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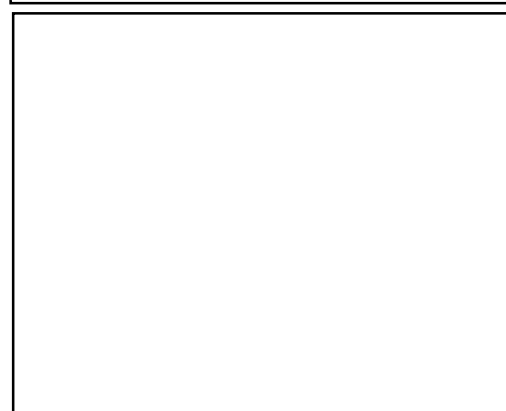
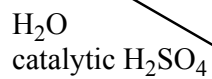
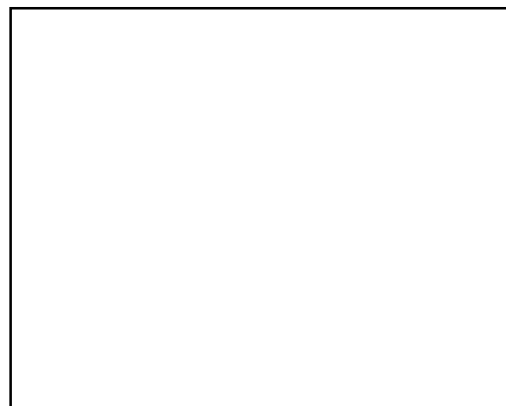
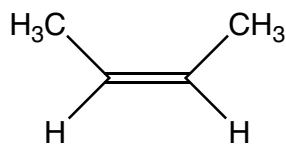
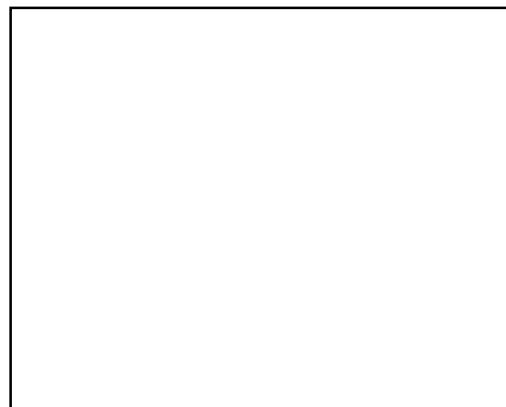
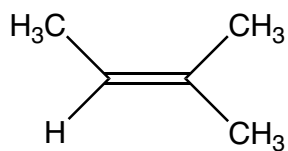
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**Chemistry 320M/328M**  
**Dr. Brent Iverson**  
**5th Homework**  
**October 4, 2022**

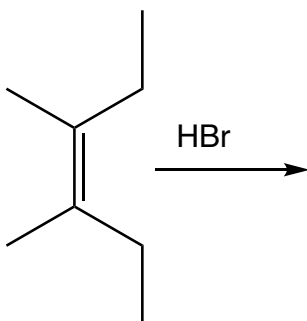
**Please print the  
first three letters  
of your last name  
in the three boxes**

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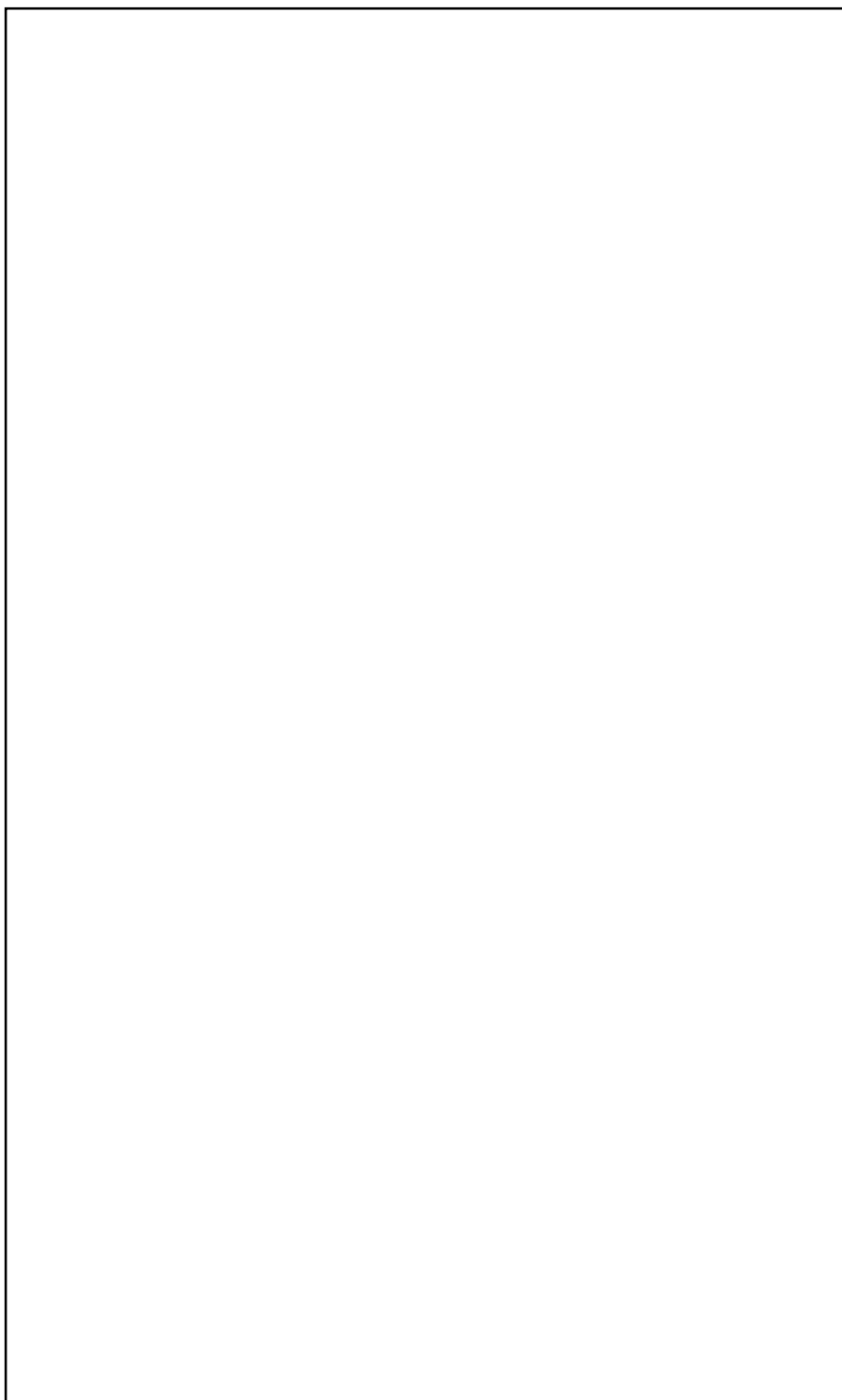
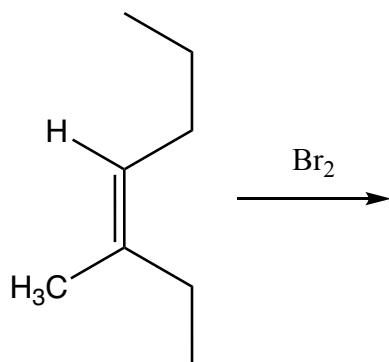
1. For the following reactions, fill in the boxes with the predominant product or products. You must indicate stereochemistry with wedges and dashes. If a racemic mixture is created, you must write "racemic" under the structures.



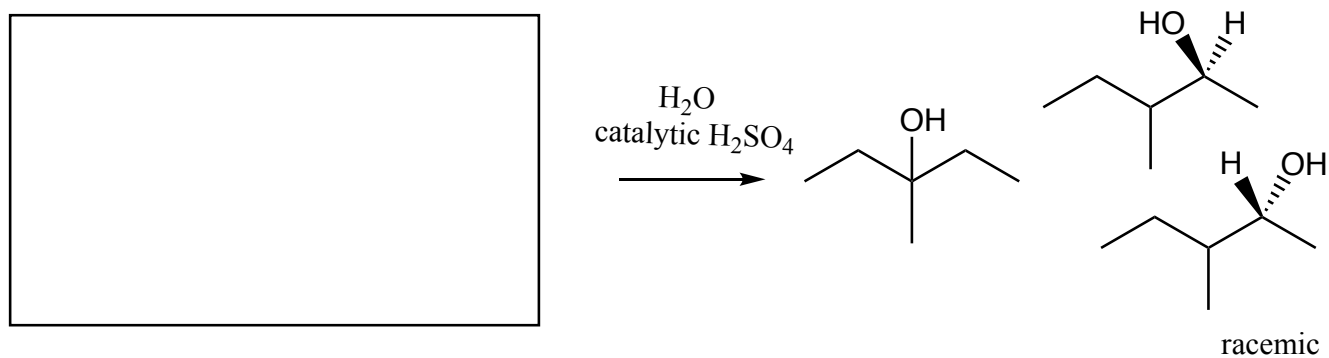
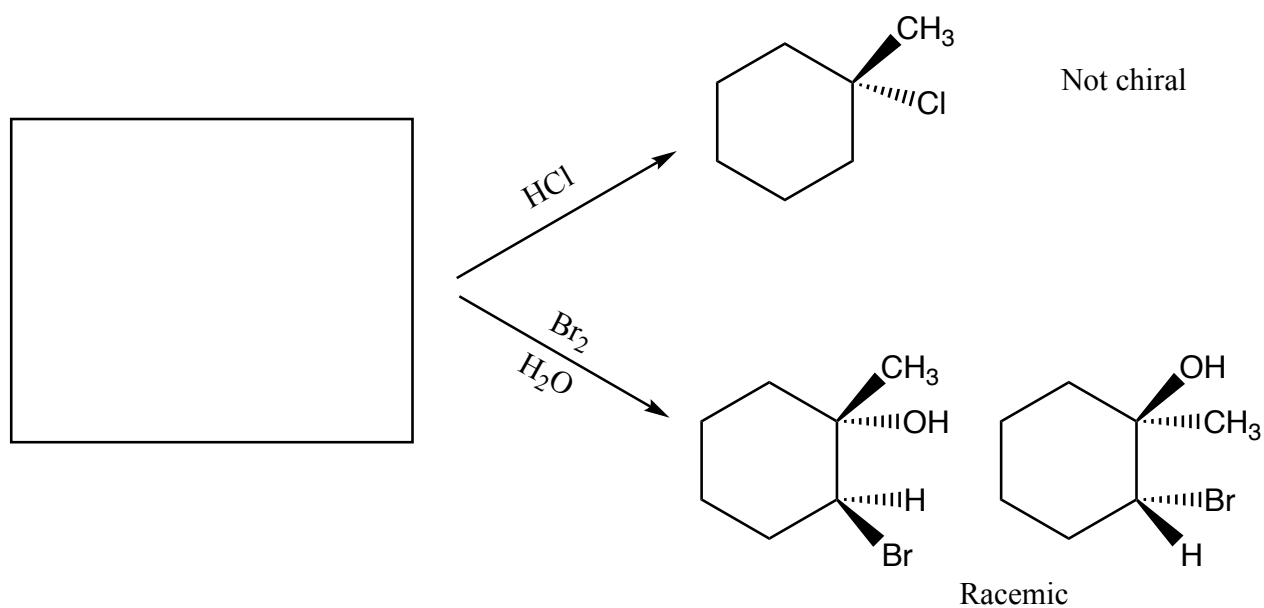
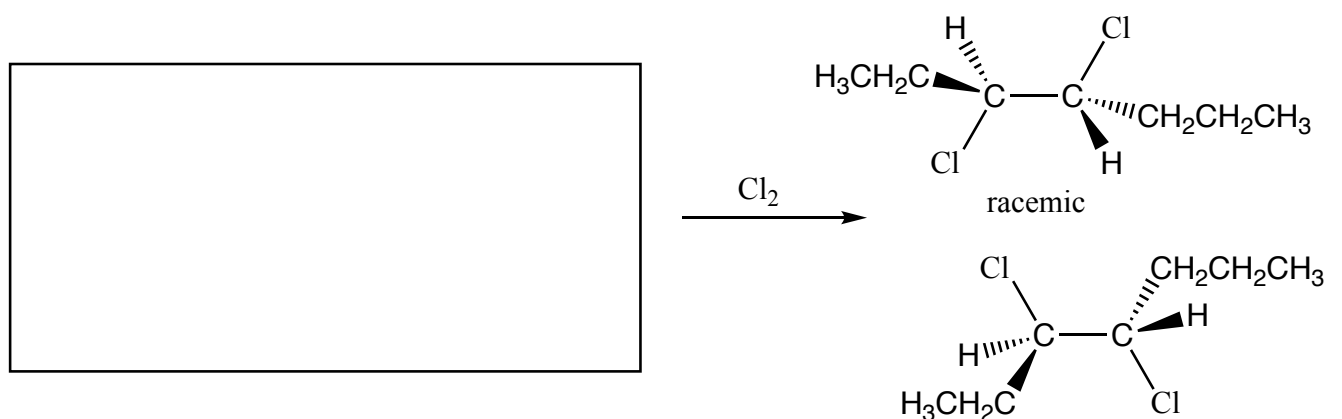
2. For the following reaction, fill in the box with the predominant product or products. You must indicate stereochemistry with wedges and dashes. If a racemic mixture is created, you must write "racemic" under the structures.



3. For the following reaction, fill in the box with the predominant product or products. You must indicate stereochemistry with wedges and dashes. If a racemic mixture is created, you must write "racemic" under the structures.

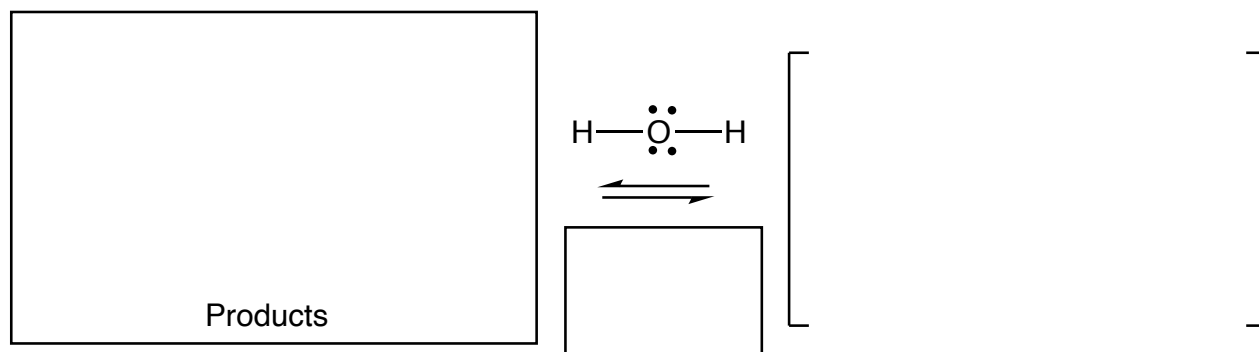
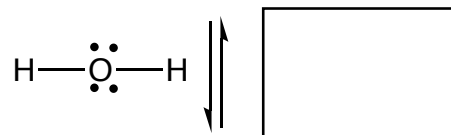
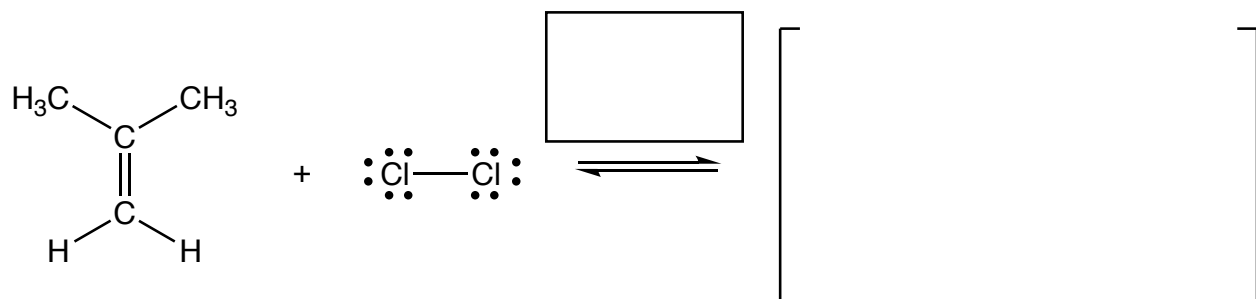


4. For the following reactions, fill in the boxes with the starting material that leads to the predominant product or products.

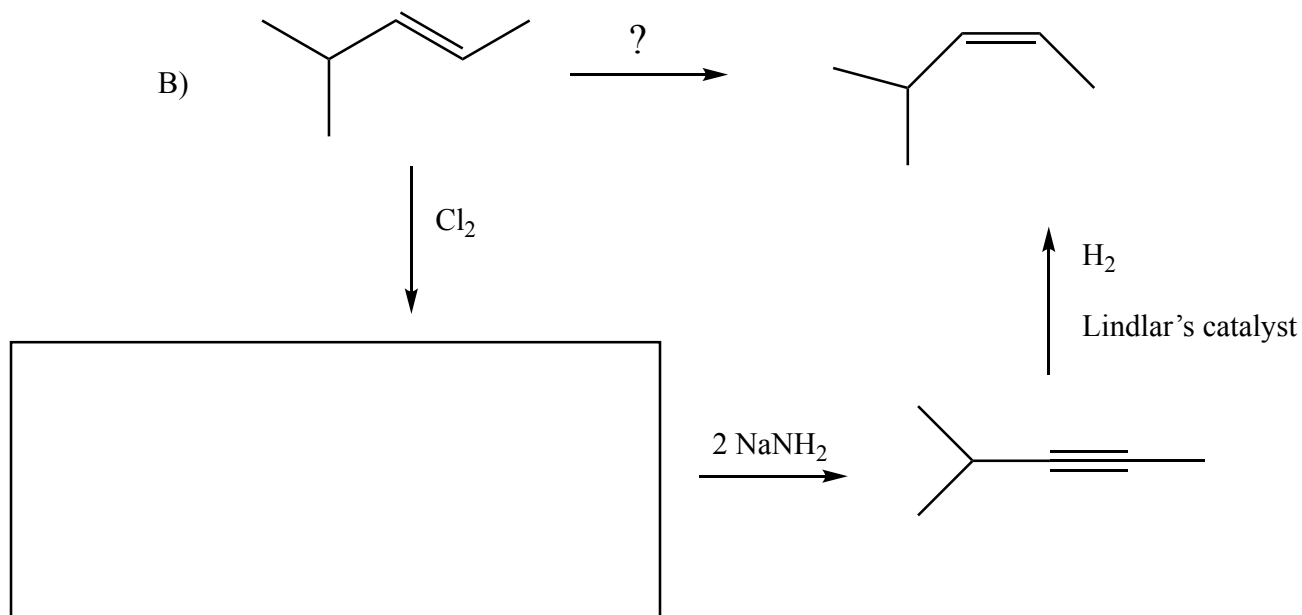
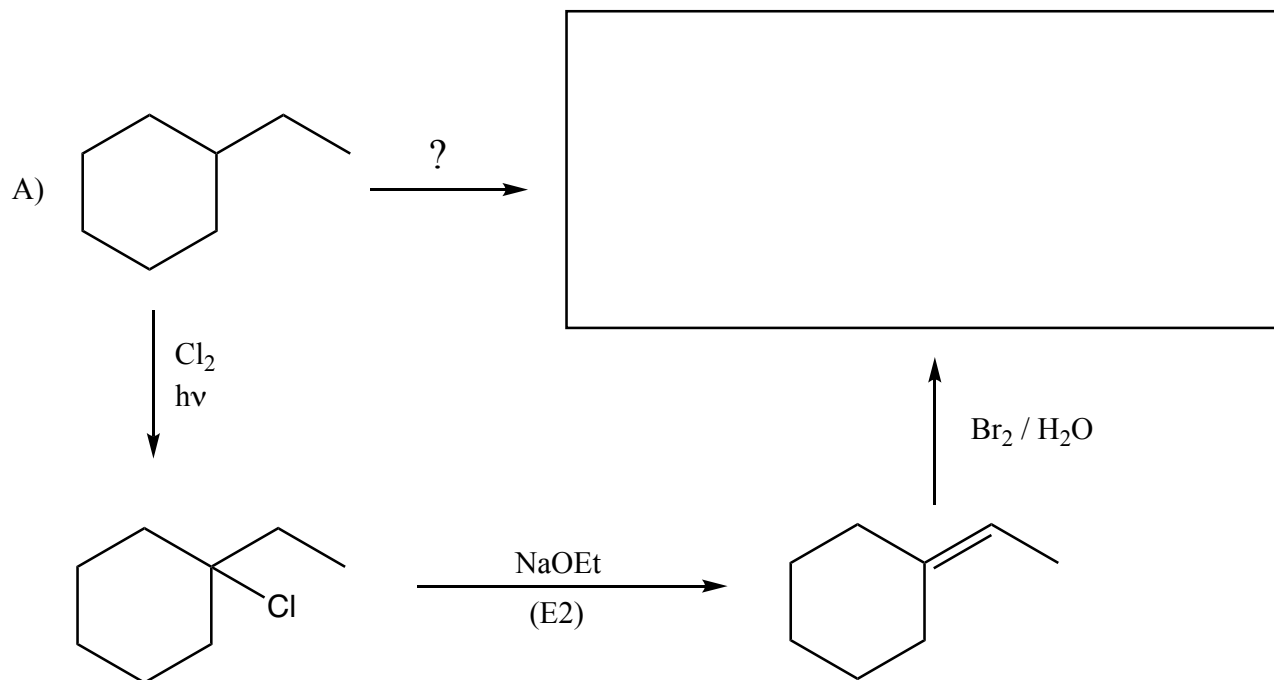


5. Read these directions carefully. **For the reaction of 3-methyl-1-propene with  $\text{Cl}_2$  and  $\text{H}_2\text{O}$  shown below, fill in the details of the mechanism. Draw the appropriate chemical structures and use an arrow to show how pairs of electrons are moved to make and break bonds during the reaction. Be sure to write all lone pairs of electrons and all formal charges. Finally, in the boxes provided by the arrows, write which kind of mechanistic element is being indicated, such as "make a bond", "add a proton", etc.**

*Alkene Hydrohalogenation*



6. For the following synthesis schemes, fill in the missing molecules. Note, you do not understand all of this chemistry yet, but soon you will and then you will be responsible for the entire sequence of synthetic reactions! Even if you have not seen all the chemistry, please take a moment to see what kind of transformations are occurring in each step of the synthesis.



7. For the following synthesis scheme, fill in the missing molecules. Note, you do not understand all of this chemistry yet, but soon you will and then you will be responsible for the entire sequence of synthetic reactions! Even if you have not seen all the chemistry, please take a moment to see what kind of transformations are occurring in each step of the synthesis.

