Normalizers

Normalizers						N_1								N_2		
$p-subgroups\ of\ G\ up\ to\ conjugacy\ in\ G$						P_1								P_2		
Representants n_j	()	(1,2)(3,5)(4,6)(7,9)	(1,4,8)(2,5,9)(3,7,6)	(1,5,6)(4,9,8)	(1,6,5)(4,8,9)	(1,9)(2,6,8,3,4,5)	(1,9)(2,5,4,3,8,6)	(1,3,5,4,7,9,8,6,2)	(1, 5, 7, 8, 2, 3, 4, 9, 6)	(1,7,8,9,2,3,4,6,5)	() $(1,3)(2)$	(2,9)(4,8)(5,6)	(1,4,3)(7,9,8)	(1,8,3)(2,7,4)	(1,7,2,8,9,3)(5,6)	(1, 2, 4, 9, 7, 3)(5, 6)
Representants $\overline{n_j}$	()	(1,2)(3,5)(4,6)(7,9)	(1,4,8)(2,5,9)(3,7,6)	(1,5,6)(4,9,8)	(1,6,5)(4,8,9)	(1,9)(2,6,8,3,4,5)	(1,9)(2,5,4,3,8,6)	(1,3,5,4,7,9,8,6,2)	(1, 5, 7, 8, 2, 3, 4, 9, 6)	(1,7,8,9,2,3,4,6,5)	() $(1,5)$	(5)(2,6)(3,4)	(1,2,4)(3,5,6)	(1,4,2)(3,6,5)	(1, 3, 2, 5, 4, 6)	(1,6,4,5,2,3)
$1 \cdot \chi_1 + 0 \cdot \chi_2 + 0 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_9 + 0 \cdot \chi_{10} + 1 \cdot \chi_{11}$	28	4	1	1	1	1	1	1	1	1	0	0	0	0	0	0
$0 \cdot \chi_1 + 1 \cdot \chi_2 + 0 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_9 + 0 \cdot \chi_{10} + 1 \cdot \chi_{11}$	28	4	1	$E(3)^{} 2$	E(3)	$E(3)^{} 2$	E(3)	$E(3)^{} 2$	E(3)	1	0	0	0	0	0	0
$0 \cdot \chi_1 + 0 \cdot \chi_2 + 1 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_9 + 0 \cdot \chi_{10} + 1 \cdot \chi_{11}$	28	4	1	E(3)	$E(3)^{} 2$	E(3)	$E(3)^{} 2$	E(3)	$E(3)^{} 2$	1	0	0	0	0	0	0
$0 \cdot \chi_1 + 0 \cdot \chi_2 + 0 \cdot \chi_3 + 1 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_9 + 0 \cdot \chi_{10} + 0 \cdot \chi_{11}$	7	-1	-2	1	1	-1	-1	1	1	1	0	0	0	0	0	0
$0 \cdot \chi_1 + 0 \cdot \chi_2 + 0 \cdot \chi_3 + 0 \cdot \chi_4 + 1 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_9 + 0 \cdot \chi_{10} + 0 \cdot \chi_{11}$	7	-1	-2	$E(3)^{} 2$	E(3)	$-E(3)^2$	-E(3)	$E(3)^{} 2$	E(3)	1	0	0	0	0	0	0
$0 \cdot \chi_1 + 0 \cdot \chi_2 + 0 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 1 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_9 + 0 \cdot \chi_{10} + 0 \cdot \chi_{11}$	7	-1	-2	E(3)	$E(3)^{} 2$	-E(3)	$-E(3)^{} 2$	E(3)	$E(3)^{} 2$	1	0	0	0	0	0	0
$0 \cdot \chi_1 + 0 \cdot \chi_2 + 0 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 1 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_9 + 0 \cdot \chi_{10} + 1 \cdot \chi_{11}$	35	3	-1	2	2	0	0	-1	-1	-1	0	0	0	0	0	0
$0 \cdot \chi_1 + 0 \cdot \chi_2 + 0 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 1 \cdot \chi_9 + 0 \cdot \chi_{10} + 1 \cdot \chi_{11}$	35	3	-1	$2 * E(3)^2$	2 * E(3)	0	0	$-E(3)^{} 2$	-E(3)	-1	0	0	0	0	0	0
$0 \cdot \chi_1 + 0 \cdot \chi_2 + 0 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 1 \cdot \chi_8 + 0 \cdot \chi_9 + 0 \cdot \chi_{10} + 1 \cdot \chi_{11}$	35	3	-1	2 * E(3)	$2*E(3)^2$	0	0	-E(3)	$-E(3)^2$	-1	0	0	0	0	0	0
$0 \cdot \chi_1 + 0 \cdot \chi_2 + 0 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_9 + 1 \cdot \chi_{10} + 0 \cdot \chi_{11}$	21	-3	3	0	0	0	0	0	0	0	0	0	0	0	0	0
$1 \cdot \chi_1 + 0 \cdot \chi_2 + 0 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_9 + 0 \cdot \chi_{10} + 0 \cdot \chi_{11}$	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
$0 \cdot \chi_1 + 0 \cdot \chi_2 + 0 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 1 \cdot \chi_9 + 0 \cdot \chi_{10} + 0 \cdot \chi_{11}$	8	0	-1	$2 * E(3)^2$	2 * E(3)	0	0	$-E(3)^2$	-E(3)	-1	1	-1	$E(3)^{} 2$	E(3)	-E(3)	$-E(3)^2$
$0 \cdot \chi_1 + 0 \cdot \chi_2 + 0 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 1 \cdot \chi_8 + 0 \cdot \chi_9 + 0 \cdot \chi_{10} + 0 \cdot \chi_{11}$	8	0	-1	2 * E(3)	$2*E(3)^2$	0	0	-E(3)	$-E(3)^2$	-1	1	-1	E(3)	$E(3)^{} 2$	$-E(3)^2$	-E(3)
$0 \cdot \chi_1 + 0 \cdot \chi_2 + 0 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 1 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_9 + 0 \cdot \chi_{10} + 0 \cdot \chi_{11}$	8	0	-1	2	2	0	0	-1	-1	-1	1	-1	1	1	-1	-1
$0 \cdot \chi_1 + 0 \cdot \chi_2 + 1 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_9 + 0 \cdot \chi_{10} + 0 \cdot \chi_{11}$	1	1	1	E(3)	$E(3)^{} 2$	E(3)	$E(3)^{} 2$	E(3)	$E(3)^{} 2$	1	1	1	E(3)	$E(3)^{} 2$	$E(3)^{} 2$	E(3)
$0 \cdot \chi_1 + 1 \cdot \chi_2 + 0 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_9 + 0 \cdot \chi_{10} + 0 \cdot \chi_{11}$	1	1	1	$E(3)^{} 2$	E(3)	$E(3)^{} 2$	E(3)	$E(3)^{} 2$	E(3)	1	1	1	$E(3)^{} 2$	E(3)	E(3)	$E(3)^{} 2$

 $P_1 = Group([()]) \cong 1$ $P_2 = Group([(1, 9, 4, 7, 8, 2, 3)]) \cong C7$

 $G \cong PSL(2,8) : C3, p = 7$

 $N_1 = Group([(1,2)(3,5)(4,6)(7,9),(2,3,4)(6,7,8)]) \cong PSL(2,8) : C3$ $N_2 = Group([(1, 9, 4, 7, 8, 2, 3), (2, 7, 3)(4, 8, 9), (2, 9, 7, 4, 3, 8)(5, 6)]) \cong C7 : C6$