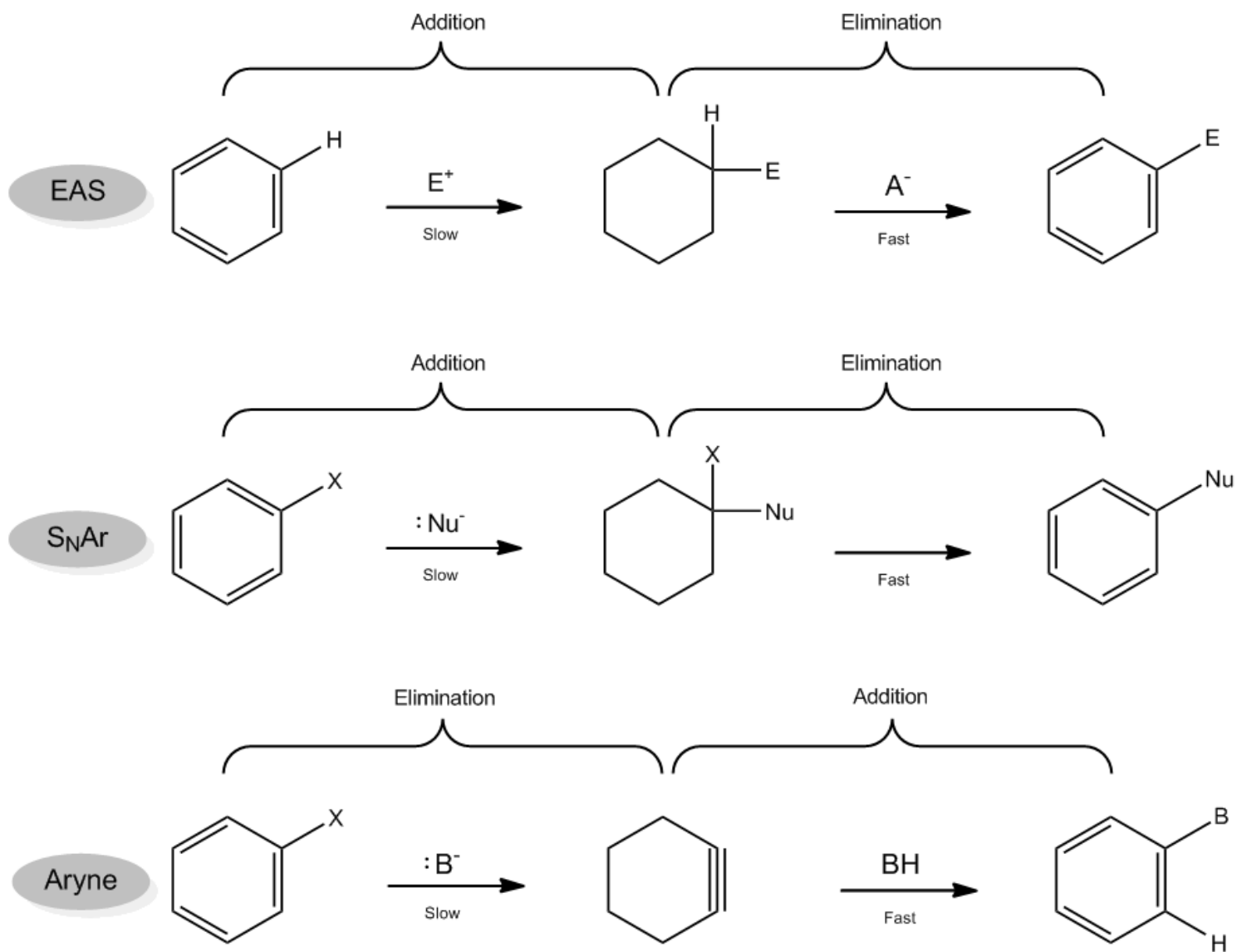


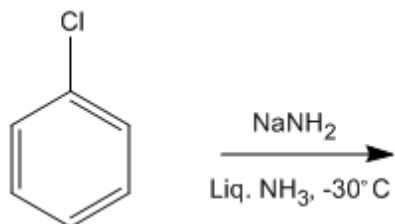
CONCEPT: BENZYNE PATHWAY – GENERAL MECHANISM

Benzene can also undergo *Nucleophilic Aromatic Substitution* via an *Elimination-Addition* pathway to make **aniline**.

- This mechanism requires the formation of a highly unstable aryne (C_6H_4) intermediate.



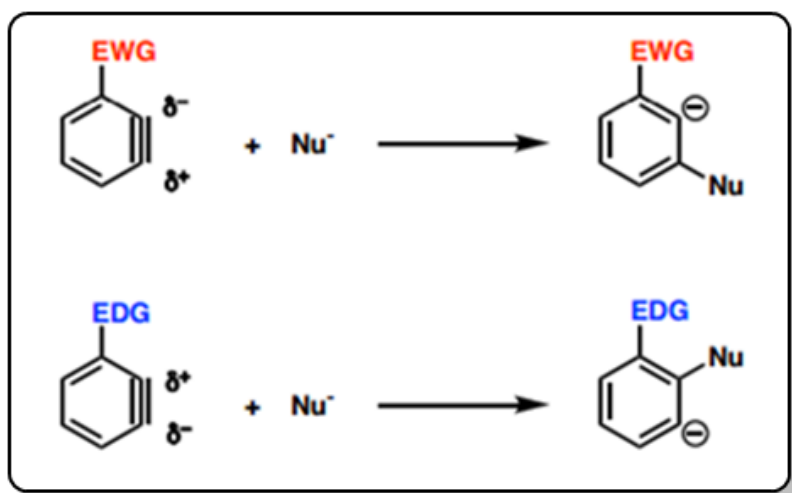
Benzyne Amination Mechanism:



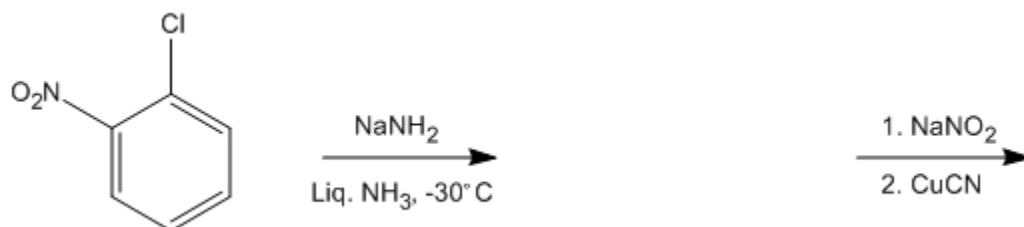
CONCEPT: BENZYNE PATHWAY – REGIOSPECIFIC PRODUCTS

MIT chemist John D. Roberts proposed that we could use donating and withdrawing groups to favor ortho vs. meta products

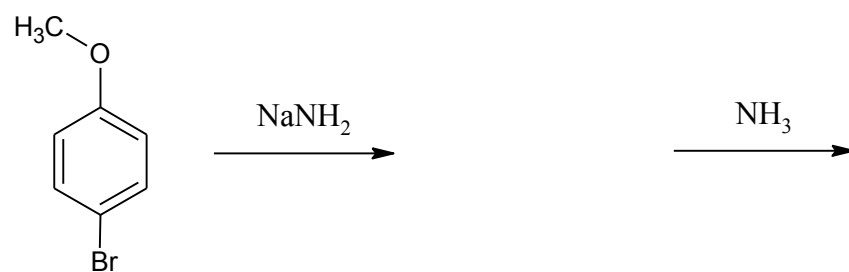
- Donating Groups favor the _____ position
- Withdrawing Groups favor the _____ position



EXAMPLE: Predict the product of the reaction. Use your knowledge of activating and deactivating groups to determine what the final product is. Show the full mechanism for the benzyne pathway.



PRACTICE: Provide the major product(s) from the following reaction.



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