Effect of l on Radial Wave Functions $R_{n,l}$
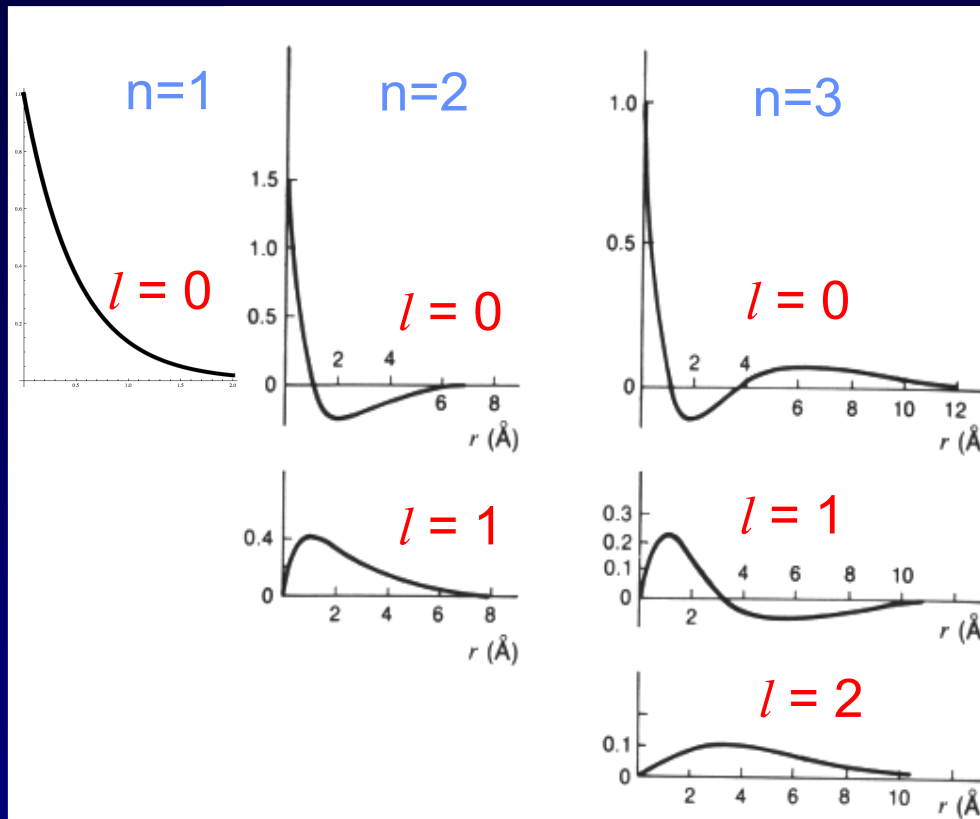

1: $l < n$ (Total energy must always be larger than rotational part.)

2: a. For fixed l, the number of radial nodes increases with n.
   b. For fixed n, the number of radial nodes decreases with l. ($E = T_{rad} + T_{rot} + U(r)$, i.e., 'radial KE' decreases as 'rotational KE' increases).

3: # radial nodes = (n-1) - l .

4: ψ(r=0) = 0 for $l \neq 0$
   Do you understand why?
   (*i.e.*, a physics explanation)

The energy eigenvalues do not depend at all on l. E_n = -13.6 eV/n^2

This is only true for the Coulomb potential.