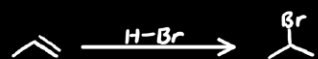
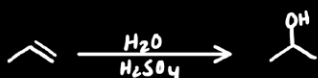


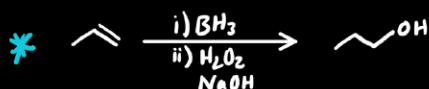
Summary of Reactions (Chapter 6)



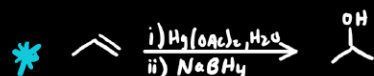
markovnikov
(Br goes to **MORE** substituted side of π bond) HCl, HI also work
Carbocation, rearrangement possible; stereochem is same as for other rxns involving carbocations



markovnikov
(OH goes to **MORE** substituted side of π bond)
Carbocation, rearrangement possible; stereochem is same as for other rxns involving carbocations

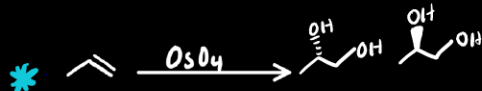


anti-markovnikov
(OH goes to **LESS** substituted side of π bond)
SYN addition of H_2O



markovnikov
(OH goes to **MORE** substituted side of π bond)

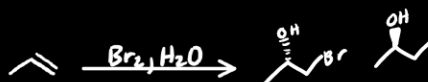
ANTI addition of H_2O
 No carbocation rearrangements (to avoid carbocation rearrangements, use this rxn instead of $\text{H}_2\text{SO}_4, \text{H}_2\text{O}$)



SYN addition of OH, OH



ANTI addition of Br, Br Cl₂ also works



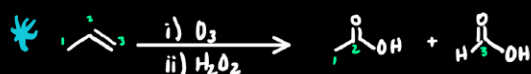
OH goes to more subst. side of π bond, Br goes to less subst. side
ANTI addition of Br, OH Cl₂ also works



SYN addition of H_2, H ~~Cl₂ also works~~

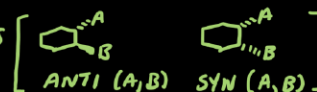


cleavage of $\text{C}=\text{C}$ bond, replace each side w/ double bond to oxygen
 reductive work-up gives Ketones or aldehydes

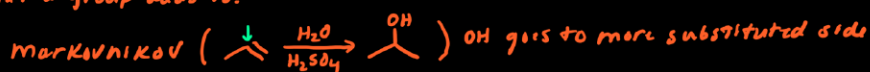


cleavage of $\text{C}=\text{C}$ bond, replace each side w/ double bond to oxygen
 reductive work-up gives Ketones or carboxylic acids

SYN and ANTI refer to relative stereochemistry between two atoms/groups added on each side of the π -bond in alkene addition reactions.



Markovnikov and anti-markovnikov refers to the side of the alkene that a group adds to.



Note: When ANY of these reactions form a new chiral center, a mixture of stereoisomers will be produced. The relationship among the stereoisomers and how many stereoisomers are formed depends on the structure of the starting material, the structure of the product, and mechanism of the reaction. Please see the lecture notes for more details on stereochemistry for each individual reaction. When a reaction forms more than one stereoisomer as a major products, all stereoisomers should be drawn explicitly.