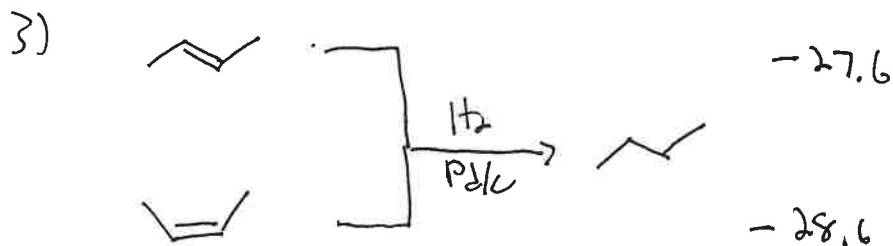
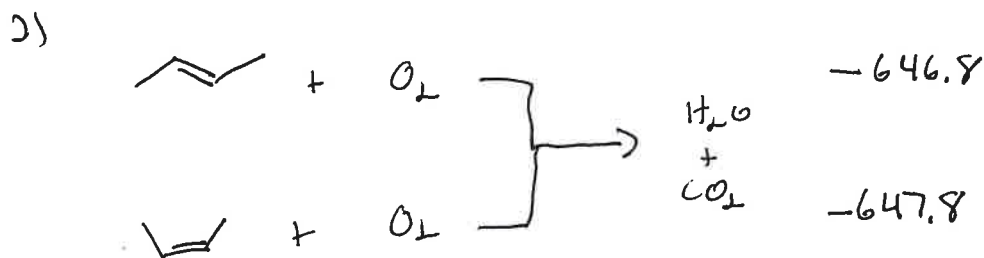
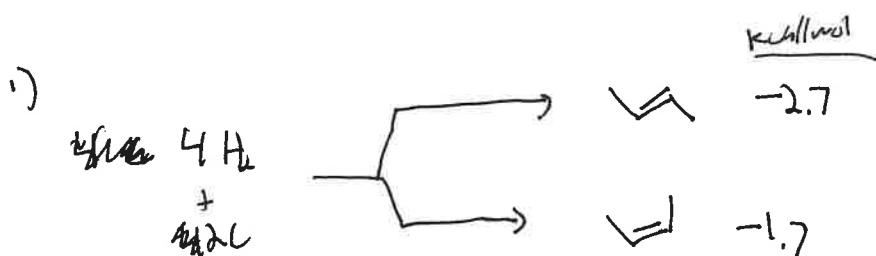
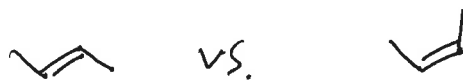


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Review session \Rightarrow Wednesday this week, 5-6 pm.

Recall: Energy difference between ~~alk~~ alkene isomers.

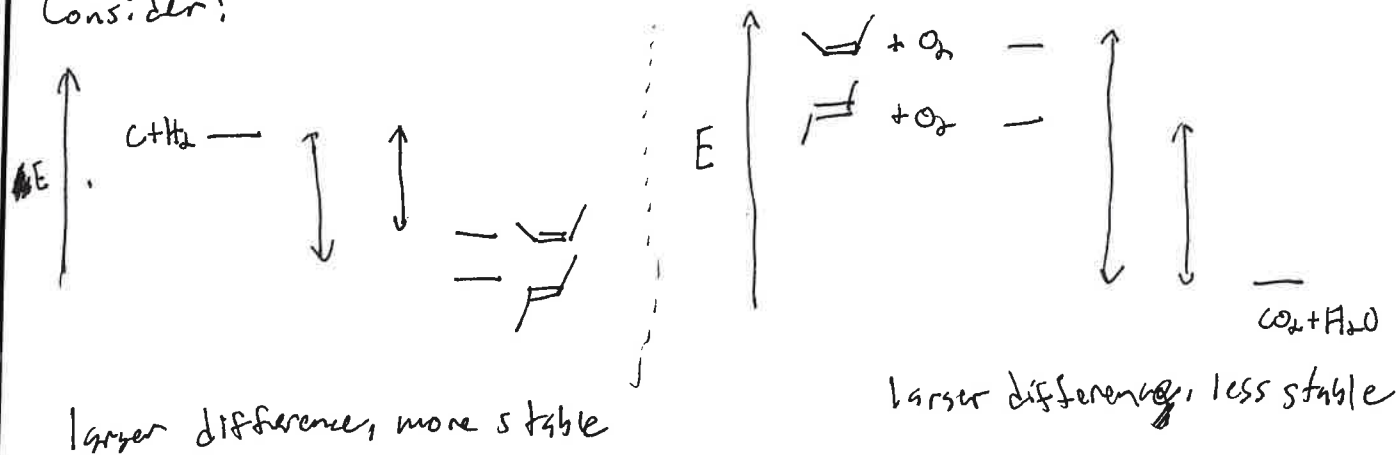


In each case, concludes CC=CC is more stable than CC=C by 1 Kcal/mol

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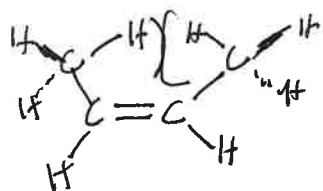
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Consider:



Why is E more stable than the Z isomer?

→ steric repulsions in Z.



(recall gauche vs. anti butane)

See pg. 149-151 (Table 4.1) → alkene comparisons

Another structure-stability trend → increasing stability
 alkyl substitution on sp^2 C ⇒ increasing stability.

Es.



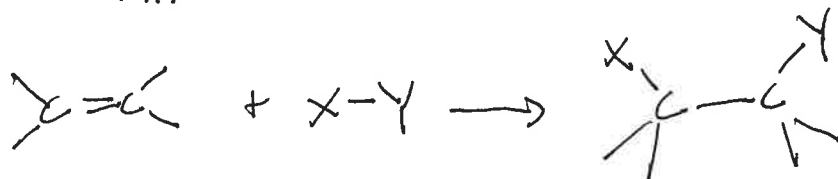
~2.5 kcal/mol
less stable than



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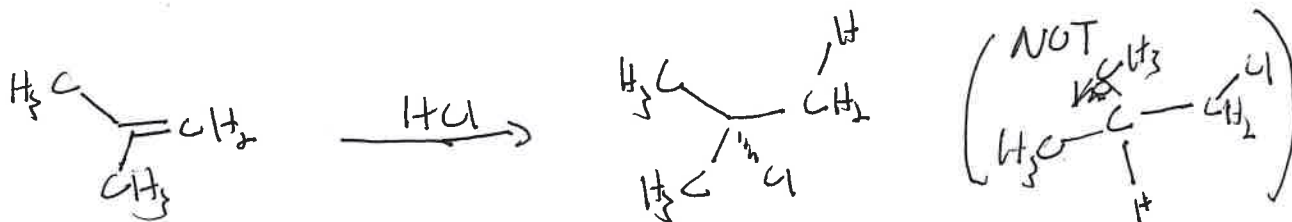
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Addition Rxns of alkenes

~~General:~~ General:Example: Hydrogenation \Rightarrow already gone over.1. Hydrogen halide (HX) addition

(Note: X is shorthand for a halogen atom)

Ex:



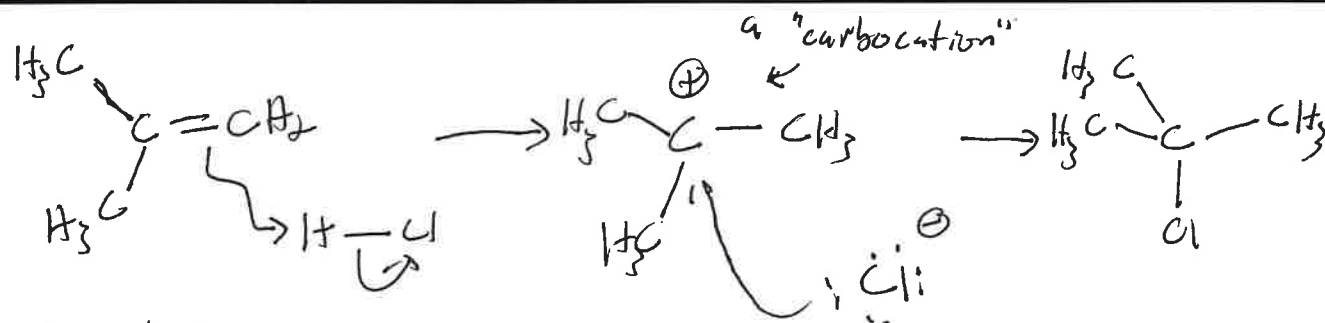
"regioselective"

Comparable reactions w/ HBr , HI , (NOT HF)Selectivity for X to end up on the most highly substituted carbon in general \Rightarrow "Markovnikov's rule"

This selectivity can be explained by the following mechanistic hypothesis:

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Step 1: Brønsted acid/base rxn.

Step 2: Lewis acid and Lewis base \rightarrow complex

Note: This is a two-step mechanism, involves one "intermediate"

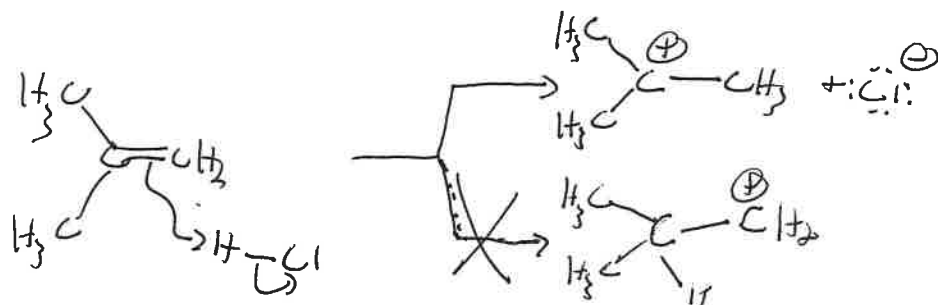
Rxns can be classified in terms of the type of intermediates...

Many types of carbocation reactions.

Carbocation is one example of higher energy intermediates

Great interest in high energy intermediates and understand them, but this can be very difficult.

Link between mechanism and ~~regioselectivity~~ regioselectivity (X on most substituted C).



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Number of carbons bonded to carbon bearing the positive charge dramatically influences stability of the carbocation.

Carbocation stability trend -

