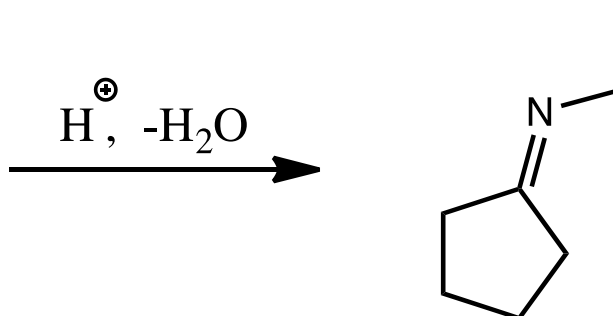
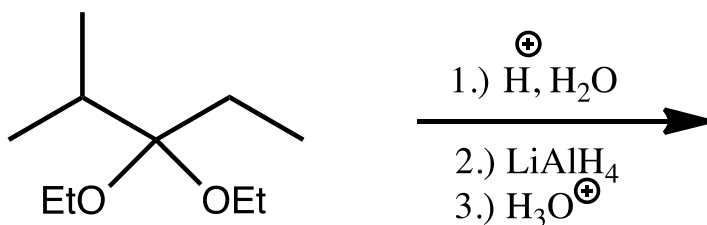
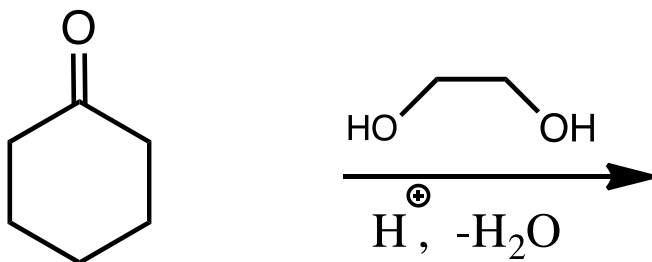


### Carbonyls #3: Rxns Practice of Ketones & Aldehydes, Part 1. Getting Them Down

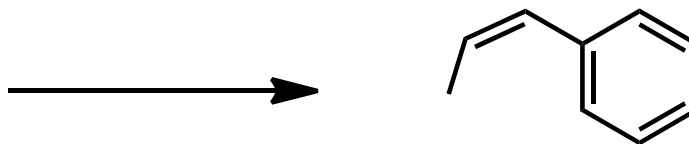
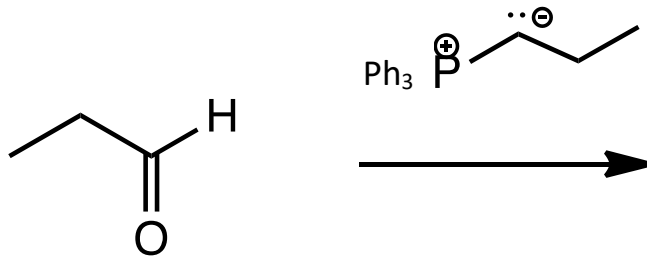
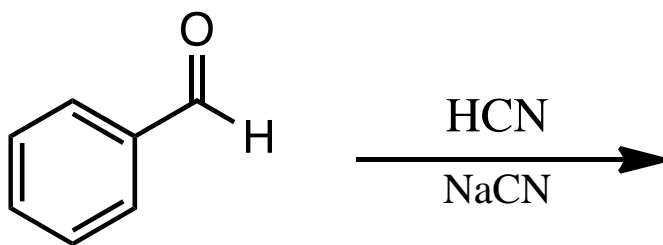
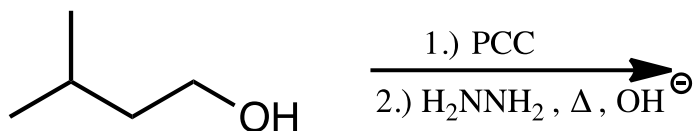
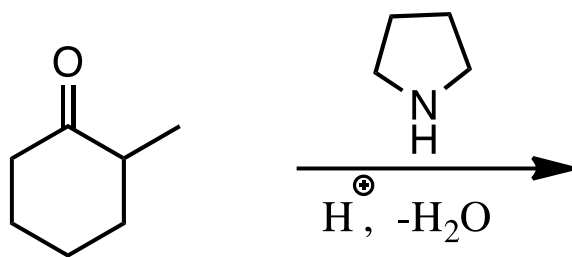
Ok, so now that we've nailed down the mechanisms for acetal, imine, and enamines, let's shift our focus to the whole host of reactions we just learned for ketones and aldehydes.

If you're feeling overwhelmed, feeling as if there are  $6.02 \times 10^{23}$  new reactions that we just learned, that's ok. There are a lot of new reactions, but with organized practice, you'll master them all in no time. This worksheet, installment 1 of 2, is meant to be more straight forward practice, to sure up your understanding with these reactions. Part 2 turns up the difficulty, but for now, let's focus on getting our reps in.

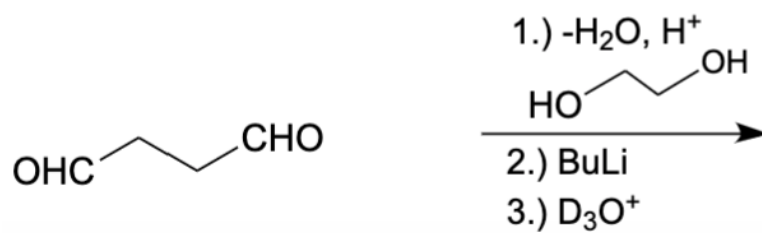
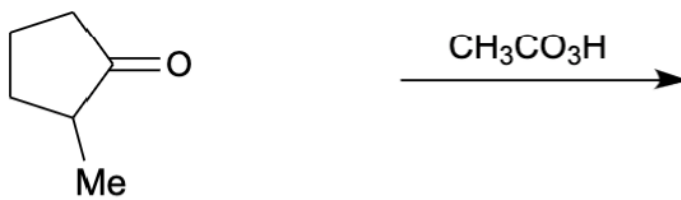
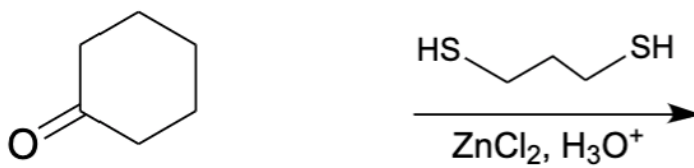
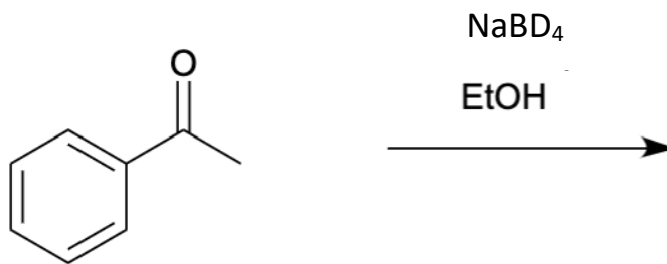
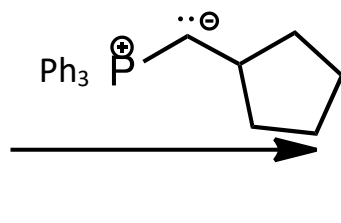
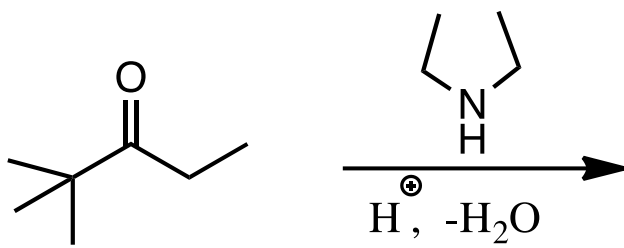
1.) Predict the major organic product:



\*Give both the amine and carbonyl\*

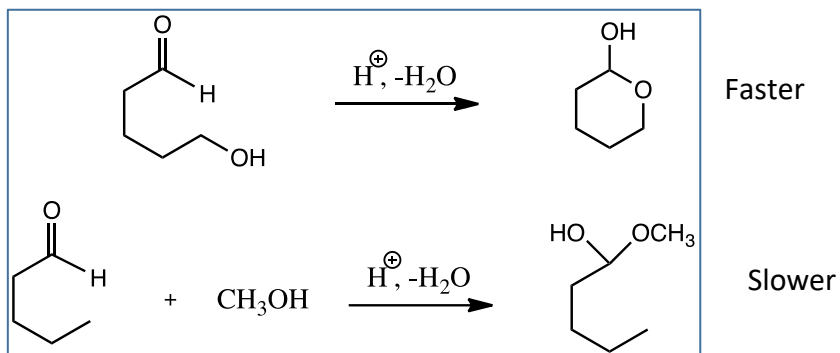


\*Give both the carbonyl and the ylide\*



2.) Okay, good job with those reactions. I know there are a lot of them, but practice will make identifying all the new ones easier come test time. Okay, now time for a concept question:

When the two hemiacetal formation (halfway to an acetal) reactions (shown below) are performed, the intramolecular reaction is faster and more favorable than the intermolecular one: **Why is that the case?**



3.) Alright, gang. To wrap up this worksheet, I have a mechanism question for you. Now, while we haven't explicitly talked about this, I know you have the organic skillz to figure this one out.

Draw the arrow pushing mechanism detailing the transformation displayed below:

**\*I know this looks whack, but two hints: protonate the carbonyl & don't forget about EAS**

