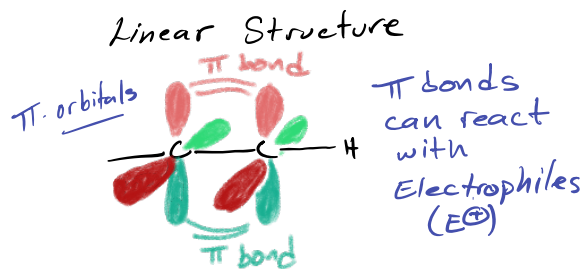
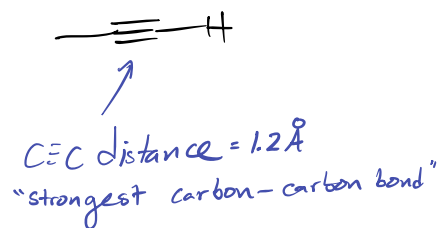
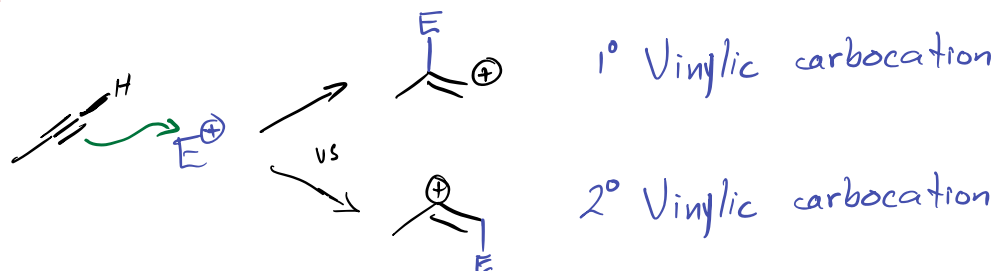


# Reactions of Alkynes

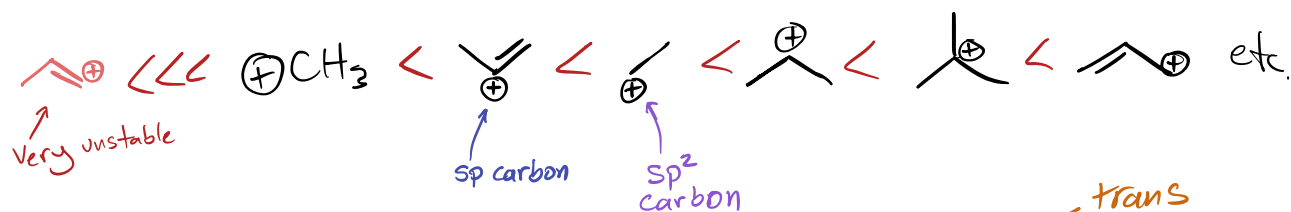
Summary:



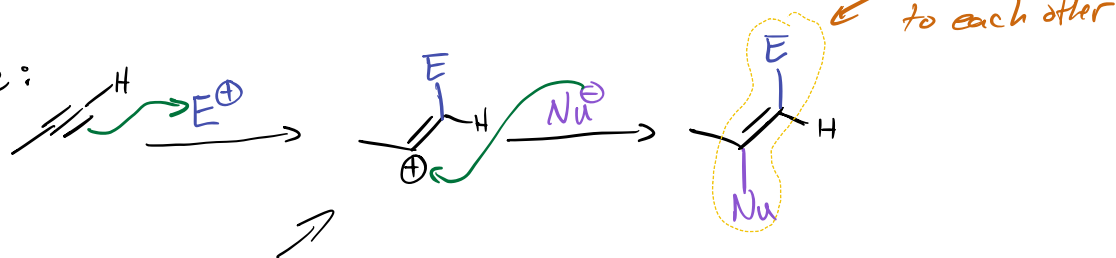
Which  $C^+$  is more likely to form in a rxn with  $E^+$ ?



Carbocation stability trends:

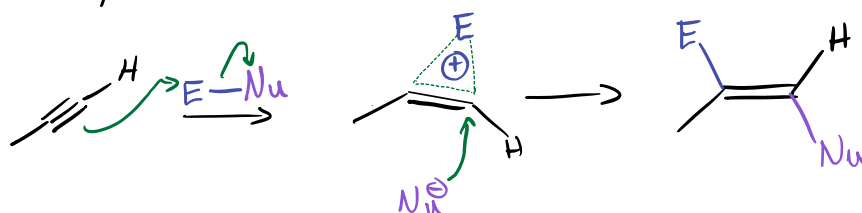


Therefore:

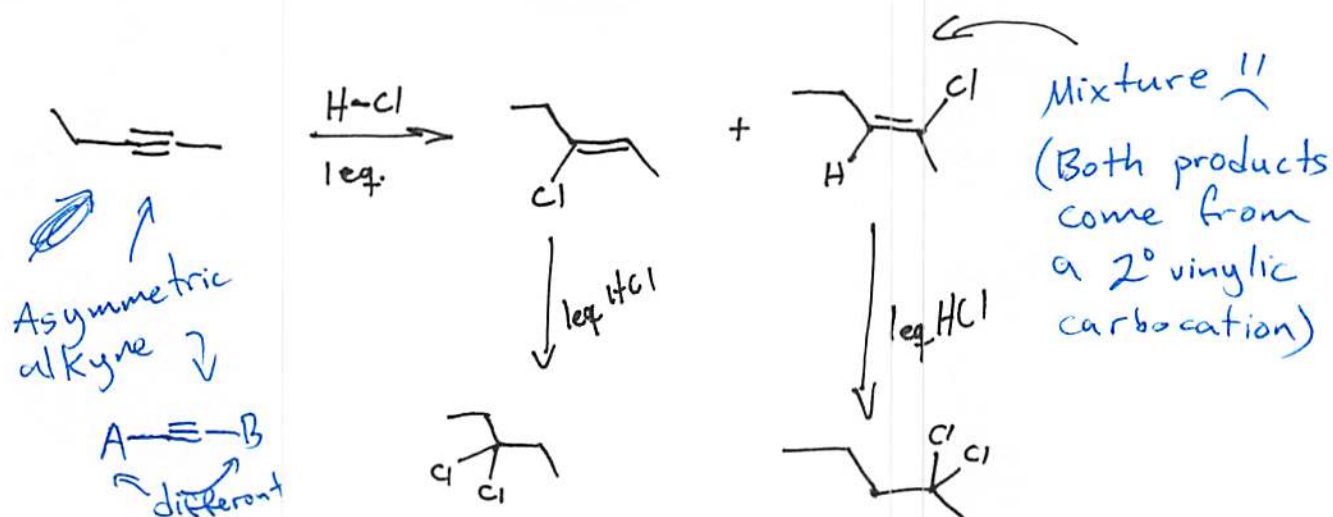


Not 100% understood.

Another possible suggestion involves the formation of a  $\pi$ -complex.



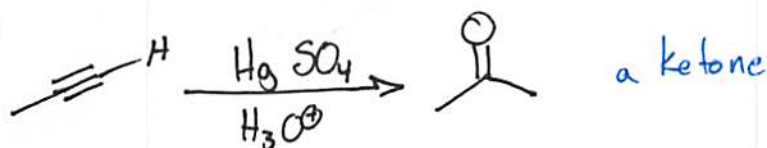
Rxn Mixtures arise ~~with~~ in some cases:

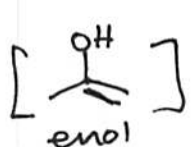


Try the mechanism on your own.  
 -just look at the first reaction.

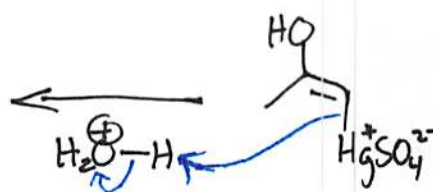
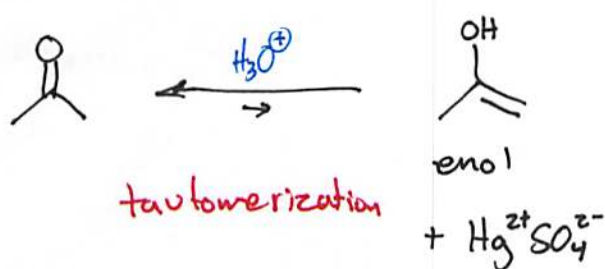
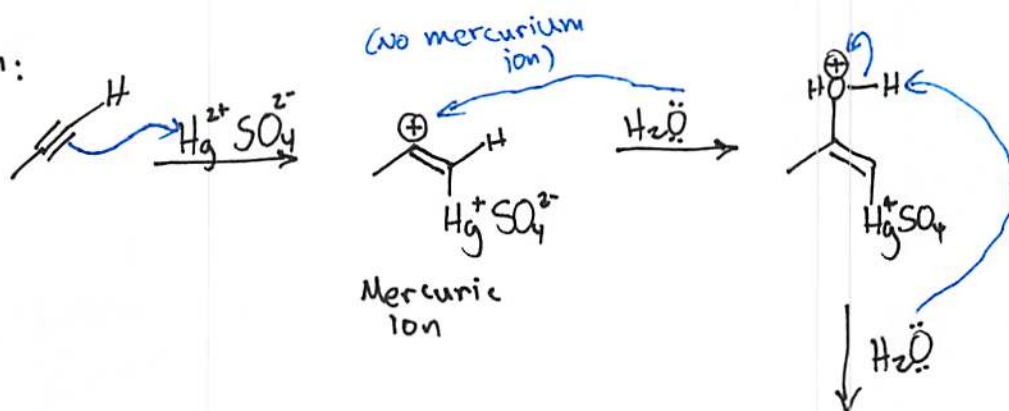
Rxn 3) Addition of  $H_2O$  (oxymercuration)  
 - works with  $HgSO_4$ ,  $HgO$ ,  $Hg(OAc)_2$   
 - for an exam, just list one reagent, not all 3.

Net Rxn:



occurs via  The transformation of an enol to a ketone is known as: keto-enol tautomerization

Mechanism:

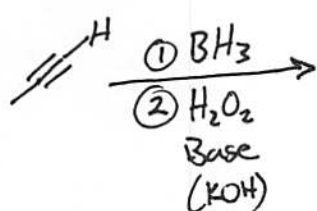


here, the C-Hg bond is very weak and nucleophilic. -attacks hydronium ion.

- In acidic conditions, enol tautomerizes to the ketone.
- Mechanism is important.
- We will draw the mechanism for tautomerization later.

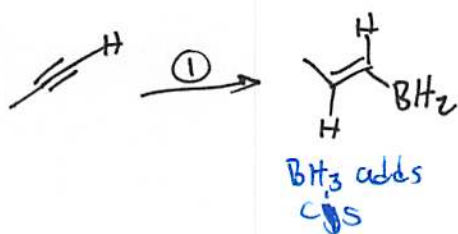
# Rxn ④ Hydroboration

Net:

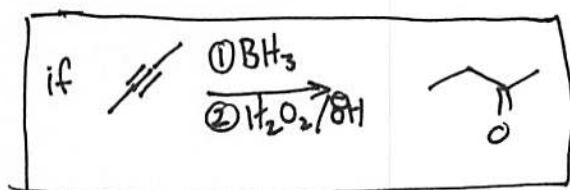


- An aldehyde!
- Rxn 3-gave a ketone.

Process



enol tautomerizes  
- base catalyzed tautomerization.



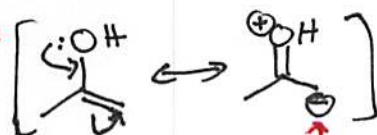
## Keto-Enol Tautomerization:

④ Acid Catalyzed:



or cat H<sup>+</sup>  
or H<sup>+</sup>/H<sub>2</sub>O

consider:



↑ like a nucleophile.

Mech:



⑤ Base-Catalyzed:

