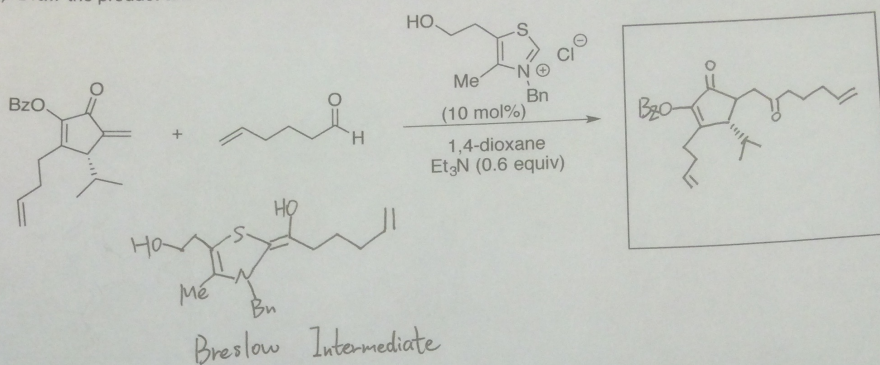
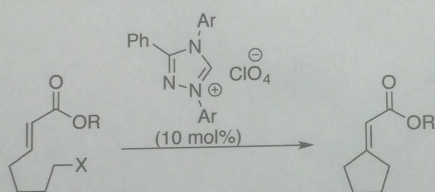


Engle Lab Problem Set 10 (ZL)
Question 1.

a). Draw the product and mechanism for this Stetter reaction. Write the name of the intermediate for this reaction.

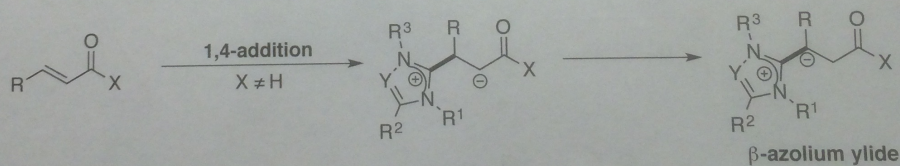


b). In 2005, Fu discovered the following reaction:

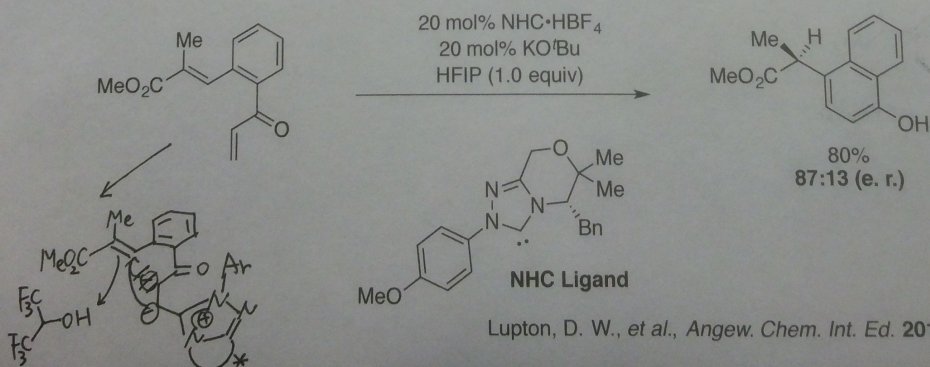


Fu, G. C., et al., *J. Am. Chem. Soc.* **2006**, *128*, 1472–1473.

They proposed the formation of β -azolium ylide:

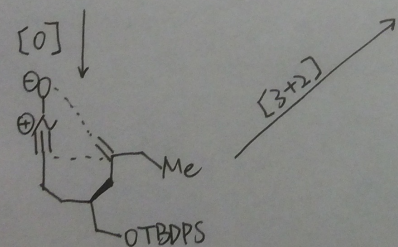
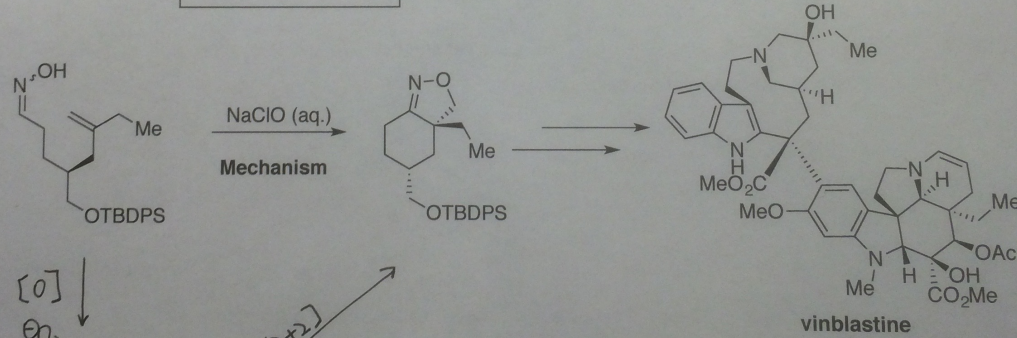
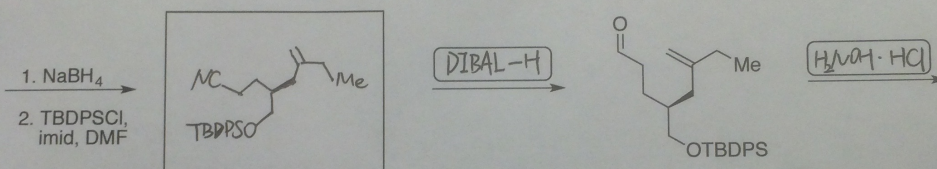
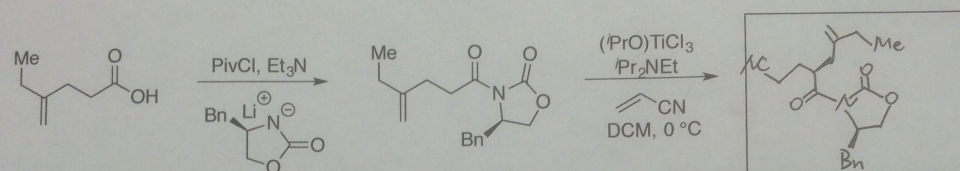


Based on this information, please propose a mechanism for the following reaction:



Question 2:

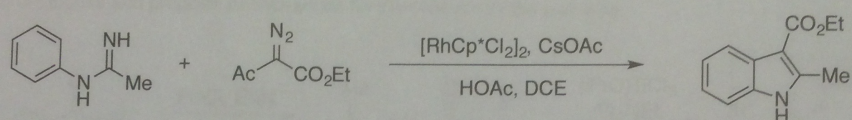
Fill in the blanks and propose a mechanism for the reaction in the last step.



Fukuyama, T., et al., *J. Am. Chem. Soc.* **2002**, 124, 2137-2139.

Question 3:

Propose a mechanism for the following reaction:



Li, X., et al., *Org. Lett.* **2016**, DOI: 10.1021/acs.orglett.5b03669.

