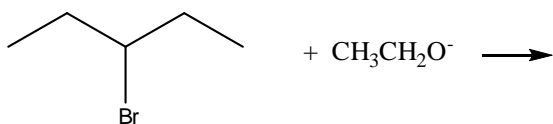
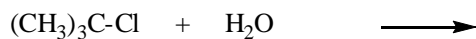
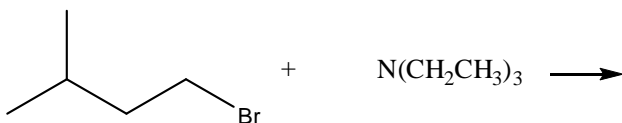


Discussion Problem Set 8

1. Identify the nucleophile and leaving group, then draw the products of the reaction. (problem 7.8a)



2. Draw the products of these substitution reactions. If the initial product can lose a proton to form a neutral product, draw that product as well. (Problem 7.9ab)

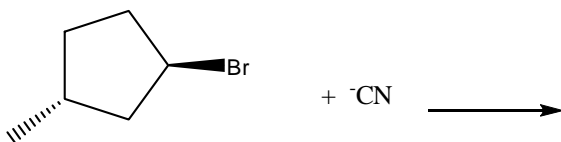
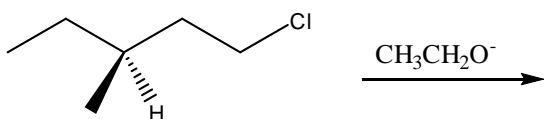
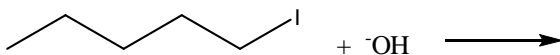
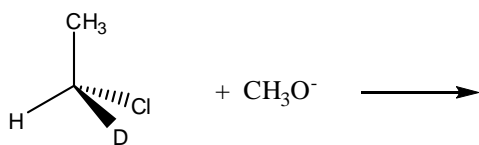


3. Identify the stronger nucleophile in each pair (problem 7.13)

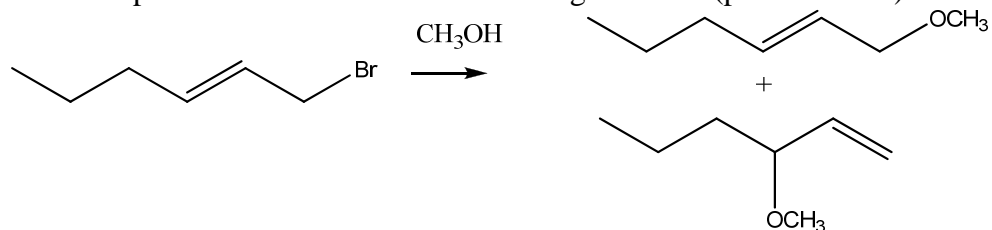


4. Explain why $(\text{CH}_3)_3\text{CCH}_2\text{Br}$, a 1° alkyl halide, undergoes $\text{S}_\text{N}2$ reactions very slowly (problem 7.23)

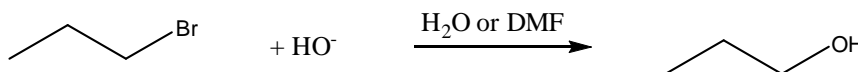
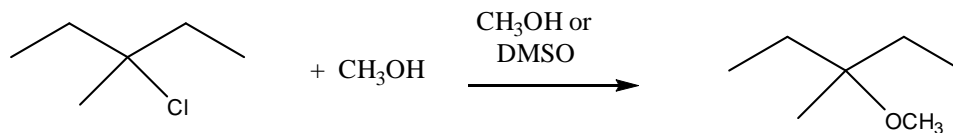
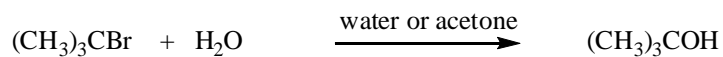
5. Predict the products of each $\text{S}_\text{N}2$ reaction and draw a mechanism for their formation. Include appropriate stereochemistry. (problem 7.58)



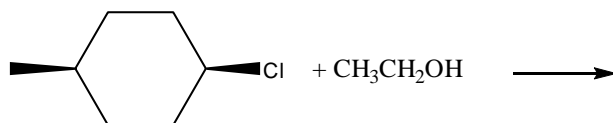
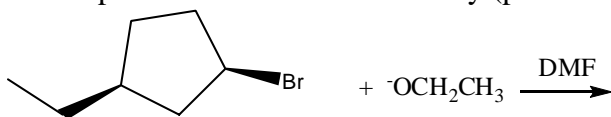
6. Draw a stepwise mechanism for the following reaction. (problem 7.65)



7. For each reaction, will the mechanism favor S_N1 or S_N2 ? Also choose the solvent in which the reaction will go faster. (problem 7.36abc)



8. Determine the mechanism of nucleophilic substitution for each reaction and draw the products with stereochemistry (problem 7.68ef)



9. The ether, $\text{CH}_3\text{OCH}_2\text{CH}_3$, can be prepared by two different methods, one using methoxide as a nucleophile, and the other using ethoxide as a nucleophile. Draw both routes. (problem 7.40)

10. Devise a synthesis of each compound from an alkyl halide using any other organic or inorganic reagents. (problem 7.74ac)

