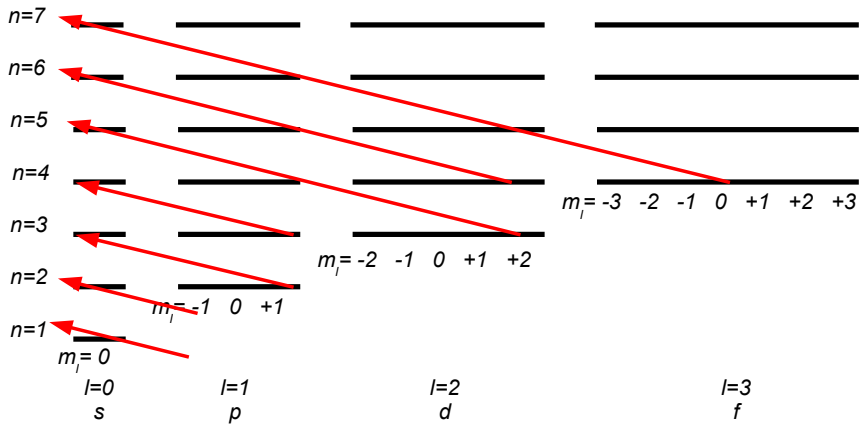
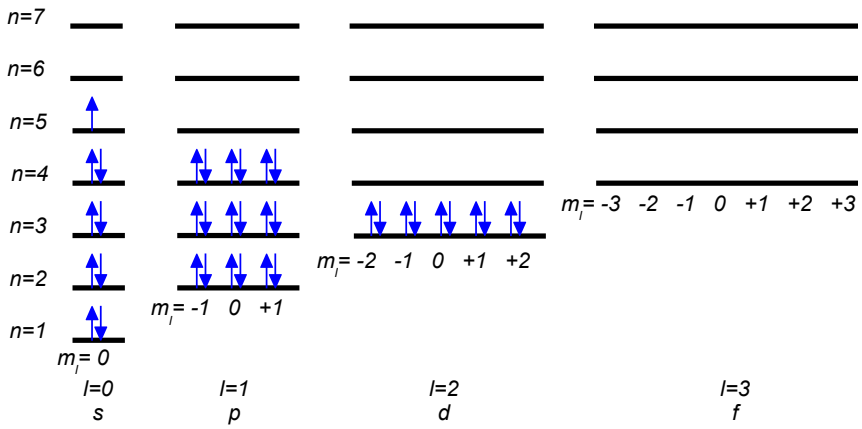
Chapter 36 Problem 28 †



Solution

Use shell notation to characterize the outermost electron of rubidium.

Since rubidium has an atomic number of 37, it has 37 protons and 37 electrons. Using the shell filling diagram place two electrons (spin-up, spin-down) in each subshell.



When this is done, the last electron goes into the $5s$ subshell. The full electronic structure of rubidium is

$$1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2 4p^6 5s^1$$

†Problem from Essential University Physics, Wolfson