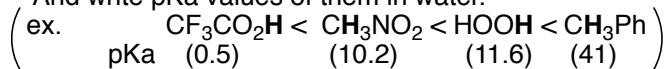


Name _____

1. 1) Rearrange the following compounds in order of pKa values.

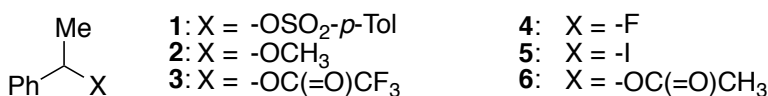
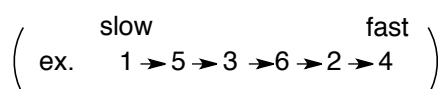
And write pKa values of them in water.



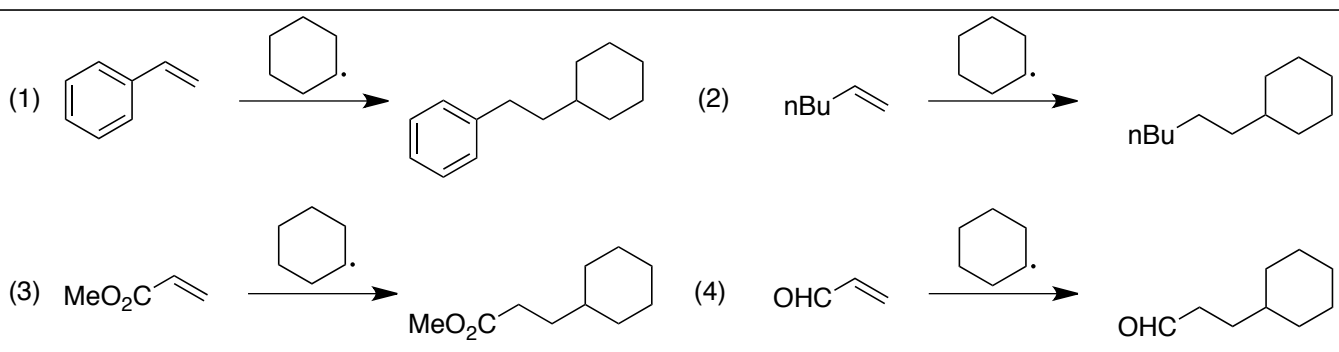
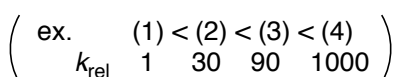
HI, TsOH, $\text{CH}_3\text{CO}_2\text{Me}$, $\text{CH}_3\text{C}(=\text{O})\text{CH}_2\text{CO}_2\text{Et}$, CHCl_3 , Ac_2NH

2) List the following compounds 1 ~ 6 in a slow order of solvolysis reaction.

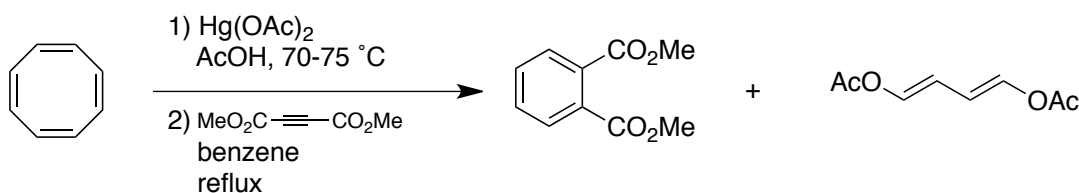
(The solvent is a mixture of EtOH and water in those reactions.)



3) Arrange the following chemical equations (1) ~ (4) in order of the velocity of radical addition reactions. And predict ratio of reaction rate.

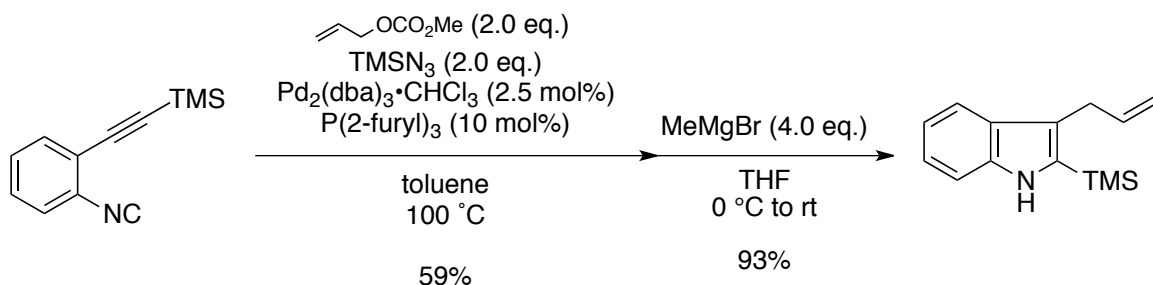


2.



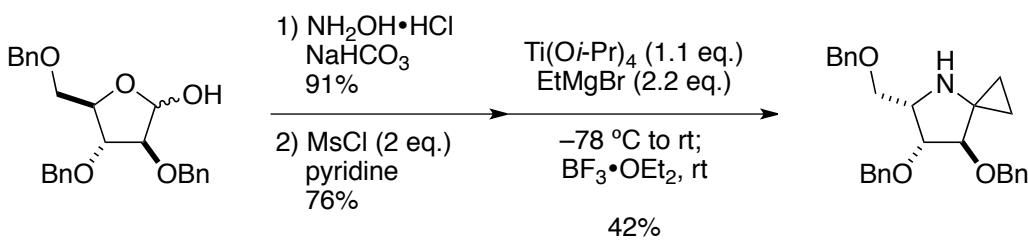
R. Dinsmore. *et al.*, *Org. Synth.*, **2**, 358 (1943)

3.



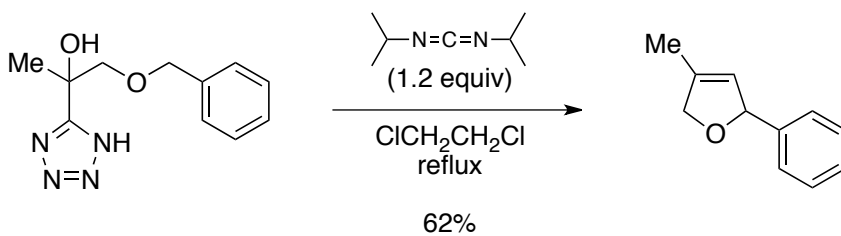
problem 09/01/2018 Q5
 Y. Yamamoto *et al.*, *J. Am. Chem. Soc.*, **124**, 11940 (2002)

4.



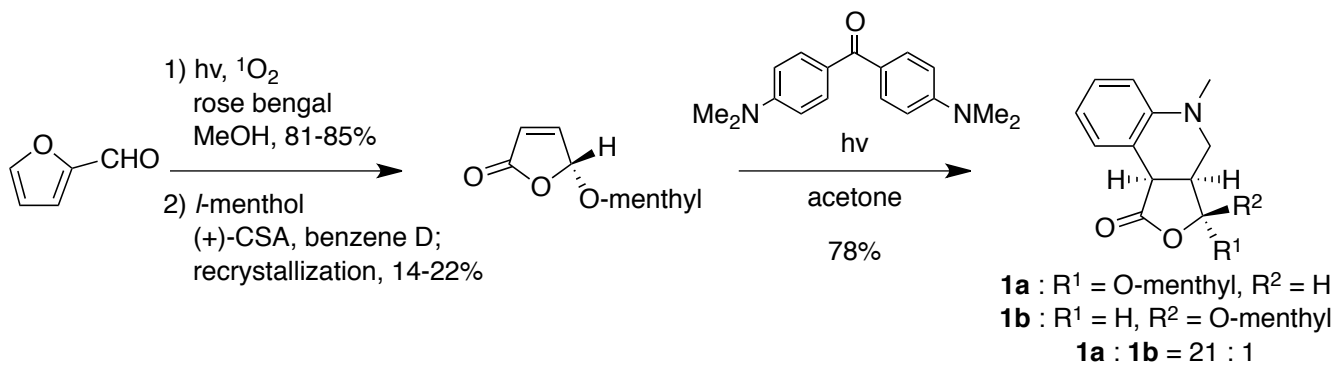
problem 08/04/2018 Q2
 P. Bertus and J. Szymoniak, *Synlett*, **9**, 1346 (2007)

5.



D. J. Wardrop *et al.*, *Org. Lett.*, **14**, 1548 (2012)

6.



N. Hoffmann *et al.*, *J. Org. Chem.*, **69**, 1646 (2004)