

THE SUBGROUP LATTICE OF J_1

THOMAS CONNOR AND DIMITRI LEEMANS

Nr.	Structure	Order	Length	Maximal Subgroups	Minimal Overgroups
1	J_1	175560	1	2 (266), 3 (1045), 4 (1463), 5 (1540), 6 (1596), 7 (2926), 13 (4180)	
2	$L_2(11)$	660	266	8 (11), 9 (11), 12 (12), 25 (55)	1
3	$2^3 : 7 : 3$	168	1045	11, 18 (7), 20 (8)	1
4	$A_5 \times 2$	120	1463	9, 18 (5), 21 (6), 25 (10)	1
5	$19 : 3 : 2$	114	1540	10, 14, 33 (19)	1
6	$11 : 5 : 2$	110	1596	12, 19, 28 (11)	1
7	$D_{10} \times S_3$	60	2926	15, 16, 17, 21 (3), 25 (5)	1
8	A_5	60	2926	26 (5), 29 (6), 34 (10)	2
9	A_5	60	1463	26 (5), 29 (6), 35 (10)	2 (2), 4
10	$19 : 3$	57	1540	22, 38 (19)	5
11	$2^3 : 7$	56	1045	31, 32 (8)	3
12	$11 : 5$	55	1596	27, 36 (11)	2 (2), 6
13	$7 : 3 : 2$	42	4180	20, 24, 33 (7)	1
14	D_{38}	38	1540	22, 39 (19)	5
15	$S_3 \times 5$	30	2926	23, 28 (3), 35	7
16	$15 : 2$	30	2926	23, 30, 33 (5)	7
17	D_{30}	30	2926	23, 29 (3), 34 (5)	7
18	$A_4 \times 2$	24	7315	26, 31, 33 (4)	3, 4
19	D_{22}	22	1596	27, 39 (11)	6
20	$7 : 3$	21	4180	32, 38 (7)	3 (2), 13
21	D_{20}	20	8778	29, 28, 30, 37 (5)	4, 7
22	19	19	1540	40	10, 14
23	15	15	2926	36, 38	15, 16, 17
24	D_{14}	14	4180	32, 39 (7)	13
25	D_{12}	12	14630	35, 33, 34, 37 (3)	2, 4, 7
26	A_4	12	7315	37, 38 (4)	8 (2), 9, 18
27	11	11	1596	40	12, 19
28	10	10	8778	36, 39	6 (2), 15, 21

continued on next page

<i>continued from previous page</i>					
Nr.	Structure	Order	Length	Maximal Subgroups	Minimal Overgroups
29	D_{10}	10	8778	36, 39 (5)	8 (2), 9, 17, 21
30	D_{10}	10	2926	36, 39 (5)	16, 21 (3)
31	2^3	8	1045	37 (7)	11, 18 (7)
32	7	7	4180	40	11 (2), 20, 24
33	6	6	14630	38, 39	5 (2), 13 (2), 16, 18 (2), 25
34	S_3	6	14630	38, 39 (3)	8 (2), 17, 25
35	S_3	6	2926	38, 39 (3)	9 (5), 15, 25 (5)
36	5	5	2926	40	12 (6), 23, 28 (3), 29 (3), 30
37	2^2	4	7315	39 (3)	21 (6), 25 (6), 26, 31
38	3	3	2926	40	10 (10), 20 (10), 23, 26 (10), 33 (5), 34 (5), 35
39	2	2	1463	40	14 (20), 19 (12), 24 (20), 28 (6), 29 (30), 30 (10), 33 (10), 34 (30), 35 (6), 37 (15)
40	1	1	1		22 (1540), 27 (1596), 32 (4180), 36 (2926), 38 (2926), 39 (1463)

TABLE 1. Subgroup lattice of J_1

UNIVERSITÉ LIBRE DE BRUXELLES, DÉPARTEMENT DE MATHÉMATIQUES - C.P.216, BOULEVARD DU TRIOMPHE,
 B-1050 BRUXELLES, BOURSIER FR1A
E-mail address: tconnor@ulb.ac.be

UNIVERSITY OF AUCKLAND, DEPARTMENT OF MATHEMATICS, PRIVATE BAG 92019, AUCKLAND, NEW ZEALAND
E-mail address: d.leemans@auckland.ac.nz