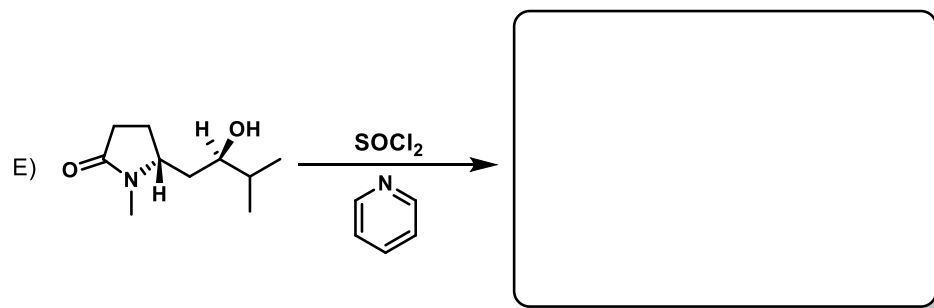
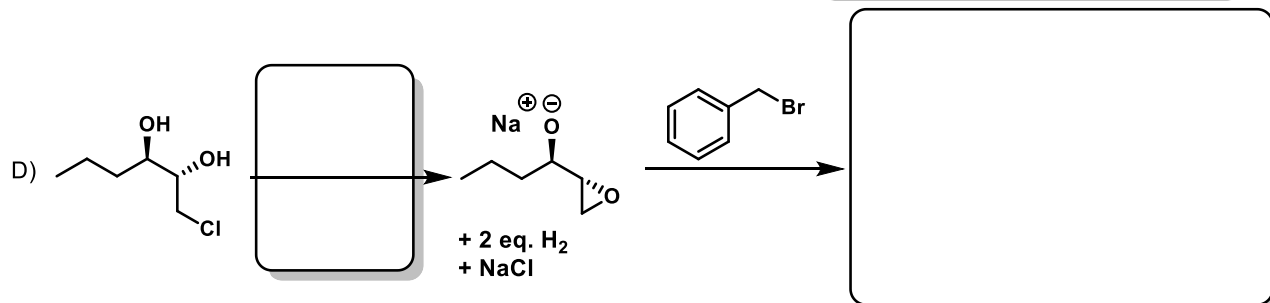
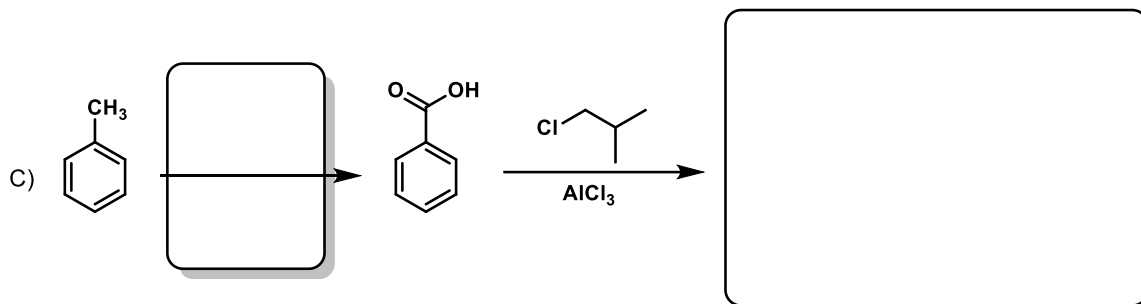
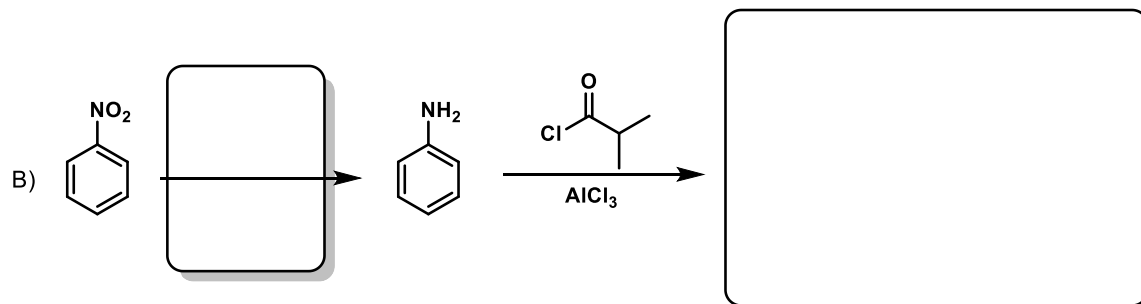
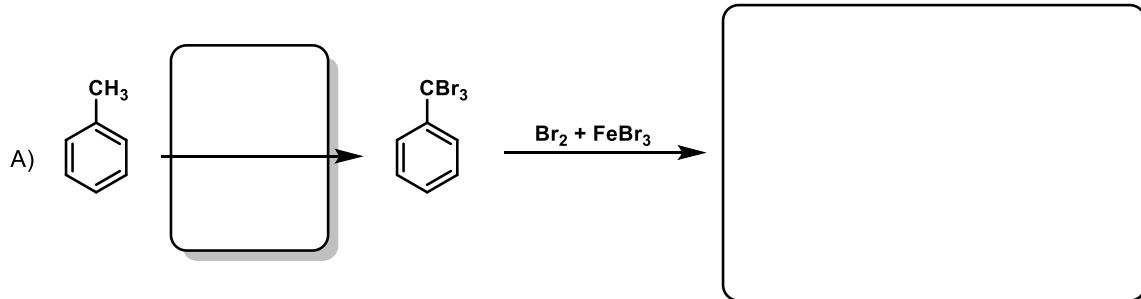
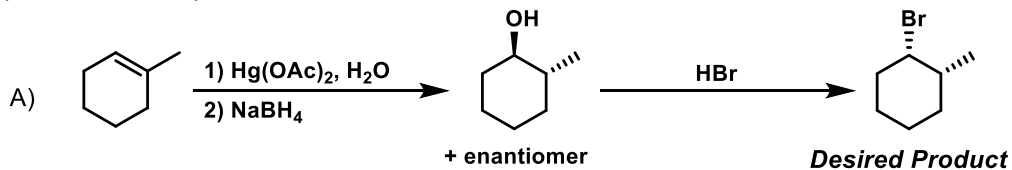


1. **Quick Synthesis.** In the boxes, fill in the correct reagent or product for the reactions given.

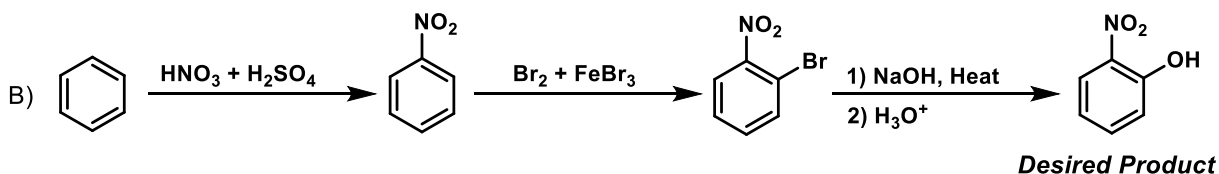


2. **Flawed Synthesis.** Below you will find three syntheses that will not ultimately lead to the **Desired Product**. In the first box, describe the flaws inherent in the synthetic route presented. In the second box, provide a new synthetic route that will lead to the **Desired Product**.



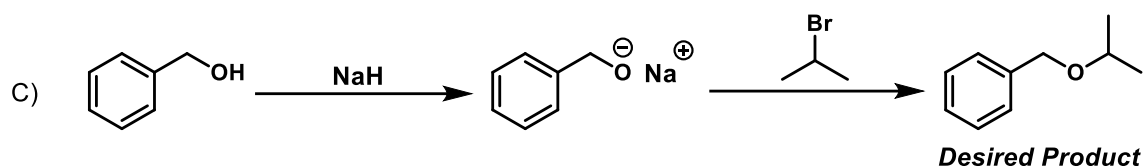
Synthetic Flaws

New Route



Synthetic Flaws

New Route



Synthetic Flaws

New Route

3. **Oxidation State.** In the large boxes, fill in the reagents needed to achieve this transformation. In the small boxes, record the oxidation state of the atom the arrow indicates.

