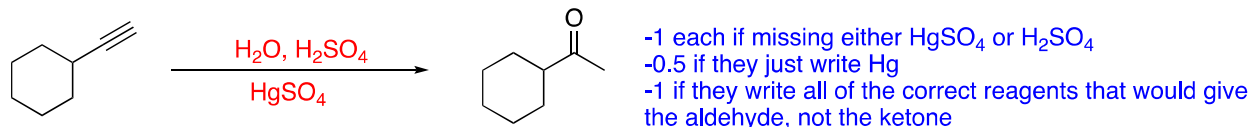
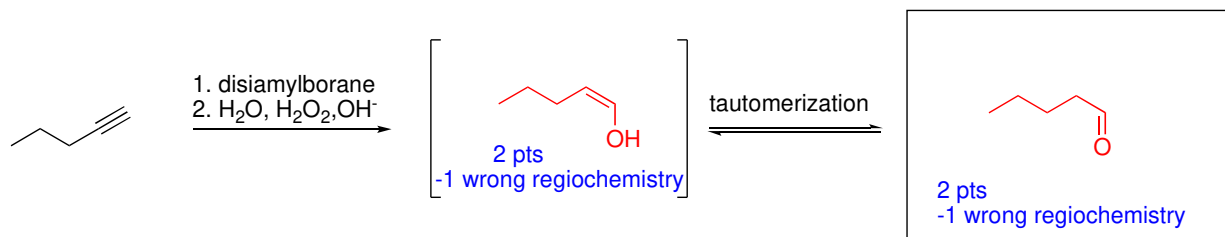


1. Provide the missing products or reagents for each of the following. **Please draw boxes around your answers.** Do not show mechanisms. (6 pts; 2 pts each)

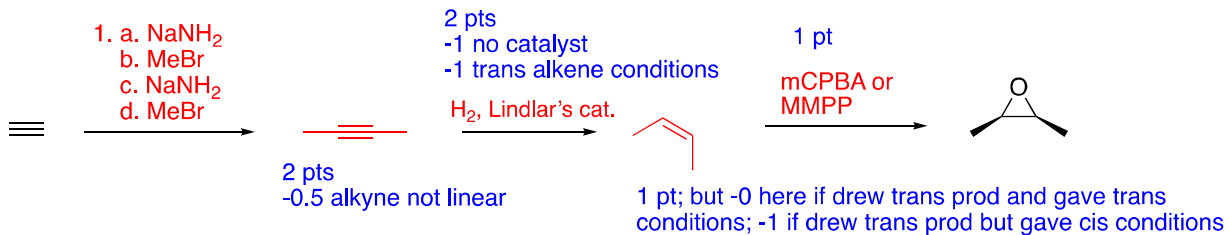


2. For the following reaction, please draw the enol intermediate it proceeds through in the square brackets provided and draw the final product in the box provided. (4 pts)



3. Find a way to synthesize the desired product from the given starting material. If more than one step is necessary, show the product of each step. Do not show mechanisms. (10 pts)

4 pts, 1 pt each reagent



It's fine to also draw the sequential alkylation, but I don't think it needs to be shown that way, since I'd imagine it'd be done in one pot.