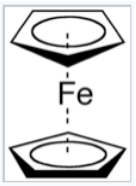
2.12: Discussion Questions

- Derive the molecular orbital diagrams for linear and bent H_2O.
- Explain why the bond angles in H_2O and H_2S are different.
- We have derived the MO diagrams for the pi-systems of four- and six-carbon chains and rings. Repeat this exercise for a 5-carbon chain and 5-carbon ring (e.g., the cyclopentadienide anion), starting from the MO pictures for H_2 and H_3. This tricky problem helps us understand the electronic structure of ferrocene, and was the subject of a Nobel prize in 1973.



Ferrocene