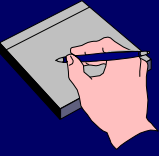


Example



Quantum Numbers

How many unique electron states exist with $n=2$?

$$\ell = 0 : 2s^2$$

$$m_\ell = 0 : m_s = 1/2, -1/2 \quad 2 \text{ states}$$

$$\ell = 1 : 2p^6$$

$$m_\ell = +1 : m_s = 1/2, -1/2 \quad 2 \text{ states}$$

$$m_\ell = 0 : m_s = 1/2, -1/2 \quad 2 \text{ states}$$

$$m_\ell = -1 : m_s = 1/2, -1/2 \quad 2 \text{ states}$$

There are a total of 8 states with $n=2$