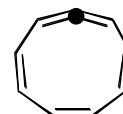
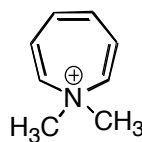
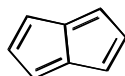
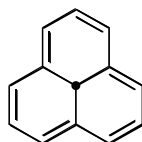
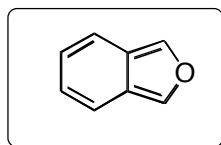
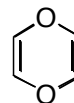
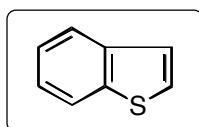
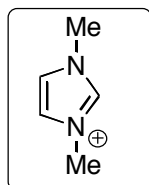
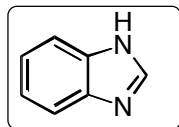
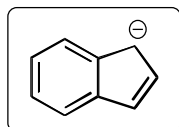
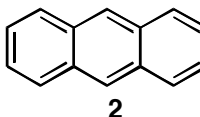
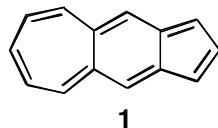


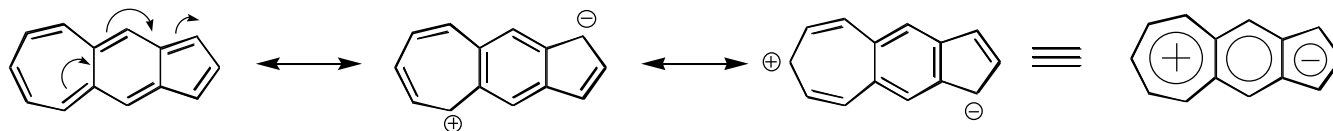
1. Determine which of the following are aromatic. **The aromatic molecules are circled**



2. Compound **1** has a large dipole, whereas the isomeric compound **2** has no dipole. Explain.

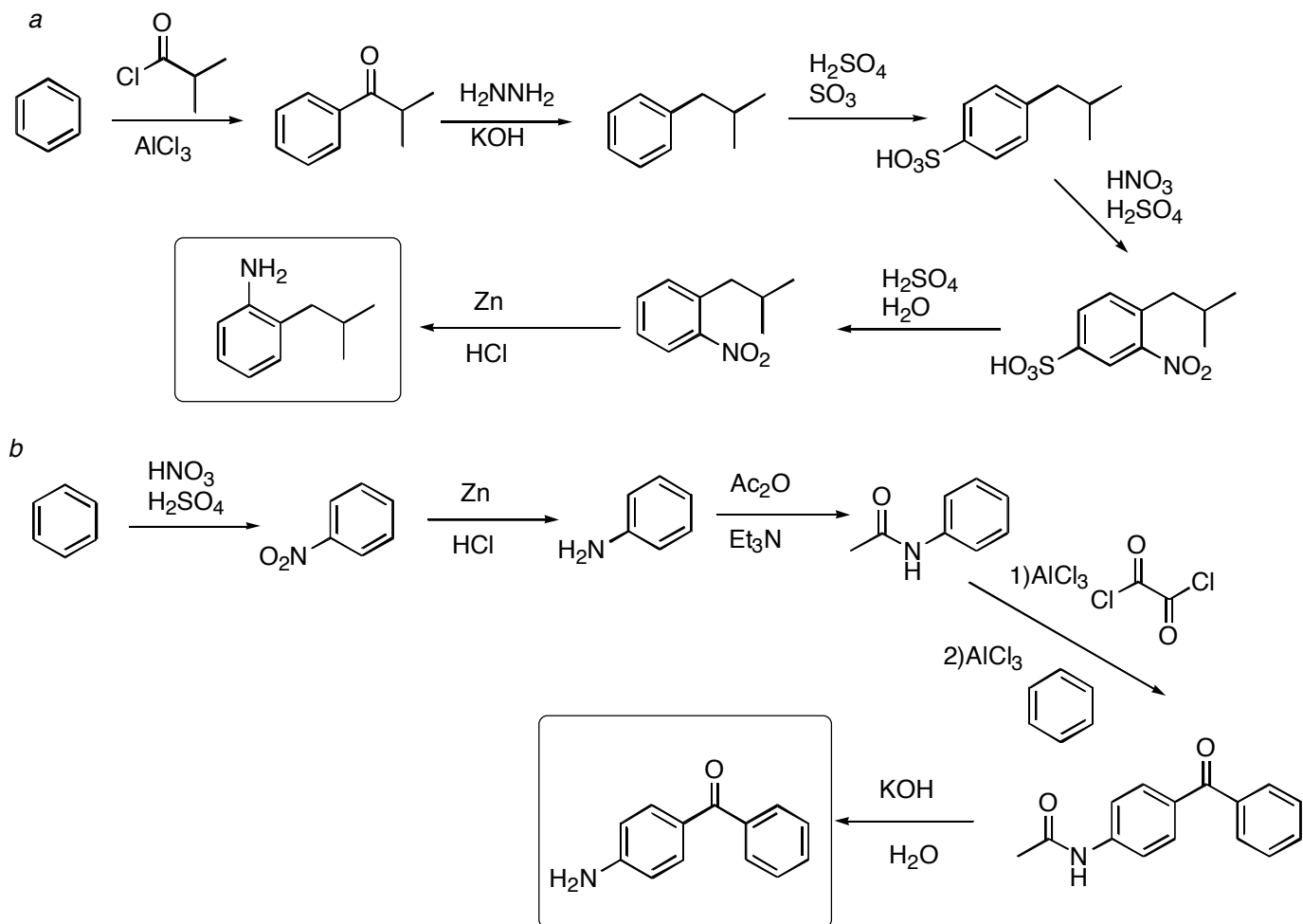


We can draw resonance structures for **1** that place negative charge on the 5-membered ring and positive charge on the 7-membered ring. This results in three contiguous aromatic rings, as shown below.



The contribution of the dipolar resonance forms leads to the dipole moment of the molecule.

3. Provide syntheses from benzene.



4. Provide a mechanism

