

Alkynes #2: Synthesis Problems with All of the Reactions We Know

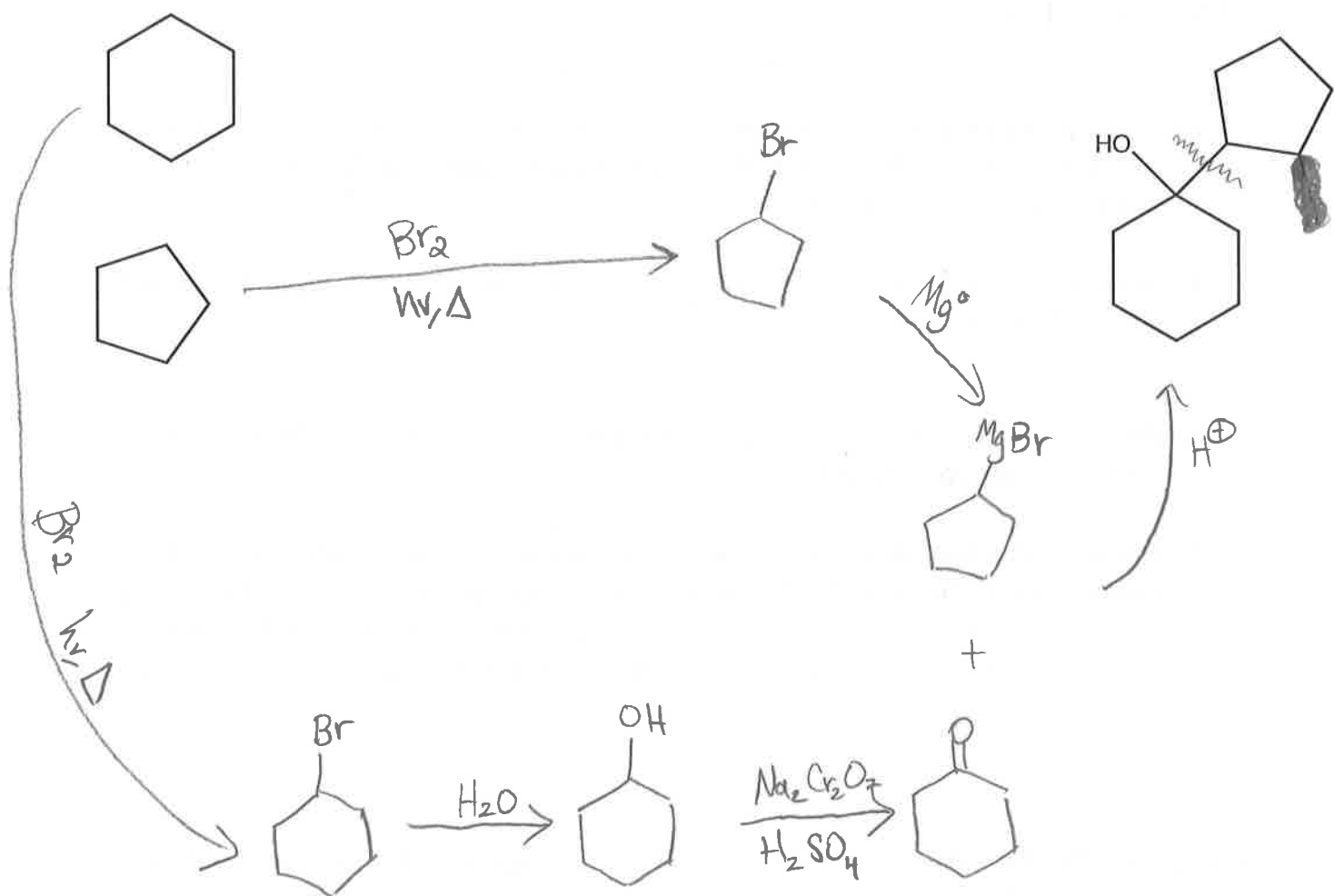
You done made it, kids: THIS IS THE LAST WORKSHEET FOR O CHEM 1 LET'S GET IT. Okay, so I'm going to give you many, **many** synthesis problems. Each subsequent one will get harder, and that's not a threat, that's just to let you know.

Here are some tips:

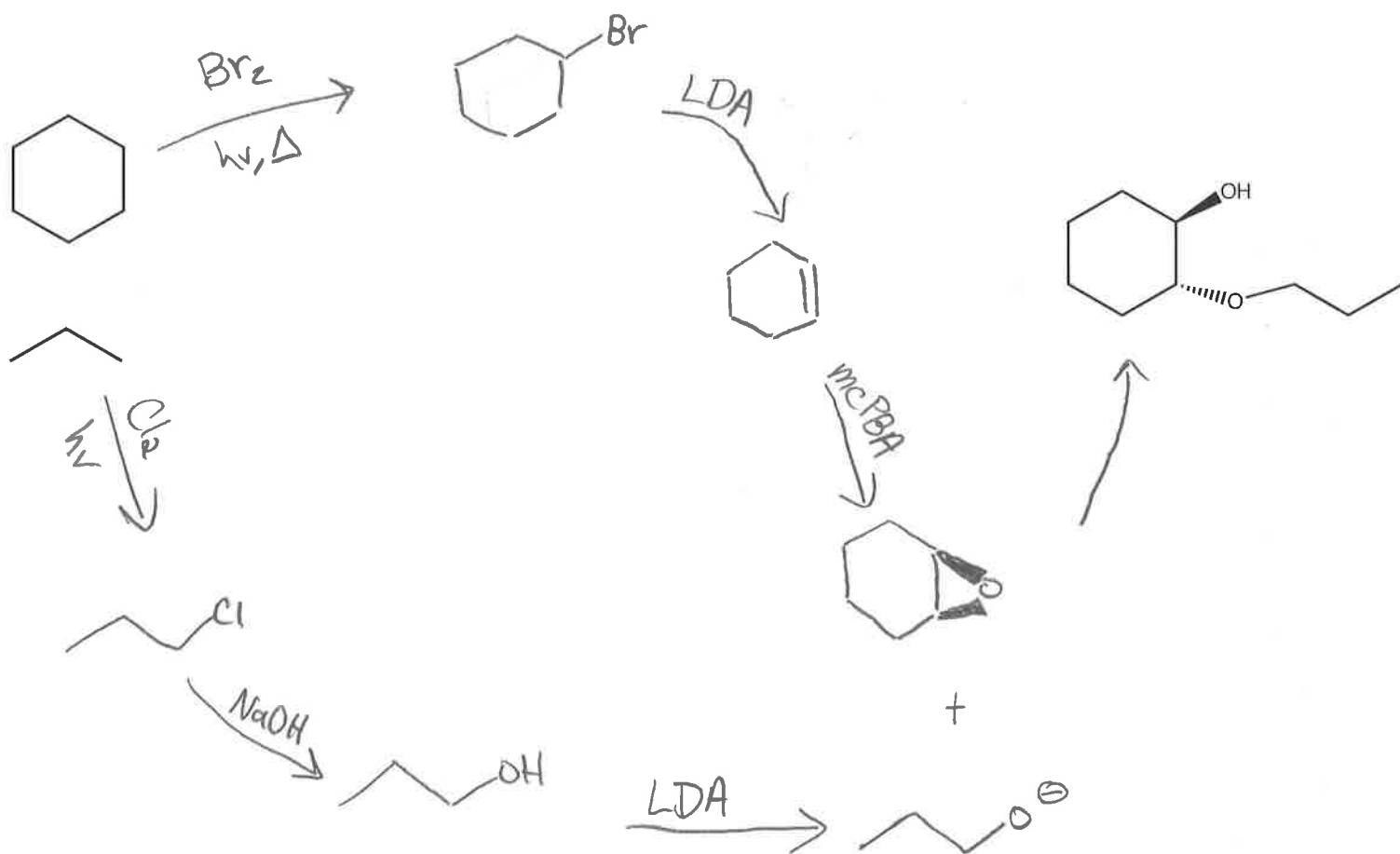
- 1.) Count your carbons. If it is apparent that carbon pieces were attached, count your carbons in the product and in the reactants and figure out how much of each reactant you need to work with.
- 2.) Make a "cut" in your product and see if you can identify your individual reactant pieces in the final target molecule.
- 3.) WORK BACKWARDS. If this still seems weird to you, trust me, it is far more effective than working forwards.
- 4.) Practice, practice, practice. Unless you are gifted with awesomely natural synthesis skills, this is something you work at to get good at it. You will try some problems and not get them on the first try, but don't quit. Look at the solution, see where you went wrong, make a mental note, and try it again. You got this 😊.

Now get on that next page, and let's synthesize some organic stuff in the most efficient way possible!!!!!!!!!!!!

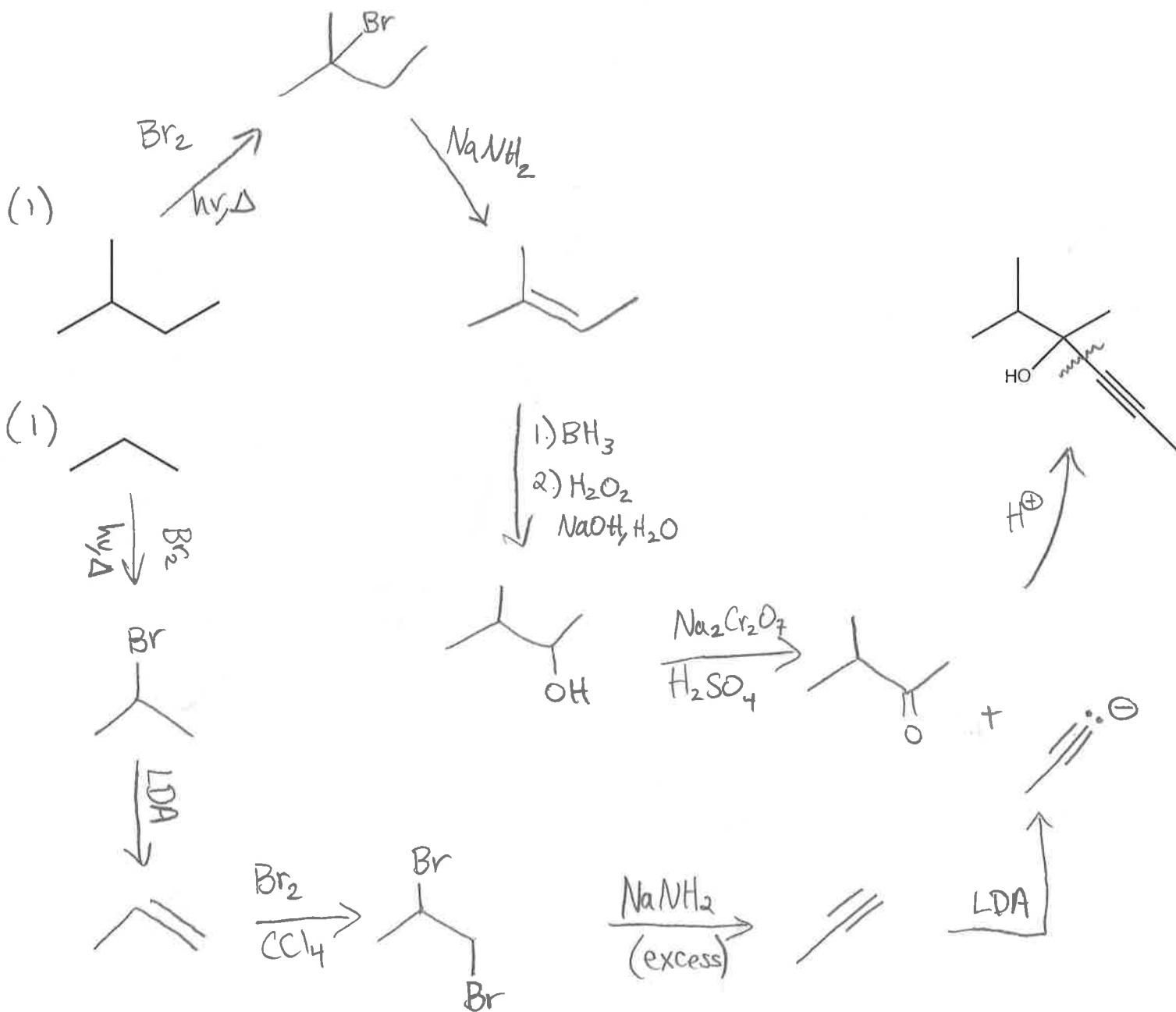
- 1.) Provide an efficient organic synthesis of the following target molecule depicted below. You may only use the organic reactants given as your source of carbon. You can use any inorganic reagents you may need.



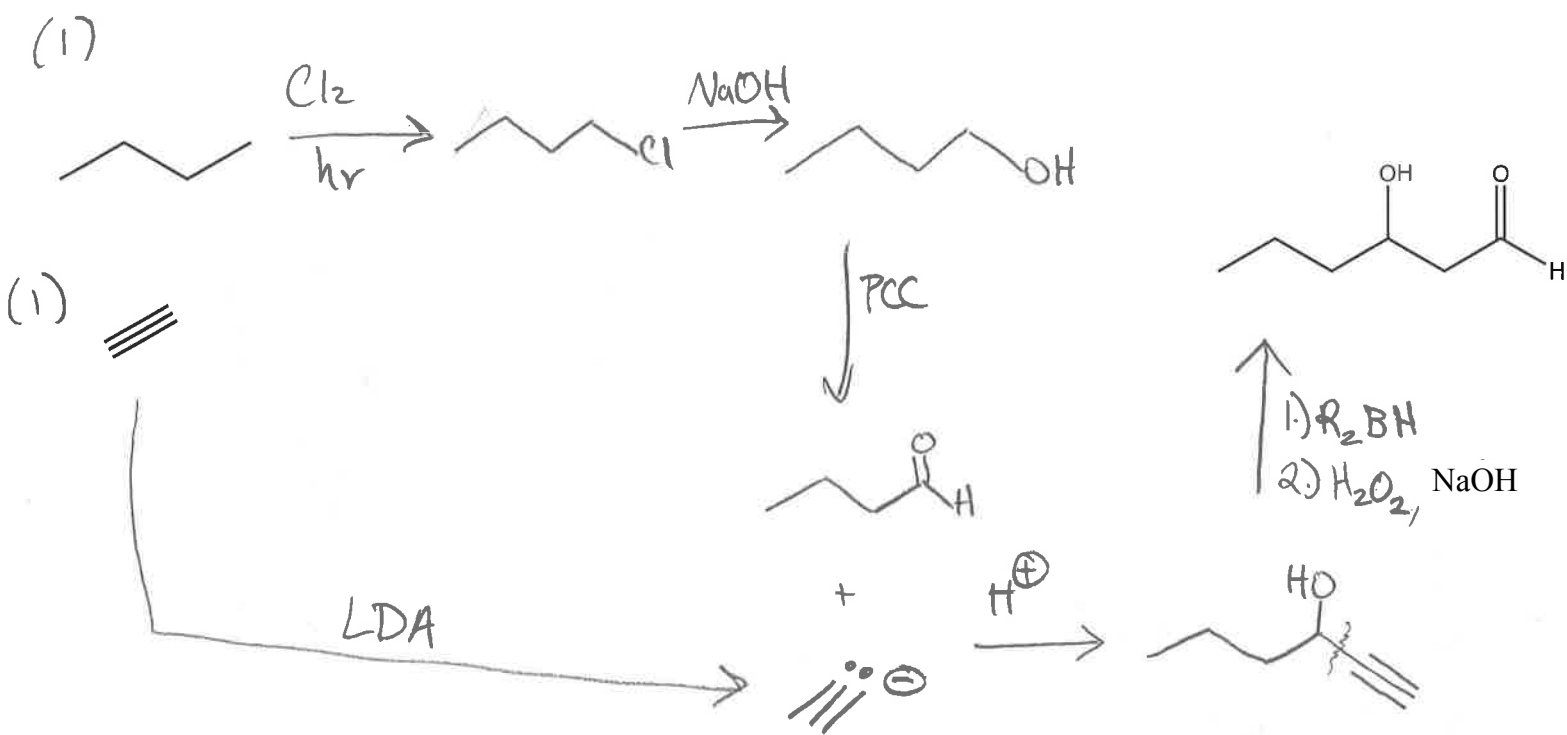
2.) Provide an efficient organic synthesis of the following target molecule depicted below. You may only use the organic reactants given as your source of carbon. You can use any inorganic reagents you may need.



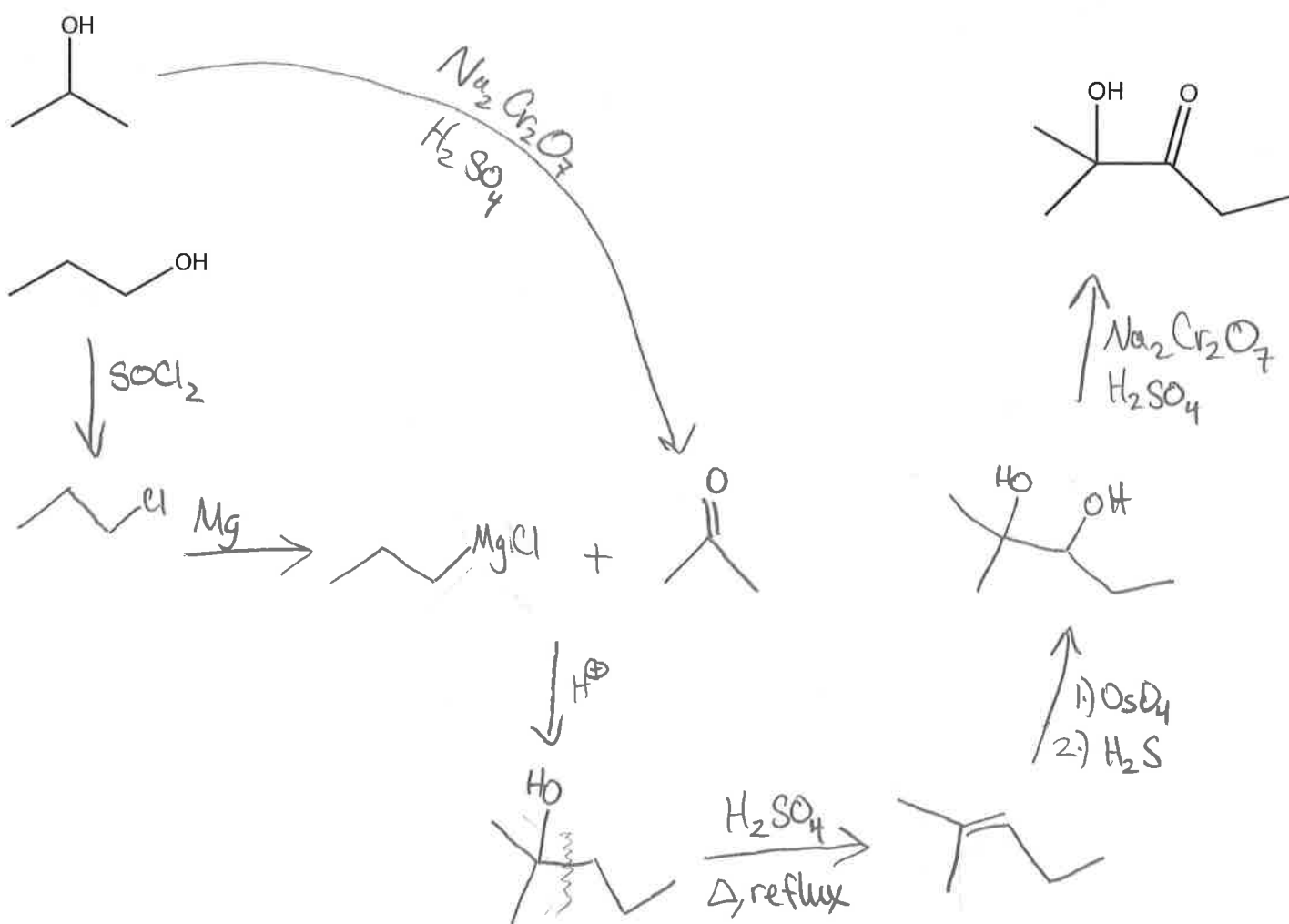
3.) Provide an efficient organic synthesis of the following target molecule depicted below.
 You may only use the organic reactants given as your source of carbon. You can use any inorganic reagents you may need.



4.) Provide an efficient organic synthesis of the following target molecule depicted below. You may only use the organic reactants given as your source of carbon. You can use any inorganic reagents you may need.

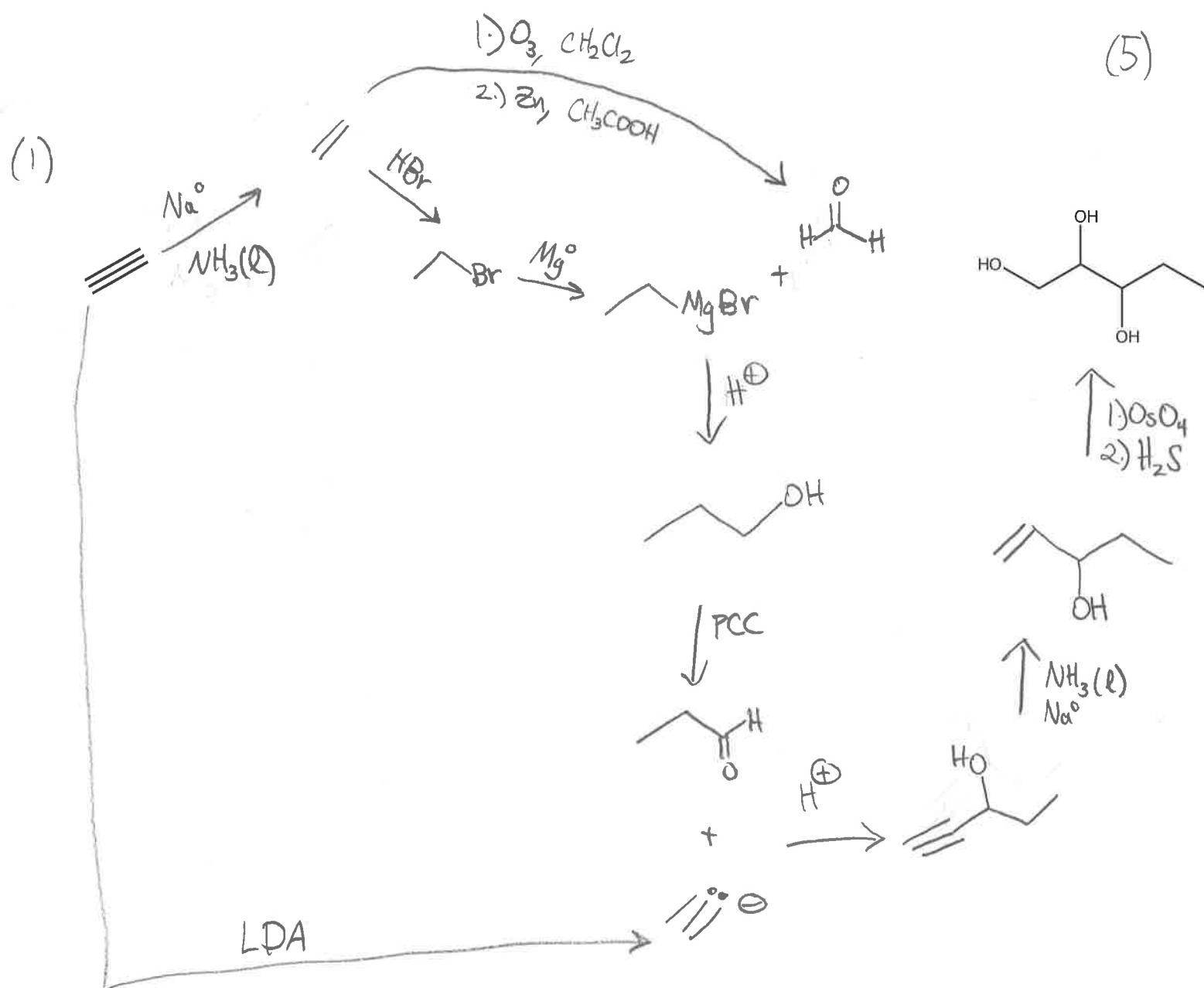


5.) Provide an efficient organic synthesis of the following target molecule depicted below.
 You may only use the organic reactants given as your source of carbon. You can use any inorganic reagents you may need.



6.) Provide an efficient organic synthesis of the following target molecule depicted below. You may only use the organic reactants given as your source of carbon. You can use any inorganic reagents you may need.

This is the hardest of all of the problems, so if you don't get this, don't worry. Fun fact: This was actually the exact synthesis problem on my O Chem 1 final.



7.) Provide an efficient organic synthesis of **3-heptyne**. You may use **ANY** source of carbon so long as the pieces are **two carbons or less**. You can use any inorganic reagents you may need.

