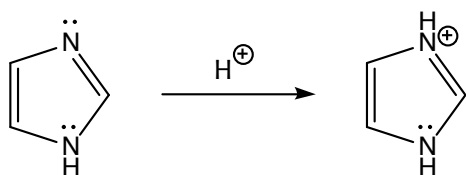


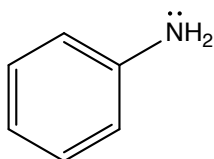
Quiz A

1. Draw three important resonance forms for phenol, PhOH. Show all lone pairs and any formal charges on the atoms that bear them.

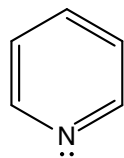
2. As we saw in class, the two nitrogens in imidazole have very different affinities for protons. The preferred reaction is shown below.



Now consider the structures of aniline and pyridine, shown below.



aniline



pyridine

- (a) Show each of these reacting with a proton, in the process balancing the reaction.
- (b) Show mechanistic arrows on each reaction.
- (c) Decide which compound is the better base. Then draw and label an energy diagram that compares the two reactions you wrote above, and that reflects your choice about which compound is the better base. Hint: put the conjugate acids at the same energy level, and show any energy differences on the base side of the reaction.