The group G is isomorphic to the group labelled by [40, 4] in the Small Groups library.
Ordinary character table of $G \cong$ C5 : Q8:

	1a	4a	2a	20a	20b	10a	10b	5a	5b	20c	20d	4b	4c
χ_1	1	1	1	1	1	1	1	1	1	1	1	1	1
χ_2	1	−1	1	−1	−1	1	1	1	1	−1	−1	−1	1
χ_3	1	−1	1	−1	−1	1	1	1	1	−1	−1	1	−1
χ_4	1	1	1	1	1	1	1	1	1	1	1	−1	−1
χ_5	2	0	−2	0	0	−2	−2	2	2	0	0	0	0
χ_6	2	0	−2	$E(20)^{13} - E(20)^{17}$	$-E(20)^{13} + E(20)^{17}$	$-E(5)^2 - E(5)^3$	$-E(5) - E(5)^4$	$E(5)^2 + E(5)^3$	$E(5) + E(5)^4$	$-E(20) + E(20)^9$	$E(20) - E(20)^9$	0	0
χ_7	2	0	−2	$-E(20)^{13} + E(20)^{17}$	$E(20)^{13} - E(20)^{17}$	$-E(5)^2 - E(5)^3$	$-E(5) - E(5)^4$	$E(5)^2 + E(5)^3$	$E(5) + E(5)^4$	$E(20) - E(20)^9$	$-E(20) + E(20)^9$	0	0
χ_8	2	0	−2	$-E(20) + E(20)^9$	$E(20) - E(20)^9$	$-E(5) - E(5)^4$	$-E(5)^2 - E(5)^3$	$E(5) + E(5)^4$	$E(5)^2 + E(5)^3$	$-E(20)^{13} + E(20)^{17}$	$E(20)^{13} - E(20)^{17}$	0	0
χ_9	2	0	−2	$E(20) - E(20)^9$	$-E(20) + E(20)^9$	$-E(5) - E(5)^4$	$-E(5)^2 - E(5)^3$	$E(5) + E(5)^4$	$E(5)^2 + E(5)^3$	$E(20)^{13} - E(20)^{17}$	$-E(20)^{13} + E(20)^{17}$	0	0
χ_{10}	2	2	2	$E(5)^2 + E(5)^3$	$E(5)^2 + E(5)^3$	$E(5)^2 + E(5)^3$	$E(5) + E(5)^4$	$E(5)^2 + E(5)^3$	$E(5) + E(5)^4$	$E(5) + E(5)^4$	$E(5) + E(5)^4$	0	0
χ_{11}	2	2	2	$E(5) + E(5)^4$	$E(5) + E(5)^4$	$E(5)^2 + E(5)^3$	$E(5) + E(5)^4$	$E(5) + E(5)^4$	$E(5)^2 + E(5)^3$	$E(5)^2 + E(5)^3$	$E(5)^2 + E(5)^3$	0	0
χ_{12}	2	−2	2	$-E(5)^2 - E(5)^3$	$-E(5)^2 - E(5)^3$	$E(5)^2 + E(5)^3$	$E(5) + E(5)^4$	$E(5)^2 + E(5)^3$	$E(5) + E(5)^4$	$-E(5) - E(5)^4$	$-E(5) - E(5)^4$	0	0
χ_{13}	2	−2	2	$-E(5) - E(5)^4$	$-E(5) - E(5)^4$	$E(5) + E(5)^4$	$E(5)^2 + E(5)^3$	$E(5) + E(5)^4$	$E(5)^2 + E(5)^3$	$-E(5)^2 - E(5)^3$	$-E(5)^2 - E(5)^3$	0	0

Trivial source character table of $G \cong$ C5 : Q8 at $p = 5$:

Normalisers N_i	N_1					N_2				
p-subgroups of G up to conjugacy in G	P_1					P_2				
Representatives $n_j \in N_i$	1a	4b	4a	2a	4c	1a	4b	4a	2a	4c
$1 \cdot \chi_1 + 0 \cdot \chi_2 + 0 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_9 + 1 \cdot \chi_{10} + 1 \cdot \chi_{11} + 0 \cdot \chi_{12} + 0 \cdot \chi_{13}$	5	1	5	5	1	0	0	0	0	0
$0 \cdot \chi_1 + 1 \cdot \chi_2 + 0 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_9 + 0 \cdot \chi_{10} + 0 \cdot \chi_{11} + 1 \cdot \chi_{12} + 1 \cdot \chi_{13}$	5	−1	−5	5	1	0	0	0	0	0
$0 \cdot \chi_1 + 0 \cdot \chi_2 + 1 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_9 + 0 \cdot \chi_{10} + 0 \cdot \chi_{11} + 1 \cdot \chi_{12} + 1 \cdot \chi_{13}$	5	1	−5	5	−1	0	0	0	0	0
$0 \cdot \chi_1 + 0 \cdot \chi_2 + 0 \cdot \chi_3 + 1 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_9 + 1 \cdot \chi_{10} + 1 \cdot \chi_{11} + 0 \cdot \chi_{12} + 0 \cdot \chi_{13}$	5	−1	5	5	−1	0	0	0	0	0
$0 \cdot \chi_1 + 0 \cdot \chi_2 + 0 \cdot \chi_3 + 0 \cdot \chi_4 + 1 \cdot \chi_5 + 1 \cdot \chi_6 + 1 \cdot \chi_7 + 1 \cdot \chi_8 + 1 \cdot \chi_9 + 0 \cdot \chi_{10} + 0 \cdot \chi_{11} + 0 \cdot \chi_{12} + 0 \cdot \chi_{13}$	10	0	0	−10	0	0	0	0	0	0
$1 \cdot \chi_1 + 0 \cdot \chi_2 + 0 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_9 + 0 \cdot \chi_{10} + 0 \cdot \chi_{11} + 0 \cdot \chi_{12} + 0 \cdot \chi_{13}$	1	1	1	1	1	1	1	1	1	1
$0 \cdot \chi_1 + 0 \cdot \chi_2 + 0 \cdot \chi_3 + 1 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_9 + 0 \cdot \chi_{10} + 0 \cdot \chi_{11} + 0 \cdot \chi_{12} + 0 \cdot \chi_{13}$	1	−1	1	1	−1	1	1	−1	1	−1
$0 \cdot \chi_1 + 0 \cdot \chi_2 + 1 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_9 + 0 \cdot \chi_{10} + 0 \cdot \chi_{11} + 0 \cdot \chi_{12} + 0 \cdot \chi_{13}$	1	1	−1	1	−1	1	−1	1	1	−1
$0 \cdot \chi_1 + 1 \cdot \chi_2 + 0 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_9 + 0 \cdot \chi_{10} + 0 \cdot \chi_{11} + 0 \cdot \chi_{12} + 0 \cdot \chi_{13}$	1	−1	−1	1	1	1	−1	−1	1	1
$0 \cdot \chi_1 + 0 \cdot \chi_2 + 0 \cdot \chi_3 + 0 \cdot \chi_4 + 1 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_9 + 0 \cdot \chi_{10} + 0 \cdot \chi_{11} + 0 \cdot \chi_{12} + 0 \cdot \chi_{13}$	2	0	0	−2	0	2	0	0	−2	0

$P_1 = Group([()]) \cong 1$
$P_2 = Group([(1, 20, 5, 28, 12)(2, 24, 8, 32, 16)(3, 26, 10, 34, 18)(4, 27, 11, 35, 19)(6, 30, 14, 37, 22)(7, 31, 15, 38, 23)(9, 33, 17, 39, 25)(13, 36, 21, 40, 29)]) \cong$ C5

$N_1 = Group([(1, 2, 4, 7)(3, 13, 9, 6)(5, 32, 11, 38)(8, 35, 15, 28)(10, 40, 17, 37)(12, 24, 19, 31)(14, 34, 21, 39)(16, 27, 23, 20)(18, 36, 25, 30)(22, 26, 29, 33), (1, 3, 4, 9)(2, 6, 7, 13)(5, 10, 11, 17)(8, 14, 15, 21)(12, 18, 19, 25)(16, 22, 23, 29)(20, 26, 27, 33)(24, 30, 31, 36)(28, 34, 35, 39)(32, 37, 38, 40), (1, 4)(2, 7)(3, 9)(5, 11)(6, 13)(8, 15)(10, 17)(12, 19)(14, 21)(16, 23)(18, 25)(20, 27)(22, 29)(24, 31)(26, 33)(28, 35)(30, 36)(32, 38)(34, 39)(37, 40), (1, 5, 12, 20, 28)(2, 8, 16, 24, 32)(3, 10, 18, 26, 34)(4, 11, 19, 27, 35)(6, 14, 22, 30, 37)(7, 15, 23, 31, 38)(9, 17, 25, 33, 39)(13, 21, 29, 36, 40)]) \cong$ C5 : Q8
$N_2 = Group([(1, 20, 5, 28, 12)(2, 24, 8, 32, 16)(3, 26, 10, 34, 18)(4, 27, 11, 35, 19)(6, 30, 14, 37, 22)(7, 31, 15, 38, 23)(9, 33, 17, 39, 25)(13, 36, 21, 40, 29), (1, 2, 4, 7)(3, 13, 9, 6)(5, 32, 11, 38)(8, 35, 15, 28)(10, 40, 17, 37)(12, 24, 19, 31)(14, 34, 21, 39)(16, 27, 23, 20)(18, 36, 25, 30)(22, 26, 29, 33), (1, 3, 4, 9)(2, 6, 7, 13)(5, 10, 11, 17)(8, 14, 15, 21)(12, 18, 19, 25)(16, 22, 23, 29)(20, 26, 27, 33)(24, 30, 31, 36)(28, 34, 35, 39)(32, 37, 38, 40)]) \cong$ C5 : Q8