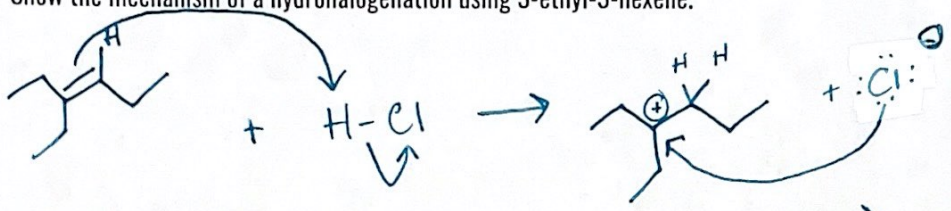
# Session 18 - Addition Reactions and Reactions Flowchart

1) Show the mechanism of a hydrohalogenation using 3-ethyl-3-hexene.

Markov. addition



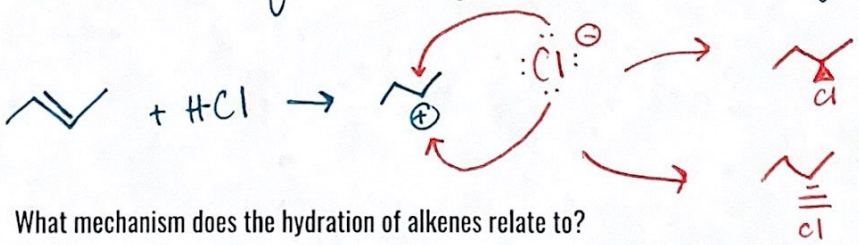

3-chloro-3-ethylhexane

2) What is a Markovnikov addition?

The bonding piece will bond to the least-substituted carbon of the double bond, forming the most stable possible carbocation.

3) If you have a chiral Carbon on one end of the double bond of a compound that goes through a hydrohalogenation reaction, what happens?

When the carbocation forms at what was a chiral center, the halogen will attack from both sides/faces of the compound, forming a racemic mixture.




4) What mechanism does the hydration of alkenes relate to?

Reverse of Dehydration (E1/E2)
↳ 1° alcohols

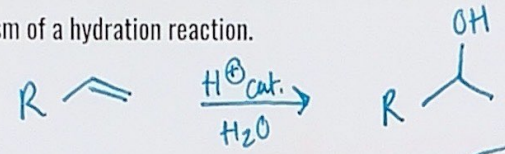
↓

Reverse E1

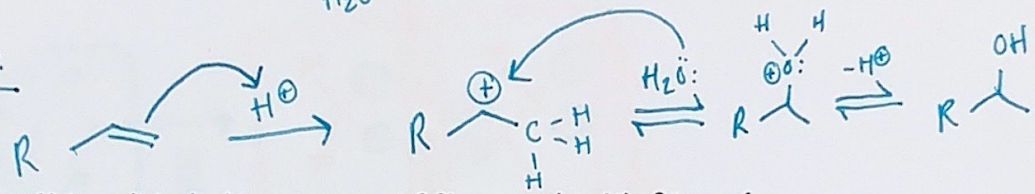
5) Show the mechanism of a hydration reaction.

Markovnikov addition

Reaction:



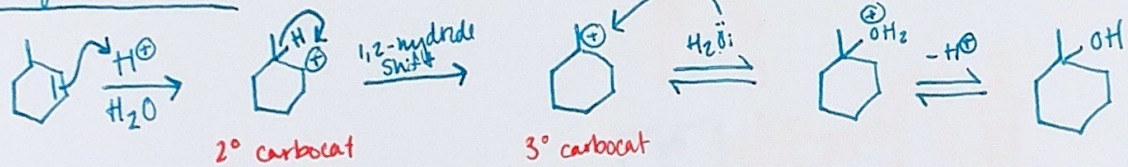

Mech:




6) What type of intermediates lead to rearrangements? Show examples of the 3 types of rearrangements.

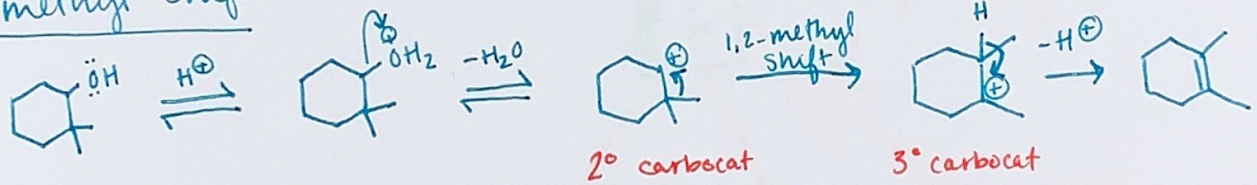
Carbocation intermediates lead to rearrangements

1,2-hydride shift:



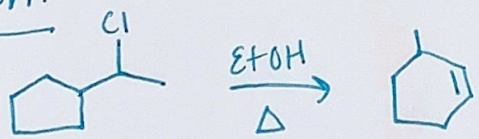

2° carbocat 3° carbocat

1,2-methyl shift:



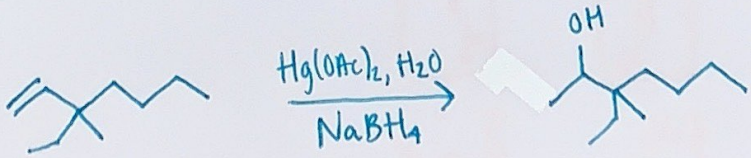

2° carbocat 3° carbocat

Ring Expansion:




(mech. on session 16)

7) Show an Oxymercuration-Demercuration reaction using 3-ethyl-3-methyl-1-heptene.




(markovnikov)

shift not possible

8) Build a flowchart using the running list of all the reactions that we have covered.