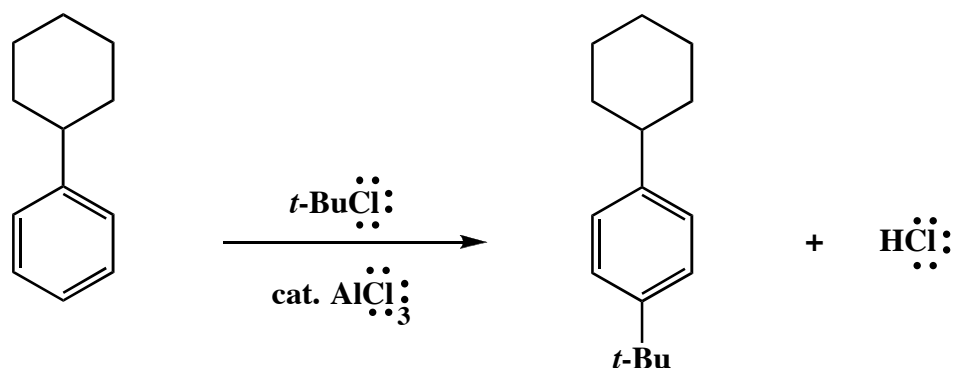
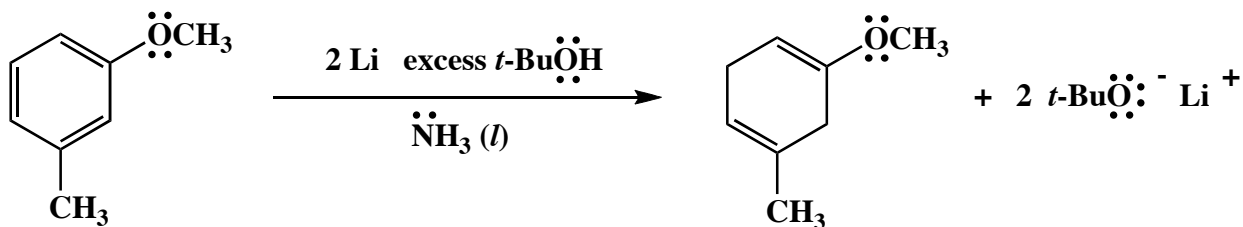


Problem Set 5

1. Draw the mechanism of the following reaction, using the curved-arrow notation to indicate the reorganization of electron density. Denote **all** intermediates, lone pairs, nonzero formal charges, countercharges, and reversibility or nonreversibility. Draw all important resonance contributors for intermediates. Finally, explain briefly why the observed regiochemistry is obtained.



2. Draw the mechanism of the following reaction, using the curved-arrow notation to indicate the reorganization of electron density. Denote **all** intermediates, unshared electrons, nonzero formal charges, countercharges, and reversibility or nonreversibility. Finally, explain briefly why the observed regiochemistry is obtained.



3. Classify each of the following ten species as aromatic, antiaromatic, or nonaromatic (neither aromatic nor antiaromatic). State your reasoning briefly under each designation.

