

# The Tetrahedral Ball Pyramid and its Structure

by Markus Gotz

An article with the same title was published in CFF66.

## Regular cube-rotations (24):

1	2	3	4	5	6	7	8	9	10	11	12
1	8	9	5	4	12	10	2	3	7	11	6
2	3	4	1	6	7	8	5	10	11	12	9
2	5	10	6	1	9	11	3	4	8	12	7
3	4	1	2	7	8	5	6	11	12	9	10
3	6	11	7	2	10	12	4	1	5	9	8
4	1	2	3	8	5	6	7	12	9	10	11
4	7	12	8	3	11	9	1	2	6	10	5
5	1	8	9	2	4	12	10	6	3	7	11
5	10	6	2	9	11	3	1	8	12	7	4
6	2	5	10	3	1	9	11	7	4	8	12
6	11	7	3	10	12	4	2	5	9	8	1
7	3	6	11	4	2	10	12	8	1	5	9
7	12	8	4	11	9	1	3	6	10	5	2
8	4	7	12	1	3	11	9	5	2	6	10
8	9	5	1	12	10	2	4	7	11	6	3
9	5	1	8	10	2	4	12	11	6	3	7
9	12	11	10	8	7	6	5	1	4	3	2
10	6	2	5	11	3	1	9	12	7	4	8
11	10	9	12	6	5	8	7	3	2	1	4
11	7	3	6	12	4	2	10	9	8	1	5
10	9	12	11	5	8	7	6	2	1	4	3
12	8	4	7	9	1	3	11	10	5	2	6
12	11	10	9	7	6	5	8	4	3	2	1

## additional rotations (96):

0	0	1	5	0	4	0	10	11	7	0	0
0	0	2	6	0	1	0	11	12	8	0	0
0	0	4	3	0	8	0	6	10	9	0	0
0	0	4	8	0	3	0	9	10	6	0	0
0	0	5	2	0	9	0	3	7	12	0	0
0	0	5	9	0	2	0	12	7	3	0	0
0	0	6	3	0	10	0	4	8	9	0	0
0	0	6	10	0	3	0	9	8	4	0	0
0	0	7	11	0	4	0	10	5	1	0	0
0	0	8	1	0	12	0	2	6	11	0	0
0	0	8	12	0	1	0	11	6	2	0	0
0	0	9	8	0	10	0	4	3	6	0	0
0	0	9	10	0	8	0	6	3	4	0	0
0	0	10	5	0	11	0	1	4	7	0	0
0	0	10	11	0	5	0	7	4	1	0	0
0	0	11	6	0	12	0	2	1	8	0	0
0	0	3	2	0	7	0	5	9	12	0	0
0	0	3	7	0	2	0	12	9	5	0	0
0	0	12	7	0	9	0	3	2	5	0	0
0	0	12	9	0	7	0	5	2	3	0	0
0	1	5	0	4	0	10	0	7	0	0	11
0	3	2	0	7	0	5	0	12	0	0	9
0	3	7	0	2	0	12	0	5	0	0	9
0	4	8	0	3	0	9	0	6	0	0	10
0	0	2	1	0	6	0	8	12	11	0	0
0	0	11	12	0	6	0	8	1	2	0	0
0	5	2	0	9	0	3	0	12	0	0	7

0	5	9	0	2	0	12	0	3	0	0	7
0	6	10	0	3	0	9	0	4	0	0	8
0	7	4	0	11	0	1	0	10	0	0	5
0	7	11	0	4	0	10	0	1	0	0	5
0	8	1	0	12	0	2	0	11	0	0	6
0	8	12	0	1	0	11	0	2	0	0	6
0	1	4	0	5	0	7	0	10	0	0	11
0	9	8	0	10	0	4	0	6	0	0	3
0	9	10	0	8	0	6	0	4	0	0	3
0	10	5	0	11	0	1	0	7	0	0	4
0	11	6	0	12	0	2	0	8	0	0	1
0	2	1	0	6	0	8	0	11	0	0	12
0	2	6	0	1	0	11	0	8	0	0	12
0	0	1	4	0	5	0	7	11	10	0	0
0	0	7	4	0	11	0	1	5	10	0	0
0	4	3	0	8	0	6	0	9	0	0	10
0	6	3	0	10	0	4	0	9	0	0	8
0	11	12	0	6	0	8	0	2	0	0	1
0	12	7	0	9	0	3	0	5	0	0	2
0	12	9	0	7	0	5	0	3	0	0	2
2	0	0	5	3	0	9	0	0	7	12	0
2	1	0	0	0	8	0	6	0	0	12	11
2	6	0	0	0	11	0	1	0	0	12	8
3	0	0	6	4	0	10	0	0	8	9	0
3	7	0	0	0	12	0	2	0	0	9	5
4	0	0	1	7	0	5	0	0	11	10	0
4	0	0	7	1	0	11	0	0	5	10	0
3	2	0	0	0	5	0	7	0	0	9	12
4	8	0	0	0	9	0	3	0	0	10	6
3	0	0	4	6	0	8	0	0	10	9	0
5	0	0	1	10	0	4	0	0	11	7	0
5	0	0	10	1	0	11	0	0	4	7	0
5	9	0	0	0	12	0	2	0	0	7	3
6	0	0	2	11	0	1	0	0	12	8	0
6	0	0	11	2	0	12	0	0	1	8	0
6	3	0	0	0	4	0	10	0	0	8	9
6	10	0	0	0	9	0	3	0	0	8	4
7	0	0	3	12	0	2	0	0	9	5	0
7	0	0	12	3	0	9	0	0	2	5	0
7	4	0	0	0	1	0	11	0	0	5	10
4	3	0	0	0	6	0	8	0	0	10	9
7	11	0	0	0	10	0	4	0	0	5	1
8	0	0	9	4	0	10	0	0	3	6	0
0	10	11	0	5	0	7	0	1	0	0	4
8	1	0	0	0	2	0	12	0	0	6	11
8	12	0	0	0	11	0	1	0	0	6	2
9	0	0	5	12	0	2	0	0	7	3	0
1	0	0	2	8	0	6	0	0	12	11	0
8	0	0	4	9	0	3	0	0	10	6	0
9	8	0	0	0	4	0	10	0	0	3	6
10	0	0	6	9	0	3	0	0	8	4	0
10	0	0	9	6	0	8	0	0	3	4	0
10	5	0	0	0	1	0	11	0	0	4	7
2	0	0	3	5	0	7	0	0	9	12	0
10	11	0	0	0	7	0	5	0	0	4	1
1	0	0	8	2	0	12	0	0	6	11	0
11	0	0	7	10	0	4	0	0	5	1	0
11	0	0	10	7	0	5	0	0	4	1	0
1	4	0	0	0	7	0	5	0	0	11	10
11	6	0	0	0	2	0	12	0	0	1	8
9	0	0	12	5	0	7	0	0	2	3	0
11	12	0	0	0	8	0	6	0	0	1	2
1	5	0	0	0	10	0	4	0	0	11	7
12	0	0	8	11	0	1	0	0	6	2	0
12	0	0	11	8	0	6	0	0	1	2	0
5	2	0	0	0	3	0	9	0	0	7	12
9	10	0	0	0	6	0	8	0	0	3	4
12	7	0	0	0	3	0	9	0	0	2	5
12	9	0	0	0	5	0	7	0	0	2	3