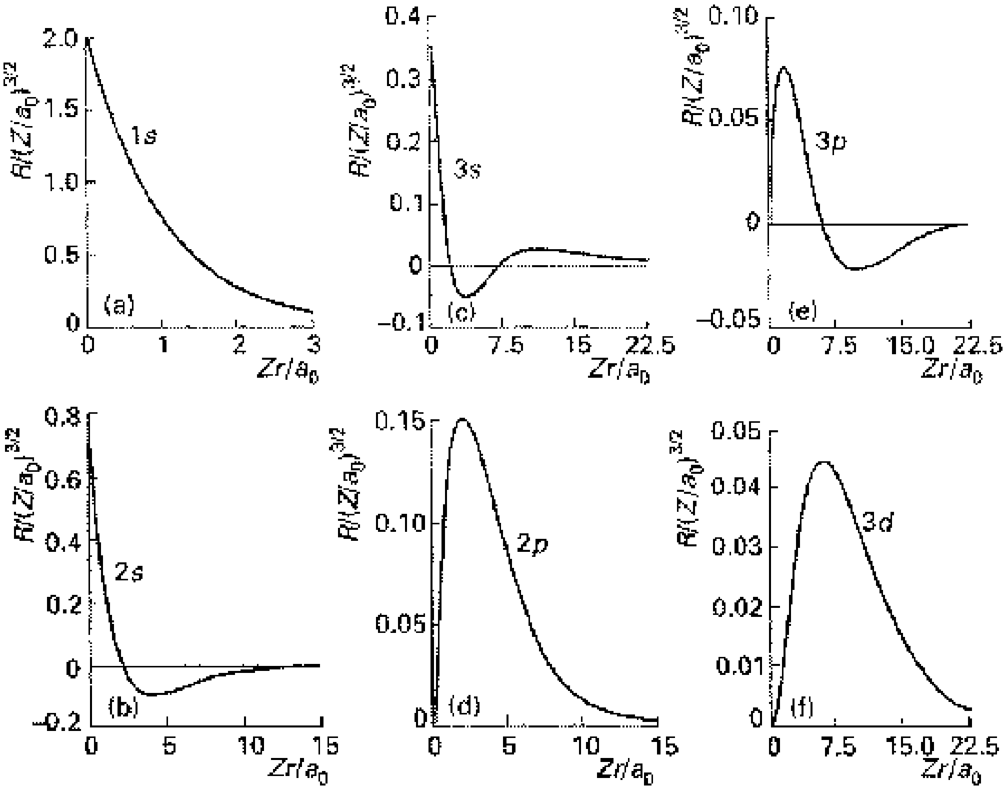
Wavefunctions (radial), Probabilities, and
Radial Probability Densities for One-electron Atoms



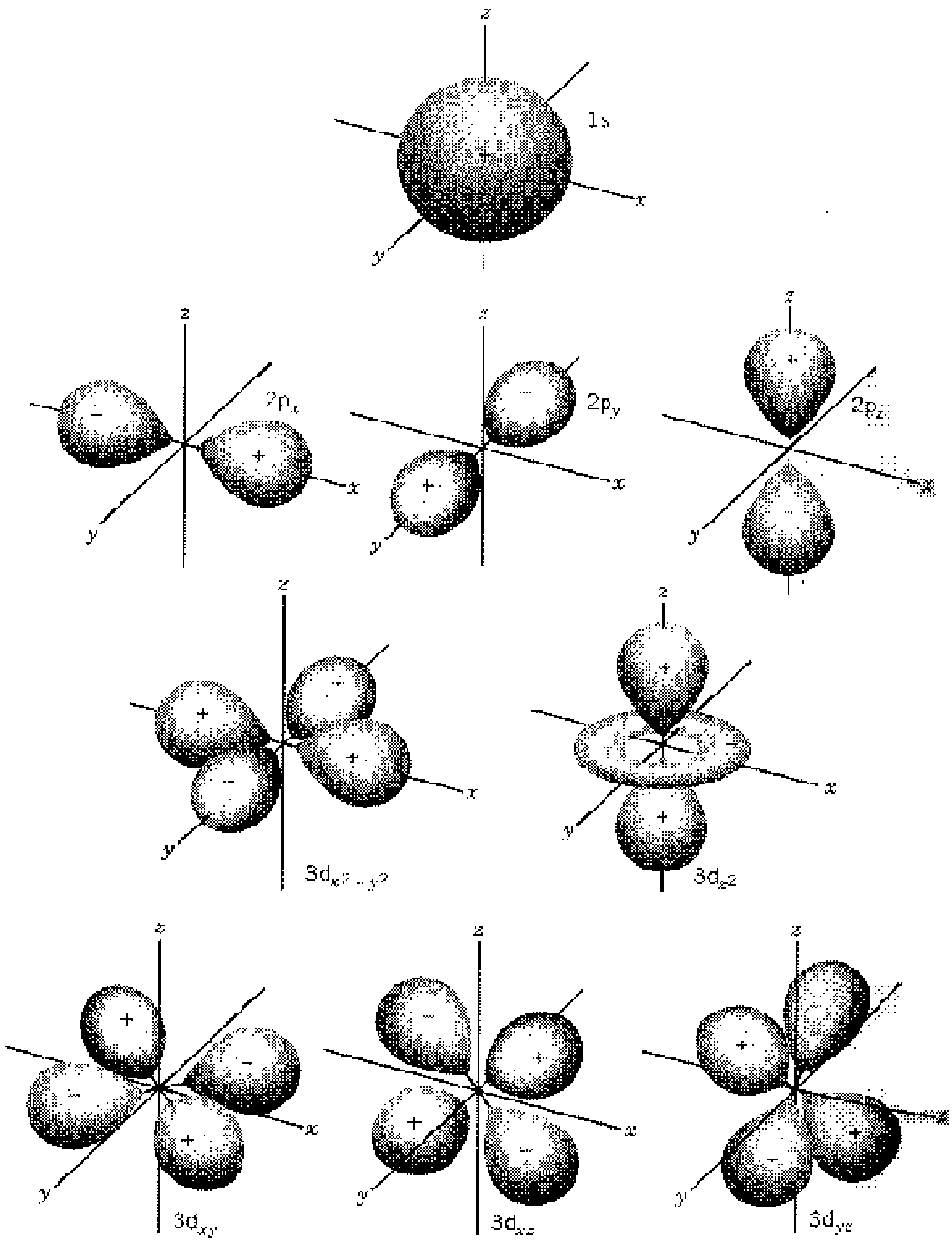
13.5 The radial wavefunctions of the first few states of hydrogenic atoms of atomic number Z. Note that the s orbitals have a nonzero and finite value at the nucleus. The horizontal scales are different in each case: orbitals with high principal quantum numbers are relatively distant from the nucleus.

from **Physical Chemistry**, 6th edition,
by, P. Atkins, W. H. Freeman and Company.
New York, 1998, p. 349.

Shells of contatnt elctronic probability [90% ?? shells]

from: **Physical Chemistry,** by R. J. Silbey and R. A. Alberty

John Wiley and Sons, New York, 2001, p.360.



Fiigure 10.6 Contour surfaces for constant $\psi^*\psi$ for one-electron atoms. The indicated signs are those of the wavefunctions. These signs are indicated because they will be of interest later when we discuss molecular orbitals. The probability density is, of course, always positive.