

Submit a **Single-sided Copy** to the Office
DO NOT STAPLE

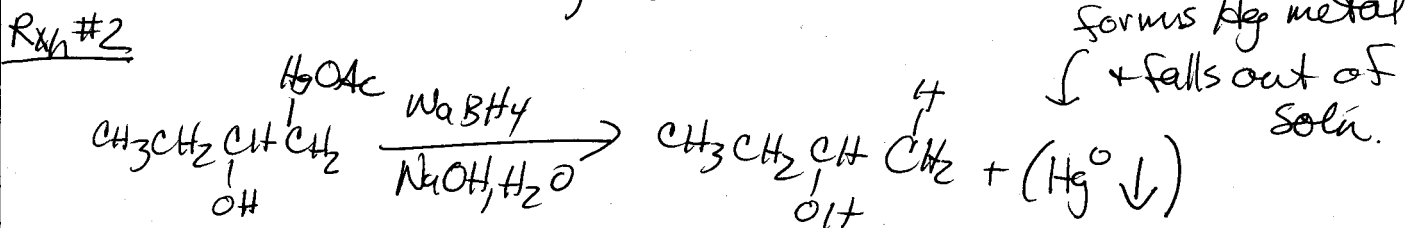
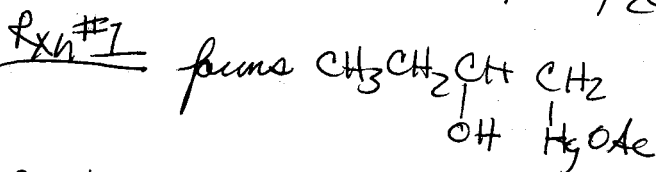
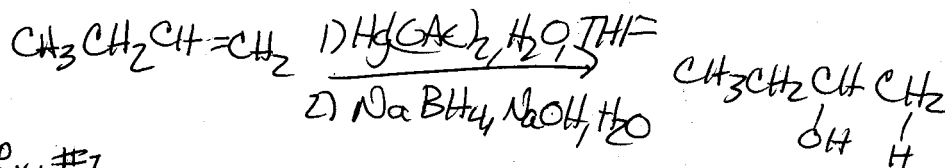
This week:

No office hrs on Friday - Instead, office hour TOPA/ after lecture

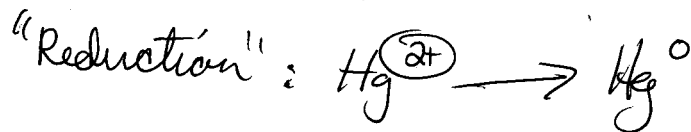
Recall:

Oxymercuration - reduction of alkenes to form alcohols
 (Markovnikov)

Ex:



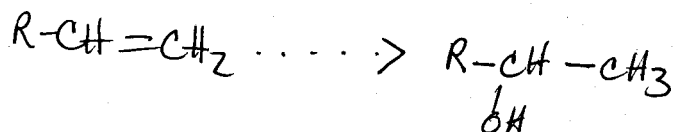
Mech: Unknown



- Mercury is very toxic - why use it?
 - Don't have to worry about $\oplus$ rearr. like in acid catalyzed hydration
 - H^+ hydration doesn't work quite as well in real life

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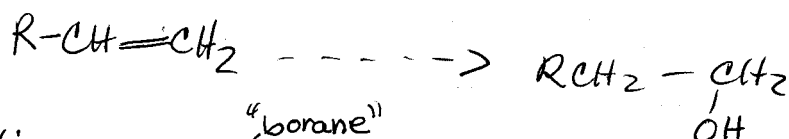
Synthetic Perspective



- Gives you an alcohol w/ Markovnikov selectivity (Regioselectivity)

Next: Hydroboration-oxidation of alkenes

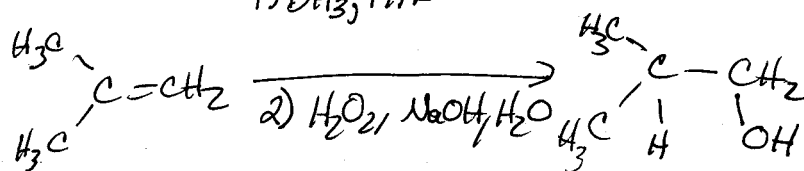
- Gives alcohols with Anti-Markovnikov selectivity



- OH ends up on less substituted C

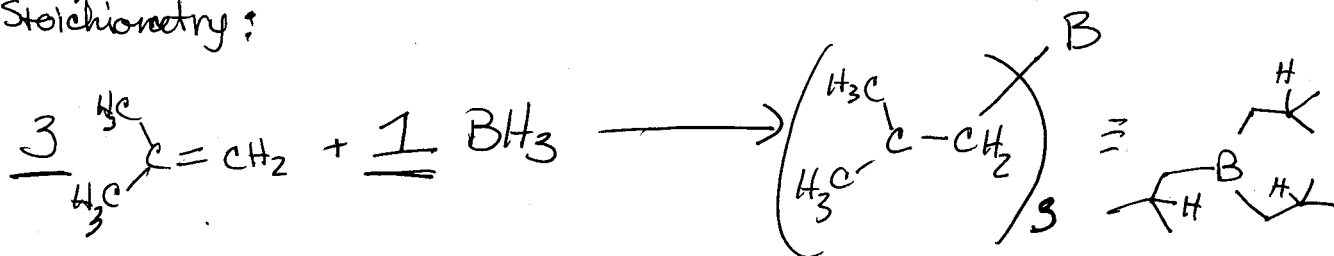
Ex:

1) BH_3 , THF



1st step:

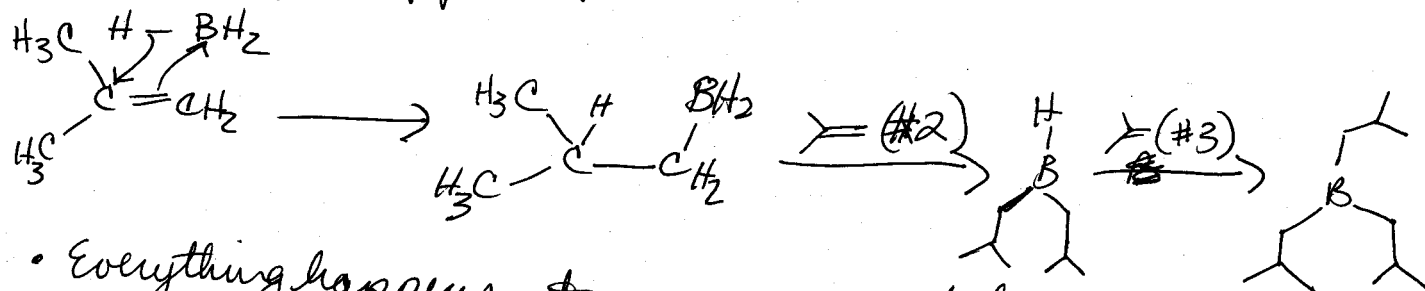
Stoichiometry:



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Mechanism of BH Band formation

= Same steps happen 3X

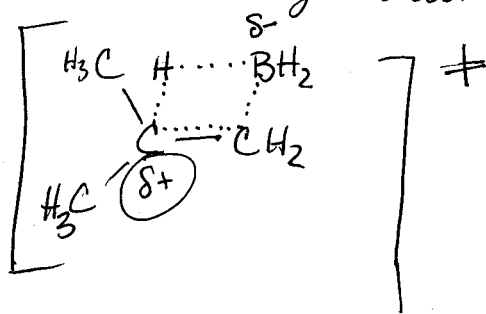


• Everything happens at once - concerted process

Origin of regioselectivity:

• 2 part rationale:

1) Partial charges that develop transiently at the transition state



More substitution:

$\Rightarrow$ Carbon better able to ~~accom~~ accommodate δ^+ (or $\oplus$)

2) Sterics:

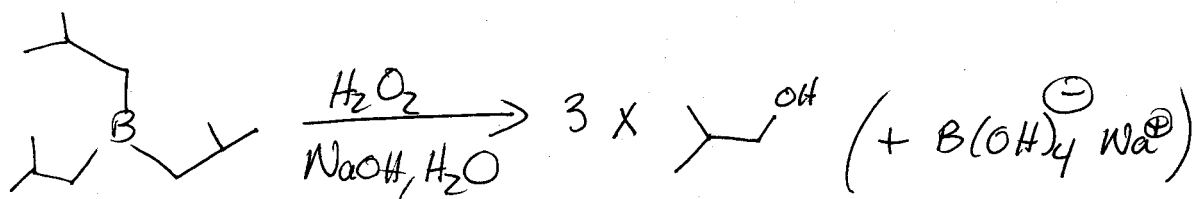
BH_2 is larger than H, therefore BH_2 prefers less sub. C

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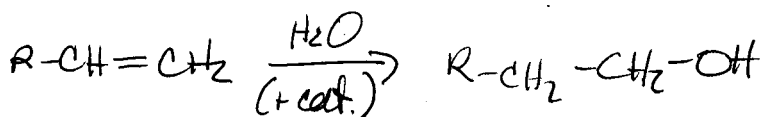
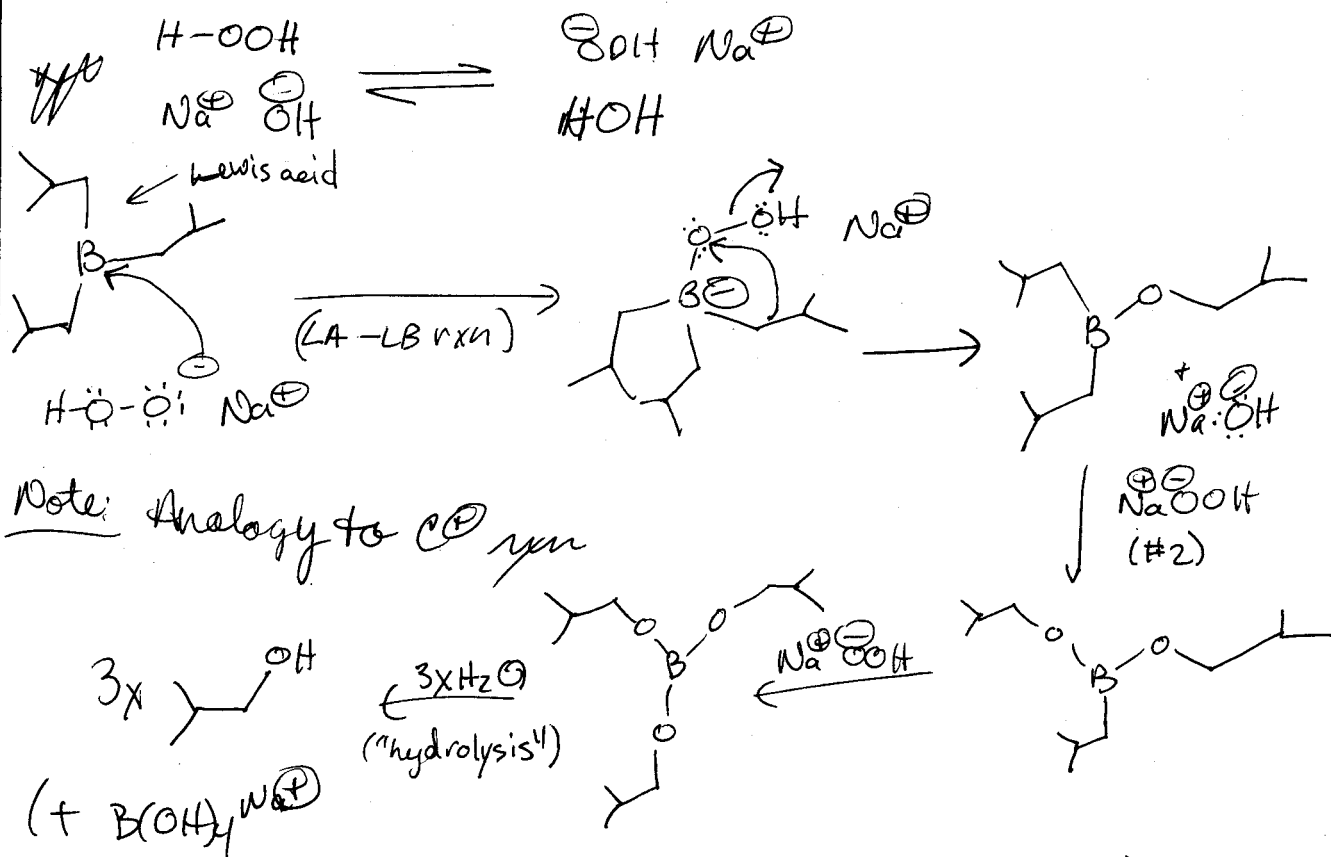
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Step #2: Oxidation

- Replace C-B bond w/ C-O bond



Meck:



- Rmr of this type recently discovered (Paper on website)