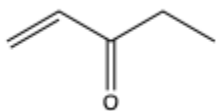
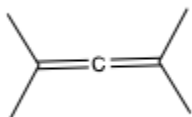


CHEM 2300 Solution 3

1. State whether the molecule is a conjugated, isolated, or cumulated double bond system.



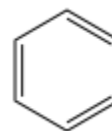
conj.



cumulated

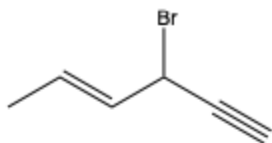


isolated

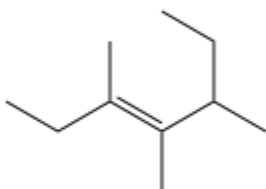


conj.

2. Name or draw the following compounds.



3-bromohex-1-ene-5-yne



3,1,5-trimethyl-3-heptene

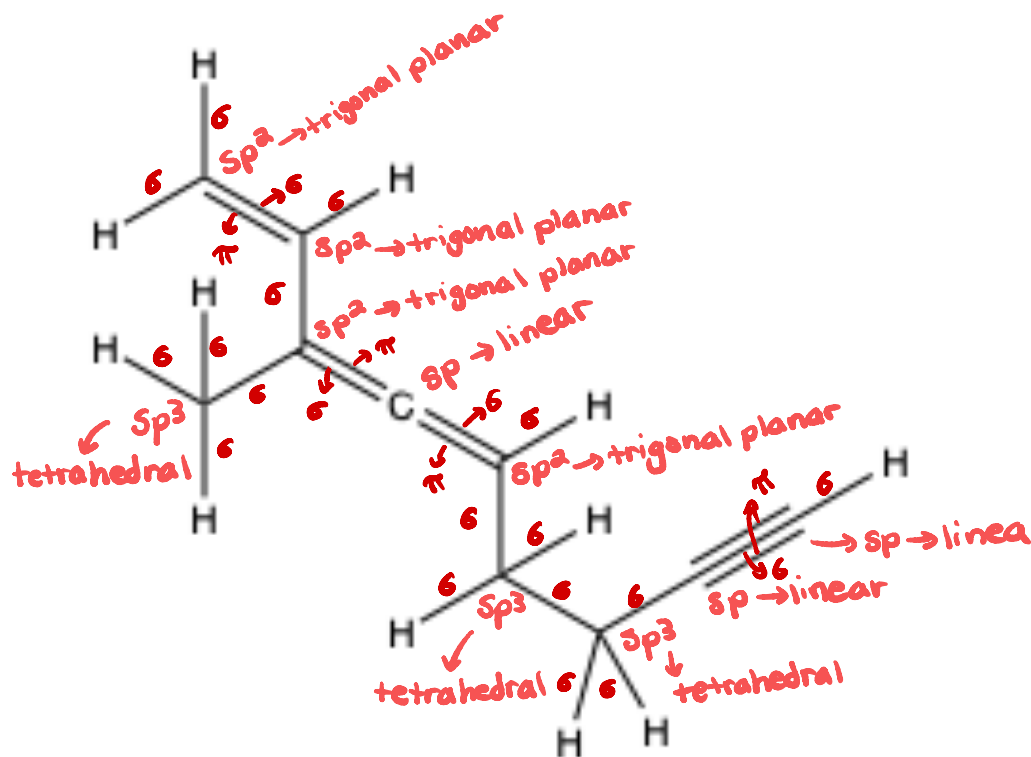
4-methylpent-1-yne



5-isopropylcyclopenta-1,3-diene



3. Label the hybridization and geometry of each carbon along with whether each bond is pi or sigma.

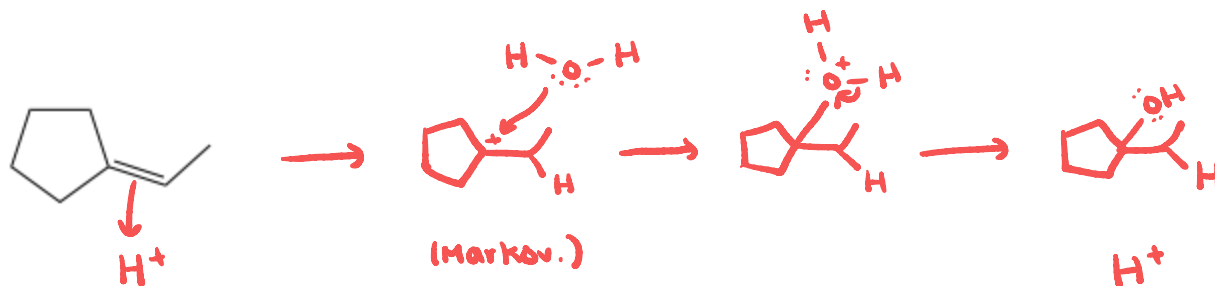


4. What are common attributes of nucleophiles? What are common attributes of electrophiles?

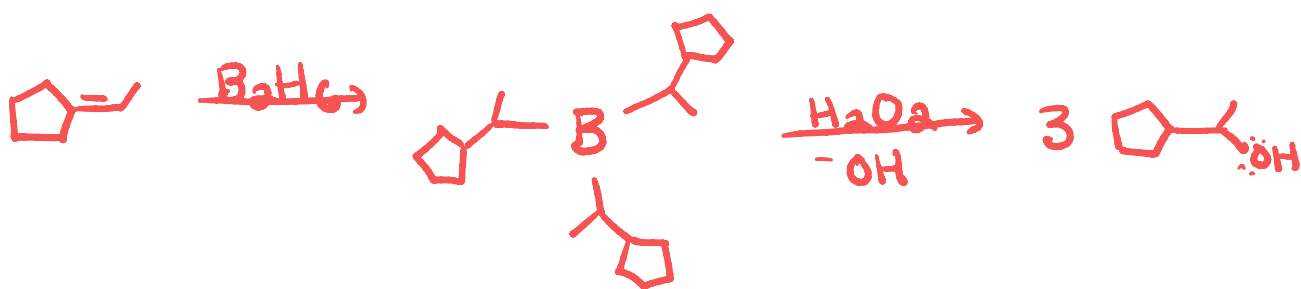
Nu: lone pair, double bond, δ^- , negative

E: positive, δ^+

5. Draw the hydration reaction mechanism (in acidic conditions) for the molecule below.

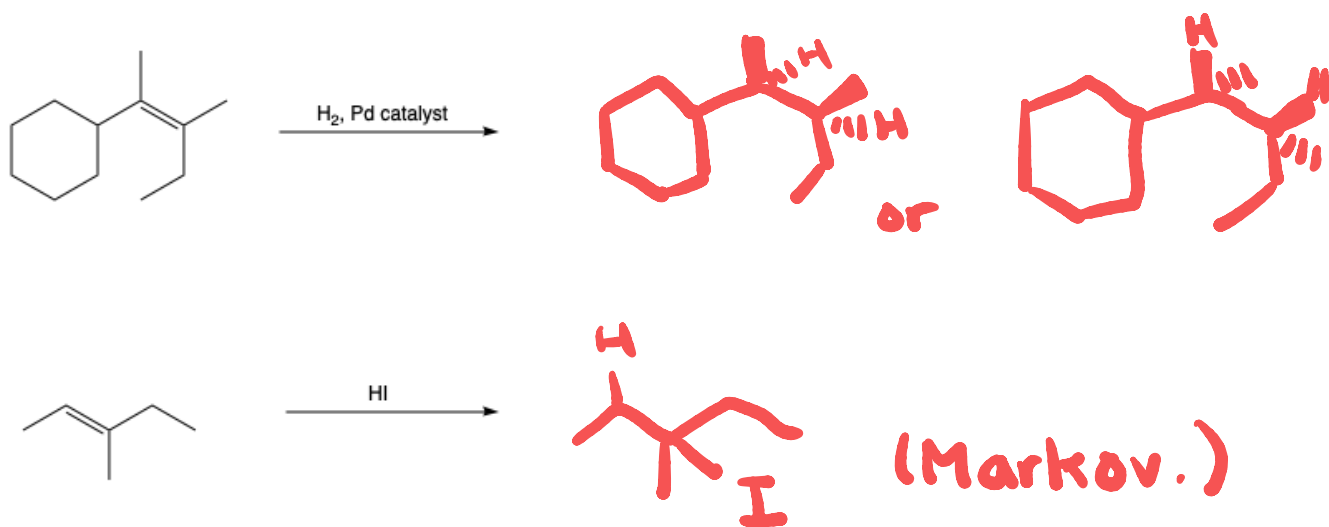


6. Draw the intermediate state and final product of the hydroboration reaction on the same molecule given above. How're these products related? Do you see the importance of the hydroboration reaction?

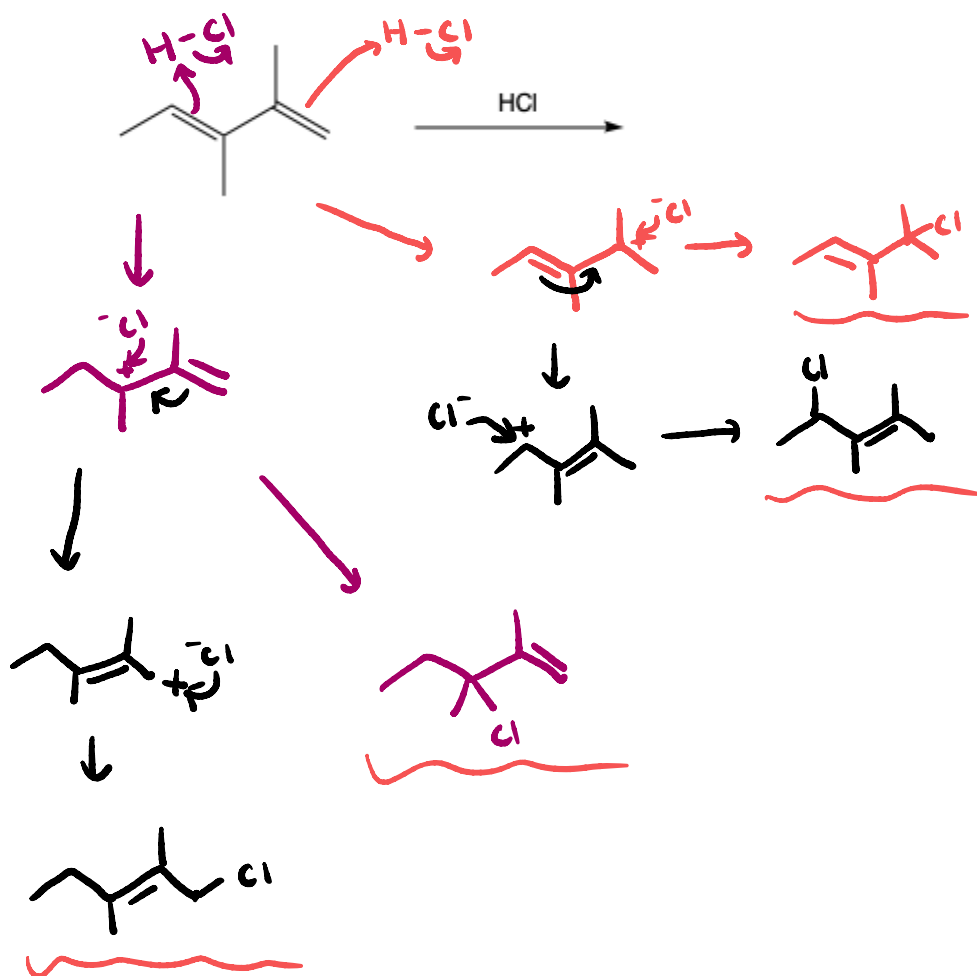


The product is Anti-Markov. unlike 18^+ rxn

7. Draw the MAJOR product for the following reactions.



8. Draw the major product along with the mechanism for the following reaction.



9. Draw either the starting material or the product for the Diel-Alder reactions.

