

Character Tables of Multiplicity-Free Endomorphism Rings

$G = 6.M_{22}.2$ (no. 1)

$H = 2^4 : S_5 \rightarrow (M_{22}.2, 6)$

rank: 14

degree: 2772

	O_1	O_2	O_3	O_4	O_5	O_6	O_7	O_8	O_9	O_{10}
$1a^+$	1	1	2	2	30	120	120	192	192	192
$21a^+$	1	1	2	2	30	10	10	-72	-72	-72
$55a^+$	1	1	2	2	30	-6	-6	24	24	24
$154a^+$	1	1	2	2	-6	12	12	0	0	0
$231a^-$	1	1	2	2	-6	-8	-8	0	0	0
$126ab$	1	-1	-2	2	0	-10	10	0	0	0
$210b^-$	1	-1	-2	2	0	12	-12	0	0	0
$21bc$	1	1	-1	-1	0	40	40	-48	24	24
$105ad$	1	1	-1	-1	0	-3b33*	-3b33*	18+2r33	-9-r33	-9-r33
$105bc$	1	1	-1	-1	0	-3b33	-3b33	18-2r33	-9+r33	-9+r33
$231bc$	1	1	-1	-1	0	-5	-5	-12	6	6
$126cf$	1	-1	1	-1	0	5b33	-5b33	0	-15-r33	15+r33
$126de$	1	-1	1	-1	0	5b33*	-5b33*	0	-15+r33	15-r33
$210ef$	1	-1	1	-1	0	3	-3	0	18	-18

	O_{11}	O_{12}	O_{13}	O_{14}
$1a^+$	240	240	480	960
$21a^+$	20	20	40	80
$55a^+$	-12	-12	-24	-48
$154a^+$	24	24	-24	-48
$231a^-$	-16	-16	16	32
$126ab$	20	-20	0	0
$210b^-$	-24	24	0	0
$21bc$	-40	-40	40	-40
$105ad$	3b33*	3b33*	18-6r33	-18+6r33
$105bc$	3b33	3b33	18+6r33	-18-6r33
$231bc$	5	5	-20	20
$126cf$	5b33	-5b33	0	0
$126de$	5b33*	-5b33*	0	0
$210ef$	3	-3	0	0

$$-3b33 = (3 - 3 * Sqrt(33))/2$$

$$-3b33^* = (3 + 3 * Sqrt(33))/2$$

$$-5b33 = (5 - 5 * Sqrt(33))/2$$

$$-5b33^* = (5 + 5 * Sqrt(33))/2$$

$$3b33 = (-3 + 3 * Sqrt(33))/2$$

$$3b33^* = (-3 - 3 * Sqrt(33))/2$$

$$\begin{aligned}5b33 &= (-5 + 5 * Sqrt(33))/2 \\5b33^* &= (-5 - 5 * Sqrt(33))/2 \\r33 &= Sqrt(33)\end{aligned}$$

References

- [Mül08] J. Müller. On the multiplicity-free actions of the sporadic simple groups. *J. Algebra*, 320:910–926, 2008.