

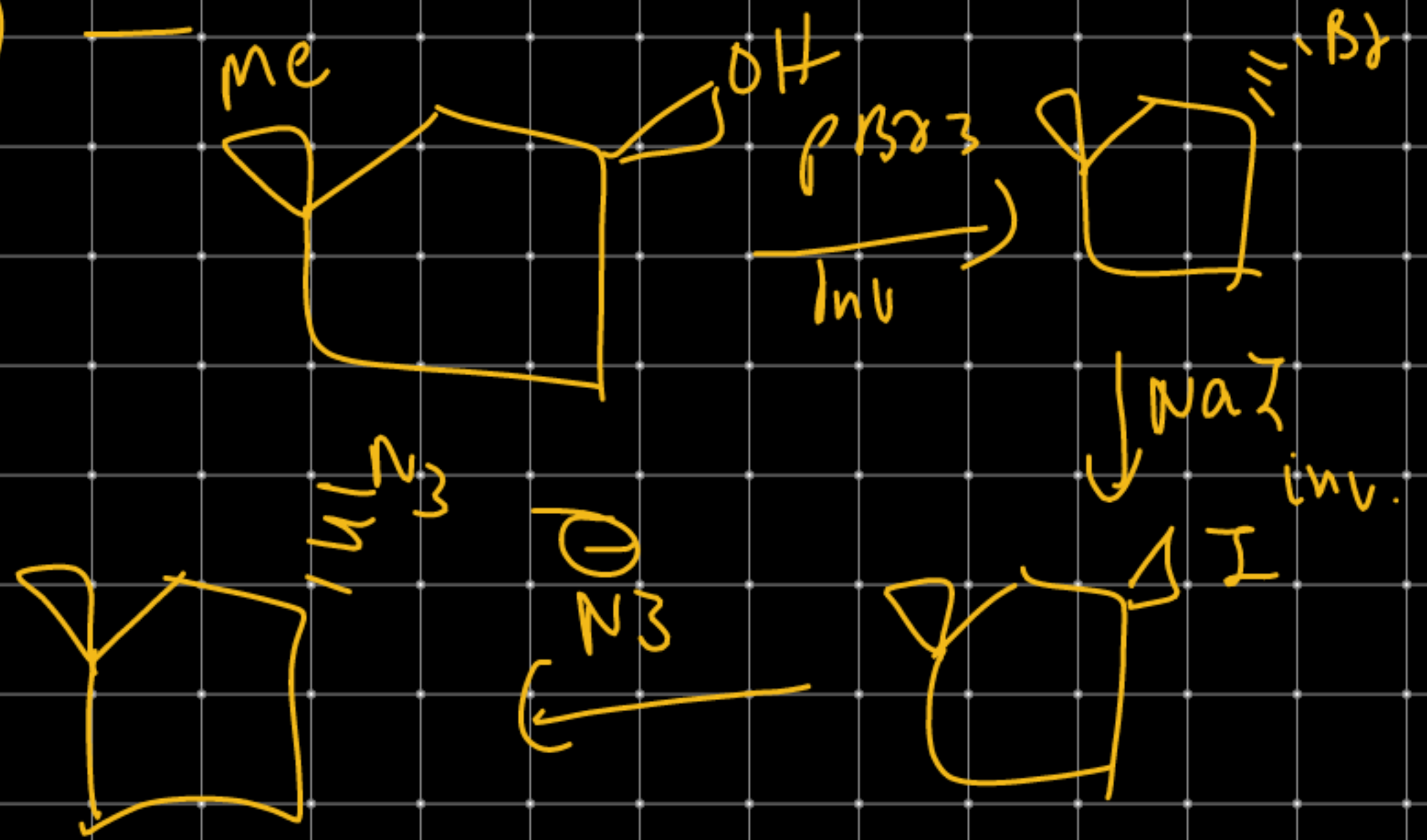
This Rxn will be fastest in  
 1)  $\text{N,N}$ -Dimethyl formamide (DMF) 2)  $\text{H}_2\text{O}$  3)  $\text{EtOH}$  4)  $\text{CH}_3\text{OH}$

\* \*  
 1)  $\text{PBr}_3, \text{Et}_2\text{O}$   
 2)  $\text{NaI, acetone}$

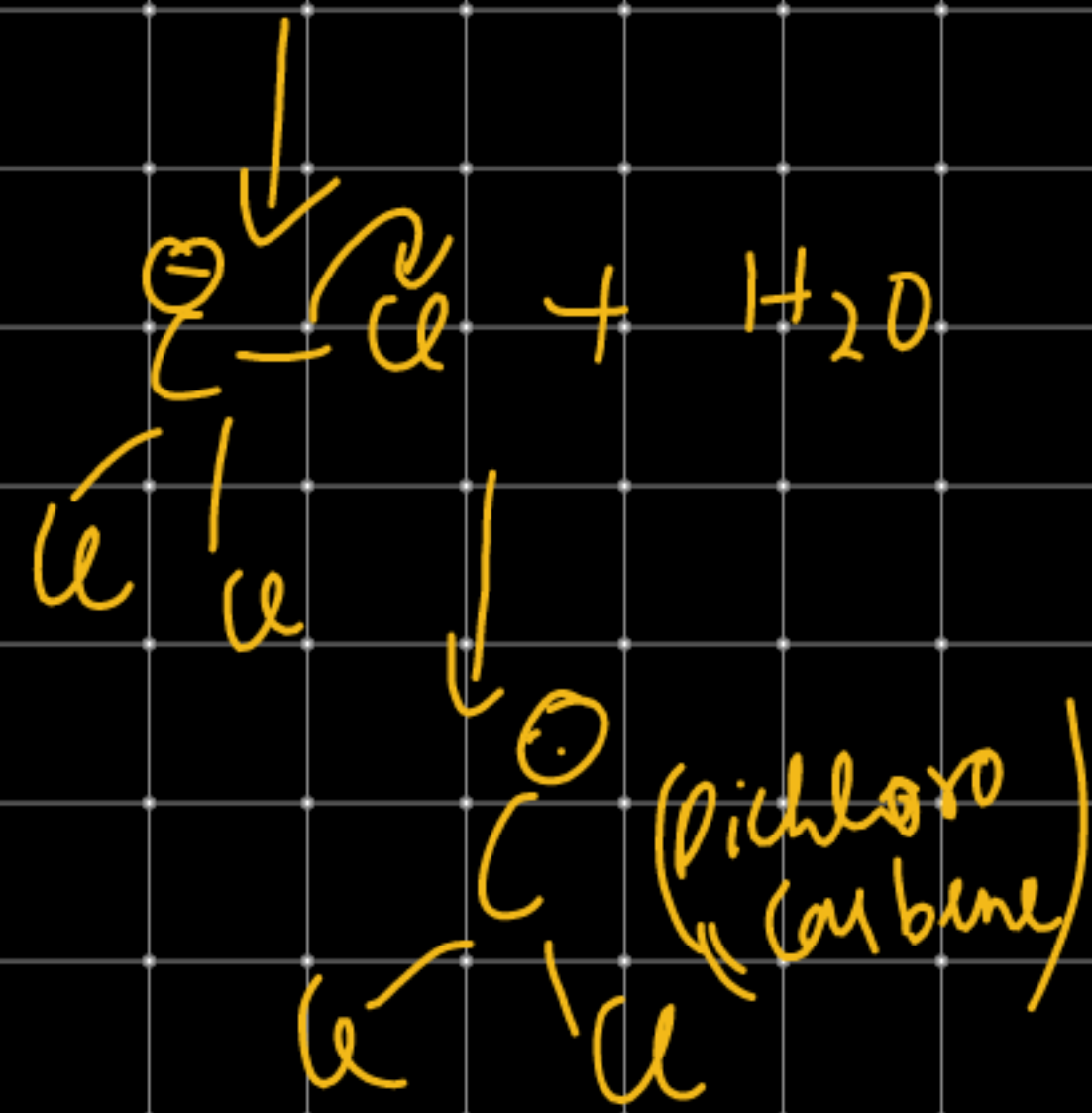
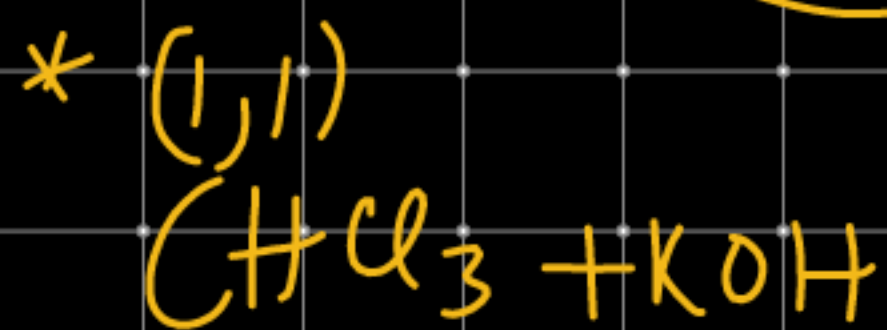


Adv 2018

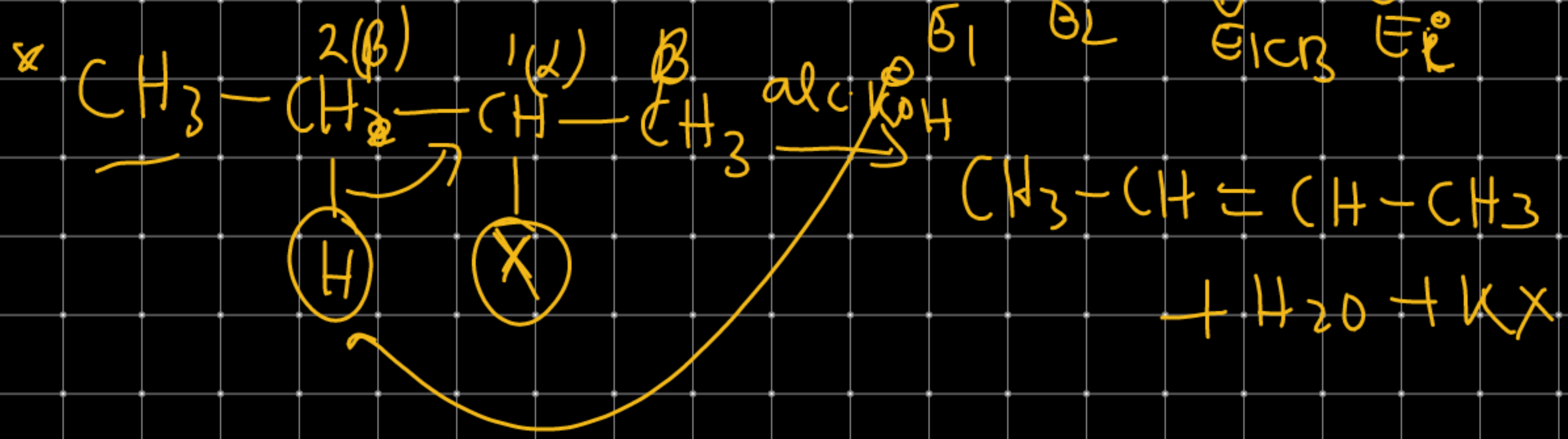
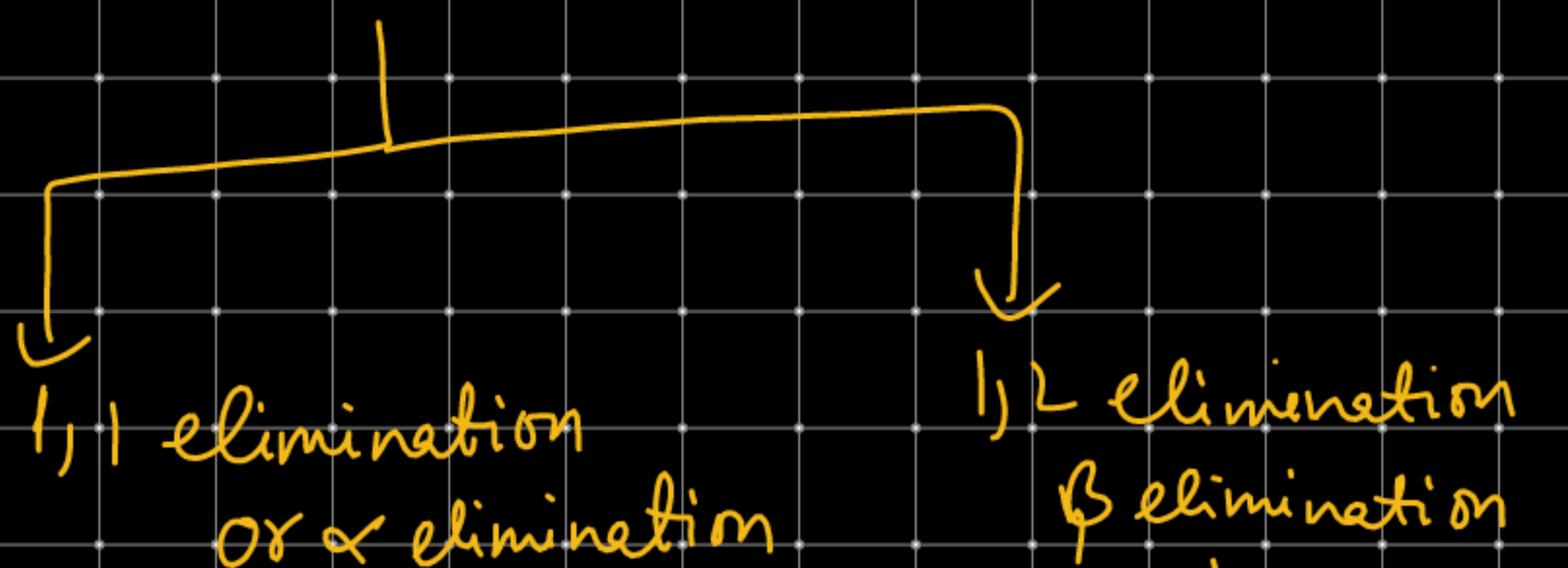
3)  $\text{NaN}_3, \text{DMF}$   
 $\text{Na}^+ (\text{N}_3^-)$



WGP

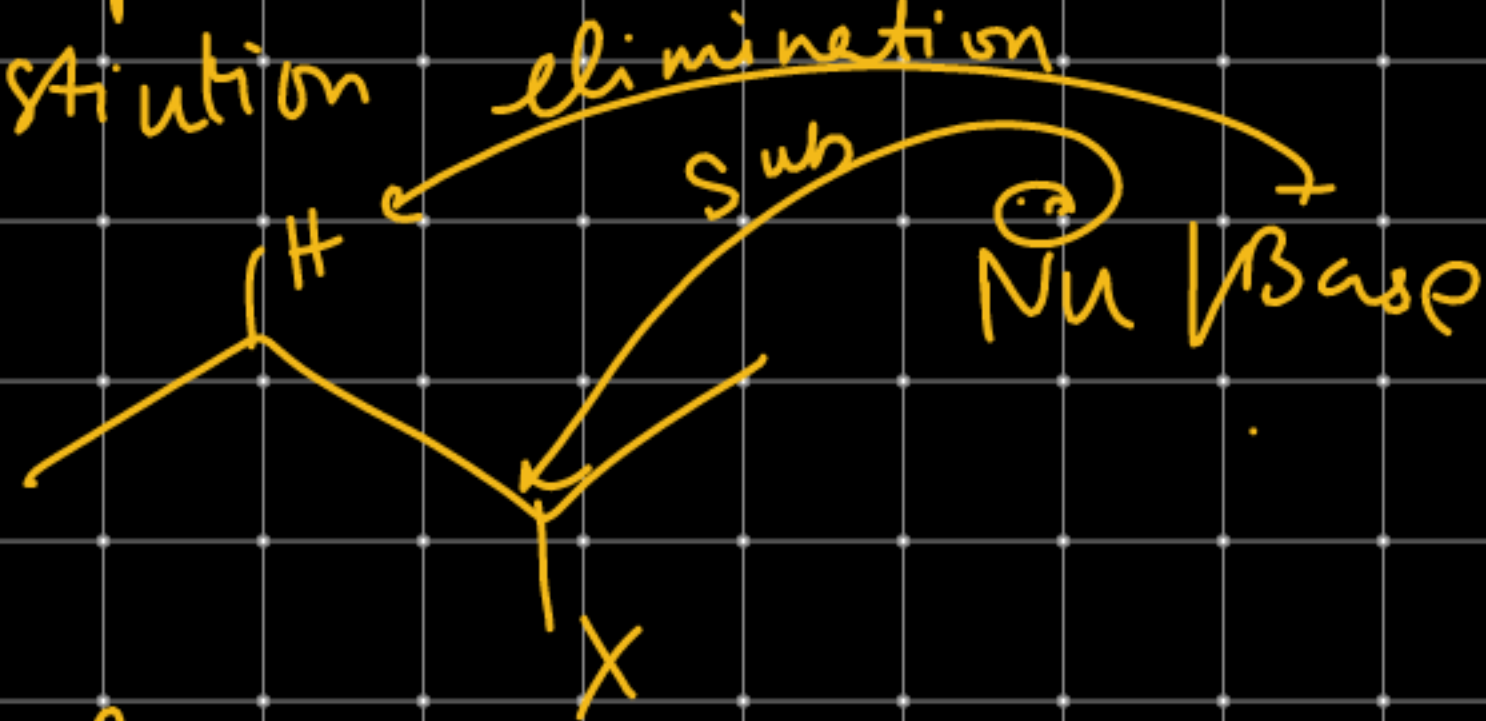


# Elimination Rxn





Elimination happens when base/<sup>Nu</sup> attack H instead of Carbon (substitution)



Factors favouring elimination over substitution

① ~~Temp~~ Temp → high temp. favours elimination ( $\Delta$ )

$$\Delta G = \Delta H - T \Delta S$$

↑  
+ve

② Basicity → Strong base favours elimination

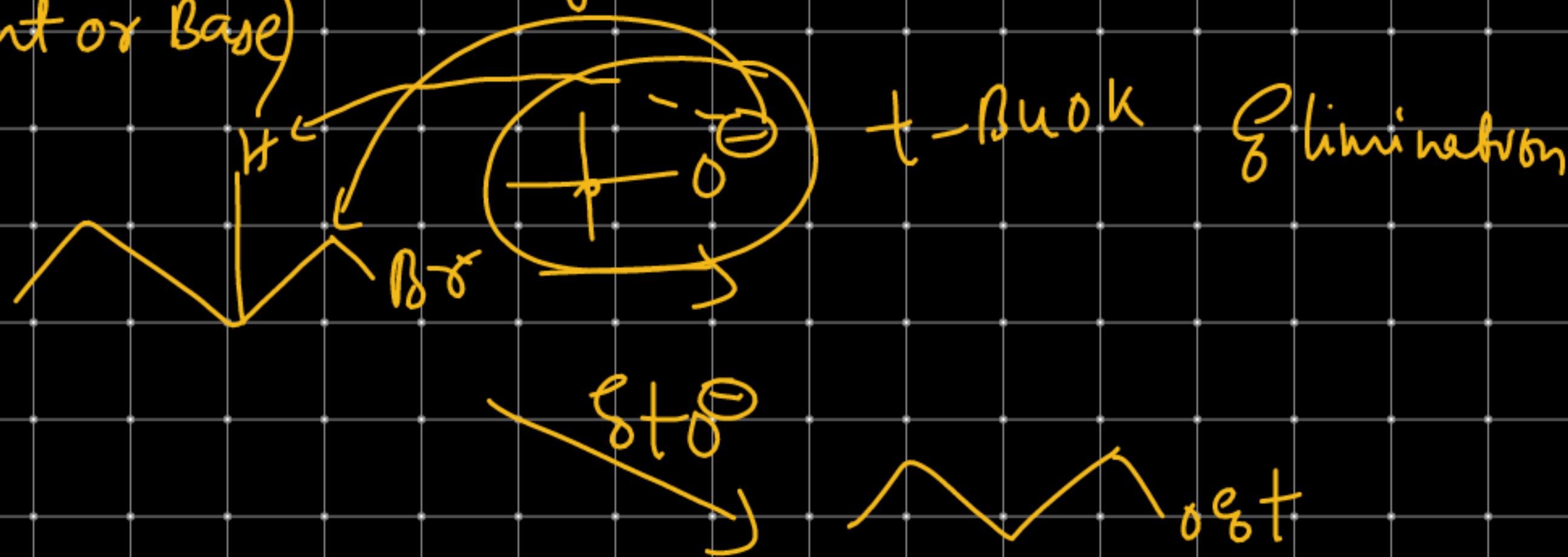


av  
KOH  
1-20

alc KOH  
KOH  
EtOH

→ Elimination

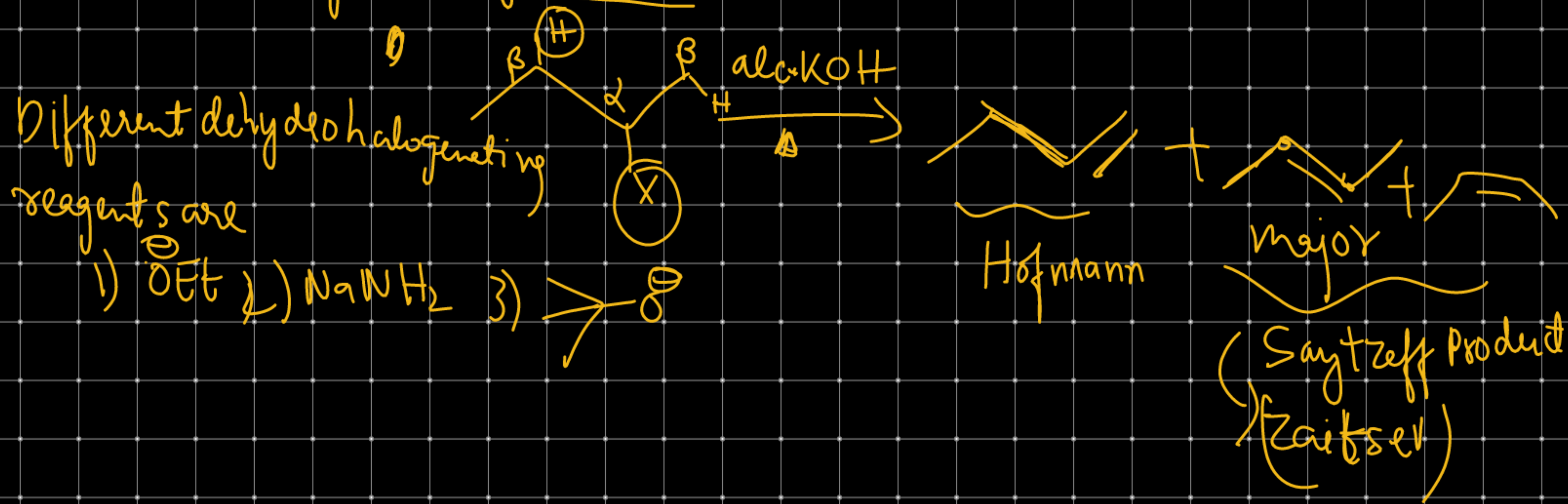
③ Steric hindrance  $\rightarrow$  Bulky base favors elimination  
(in Reactant or Base)



# E<sub>2</sub> Elimination

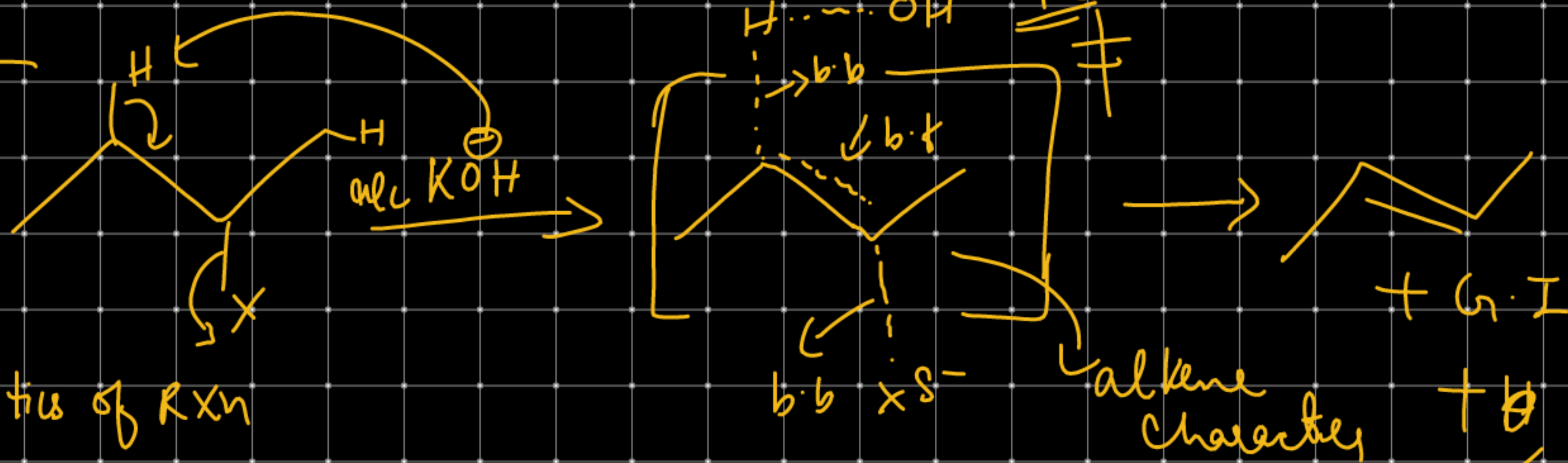
- ① Dehydrohalogenation
- ② Dehalogenation
- ③ Hofmann exhaustive methylation

## 1) Dehydrohalogenation



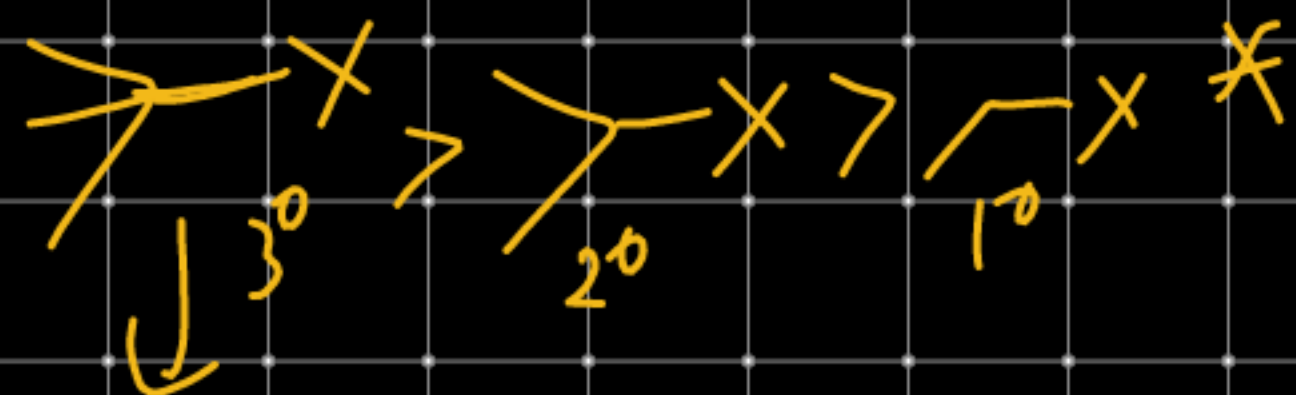


Mechanism



Characteristics of Rxn

rate  $\propto [R-Br] [Base]$  order = 2 = Molecularity



(More stable alkene forming more rate)

\* Elementary rxn (Single step)

\* No rearrangement

\* Factor affecting rate of  $E_2$

→ conc of Alkyl halide & Base

→ strength of Base ( $\text{NH}_2^- > \text{OH}^-$ )

→ leaving group  
 $R-I > R-Br > R-Cl > R-F$