SUPPLEMENT TO "MODULAR CURVES OF PRIME-POWER LEVEL WITH INFINITELY MANY RATIONAL POINTS"

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ANDREW V. SUTHERLAND AND DAVID ZYWINA

This section includes tables that list data for all the groups G, up to conjugacy in $\mathrm{GL}_2(\hat{\mathbb{Z}})$, from Theorem 1.1. The genus 0 groups are given in Tables 1, 2 and 3. The genus 1 groups are given in Table 4.

We now describe how to read Tables 1–4. Each row corresponds to a unique group G from Theorem 1.1 up to conjugacy; it is given a unique label of the form MZ^g-Nz, where M, N and g are integers and Z and z are letters. The integers N and g are the level and genus of G, respectively. Let Γ be the congruence subgroup consisting of matrices in $\mathrm{SL}_2(\mathbb{Z})$ whose image modulo N lies in the image of G modulo N. The integer g is also the genus of the Riemann surface obtained by taking the quotient of the complex upper-half plane by the action of Γ. The integer M is the level of Γ and Z is an uppercase letter that distinguishes Γ up to conjugacy in $\mathrm{GL}_2(\mathbb{Z})$; the prefix MZ^g for Γ matches the label used by Cummins and Pauli [*Experiment. Math.* **12** (2003), 243–255]. The letter z is chosen so that the label MZ^g-Nz distinguishes G up to conjugacy in $\mathrm{GL}_2(\hat{\mathbb{Z}})$. In some of the tables, we also number the rows.

For each row of these tables, there is a positive integer N and a set of matrices S in $\mathrm{GL}_2(\mathbb{Z}/N\mathbb{Z})$; the corresponding open subgroup G of $\mathrm{GL}_2(\hat{\mathbb{Z}})$ consists of the matrices $A \in \mathrm{GL}_2(\hat{\mathbb{Z}})$ whose image in $\mathrm{GL}_2(\mathbb{Z}/N\mathbb{Z})$ lies in the subgroup generated by S. The integer i in each row is the index $[\mathrm{GL}_2(\hat{\mathbb{Z}}) : G]$.

For each row of a table, we also have a list of minimal supergroups up to conjugacy (given by labels or numberings of other rows); more precisely, the groups G' satisfying $G \subsetneq G' \subseteq \mathrm{GL}_2(\hat{\mathbb{Z}})$, up to conjugacy in $\mathrm{GL}_2(\hat{\mathbb{Z}})$, for which there are no subgroups strictly between G and G'.

If G has genus 0, then X_G is isomorphic to $\mathbb{P}^1_{\mathbb{Q}}$; its function field is of the form $\mathbb{Q}(t)$. If G has genus 1, then the curve X_G is isomorphic to the elliptic curve in Table 5 given by the "curve" column of Table 4; its function field is of the form $\mathbb{Q}(x, y)$, where x and y are the given Weierstrass coordinates.

Now for simplicity, suppose that G has genus 0. The function F listed in the "map" column describes the morphism $X_G \to X_{G'}$ for one of the corresponding minimal supergroups G' of G (or the first minimal supergroup listed if only one map is given). More precisely, after appropriately conjugating G' satisfying $G \subsetneq G'$, the morphism $X_G \to X_{G'}$ is given by the rational function $F(t) \in \mathbb{Q}(t)$, i.e., the curves X_G and $X_{G'}$ have function fields $\mathbb{Q}(t)$ and $\mathbb{Q}(u)$, respectively, and are related by the equation $u = F(t)$. By composing these rational maps down to $X_{\mathrm{GL}_2(\hat{\mathbb{Z}})} = \mathbb{P}^1_{\mathbb{Q}}$ (i.e., to the group labeled $1\mathrm{A}^0$-1a), we obtain from G a rational function

$$J(t) \in \mathbb{Q}(t);$$

in Section 5, we showed that $J(t)$ describes the morphism π_G from X_G to the j-line. If $J'(t) \in \mathbb{Q}(t)$ is the rational function arising from G' in the same manner, then we will have $J(t) = J'(F(t))$. The function $J(t)$ is independent of any choice of supergroups.

Similar remarks and conventions hold when G has genus 1.

#	label	i	N	generators	map	sup
0	$1A^0$-1a	1	1			
1	$3A^0$-3a	3	3	$\left(\begin{smallmatrix}0&1\\2&0\end{smallmatrix}\right), \left(\begin{smallmatrix}1&1\\1&2\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&2\end{smallmatrix}\right)$	t^3	0
2	$3B^0$-3a	4	3	$\left(\begin{smallmatrix}0&1\\2&1\end{smallmatrix}\right), \left(\begin{smallmatrix}1&2\\0&2\end{smallmatrix}\right)$	$(t+3)^3(t+27)\,/\,t$	0
3	$3C^0$-3a	6	3	$\left(\begin{smallmatrix}0&1\\2&0\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&2\end{smallmatrix}\right)$	$(t-9)(t+3)\,/\,t$	1
4	$3D^0$-3a	12	3	$\left(\begin{smallmatrix}2&0\\0&2\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&2\end{smallmatrix}\right)$	$729\,/\,(t^3-27)$	2
					$-27(t-3)\,/\,(t^2+3t+9)$	3
5	$9A^0$-9a	9	9	$\left(\begin{smallmatrix}0&2\\4&0\end{smallmatrix}\right), \left(\begin{smallmatrix}1&1\\4&5\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&2\end{smallmatrix}\right)$	t^3+9t-6	1
6	$9B^0$-9a	12	9	$\left(\begin{smallmatrix}1&1\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}2&0\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&2\end{smallmatrix}\right)$	$t(t^2+9t+27)$	2
7	$9C^0$-9a	12	9	$\left(\begin{smallmatrix}2&0\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}4&2\\3&4\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&2\end{smallmatrix}\right)$	t^3	2
8	$9D^0$-9a	18	9	$\left(\begin{smallmatrix}2&0\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}1&3\\3&1\end{smallmatrix}\right), \left(\begin{smallmatrix}0&2\\4&0\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&2\end{smallmatrix}\right)$	$-27\,/\,t^3$	3
					$(t^2-3)\,/\,t$	5
9	$9E^0$-9a	18	9	$\left(\begin{smallmatrix}1&3\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}2&1\\1&1\end{smallmatrix}\right), \left(\begin{smallmatrix}4&2\\0&5\end{smallmatrix}\right)$	$-9(t^3+3t^2-9t-3)/(8t^3)$	1
10	$9F^0$-9a	27	9	$\left(\begin{smallmatrix}0&2\\4&1\end{smallmatrix}\right), \left(\begin{smallmatrix}4&3\\5&4\end{smallmatrix}\right), \left(\begin{smallmatrix}4&5\\0&5\end{smallmatrix}\right)$	$\frac{3^7(t^2-1)^3(t^6+3t^5+6t^4+t^3-3t^2+12t+16)^3(2t^3+3t^2-3t-5)}{(t^3-3t-1)^9}$	0
11	$9G^0$-9a	27	9	$\left(\begin{smallmatrix}0&4\\2&3\end{smallmatrix}\right), \left(\begin{smallmatrix}5&1\\1&4\end{smallmatrix}\right), \left(\begin{smallmatrix}5&3\\0&4\end{smallmatrix}\right)$	$\frac{(t^3-9t-12)(9-3t^3)(5t^3+18t^2+18t+3)}{(t^3+3t^2-3)^3}$	1
12	$9H^0$-9a	36	9	$\left(\begin{smallmatrix}1&3\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}5&0\\3&2\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\2&2\end{smallmatrix}\right)$	$3(t^3+9)/t^3$	4
					$3t\,/\,(2t^2-3t+6)$	9
13	$9H^0$-9b	36	9	$\left(\begin{smallmatrix}1&3\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}5&0\\3&2\end{smallmatrix}\right), \left(\begin{smallmatrix}2&1\\0&1\end{smallmatrix}\right)$	$3(t^3+9t^2-9t-9)\,/\,(t^3-9t^2-9t+9)$	4
14	$9H^0$-9c	36	9	$\left(\begin{smallmatrix}1&3\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}5&0\\3&2\end{smallmatrix}\right), \left(\begin{smallmatrix}4&2\\0&5\end{smallmatrix}\right)$	$-6(t^3-9t)\,/\,(t^3+9t^2-9t-9)$	4
					$-(t^2+3)\,/\,(t^2+8t+3)$	10
15	$9I^0$-9a	36	9	$\left(\begin{smallmatrix}2&1\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}1&2\\3&2\end{smallmatrix}\right)$	$-6(t^3-9t)\,/\,(t^3-3t^2-9t+3)$	6
16	$9I^0$-9b	36	9	$\left(\begin{smallmatrix}2&1\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}4&0\\3&5\end{smallmatrix}\right)$	$-3(t^3+9t^2-9t-9)\,/\,(t^3+3t^2-9t-3)$	6
17	$9I^0$-9c	36	9	$\left(\begin{smallmatrix}2&2\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}2&2\\3&1\end{smallmatrix}\right)$	$(t^3-6t^2+3t+1)\,/\,(t^2-t)$	6
18	$9J^0$-9a	36	9	$\left(\begin{smallmatrix}1&3\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}2&2\\3&8\end{smallmatrix}\right), \left(\begin{smallmatrix}1&2\\0&2\end{smallmatrix}\right)$	$(t^3-3t+1)\,/\,(t^2-t)$	7
19	$9J^0$-9b	36	9	$\left(\begin{smallmatrix}1&3\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}2&2\\3&8\end{smallmatrix}\right), \left(\begin{smallmatrix}2&1\\0&1\end{smallmatrix}\right)$	$-18(t^2-1)\,/\,(t^3-3t^2-9t+3)$	7
20	$9J^0$-9c	36	9	$\left(\begin{smallmatrix}1&3\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}5&2\\3&5\end{smallmatrix}\right), \left(\begin{smallmatrix}4&0\\0&5\end{smallmatrix}\right)$	$3(t^3+3t^2-9t-3)\,/\,(t^3-3t^2-9t+3)$	7
21	$27A^0$-27a	36	27	$\left(\begin{smallmatrix}1&1\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}2&1\\9&5\end{smallmatrix}\right), \left(\begin{smallmatrix}1&2\\3&2\end{smallmatrix}\right)$	t^3	6

TABLE 1. Genus zero groups of 3-power level.

label	i	N	generators	map	supergroup
1A^0-1a	1	1			
5A^0-5a	5	5	$\left(\begin{smallmatrix}2&1\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&0\end{smallmatrix}\right),\left(\begin{smallmatrix}1&1\\0&2\end{smallmatrix}\right)$	$t^3(t^2+5t+40)$	1A^0-1a
5B^0-5a	6	5	$\left(\begin{smallmatrix}2&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\1&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&2\end{smallmatrix}\right)$	$(t^2+10t+5)^3\,/\,t$	1A^0-1a
5C^0-5a	10	5	$\left(\begin{smallmatrix}3&1\\0&2\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&0\end{smallmatrix}\right),\left(\begin{smallmatrix}2&2\\2&1\end{smallmatrix}\right)$	$8000t^3(t+1)(t^2-5t+10)^3\,/\,(t^2-5)^5$	1A^0-1a
5D^0-5a	12	5	$\left(\begin{smallmatrix}4&0\\1&4\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&2\end{smallmatrix}\right)$	$125t\,/\,(t^2-11t-1)$	5B^0-5a
5D^0-5b	12	5	$\left(\begin{smallmatrix}4&0\\1&4\end{smallmatrix}\right),\left(\begin{smallmatrix}2&0\\0&1\end{smallmatrix}\right)$	$(t^2-11t-1)\,/\,t$	5B^0-5a
5E^0-5a	15	5	$\left(\begin{smallmatrix}2&1\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}2&0\\2&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\2&2\end{smallmatrix}\right)$	$(t+5)(t^2-5)\,/\,(t^2+5t+5)$	5A^0-5a
5G^0-5a	30	5	$\left(\begin{smallmatrix}3&1\\0&2\end{smallmatrix}\right),\left(\begin{smallmatrix}2&1\\0&1\end{smallmatrix}\right)$	$125\,/\,(t(t^4+5t^3+15t^2+25t+25))$	5E^0-5a
				$(t^2+5)/t$	5B^0-5a
5G^0-5b	30	5	$\left(\begin{smallmatrix}3&1\\0&2\end{smallmatrix}\right),\left(\begin{smallmatrix}2&1\\3&3\end{smallmatrix}\right)$	$-t(t^2+5t+10)\,/\,(t^3+5t^2+10t+10)$	5C^0-5a
				$-5(t^2+4t+5)/(t^2+5t+5)$	5E^0-5a
5H^0-5a	60	5	$\left(\begin{smallmatrix}4&0\\0&4\end{smallmatrix}\right),\left(\begin{smallmatrix}2&0\\0&1\end{smallmatrix}\right)$	$-1\,/\,t^5$	5D^0-5a
				$\frac{-(t^4-2t^3+4t^2-3t+1)}{t(t^4+3t^3+4t^2+2t+1)}$	5D^0-5b
				$5t\,/\,(t^2-t-1)$	5G^0-5a
25A^0-25a	30	25	$\left(\begin{smallmatrix}2&2\\0&13\end{smallmatrix}\right),\left(\begin{smallmatrix}4&1\\3&1\end{smallmatrix}\right),\left(\begin{smallmatrix}2&3\\0&6\end{smallmatrix}\right)$	$(t-1)(t^4+t^3+6t^2+6t+11)$	5B^0-5a
25B^0-25a	60	25	$\left(\begin{smallmatrix}9&10\\0&14\end{smallmatrix}\right),\left(\begin{smallmatrix}0&7\\7&2\end{smallmatrix}\right),\left(\begin{smallmatrix}2&8\\0&1\end{smallmatrix}\right)$	$-t^5$	5D^0-5b
				$(1-t^2)\,/\,t$	25A^0-25a
25B^0-25b	60	25	$\left(\begin{smallmatrix}9&10\\0&14\end{smallmatrix}\right),\left(\begin{smallmatrix}0&7\\7&2\end{smallmatrix}\right),\left(\begin{smallmatrix}4&1\\0&7\end{smallmatrix}\right)$	$\frac{-(t^4-2t^3+4t^2-3t+1)}{t(t^4+3t^3+4t^2+2t+1)}$	5D^0-5a
				$(t^2+4t-1)\,/\,(t^2-t-1)$	25A^0-25a
7B^0-7a	8	7	$\left(\begin{smallmatrix}2&0\\0&4\end{smallmatrix}\right),\left(\begin{smallmatrix}3&0\\1&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right)$	$(t^2+5t+1)^3(t^2+13t+49)\,/\,t$	1A^0-1a
7D^0-7a	21	7	$\left(\begin{smallmatrix}0&3\\2&3\end{smallmatrix}\right),\left(\begin{smallmatrix}2&4\\4&5\end{smallmatrix}\right),\left(\begin{smallmatrix}3&1\\0&4\end{smallmatrix}\right)$	$\frac{(2t-1)^3(t^2-t+2)^3(2t^2+5t+4)^3(5t^2+2t-4)^3}{(t^3+2t^2-t-1)^7}$	1A^0-1a
7E^0-7a	24	7	$\left(\begin{smallmatrix}6&0\\1&6\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right)$	$49(t^2-t)\,/\,(t^3-8t^2+5t+1)$	7B^0-7a
7E^0-7b	24	7	$\left(\begin{smallmatrix}6&0\\1&6\end{smallmatrix}\right),\left(\begin{smallmatrix}3&0\\0&1\end{smallmatrix}\right)$	$(t^3-8t^2+5t+1)\,/\,(t^2-t)$	7B^0-7a
7E^0-7c	24	7	$\left(\begin{smallmatrix}6&0\\1&6\end{smallmatrix}\right),\left(\begin{smallmatrix}3&0\\0&4\end{smallmatrix}\right)$	$-7(t^3-2t^2-t+1)\,/\,(t^3-t^2-2t+1)$	7B^0-7a
7F^0-7a	28	7	$\left(\begin{smallmatrix}3&1\\4&4\end{smallmatrix}\right),\left(\begin{smallmatrix}4&4\\1&3\end{smallmatrix}\right),\left(\begin{smallmatrix}3&4\\0&4\end{smallmatrix}\right)$	$\frac{t(t+1)^3(t^2-5t+1)^3(t^2-5t+8)^3(t^4-5t^3+8t^2-7t+7)^3}{(t^3-4t^2+3t+1)^7}$	1A^0-1a
13A^0-13a	14	13	$\left(\begin{smallmatrix}2&0\\0&7\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\1&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&2\end{smallmatrix}\right)$	$(t^2+5t+13)(t^4+7t^3+20t^2+19t+1)^3\,/\,t$	1A^0-1a
13B^0-13a	28	13	$\left(\begin{smallmatrix}3&0\\0&9\end{smallmatrix}\right),\left(\begin{smallmatrix}4&0\\1&10\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&2\end{smallmatrix}\right)$	$13t\,/\,(t^2-3t-1)$	13A^0-13a
13B^0-13b	28	13	$\left(\begin{smallmatrix}3&0\\0&9\end{smallmatrix}\right),\left(\begin{smallmatrix}4&0\\1&10\end{smallmatrix}\right),\left(\begin{smallmatrix}2&0\\0&1\end{smallmatrix}\right)$	$(t^2-3t-1)\,/\,t$	13A^0-13a
13C^0-13a	42	13	$\left(\begin{smallmatrix}5&0\\0&8\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\1&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&2\end{smallmatrix}\right)$	$13(t^2-t)\,/\,(t^3-4t^2+t+1)$	13A^0-13a
13C^0-13b	42	13	$\left(\begin{smallmatrix}5&0\\0&8\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\1&1\end{smallmatrix}\right),\left(\begin{smallmatrix}2&0\\0&1\end{smallmatrix}\right)$	$(t^3-4t^2+t+1)\,/\,(t^2-t)$	13A^0-13a
13C^0-13c	42	13	$\left(\begin{smallmatrix}5&0\\0&8\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\1&1\end{smallmatrix}\right),\left(\begin{smallmatrix}2&0\\0&3\end{smallmatrix}\right)$	$-(5t^3-7t^2-8t+5)\,/\,(t^3-4t^2+t+1)$	13A^0-13a

TABLE 2. Genus zero groups of ℓ-power level for primes $\ell > 3$.

label	i	N	generators	map	supergroups
$1A^0$-1a	1	1			
$2A^0$-2a	2	2	$\left(\begin{smallmatrix}0&1\\1&1\end{smallmatrix}\right)$	t^2+1728	$1A^0$-1a
$2A^0$-4a	2	4	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&1\\1&2\end{smallmatrix}\right),\left(\begin{smallmatrix}1&1\\0&3\end{smallmatrix}\right)$	$-t^2+1728$	$1A^0$-1a
$2A^0$-8a	2	8	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&1\\1&2\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&1\\0&5\end{smallmatrix}\right)$	$-2t^2+1728$	$1A^0$-1a
$2A^0$-8b	2	8	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&1\\1&2\end{smallmatrix}\right),\left(\begin{smallmatrix}1&1\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&1\\0&5\end{smallmatrix}\right)$	$2t^2+1728$	$1A^0$-1a
$2B^0$-2a	3	2	$\left(\begin{smallmatrix}0&1\\1&0\end{smallmatrix}\right)$	$(256-t)^3/t^2$	$1A^0$-1a
$2C^0$-2a	6	2		$-t^2+64$	$2B^0$-2a, $2A^0$-2a
$2C^0$-4a	6	4	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\2&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&1\\0&3\end{smallmatrix}\right)$	$64(t^2+1)$	$2B^0$-2a, $2A^0$-4a
$2C^0$-8a	6	8	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\2&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}0&1\\1&0\end{smallmatrix}\right)$	$32(t^2+2)$	$2B^0$-2a, $2A^0$-8a
$2C^0$-8b	6	8	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\2&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&1\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&1\\0&5\end{smallmatrix}\right)$	$-32(t^2-2)$	$2B^0$-2a, $2A^0$-8b
$4A^0$-4a	4	4	$\left(\begin{smallmatrix}1&1\\1&2\end{smallmatrix}\right),\left(\begin{smallmatrix}0&1\\3&0\end{smallmatrix}\right),\left(\begin{smallmatrix}1&1\\0&3\end{smallmatrix}\right)$	$4t^3(8-t)$	$1A^0$-1a
$4B^0$-4a	6	4	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}0&1\\3&2\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right)$	$256/(t^2+4)$	$2B^0$-2a
$4B^0$-4b	6	4	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}0&1\\3&2\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&3\end{smallmatrix}\right)$	$-4096/(t^2+16t)$	$2B^0$-2a
$4B^0$-8a	6	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&2\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&5\end{smallmatrix}\right)$	$-512/(t^2-8)$	$2B^0$-2a
$4B^0$-8b	6	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&2\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&5\end{smallmatrix}\right)$	$512/(t^2+8)$	$2B^0$-2a
$4C^0$-4a	6	4	$\left(\begin{smallmatrix}1&2\\2&1\end{smallmatrix}\right),\left(\begin{smallmatrix}0&1\\3&0\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right)$	t^2	$2B^0$-2a
$4C^0$-4b	6	4	$\left(\begin{smallmatrix}1&2\\2&1\end{smallmatrix}\right),\left(\begin{smallmatrix}0&1\\3&0\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&3\end{smallmatrix}\right)$	$-t^2$	$2B^0$-2a
$4C^0$-8a	6	8	$\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}2&1\\3&2\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&5\end{smallmatrix}\right)$	$-128t^2$	$2B^0$-2a
$4C^0$-8b	6	8	$\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}2&1\\3&2\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&5\end{smallmatrix}\right)$	$128t^2$	$2B^0$-2a
$4D^0$-4a	8	4	$\left(\begin{smallmatrix}2&1\\1&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&1\\0&3\end{smallmatrix}\right)$	$-(t^2+2t-2)/t$	$4A^0$-4a, $2A^0$-4a
$4D^0$-8a	8	8	$\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}2&1\\5&3\end{smallmatrix}\right),\left(\begin{smallmatrix}3&3\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}0&1\\3&0\end{smallmatrix}\right)$	$(t^2+4t-2)/(4-2t^2)$	$4A^0$-4a, $2A^0$-8a
$4E^0$-4a	12	4	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&1\end{smallmatrix}\right),\left(\begin{smallmatrix}0&1\\1&0\end{smallmatrix}\right)$	$(t^2-1)/(2t)$	$2C^0$-4a, $4C^0$-4a, $4B^0$-4b
$4E^0$-4b	12	4	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right)$	$8(2t^2+1)$	$2C^0$-2a, $4B^0$-4a, $4C^0$-4a
$4E^0$-4c	12	4	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&3\end{smallmatrix}\right)$	$4(t^2+1)/t$	$2C^0$-2a, $4C^0$-4b, $4B^0$-4b
$4E^0$-8a	12	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}5&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}0&1\\1&0\end{smallmatrix}\right)$	$4t/(t^2-2)$	$2C^0$-8a, $4B^0$-8a, $4C^0$-4a
$4E^0$-8b	12	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}5&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&5\end{smallmatrix}\right)$	$8(t^2-1)$	$2C^0$-2a, $4B^0$-8a, $4C^0$-8a
$4E^0$-8c	12	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}5&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}0&1\\1&0\end{smallmatrix}\right)$	$(t^2-2)/(2t)$	$2C^0$-8a, $4C^0$-8b, $4B^0$-4b
$4E^0$-8d	12	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}5&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&5\end{smallmatrix}\right)$	$8(t^2+1)$	$2C^0$-2a, $4B^0$-8b, $4C^0$-8b
$4E^0$-8e	12	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}5&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}0&1\\1&0\end{smallmatrix}\right)$	$(t^2+1)/(t^2-2t-1)$	$4C^0$-8b, $4B^0$-8a, $2C^0$-4a
$4E^0$-8f	12	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}5&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&5\end{smallmatrix}\right),\left(\begin{smallmatrix}3&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}0&1\\3&2\end{smallmatrix}\right)$	$(t^2+2t-1)/(t^2+1)$	$2C^0$-8b, $4C^0$-8b, $4B^0$-4a
$4E^0$-8g	12	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}5&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&5\end{smallmatrix}\right),\left(\begin{smallmatrix}3&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}2&1\\1&2\end{smallmatrix}\right)$	$4t/(t^2+2)$	$2C^0$-8b, $4B^0$-8b, $4C^0$-4a
$4E^0$-8h	12	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}5&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&5\end{smallmatrix}\right),\left(\begin{smallmatrix}3&2\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}0&1\\3&0\end{smallmatrix}\right)$	$2(t^2+1)/(t^2+2t-1)$	$2C^0$-8b, $4B^0$-8a, $4C^0$-4b
$4E^0$-8i	12	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}5&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&5\end{smallmatrix}\right),\left(\begin{smallmatrix}3&2\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}2&1\\1&2\end{smallmatrix}\right)$	$(t^2+2)/(2t)$	$2C^0$-8b, $4C^0$-8a, $4B^0$-4b
$4F^0$-4a	12	4	$\left(\begin{smallmatrix}0&1\\3&0\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right)$	$8(t^2-1)$	$4C^0$-4a
$4F^0$-4b	12	4	$\left(\begin{smallmatrix}0&1\\3&0\end{smallmatrix}\right),\left(\begin{smallmatrix}2&1\\1&2\end{smallmatrix}\right)$	$8(t^2+1)$	$4C^0$-4a, $4A^0$-4a
$4F^0$-8a	12	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&1\end{smallmatrix}\right)$	$4(t^2+2)$	$4C^0$-4a
$4F^0$-8b	12	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}3&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&1\end{smallmatrix}\right)$	$4(t^2-2)$	$4C^0$-4a
$4G^0$-16a	24	16	$\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right),\left(\begin{smallmatrix}3&0\\0&11\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&1\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&5\\2&5\end{smallmatrix}\right)$	$(1-t^2)/(2t)$	$4E^0$-8f
$4G^0$-4a	24	4	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right)$	$1/4t^2$	$4E^0$-4c, $4E^0$-4b, $4F^0$-4a
$4G^0$-4b	24	4	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&3\\0&3\end{smallmatrix}\right)$	$t^2/2$	$4E^0$-4a, $4F^0$-4a, $4F^0$-4b, $4D^0$-4a
$4G^0$-8a	24	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}5&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}0&1\\3&0\end{smallmatrix}\right),\left(\begin{smallmatrix}2&1\\5&2\end{smallmatrix}\right)$	$4t/(t^2-2)$	$4F^0$-4b, $4E^0$-8a, $4F^0$-8b, $4D^0$-8a
$4G^0$-8b	24	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}5&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}0&1\\1&0\end{smallmatrix}\right)$	$2(t^2+2t+2)/(t^2-2)$	$4F^0$-4a, $4F^0$-8a, $4E^0$-8a
$4G^0$-8c	24	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}5&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&5\end{smallmatrix}\right)$	$t^2/2$	$4E^0$-4c, $4E^0$-8b, $4E^0$-8d
$4G^0$-8d	24	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}5&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}3&0\\2&5\end{smallmatrix}\right)$	$2(t^2-1)/(t^2+1)$	$4F^0$-8b, $4E^0$-8b, $4E^0$-4b
$4G^0$-8e	24	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}5&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&3\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&5\end{smallmatrix}\right)$	t^2	$4E^0$-4a, $4F^0$-8a, $4F^0$-8b
$4G^0$-8f	24	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}5&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&3\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&3\\2&3\end{smallmatrix}\right)$	$4t/(t^2+2)$	$4F^0$-4a, $4E^0$-8g, $4F^0$-8b

label	i	N	generators	map	supergroups
$8B^0$-8a	12	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right), \left(\begin{smallmatrix}1&2\\2&5\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&5\end{smallmatrix}\right)$	$16t^2$	$4C^0$-4a
$8B^0$-8b	12	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right), \left(\begin{smallmatrix}1&2\\2&5\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\0&5\end{smallmatrix}\right)$	$32t^2$	$4C^0$-4a
$8B^0$-8c	12	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right), \left(\begin{smallmatrix}1&2\\2&5\end{smallmatrix}\right), \left(\begin{smallmatrix}3&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&5\end{smallmatrix}\right)$	$32t^2$	$4C^0$-4b
$8B^0$-8d	12	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right), \left(\begin{smallmatrix}1&2\\2&5\end{smallmatrix}\right), \left(\begin{smallmatrix}3&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\0&5\end{smallmatrix}\right)$	$16t^2$	$4C^0$-4b
$8C^0$-8a	12	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}5&0\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&2\end{smallmatrix}\right), \left(\begin{smallmatrix}1&2\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&5\end{smallmatrix}\right)$	$-8t^2$	$4B^0$-4b
$8C^0$-8b	12	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}5&0\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&2\end{smallmatrix}\right), \left(\begin{smallmatrix}1&2\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\0&5\end{smallmatrix}\right)$	$-4(t^2+4)$	$4B^0$-4b
$8C^0$-8c	12	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}5&0\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&2\end{smallmatrix}\right), \left(\begin{smallmatrix}3&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&5\end{smallmatrix}\right)$	$-8(t^2+2)$	$4B^0$-4b
$8C^0$-8d	12	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}5&0\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&2\end{smallmatrix}\right), \left(\begin{smallmatrix}3&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\0&5\end{smallmatrix}\right)$	$-t^2$	$4B^0$-4b
$8D^0$-8a	12	8	$\left(\begin{smallmatrix}2&1\\3&2\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&5\end{smallmatrix}\right)$	$16/(t^2-2)$	$4C^0$-4a
$8D^0$-8b	12	8	$\left(\begin{smallmatrix}2&1\\3&2\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\0&5\end{smallmatrix}\right)$	$32/(t^2+4)$	$4C^0$-4a
$8D^0$-8c	12	8	$\left(\begin{smallmatrix}2&1\\3&2\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&5\end{smallmatrix}\right)$	$16/(t^2+2)$	$4C^0$-4a
$8D^0$-8d	12	8	$\left(\begin{smallmatrix}2&1\\3&2\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\0&5\end{smallmatrix}\right)$	$32/(t^2-4)$	$4C^0$-4a
$8E^0$-16a	16	16	$\left(\begin{smallmatrix}3&4\\0&11\end{smallmatrix}\right), \left(\begin{smallmatrix}2&3\\3&5\end{smallmatrix}\right), \left(\begin{smallmatrix}3&3\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}0&1\\3&0\end{smallmatrix}\right)$	$-4t/(t^2+2)$	$4D^0$-8a
$8E^0$-16b	16	16	$\left(\begin{smallmatrix}3&4\\0&11\end{smallmatrix}\right), \left(\begin{smallmatrix}2&3\\3&5\end{smallmatrix}\right), \left(\begin{smallmatrix}3&3\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\1&0\end{smallmatrix}\right)$	$-2(t^2-2t+2)/(t^2-4t+2)$	$4D^0$-8a
$8F^0$-8a	16	8	$\left(\begin{smallmatrix}1&1\\1&2\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right), \left(\begin{smallmatrix}3&3\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}2&1\\1&3\end{smallmatrix}\right)$	$8(t^4-4t^2-8t-4)/(t^2-2)^2$	$4A^0$-4a
$8G^0$-16a	24	16	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\0&11\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\8&1\end{smallmatrix}\right), \left(\begin{smallmatrix}3&1\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}1&2\\2&1\end{smallmatrix}\right)$	$(1-t^2)/(2t)$	$4E^0$-8e
$8G^0$-8a	24	8	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}5&0\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&5\end{smallmatrix}\right)$	$(t^2-1)/t$	$8C^0$-8b, $8C^0$-8d, $4E^0$-4c
$8G^0$-8b	24	8	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}5&0\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\4&5\end{smallmatrix}\right)$	$(t^2+2)/(2t)$	$8C^0$-8a, $8C^0$-8c, $4E^0$-4c
$8G^0$-8c	24	8	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}5&0\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&1\\0&5\end{smallmatrix}\right)$	$(t^2-2)/(2t)$	$4E^0$-8c, $8C^0$-8a, $8C^0$-8d
$8G^0$-8d	24	8	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}5&0\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\2&1\end{smallmatrix}\right)$	$t^2/2$	$4E^0$-4b, $8D^0$-8d, $8D^0$-8b
$8G^0$-8e	24	8	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}5&0\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\2&3\end{smallmatrix}\right), \left(\begin{smallmatrix}3&2\\2&1\end{smallmatrix}\right)$	t^2	$4E^0$-4b, $8D^0$-8a, $8D^0$-8c
$8G^0$-8f	24	8	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}5&0\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}1&1\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&5\end{smallmatrix}\right)$	$(t^2-1)/(2t)$	$4E^0$-4a, $8C^0$-8d, $8D^0$-8d
$8G^0$-8g	24	8	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}5&0\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}1&1\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&1\\4&1\end{smallmatrix}\right)$	$(t^2+2)/(2t)$	$4E^0$-8i, $8C^0$-8c, $8C^0$-8d
$8G^0$-8h	24	8	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}5&0\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}1&1\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}3&2\\2&1\end{smallmatrix}\right)$	$2(t^2+1)/(t^2+2t-1)$	$4E^0$-8g, $8D^0$-8d, $8D^0$-8c
$8G^0$-8i	24	8	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}5&0\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}1&3\\2&3\end{smallmatrix}\right), \left(\begin{smallmatrix}3&2\\2&1\end{smallmatrix}\right)$	$(t^2+2)/(2t)$	$4E^0$-8g, $8D^0$-8b, $8D^0$-8a
$8G^0$-8j	24	8	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}5&0\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}1&1\\4&1\end{smallmatrix}\right)$	$2(t^2+1)/(t^2-2t-1)$	$4E^0$-8i, $8C^0$-8a, $8C^0$-8b
$8G^0$-8k	24	8	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}5&0\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}3&1\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\4&5\end{smallmatrix}\right)$	$2(t^2-1)/(t^2+1)$	$8D^0$-8a, $8C^0$-8a, $4E^0$-4a
$8G^0$-8l	24	8	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}5&0\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}3&1\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\2&1\end{smallmatrix}\right)$	$(t^2-2)/(2t)$	$4E^0$-8a, $8D^0$-8d, $8D^0$-8a
$8H^0$-8a	24	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\4&1\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&5\end{smallmatrix}\right)$	$2t/(t^2-2)$	$8B^0$-8a, $8D^0$-8a, $4F^0$-4a
$8H^0$-8b	24	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\4&1\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&2\\2&3\end{smallmatrix}\right)$	$4t/(t^2-2)$	$4F^0$-8a, $8D^0$-8a, $8B^0$-8b
$8H^0$-8c	24	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\4&1\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\0&5\end{smallmatrix}\right)$	$t/(t^2+1)$	$8B^0$-8b, $8D^0$-8b, $4F^0$-4a
$8H^0$-8d	24	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\4&1\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}1&2\\2&3\end{smallmatrix}\right)$	$(t^2+1)/(t^2+2t-1)$	$8B^0$-8a, $8D^0$-8a, $4F^0$-4b
$8H^0$-8e	24	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\4&1\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&5\end{smallmatrix}\right)$	$2t/(t^2+2)$	$8B^0$-8a, $8D^0$-8c, $4F^0$-4a
$8H^0$-8f	24	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\4&1\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&2\\2&1\end{smallmatrix}\right)$	$(t^2-2)/(2t)$	$4F^0$-8a, $8B^0$-8a, $8D^0$-8d
$8H^0$-8g	24	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\4&1\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\0&5\end{smallmatrix}\right)$	$t/(t^2-1)$	$8B^0$-8b, $8D^0$-8d, $4F^0$-4a
$8H^0$-8h	24	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\4&1\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}2&1\\1&2\end{smallmatrix}\right)$	$(t^2-1)/(2t)$	$4F^0$-4b, $8B^0$-8b, $8D^0$-8d
$8H^0$-8i	24	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\4&1\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}1&2\\2&1\end{smallmatrix}\right)$	$(t^2+2)/(2t)$	$4F^0$-8b, $8B^0$-8a, $8D^0$-8d
$8H^0$-8j	24	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\4&1\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}2&3\\5&2\end{smallmatrix}\right)$	$2(t^2+1)/(t^2+2t-1)$	$4F^0$-8b, $8D^0$-8a, $8B^0$-8b
$8H^0$-8k	24	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\4&1\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right), \left(\begin{smallmatrix}3&4\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}1&2\\2&1\end{smallmatrix}\right)$	$(t^2+2t-1)/(t^2+1)$	$4F^0$-8b, $8B^0$-8a, $8D^0$-8b
$8H^0$-8l	24	8	$\left(\begin{smallmatrix}3&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\4&1\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right), \left(\begin{smallmatrix}3&4\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}2&1\\1&2\end{smallmatrix}\right)$	$4t/(t^2+2)$	$4F^0$-8b, $8D^0$-8c, $8B^0$-8b
$8I^0$-8a	24	8	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&2\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}1&6\\0&3\end{smallmatrix}\right)$	$4t^2/(t^2-2)$	$8C^0$-8d
$8I^0$-8b	24	8	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&2\end{smallmatrix}\right), \left(\begin{smallmatrix}3&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\0&5\end{smallmatrix}\right)$	$4t^2/(t^2+2)$	$8C^0$-8d
$8I^0$-8c	24	8	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&2\end{smallmatrix}\right), \left(\begin{smallmatrix}3&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}5&4\\0&1\end{smallmatrix}\right)$	$4/(t^2-1)$	$8C^0$-8d
$8I^0$-8d	24	8	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&2\end{smallmatrix}\right), \left(\begin{smallmatrix}5&2\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}5&4\\0&1\end{smallmatrix}\right)$	$4/(t^2+1)$	$8C^0$-8d

label	i	N	generators	map	supergroups
$8J^0$-8a	24	8	$\left(\begin{smallmatrix}3&2\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}5&2\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&5\end{smallmatrix}\right)$	$(t^2+2)/t^2$	$4E^0$-4c
$8J^0$-8b	24	8	$\left(\begin{smallmatrix}3&2\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}5&2\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&5\end{smallmatrix}\right)$	t^2-1	$4E^0$-4c
$8J^0$-8c	24	8	$\left(\begin{smallmatrix}3&2\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}5&2\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&5\end{smallmatrix}\right)$	$t^2/(t^2-2)$	$4E^0$-4c
$8J^0$-8d	24	8	$\left(\begin{smallmatrix}3&2\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}5&2\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&5\end{smallmatrix}\right)$	t^2+1	$4E^0$-4c
$8K^0$-16a	24	16	$\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}3&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&1\end{smallmatrix}\right)$	$(t^2+4)/2$	$4F^0$-8b
$8K^0$-16b	24	16	$\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}7&0\\0&9\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&1\end{smallmatrix}\right)$	$(t^2-4)/2$	$4F^0$-8b
$8K^0$-16c	24	16	$\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right),\left(\begin{smallmatrix}2&3\\1&2\end{smallmatrix}\right),\left(\begin{smallmatrix}3&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&1\end{smallmatrix}\right)$	t^2+2	$4F^0$-8b
$8K^0$-16d	24	16	$\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right),\left(\begin{smallmatrix}2&3\\1&2\end{smallmatrix}\right),\left(\begin{smallmatrix}7&0\\0&9\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&1\end{smallmatrix}\right)$	t^2-2	$4F^0$-8b
$8L^0$-8a	24	8	$\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}5&2\\2&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\0&5\end{smallmatrix}\right)$	$(t^2-2t-1)/(4t)$	$8B^0$-8d
$8L^0$-8b	24	8	$\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}5&2\\2&1\end{smallmatrix}\right),\left(\begin{smallmatrix}5&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}3&6\\0&1\end{smallmatrix}\right)$	$2t/(t^2-2t-1)$	$8B^0$-8d
$8N^0$-16a	48	16	$\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right),\left(\begin{smallmatrix}9&0\\0&9\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}0&1\\1&0\end{smallmatrix}\right),\left(\begin{smallmatrix}2&3\\5&6\end{smallmatrix}\right)$	$(t^2+2)/(2t)$	$4G^0$-8a, $8K^0$-16a, $8K^0$-16d
$8N^0$-16b	48	16	$\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right),\left(\begin{smallmatrix}9&0\\0&9\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}0&1\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}2&5\\1&2\end{smallmatrix}\right)$	$t^2/2$	$4G^0$-8e, $8K^0$-16a, $8K^0$-16b
$8N^0$-16c	48	16	$\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right),\left(\begin{smallmatrix}9&0\\0&9\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&1\end{smallmatrix}\right),\left(\begin{smallmatrix}0&5\\1&0\end{smallmatrix}\right)$	$4t/(t^2-1)$	$8K^0$-16c, $4G^0$-8e, $8K^0$-16d
$8N^0$-16d	48	16	$\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right),\left(\begin{smallmatrix}9&0\\0&9\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}3&2\\2&5\end{smallmatrix}\right),\left(\begin{smallmatrix}2&3\\5&6\end{smallmatrix}\right)$	$2(t^2+1)/(t^2-2t-1)$	$4G^0$-8a, $8K^0$-16b, $8K^0$-16c
$8N^0$-16e	48	16	$\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right),\left(\begin{smallmatrix}9&0\\0&9\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}7&0\\0&9\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&1\end{smallmatrix}\right)$	$(t^2-1)/(2t)$	$4G^0$-8d, $8K^0$-16d, $8K^0$-16b
$8N^0$-16f	48	16	$\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right),\left(\begin{smallmatrix}9&0\\0&9\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}7&0\\0&9\end{smallmatrix}\right),\left(\begin{smallmatrix}2&1\\1&6\end{smallmatrix}\right)$	$(t^2-2)/(2t)$	$4G^0$-8f, $8K^0$-16b, $8K^0$-16d
$8N^0$-32a	48	32	$\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}15&0\\0&15\end{smallmatrix}\right),\left(\begin{smallmatrix}7&0\\0&23\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}3&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}2&3\\1&0\end{smallmatrix}\right)$	$(1-2t-t^2)/(t^2-2t-1)$	$4G^0$-16a
$8N^0$-8a	48	8	$\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&5\end{smallmatrix}\right)$	t^2	$4G^0$-4a, $8J^0$-8a, $8J^0$-8c
$8N^0$-8b	48	8	$\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&5\end{smallmatrix}\right)$	$(t^2-2)/(2t)$	$4G^0$-8c, $8J^0$-8c, $8J^0$-8b
$8N^0$-8c	48	8	$\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}3&2\\0&5\end{smallmatrix}\right)$	$(t^2+1)/t$	$4G^0$-4a, $8J^0$-8d, $8J^0$-8b
$8N^0$-8d	48	8	$\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}3&0\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\2&5\end{smallmatrix}\right)$	$2(t^2+1)/(t^2+2t-1)$	$4G^0$-8c, $8J^0$-8c, $8J^0$-8d
$8N^0$-8e	48	8	$\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}3&0\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&5\end{smallmatrix}\right)$	$(t^2+2)/(2t)$	$4G^0$-8c, $8J^0$-8a, $8J^0$-8b
$8N^0$-8f	48	8	$\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}3&0\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}5&0\\0&1\end{smallmatrix}\right)$	$(t^2-1)/t$	$4G^0$-4a, $8J^0$-8b, $8J^0$-8c
$8O^0$-16a	48	16	$\left(\begin{smallmatrix}1&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right),\left(\begin{smallmatrix}3&2\\0&11\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\8&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&3\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}5&1\\4&3\end{smallmatrix}\right)$	$(1-t^2)/(2t)$	$8G^0$-8j
$8O^0$-8a	48	8	$\left(\begin{smallmatrix}3&2\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}5&2\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\4&5\end{smallmatrix}\right)$	$(t^2-2)/(2t)$	$8G^0$-8b, $8J^0$-8b, $8J^0$-8c
$8O^0$-8b	48	8	$\left(\begin{smallmatrix}3&2\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}5&2\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\4&3\end{smallmatrix}\right)$	$(t^2-1)/(2t)$	$8G^0$-8a, $8J^0$-8c, $8I^0$-8c
$8O^0$-8c	48	8	$\left(\begin{smallmatrix}3&2\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}5&2\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&5\end{smallmatrix}\right)$	$2t/(t^2-1)$	$8J^0$-8a, $8J^0$-8c, $8G^0$-8a
$8O^0$-8d	48	8	$\left(\begin{smallmatrix}3&2\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}5&2\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&5\end{smallmatrix}\right)$	$(t^2+2)/(2t)$	$8J^0$-8b, $8J^0$-8d, $8G^0$-8a
$8O^0$-8e	48	8	$\left(\begin{smallmatrix}3&2\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}5&2\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\4&3\end{smallmatrix}\right)$	$(t^2+1)/(2t)$	$8I^0$-8a, $8J^0$-8b, $8G^0$-8a
$8O^0$-8f	48	8	$\left(\begin{smallmatrix}3&2\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}5&2\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&3\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&5\end{smallmatrix}\right)$	$t^2/2$	$8G^0$-8f, $8I^0$-8c, $8I^0$-8d
$8O^0$-8g	48	8	$\left(\begin{smallmatrix}3&2\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}5&2\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&3\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\0&5\end{smallmatrix}\right)$	t^2	$8G^0$-8f, $8I^0$-8b, $8I^0$-8a
$8O^0$-8h	48	8	$\left(\begin{smallmatrix}3&2\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}5&2\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&3\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&3\\4&1\end{smallmatrix}\right)$	$(t^2-2)/(2t)$	$8G^0$-8g, $8I^0$-8c, $8I^0$-8a
$8O^0$-8i	48	8	$\left(\begin{smallmatrix}3&2\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}5&2\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}3&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\4&3\end{smallmatrix}\right)$	$(t^2-2)/(t^2-4t+2)$	$8J^0$-8a, $8J^0$-8b, $8G^0$-8b
$8O^0$-8j	48	8	$\left(\begin{smallmatrix}3&2\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}5&2\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}3&2\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\4&3\end{smallmatrix}\right)$	$(t^2+2)/(2t)$	$8G^0$-8b, $8J^0$-8d, $8J^0$-8c
$8O^0$-8k	48	8	$\left(\begin{smallmatrix}3&2\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}5&2\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}3&3\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\4&3\end{smallmatrix}\right)$	$(t^2+4t+2)/(t^2-2)$	$8I^0$-8b, $8G^0$-8c, $8I^0$-8c
$8O^0$-8l	48	8	$\left(\begin{smallmatrix}3&2\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}5&2\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}3&3\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&1\\4&1\end{smallmatrix}\right)$	$(t^2+2)/(2t)$	$8G^0$-8c, $8I^0$-8d, $8I^0$-8a
$8P^0$-8a	48	8	$\left(\begin{smallmatrix}3&4\\4&3\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}3&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\0&5\end{smallmatrix}\right)$	$(t^2+2)/(t^2-4t+2)$	$8H^0$-8g
$8P^0$-8b	48	8	$\left(\begin{smallmatrix}3&4\\4&3\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}3&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}5&4\\0&1\end{smallmatrix}\right)$	$(t^2+1)/(2(t-1))$	$8H^0$-8g
$16B^0$-16a	24	16	$\left(\begin{smallmatrix}3&0\\0&11\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&8\\0&3\end{smallmatrix}\right)$	$t^2/2$	$8B^0$-8a
$16B^0$-16b	24	16	$\left(\begin{smallmatrix}3&0\\0&11\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}5&2\\0&3\end{smallmatrix}\right)$	$t^2/2$	$8B^0$-8d
$16B^0$-16c	24	16	$\left(\begin{smallmatrix}3&0\\0&11\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&5\end{smallmatrix}\right),\left(\begin{smallmatrix}3&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&8\\0&3\end{smallmatrix}\right)$	t^2	$8B^0$-8a
$16B^0$-16d	24	16	$\left(\begin{smallmatrix}3&0\\0&11\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&5\end{smallmatrix}\right),\left(\begin{smallmatrix}3&6\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}3&4\\0&7\end{smallmatrix}\right)$	t^2	$8B^0$-8d

label	i	N	generators	map	supergroups
$16C^0$-16a	24	16	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}3&8\\0&11\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&2\end{smallmatrix}\right), \left(\begin{smallmatrix}1&2\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\0&5\end{smallmatrix}\right)$	$t^2/2$	$8C^0$-8b
$16C^0$-16b	24	16	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}3&8\\0&11\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&2\end{smallmatrix}\right), \left(\begin{smallmatrix}1&2\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}5&4\\0&1\end{smallmatrix}\right)$	t^2	$8C^0$-8b
$16C^0$-16c	24	16	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}3&8\\0&11\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&2\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}5&2\\0&3\end{smallmatrix}\right)$	$2t^2$	$8C^0$-8d
$16C^0$-16d	24	16	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}3&8\\0&11\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&2\end{smallmatrix}\right), \left(\begin{smallmatrix}5&4\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}1&6\\0&3\end{smallmatrix}\right)$	t^2	$8C^0$-8d
$16D^0$-16a	24	16	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\0&11\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&2\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}5&2\\0&3\end{smallmatrix}\right)$	t^2-4	$8C^0$-8d
$16D^0$-16b	24	16	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\0&11\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&2\end{smallmatrix}\right), \left(\begin{smallmatrix}3&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\0&5\end{smallmatrix}\right)$	t^2+4	$8C^0$-8d
$16D^0$-16c	24	16	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\0&11\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&2\end{smallmatrix}\right), \left(\begin{smallmatrix}3&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}5&2\\0&3\end{smallmatrix}\right)$	$2(t^2-2)$	$8C^0$-8d
$16D^0$-16d	24	16	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\0&11\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&2\end{smallmatrix}\right), \left(\begin{smallmatrix}3&6\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}3&4\\0&7\end{smallmatrix}\right)$	$2(t^2+2)$	$8C^0$-8d
$16E^0$-16a	24	16	$\left(\begin{smallmatrix}0&3\\5&8\end{smallmatrix}\right), \left(\begin{smallmatrix}2&1\\3&10\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&5\end{smallmatrix}\right)$	$(t^2+4)/2$	$8D^0$-8a
$16E^0$-16b	24	16	$\left(\begin{smallmatrix}0&3\\5&8\end{smallmatrix}\right), \left(\begin{smallmatrix}2&1\\3&10\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&8\\0&5\end{smallmatrix}\right)$	t^2-2	$8D^0$-8a
$16E^0$-16c	24	16	$\left(\begin{smallmatrix}0&3\\5&8\end{smallmatrix}\right), \left(\begin{smallmatrix}2&1\\3&10\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}1&8\\0&3\end{smallmatrix}\right)$	$(t^2-4)/2$	$8D^0$-8a
$16E^0$-16d	24	16	$\left(\begin{smallmatrix}0&3\\5&8\end{smallmatrix}\right), \left(\begin{smallmatrix}2&1\\3&10\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}1&8\\0&3\end{smallmatrix}\right)$	t^2+2	$8D^0$-8a
$16F^0$-32a	32	32	$\left(\begin{smallmatrix}3&4\\0&11\end{smallmatrix}\right), \left(\begin{smallmatrix}6&3\\7&9\end{smallmatrix}\right), \left(\begin{smallmatrix}3&3\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\1&0\end{smallmatrix}\right)$	$-(t^2+2)/(2t)$	$8E^0$-16b
$16F^0$-32b	32	32	$\left(\begin{smallmatrix}3&4\\0&11\end{smallmatrix}\right), \left(\begin{smallmatrix}6&3\\7&9\end{smallmatrix}\right), \left(\begin{smallmatrix}5&5\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\1&0\end{smallmatrix}\right)$	$(t^2-4t+2)/(t^2-2t+2)$	$8E^0$-16b
$16G^0$-16a	48	16	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\8&11\end{smallmatrix}\right), \left(\begin{smallmatrix}1&3\\2&3\end{smallmatrix}\right), \left(\begin{smallmatrix}3&2\\2&1\end{smallmatrix}\right)$	$2(t^2+1)/(t^2+2t-1)$	$8G^0$-8i, $16E^0$-16c, $16E^0$-16d
$16G^0$-16b	48	16	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\8&11\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}1&0\\0&5\end{smallmatrix}\right)$	$t^2/2$	$8G^0$-8a, $16D^0$-16a, $16D^0$-16b
$16G^0$-16c	48	16	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\8&11\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}5&0\\0&1\end{smallmatrix}\right)$	t^2	$8G^0$-8a, $16D^0$-16c, $16D^0$-16d
$16G^0$-16d	48	16	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\8&11\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}5&1\\0&1\end{smallmatrix}\right)$	$(t^2-2)/(2t)$	$8G^0$-8c, $16D^0$-16a, $16D^0$-16c
$16G^0$-16e	48	16	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\8&11\end{smallmatrix}\right), \left(\begin{smallmatrix}3&1\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}1&1\\0&5\end{smallmatrix}\right)$	$(t^2+2)/(2t)$	$8G^0$-8g, $16D^0$-16b, $16D^0$-16c
$16G^0$-16f	48	16	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\8&11\end{smallmatrix}\right), \left(\begin{smallmatrix}3&1\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}1&1\\4&1\end{smallmatrix}\right)$	$2(t^2+1)/(t^2+2t-1)$	$8G^0$-8g, $16D^0$-16a, $16D^0$-16d
$16G^0$-16g	48	16	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\8&11\end{smallmatrix}\right), \left(\begin{smallmatrix}3&1\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}5&0\\0&1\end{smallmatrix}\right)$	$(t^2-1)/(2t)$	$8G^0$-8f, $16D^0$-16c, $16D^0$-16a
$16G^0$-16h	48	16	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\8&11\end{smallmatrix}\right), \left(\begin{smallmatrix}3&2\\2&1\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\2&3\end{smallmatrix}\right)$	t^2	$8G^0$-8e, $16E^0$-16b, $16E^0$-16d
$16G^0$-16i	48	16	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\8&11\end{smallmatrix}\right), \left(\begin{smallmatrix}3&2\\2&1\end{smallmatrix}\right), \left(\begin{smallmatrix}3&3\\4&5\end{smallmatrix}\right)$	$(t^2+2)/(2t)$	$8G^0$-8i, $16E^0$-16a, $16E^0$-16b
$16G^0$-16j	48	16	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\8&11\end{smallmatrix}\right), \left(\begin{smallmatrix}3&4\\2&1\end{smallmatrix}\right), \left(\begin{smallmatrix}1&2\\4&5\end{smallmatrix}\right)$	$t^2/2$	$8G^0$-8e, $16E^0$-16c, $16E^0$-16a
$16G^0$-16k	48	16	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\8&11\end{smallmatrix}\right), \left(\begin{smallmatrix}7&1\\0&9\end{smallmatrix}\right), \left(\begin{smallmatrix}1&2\\4&5\end{smallmatrix}\right)$	$(t^2-1)/(2t)$	$8G^0$-8k, $16E^0$-16b, $16E^0$-16c
$16G^0$-16l	48	16	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\8&11\end{smallmatrix}\right), \left(\begin{smallmatrix}7&1\\0&9\end{smallmatrix}\right), \left(\begin{smallmatrix}3&0\\2&1\end{smallmatrix}\right)$	$(t^2-2)/(2t)$	$8G^0$-8l, $16E^0$-16c, $16E^0$-16b
$16G^0$-32a	48	32	$\left(\begin{smallmatrix}1&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}15&0\\0&15\end{smallmatrix}\right), \left(\begin{smallmatrix}7&0\\0&23\end{smallmatrix}\right),$ $\left(\begin{smallmatrix}3&0\\8&11\end{smallmatrix}\right), \left(\begin{smallmatrix}3&1\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}5&2\\2&5\end{smallmatrix}\right)$	$(1-2t-t^2)/(t^2-2t-1)$	$8G^0$-16a
$16H^0$-16a	48	16	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}9&0\\0&9\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&2\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}1&2\\0&7\end{smallmatrix}\right)$	$4t/(t^2+2)$	$8I^0$-8a, $16C^0$-16c, $16D^0$-16a
$16H^0$-16b	48	16	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}9&0\\0&9\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&2\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}1&6\\0&3\end{smallmatrix}\right)$	$2(t^2+1)/(t^2-2t-1)$	$8I^0$-8a, $16C^0$-16c, $16D^0$-16b
$16H^0$-16c	48	16	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}9&0\\0&9\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&2\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}5&2\\0&3\end{smallmatrix}\right)$	$4t/(t^2-2)$	$8I^0$-8b, $16C^0$-16c, $16D^0$-16a
$16H^0$-16d	48	16	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}9&0\\0&9\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&2\end{smallmatrix}\right), \left(\begin{smallmatrix}1&6\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&2\\0&7\end{smallmatrix}\right)$	$(t^2+2t-1)/(t^2+1)$	$8I^0$-8a, $16D^0$-16c, $16C^0$-16d
$16H^0$-16e	48	16	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}9&0\\0&9\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&2\end{smallmatrix}\right), \left(\begin{smallmatrix}3&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}1&2\\0&7\end{smallmatrix}\right)$	$(t^2-2)/(2t)$	$16C^0$-16c, $16D^0$-16c, $8I^0$-8c
$16H^0$-16f	48	16	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}9&0\\0&9\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&2\end{smallmatrix}\right), \left(\begin{smallmatrix}3&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}5&2\\0&3\end{smallmatrix}\right)$	$(t^2-2)/(2t)$	$8I^0$-8b, $16D^0$-16c, $16C^0$-16d
$16H^0$-16g	48	16	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}9&0\\0&9\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&2\end{smallmatrix}\right), \left(\begin{smallmatrix}3&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}5&4\\0&1\end{smallmatrix}\right)$	$(t^2+1)/t$	$16C^0$-16d, $16D^0$-16b, $8I^0$-8c
$16H^0$-16h	48	16	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}9&0\\0&9\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&2\end{smallmatrix}\right), \left(\begin{smallmatrix}3&4\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}5&6\\0&7\end{smallmatrix}\right)$	$(t^2+2)/(2t)$	$16C^0$-16c, $16D^0$-16d, $8I^0$-8c
$16H^0$-16i	48	16	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}9&0\\0&9\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&2\end{smallmatrix}\right), \left(\begin{smallmatrix}5&2\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}1&6\\0&3\end{smallmatrix}\right)$	$(t^2+2t-1)/(t^2+1)$	$16C^0$-16c, $16D^0$-16c, $8I^0$-8d
$16H^0$-16j	48	16	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}9&0\\0&9\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&2\end{smallmatrix}\right), \left(\begin{smallmatrix}5&2\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}5&4\\0&1\end{smallmatrix}\right)$	$2t/(t^2-1)$	$8I^0$-8d, $16D^0$-16a, $16C^0$-16d
$16H^0$-16k	48	16	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}9&0\\0&9\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&2\end{smallmatrix}\right), \left(\begin{smallmatrix}5&4\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}1&2\\0&7\end{smallmatrix}\right)$	$(t^2-1)/t$	$16C^0$-16d, $16D^0$-16a, $8I^0$-8c
$16H^0$-16l	48	16	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right), \left(\begin{smallmatrix}9&0\\0&9\end{smallmatrix}\right), \left(\begin{smallmatrix}0&3\\5&2\end{smallmatrix}\right), \left(\begin{smallmatrix}7&2\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}7&4\\0&3\end{smallmatrix}\right)$	$(t^2+2)/(2t)$	$8I^0$-8a, $16D^0$-16d, $16C^0$-16d
$32A^0$-32a	48	32	$\left(\begin{smallmatrix}3&8\\0&11\end{smallmatrix}\right), \left(\begin{smallmatrix}5&8\\0&13\end{smallmatrix}\right), \left(\begin{smallmatrix}0&7\\9&2\end{smallmatrix}\right), \left(\begin{smallmatrix}1&4\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}5&6\\0&3\end{smallmatrix}\right)$	$2/t^2$	$16C^0$-16a
$32A^0$-32b	48	32	$\left(\begin{smallmatrix}3&8\\0&11\end{smallmatrix}\right), \left(\begin{smallmatrix}5&8\\0&13\end{smallmatrix}\right), \left(\begin{smallmatrix}0&7\\9&2\end{smallmatrix}\right), \left(\begin{smallmatrix}5&2\\0&3\end{smallmatrix}\right), \left(\begin{smallmatrix}5&4\\0&1\end{smallmatrix}\right)$	t^2	$16C^0$-16d
$32A^0$-32c	48	32	$\left(\begin{smallmatrix}3&8\\0&11\end{smallmatrix}\right), \left(\begin{smallmatrix}5&8\\0&13\end{smallmatrix}\right), \left(\begin{smallmatrix}0&7\\9&2\end{smallmatrix}\right), \left(\begin{smallmatrix}7&2\\0&1\end{smallmatrix}\right), \left(\begin{smallmatrix}9&2\\0&3\end{smallmatrix}\right)$	t^2	$16C^0$-16a
$32A^0$-32d	48	32	$\left(\begin{smallmatrix}3&8\\0&11\end{smallmatrix}\right), \left(\begin{smallmatrix}5&8\\0&13\end{smallmatrix}\right), \left(\begin{smallmatrix}0&7\\9&2\end{smallmatrix}\right), \left(\begin{smallmatrix}7&2\\0&5\end{smallmatrix}\right), \left(\begin{smallmatrix}7&4\\0&3\end{smallmatrix}\right)$	$2/t^2$	$16C^0$-16d

TABLE 3. Genus 0 groups of 2-power level.

group	i	N	generators	curve	map	supergroups
16C^1-16c	24	16	$\left(\begin{smallmatrix}2&1\\3&2\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&8\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&8\\0&3\end{smallmatrix}\right)$	256a2	$(x-1)/2$	8D^0-8a
16C^1-16d	24	16	$\left(\begin{smallmatrix}2&1\\3&2\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&8\end{smallmatrix}\right),\left(\begin{smallmatrix}3&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&8\\0&3\end{smallmatrix}\right)$	256a1	$x+1$	8D^0-8a
16B^1-16a	24	16	$\left(\begin{smallmatrix}3&0\\0&11\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}2&3\\9&6\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&5\end{smallmatrix}\right)$	256b2	$x/4$	8B^0-8a
16B^1-16c	24	16	$\left(\begin{smallmatrix}3&0\\0&11\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}2&3\\9&6\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&5\end{smallmatrix}\right)$	256b1	$x/2$	8B^0-8a
16I^1-16d	48	16	$\left(\begin{smallmatrix}3&0\\0&11\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&8\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\12&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&8\\0&3\end{smallmatrix}\right)$	256a1	$x-1$	8H^0-8a, 16E^0-16c, 16C^1-16c
16I^1-16f	48	16	$\left(\begin{smallmatrix}3&0\\0&11\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&8\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\12&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&8\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}2&3\\5&2\end{smallmatrix}\right)$	256a2	$\frac{4x-4y+12}{x^2-2x-15}$	8H^0-8b, 16E^0-16c, 16C^1-16d
16I^1-16g	48	16	$\left(\begin{smallmatrix}3&0\\0&11\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&8\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\12&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&8\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\10&3\end{smallmatrix}\right)$	256a2	$\frac{2(y-x-1)}{x^2-2x-11}$	8H^0-8d, 16E^0-16b, 16C^1-16d
16I^1-16h	48	16	$\left(\begin{smallmatrix}3&0\\0&11\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&8\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\12&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&8\\0&7\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\10&7\end{smallmatrix}\right)$	256a1	$1/x$	8H^0-8j, 16E^0-16b, 16C^1-16c
16I^1-16j	48	16	$\left(\begin{smallmatrix}3&0\\0&11\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&8\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\12&1\end{smallmatrix}\right),\left(\begin{smallmatrix}3&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&8\\0&3\end{smallmatrix}\right)$	256a2	$(x+3)/2$	8H^0-8a, 16E^0-16d, 16C^1-16d
16I^1-16k	48	16	$\left(\begin{smallmatrix}3&0\\0&11\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&8\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\12&1\end{smallmatrix}\right),\left(\begin{smallmatrix}3&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}2&3\\5&2\end{smallmatrix}\right)$	256a2	$\frac{-x+1}{x+3}$	8H^0-8j, 16E^0-16a, 16C^1-16d
8H^1-16b	48	16	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right),\left(\begin{smallmatrix}1&8\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}3&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&9\end{smallmatrix}\right)$	256a2	$(x+3)/2$	8H^0-8i, 8K^0-16c, 8D^1-16b
8H^1-16c	48	16	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right),\left(\begin{smallmatrix}1&8\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}3&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\6&9\end{smallmatrix}\right)$	256a2	$\frac{x-1}{x+3}$	8H^0-8j, 8K^0-16a, 8D^1-16b
8H^1-16e	48	16	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right),\left(\begin{smallmatrix}1&8\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}7&0\\0&9\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&1\end{smallmatrix}\right)$	256a1	$x-1$	8H^0-8i, 8K^0-16b, 8D^1-16c
8H^1-16g	48	16	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right),\left(\begin{smallmatrix}1&8\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}7&0\\0&9\end{smallmatrix}\right),\left(\begin{smallmatrix}2&3\\5&2\end{smallmatrix}\right)$	256a1	$-1/x$	8H^0-8j, 8K^0-16d, 8D^1-16c
16D^1-16d	24	16	$\left(\begin{smallmatrix}3&8\\0&11\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}5&2\\2&1\end{smallmatrix}\right),\left(\begin{smallmatrix}3&2\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}5&4\\0&1\end{smallmatrix}\right)$	128a1	$(x+1)/2$	8B^0-8d
8H^1-16j	48	16	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right),\left(\begin{smallmatrix}1&8\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}7&4\\0&9\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&9\end{smallmatrix}\right)$	256a2	$\frac{2(x+y+1)}{x^2-2x-11}$	8H^0-8k, 8K^0-16d, 8D^1-16b
8D^1-16b	24	16	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right),\left(\begin{smallmatrix}3&4\\0&11\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}3&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&9\end{smallmatrix}\right)$	256a1	$x+1$	4F^0-8b
8H^1-16k	48	16	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right),\left(\begin{smallmatrix}1&8\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}7&4\\0&9\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\6&9\end{smallmatrix}\right)$	256a2	$\frac{4(x-y+3)}{x^2-2x-15}$	8H^0-8l, 8K^0-16b, 8D^1-16b
8D^1-16c	24	16	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right),\left(\begin{smallmatrix}3&4\\0&11\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}3&4\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&1\end{smallmatrix}\right)$	256a2	$(x-1)/2$	4F^0-8b
16J^1-16e	48	16	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}5&2\\2&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&6\\0&7\end{smallmatrix}\right),\left(\begin{smallmatrix}7&4\\0&3\end{smallmatrix}\right)$	128a2	$\frac{x^2+2x-7}{8x-8}$	8B^0-8d,8L^0-8a,16B^0-16b,16D^1-16d
16J^1-16g	48	16	$\left(\begin{smallmatrix}7&0\\0&7\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}5&2\\2&1\end{smallmatrix}\right),\left(\begin{smallmatrix}5&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}3&6\\0&1\end{smallmatrix}\right)$	128a2	$(1-x)/2$	8L^0-8b, 16B^0-16d, 16D^1-16d
16F^1-16a	48	16	$\left(\begin{smallmatrix}3&0\\0&11\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&5\end{smallmatrix}\right)$	256b1	$-2/x$	8H^0-8a, 16B^0-16a, 16B^1-16a
16F^1-16c	48	16	$\left(\begin{smallmatrix}3&0\\0&11\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&3\end{smallmatrix}\right)$	256b2	$\frac{x^2+2y-8}{x^2-8x+8}$	16B^0-16c, 8H^0-8d, 16B^1-16c
16F^1-16d	48	16	$\left(\begin{smallmatrix}3&0\\0&11\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\0&3\end{smallmatrix}\right),\left(\begin{smallmatrix}1&0\\0&5\end{smallmatrix}\right)$	256b2	$4/x$	8H^0-8e, 16B^0-16c, 16B^1-16c
16F^1-16h	48	16	$\left(\begin{smallmatrix}3&0\\0&11\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}3&0\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&1\end{smallmatrix}\right)$	256b1	x	8H^0-8i, 16B^0-16c, 16B^1-16a
16F^1-16j	48	16	$\left(\begin{smallmatrix}3&0\\0&11\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}3&4\\0&1\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&1\end{smallmatrix}\right)$	256b2	$x/2$	8H^0-8f, 16B^0-16a, 16B^1-16c
16F^1-16k	48	16	$\left(\begin{smallmatrix}3&0\\0&11\end{smallmatrix}\right),\left(\begin{smallmatrix}1&4\\4&1\end{smallmatrix}\right),\left(\begin{smallmatrix}0&3\\5&0\end{smallmatrix}\right),\left(\begin{smallmatrix}3&4\\0&5\end{smallmatrix}\right),\left(\begin{smallmatrix}1&2\\2&1\end{smallmatrix}\right)$	256b2	$\frac{x^2+2y-8}{x^2+4x+8}$	16B^0-16a, 8H^0-8k, 16B^1-16c
11C^1-11a	55	11	$\left(\begin{smallmatrix}3&4\\4&2\end{smallmatrix}\right),\left(\begin{smallmatrix}3&1\\1&8\end{smallmatrix}\right),\left(\begin{smallmatrix}6&4\\0&5\end{smallmatrix}\right)$	121b1	$J(x,y)$	1A^0-1a

TABLE 4. Genus 1 groups G of prime power level for which $X_G(\mathbb{Q})$ is infinite.

label	Weierstrass model
121b1	$y^2+y=x^3-x^2-7x+10$
128a1	$y^2=x^3+x^2+x+1$
128a2	$y^2=x^3+x^2-9x+7$
256a1	$y^2=x^3+x^2-3x+1$
256a2	$y^2=x^3+x^2-13x-21$
256b1	$y^2=x^3-2x$
256b2	$y^2=x^3+8x$

TABLE 5. Some elliptic curves.

$$J(x,y) := \frac{(f_1 f_2 f_3 f_4)^3}{f_5^2 f_6^{11}},$$

$$\begin{aligned} f_1 &= x^2 + 3x - 6, & f_2 &= 11(x^2-5)y + (2x^4 + 23x^3 - 72x^2 - 28x + 127), \\ f_3 &= 6y + 11x - 19, & f_4 &= 22(x-2)y + (5x^3 + 17x^2 - 112x + 120), \\ f_5 &= 11y + (2x^2 + 17x - 34), & f_6 &= (x-4)y - (5x-9). \end{aligned}$$