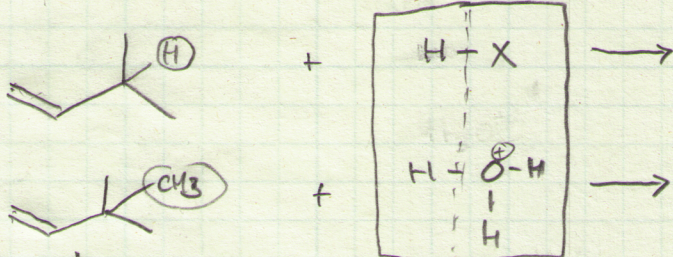
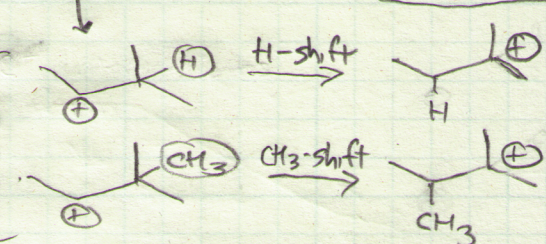


Hydrohalogenation (H-X) X = halogen
Hydration (H-OH, dil H₂SO₄)



Lewis Acid
H⁺

Lewis Base
:X⁻

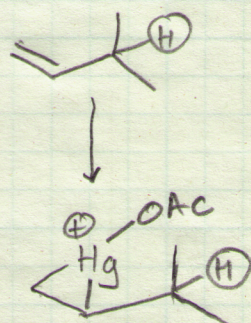


∴ rearrangements are possible

2° C⁺ → 3° C⁺
via hydride or CH₃ shift.

C⁺ intermediates

Oxymercuration - Demercuration



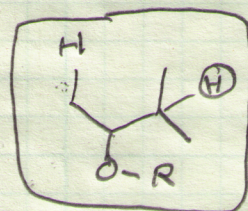
① Hg(OAc)₂, R-O-H

LA
:Hg²⁺

LB
R-O-H
(R = H or Alkyl)

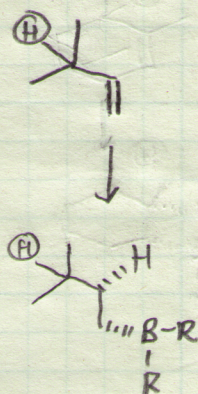
② Na⁺ BH₄⁻

provides
H:⁻ that removes Hg²⁺



NO C⁺ intermediates ∴ NO H-shift or CH₃-shift

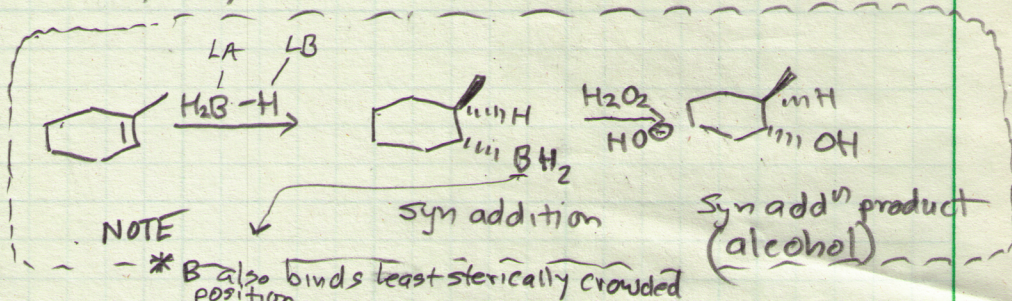
Hydroboration - Oxidation



1) BH₃
2) H₂O₂, HO⁻, H₂O

empty p → LA
CB

LB
"H:⁻"
(from BH₃)



NOTE

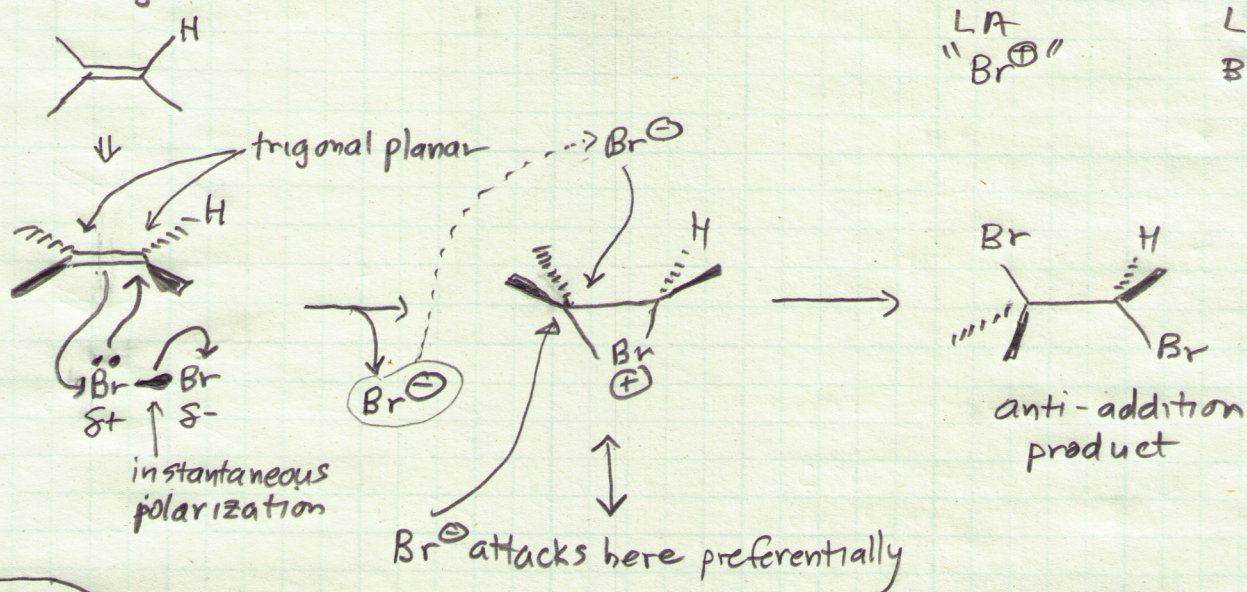
* B also binds least sterically crowded position

syn addition

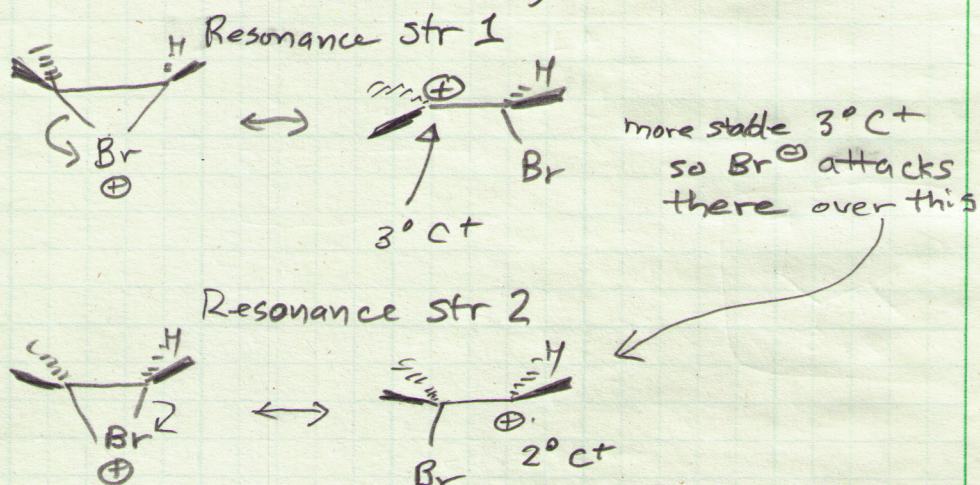
syn addⁿ product
(alcohol)

NO C⁺ intermediates ∴ NO H- or CH₃-shifts

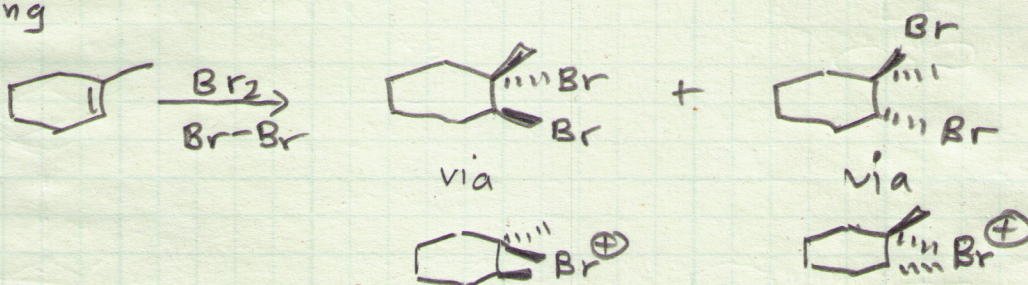
D. halogenation



NO C⁺ intermediate is formed
 ∴ NO H- or CH₃-shift

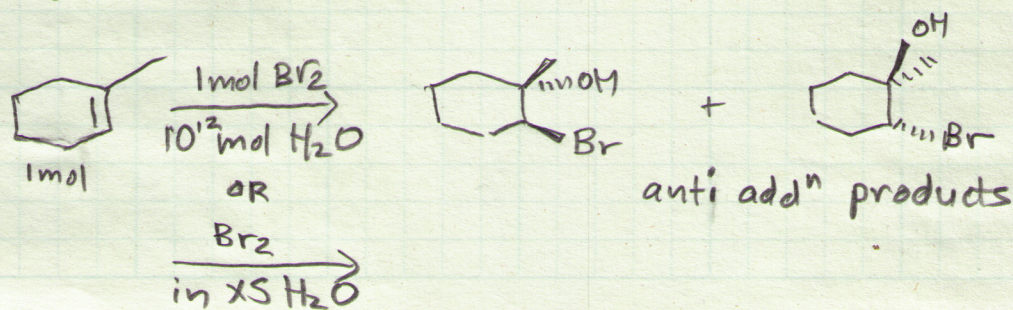


Ring

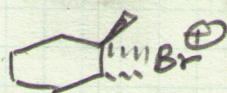
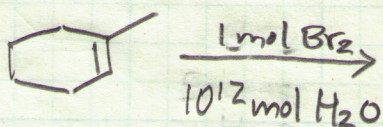


Halohydrin

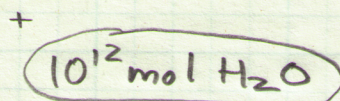
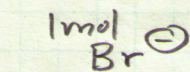
halogen 'OH' addition



Halohydrin formation continued. What is happening?



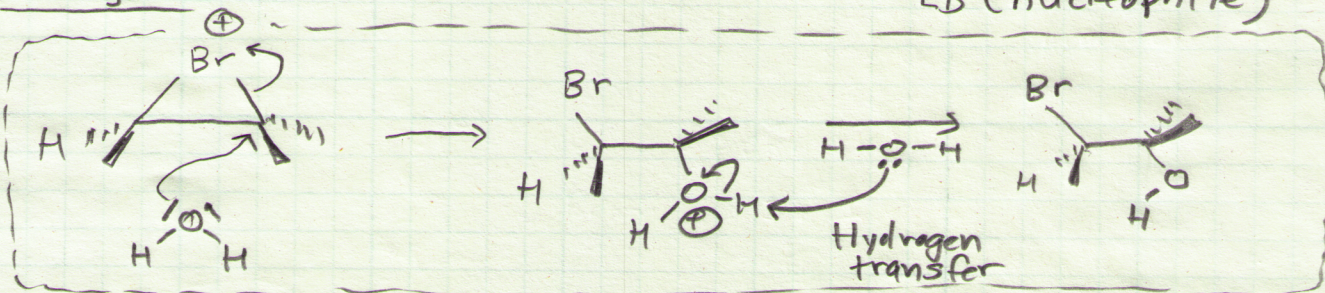
and



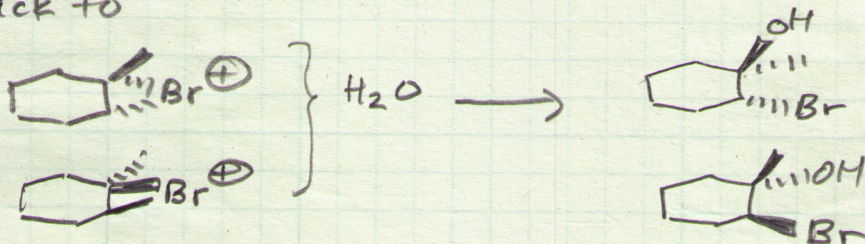
this dilutes Br^-

$\therefore \text{H}_2\text{O}$ functions as the LB (nucleophile)

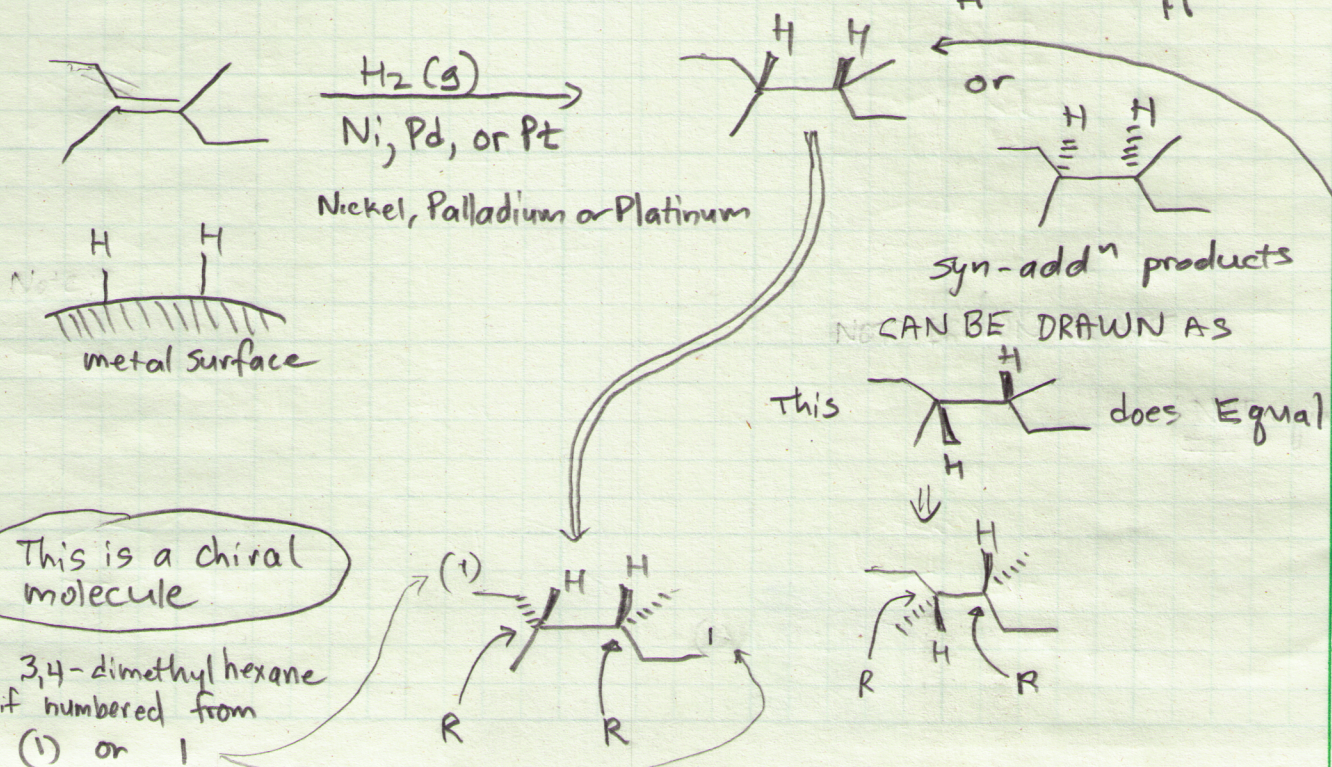
Imagine



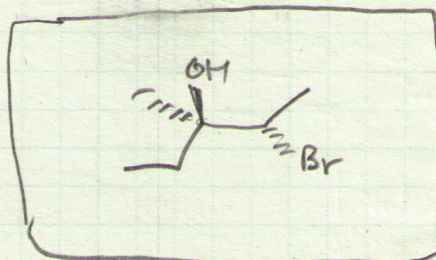
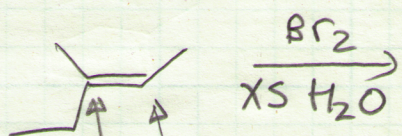
Back to



Hydrogenation (H_2 gas)



Practice



Draw one stereoisomer

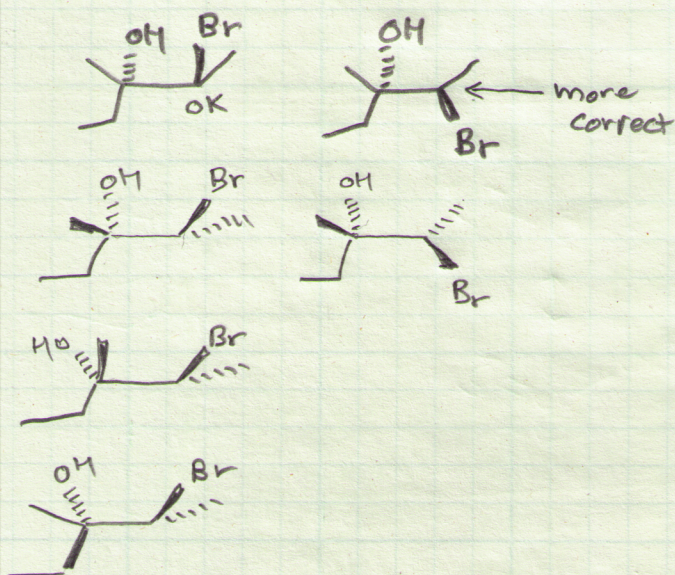
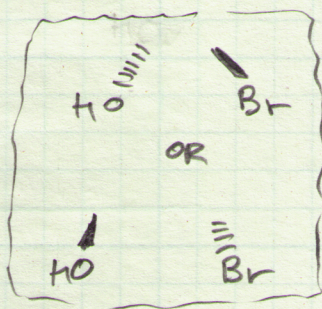
Br goes here
Lewis Acid

"OH" goes here
Lewis Base

Anti-addition product!

Variations of drawing

YOU GET
THE IDEA



each of these communicates
anti-addⁿ mechanism