

# $O_8^+(3) \pmod{5}$

	blocks	defect	matrix
$G :$	1	2	$16 \times 10$
	2	1	$5 \times 4$
	3	1	$5 \times 4$
	4	1	$5 \times 4$
	5	1	$5 \times 4$
	6	1	$5 \times 4$
	7	1	$5 \times 4$
	8	0	$300_1 = \chi_8, \varphi_8$
	9	0	$2275_1 = \chi_{12}, \varphi_{12}$
	10	0	$2275_2 = \chi_{13}, \varphi_{13}$
	11	0	$2275_3 = \chi_{14}, \varphi_{14}$
	12	0	$2275_4 = \chi_{15}, \varphi_{15}$
	13	0	$9450_1 = \chi_{23}, \varphi_{23}$
	14	0	$17550_1 = \chi_{24}, \varphi_{24}$
	15	0	$18200_1 = \chi_{25}, \varphi_{25}$
	16	0	$18200_2 = \chi_{26}, \varphi_{26}$
	17	0	$18200_3 = \chi_{27}, \varphi_{27}$
	18	0	$18200_4 = \chi_{28}, \varphi_{28}$
	19	0	$18200_5 = \chi_{29}, \varphi_{29}$
	20	0	$23400_1 = \chi_{30}, \varphi_{31}$
	21	0	$23400_2 = \chi_{31}, \varphi_{32}$
	22	0	$23400_3 = \chi_{32}, \varphi_{33}$
	23	0	$23400_4 = \chi_{33}, \varphi_{34}$
	24	0	$23400_5 = \chi_{34}, \varphi_{35}$
	25	0	$23400_6 = \chi_{35}, \varphi_{36}$
	26	0	$27300_1 = \chi_{37}, \varphi_{37}$
	27	1	$5 \times 4$
	28	1	$5 \times 4$
	29	1	$5 \times 4$
	30	0	$40950_1 = \chi_{44}, \varphi_{44}$
	31	0	$40950_2 = \chi_{45}, \varphi_{45}$
	32	0	$40950_3 = \chi_{46}, \varphi_{46}$

	blocks	defect	matrix
	33	0	$40950_4 = \chi_{47}, \varphi_{47}$
	34	0	$40950_5 = \chi_{48}, \varphi_{48}$
	35	0	$40950_6 = \chi_{49}, \varphi_{49}$
	36	0	$54600_1 = \chi_{59}, \varphi_{59}$
	37	0	$54600_2 = \chi_{60}, \varphi_{60}$
	38	0	$54600_3 = \chi_{61}, \varphi_{61}$
	39	0	$54600_4 = \chi_{62}, \varphi_{62}$
	40	0	$54600_5 = \chi_{63}, \varphi_{63}$
	41	0	$54600_6 = \chi_{64}, \varphi_{64}$
	42	0	$54600_7 = \chi_{65}, \varphi_{65}$
	43	0	$163800_1 = \chi_{69}, \varphi_{66}$
	44	0	$163800_2 = \chi_{70}, \varphi_{67}$
	45	0	$163800_3 = \chi_{71}, \varphi_{68}$
	46	0	$184275_1 = \chi_{72}, \varphi_{75}$
	47	0	$184275_2 = \chi_{73}, \varphi_{76}$
	48	0	$184275_3 = \chi_{74}, \varphi_{77}$
	49	0	$184275_4 = \chi_{75}, \varphi_{78}$
	50	0	$218700_1 = \chi_{82}, \varphi_{79}$
	51	0	$245700_1 = \chi_{89}, \varphi_{86}$
	52	0	$291200_1 = \chi_{96}, \varphi_{87}$
	53	0	$291200_2 = \chi_{97}, \varphi_{88}$
	54	0	$291200_3 = \chi_{98}, \varphi_{89}$
	55	0	$291200_4 = \chi_{99}, \varphi_{90}$
	56	0	$291200_5 = \chi_{100}, \varphi_{91}$
	57	0	$332800_1 = \chi_{101}, \varphi_{92}$
	58	0	$332800_2 = \chi_{102}, \varphi_{93}$
	59	0	$332800_3 = \chi_{103}, \varphi_{94}$
	60	0	$332800_4 = \chi_{104}, \varphi_{95}$
	61	0	$491400_1 = \chi_{111}, \varphi_{97}$
	62	0	$716800_1 = \chi_{113}, \varphi_{98}$
	63	0	$716800_2 = \chi_{114}, \varphi_{99}$

<b>Block 1:</b>	$\varphi_1$	$\varphi_9$	$\varphi_{10}$	$\varphi_{11}$	$\varphi_{16}$	$\varphi_{30}$	$\varphi_{50}$	$\varphi_{51}$	$\varphi_{52}$	$\varphi_{96}$
$1_1 = \chi_1$	1	.	.	.	.	.	.	.	.	.
$819_1 = \chi_9$	1	1	.	.	.	.	.	.	.	.
$819_2 = \chi_{10}$	1	.	1	.	.	.	.	.	.	.
$819_3 = \chi_{11}$	1	.	.	1	.	.	.	.	.	.
$2808_1 = \chi_{16}$	.	.	.	.	1	.	.	.	.	.
$24192_1 = \chi_{36}$	1	1	1	1	.	1	.	.	.	.
$46592_1 = \chi_{50}$	.	.	.	.	1	.	1	.	.	.
$46592_2 = \chi_{51}$	.	.	.	.	1	.	.	1	.	.
$46592_3 = \chi_{52}$	.	.	.	.	1	.	.	.	1	.
$66339_1 = \chi_{66}$	.	1	.	.	.	1	1	.	.	.
$66339_2 = \chi_{67}$	.	.	1	.	.	1	.	1	.	.
$66339_3 = \chi_{68}$	.	.	.	1	.	1	.	.	1	.
$419328_1 = \chi_{105}$	.	.	.	.	.	.	1	.	.	1
$419328_2 = \chi_{106}$	.	.	.	.	.	.	.	1	.	1
$419328_3 = \chi_{107}$	.	.	.	.	.	.	.	.	1	1
$531441_1 = \chi_{112}$	.	.	.	.	1	1	1	1	1	1

$$\begin{aligned}
\varphi_1 &= 1_1 & \varphi_{30} &= 21737_1 \\
\varphi_9 &= 818_1 & \varphi_{50} &= 43784_1 \\
\varphi_{10} &= 818_2 & \varphi_{51} &= 43784_2 \\
\varphi_{11} &= 818_3 & \varphi_{52} &= 43784_3 \\
\varphi_{16} &= 2808_1 & \varphi_{96} &= 375544_1
\end{aligned}$$

<b>Block 2:</b>	$\varphi_2$	$\varphi_{20}$	$\varphi_{53}$	$\varphi_{72}$
$260_1 = \chi_2$	1	.	.	.
$5460_4 = \chi_{20}$	.	1	.	.
$49140_1 = \chi_{53}$	1	.	1	.
$189540_4 = \chi_{79}$	.	1	.	1
$232960_4 = \chi_{86}$	.	.	1	1

$$\begin{aligned}
\varphi_2 &= 260_1 \\
\varphi_{20} &= 5460_4 \\
\varphi_{53} &= 48880_1 \\
\varphi_{72} &= 184080_4
\end{aligned}$$

<b>Block 3:</b>	$\varphi_3$	$\varphi_{21}$	$\varphi_{54}$	$\varphi_{73}$
$260_2 = \chi_3$	1	.	.	.
$5460_5 = \chi_{21}$	.	1	.	.
$49140_2 = \chi_{54}$	1	.	1	.
$189540_5 = \chi_{80}$	.	1	.	1
$232960_5 = \chi_{87}$	.	.	1	1

$$\begin{aligned}
\varphi_3 &= 260_2 \\
\varphi_{21} &= 5460_5 \\
\varphi_{54} &= 48880_2 \\
\varphi_{73} &= 184080_5
\end{aligned}$$

<b>Block 4:</b>	$\varphi_4$	$\varphi_{22}$	$\varphi_{55}$	$\varphi_{74}$
$260_3 = \chi_4$	1	.	.	.
$5460_6 = \chi_{22}$	.	1	.	.
$49140_3 = \chi_{55}$	1	.	1	.
$189540_6 = \chi_{81}$	.	1	.	1
$232960_6 = \chi_{88}$	.	.	1	1

$$\begin{aligned}\varphi_4 &= 260_3 \\ \varphi_{22} &= 5460_6 \\ \varphi_{55} &= 48880_3 \\ \varphi_{74} &= 184080_6\end{aligned}$$

<b>Block 5:</b>	$\varphi_5$	$\varphi_{17}$	$\varphi_{56}$	$\varphi_{69}$
$260_4 = \chi_5$	1	.	.	.
$5460_1 = \chi_{17}$	.	1	.	.
$49140_4 = \chi_{56}$	1	.	1	.
$189540_1 = \chi_{76}$	.	1	.	1
$232960_1 = \chi_{83}$	.	.	1	1

$$\begin{aligned}\varphi_5 &= 260_4 \\ \varphi_{17} &= 5460_1 \\ \varphi_{56} &= 48880_4 \\ \varphi_{69} &= 184080_1\end{aligned}$$

<b>Block 6:</b>	$\varphi_6$	$\varphi_{18}$	$\varphi_{57}$	$\varphi_{70}$
$260_5 = \chi_6$	1	.	.	.
$5460_2 = \chi_{18}$	.	1	.	.
$49140_5 = \chi_{57}$	1	.	1	.
$189540_2 = \chi_{77}$	.	1	.	1
$232960_2 = \chi_{84}$	.	.	1	1

$$\begin{aligned}\varphi_6 &= 260_5 \\ \varphi_{18} &= 5460_2 \\ \varphi_{57} &= 48880_5 \\ \varphi_{70} &= 184080_2\end{aligned}$$

<b>Block 7:</b>	$\varphi_7$	$\varphi_{19}$	$\varphi_{58}$	$\varphi_{71}$
$260_6 = \chi_7$	1	.	.	.
$5460_3 = \chi_{19}$	.	1	.	.
$49140_6 = \chi_{58}$	1	.	1	.
$189540_3 = \chi_{78}$	.	1	.	1
$232960_3 = \chi_{85}$	.	.	1	1

$$\begin{aligned}\varphi_7 &= 260_6 \\ \varphi_{19} &= 5460_3 \\ \varphi_{58} &= 48880_6 \\ \varphi_{71} &= 184080_3\end{aligned}$$

<b>Block 27:</b>	$\varphi_{38}$	$\varphi_{41}$	$\varphi_{80}$	$\varphi_{83}$
$29120_1 = \chi_{38}$	1	.	.	.
$29120_4 = \chi_{41}$	.	1	.	.
$262080_1 = \chi_{90}$	1	.	1	.
$262080_4 = \chi_{93}$	.	1	.	1
$465920_1 = \chi_{108}$	.	.	1	1

$$\begin{aligned}\varphi_{38} &= 29120_1 \\ \varphi_{41} &= 29120_4 \\ \varphi_{80} &= 232960_1 \\ \varphi_{83} &= 232960_4\end{aligned}$$

<b>Block 28:</b>	$\varphi_{39}$	$\varphi_{42}$	$\varphi_{81}$	$\varphi_{84}$
$29120_2 = \chi_{39}$	1	.	.	.
$29120_5 = \chi_{42}$	.	1	.	.
$262080_2 = \chi_{91}$	1	.	1	.
$262080_5 = \chi_{94}$	.	1	.	1
$465920_2 = \chi_{109}$	.	.	1	1

$$\begin{aligned} \varphi_{39} &= 29120_2 \\ \varphi_{42} &= 29120_5 \\ \varphi_{81} &= 232960_2 \\ \varphi_{84} &= 232960_5 \end{aligned}$$

<b>Block 29:</b>	$\varphi_{40}$	$\varphi_{43}$	$\varphi_{82}$	$\varphi_{85}$
$29120_3 = \chi_{40}$	1	.	.	.
$29120_6 = \chi_{43}$	.	1	.	.
$262080_3 = \chi_{92}$	1	.	1	.
$262080_6 = \chi_{95}$	.	1	.	1
$465920_3 = \chi_{110}$	.	.	1	1

$$\begin{aligned} \varphi_{40} &= 29120_3 \\ \varphi_{43} &= 29120_6 \\ \varphi_{82} &= 232960_3 \\ \varphi_{85} &= 232960_6 \end{aligned}$$