Program calculates the Moshinsky brackets < n,l,N,L,lam | n1,l1,n2,l2,lam >.

These are the transformation coefficients (for 3D harmonic oscillator radial wavefunctions) between individual particle coordinates, with quantum numbers (n1,l1) and (n2,l2), and their centre of mass and relative coordinates with quantum numbers (N,L) and (n,l). The total orbital angular momentum of the particles (the vector sum of l1 and l2 and of l and L) is lam.

Required program inputs are: n1, l1, n2, l2, lam

The definition of the principle quantum numbers n is such that the level sequence is: 1s, 1p, [2s1d], [2p1f], ...
so that the numbers of excited oscillator quanta are 2*(N-1)+L, etc.

The program calculates all non vanishing (and some vanishing) Moshinsky brackets < n,l,N,L,lam | n1,l1,n2,l2,lam > for the n1, l1, n2, l2 and lam and all possible n, l, N, L allowed by the oscillator state energies.

It also checks the unitarity condition with respect to sums over all allowed N, L, n and l