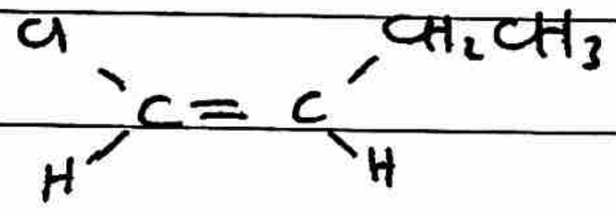
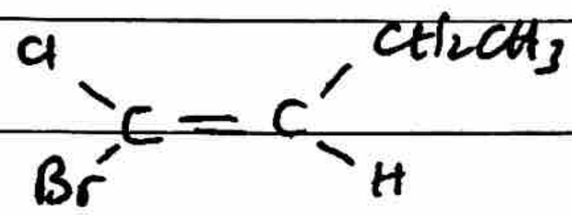
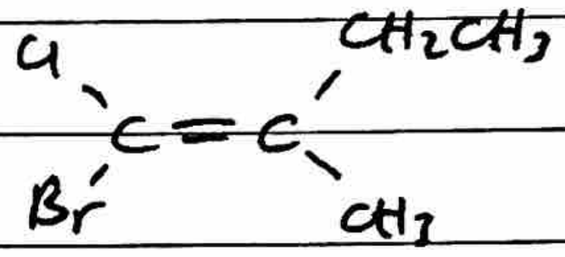
26/10/2018



Disubstituted

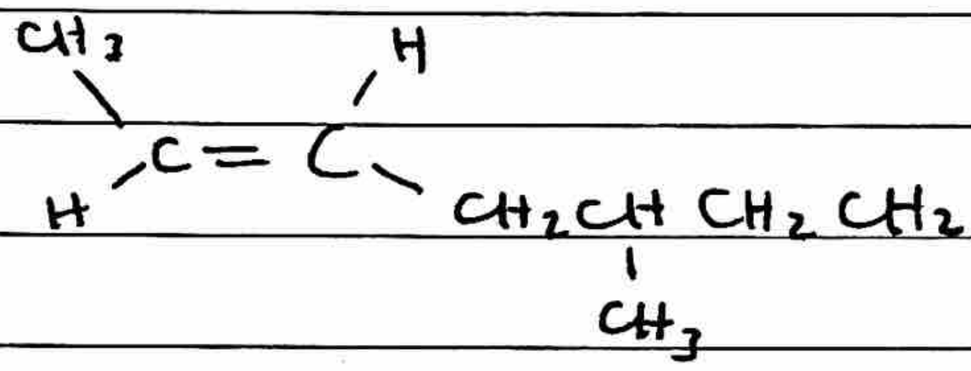


Trisubstituted

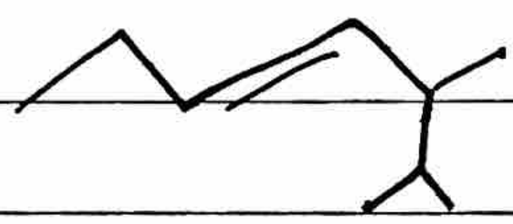


Tetrasubstituted.

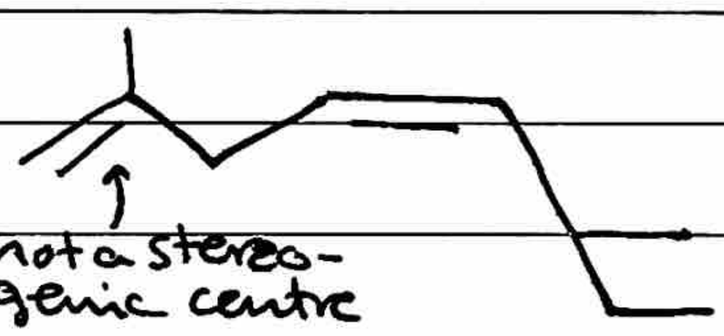
→ The only one with Cis, Trans configurations



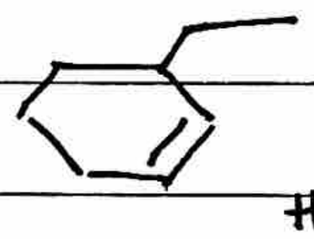
trans - 5-methyl-2-heptene



trans - 5,6-Dimethyl-3-heptene



not a stereogenic centre

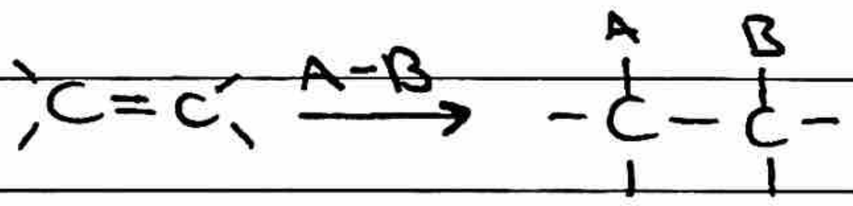


1α> Cycle, thus no Cis, trans.

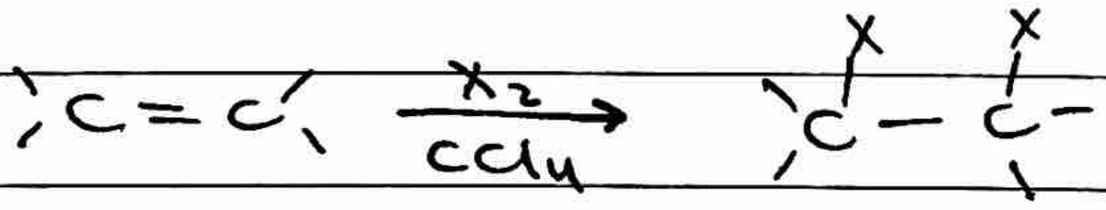
Cis-2,6-Dimethyl-1,4-Octadien

3-Ethylcyclohexene.

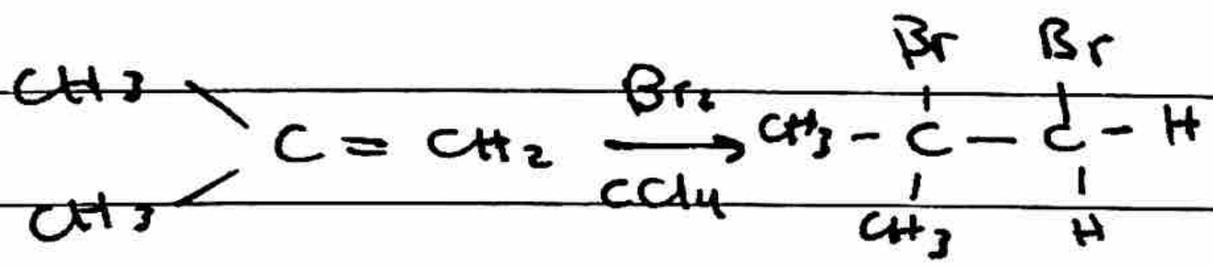
3.7: Polar Addition:

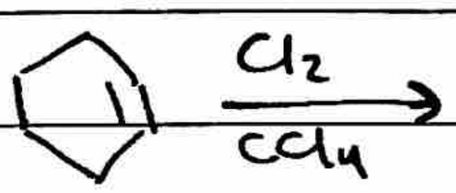


① Halogenation:



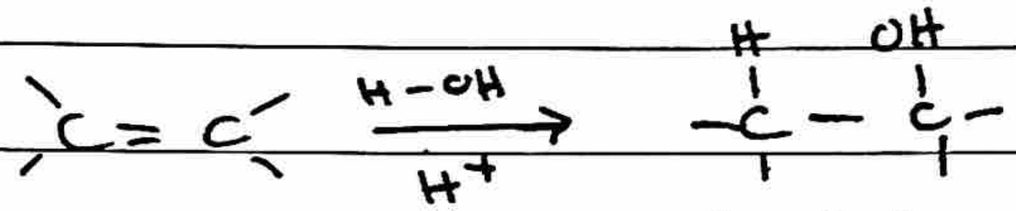
X_2 = Halogen.





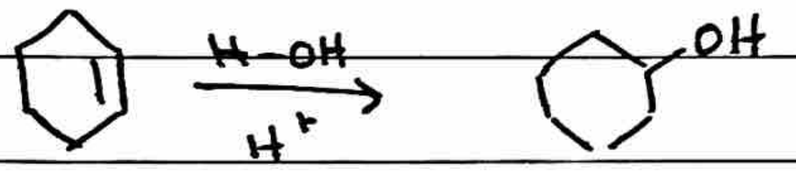
trans dihaloalkane.

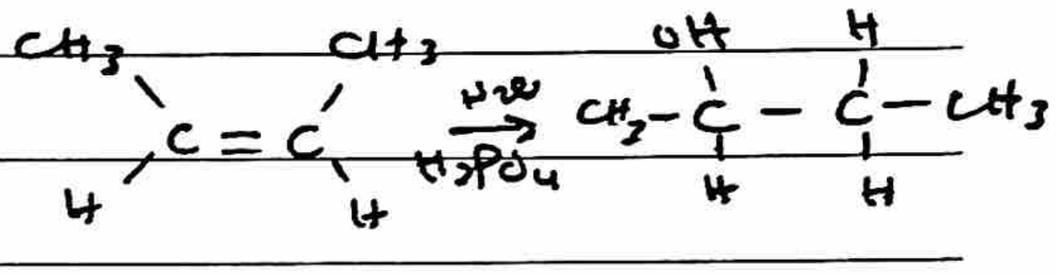
② Addition of water:

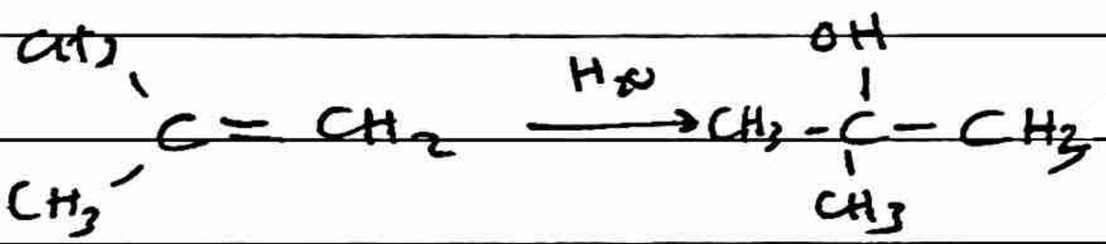


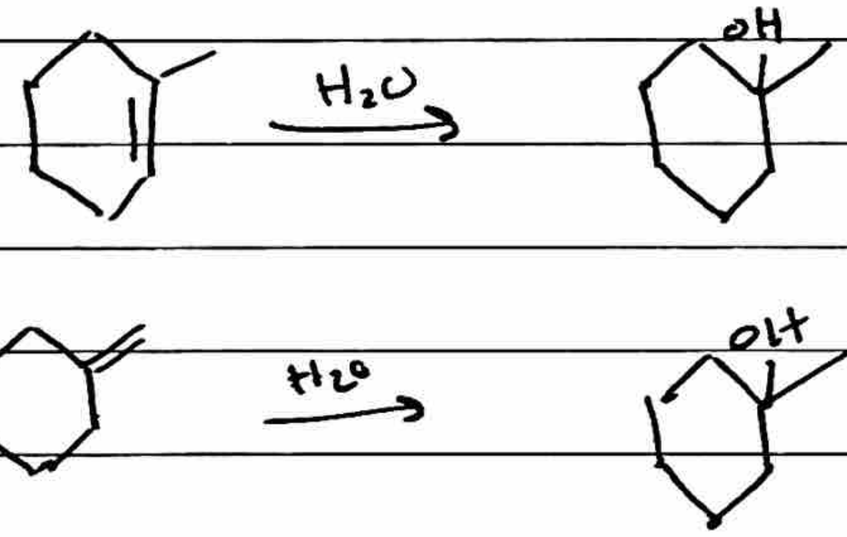
alcohol

Acid Catalyzed reaction.



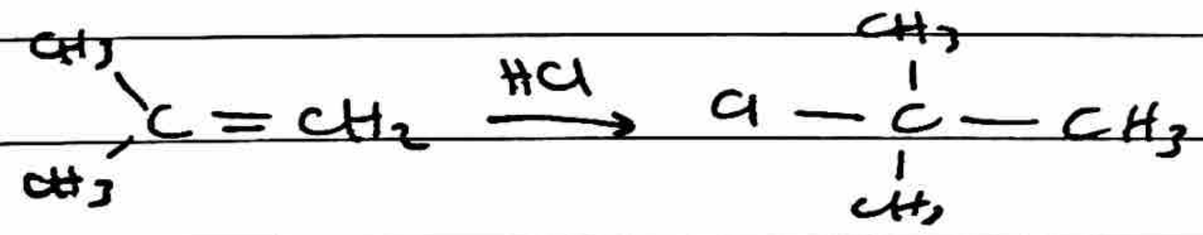


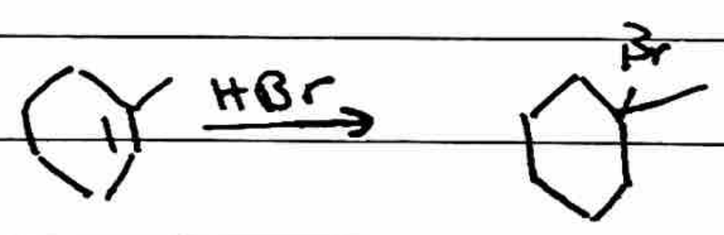


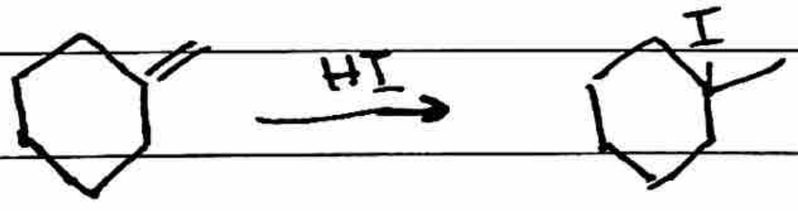


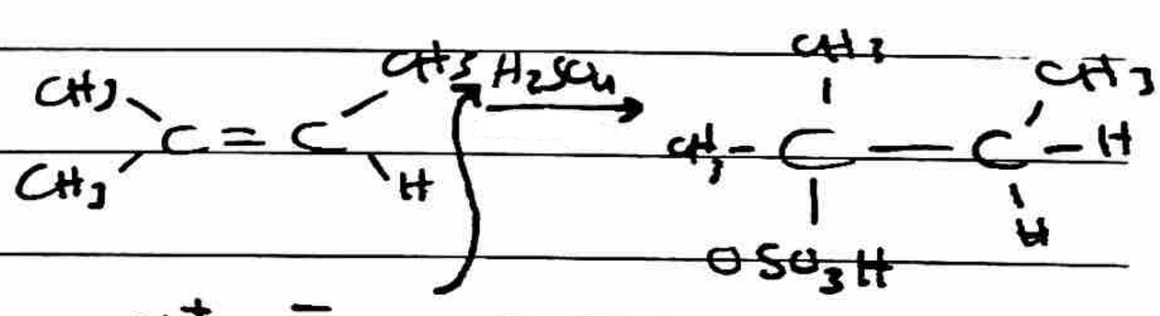
Markovnekov's rule: The hydrogen atom is added to the carbon at the double bond that is connected to the most hydrogen atoms. And the conjugate base is added to the other carbon (with less hydrogens).

③ Addition of Acids:







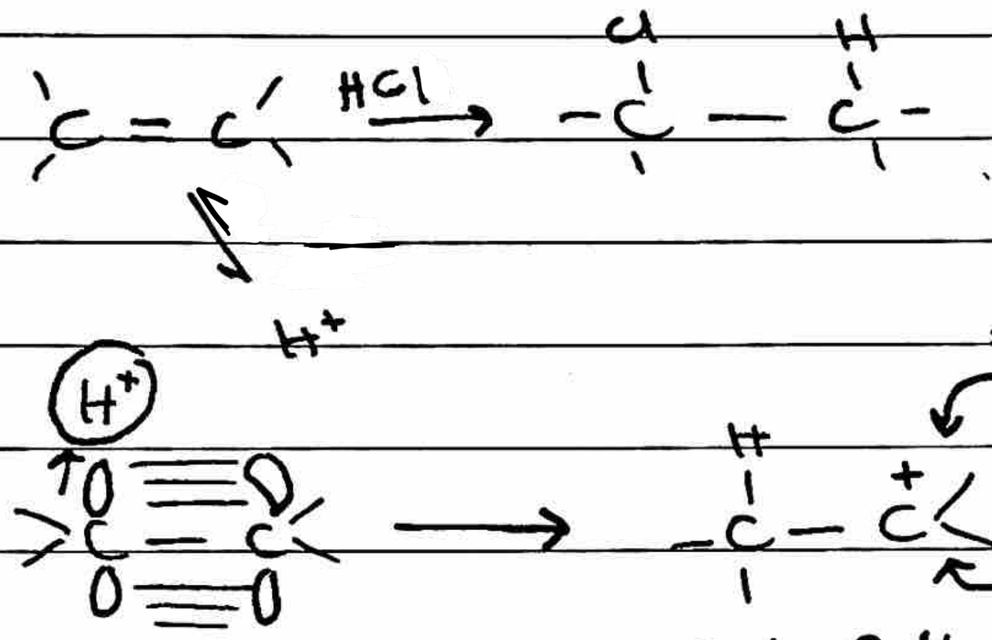


$(H_2SO_4 \rightarrow H^+ + {}^-O{-}SO_3H)$

3.9: Electrophilic Addition:

Electrophile E^+

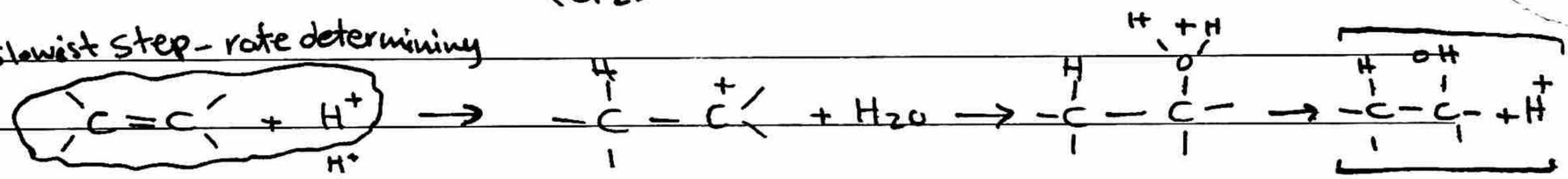
Nucleophile $\ddot{N}u$ ($H_2\ddot{O}$ or $:\ddot{O}H^-$)

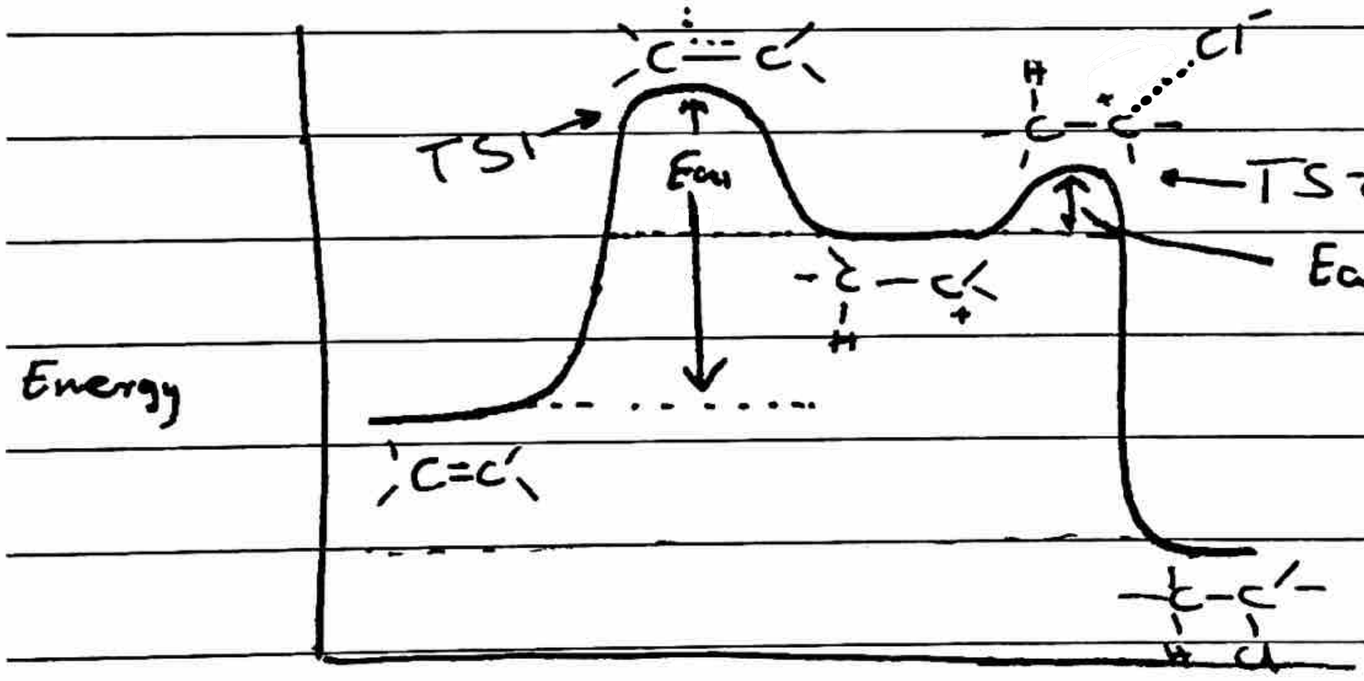


the planer gives the 50% chance of the Cl^- hitting from either side, thus it's very attractive to $\ddot{N}u$ or Cl^-

Organic.

slowest step - rate determining



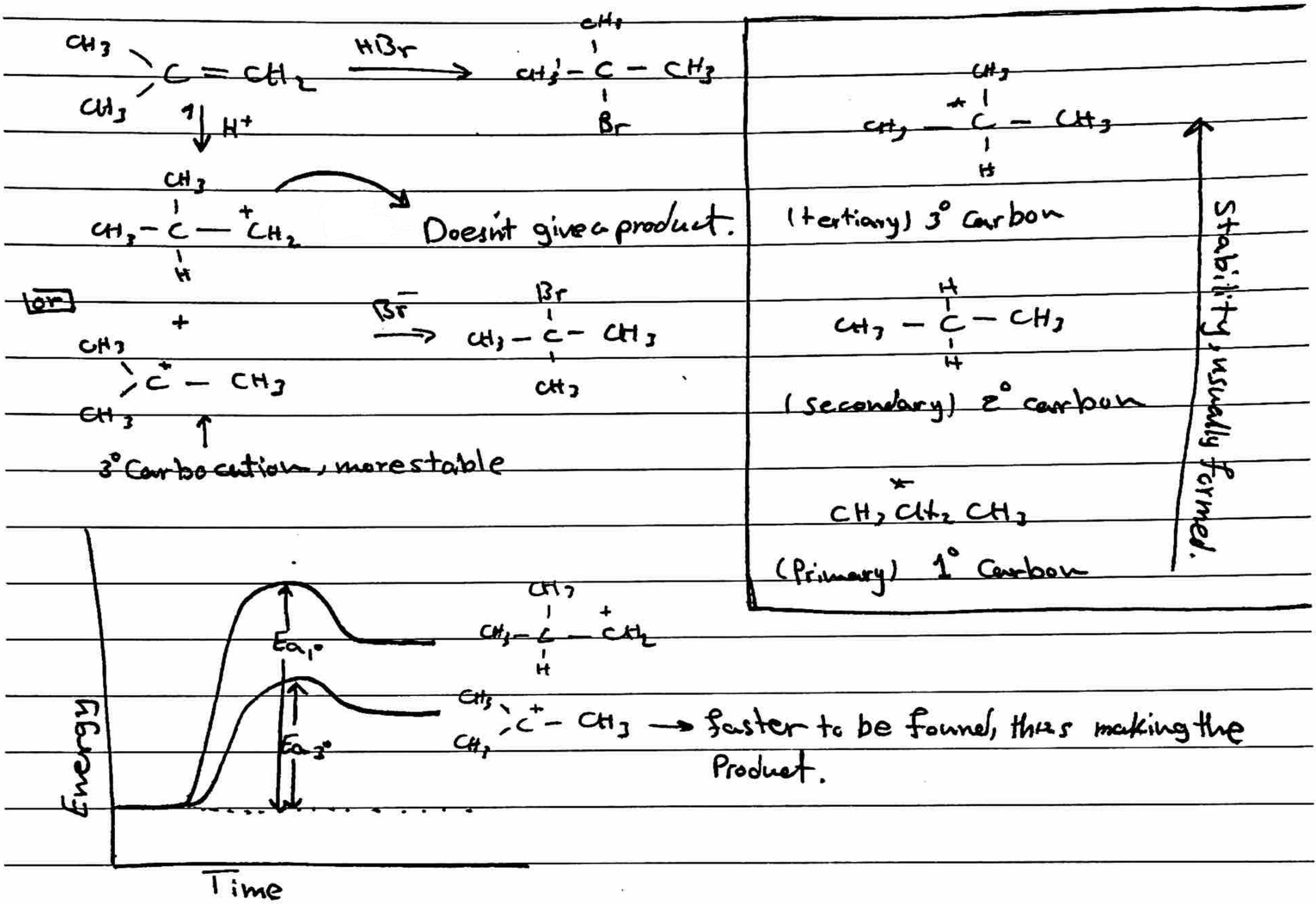


TS: transition state

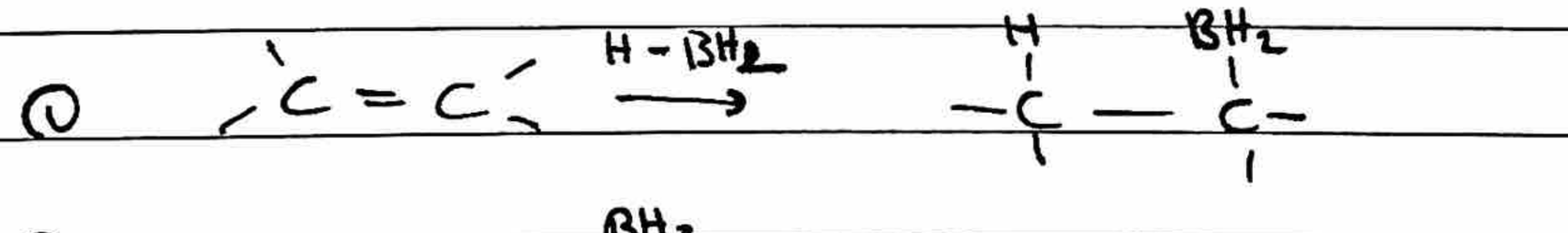
$\because E_{a1} > E_{a2}$, $\therefore$ Step 1 is slower than Step 2, $\therefore$ Step 1 is the rate determinating step.

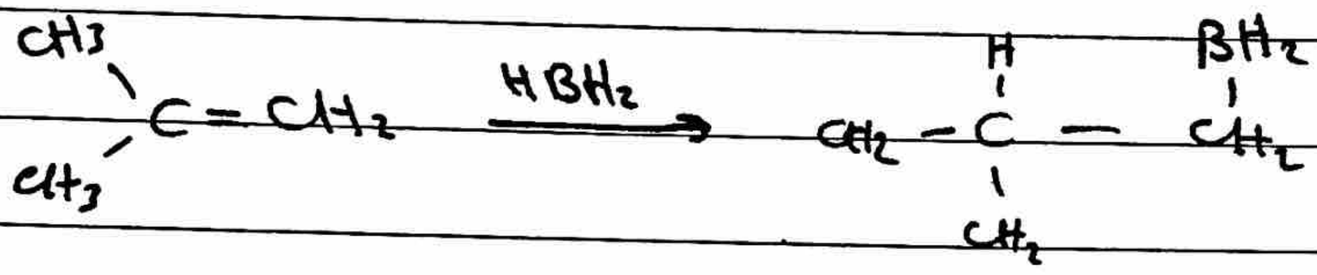
the stability of the Carbocation determines the rate of the reaction.

28/2/2018

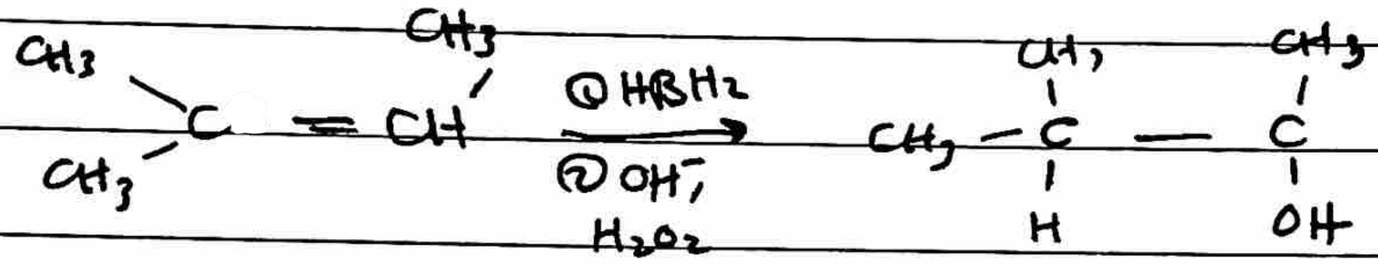


3.13. Hydroboration:

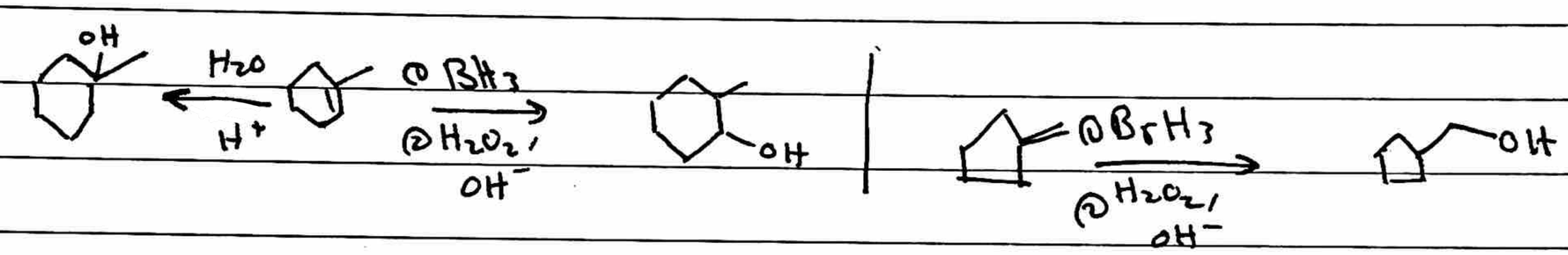


③ 

(Unti-markovnikov's)

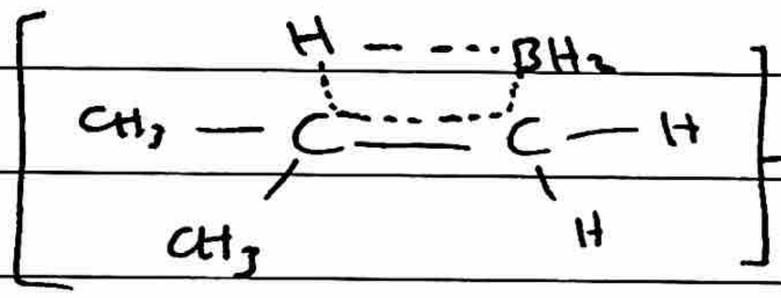


(Primary Alcohol formed).



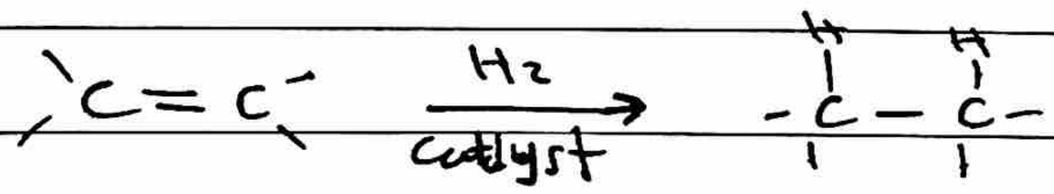
- why is the reaction Unti-markovnikov's?

because it happens in a one step (one step reaction).

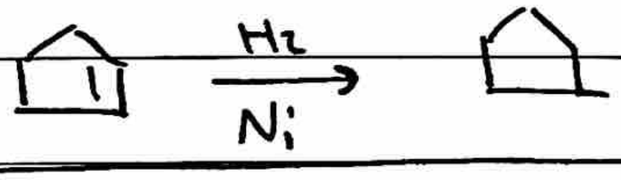


→ least steric strain.

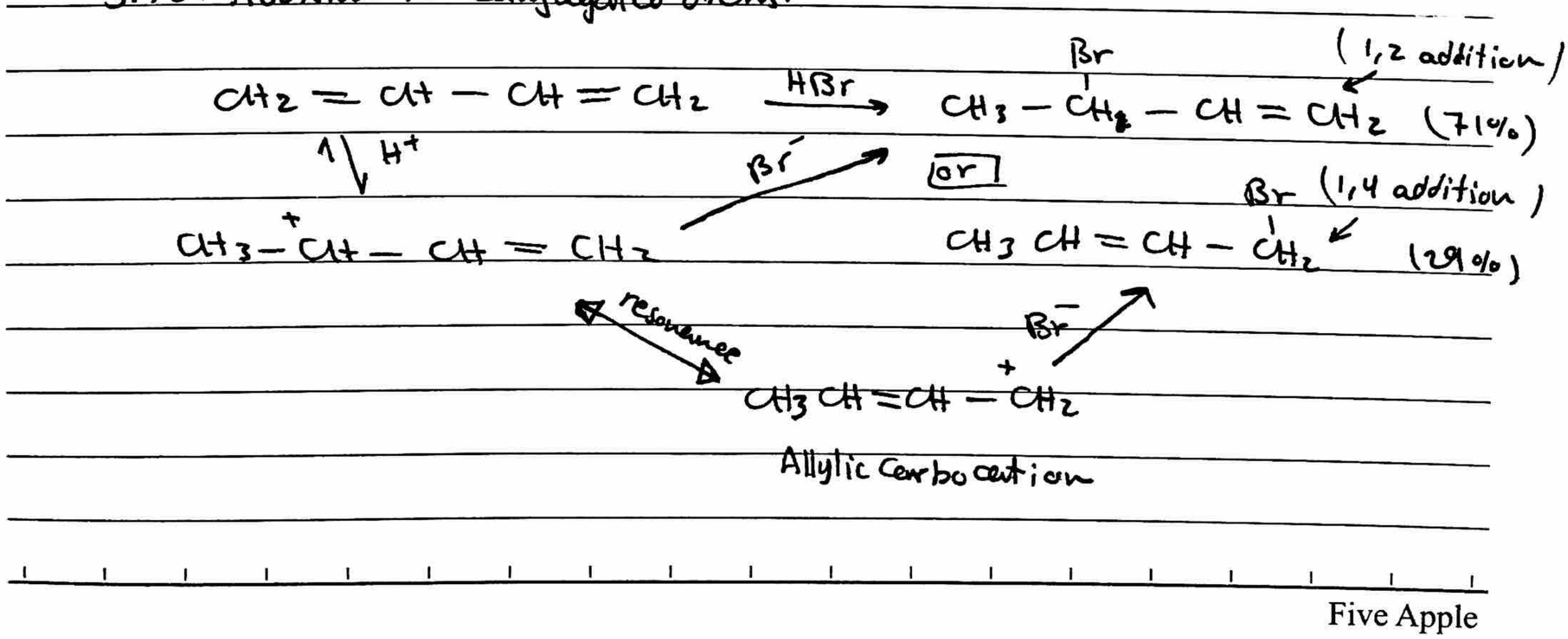
3.14: Hydrogenation of Alkines:

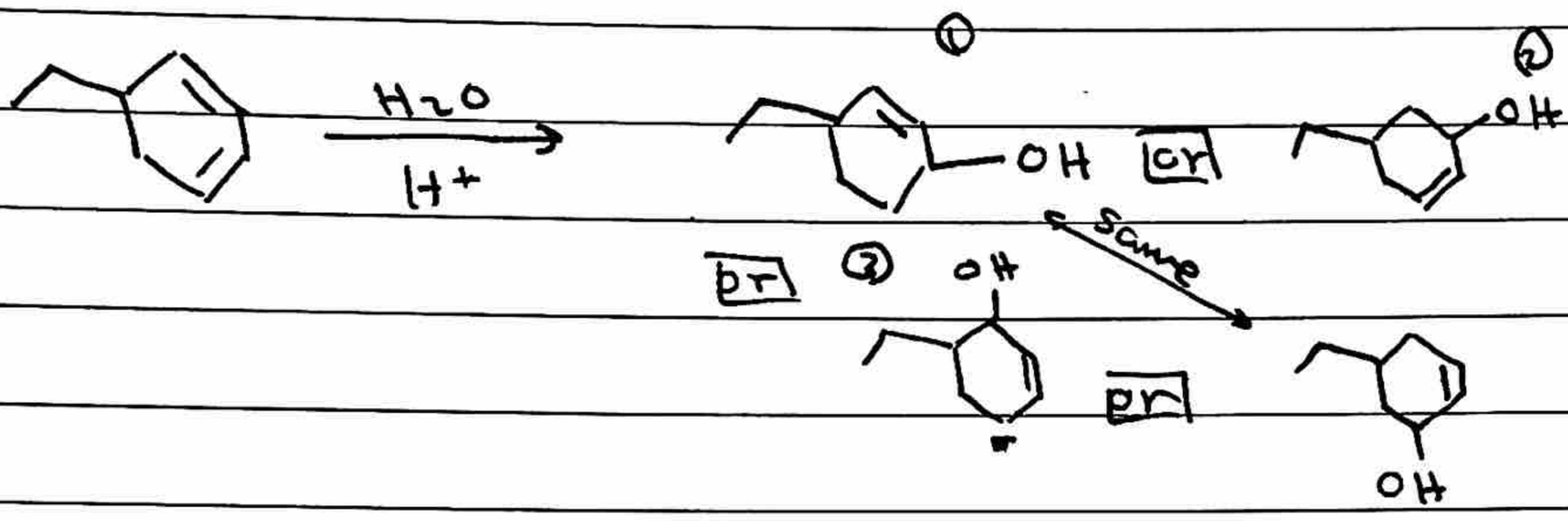


Saturation.



3.15: Addition to conjugated diens.





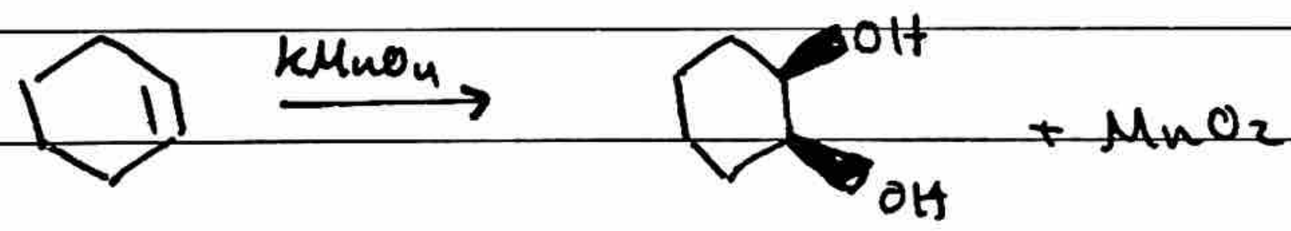
HW: $\xrightarrow{HCl}$

3.17: Oxidation of Alkenes:

a:

$$\text{>C=C<} \xrightarrow[OH^-]{kMnO_4} \text{>C(OH)–C(OH)<} + MnO_2$$

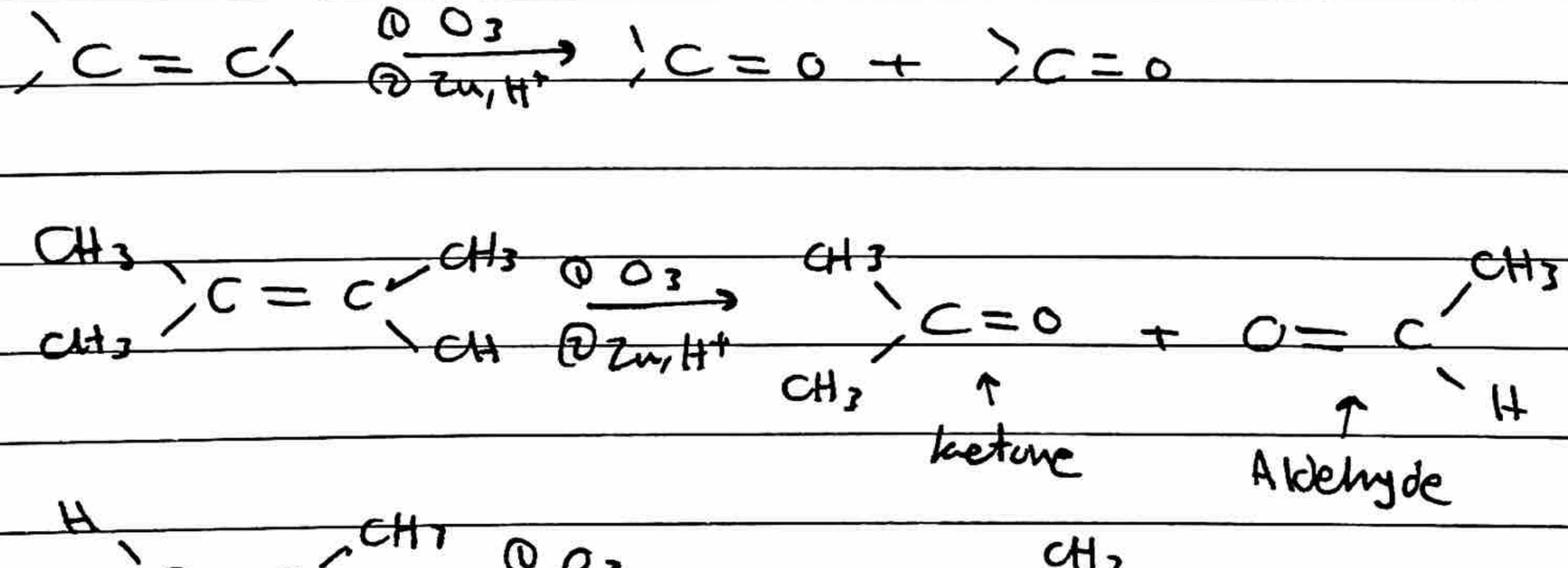
red ppt.

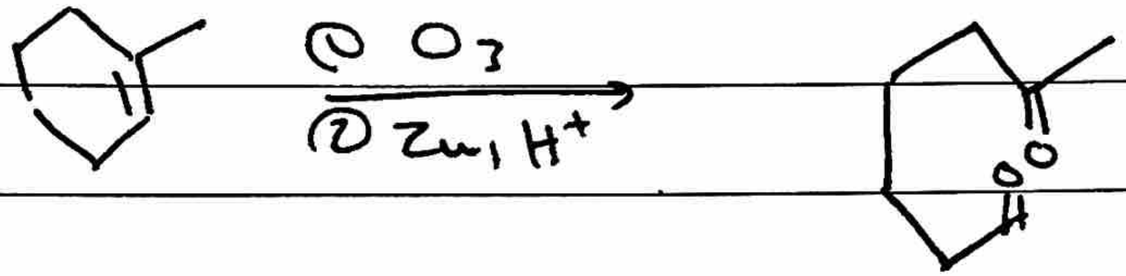
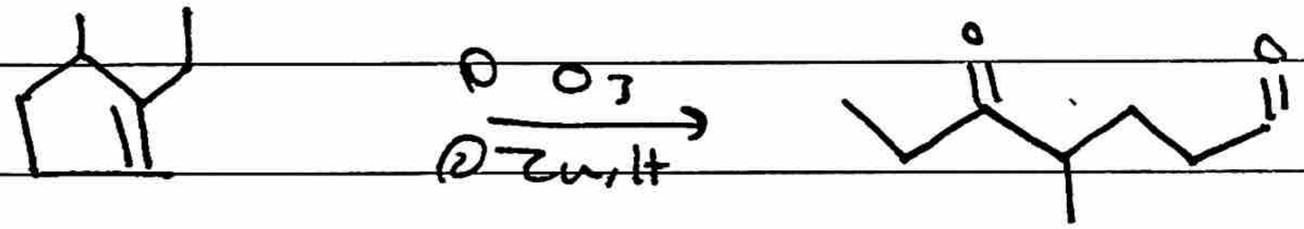


b:

– Ozonolysis:

$$\text{>C=C<} \xrightarrow[②\ Zn, H^+]{①\ O_3} \text{>C=O} + \text{>C=O}$$





Find the Original material from the product of ozonolation: