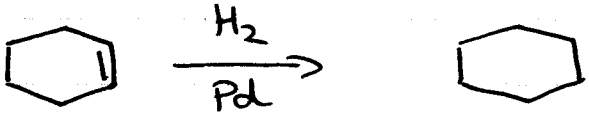
LEC (18) CHEM 30A May 16th

(1) HYDROBORATION cont...
(2) OXIDATION — Read 6.5 - 6.7, 10.9 (3rd)
(3) REDUCTION — 6.5 - 6.7, 7.6 (4th)
(4) STEREOCHEMISTRY
(5) ALKYNES — 6.43-6.49 (3rd)
6.41 - 6.52 (4th)

---

(1) & (2) See pages 6-8 Lec (17)

(3) REDUCTION

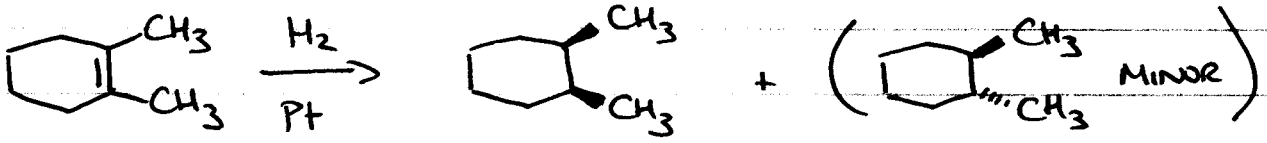


METAL CATALYST
(finely divided on an inert support → charcoal)

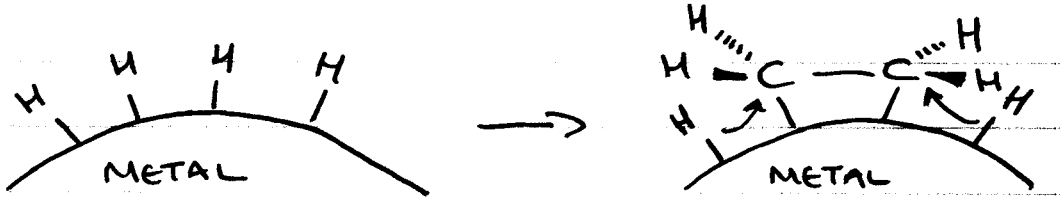
Transition metal catalyst Pt, Pd, Ru, Ni

- CATALYTIC REDUCTION / HYDROGENATION

- Stereoselective

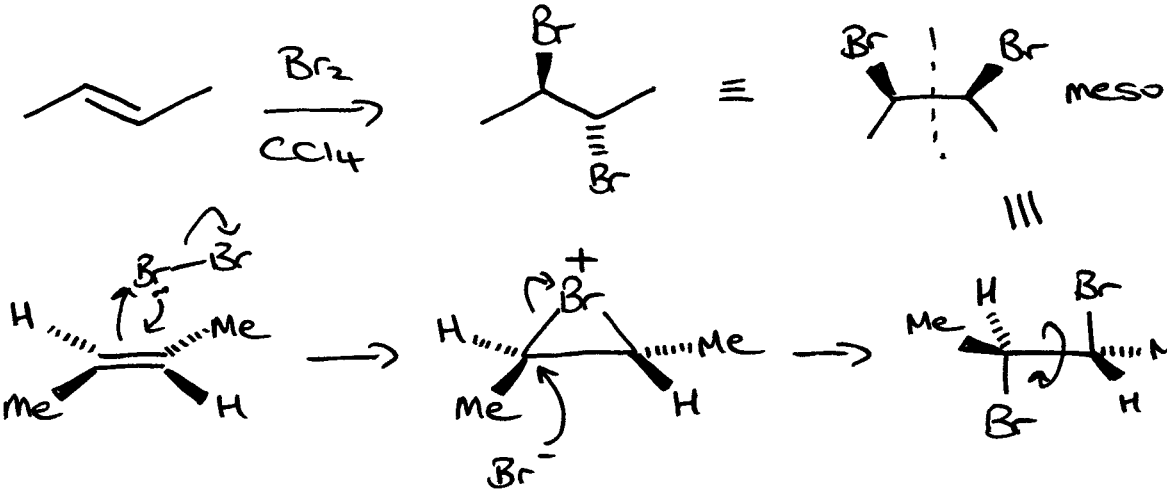


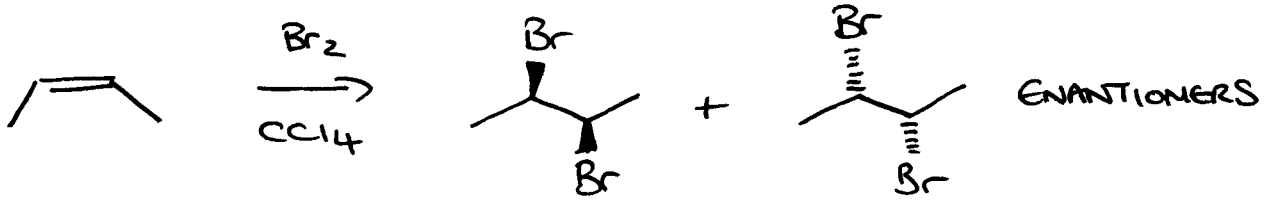
mechanism:



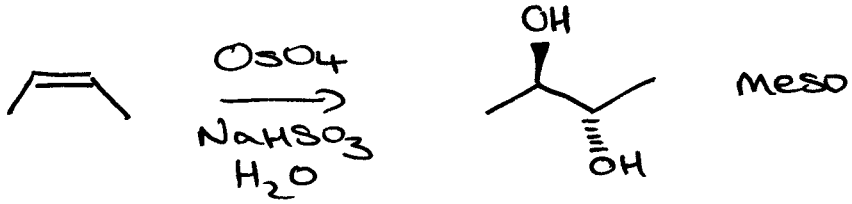
MINOR PRODUCTS result from isomerisation of the alkene on the metal catalyst.

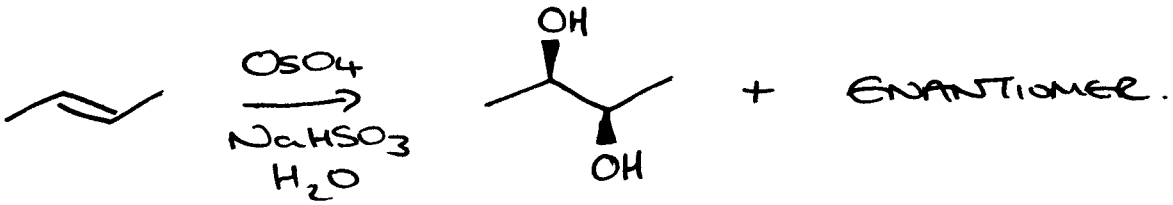
(4) STEREOCHEMISTRY (again)





WORK THROUGH THE MECHANISM

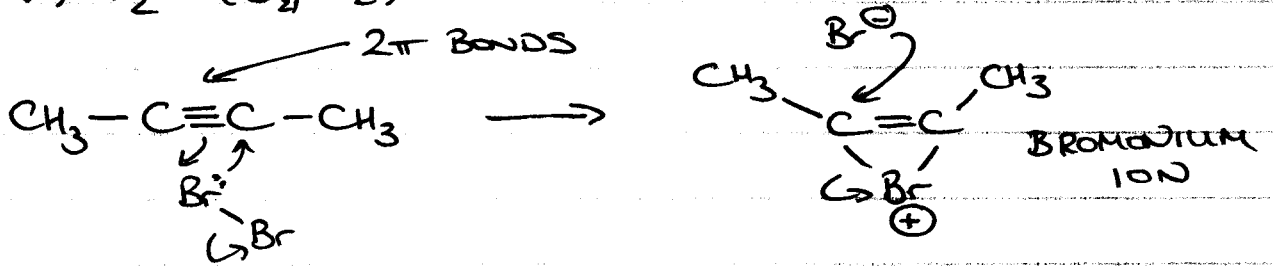




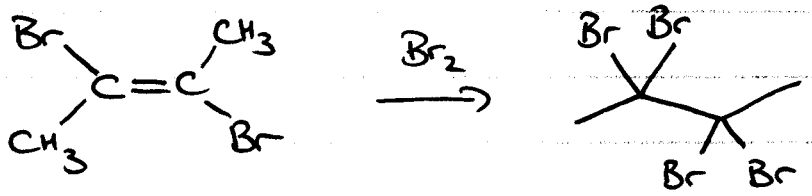
Again, work through the mechanisms and show how to get each product

(5) ALKYNES

(i) X_2 (Br_2, Cl_2)



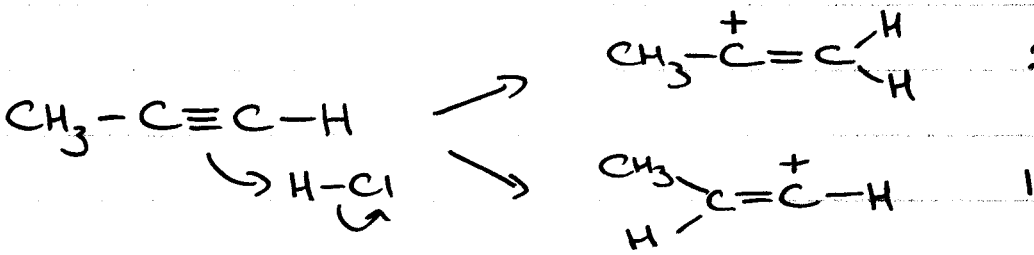
ANTI STEREOSPECIFICITY



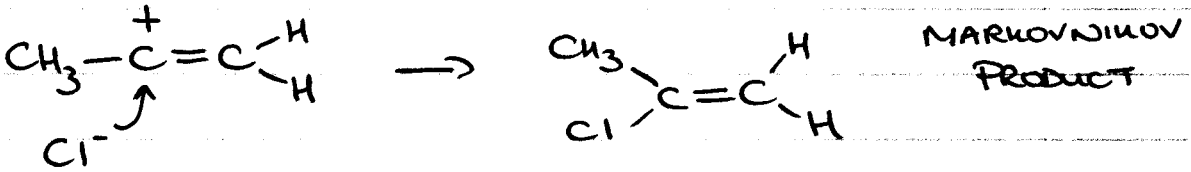
trans dibromide (difficult to stop here)

tetrabromoalkane

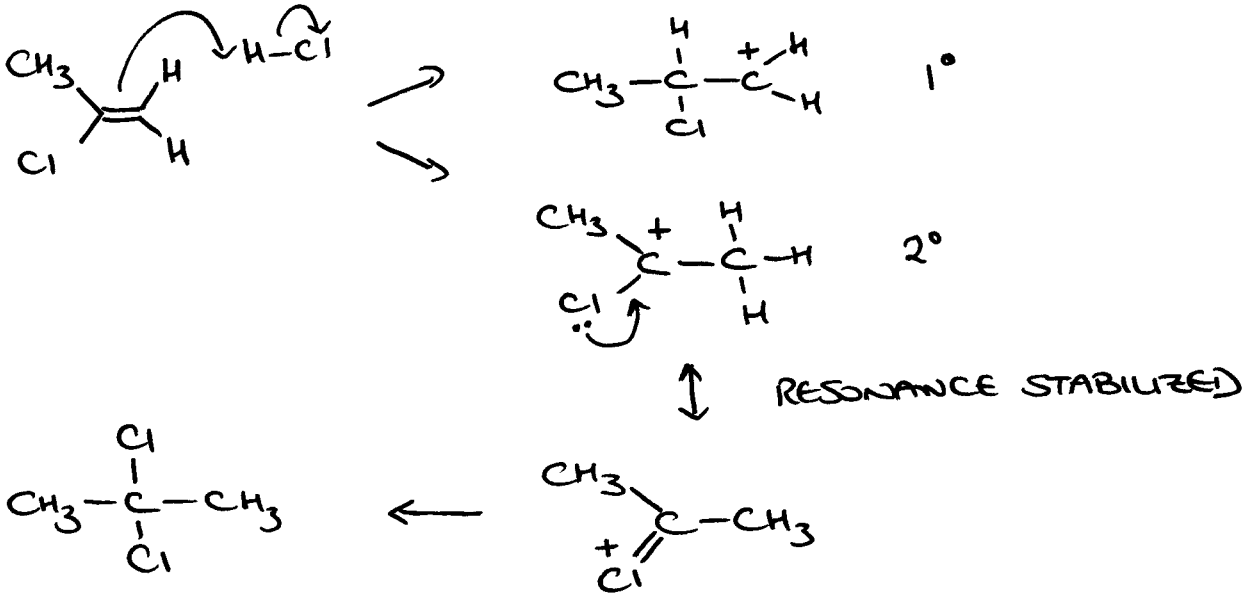
(ii) HX (HCl, HBr, HI)



VINYL CARBOCATIONS (not very stable)



ALKENE PRODUCT COMPETES WITH ALKYNE FOR H–Cl IN THE REACTION (ALKENES MORE REACTIVE)

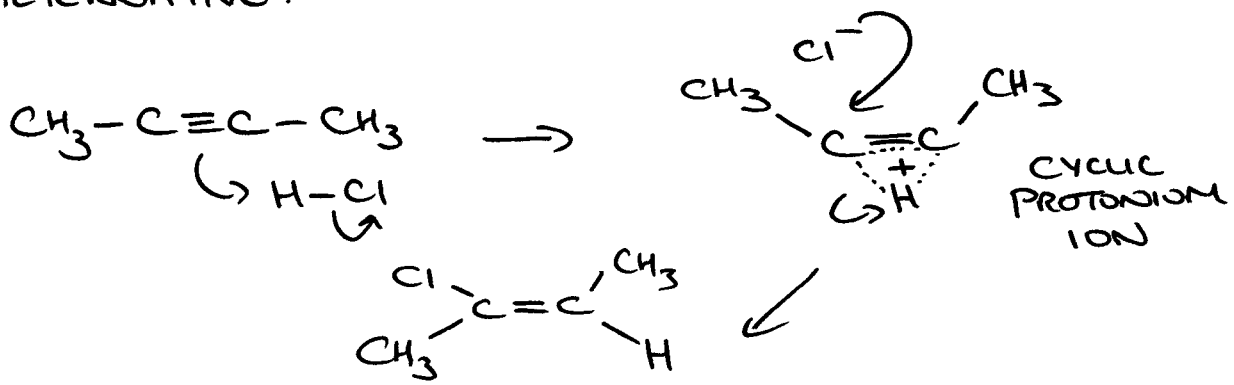


mechanisms may be more complicated, but this is not a bad model

VINYLIC C^+ quite unstable

$2°$ VINYLIC $C^+ \simeq 1° C^+$ ← not a viable reaction intermediate

ALTERNATIVE:



ACCOUNTS FOR OBSERVED TRANS SELECTIVITY.