

## $S_6(2) \pmod{7}$

	blocks	defect	matrix
$G :$	1	1	$7 \times 6$
	2	0	$7_1 = \chi_2, \varphi_2$
	3	0	$21_1 = \chi_4, \varphi_4$
	4	0	$21_2 = \chi_5, \varphi_5$
	5	0	$35_1 = \chi_7, \varphi_7$
	6	0	$35_2 = \chi_8, \varphi_8$
	7	0	$56_1 = \chi_9, \varphi_9$
	8	0	$70_1 = \chi_{10}, \varphi_{10}$
	9	0	$84_1 = \chi_{11}, \varphi_{11}$
	10	0	$105_1 = \chi_{12}, \varphi_{13}$
	11	0	$105_2 = \chi_{13}, \varphi_{14}$
	12	0	$105_3 = \chi_{14}, \varphi_{15}$
	13	0	$168_1 = \chi_{16}, \varphi_{16}$
	14	0	$189_1 = \chi_{17}, \varphi_{17}$
	15	0	$189_2 = \chi_{18}, \varphi_{18}$
	16	0	$189_3 = \chi_{19}, \varphi_{19}$

  

	blocks	defect	matrix
	17	0	$210_1 = \chi_{20}, \varphi_{21}$
	18	0	$210_2 = \chi_{21}, \varphi_{22}$
	19	0	$280_1 = \chi_{23}, \varphi_{23}$
	20	0	$280_2 = \chi_{24}, \varphi_{24}$
	21	0	$315_1 = \chi_{25}, \varphi_{26}$
	22	0	$336_1 = \chi_{26}, \varphi_{27}$
	23	0	$378_1 = \chi_{27}, \varphi_{28}$
	24	0	$420_1 = \chi_{29}, \varphi_{29}$

  

	blocks	defect	matrix
$2.G :$	25	1	$7 \times 6$
	26	0	$112_1 = \chi_{35}, \varphi_{34}$
	27	0	$112_2 = \chi_{36}, \varphi_{35}$
	28	0	$168_2 = \chi_{38}, \varphi_{37}$
	29	0	$280_3 = \chi_{39}, \varphi_{38}$
	30	0	$448_1 = \chi_{40}, \varphi_{39}$
	31	0	$560_1 = \chi_{42}, \varphi_{41}$

<b>Block 1:</b>	$\varphi_1$	$\varphi_3$	$\varphi_6$	$\varphi_{12}$	$\varphi_{20}$	$\varphi_{25}$
$1_1 = \chi_1$	1	.	.	.	.	.
$15_1 = \chi_3$	.	1	.	.	.	.
$27_1 = \chi_6$	1	.	1	.	.	.
$120_1 = \chi_{15}$	.	.	1	1	.	.
$216_1 = \chi_{22}$	.	1	.	.	1	.
$405_1 = \chi_{28}$	.	.	.	1	.	1
$512_1 = \chi_{30}$	.	.	.	.	1	1

$$\begin{aligned}
 \varphi_1 &= 1_1 \\
 \varphi_3 &= 15_1 \\
 \varphi_6 &= 26_1 \\
 \varphi_{12} &= 94_1 \\
 \varphi_{20} &= 201_1 \\
 \varphi_{25} &= 311_1
 \end{aligned}$$

<b>Block 25:</b>	$\varphi_{30}$	$\varphi_{31}$	$\varphi_{32}$	$\varphi_{33}$	$\varphi_{36}$	$\varphi_{40}$
$8_1 = \chi_{31}$	1	.	.	.	.	.
$48_1 = \chi_{32}$	1	1	.	.	.	.
$64_1 = \chi_{33}$	.	.	1	.	.	.
$64_2 = \chi_{34}$	.	.	.	1	.	.
$120_2 = \chi_{37}$	.	.	.	.	1	.
$512_2 = \chi_{41}$	.	1	.	.	.	1
$720_1 = \chi_{43}$	.	.	1	1	1	1

$$\begin{aligned}
 \varphi_{30} &= 8_1 \\
 \varphi_{31} &= 40_1 \\
 \varphi_{32} &= 64_1 \\
 \varphi_{33} &= 64_2 \\
 \varphi_{36} &= 120_1 \\
 \varphi_{40} &= 472_1
 \end{aligned}$$