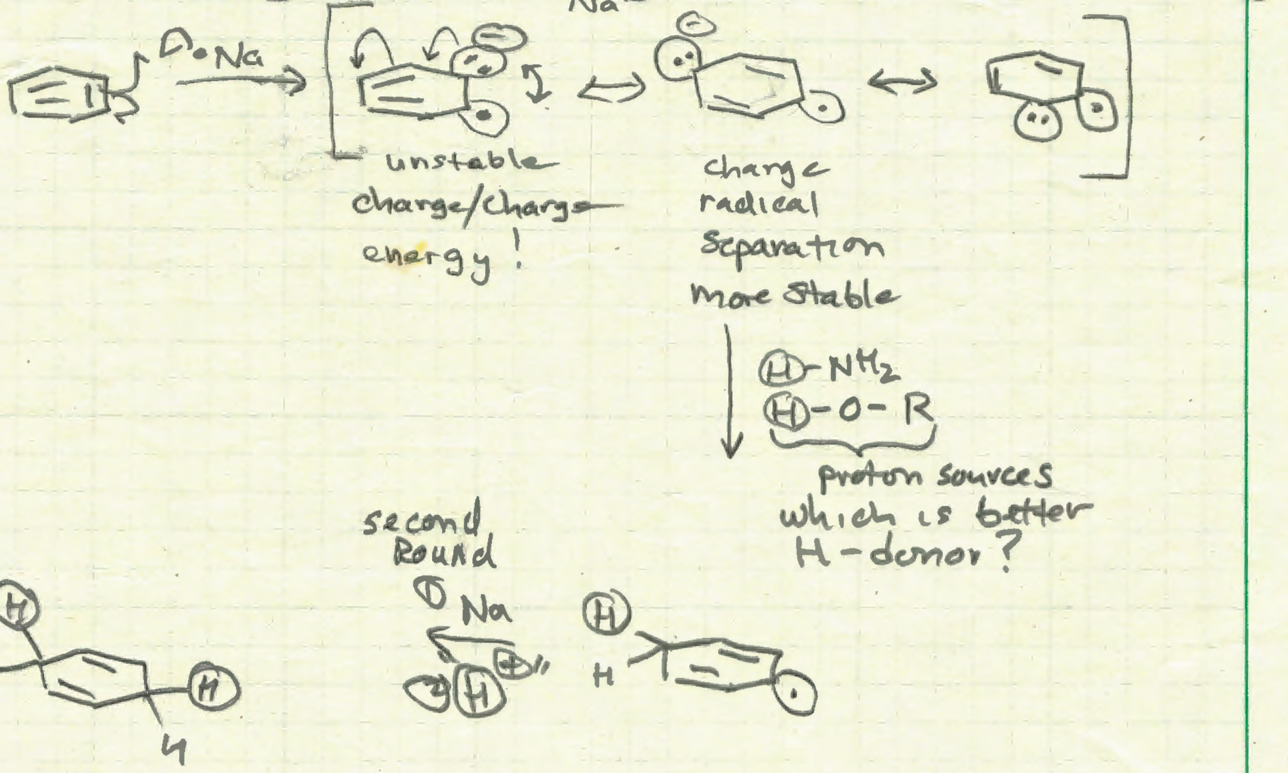
Recall

proton source!



Birch (Na, $\overset{H-O-R}{NH_3}$)

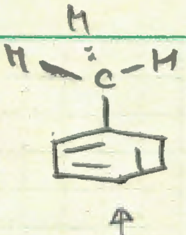
① ② ③ similar to ①



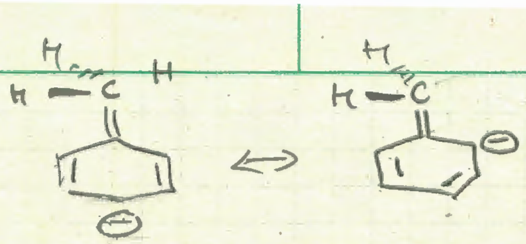
unstable charge/charge energy!

charge radical separation more stable

proton sources which is better H-donor?

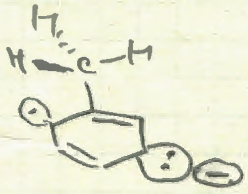


hyperconjugation

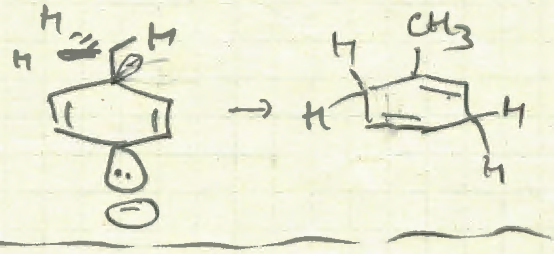


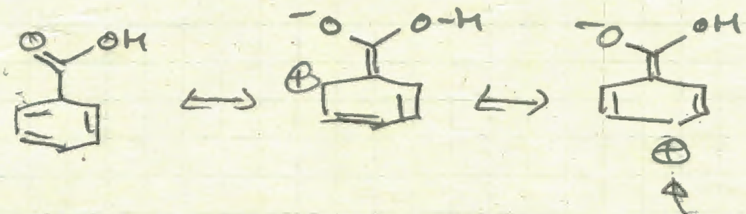
Birch anion will NOT Form here because ⌇CH$_3$ is an ortho/para director placing (−) chrg here

via

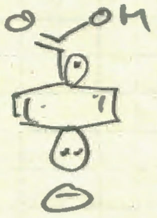


preferred over

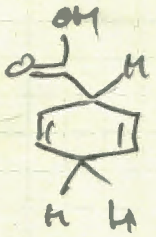




(−) chrg favorable posits here!



preferred ∴



90% Birch product