

$HN.2 \pmod{7}$

	blocks	defect	matrix
$G :$	1	1	7×6
	2	1	7×6
	3	0	$266_1 = \chi_{2+}, \varphi_{2+}$
	4	1	7×6
	5	1	7×6
	6	1	7×6
	7	1	7×6
	8	0	$17556_1 = \chi_{6+}, \varphi_{6+}$
	9	0	$70224_1 = \chi_{11+}, \varphi_{11+}$
	10	0	$131670_1 = \chi_{13+}, \varphi_{13+}$
	11	1	7×6
	12	0	$365750_1 = \chi_{20,0}, \varphi_{19,0}$
	13	0	$365750_2 = \chi_{20,1}, \varphi_{19,1}$
	14	0	$749056_1 = \chi_{21+}, \varphi_{20+}$
	15	0	$1312500_1 = \chi_{25+}, \varphi_{24+}$
	16	0	$1436400_1 = \chi_{27+}, \varphi_{26+}$
	17	0	$1053360_1 = \chi_{29,0}, \varphi_{28,0}$
	18	0	$1053360_2 = \chi_{29,1}, \varphi_{28,1}$
	19	0	$2133054_1 = \chi_{30+}, \varphi_{29+}$
	20	0	$1185030_1 = \chi_{32,0}, \varphi_{33,0}$
	21	0	$1185030_2 = \chi_{32,1}, \varphi_{33,1}$
	22	0	$1361920_1 = \chi_{34,0}, \varphi_{35,0}$
	23	0	$1361920_2 = \chi_{34,1}, \varphi_{35,1}$
	24	0	$2723840_1 = \chi_{35+}, \varphi_{36+}$
	25	0	$2661120_1 = \chi_{42,0}, \varphi_{41,0}$
	26	0	$2661120_2 = \chi_{42,1}, \varphi_{41,1}$
	27	0	$3878280_1 = \chi_{47,0}, \varphi_{44,0}$
	28	0	$3878280_2 = \chi_{47,1}, \varphi_{44,1}$
	29	0	$4156250_1 = \chi_{48,0}, \varphi_{45,0}$
	30	0	$4156250_2 = \chi_{48,1}, \varphi_{45,1}$
	31	0	$5103000_1 = \chi_{51,0}, \varphi_{47,0}$
	32	0	$5103000_2 = \chi_{51,1}, \varphi_{47,1}$
	33	0	$5103000_3 = \chi_{52,0}, \varphi_{48,0}$
	34	0	$5103000_4 = \chi_{52,1}, \varphi_{48,1}$
	35	0	$5332635_1 = \chi_{53,0}, \varphi_{49,0}$
	36	0	$5332635_2 = \chi_{53,1}, \varphi_{49,1}$

Block 1:	$\varphi_{1,0}$	$\varphi_{8,1}$	$\varphi_{17,1}$	$\varphi_{39,0}$	$\varphi_{40,1}$	$\varphi_{46,0}$
$1_1 = \chi_{1,0}$	1	.	.	.	.	.
$8910_2 = \chi_{8,1}$	1	1	.	.	.	.
$267520_2 = \chi_{18,1}$	.	1	1	.	.	.
$1625184_2 = \chi_{38,1}$	.	.	.	.	1	.
$3200000_1 = \chi_{45,0}$	.	.	.	1	1	.
$4561920_2 = \chi_{49,1}$	.	.	1	.	.	1
$5878125_1 = \chi_{54,0}$	.	.	.	1	.	1

$$\begin{aligned}
\varphi_{1,0} &= 1_1 \\
\varphi_{8,1} &= 8909_2 \\
\varphi_{17,1} &= 258611_2 \\
\varphi_{39,0} &= 1574816_1 \\
\varphi_{40,1} &= 1625184_2 \\
\varphi_{46,0} &= 4303309_1
\end{aligned}$$

Block 2:	$\varphi_{1,1}$	$\varphi_{8,0}$	$\varphi_{17,0}$	$\varphi_{39,1}$	$\varphi_{40,0}$	$\varphi_{46,1}$
$1_2 = \chi_{1,1}$	1	.	.	.	.	.
$8910_1 = \chi_{8,0}$	1	1	.	.	.	.
$267520_1 = \chi_{18,0}$	.	1	1	.	.	.
$1625184_1 = \chi_{38,0}$	.	.	.	.	1	.
$3200000_2 = \chi_{45,1}$	.	.	.	1	1	.
$4561920_1 = \chi_{49,0}$	.	.	1	.	.	1
$5878125_2 = \chi_{54,1}$	.	.	.	1	.	1

$$\begin{aligned}
\varphi_{1,1} &= 1_2 \\
\varphi_{8,0} &= 8909_1 \\
\varphi_{17,0} &= 258611_1 \\
\varphi_{39,1} &= 1574816_2 \\
\varphi_{40,0} &= 1625184_1 \\
\varphi_{46,1} &= 4303309_2
\end{aligned}$$

Block 4:	$\varphi_{4,0}$	$\varphi_{9,0}$	$\varphi_{10,0}$	$\varphi_{23,0}$	$\varphi_{38,0}$	$\varphi_{43,0}$
$760_1 = \chi_{4,0}$	1	.	.	.	.	.
$9405_1 = \chi_{9,0}$	.	1	.	.	.	.
$16929_1 = \chi_{10,0}$	1	.	1	.	.	.
$653125_1 = \chi_{24,0}$	.	.	1	1	.	.
$2031480_1 = \chi_{39,0}$	.	.	.	1	1	.
$3424256_1 = \chi_{46,0}$	.	1	.	.	.	1
$4809375_1 = \chi_{50,0}$	.	.	.	.	1	1

$$\begin{aligned}
\varphi_{4,0} &= 760_1 \\
\varphi_{9,0} &= 9405_1 \\
\varphi_{10,0} &= 16169_1 \\
\varphi_{23,0} &= 636956_1 \\
\varphi_{38,0} &= 1394524_1 \\
\varphi_{43,0} &= 3414851_1
\end{aligned}$$

Block 5:	$\varphi_{4,1}$	$\varphi_{9,1}$	$\varphi_{10,1}$	$\varphi_{23,1}$	$\varphi_{38,1}$	$\varphi_{43,1}$
$760_2 = \chi_{4,1}$	1	.	.	.	.	.
$9405_2 = \chi_{9,1}$	.	1	.	.	.	.
$16929_2 = \chi_{10,1}$	1	.	1	.	.	.
$653125_2 = \chi_{24,1}$	.	.	1	1	.	.
$2031480_2 = \chi_{39,1}$	.	.	.	1	1	.
$3424256_2 = \chi_{46,1}$	.	1	.	.	.	1
$4809375_2 = \chi_{50,1}$	.	.	.	.	1	1

$$\begin{aligned}
\varphi_{4,1} &= 760_2 \\
\varphi_{9,1} &= 9405_2 \\
\varphi_{10,1} &= 16169_2 \\
\varphi_{23,1} &= 636956_2 \\
\varphi_{38,1} &= 1394524_2 \\
\varphi_{43,1} &= 3414851_2
\end{aligned}$$

Block 6:	$\varphi_{5,0}$	$\varphi_{16,1}$	$\varphi_{22,0}$	$\varphi_{31,0}$	$\varphi_{32,0}$	$\varphi_{34,0}$
$3344_1 = \chi_{5,0}$	1	.	.	.	.	.
$214016_2 = \chi_{17,1}$	.	1	.	.	.	.
$406296_1 = \chi_{23,0}$	1	.	1	.	.	.
$1354320_2 = \chi_{33,1}$	.	1	.	1	.	.
$1575936_1 = \chi_{37,0}$	.	.	1	.	1	.
$2375000_1 = \chi_{40,0}$	.	.	.	1	.	1
$2407680_1 = \chi_{41,0}$	.	.	.	.	1	1

$$\begin{aligned}
\varphi_{5,0} &= 3344_1 \\
\varphi_{16,1} &= 214016_2 \\
\varphi_{22,0} &= 402952_1 \\
\varphi_{31,0} &= 1140304_1 \\
\varphi_{32,0} &= 1172984_1 \\
\varphi_{34,0} &= 1234696_1
\end{aligned}$$

Block 7:	$\varphi_{5,1}$	$\varphi_{16,0}$	$\varphi_{22,1}$	$\varphi_{31,1}$	$\varphi_{32,1}$	$\varphi_{34,1}$
$3344_2 = \chi_{5,1}$	1	.	.	.	.	.
$214016_1 = \chi_{17,0}$	.	1	.	.	.	.
$406296_2 = \chi_{23,1}$	1	.	1	.	.	.
$1354320_1 = \chi_{33,0}$	.	1	.	1	.	.
$1575936_2 = \chi_{37,1}$	.	.	1	.	1	.
$2375000_2 = \chi_{40,1}$	.	.	.	1	.	1
$2407680_2 = \chi_{41,1}$	.	.	.	.	1	1

$$\begin{aligned}
\varphi_{5,1} &= 3344_2 \\
\varphi_{16,0} &= 214016_1 \\
\varphi_{22,1} &= 402952_2 \\
\varphi_{31,1} &= 1140304_2 \\
\varphi_{32,1} &= 1172984_2 \\
\varphi_{34,1} &= 1234696_2
\end{aligned}$$

Block 11:	$\varphi_{15,0}$	$\varphi_{15,1}$	$\varphi_{18,0}$	$\varphi_{18,1}$	$\varphi_{42,0}$	$\varphi_{42,1}$
$138510_1 = \chi_{15+}$	1	1	.	.	.	.
$270864_1 = \chi_{19,0}$	.	.	1	.	.	.
$270864_2 = \chi_{19,1}$	.	.	.	1	.	.
$2784375_1 = \chi_{43,0}$	1	.	.	.	1	.
$2784375_2 = \chi_{43,1}$	.	1	.	.	.	1
$2985984_1 = \chi_{44,0}$	.	.	.	1	1	.
$2985984_2 = \chi_{44,1}$	.	.	1	.	.	1

$$\begin{aligned}
\varphi_{15,0} &= 69255_1 \\
\varphi_{15,1} &= 69255_2 \\
\varphi_{18,0} &= 270864_1 \\
\varphi_{18,1} &= 270864_2 \\
\varphi_{42,0} &= 2715120_1 \\
\varphi_{42,1} &= 2715120_2
\end{aligned}$$