

Name: _____ Date: _____ Pd: _____

O-Chem 8.6 Practice "Stereochemistry within Mechanisms"

Directions: Add/edit text boxes to complete the following questions. You can also add drawings and lines. [CLICK HERE](#) to see a video of how to make drawings using the scribble-line tool. You may also draw your answers on paper then attach your drawings to the google assignment as an image or paste them into each question on the slides.

1. What is a "carbocation"? generally created as an "intermediate" substance that doesn't appear for very long. This is when the + charge is on a carbon. The higher the degree of carbon = the more stable it is

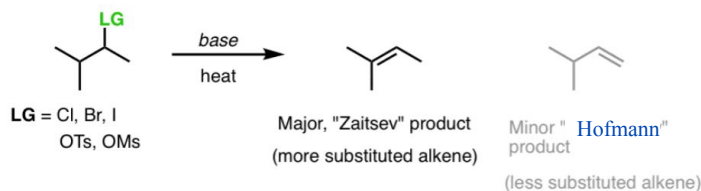
2. What is "regiochemistry"? Regiochemistry is a concern for when we have multiple options for products based on where the reaction takes place. (add/removing things on the more or less substituted carbons)

3. Explain the "basics" of what happens during an **elimination reaction**.

TWO atoms are removed (eliminated) and a double bond is formed. Typically a halogen (X = the leaving group) and a H.

a. What are the two possible types of product?

Zaitsev and Hofmann



b. How can you distinguish between them?

Zaitsev will have a higher-substituted double bond

Hofmann will have a lower-substituted double bond

c. Which product tends to be more stable? Why?

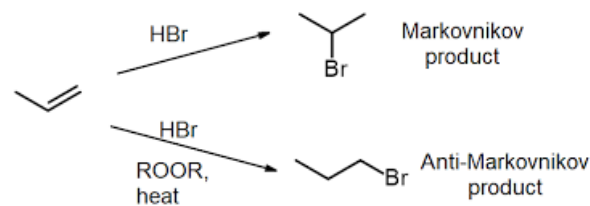
The Zaitsev product b/c it will have the more stable carbocation intermediate

4. Explain the "basics" of what happens during an **addition reaction**.

Two atoms (or groups) are ADDED to either side of a C=C double bond

a. What are the two possible types of products?

Markovnikov and Anti-Markovnikov



b. How can you distinguish between them?

Markovnikov = the "larger" of the atoms (or groups) is being added to a higher sub. C

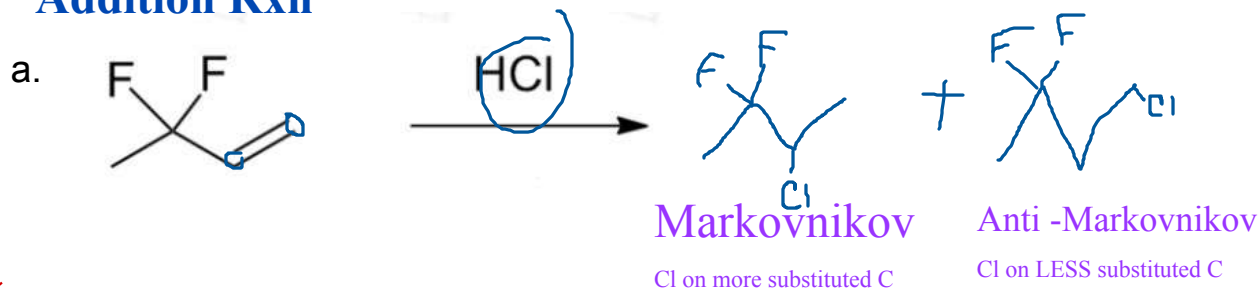
Anti-Markovnikov = the "larger" of the atoms (or groups) is being added to a lower sub. C

c. Which product tends to be more stable? Why?

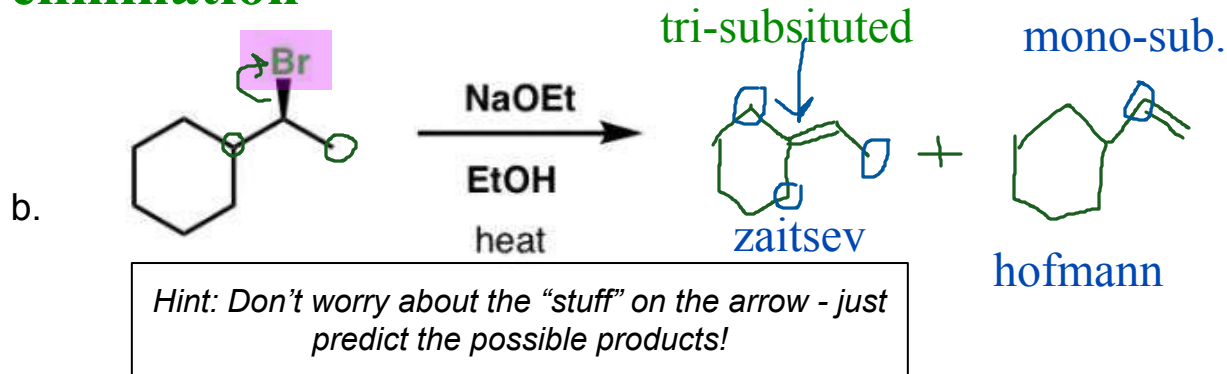
The Markovnikov product b/c it will have the more stable carbocation intermediate

3. Using your "foldable" that we made for elimination and addition reactions. Predict the two possible products for each reaction. Label each answer as either Zaitsev (Z), Hoffman (H), Markovnikov (M), or Anti-Markovnikov (A-M).

Addition Rxn

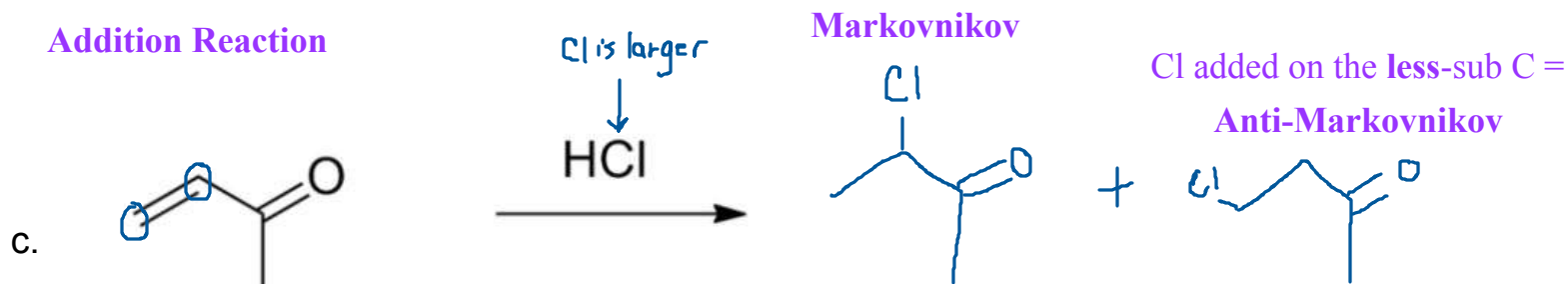


elimination

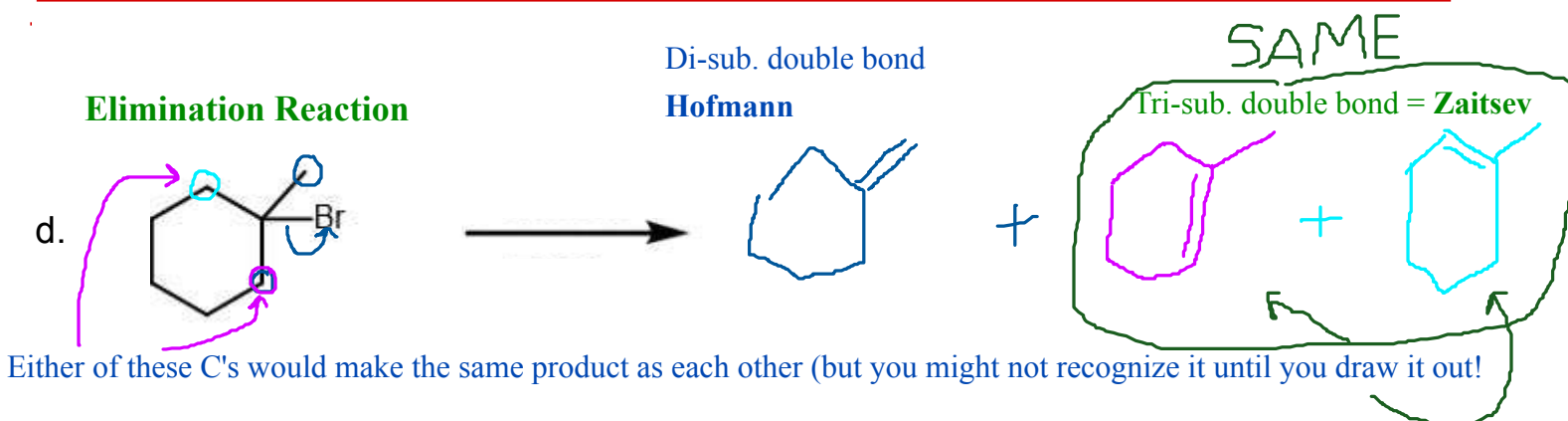


Cl added on the **more-sub C** =

Addition Reaction



Elimination Reaction



Elimination Reaction

