NAME (Print): _____

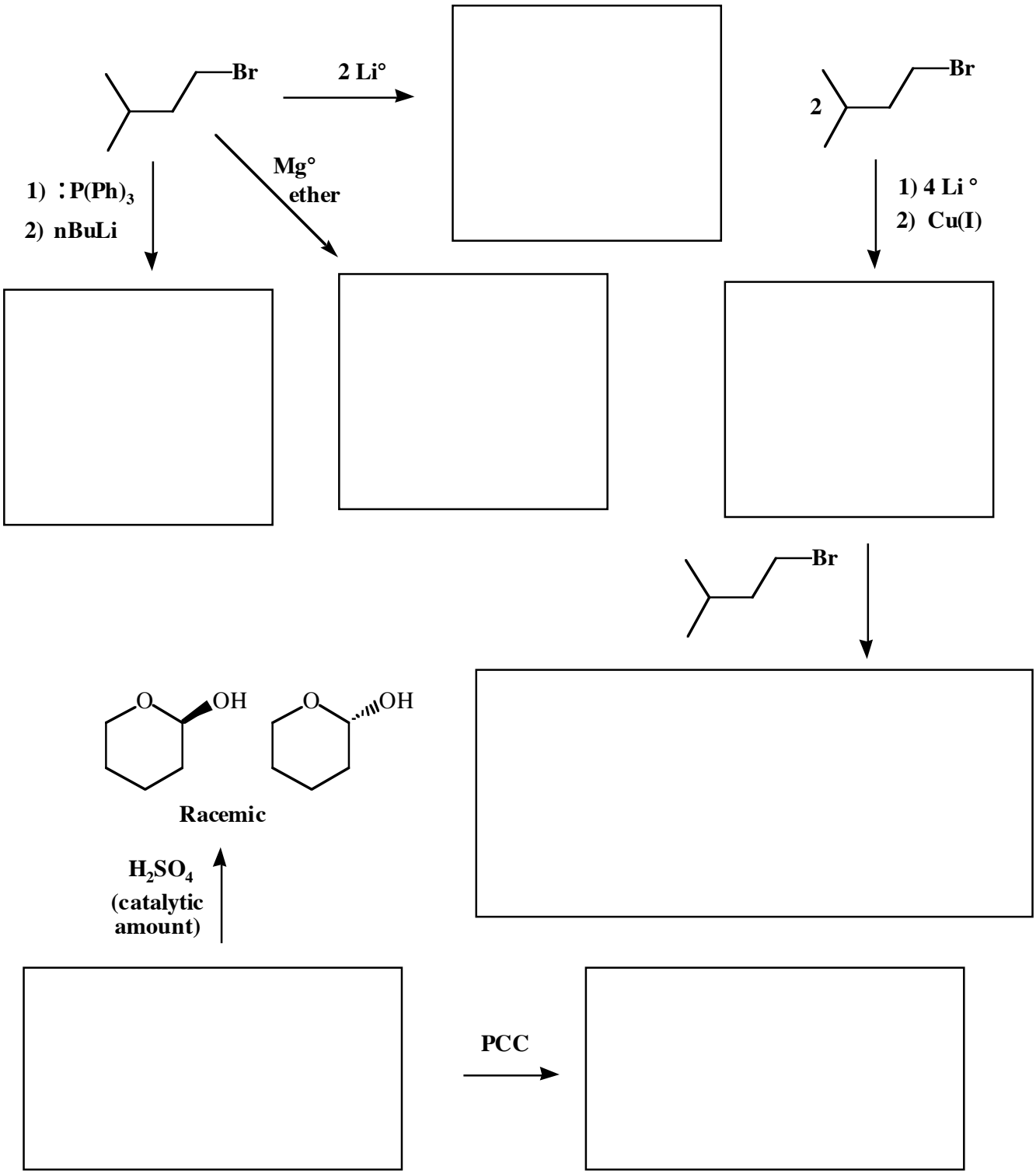
SIGNATURE: _____

Chemistry 310N
Dr. Brent Iverson
4th Homework
February 6, 2008

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

Score: _____

(3 or 5 pts each) Fill in the box with the product or products that are missing from the following chemical reaction equations. When a racemic mixture is formed, **you must write "racemic" under both structures EVEN THOUGH YOU DREW BOTH STRUCTURES**.



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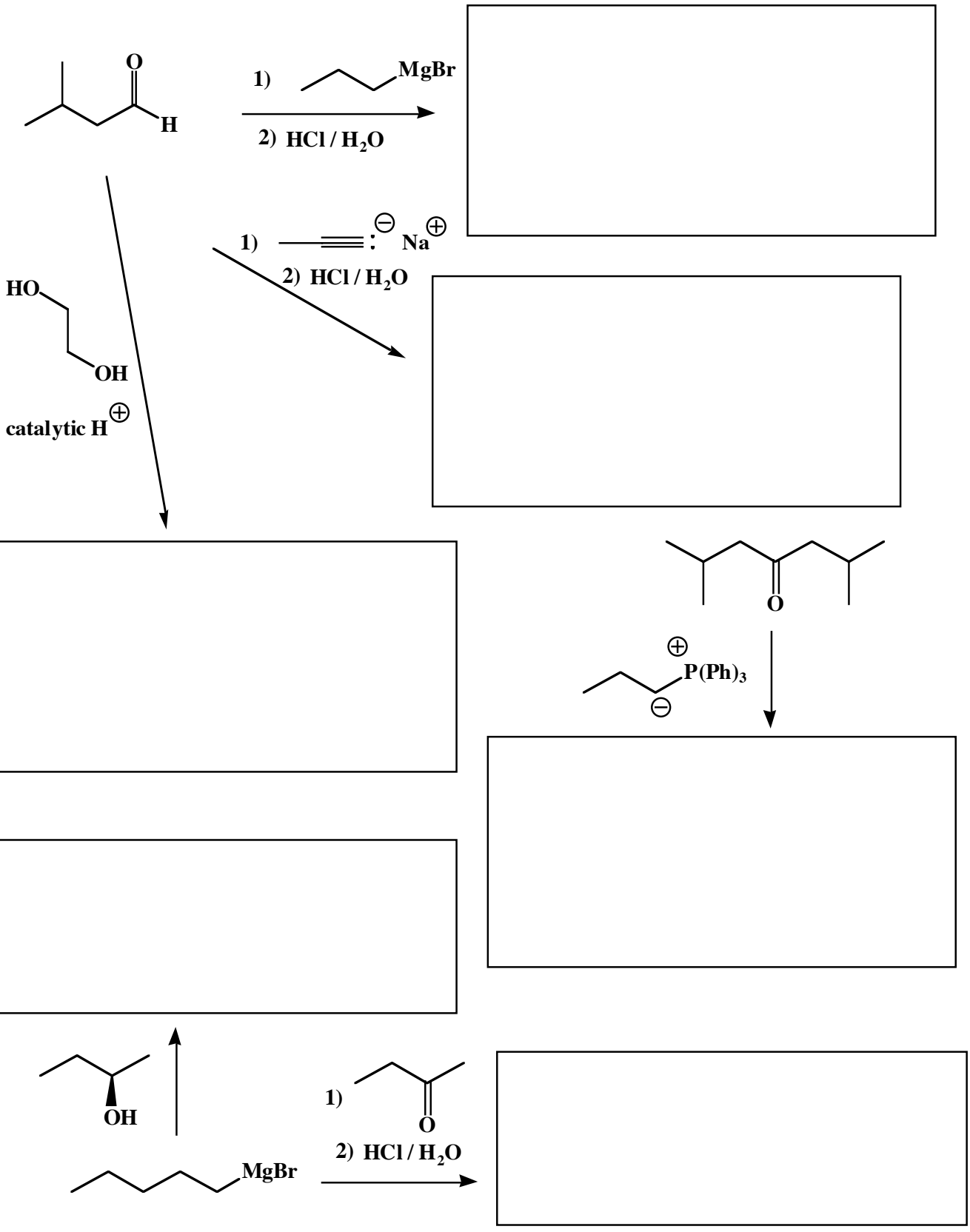

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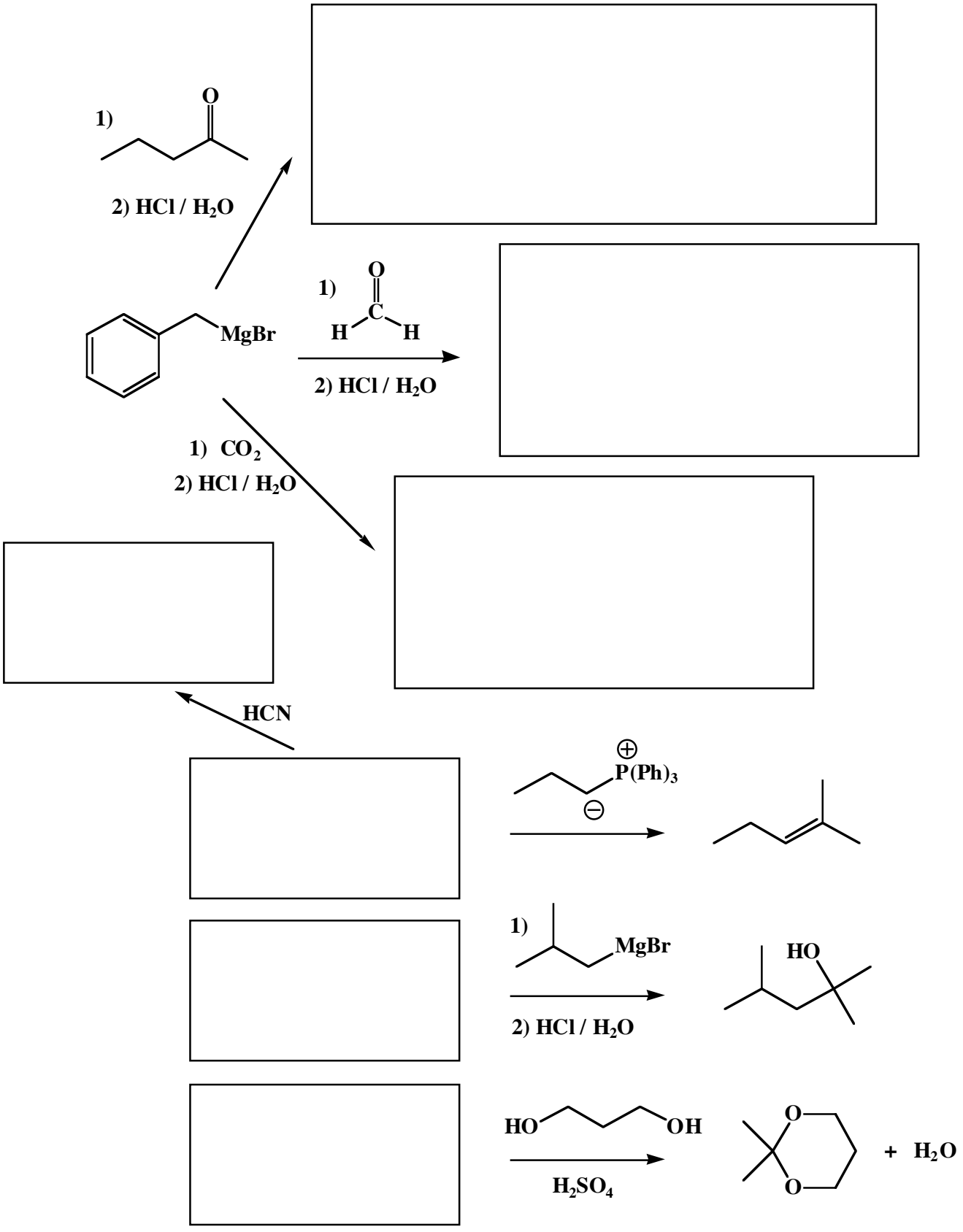
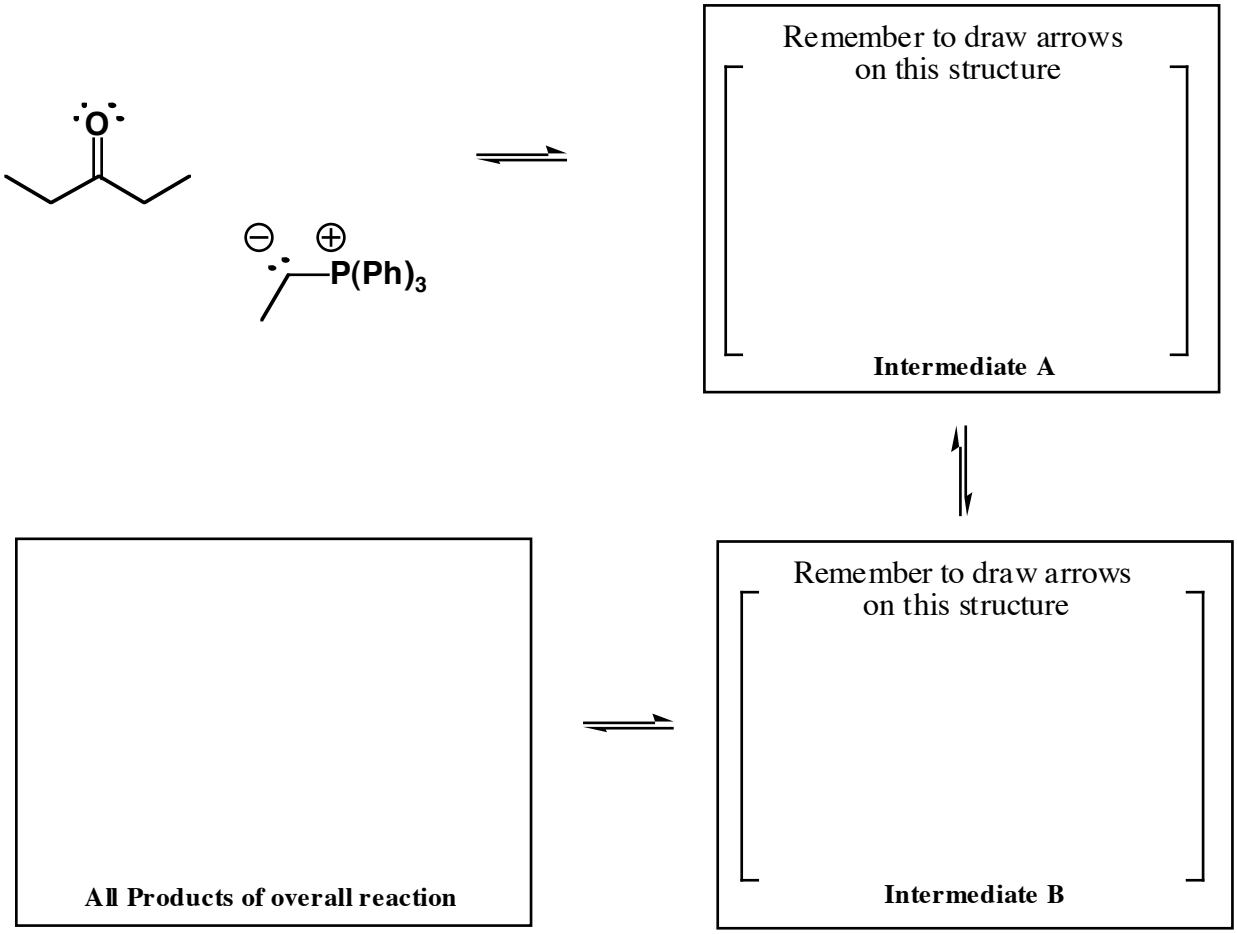


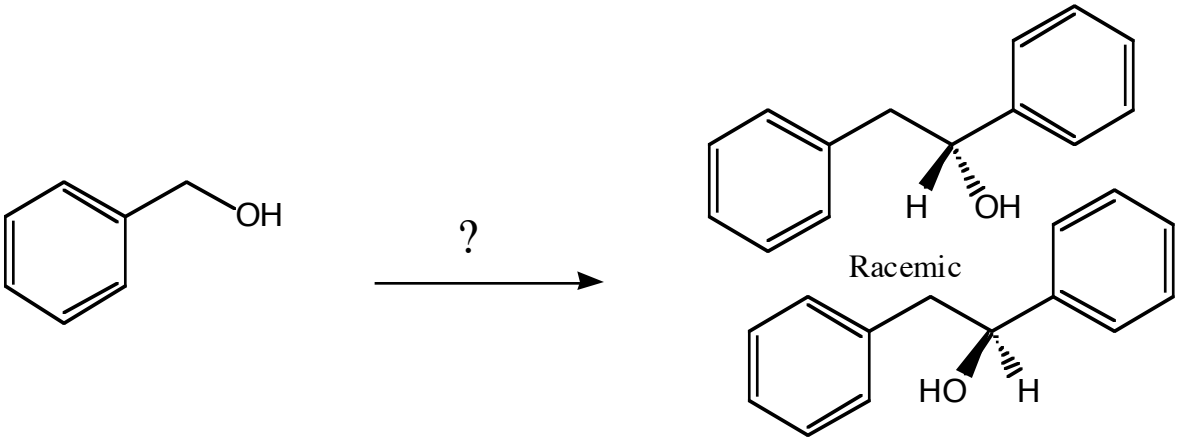
(18 pts.) Read these directions carefully. Read these directions carefully. (It was worth repeating) **For the reaction shown below, fill in the details of the mechanism. Draw the appropriate chemical structures and draw arrows to show how pairs of electrons are moved to** make and break bonds during the reaction of the 3-pentanone **reacts with the ylide shown**. Draw all non-bonded electrons as dots around the appropriate atoms and include all formal charges. **Draw all products of each step and all products of the overall reaction. MAKE SURE TO FILL IN THE BLANK AT THE BOTTOM.**



(2 pts) For the overall reaction, the "motive" is provided by formation of a type of bond that drives the process to completion. What is that type of bond? _____

These are synthesis questions. You need to show how the starting material can be converted into the product(s) shown. You may use any reactions we have learned. Show all the reagents you need. Show each molecule synthesized along the way and be sure to pay attention to the regiochemistry and stereochemistry preferences for each reaction.

(10 pts) **All of the carbon atoms of the products must come from the starting material for this one!**



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(12 pts) **All of the carbon atoms of the products must come from the starting material for this one!**