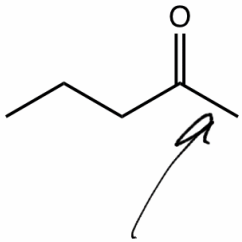
Hand in Reworked Test 1

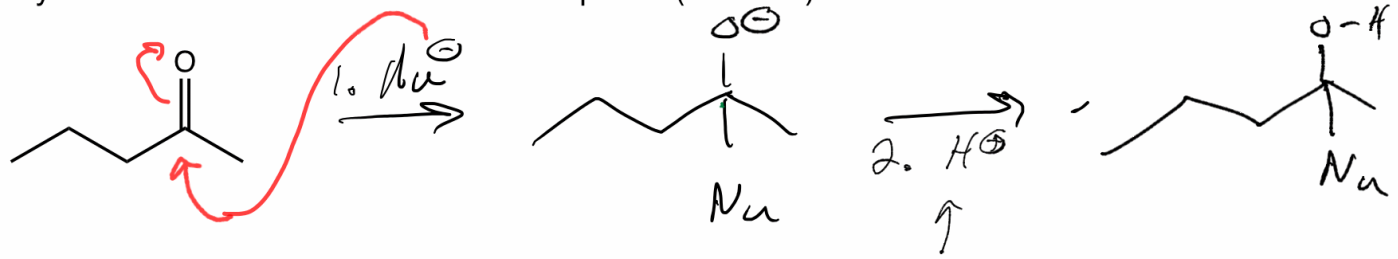
Today 16.3, 16.4, 16.5

Monday 16.6, 16.9



no LG ketone $\ominus CH_3$ too basic

aldehyde $\ominus H$ too basic



Nu = CH_3MgBr = $\ominus CH_3$ Grignard HCl

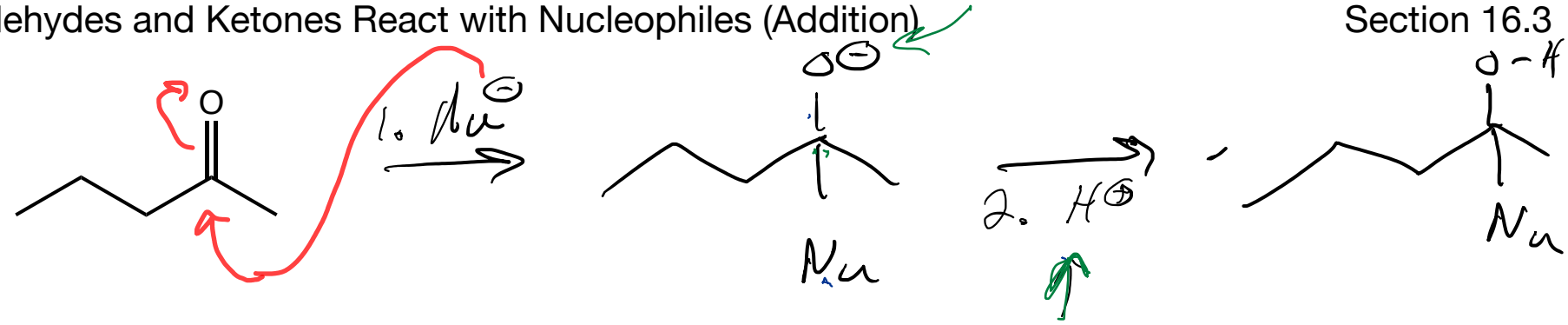
= $NaC\equiv C-R$ = $\ominus C\equiv C-R$ acetylide ion

= $NaC\equiv N$ = $\ominus C\equiv N$ cyanide

can't use HCl; HCl will react with π to π bond

CN^- is a reasonable LG. Reaction must be done with $CN^\ominus$ + HCN to protonate $O^\ominus$ to make loss of $CN^\ominus$ less favorable

'nucleophilic' element doesn't have a lp of e^-'s in addition to the ones acting as the Nu

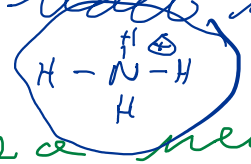


Nu = CH_3MgBr = $\ominus CH_3$ Grignard HCl

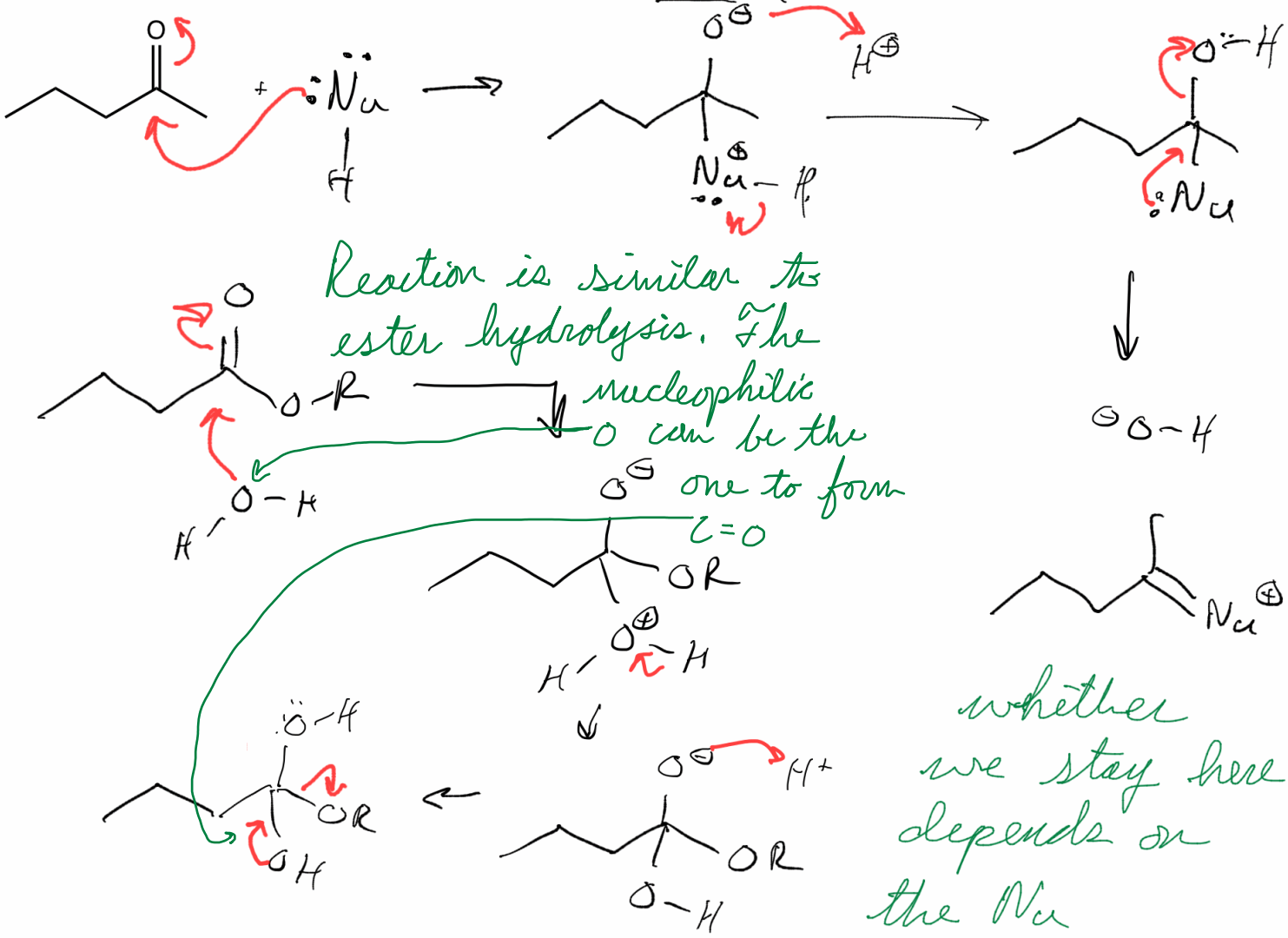
= $NaC\equiv C-R$ = $\ominus C\equiv C-R$ acetylide ion

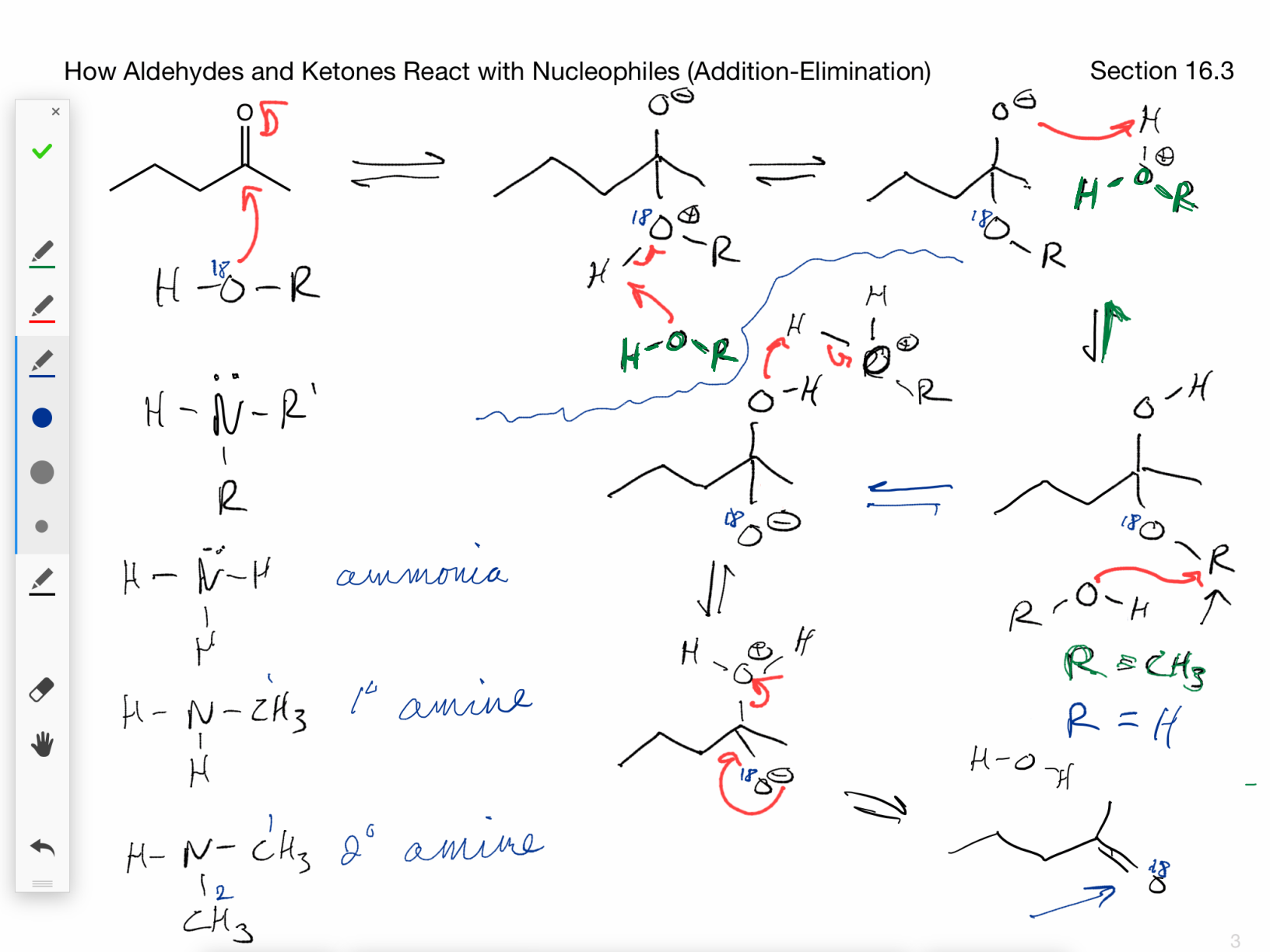
= $NaC\equiv N$ = $\ominus C\equiv N$ cyanide

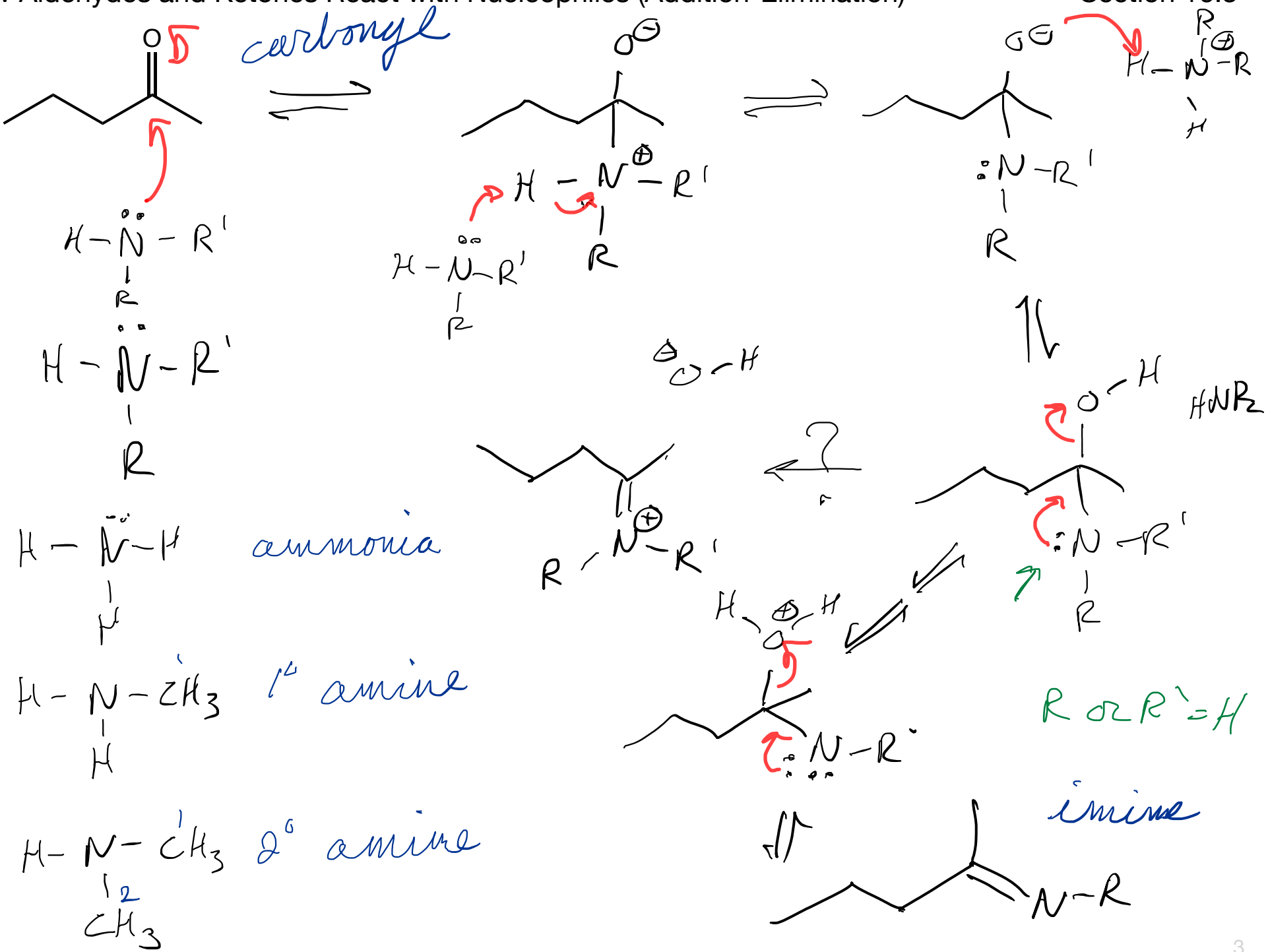
With Grignard reagent finish reaction by adding acid.

Acetylide ion has C to C # bonds, since they react with strong acids, 2nd step needs a weak acid 

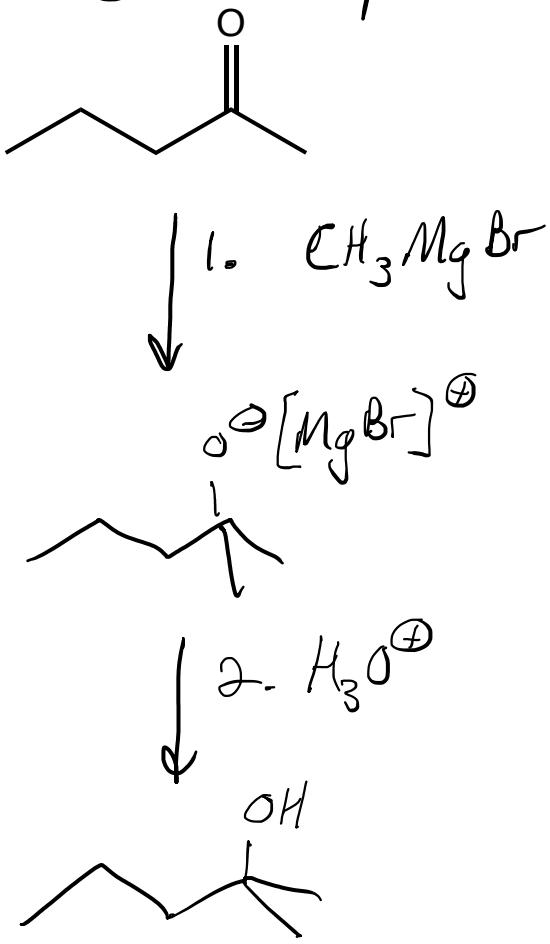
CN^- is a weak base... it can leave... we need an acid to prevent $CN^\ominus$ from leaving H-CN


Reaction is similar to ester hydrolysis. The nucleophilic O can be the one to form C=O
whether we stay here depends on the Nu

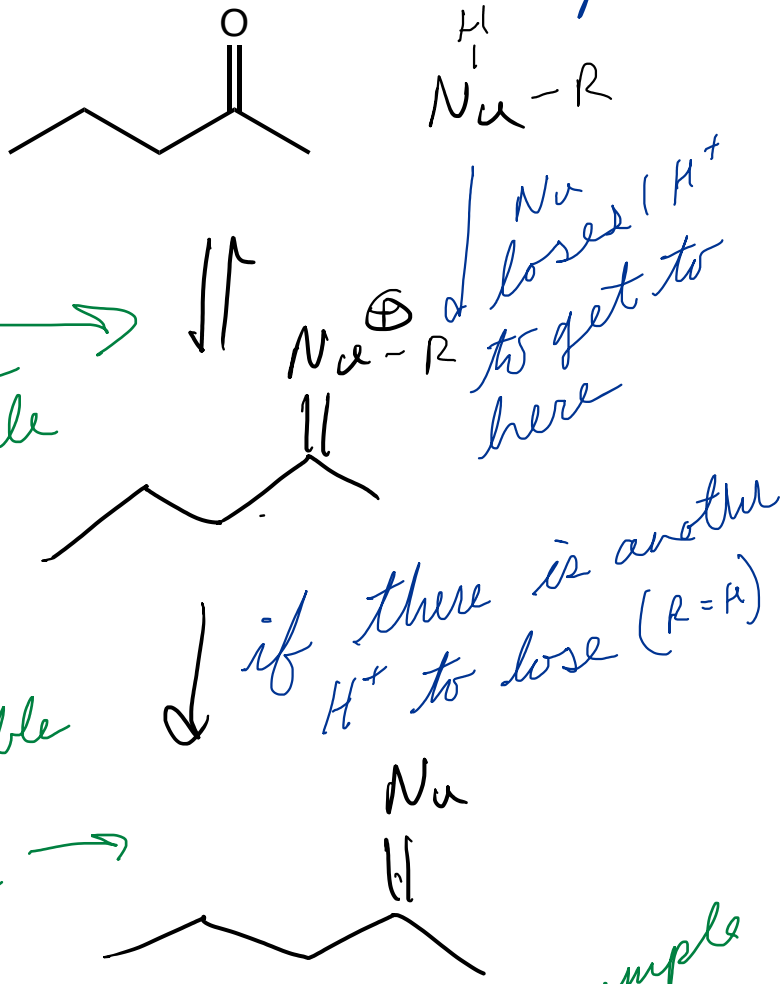

ammonia
1° amine
2° amine
R = CH3
R = H

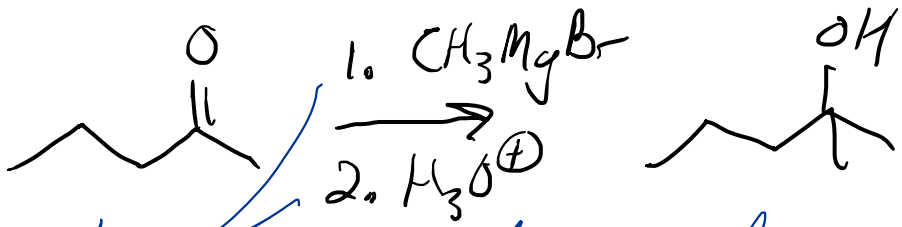

carbonyl
ammonia
1° amine
2° amine
R or R' = H
imine

with C nucleophiles



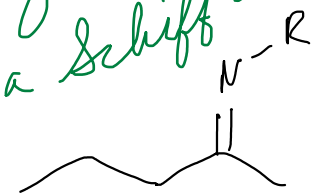
with O & N nucleophiles





two different reactions

for example a Schiff base



from a 1° amine H_2NR