

$Fi_{22} \pmod{7}$

	blocks	defect	matrix
$G :$	1	1	$7 \times 6$
	2	1	$7 \times 6$
	3	0	$1001_1 = \chi_4, \varphi_4$
	4	0	$3003_1 = \chi_6, \varphi_6$
	5	0	$3080_1 = \chi_7, \varphi_7$
	6	1	$7 \times 6$
	7	0	$13650_1 = \chi_9, \varphi_9$
	8	0	$30030_1 = \chi_{10}, \varphi_{10}$
	9	0	$32032_1 = \chi_{11}, \varphi_{11}$
	10	0	$43680_1 = \chi_{12}, \varphi_{12}$
	11	0	$45045_1 = \chi_{13}, \varphi_{13}$
	12	0	$48048_1 = \chi_{14}, \varphi_{14}$
	13	0	$50050_1 = \chi_{15}, \varphi_{15}$
	14	0	$50050_2 = \chi_{16}, \varphi_{16}$
	15	0	$75075_1 = \chi_{17}, \varphi_{17}$
	16	0	$75075_2 = \chi_{18}, \varphi_{18}$
	17	0	$75075_3 = \chi_{19}, \varphi_{19}$
	18	0	$81081_1 = \chi_{20}, \varphi_{20}$
	19	0	$138600_1 = \chi_{22}, \varphi_{22}$
	20	0	$138600_2 = \chi_{23}, \varphi_{23}$
	21	0	$150150_1 = \chi_{24}, \varphi_{24}$
	22	0	$300300_1 = \chi_{27}, \varphi_{27}$
	23	0	$320320_1 = \chi_{28}, \varphi_{28}$
	24	0	$400400_1 = \chi_{31}, \varphi_{31}$
	25	0	$400400_2 = \chi_{32}, \varphi_{32}$
	26	0	$400400_3 = \chi_{33}, \varphi_{33}$
	$27 = \overline{26}$	0	$400400_4 = \chi_{34}, \varphi_{34}$
	28	0	$450450_1 = \chi_{35}, \varphi_{35}$
	29	0	$450450_2 = \chi_{36}, \varphi_{36}$
	30	0	$576576_1 = \chi_{37}, \varphi_{39}$
	31	0	$582400_1 = \chi_{40}, \varphi_{41}$
	$32 = \overline{31}$	0	$582400_2 = \chi_{41}, \varphi_{42}$
	33	0	$600600_1 = \chi_{42}, \varphi_{43}$
	34	0	$600600_2 = \chi_{43}, \varphi_{44}$
	$35 = \overline{34}$	0	$600600_3 = \chi_{44}, \varphi_{45}$
	36	0	$675675_1 = \chi_{45}, \varphi_{46}$
	37	0	$720720_1 = \chi_{46}, \varphi_{47}$
	38	0	$800800_1 = \chi_{47}, \varphi_{49}$
	39	0	$972972_1 = \chi_{50}, \varphi_{51}$
	40	0	$982800_1 = \chi_{51}, \varphi_{52}$

	blocks	defect	matrix
	41 = $\overline{40}$	0	982800 <sub>2</sub> = $\chi_{52}, \varphi_{53}$
	42	0	1201200 <sub>1</sub> = $\chi_{53}, \varphi_{55}$
	43	0	1360800 <sub>1</sub> = $\chi_{54}, \varphi_{56}$
	44	0	1791153 <sub>1</sub> = $\chi_{57}, \varphi_{57}$
	45	0	2027025 <sub>1</sub> = $\chi_{59}, \varphi_{59}$
	46	0	2050048 <sub>1</sub> = $\chi_{60}, \varphi_{60}$
	47	0	2402400 <sub>1</sub> = $\chi_{62}, \varphi_{62}$
2.G :	48	1	7 × 6
	49	1	7 × 6
	50	1	7 × 6
	51	0	5824 <sub>1</sub> = $\chi_{69}, \varphi_{66}$
	52	0	5824 <sub>2</sub> = $\chi_{70}, \varphi_{67}$
	53 = $\overline{52}$	0	5824 <sub>3</sub> = $\chi_{71}, \varphi_{68}$
	54 = $\overline{51}$	0	5824 <sub>4</sub> = $\chi_{72}, \varphi_{69}$
	55	0	48048 <sub>2</sub> = $\chi_{76}, \varphi_{73}$
	56	0	48048 <sub>3</sub> = $\chi_{77}, \varphi_{74}$
	57	0	123200 <sub>1</sub> = $\chi_{80}, \varphi_{77}$
	58	0	133056 <sub>1</sub> = $\chi_{81}, \varphi_{78}$
	59	0	235872 <sub>1</sub> = $\chi_{85}, \varphi_{82}$
	60	0	235872 <sub>2</sub> = $\chi_{86}, \varphi_{83}$
	61	0	320320 <sub>2</sub> = $\chi_{87}, \varphi_{84}$
	62	0	320320 <sub>3</sub> = $\chi_{88}, \varphi_{85}$
	63	0	400400 <sub>5</sub> = $\chi_{89}, \varphi_{86}$
	64	0	400400 <sub>6</sub> = $\chi_{90}, \varphi_{87}$
	65	0	436800 <sub>1</sub> = $\chi_{91}, \varphi_{88}$
	66	0	436800 <sub>2</sub> = $\chi_{92}, \varphi_{89}$
	67	0	480480 <sub>1</sub> = $\chi_{93}, \varphi_{90}$
	68	0	480480 <sub>2</sub> = $\chi_{94}, \varphi_{91}$
	69	0	1201200 <sub>2</sub> = $\chi_{100}, \varphi_{97}$
	70	0	1201200 <sub>3</sub> = $\chi_{101}, \varphi_{98}$
	71	0	1297296 <sub>1</sub> = $\chi_{102}, \varphi_{99}$
	72	0	1297296 <sub>2</sub> = $\chi_{103}, \varphi_{100}$
	73	0	1663200 <sub>1</sub> = $\chi_{105}, \varphi_{103}$
	74	0	1663200 <sub>2</sub> = $\chi_{106}, \varphi_{104}$
	75	0	2358720 <sub>1</sub> = $\chi_{109}, \varphi_{105}$
	76	0	2358720 <sub>2</sub> = $\chi_{110}, \varphi_{106}$
	77	0	2402400 <sub>2</sub> = $\chi_{111}, \varphi_{107}$
	78	0	2402400 <sub>3</sub> = $\chi_{112}, \varphi_{108}$
3.G :	79 80 = 79*	1	7 × 6

	blocks	defect	matrix
	81	0	$12474_1 = \chi_{117}, \varphi_{111}$
	82 = 81*		
	83	0	$12474_3 = \chi_{118}, \varphi_{112}$
	84 = 83*		
	85	0	$19656_1 = \chi_{120}, \varphi_{114}$
	86 = 85*		
	87	0	$27027_1 = \chi_{121}, \varphi_{115}$
	88 = 87*		
	89	1	$7 \times 6$
	90 = 89*		
	91	0	$51975_1 = \chi_{123}, \varphi_{117}$
	92 = 91*		
	93	0	$54054_1 = \chi_{124}, \varphi_{118}$
	94 = 93*		
	95	0	$61425_1 = \chi_{125}, \varphi_{119}$
	96 = 95*		
	97	1	$7 \times 6$
	98 = 97*		
	99	0	$235872_3 = \chi_{128}, \varphi_{123}$
	100 = 99*		
	101	0	$368550_1 = \chi_{132}, \varphi_{128}$
	102 = 101*		
	103 = $\overline{102}$	0	$368550_3 = \chi_{133}, \varphi_{129}$
	104 = 103*		
	105	0	$405405_1 = \chi_{135}, \varphi_{130}$
	106 = 105*		
	107	0	$405405_3 = \chi_{136}, \varphi_{131}$
	108 = 107*		
	109	0	$432432_1 = \chi_{137}, \varphi_{132}$
	110 = 109*		
	111	0	$675675_2 = \chi_{141}, \varphi_{138}$
	112 = 111*		
	113	0	$675675_4 = \chi_{142}, \varphi_{139}$
	114 = 113*		
	115	0	$997920_1 = \chi_{146}, \varphi_{140}$
	116 = 115*		
	117	0	$1297296_3 = \chi_{148}, \varphi_{141}$
	118 = 117*		
	119 = $\overline{118}$	0	$1297296_5 = \chi_{149}, \varphi_{142}$
	120 = 119*		

	blocks	defect	matrix
	121	0	$1351350_1 = \chi_{150}, \varphi_{144}$
	122 = 121*		
	123	0	$1351350_3 = \chi_{151}, \varphi_{145}$
	124 = 123*		
	125	0	$1351350_5 = \chi_{152}, \varphi_{146}$
	126 = 125*		
	127	0	$1351350_7 = \chi_{153}, \varphi_{147}$
	128 = 127*		
	129	0	$1621620_1 = \chi_{154}, \varphi_{148}$
	130 = 129*		
	131	0	$1658475_1 = \chi_{155}, \varphi_{149}$
	132 = 131*		
	133 = $\overline{132}$	0	$1658475_3 = \chi_{156}, \varphi_{150}$
	134 = 133*		
	135	0	$1729728_1 = \chi_{157}, \varphi_{151}$
	136 = 135*		
	137	0	$1791153_2 = \chi_{158}, \varphi_{152}$
	138 = 137*		
	139	0	$1965600_1 = \chi_{161}, \varphi_{153}$
	140 = 139*		
	141	0	$1965600_3 = \chi_{162}, \varphi_{154}$
	142 = 141*		
6.G :	143	1	$7 \times 6$
	144 = 143*		
	145	1	$7 \times 6$
	146 = 145*		
	147	1	$7 \times 6$
	148 = 147*		
	149	0	$314496_1 = \chi_{176}, \varphi_{168}$
	150 = 149*		
	151	0	$314496_3 = \chi_{177}, \varphi_{169}$
	152 = 151*		
	153 = $\overline{152}$	0	$314496_5 = \chi_{178}, \varphi_{170}$
	154 = 153*		
	155 = $\overline{150}$	0	$314496_7 = \chi_{179}, \varphi_{171}$
	156 = 155*		
	157	0	$432432_3 = \chi_{182}, \varphi_{172}$
	158 = 157*		
	159	0	$432432_5 = \chi_{183}, \varphi_{173}$
	160 = 159*		

	blocks	defect	matrix
	161	0	$967680_1 = \chi_{184}, \varphi_{174}$
	162 = 161*		
	163	0	$967680_3 = \chi_{185}, \varphi_{175}$
	164 = 163*		
	165	0	$1729728_3 = \chi_{190}, \varphi_{180}$
	166 = 165*		
	167	0	$1729728_5 = \chi_{191}, \varphi_{181}$
	168 = 167*		
	169	0	$1796256_1 = \chi_{192}, \varphi_{182}$
	170 = 169*		
	171	0	$1796256_3 = \chi_{193}, \varphi_{183}$
	172 = 171*		
	173	0	$2594592_1 = \chi_{194}, \varphi_{186}$
	174 = 173*		

<b>Block 1:</b>	$\varphi_1$	$\varphi_2$	$\varphi_{21}$	$\varphi_{26}$	$\varphi_{37}$	$\varphi_{61}$
$1_1 = \chi_1$	1	.	.	.	.	.
$78_1 = \chi_2$	.	1	.	.	.	.
$114400_1 = \chi_{21}$	.	1	1	.	.	.
$289575_1 = \chi_{26}$	1	.	.	1	.	.
$577368_1 = \chi_{38}$	.	.	1	.	1	.
$2555904_1 = \chi_{63}$	.	.	.	1	.	1
$2729376_1 = \chi_{65}$	.	.	.	.	1	1

$$\begin{aligned}
\varphi_1 &= 1_1 \\
\varphi_2 &= 78_1 \\
\varphi_{21} &= 114322_1 \\
\varphi_{26} &= 289574_1 \\
\varphi_{37} &= 463046_1 \\
\varphi_{61} &= 2266330_1
\end{aligned}$$

<b>Block 2:</b>	$\varphi_3$	$\varphi_5$	$\varphi_{30}$	$\varphi_{40}$	$\varphi_{50}$	$\varphi_{54}$
$429_1 = \chi_3$	1	.	.	.	.	.
$1430_1 = \chi_5$	.	1	.	.	.	.
$360855_1 = \chi_{29}$	1	.	1	.	.	.
$579150_1 = \chi_{39}$	.	1	.	1	.	.
$1372800_1 = \chi_{55}$	.	.	1	.	.	1
$1441792_1 = \chi_{56}$	.	.	.	1	1	.
$1876446_1 = \chi_{58}$	.	.	.	.	1	1

$$\begin{aligned}
\varphi_3 &= 429_1 \\
\varphi_5 &= 1430_1 \\
\varphi_{30} &= 360426_1 \\
\varphi_{40} &= 577720_1 \\
\varphi_{50} &= 864072_1 \\
\varphi_{54} &= 1012374_1
\end{aligned}$$

<b>Block 6:</b>	$\varphi_8$	$\varphi_{25}$	$\varphi_{29}$	$\varphi_{38}$	$\varphi_{48}$	$\varphi_{58}$
$10725_1 = \chi_8$	1	.	.	.	.	.
$205920_1 = \chi_{25}$	.	1	.	.	.	.
$370656_1 = \chi_{30}$	1	.	1	.	.	.
$852930_1 = \chi_{48}$	.	.	1	1	.	.
$938223_1 = \chi_{49}$	.	1	.	.	1	.
$2316600_1 = \chi_{61}$	.	.	.	1	.	1
$2555904_2 = \chi_{64}$	.	.	.	.	1	1

$$\begin{aligned} \varphi_8 &= 10725_1 \\ \varphi_{25} &= 205920_1 \\ \varphi_{29} &= 359931_1 \\ \varphi_{38} &= 492999_1 \\ \varphi_{48} &= 732303_1 \\ \varphi_{58} &= 1823601_1 \end{aligned}$$

<b>Block 48:</b>	$\varphi_{63}$	$\varphi_{72}$	$\varphi_{75}$	$\varphi_{76}$	$\varphi_{81}$	$\varphi_{96}$
$352_1 = \chi_{66}$	1	.	.	.	.	.
$27456_1 = \chi_{75}$	.	1	.	.	.	.
$105600_1 = \chi_{78}$	.	.	1	.	.	.
$105600_2 = \chi_{79}$	.	.	.	1	.	.
$228800_1 = \chi_{84}$	1	.	.	.	1	.
$1029600_1 = \chi_{99}$	.	1	.	.	.	1
$1441792_2 = \chi_{104}$	.	.	1	1	1	1

$$\begin{aligned} \varphi_{63} &= 352_1 \\ \varphi_{72} &= 27456_1 \\ \varphi_{75} &= 105600_1 \\ \varphi_{76} &= 105600_2 \\ \varphi_{81} &= 228448_1 \\ \varphi_{96} &= 1002144_1 \end{aligned}$$

<b>Block 49:</b>	$\varphi_{64}$	$\varphi_{71}$	$\varphi_{79}$	$\varphi_{92}$	$\varphi_{95}$	$\varphi_{102}$
$2080_1 = \chi_{67}$	1	.	.	.	.	.
$13728_2 = \chi_{74}$	.	1	.	.	.	.
$146432_1 = \chi_{82}$	1	.	1	.	.	.
$686400_1 = \chi_{95}$	.	.	1	1	.	.
$915200_2 = \chi_{98}$	.	1	.	.	1	.
$2196480_1 = \chi_{107}$	.	.	.	1	.	1
$2555904_4 = \chi_{114}$	.	.	.	.	1	1

$$\begin{aligned} \varphi_{64} &= 2080_1 \\ \varphi_{71} &= 13728_2 \\ \varphi_{79} &= 144352_1 \\ \varphi_{92} &= 542048_1 \\ \varphi_{95} &= 901472_2 \\ \varphi_{102} &= 1654432_2 \end{aligned}$$

<b>Block 50:</b>	$\varphi_{65}$	$\varphi_{70}$	$\varphi_{80}$	$\varphi_{93}$	$\varphi_{94}$	$\varphi_{101}$
$2080_2 = \chi_{68}$	1	.	.	.	.	.
$13728_1 = \chi_{73}$	.	1	.	.	.	.
$146432_2 = \chi_{83}$	1	.	1	.	.	.
$686400_2 = \chi_{96}$	.	.	1	1	.	.
$915200_1 = \chi_{97}$	.	1	.	.	1	.
$2196480_2 = \chi_{108}$	.	.	.	1	.	1
$2555904_3 = \chi_{113}$	.	.	.	.	1	1

$$\begin{aligned} \varphi_{65} &= 2080_2 \\ \varphi_{70} &= 13728_1 \\ \varphi_{80} &= 144352_2 \\ \varphi_{93} &= 542048_2 \\ \varphi_{94} &= 901472_1 \\ \varphi_{101} &= 1654432_1 \end{aligned}$$

<b>Blocks 79, 80:</b>	$\varphi_{109}$	$\varphi_{110}$	$\varphi_{113}$	$\varphi_{125}$	$\varphi_{127}$	$\varphi_{135}$
$351_1 = \chi_{115}$	1	.	.	.	.	.
$7722_1 = \chi_{116}$	.	1	.	.	.	.
$19305_1 = \chi_{119}$	1	.	1	.	.	.
$289575_2 = \chi_{130}$	.	1	.	1	.	.
$386100_1 = \chi_{134}$	.	.	1	.	1	.
$852930_2 = \chi_{144}$	.	.	.	1	.	1
$938223_2 = \chi_{145}$	.	.	.	.	1	1

$$\begin{aligned} \varphi_{109} &= 351_1 \\ \varphi_{110} &= 7722_1 \\ \varphi_{113} &= 18954_1 \\ \varphi_{125} &= 281853_1 \\ \varphi_{127} &= 367146_1 \\ \varphi_{135} &= 571077_1 \end{aligned}$$

<b>Blocks 89, 90:</b>	$\varphi_{116}$	$\varphi_{122}$	$\varphi_{126}$	$\varphi_{136}$	$\varphi_{137}$	$\varphi_{155}$
$42120_1 = \chi_{122}$	1	.	.	.	.	.
$237600_1 = \chi_{129}$	1	1	.	.	.	.
$494208_1 = \chi_{138}$	.	1	1	.	.	.
$577368_2 = \chi_{139}$	.	.	.	1	.	.
$1235520_1 = \chi_{147}$	.	.	.	1	1	.
$2729376_2 = \chi_{163}$	.	.	1	.	.	1
$3088800_1 = \chi_{164}$	.	.	.	.	1	1

$$\begin{aligned} \varphi_{116} &= 42120_1 \\ \varphi_{122} &= 195480_1 \\ \varphi_{126} &= 298728_1 \\ \varphi_{136} &= 577368_1 \\ \varphi_{137} &= 658152_1 \\ \varphi_{155} &= 2430648_1 \end{aligned}$$

<b>Blocks 97, 98:</b>	$\varphi_{120}$	$\varphi_{121}$	$\varphi_{124}$	$\varphi_{133}$	$\varphi_{134}$	$\varphi_{143}$
$96525_1 = \chi_{126}$	1	.	.	.	.	.
$123552_1 = \chi_{127}$	.	1	.	.	.	.
$360855_2 = \chi_{131}$	.	1	1	.	.	.
$608256_1 = \chi_{140}$	1	.	.	1	.	.
$772200_1 = \chi_{143}$	.	.	1	.	1	.
$1853280_1 = \chi_{159}$	.	.	.	1	.	1
$1876446_2 = \chi_{160}$	.	.	.	.	1	1

$$\begin{aligned} \varphi_{120} &= 96525_1 \\ \varphi_{121} &= 123552_1 \\ \varphi_{124} &= 237303_1 \\ \varphi_{133} &= 511731_1 \\ \varphi_{134} &= 534897_1 \\ \varphi_{143} &= 1341549_1 \end{aligned}$$

<b>Blocks 143, 144:</b>	$\varphi_{156}$	$\varphi_{158}$	$\varphi_{163}$	$\varphi_{177}$	$\varphi_{178}$	$\varphi_{185}$
$1728_1 = \chi_{165}$	1	.	.	.	.	.
$61776_1 = \chi_{167}$	1	1	.	.	.	.
$71280_3 = \chi_{170}$	.	.	1	.	.	.
$1123200_3 = \chi_{187}$	.	.	1	1	.	.
$1235520_3 = \chi_{188}$	.	1	.	.	1	.
$2965248_3 = \chi_{196}$	.	.	.	1	.	1
$3088800_3 = \chi_{197}$	.	.	.	.	1	1

$$\begin{aligned} \varphi_{156} &= 1728_1 \\ \varphi_{158} &= 60048_1 \\ \varphi_{163} &= 71280_3 \\ \varphi_{177} &= 1051920_3 \\ \varphi_{178} &= 1175472_1 \\ \varphi_{185} &= 1913328_3 \end{aligned}$$

<b>Blocks 145, 146:</b>	$\varphi_{157}$	$\varphi_{159}$	$\varphi_{162}$	$\varphi_{176}$	$\varphi_{179}$	$\varphi_{184}$
$1728_3 = \chi_{166}$	1	.	.	.	.	.
$61776_3 = \chi_{168}$	1	1	.	.	.	.
$71280_1 = \chi_{169}$	.	.	1	.	.	.
$1123200_1 = \chi_{186}$	.	.	1	1	.	.
$1235520_5 = \chi_{189}$	.	1	.	.	1	.
$2965248_1 = \chi_{195}$	.	.	.	1	.	1
$3088800_5 = \chi_{198}$	.	.	.	.	1	1

$$\begin{aligned} \varphi_{157} &= 1728_3 \\ \varphi_{159} &= 60048_3 \\ \varphi_{162} &= 71280_1 \\ \varphi_{176} &= 1051920_1 \\ \varphi_{179} &= 1175472_3 \\ \varphi_{184} &= 1913328_1 \end{aligned}$$

<b>Blocks 147, 148:</b>	$\varphi_{160}$	$\varphi_{161}$	$\varphi_{164}$	$\varphi_{165}$	$\varphi_{166}$	$\varphi_{167}$
$112320_1 = \chi_{171}$	.	.	1	.	.	.
$112320_3 = \chi_{172}$	.	.	.	1	.	.
$123552_3 = \chi_{173}$	1	1	.	.	.	.
$308880_1 = \chi_{174}$	1	.	.	.	1	.
$308880_3 = \chi_{175}$	.	1	.	.	.	1
$359424_1 = \chi_{180}$	.	.	1	.	1	.
$359424_3 = \chi_{181}$	.	.	.	1	.	1

$$\begin{aligned} \varphi_{160} &= 61776_1 \\ \varphi_{161} &= 61776_3 \\ \varphi_{164} &= 112320_1 \\ \varphi_{165} &= 112320_3 \\ \varphi_{166} &= 247104_1 \\ \varphi_{167} &= 247104_3 \end{aligned}$$