

The group  $G$  is isomorphic to the group labelled by [ 16, 4 ] in the Small Groups library.

Ordinary character table of  $G \cong C4 : C4$ :

	1a	4a	4b	2a	2b	4c	4d	4e	2c	4f
$\chi_1$	1	1	1	1	1	1	1	1	1	1
$\chi_2$	1	-1	-1	1	1	1	-1	-1	1	1
$\chi_3$	1	-1	1	1	1	-1	-1	1	1	-1
$\chi_4$	1	1	-1	1	1	-1	1	-1	1	-1
$\chi_5$	1	$-E(4)$	-1	1	-1	$E(4)$	$E(4)$	1	-1	$-E(4)$
$\chi_6$	1	$E(4)$	-1	1	-1	$-E(4)$	$-E(4)$	1	-1	$E(4)$
$\chi_7$	1	$-E(4)$	1	1	-1	$-E(4)$	$E(4)$	-1	-1	$E(4)$
$\chi_8$	1	$E(4)$	1	1	-1	$E(4)$	$-E(4)$	-1	-1	$-E(4)$
$\chi_9$	2	0	0	-2	2	0	0	0	-2	0
$\chi_{10}$	2	0	0	-2	-2	0	0	0	2	0

Trivial source character table of  $G \cong C4 : C4$  at  $p = 2$ :

Normalisers $N_i$	$N_1$	$N_2$	$N_3$	$N_4$	$N_5$	$N_6$	$N_7$	$N_8$	$N_9$	$N_{10}$	$N_{11}$	$N_{12}$	$N_{13}$
$p$ -subgroups of $G$ up to conjugacy in $G$	$P_1$	$P_2$	$P_3$	$P_4$	$P_5$	$P_6$	$P_7$	$P_8$	$P_9$	$P_{10}$	$P_{11}$	$P_{12}$	$P_{13}$
Representatives $n_j \in N_i$	1a	1a	1a	1a	1a	1a	1a	1a	1a	1a	1a	1a	1a
$1 \cdot \chi_1 + 1 \cdot \chi_2 + 1 \cdot \chi_3 + 1 \cdot \chi_4 + 1 \cdot \chi_5 + 1 \cdot \chi_6 + 1 \cdot \chi_7 + 1 \cdot \chi_8 + 2 \cdot \chi_9 + 2 \cdot \chi_{10}$	16	0	0	0	0	0	0	0	0	0	0	0	0
$1 \cdot \chi_1 + 1 \cdot \chi_2 + 1 \cdot \chi_3 + 1 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 2 \cdot \chi_9 + 0 \cdot \chi_{10}$	8	8	0	0	0	0	0	0	0	0	0	0	0
$1 \cdot \chi_1 + 1 \cdot \chi_2 + 1 \cdot \chi_3 + 1 \cdot \chi_4 + 1 \cdot \chi_5 + 1 \cdot \chi_6 + 1 \cdot \chi_7 + 1 \cdot \chi_8 + 0 \cdot \chi_9 + 0 \cdot \chi_{10}$	8	0	8	0	0	0	0	0	0	0	0	0	0
$1 \cdot \chi_1 + 1 \cdot \chi_2 + 1 \cdot \chi_3 + 1 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_9 + 2 \cdot \chi_{10}$	8	0	0	8	0	0	0	0	0	0	0	0	0
$1 \cdot \chi_1 + 1 \cdot \chi_2 + 1 \cdot \chi_3 + 1 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_9 + 0 \cdot \chi_{10}$	4	4	4	4	4	0	0	0	0	0	0	0	0
$1 \cdot \chi_1 + 0 \cdot \chi_2 + 1 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 1 \cdot \chi_7 + 1 \cdot \chi_8 + 0 \cdot \chi_9 + 0 \cdot \chi_{10}$	4	0	4	0	0	4	0	0	0	0	0	0	0
$1 \cdot \chi_1 + 0 \cdot \chi_2 + 1 \cdot \chi_3 + 0 \cdot \chi_4 + 1 \cdot \chi_5 + 1 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_9 + 0 \cdot \chi_{10}$	4	0	4	0	0	0	4	0	0	0	0	0	0
$1 \cdot \chi_1 + 0 \cdot \chi_2 + 0 \cdot \chi_3 + 1 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 1 \cdot \chi_9 + 0 \cdot \chi_{10}$	4	4	0	0	0	0	0	2	0	0	0	0	0
$1 \cdot \chi_1 + 1 \cdot \chi_2 + 0 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 1 \cdot \chi_9 + 0 \cdot \chi_{10}$	4	4	0	0	0	0	0	0	2	0	0	0	0
$1 \cdot \chi_1 + 0 \cdot \chi_2 + 1 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_9 + 0 \cdot \chi_{10}$	2	2	2	2	2	2	2	0	0	2	0	0	0
$1 \cdot \chi_1 + 0 \cdot \chi_2 + 0 \cdot \chi_3 + 1 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_9 + 0 \cdot \chi_{10}$	2	2	2	2	2	0	0	2	0	0	2	0	0
$1 \cdot \chi_1 + 1 \cdot \chi_2 + 0 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_9 + 0 \cdot \chi_{10}$	2	2	2	2	2	0	0	0	2	0	0	2	0
$1 \cdot \chi_1 + 0 \cdot \chi_2 + 0 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_9 + 0 \cdot \chi_{10}$	1	1	1	1	1	1	1	1	1	1	1	1	1

$$P_1 = \text{Group}([()]) \cong 1$$

$$P_2 = \text{Group}([(1, 5)(2, 8)(3, 10)(4, 11)(6, 13)(7, 14)(9, 15)(12, 16)]) \cong C2$$

$$P_3 = \text{Group}([(1, 4)(2, 7)(3, 9)(5, 11)(6, 12)(8, 14)(10, 15)(13, 16)]) \cong C2$$

$$P_4 = \text{Group}([(1, 11)(2, 14)(3, 15)(4, 5)(6, 16)(7, 8)(9, 10)(12, 13)]) \cong C2$$

$$P_5 = \text{Group}([(1, 4)(2, 7)(3, 9)(5, 11)(6, 12)(8, 14)(10, 15)(13, 16), (1, 5)(2, 8)(3, 10)(4, 11)(6, 13)(7, 14)(9, 15)(12, 16)]) \cong C2 \times C2$$

$$P_6 = \text{Group}([(1, 3, 4, 9)(2, 6, 7, 12)(5, 10, 11, 15)(8, 13, 14, 16), (1, 4)(2, 7)(3, 9)(5, 11)(6, 12)(8, 14)(10, 15)(13, 16)]) \cong C4$$

$$P_7 = \text{Group}([(1, 10, 4, 15)(2, 13, 7, 16)(3, 11, 9, 5)(6, 14, 12, 8), (1, 4)(2, 7)(3, 9)(5, 11)(6, 12)(8, 14)(10, 15)(13, 16)]) \cong C4$$

$$P_8 = \text{Group}([(1, 2, 5, 8)(3, 12, 10, 16)(4, 7, 11, 14)(6, 15, 13, 9), (1, 5)(2, 8)(3, 10)(4, 11)(6, 13)(7, 14)(9, 15)(12, 16)]) \cong C4$$

$$P_9 = \text{Group}([(1, 12, 5, 16)(2, 15, 8, 9)(3, 7, 10, 14)(4, 6, 11, 13), (1, 5)(2, 8)(3, 10)(4, 11)(6, 13)(7, 14)(9, 15)(12, 16)]) \cong C4$$

$$P_{10} = \text{Group}([(1, 4)(2, 7)(3, 9)(5, 11)(6, 12)(8, 14)(10, 15)(13, 16), (1, 5)(2, 8)(3, 10)(4, 11)(6, 13)(7, 14)(9, 15)(12, 16), (1, 3, 4, 9)(2, 6, 7, 12)(5, 10, 11, 15)(8, 13, 14, 16)]) \cong C4 \times C2$$

$$P_{11} = \text{Group}([(1, 4)(2, 7)(3, 9)(5, 11)(6, 12)(8, 14)(10, 15)(13, 16), (1, 5)(2, 8)(3, 10)(4, 11)(6, 13)(7, 14)(9, 15)(12, 16), (1, 2, 5, 8)(3, 12, 10, 16)(4, 7, 11, 14)(6, 15, 13, 9)]) \cong C4 \times C2$$

$$P_{12} = \text{Group}([(1, 4)(2, 7)(3, 9)(5, 11)(6, 12)(8, 14)(10, 15)(13, 16), (1, 5)(2, 8)(3, 10)(4, 11)(6, 13)(7, 14)(9, 15)(12, 16), (1, 12, 5, 16)(2, 15, 8, 9)(3, 7, 10, 14)(4, 6, 11, 13)]) \cong C4 \times C2$$

$$P_{13} = \text{Group}([(1, 4)(2, 7)(3, 9)(5, 11)(6, 12)(8, 14)(10, 15)(13, 16), (1, 5)(2, 8)(3, 10)(4, 11)(6, 13)(7, 14)(9, 15)(12, 16), (1, 3, 4, 9)(2, 6, 7, 12)(5, 10, 11, 15)(8, 13, 14, 16), (1, 2, 5, 8)(3, 12, 10, 16)(4, 7, 11, 14)(6, 15, 13, 9)]) \cong C4 : C4$$

$$N_1 = \text{Group}([(1, 2, 5, 8)(3, 12, 10, 16)(4, 7, 11, 14)(6, 15, 13, 9), (1, 3, 4, 9)(2, 6, 7, 12)(5, 10, 11, 15)(8, 13, 14, 16), (1, 4)(2, 7)(3, 9)(5, 11)(6, 12)(8, 14)(10, 15)(13, 16), (1, 5)(2, 8)(3, 10)(4, 11)(6, 13)(7, 14)(9, 15)(12, 16)]) \cong C4 : C4$$

$$N_2 = \text{Group}([(1, 2, 5, 8)(3, 12, 10, 16)(4, 7, 11, 14)(6, 15, 13, 9), (1, 3, 4, 9)(2, 6, 7, 12)(5, 10, 11, 15)(8, 13, 14, 16), (1, 4)(2, 7)(3, 9)(5, 11)(6, 12)(8, 14)(10, 15)(13, 16), (1, 5)(2, 8)(3, 10)(4, 11)(6, 13)(7, 14)(9, 15)(12, 16)]) \cong C4 : C4$$

$$N_3 = \text{Group}([(1, 2, 5, 8)(3, 12, 10, 16)(4, 7, 11, 14)(6, 15, 13, 9), (1, 3, 4, 9)(2, 6, 7, 12)(5, 10, 11, 15)(8, 13, 14, 16), (1, 4)(2, 7)(3, 9)(5, 11)(6, 12)(8, 14)(10, 15)(13, 16), (1, 5)(2, 8)(3, 10)(4, 11)(6, 13)(7, 14)(9, 15)(12, 16)]) \cong C4 : C4$$

$$N_4 = \text{Group}([(1, 2, 5, 8)(3, 12, 10, 16)(4, 7, 11, 14)(6, 15, 13, 9), (1, 3, 4, 9)(2, 6, 7, 12)(5, 10, 11, 15)(8, 13, 14, 16), (1, 4)(2, 7)(3, 9)(5, 11)(6, 12)(8, 14)(10, 15)(13, 16), (1, 5)(2, 8)(3, 10)(4, 11)(6, 13)(7, 14)(9, 15)(12, 16)]) \cong C4 : C4$$

$$N_5 = \text{Group}([(1, 5)(2, 8)(3, 10)(4, 11)(6, 13)(7, 14)(9, 15)(12, 16), (1, 4)(2, 7)(3, 9)(5, 11)(6, 12)(8, 14)(10, 15)(13, 16), (1, 2, 5, 8)(3, 12, 10, 16)(4, 7, 11, 14)(6, 15, 13, 9), (1, 3, 4, 9)(2, 6, 7, 12)(5, 10, 11, 15)(8, 13, 14, 16)]) \cong C4 : C4$$

$$N_6 = \text{Group}([(1, 3, 4, 9)(2, 6, 7, 12)(5, 10, 11, 15)(8, 13, 14, 16), (1, 4)(2, 7)(3, 9)(5, 11)(6, 12)(8, 14)(10, 15)(13, 16), (1, 2, 5, 8)(3, 12, 10, 16)(4, 7, 11, 14)(6, 15, 13, 9)]) \cong C4 : C4$$

$$N_7 = \text{Group}([(1, 10, 4, 15)(2, 13, 7, 16)(3, 11, 9, 5)(6, 14, 12, 8), (1, 4)(2, 7)(3, 9)(5, 11)(6, 12)(8, 14)(10, 15)(13, 16), (1, 2, 5, 8)(3, 12, 10, 16)(4, 7, 11, 14)(6, 15, 13, 9)]) \cong C4 : C4$$

$$N_8 = \text{Group}([(1, 2, 5, 8)(3, 12, 10, 16)(4, 7, 11, 14)(6, 15, 13, 9), (1, 5)(2, 8)(3, 10)(4, 11)(6, 13)(7, 14)(9, 15)(12, 16), (1, 4)(2, 7)(3, 9)(5, 11)(6, 12)(8, 14)(10, 15)(13, 16)]) \cong C4 \times C2$$

$$N_9 = \text{Group}([(1, 12, 5, 16)(2, 15, 8, 9)(3, 7, 10, 14)(4, 6, 11, 13), (1, 5)(2, 8)(3, 10)(4, 11)(6, 13)(7, 14)(9, 15)(12, 16), (1, 4)(2, 7)(3, 9)(5, 11)(6, 12)(8, 14)(10, 15)(13, 16)]) \cong C4 \times C2$$

$$N_{10} = \text{Group}([(1, 3, 4, 9)(2, 6, 7, 12)(5, 10, 11, 15)(8, 13, 14, 16), (1, 5)(2, 8)(3, 10)(4, 11)(6, 13)(7, 14)(9, 15)(12, 16), (1, 4)(2, 7)(3, 9)(5, 11)(6, 12)(8, 14)(10, 15)(13, 16), (1, 2, 5, 8)(3, 12, 10, 16)(4, 7, 11, 14)(6, 15, 13, 9)]) \cong C4 : C4$$

$$N_{11} = \text{Group}([(1, 2, 5, 8)(3, 12, 10, 16)(4, 7, 11, 14)(6, 15, 13, 9), (1, 5)(2, 8)(3, 10)(4, 11)(6, 13)(7, 14)(9, 15)(12, 16), (1, 4)(2, 7)(3, 9)(5, 11)(6, 12)(8, 14)(10, 15)(13, 16), (1, 3, 4, 9)(2, 6, 7, 12)(5, 10, 11, 15)(8, 13, 14, 16)]) \cong C4 : C4$$

$$N_{12} = \text{Group}([(1, 12, 5, 16)(2, 15, 8, 9)(3, 7, 10, 14)(4, 6, 11, 13), (1, 5)(2, 8)(3, 10)(4, 11)(6, 13)(7, 14)(9, 15)(12, 16), (1, 4)(2, 7)(3, 9)(5, 11)(6, 12)(8, 14)(10, 15)(13, 16), (1, 2, 5, 8)(3, 12, 10, 16)(4, 7, 11, 14)(6, 15, 13, 9)]) \cong C4 : C4$$

$$N_{13} = \text{Group}([(1, 2, 5, 8)(3, 12, 10, 16)(4, 7, 11, 14)(6, 15, 13, 9), (1, 3, 4, 9)(2, 6, 7, 12)(5, 10, 11, 15)(8, 13, 14, 16), (1, 5)(2, 8)(3, 10)(4, 11)(6, 13)(7, 14)(9, 15)(12, 16), (1, 4)(2, 7)(3, 9)(5, 11)(6, 12)(8, 14)(10, 15)(13, 16)]) \cong C4 : C4$$