

LEC (17)

CHEM 30A

Feb 18th

(1)

① ADDITION OF HOCl/HOBr

② OXYMERCURATION

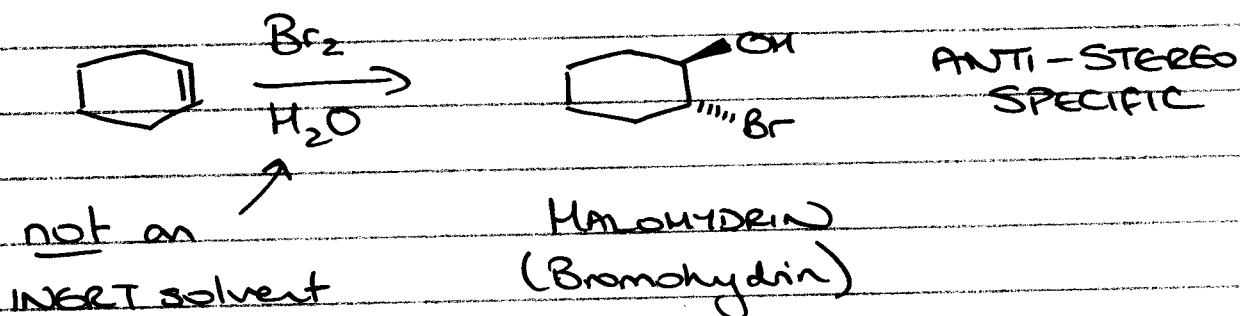
③ HYDROBORATION

④ OXIDATION

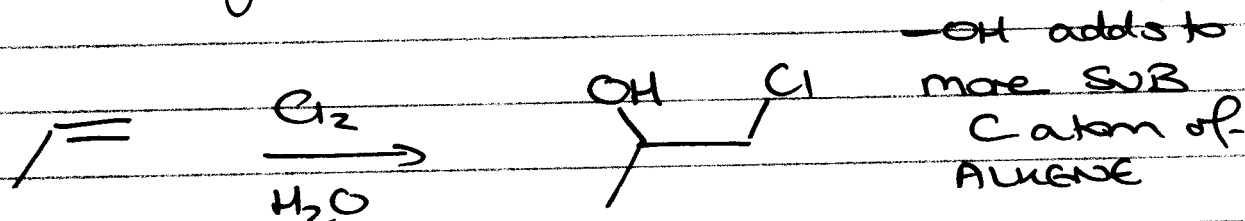
QUIZ
LOW 3
MEAN 16
HIGH 29

READ Ch 6, PROBLEMS 6.9-6.11, 6.13, 6.17-6.42
MECHANISM SHEETS ON WEB

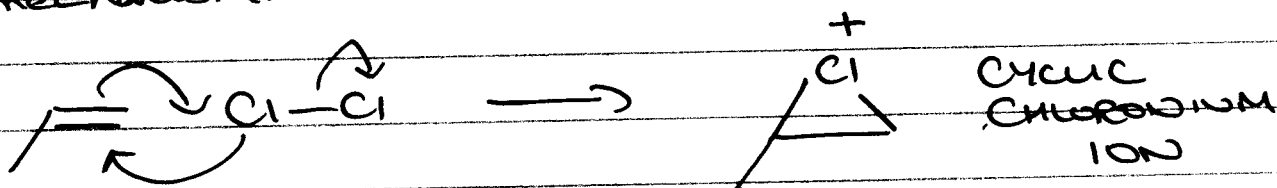
① ADDITION OF HOCl/HOBr



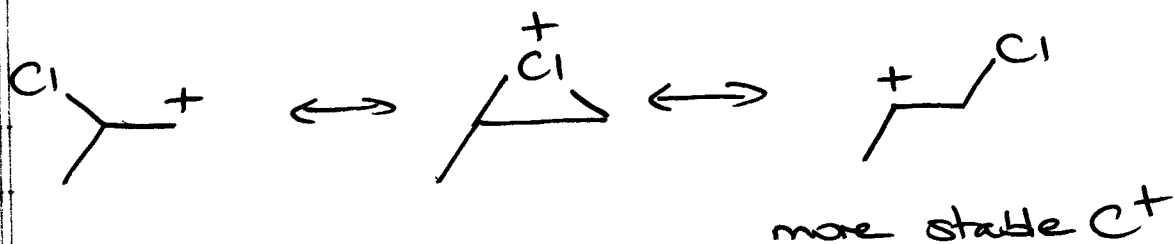
- also regioselective



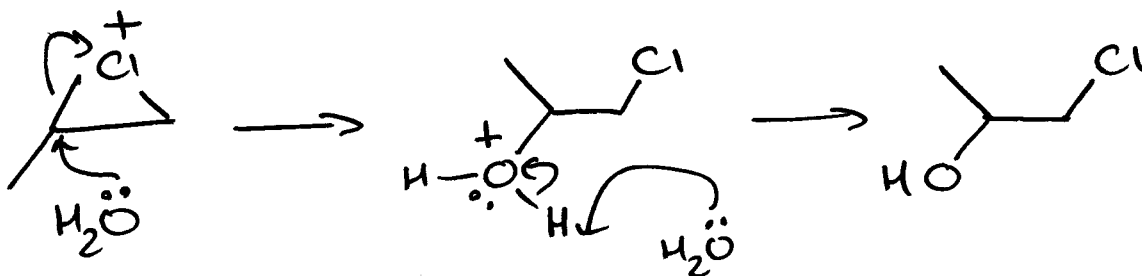
mechanism:



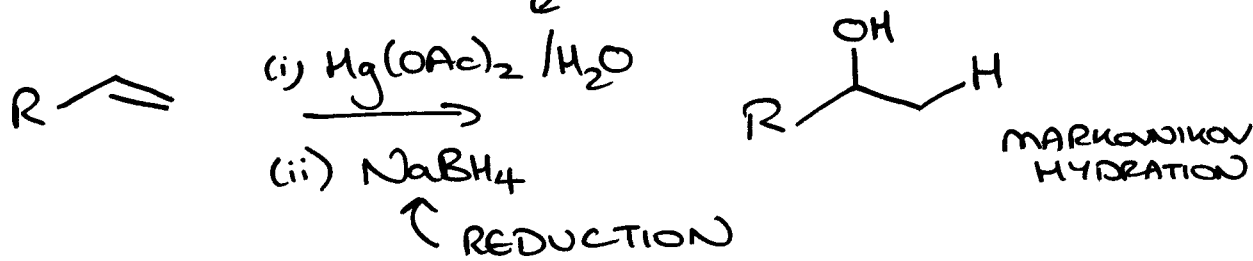
(2)



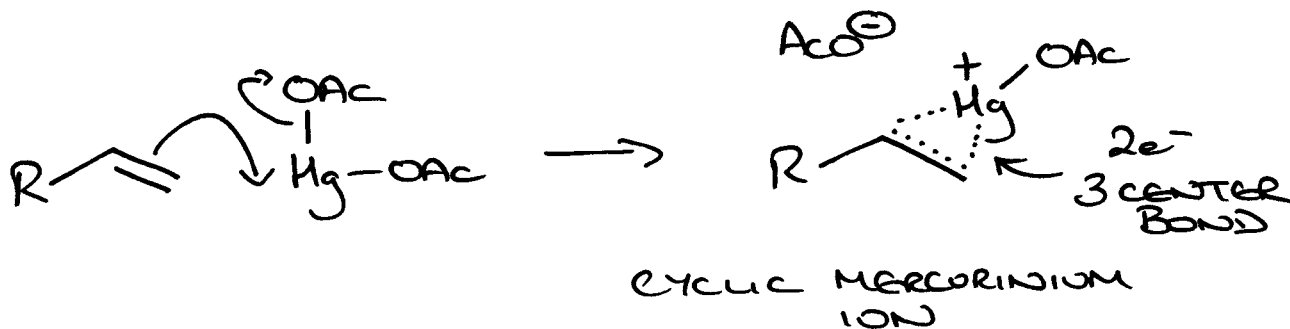
OPENS via more stable C^+ , hence



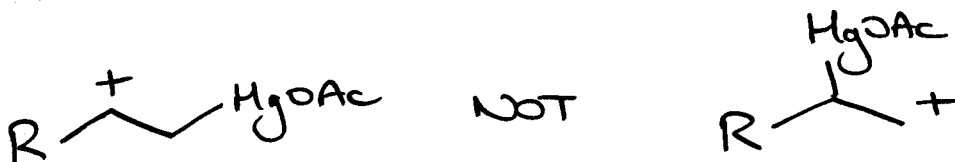
(2) OXYMERCURATION

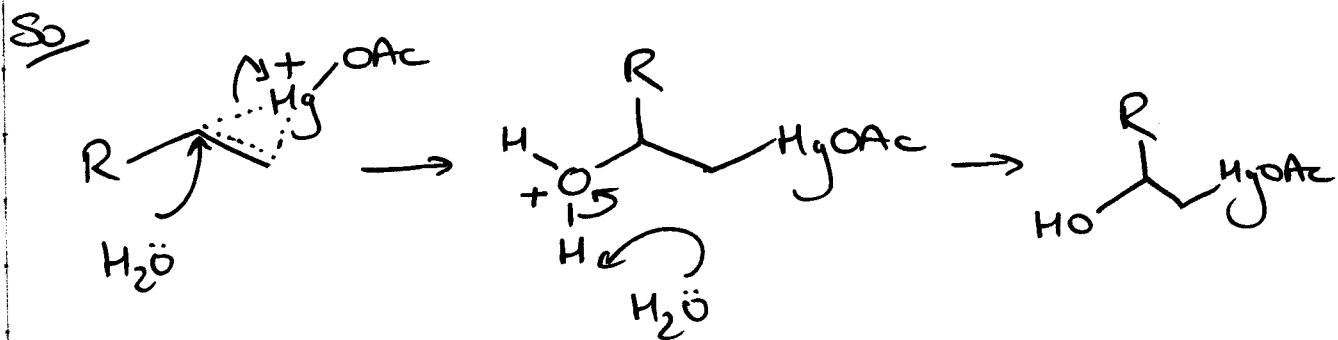


mechanism

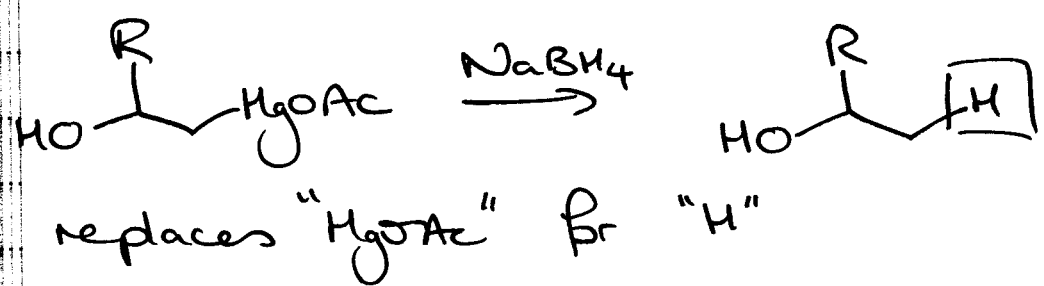


opens via most stable C^+





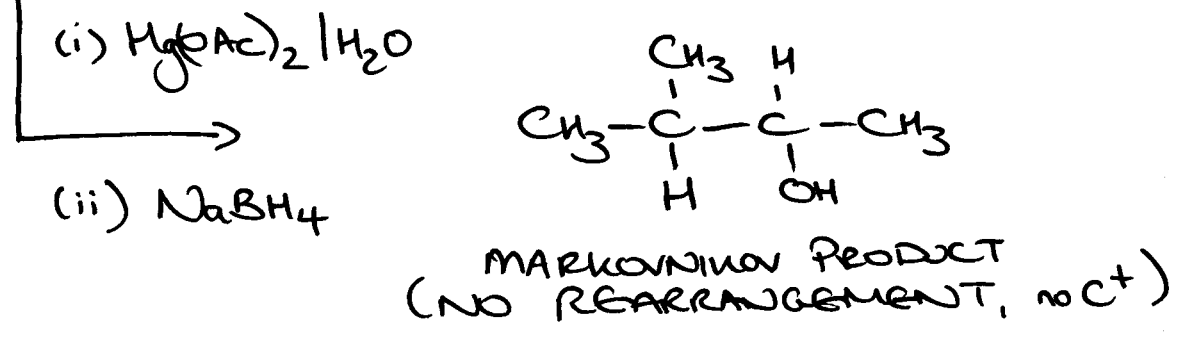
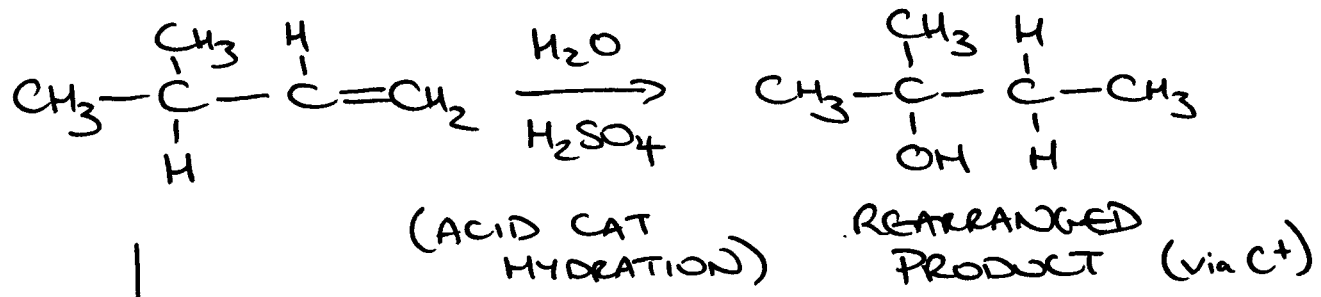
Organomercury compd reduced w/ NaBH₄



DON'T NEED TO KNOW MECHANISM FOR THIS

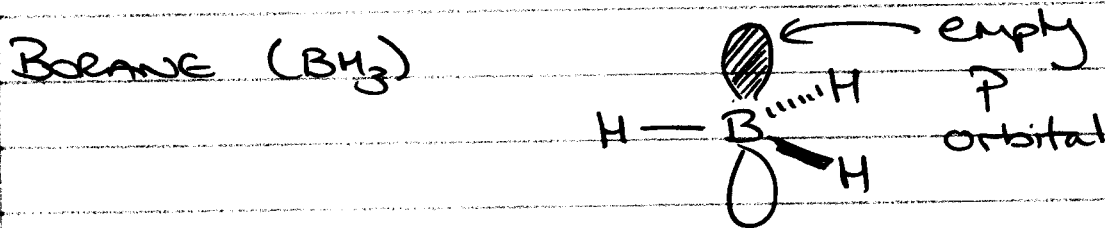
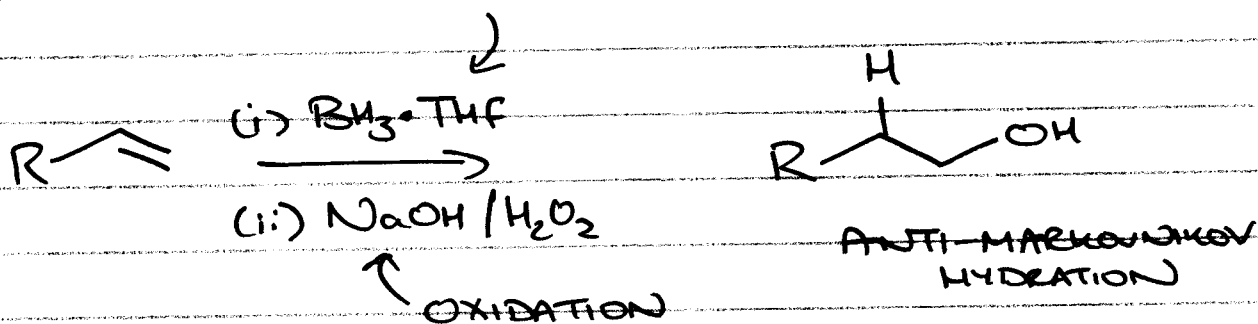
WHY IS THIS USEFUL?

consider:



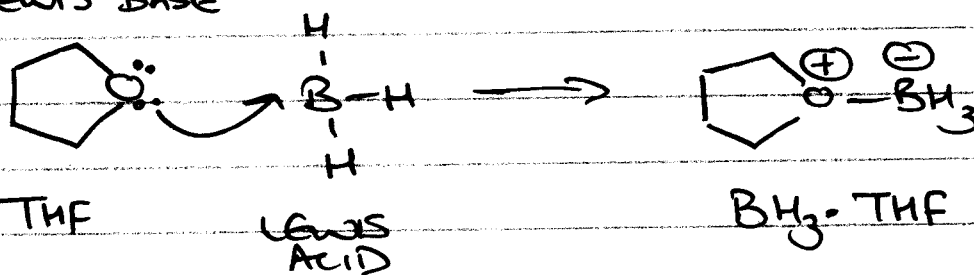
So REGIOSPECIFIC w/ ANTISTEREOSPECIFICITY
(similar to addition of HCl/HOBr)

(3) HYDROBORATION

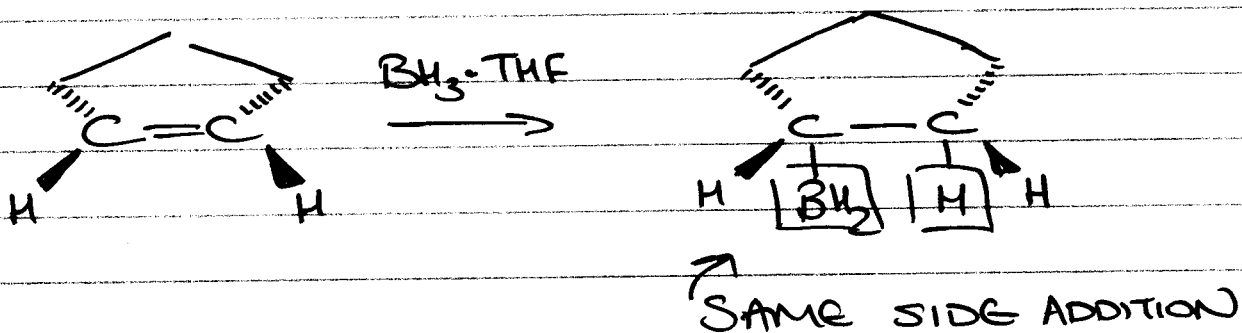


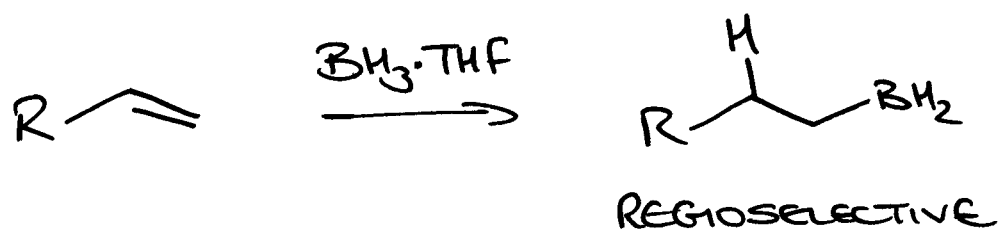
(actually exist as B_2H_6 - structure?)

LEWIS BASE



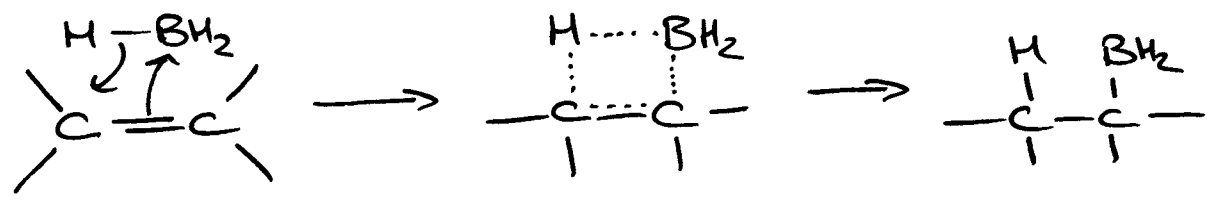
- SYN STEREOSPECIFIC



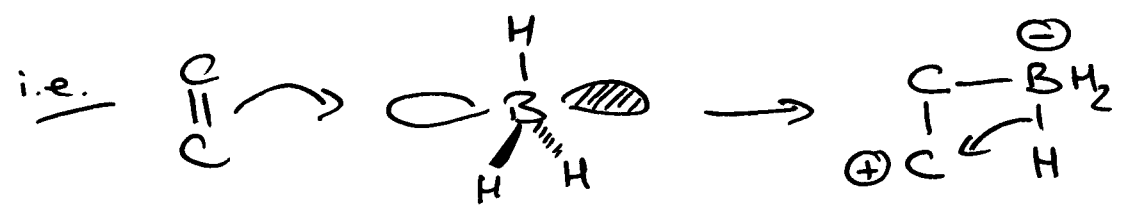


BORON ADDS TO LESS SUBSTITUTED C ATOM

Mechanism:



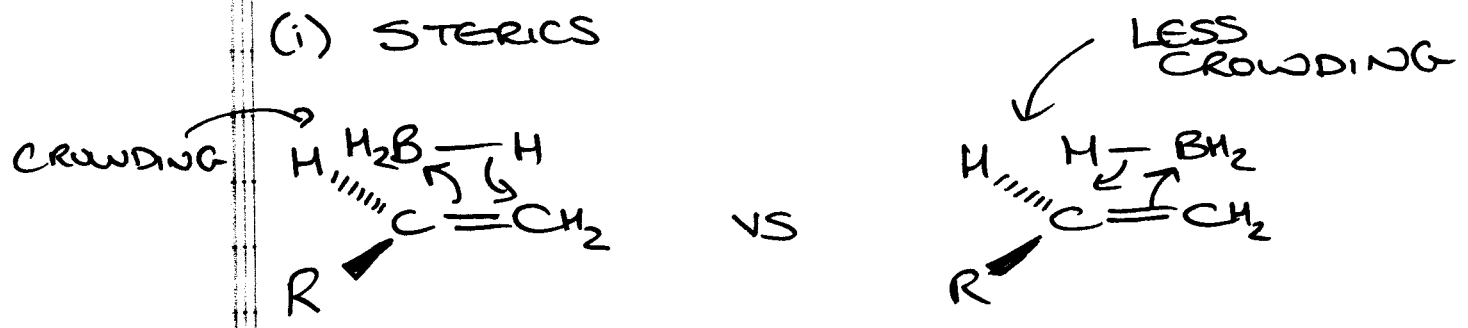
DOES NOT GO THROUGH A C⁺



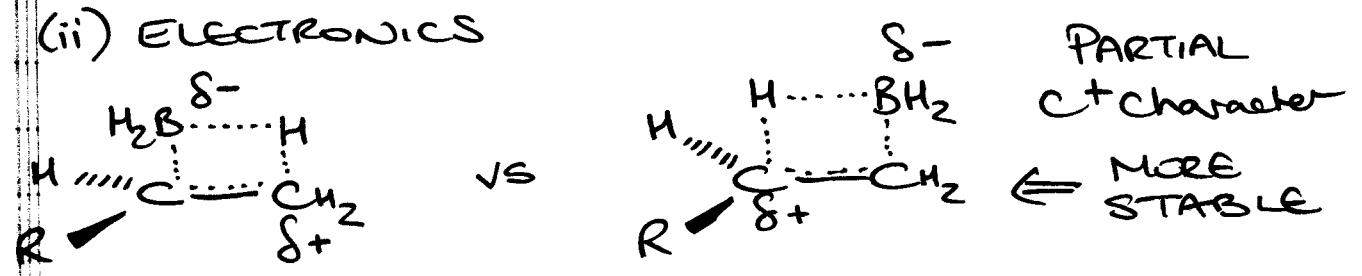
⇒ NO REARRANGEMENTS

WHY REGIOSELECTIVE?

(i) STERIC

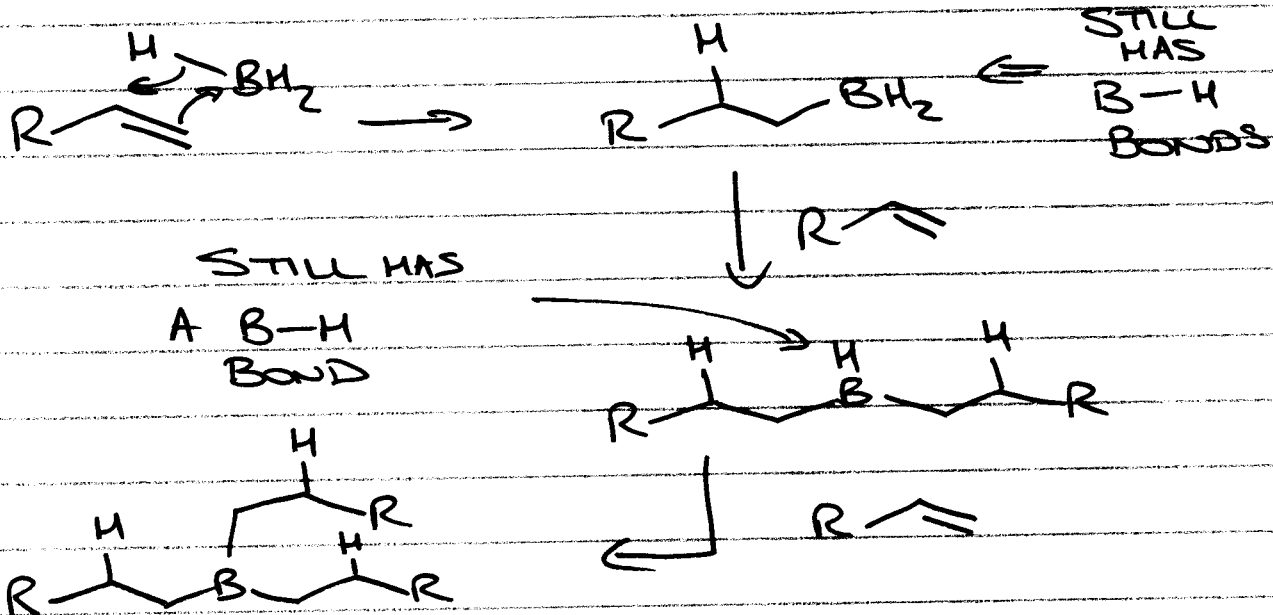


(ii) ELECTRONICS



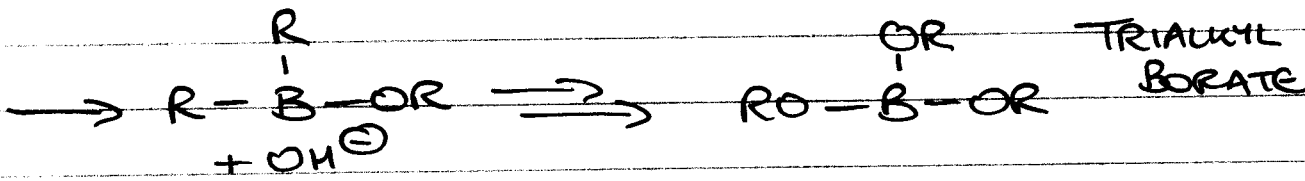
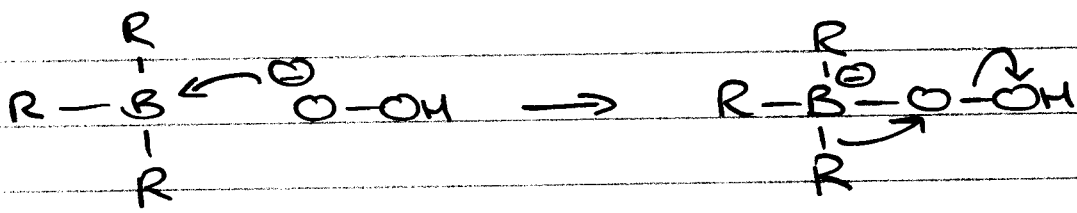
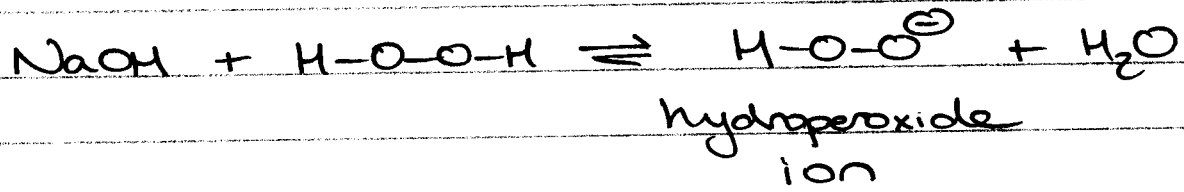
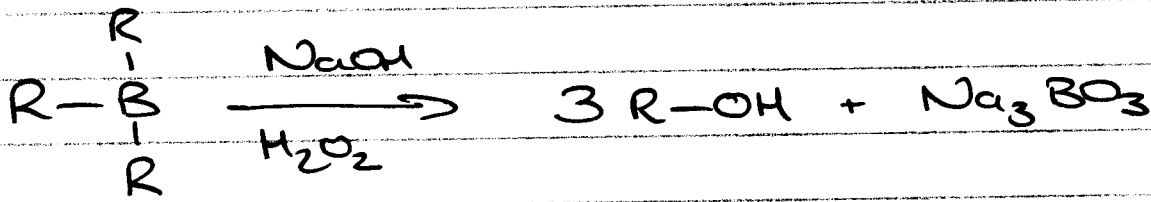
6

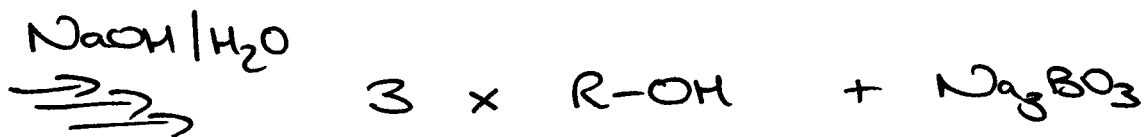
Full mechanism



TRIALKYLBORANE

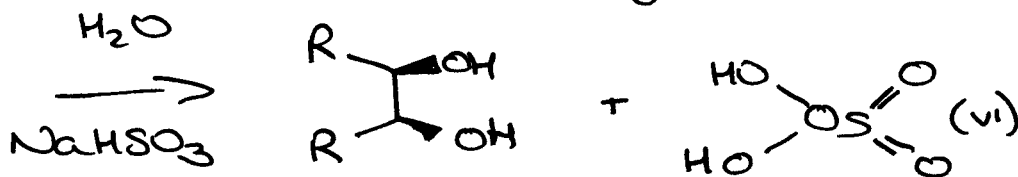
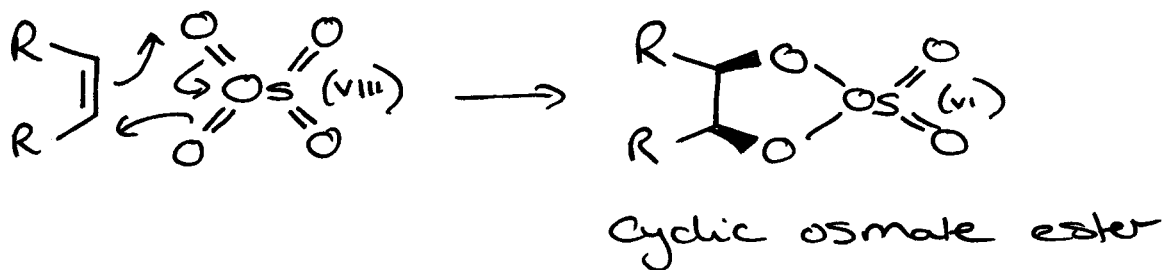
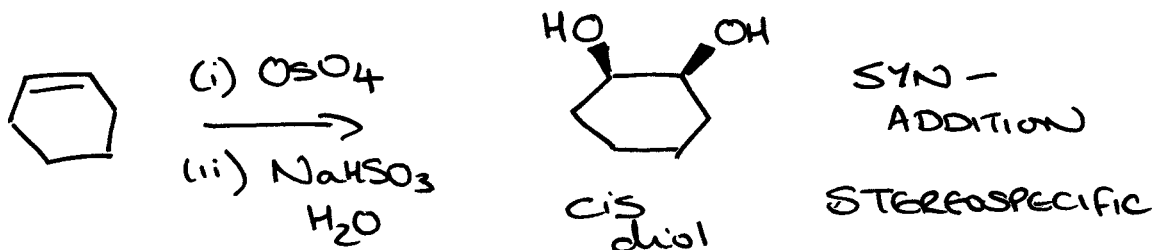
SECOND STEP





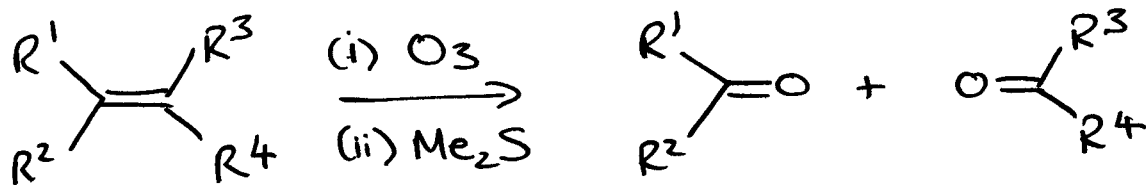
④ OXIDATION

(i) OsO_4 osmium tetroxide

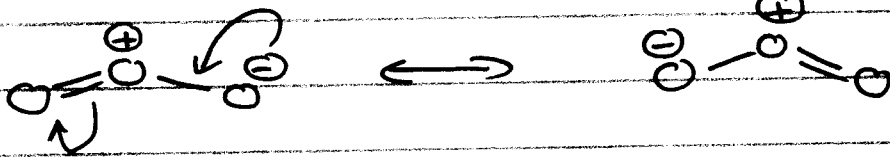


OS REDUCED (VIII \rightarrow VI), ALKENE OXIDIZED

(ii) OZONOLYSIS



OZONE



Mechanism:

