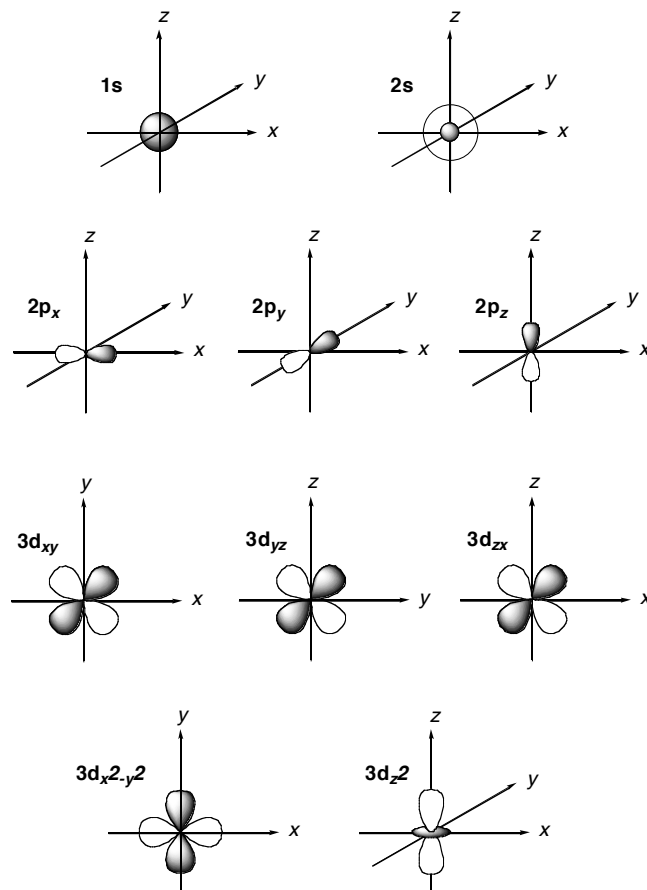
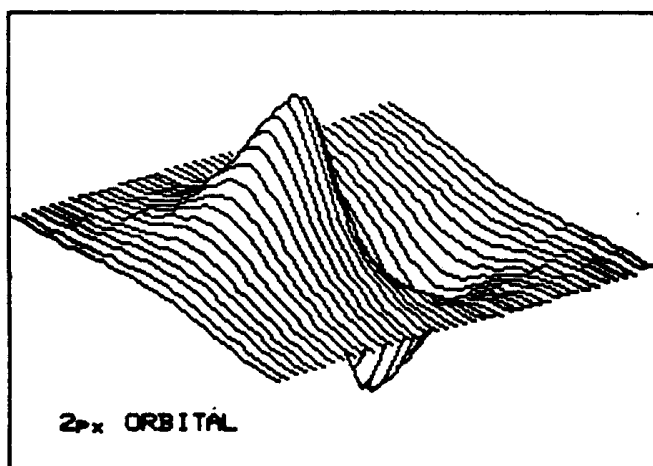


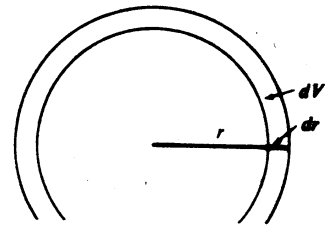
## Chemistry 0310 - Organic Chemistry 1

## Chapter 1. Structure &amp; Bonding in Organic Molecules

Important concepts:

- **Valence electrons:** the electrons in the outer shells of atoms that can participate in bonding. Each element generally forms certain fixed numbers of bonds: Valence.
- **Lewis structures:** electron dot formulas that show the valence electrons of atoms. Lone-pairs are often omitted.
- **Octet rule:** most 2nd and 3rd row elements prefer an eight (8) electron configuration in bonding (noble gas configuration).
- **Constitutional isomers:** molecules with identical molecular formulae, but different connectivity between the atoms.
- **Electronegativity:** the ability of an atom to attract electrons. The Pauling scale ranges from 4.0 (strongest, F) to 0.7 (weakest, Cs). The electron distribution within the bond reflects a continuum from covalent to ionic and is a function of the electronegativity of the bonded atoms.
- **Resonance structures:** chemical structures that differ only in the distribution of the ( $\pi$ ) bond electrons.
- **Orbitals:** plots of the square of the wave function ( $\psi^2$ ) that express a high probability of finding an electron within its perimeter.





Space filling (CPK)