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Retired from the Centre National de la Recherche Scientifique

As an exercise for specialists in graphical methods I propose the following:

Show that the projector products given below are not 0. Determine the sign of the products.

The projectors defined are elements of the group algebra of S_6 . Projectors are defined by Young tableaux; the Young tableaux are defined by putting the sequence of symbols listed in the Young frames defined by the partitions given in the headings.

Truly yours G.Bergdolt

n= 6	n!= 720	11 partitions	
Partitions			
Part 0	1 1 1 1 1 1	Nb of Young tab	1
Part 1	2 1 1 1 1 0	Nb of Young tab	5
Part 2	2 2 1 1 0 0	Nb of Young tab	9
Part 3	2 2 2 0 0 0	Nb of Young tab	5
Part 4	3 1 1 1 0 0	Nb of Young tab	10
Part 5	3 2 1 0 0 0	Nb of Young tab	16
Part 6	3 3 0 0 0 0	Nb of Young tab	5
Part 7	4 1 1 0 0 0	Nb of Young tab	10
Part 8	4 2 0 0 0 0	Nb of Young tab	9
Part 9	5 1 0 0 0 0	Nb of Young tab	5
Part 10	6 0 0 0 0 0	Nb of Young tab	1

Partition 1 1 1 1 1 1
 Partition 2 1 1 1 1 0
 Partition 2 2 1 1 0 0
 1 2 3 4 5 6 1 4 2 6 3 5 -1
 1 2 3 4 5 6 1 4 2 5 3 6 1
 1 2 3 5 4 6 1 5 2 6 3 4 -1
 Partition 2 2 2 0 0 0
 1 2 3 4 5 6 1 4 2 5 3 6 1
 Partition 3 1 1 1 0 0
 Partition 3 2 1 0 0 0
 1 2 3 4 5 6 1 3 5 2 4 6 1
 1 2 3 4 5 6 1 3 5 2 6 4 -1
 1 2 3 4 6 5 1 3 6 2 4 5 1
 1 2 3 4 6 5 1 3 6 2 5 4 1
 1 2 6 3 4 5 1 4 6 2 5 3 1
 1 2 5 3 4 6 1 4 5 2 6 3 -1
 1 2 4 3 5 6 1 4 5 2 6 3 -1
 1 2 4 3 6 5 1 4 6 2 5 3 1
 Partition 3 3 0 0 0 0
 1 2 3 4 5 6 1 3 5 2 4 6 -1
 Partition 4 1 1 0 0 0
 Partition 4 2 0 0 0 0
 1 2 3 4 5 6 1 3 4 6 2 5 1
 1 2 3 6 4 5 1 3 5 6 2 4 1
 1 2 3 5 4 6 1 3 5 6 2 4 1
 Partition 5 1 0 0 0 0
 Partition 6 0 0 0 0 0