

THE SUBGROUP LATTICE OF $PGL_2(9) \cong A_6 : 2$

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Nr.	Structure	Order	Length	Maximal Subgroups	Minimal Overgroups
1	$A_6 : 2$	720	1	2, 3 (10), 7 (36), 9 (45)	
2	A_6	360	1	4 (12), 5 (10), 6 (30)	1
3	$3 : S_3 \cdot 2 \cdot 2$	72	10	5, 15 (9)	1
4	A_5	60	12	10 (5), 11 (6), 18 (10)	2
5	$3 : S_3 \cdot 2$	36	10	8, 20 (9)	2, 3
6	$2^2 : S_3$	24	30	10, 16 (3), 18 (4)	2
7	D_{20}	20	36	12, 13, 11, 21 (5)	1
8	$3 : S_3$	18	10	14, 18 (12)	5
9	D_{16}	16	45	16, 15, 17	1
10	A_4	12	30	22, 23 (4)	4 (2), 6
11	D_{10}	10	36	19, 24 (5)	4 (2), 7
12	D_{10}	10	36	19, 25 (5)	7
13	10	10	36	19, 25	7
14	3^2	9	10	23 (4)	8
15	8	8	45	20	3 (2), 9
16	D_8	8	45	22 (2), 20	6 (2), 9
17	D_8	8	45	21 (2), 20	9
18	S_3	6	120	23, 24 (3)	4, 6, 8
19	5	5	36	26	11, 12, 13
20	4	4	45	24	5 (2), 15, 16, 17
21	2^2	4	90	24, 25 (2)	7 (2), 17
22	2^2	4	30	24 (3)	10, 16 (3)
23	3	3	40	26	10 (3), 14, 18 (3)
24	2	2	45	26	11 (4), 18 (8), 20, 21 (2), 22 (2)
25	2	2	36	26	12 (5), 13, 21 (5)
26	1	1	1		19 (36), 23 (40), 24 (45), 25 (36)

TABLE 1. Subgroup lattice of $A_6 : 2$

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