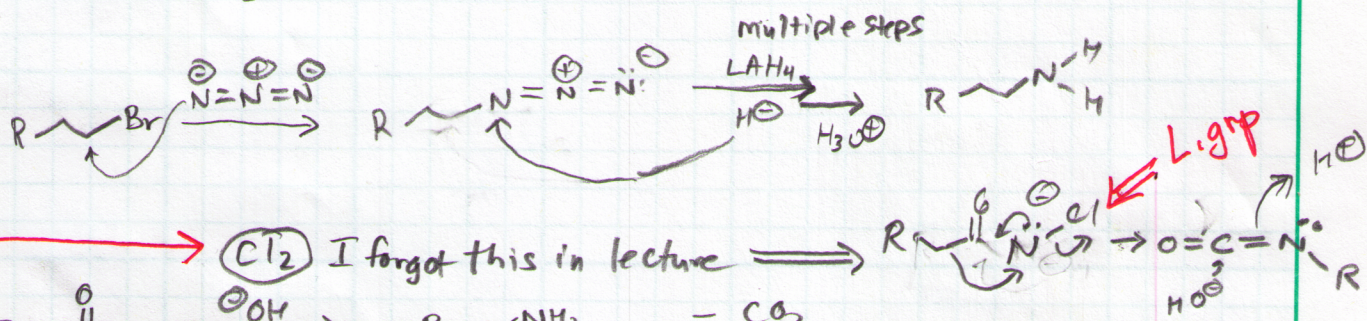
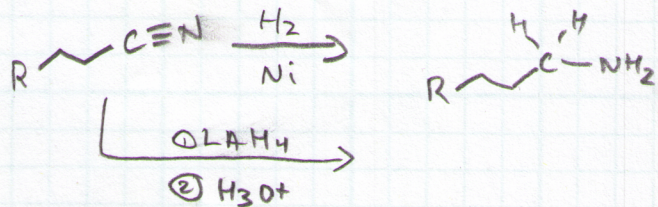
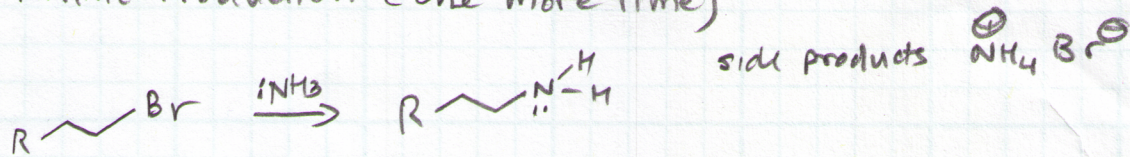


Amine Production (one more time)

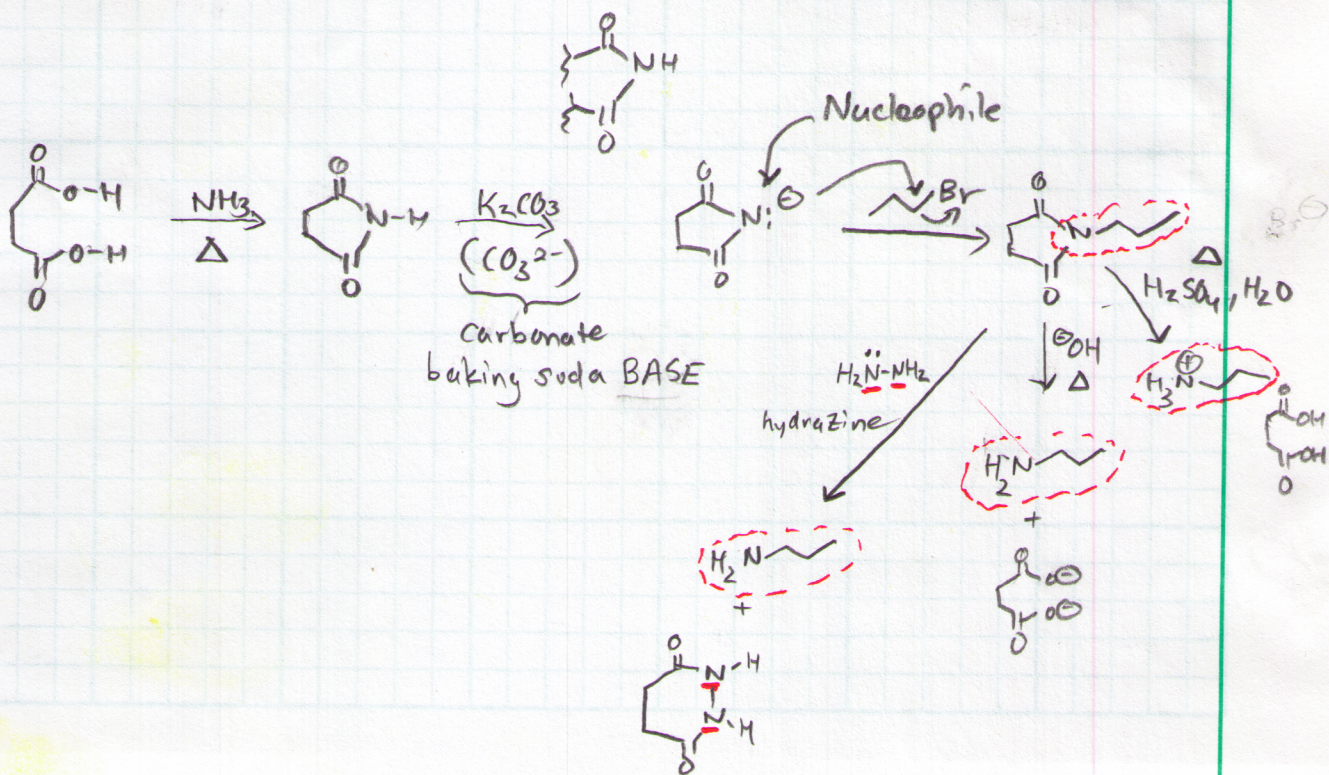


Cl_2 I forgot this in lecture \Rightarrow $R-CH_2-CH_2-COCl \xrightarrow{NH_3} R-CH_2-CH_2-CO-NH_2 \xrightarrow{H_2O} R-CH_2-CH_2-NH_2 + CO_2$
 - CO_2 by product loss of this gas drives rxn

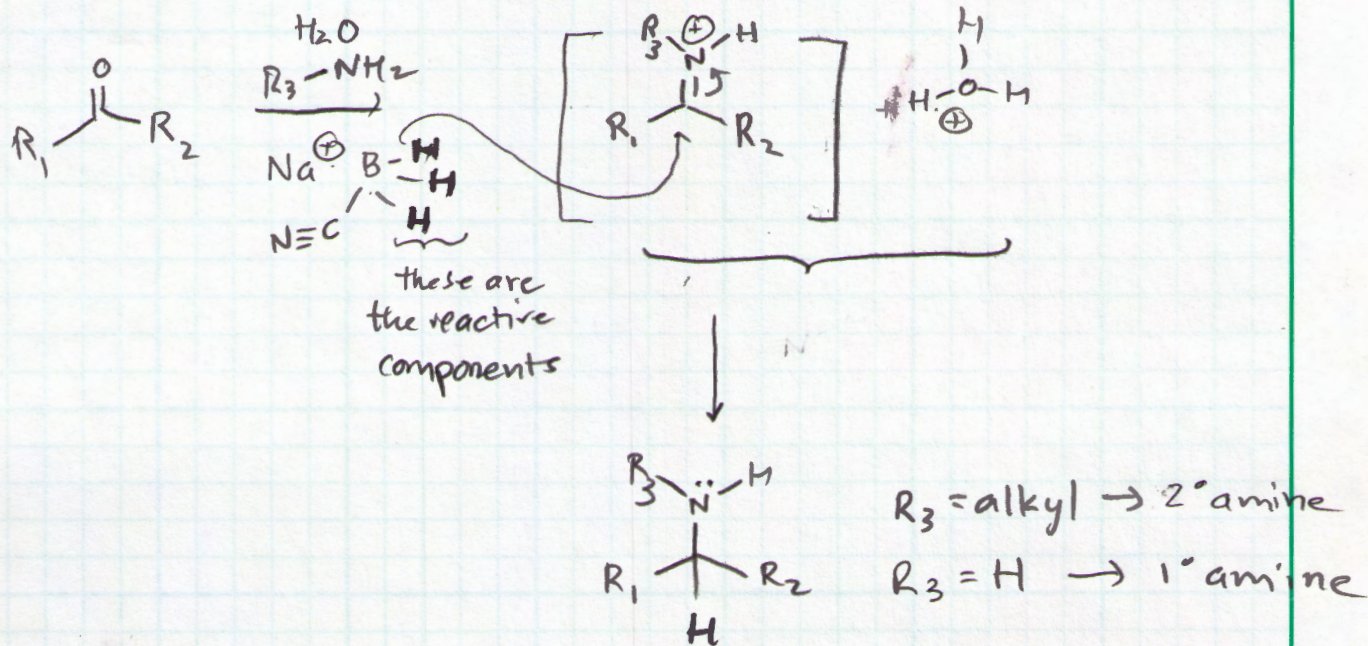
Hoffman Rearr

Gabriel Synthesis

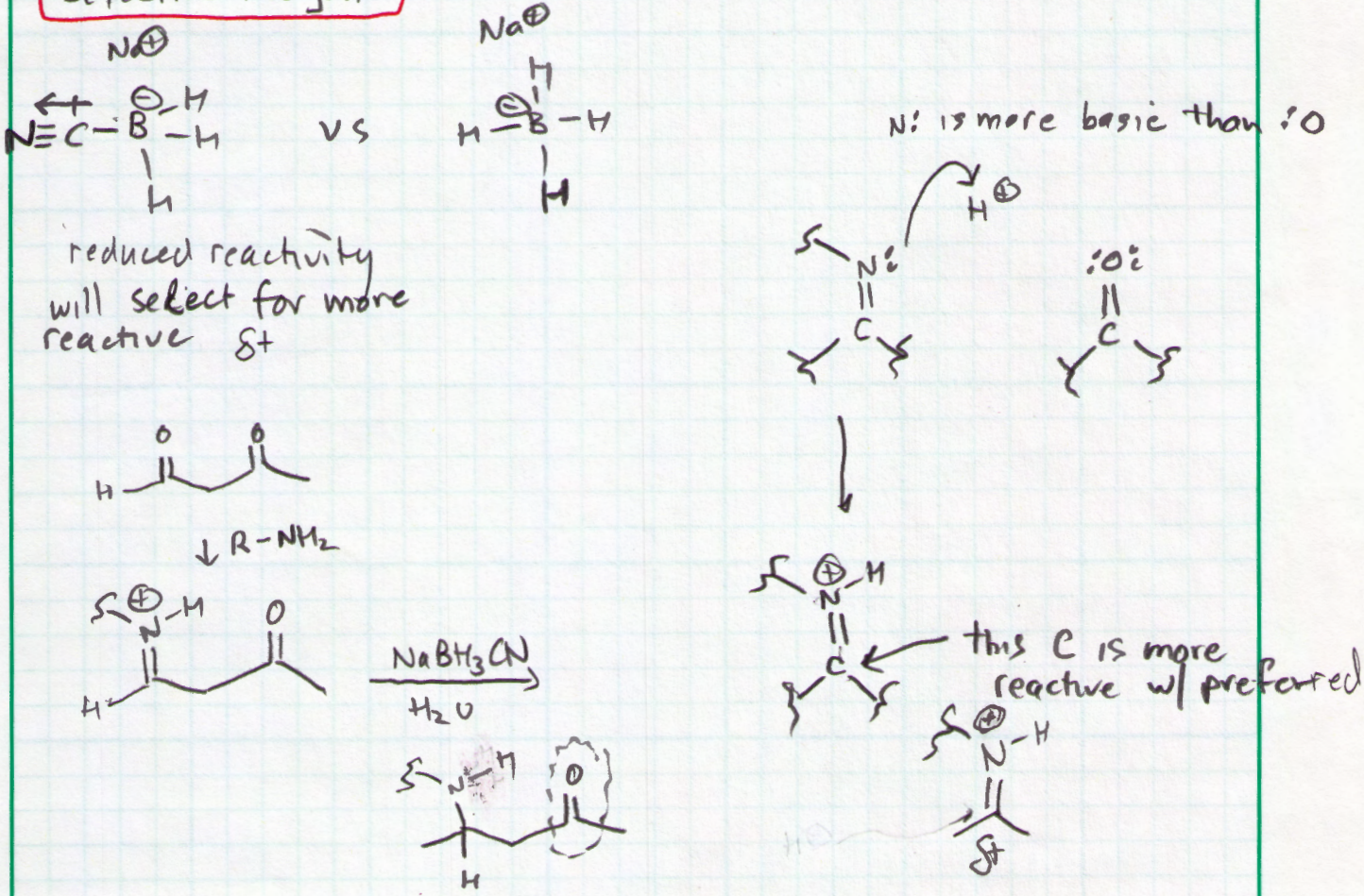
Convert Succinic Acid to Succinimide



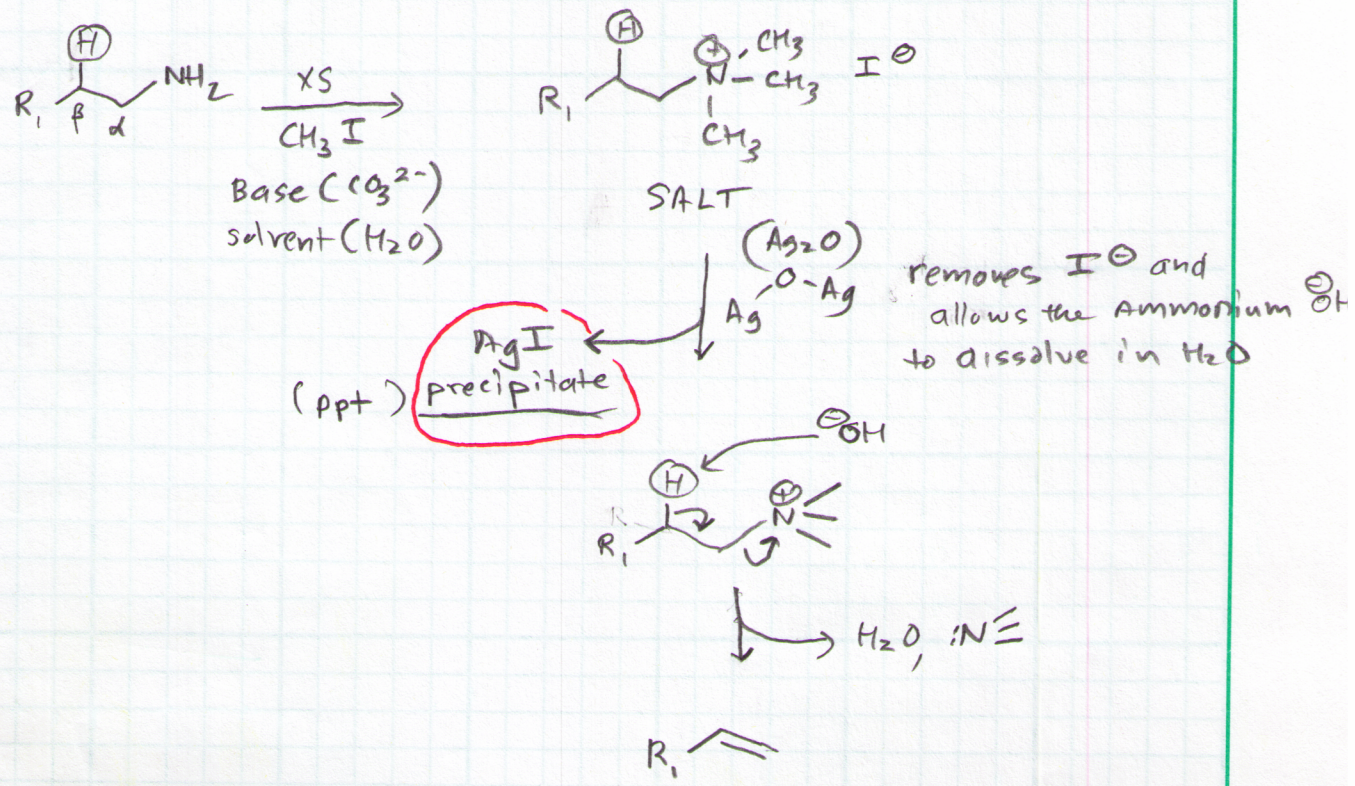
Amines from Reductive Amination (Amine formed via Reduction)



Selective Reagent



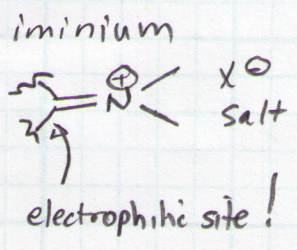
Alkyl Quaternary Ammonium (N^+) Salts contain a good Leaving Grp.



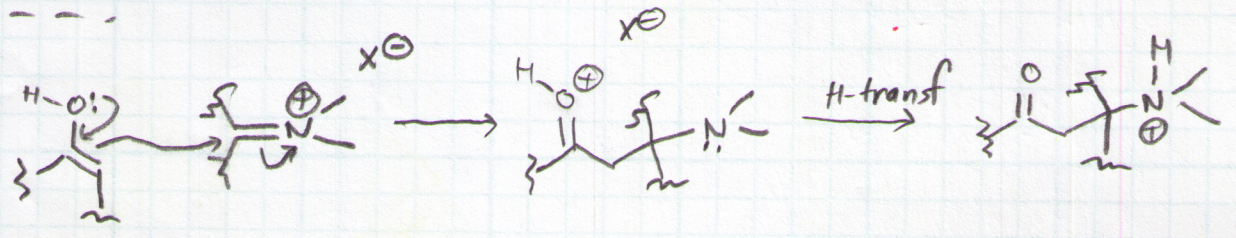
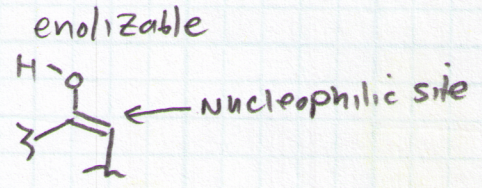
so, you see these $\{NR_3^+\}$ salts are an excellent method to access alkenes via an E_2 process

Mannich Rxn

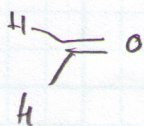
Substrate (A)



Substrate (B)

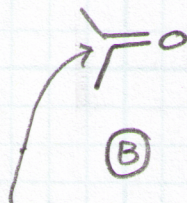


Which rxns faster with $\text{:N(CH}_3)_2\text{H}$?



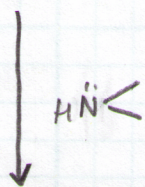
(A)

OR

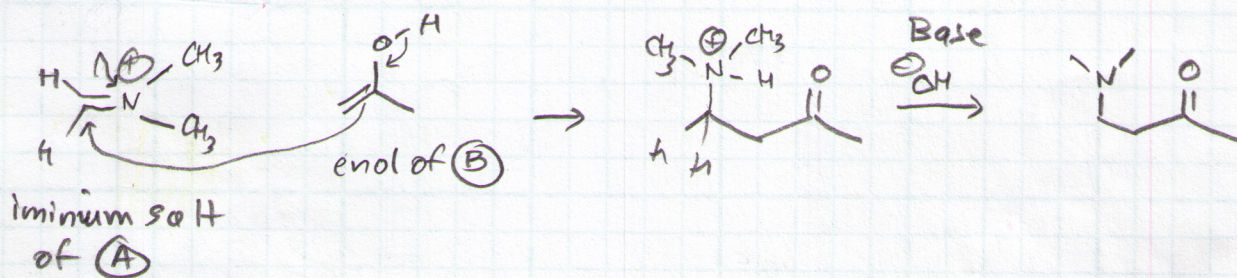


(B)

Smaller δ^+ charge \therefore less rxn than (A)



preferentially (A) formaldehyde is preferred for Mannich Rxn because it forms iminium salt.



Draw the iminium salt and enol that would form before the Mannich condensation happened

