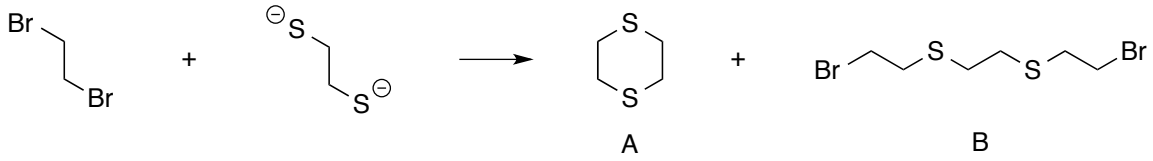
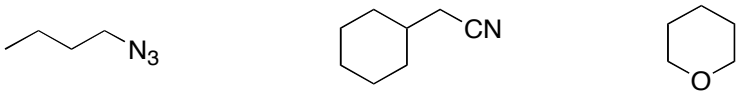
Practice Problems for Chapters 7 and 8. To be completed after completion of the problems in the text.

1) Using arrows, explain how the products below are formed. How might you enhance the yield of B?

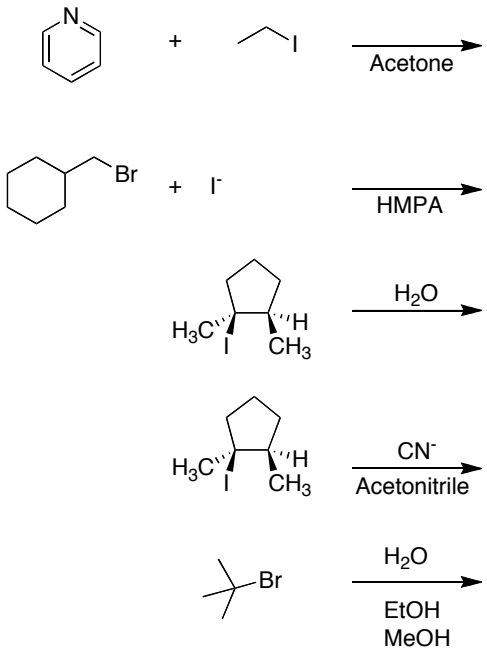


A B

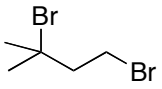
2) Devise S_N2 reactions that would give the following products starting with your choice of alky halides.



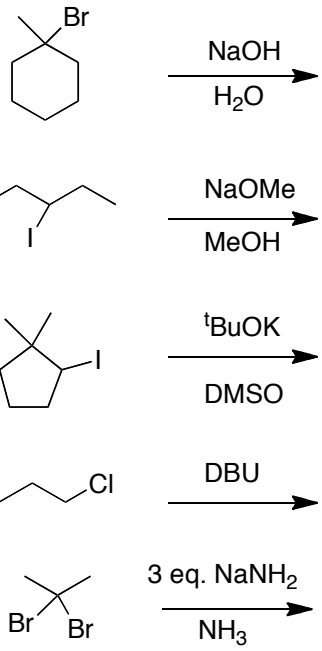
3) Predict the **major substitution product** of the following reactions and determine if they are formed from S_N1 or S_N2 pathways.



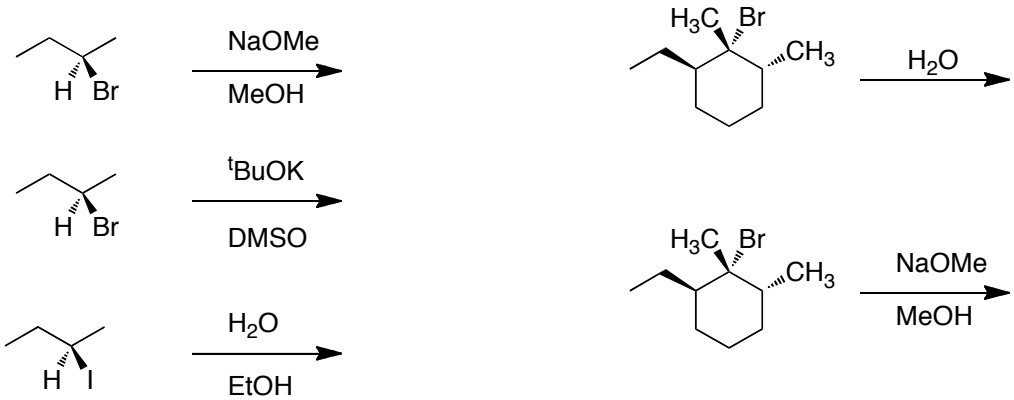
4) For the following dibromo alkane determine which position will react faster (be more reactive) under S_N1 and S_N2 conditions. Explain your answer.



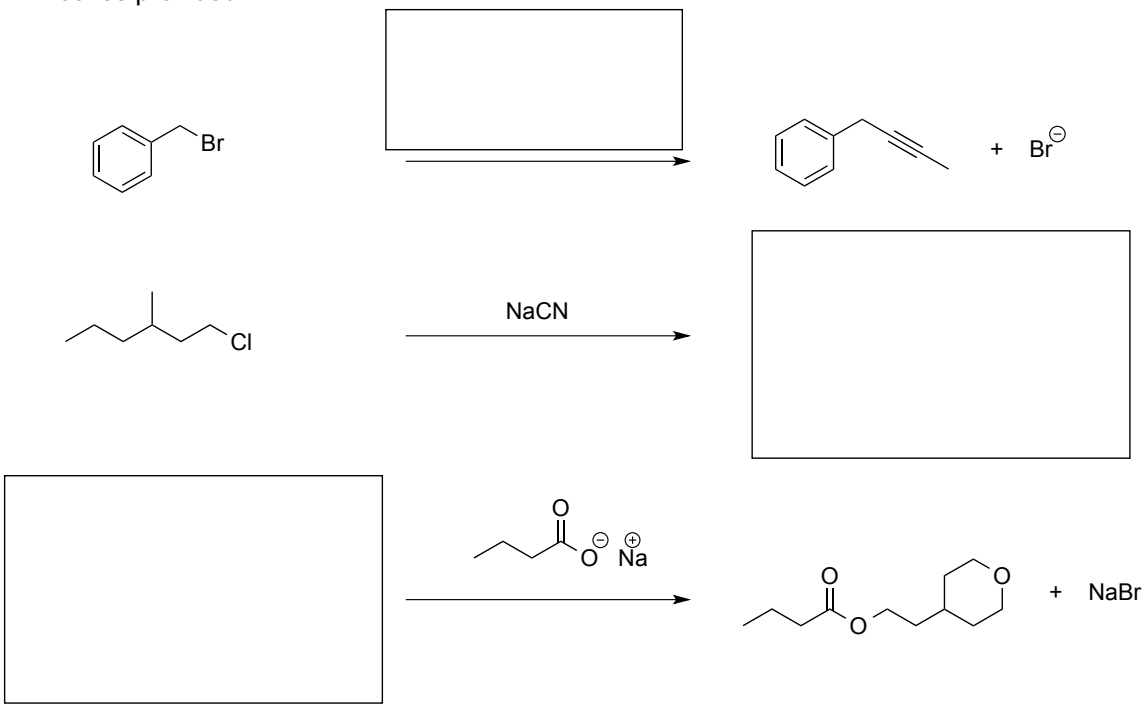
5) Predict **the major elimination product** of the following reactions and indicate if they are from E1 or E2 pathways.



6) Predict the major product in each of the following reactions and indicate if it came from an S_N1, S_N2, E1, or E2 reaction.



7) For each of the following reactions, provide the appropriate reagents or products in the boxes provided.



8) Answer the following questions for the reaction coordinate diagram shown below.

A. Give the letter(s) corresponding to the transition state(s). _____

B. Give the letter(s) corresponding to the reactive intermediate(s). _____

C. **Step 1** or **Step 2** is the rate determining step. (circle one)

D. Step 1 is **endothermic** or **exothermic**. (circle one)

E. Step 2 is **endothermic** or **exothermic**. (circle one)

F. The overall reaction is **endothermic** or **exothermic.** (circle one)