

Part A: sp^3 Orbitals & Sigma (σ) Bonds

- 1) Why are sp^3 (and sp^2 and sp) orbitals all called *hybrid* orbitals?
They are blends between an s and a certain number of p orbitals
- 2) How many orbitals are combined to form sp^3 hybrid orbitals? What orbitals are they?
4 orbitals: 1 s and 3 p
- 3) How many sp^3 orbitals does an sp^3 hybridized atom have? 4 What is the bond angle between them? 109.5
- 4) What is a sigma bond?
A molecular bond formed by the direct overlap of orbitals directed between to atoms, along the internuclear axis