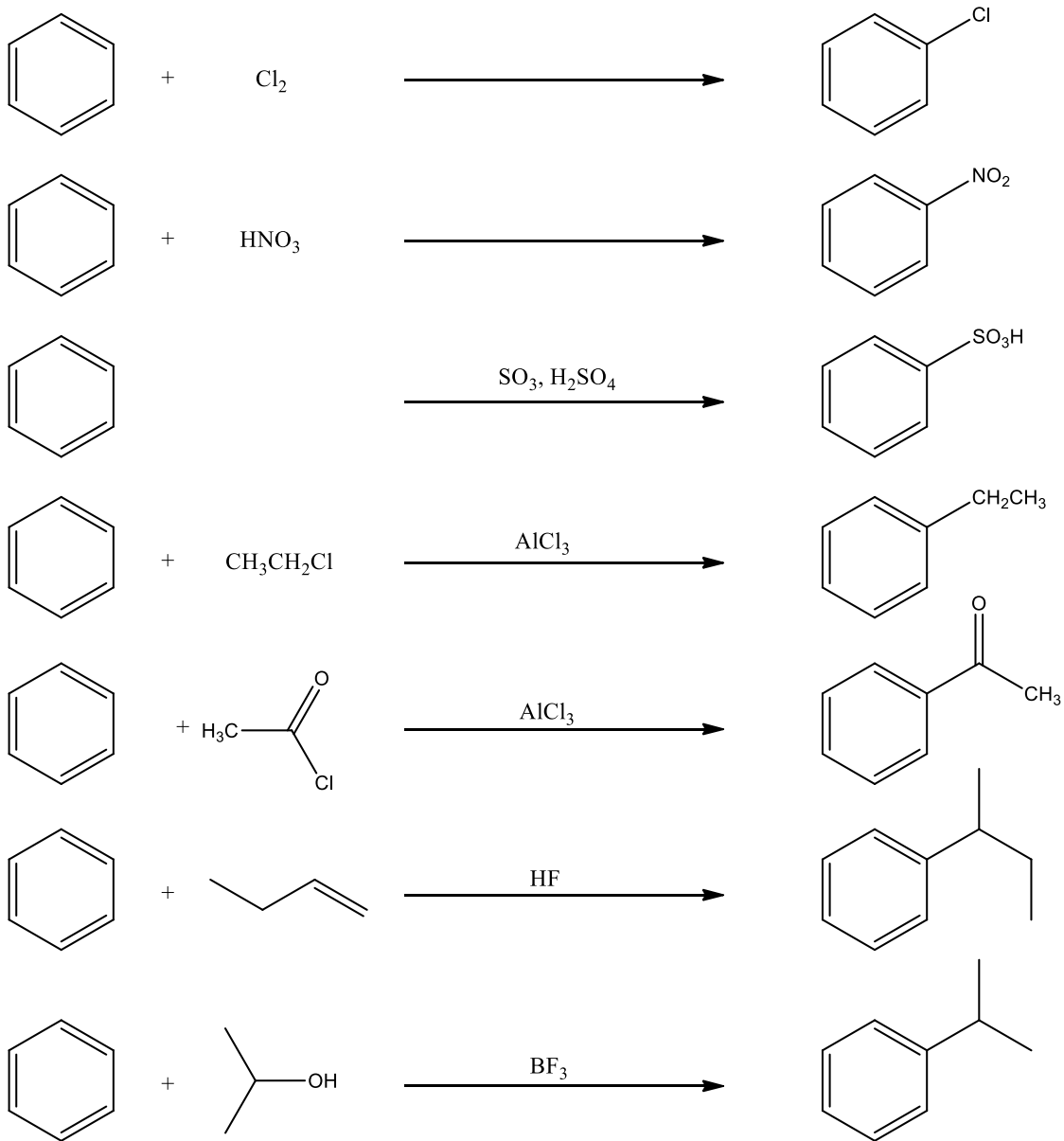
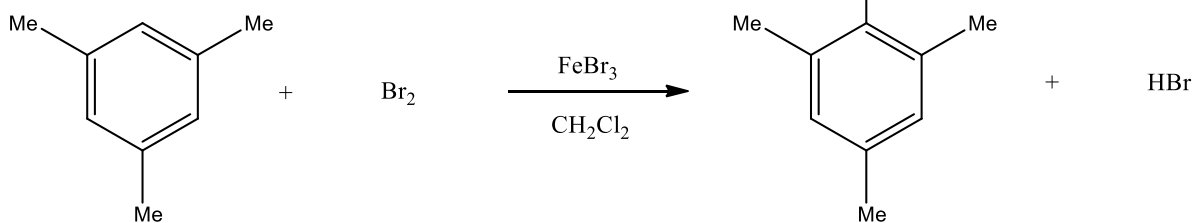
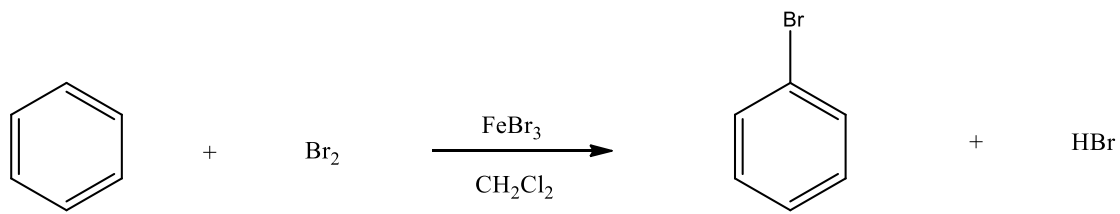
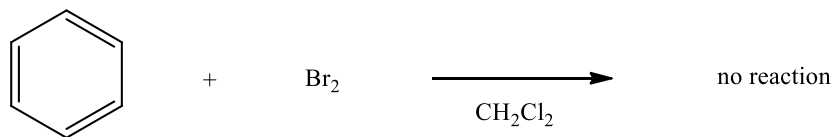
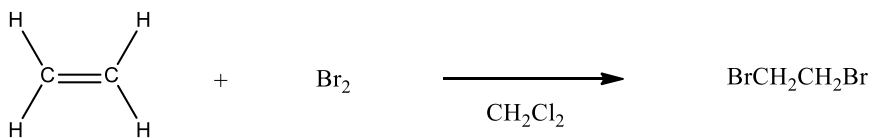


Discussion Section 3

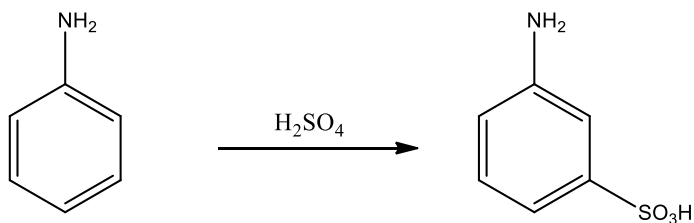
1. Each of the following is classified as a reaction that occurs by an electrophilic aromatic substitution mechanism. Construct a table showing the electrophile and the electrophilic substitution intermediate for each of the reactions. Write a general two-step mechanistic scheme (use curved arrows to show movement of electron pairs) for these reactions



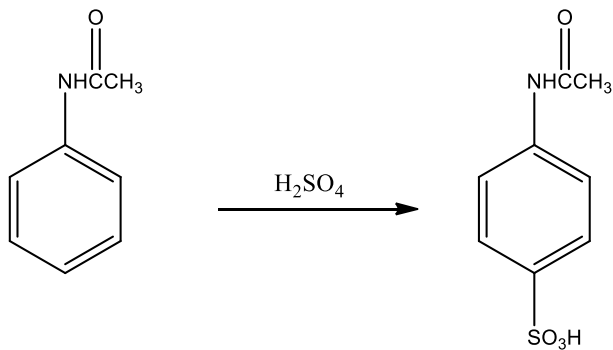
2. Consider the following reactions and explain the differences in reactivity and products.



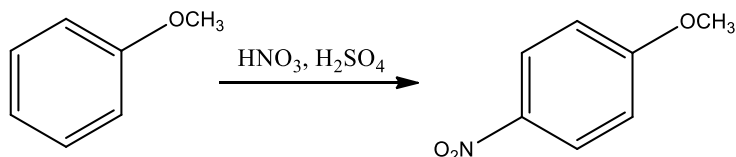
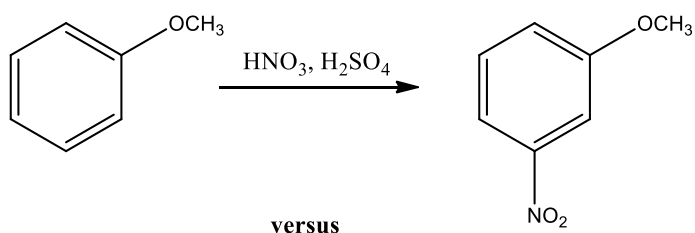
3. Explain clearly with words and structures the results of the following reactions. Which reaction is faster? Explain your choice.



versus



4. A) Predict which of the following reactions will occur at a faster rate.



B) What does your answer in part (A) imply that the major product in the nitration of anisole (PhOMe) will be? Explain.

C) Show a detailed mechanism for the reactions in part (A) and give energy diagrams (reaction coordinate diagrams) for the two mechanisms. Take care to show all important resonance structures. Explain how your energy diagrams account for your predictions in parts (A) and (B).

5. Propose reagents and conditions for preparing the following compounds from benzene.

