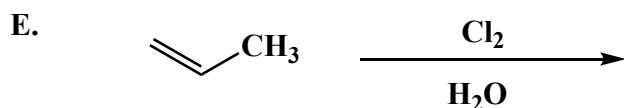
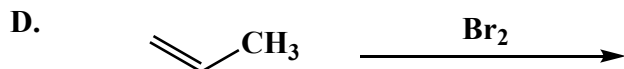
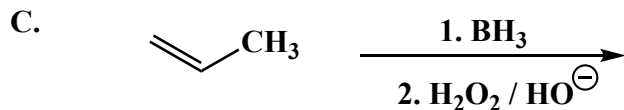
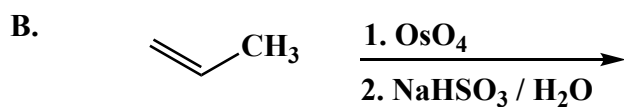
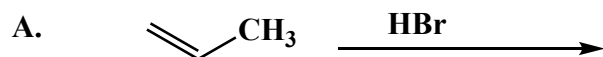


**NAME (Print):** \_\_\_\_\_

**SIGNATURE:** \_\_\_\_\_

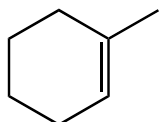
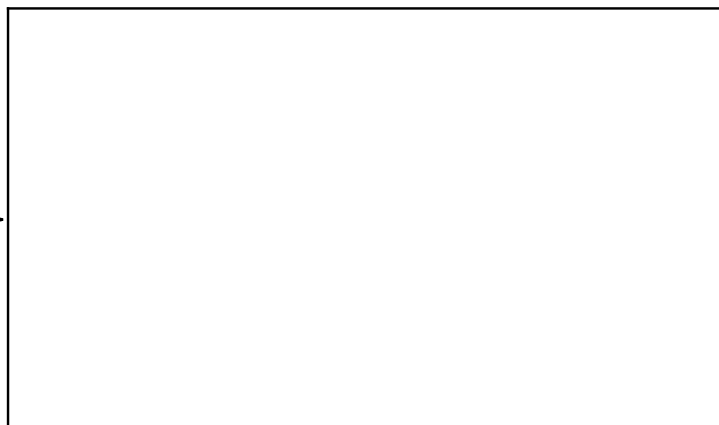
**Chemistry 320M/328M  
Dr. Brent Iverson  
Exam 2 Practice  
October 21, 2024**

1. (3-5 pts each) The following reactions all involve chemistry of alkenes. Fill in the box with the product(s) that are missing from the chemical reaction equations. **Draw only the predominant regioisomer product or products (i.e. Markovnikov or non-Markovnikov products)** and please remember that **you must draw the structures of ALL the product stereoisomers using wedges and dashes to indicate stereochemistry**. When a racemic mixture is formed, **you must write "racemic"** under all of the structures **EVEN THOUGH YOU DREW ALL OF THE STRUCTURES**.

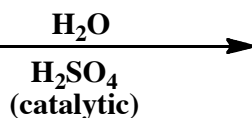
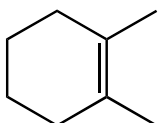


1. (cont.) (3-5 pts each) The following reactions all involve chemistry of alkenes. Fill in the box with the product(s) that are missing from the chemical reaction equations. **Draw only the predominant regioisomer product or products (i.e. Markovnikov or non-Markovnikov products)** and please remember that **you must draw the structures of all the product stereoisomers using wedges and dashes to indicate stereochemistry**. When a racemic mixture is formed, **you must write "racemic"** under all of the structures **EVEN THOUGH YOU DREW ALL OF THE STRUCTURES**.

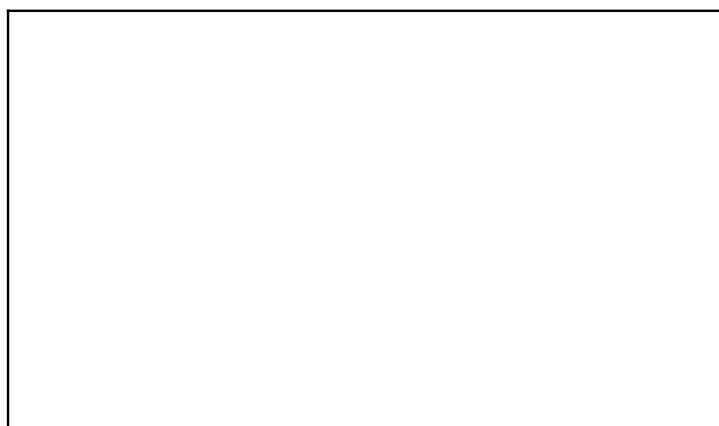
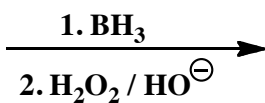
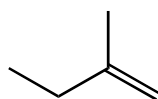
F.

 $\xrightarrow{\text{Cl}_2}$ 

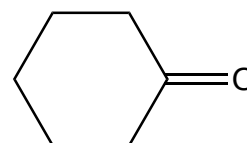
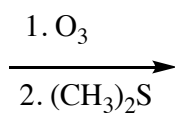
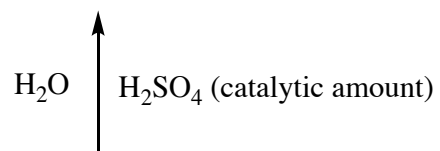
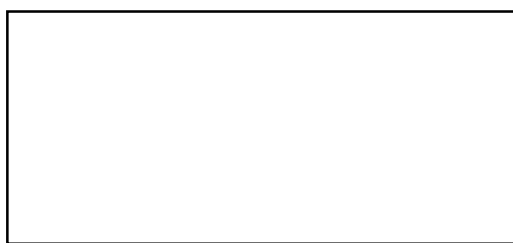
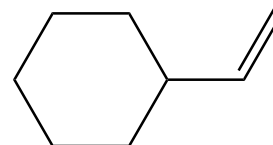
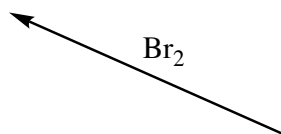
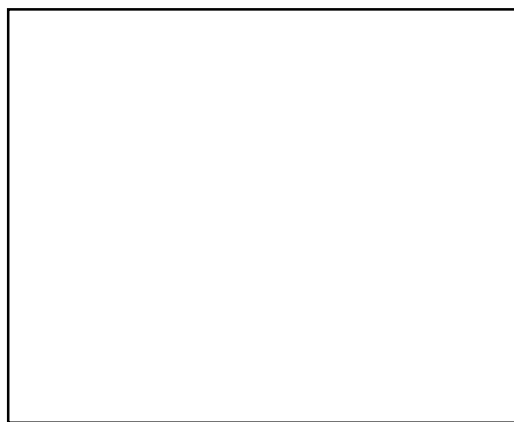
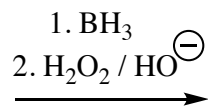
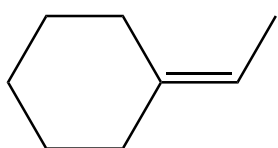
G.



H.

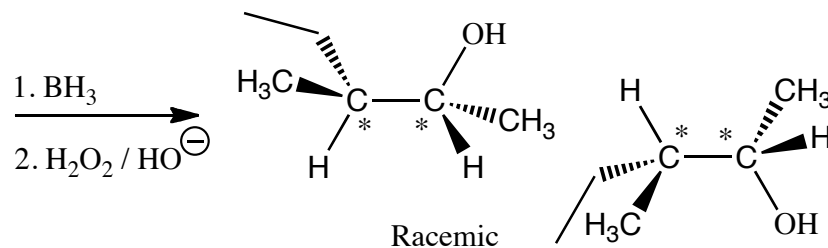
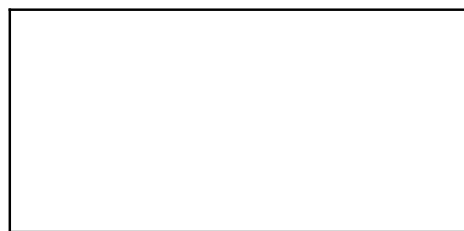
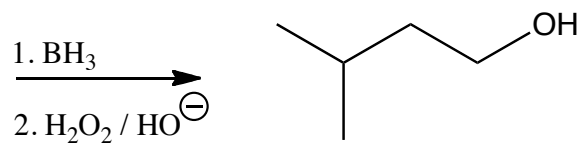
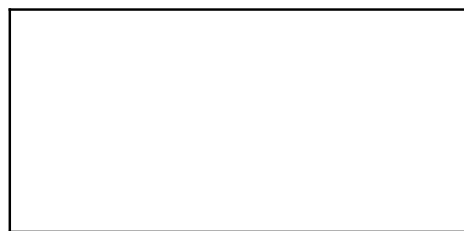
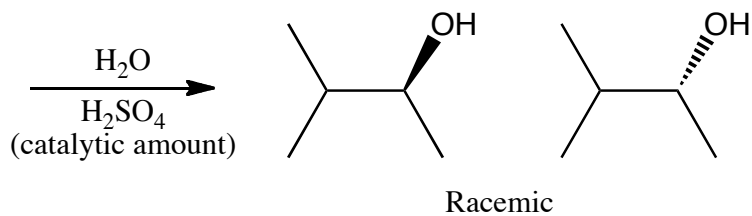
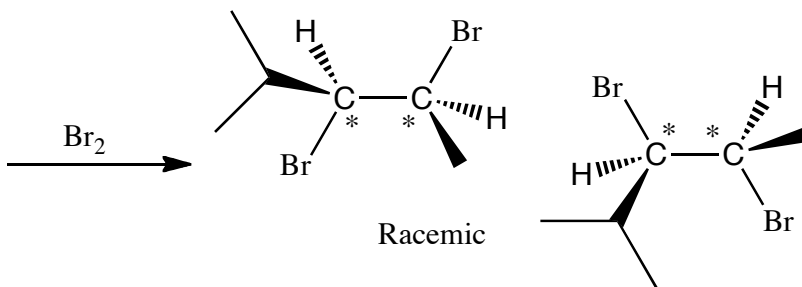
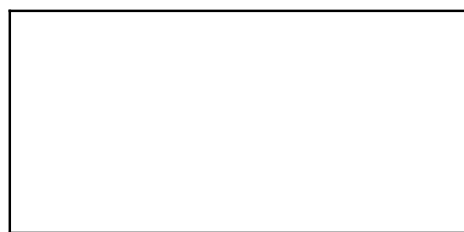


2. (3 or 5 pts each) For the following reactions, fill in the boxes with the appropriate structures. I know this is pretty hard, but I think it will be a great way to study your alkene and alkyne reactions. Work together if that helps.

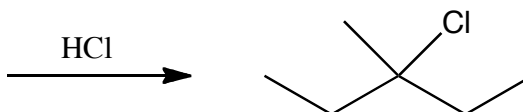
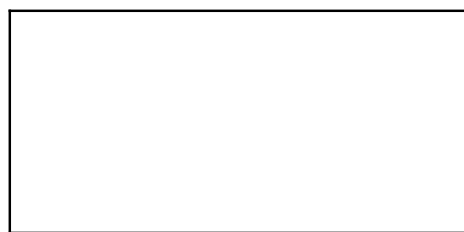


This is the only organic product.

3. (3 pts each) For the following reactions, fill in the boxes with the starting material that leads to the predominant product or products.



or



4. (23 pts.) Read these directions carefully. **For the reaction shown below, fill in the details of the mechanism for the rearranged product only. Although non-rearranged product is also formed, we are not interested in that 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.

