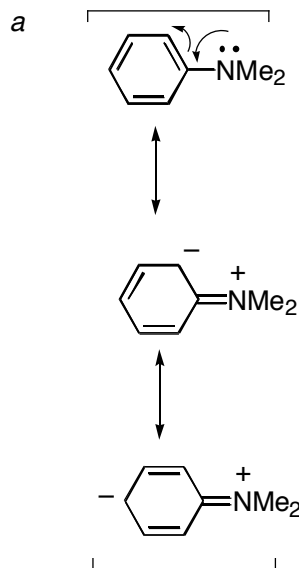
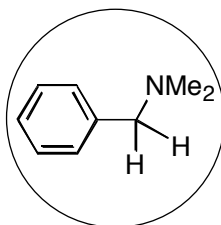


1. Which is a stronger base?



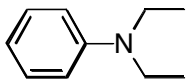
or



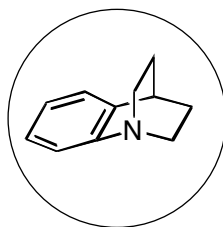
Here, a CH_2 separates the non-bonded electrons from the phenyl ring. Resonance is not possible.

aromatic amine is less basic because the non-bonded electrons on nitrogen are conjugated with the phenyl ring.

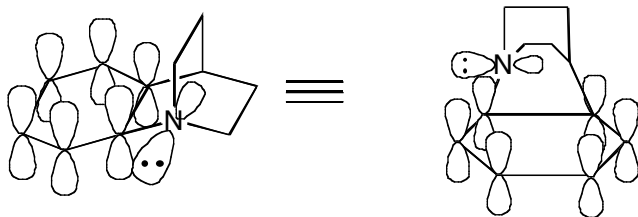
b



or

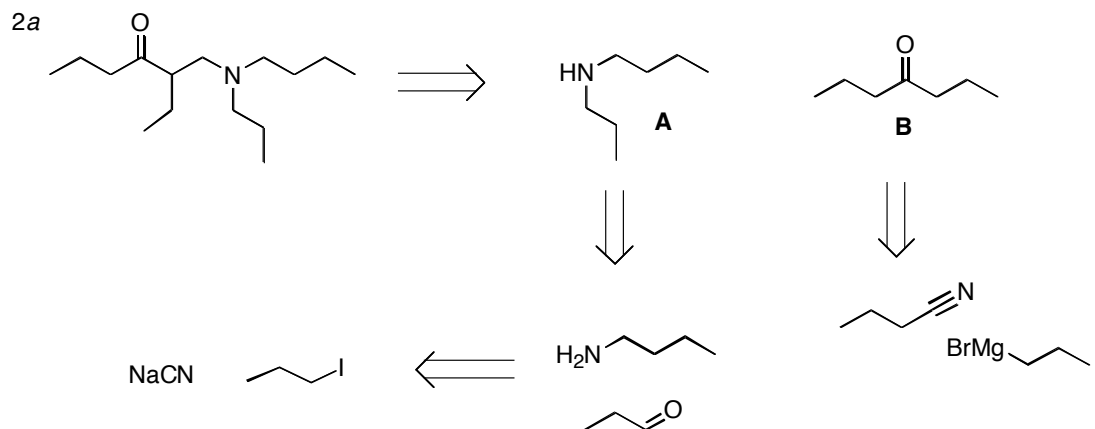


Hint: make a model and think about the geometry of the lone pair relative to the benzene ring

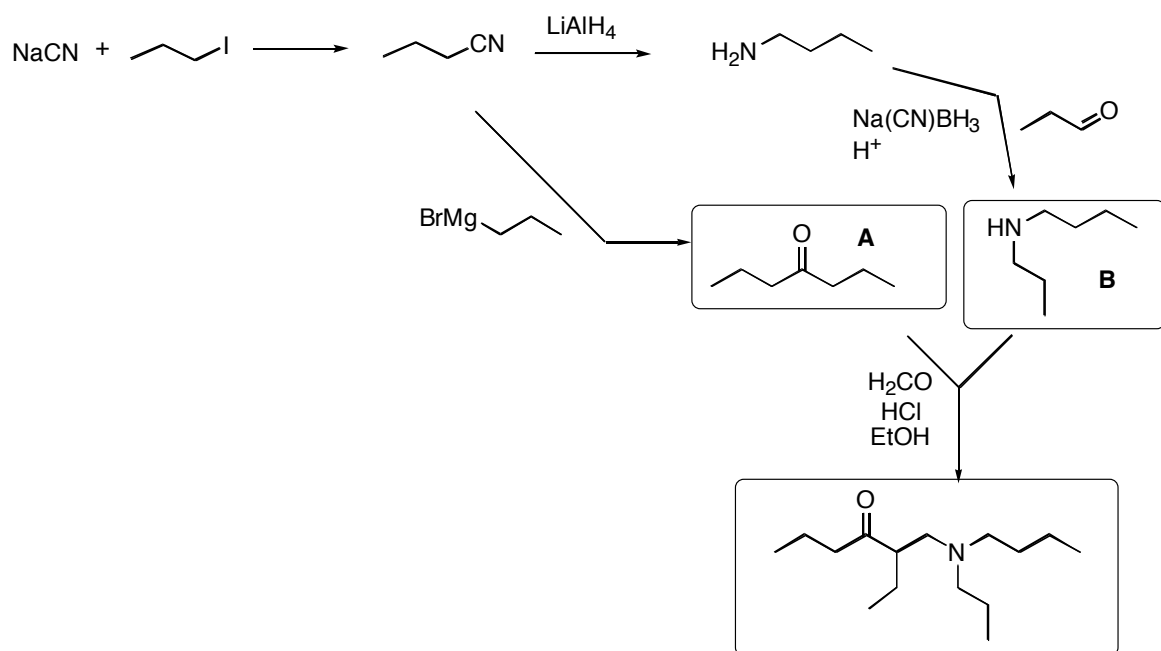


Lone pair is oriented
~ perpendicular to the pi
system of the benzene ring
Delocalization is impossible!

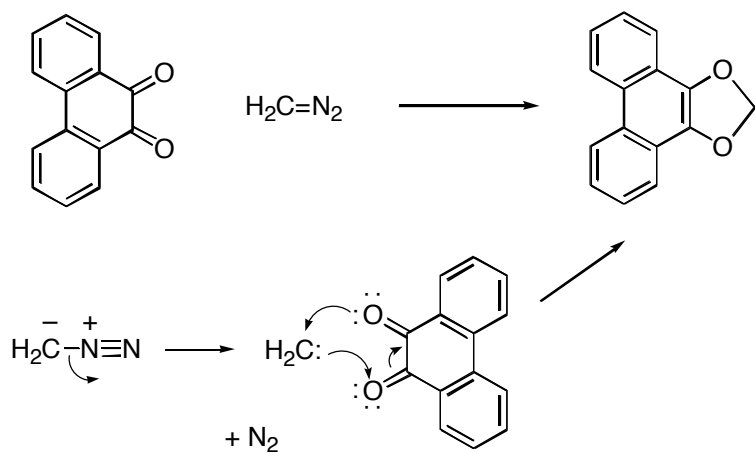
Retrosynthesis



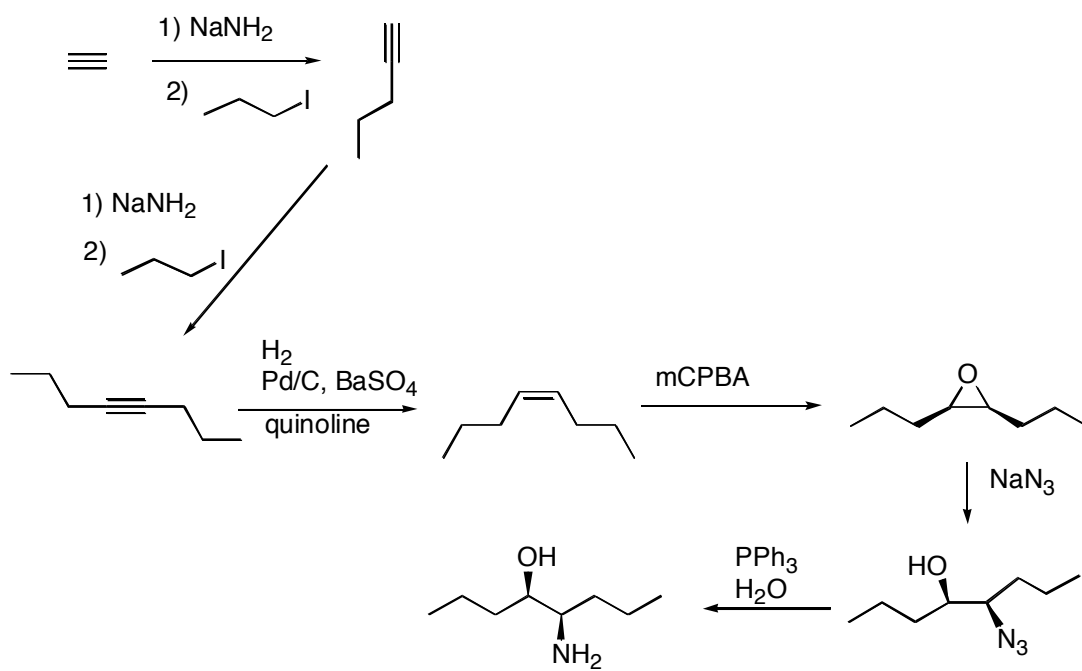
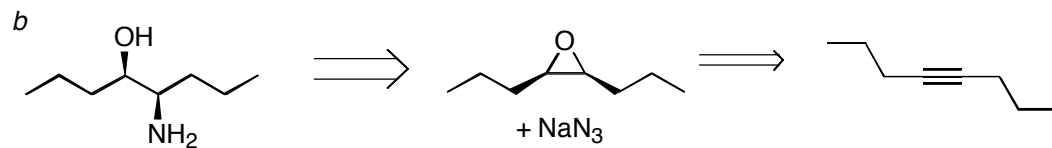
Forward synthesis



4. Propose an arrow pushing mechanism



2b



3. Propose an arrow pushing mechanism

