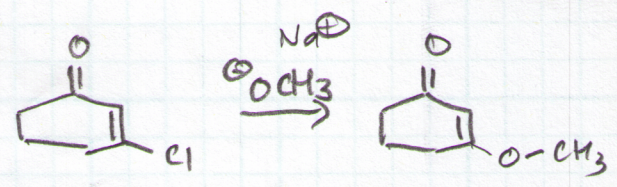


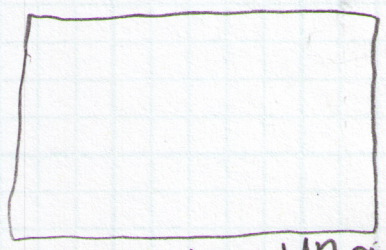
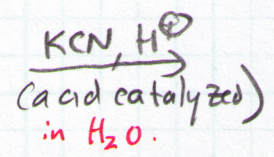
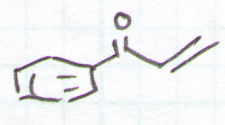
Show the mechanism of the following



Hint: start with a conjugate (1,4)-addition

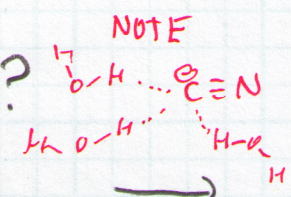
SEEK TA's for ASSISTANCE

Show the mechanism



conjugate addⁿ product

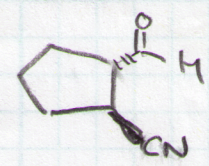
MECHANISM?



H-bonding tunes $\ominus C$ and directs towards 1,4-Addⁿ.

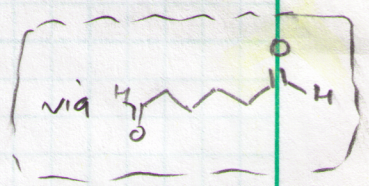
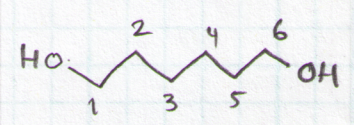
Let's work backwards

Product



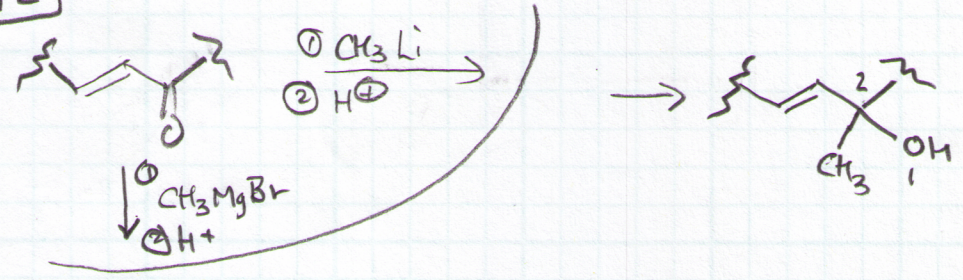
back to

Reactant



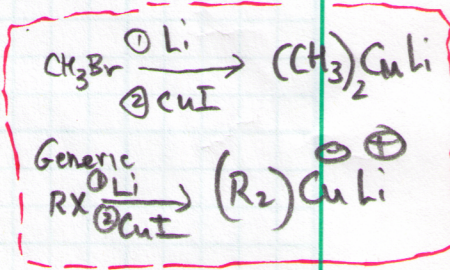
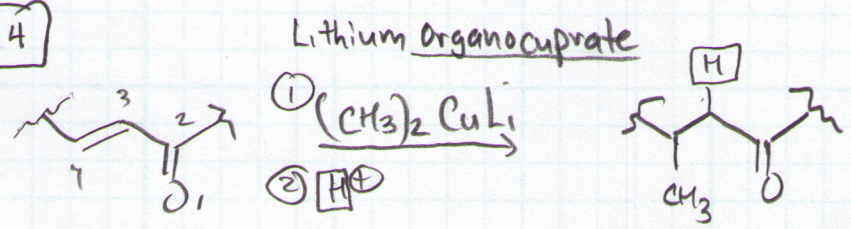
1,2 vs 1,4-addⁿ with Organometallic Reagents

1,2

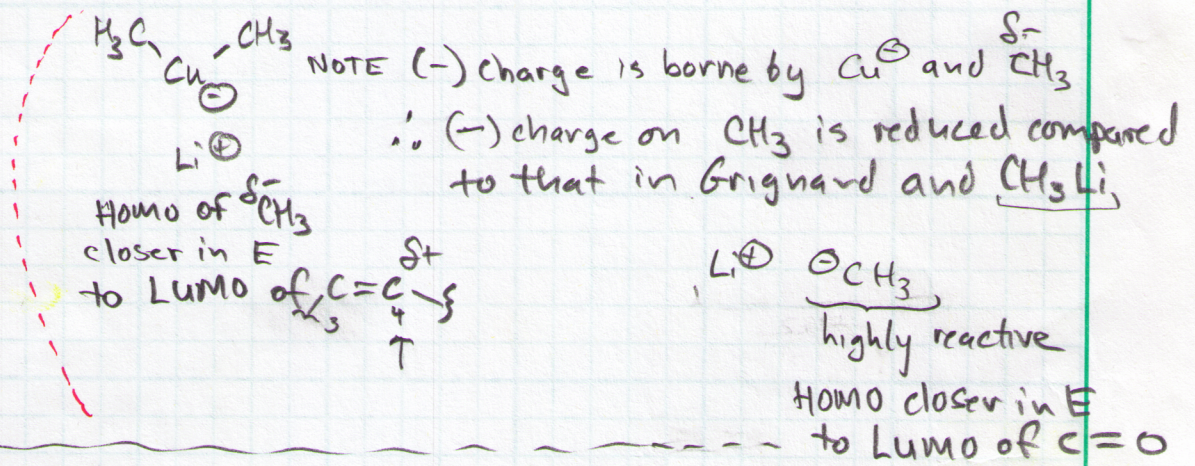


strongly electroneg
 C^\ominus rxn at
 higher δ^+
 C-O center
 δ^+ δ^-

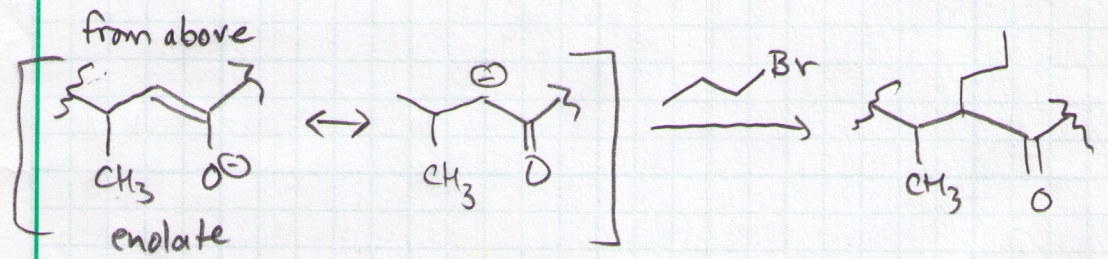
1,4



see rationale here

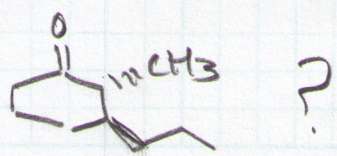
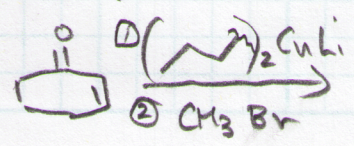


NOTE: Before H^+ is added in 2nd step, enolate can react w/ haloalkane in $\text{S}_{\text{N}}2$ rxn



Interesting processes to add C-C bonds to carbonyl compd^s

why trans?

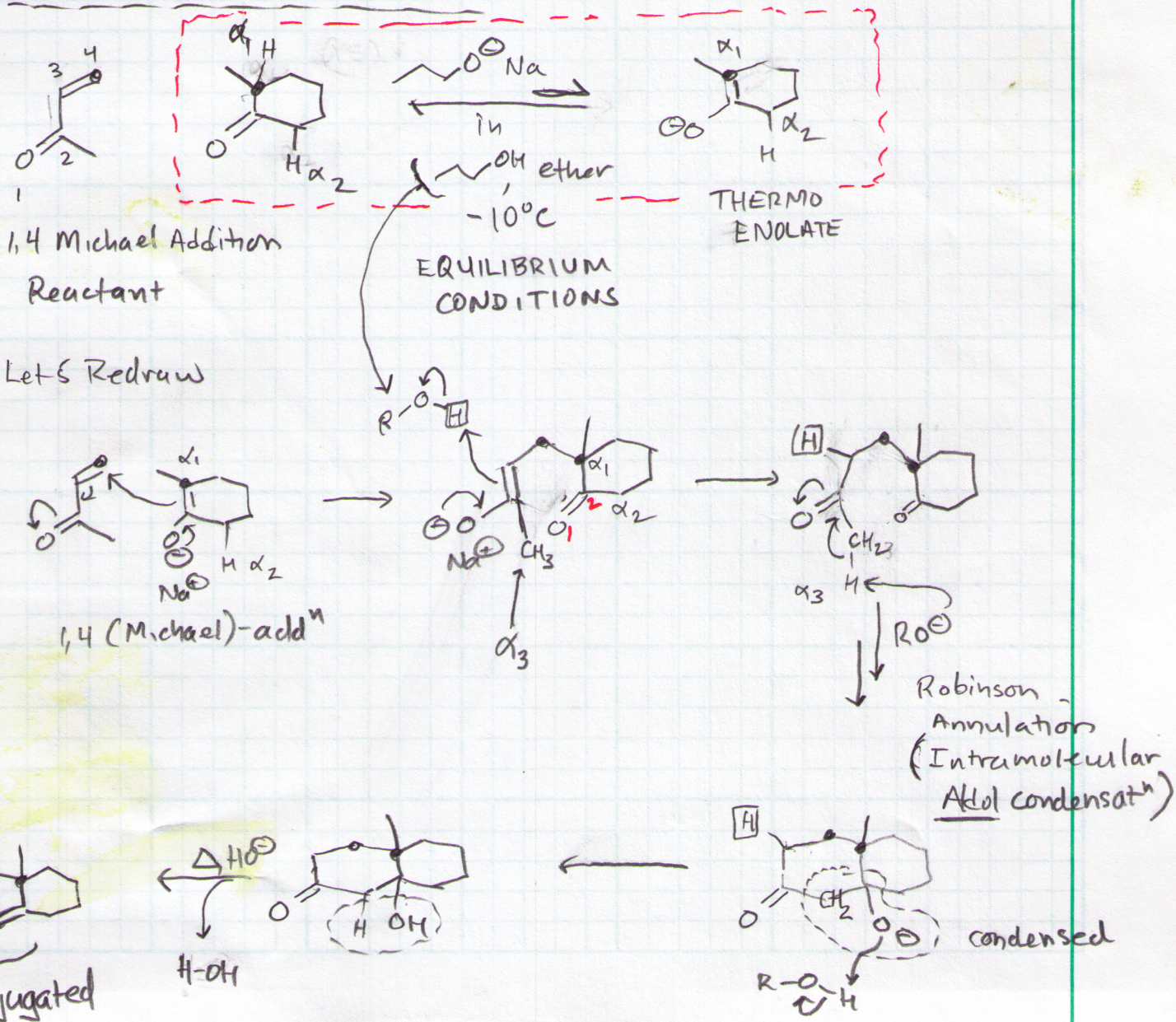
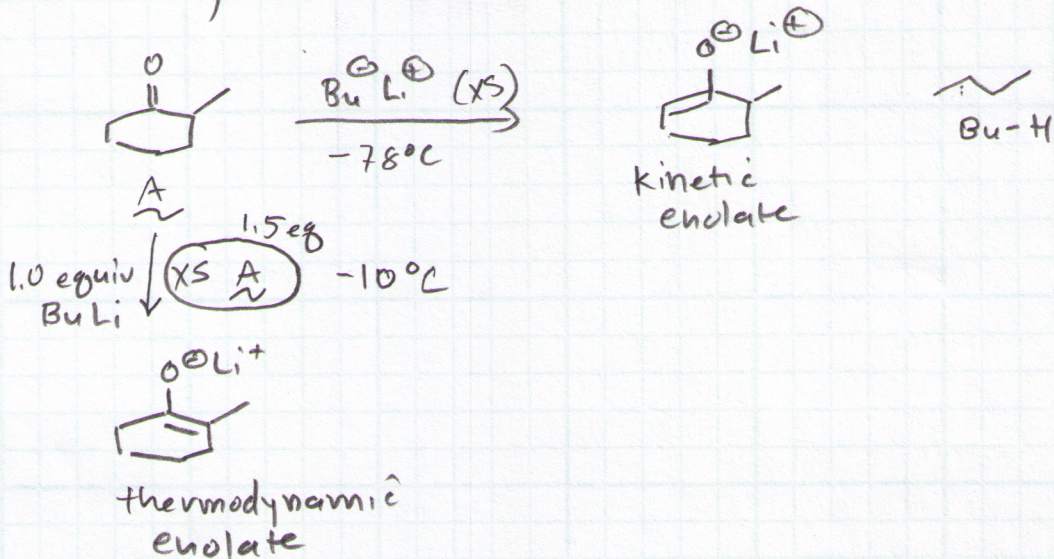


Explain trans stereoisomerism

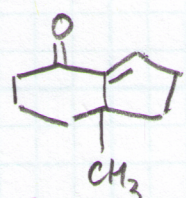
+ Enantiomer

1,4-addⁿ followed by intramolecular aldol condensation.

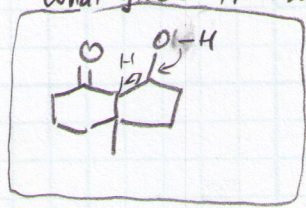
Recall



Retrosynthesis Analysis

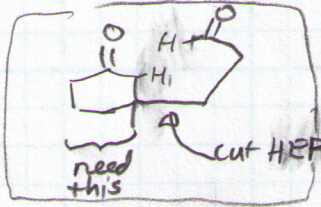


Retrosynth Arrow

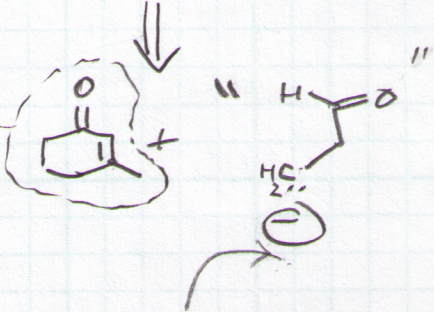


what gives α, β -unsat ketone?

what $\text{C}=\text{O}$ comps condensed?

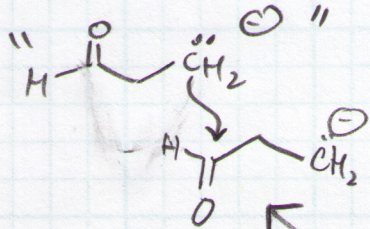


Synthesize from and

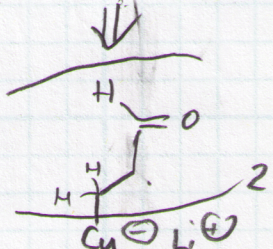


Need (-) charged carbon that will do a 1,4-addition

Please NOTE



would react with itself DONT WANT THIS TO HAPPEN



This organocuprate will do a 1,4-addn

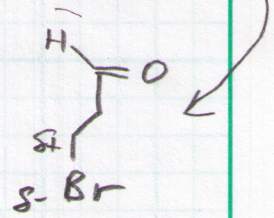
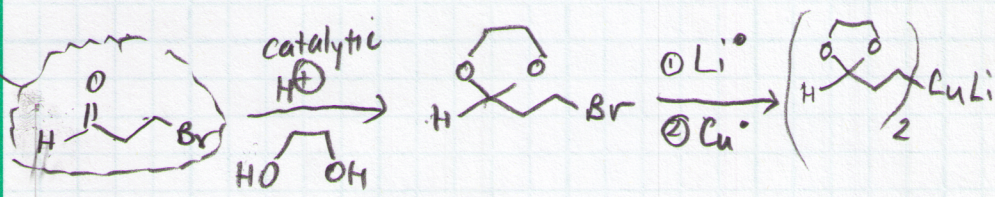
LOOK

SEE THIS!

BUT

Need to protect before reacting w/ Li^+ or Cu^+

what did the cuprate come from?



FORWARD RxN

