

$F_{3+} \pmod{23}$ 

	blocks	defect	matrix
$G :$	1	1	$13 \times 11$
	2	0	$8671_1 = \chi_2, \varphi_2$
	3	0	$57477_1 = \chi_3, \varphi_3$
	4	0	$249458_1 = \chi_4, \varphi_4$
	5	0	$555611_1 = \chi_5, \varphi_5$
	6	0	$1666833_1 = \chi_8, \varphi_7$
	7	0	$4864431_1 = \chi_9, \varphi_8$
	8	0	$32715683_1 = \chi_{10}, \varphi_9$
	9	0	$40536925_1 = \chi_{12}, \varphi_{11}$
	10	0	$48893768_1 = \chi_{13}, \varphi_{12}$
	11	0	$74837400_1 = \chi_{14}, \varphi_{13}$
	$12 = \overline{II}$	0	$74837400_2 = \chi_{15}, \varphi_{14}$
	13	0	$79452373_1 = \chi_{16}, \varphi_{15}$
	14	0	$112168056_1 = \chi_{17}, \varphi_{16}$
	15	0	$159402880_1 = \chi_{18}, \varphi_{17}$
	16	0	$415098112_1 = \chi_{20}, \varphi_{19}$
	17	0	$635618984_1 = \chi_{21}, \varphi_{20}$
	18	0	$1069551175_1 = \chi_{22}, \varphi_{21}$
	19	0	$1112333222_1 = \chi_{23}, \varphi_{22}$
	20	0	$1264015025_1 = \chi_{24}, \varphi_{23}$
	21	0	$1337276304_1 = \chi_{25}, \varphi_{24}$
	22	0	$1540153692_1 = \chi_{26}, \varphi_{25}$
	23	0	$2346900864_1 = \chi_{27}, \varphi_{26}$
	24	0	$3178094920_1 = \chi_{28}, \varphi_{27}$
	25	0	$3208653525_1 = \chi_{29}, \varphi_{28}$
	26	0	$3283490925_1 = \chi_{30}, \varphi_{29}$
	27	0	$5005499499_1 = \chi_{31}, \varphi_{30}$
	28	0	$6471756928_1 = \chi_{33}, \varphi_{32}$
	29	0	$7150713570_1 = \chi_{34}, \varphi_{33}$
	30	0	$9100908180_1 = \chi_{36}, \varphi_{35}$
	31	0	$9441555200_1 = \chi_{37}, \varphi_{36}$
	32	0	$10169903744_1 = \chi_{38}, \varphi_{37}$
	33	0	$10776585600_1 = \chi_{39}, \varphi_{38}$
	34	0	$10776585600_2 = \chi_{40}, \varphi_{39}$
	35	0	$13904165275_1 = \chi_{41}, \varphi_{40}$
	36	0	$13904165275_2 = \chi_{42}, \varphi_{41}$
	37	0	$14507059905_1 = \chi_{43}, \varphi_{42}$
	38	0	$17068369920_1 = \chi_{44}, \varphi_{43}$
	39	0	$17161712568_1 = \chi_{45}, \varphi_{44}$
	40	0	$18481844304_1 = \chi_{46}, \varphi_{45}$

	blocks	defect	matrix
	41	0	18481844304 <sub>2</sub> = $\chi_{47}, \varphi_{46}$
	42	0	25027497495 <sub>1</sub> = $\chi_{48}, \varphi_{47}$
	43	0	27808330550 <sub>1</sub> = $\chi_{49}, \varphi_{48}$
	44	0	29444114700 <sub>1</sub> = $\chi_{50}, \varphi_{49}$
	45	0	35594663104 <sub>1</sub> = $\chi_{51}, \varphi_{50}$
	46	0	36858678129 <sub>1</sub> = $\chi_{52}, \varphi_{51}$
	47	0	37337059200 <sub>1</sub> = $\chi_{53}, \varphi_{52}$
	48	0	38641860608 <sub>1</sub> = $\chi_{54}, \varphi_{53}$
	49	0	40043995992 <sub>1</sub> = $\chi_{55}, \varphi_{54}$
	50	0	44493328880 <sub>1</sub> = $\chi_{56}, \varphi_{55}$
	51	0	45049495491 <sub>1</sub> = $\chi_{57}, \varphi_{56}$
	52	0	46602926370 <sub>1</sub> = $\chi_{58}, \varphi_{57}$
	53	0	54234085491 <sub>1</sub> = $\chi_{59}, \varphi_{59}$
	54	0	54481627200 <sub>1</sub> = $\chi_{60}, \varphi_{60}$
	55	0	54481627200 <sub>2</sub> = $\chi_{61}, \varphi_{61}$
	56	0	55616661100 <sub>1</sub> = $\chi_{62}, \varphi_{62}$
	57	0	63831063582 <sub>1</sub> = $\chi_{63}, \varphi_{63}$
	58	0	65393917952 <sub>1</sub> = $\chi_{64}, \varphi_{64}$
	59	0	65393917952 <sub>2</sub> = $\chi_{65}, \varphi_{65}$
	60	0	67331776512 <sub>1</sub> = $\chi_{66}, \varphi_{66}$
	61	0	71189326208 <sub>1</sub> = $\chi_{67}, \varphi_{68}$
	62	0	74887473024 <sub>1</sub> = $\chi_{68}, \varphi_{69}$
	63	0	77007684600 <sub>1</sub> = $\chi_{69}, \varphi_{70}$
	64	0	77007684600 <sub>2</sub> = $\chi_{70}, \varphi_{71}$
	65	0	77108871168 <sub>1</sub> = $\chi_{71}, \varphi_{72}$
	66	0	102385217025 <sub>1</sub> = $\chi_{73}, \varphi_{74}$
	67	0	111233322200 <sub>1</sub> = $\chi_{74}, \varphi_{75}$
	68	0	111233322200 <sub>2</sub> = $\chi_{75}, \varphi_{76}$
	69	0	118588933386 <sub>1</sub> = $\chi_{76}, \varphi_{77}$
	70	0	132390354096 <sub>1</sub> = $\chi_{77}, \varphi_{79}$
	71	0	132390354096 <sub>2</sub> = $\chi_{78}, \varphi_{80}$
	72	0	140095612800 <sub>1</sub> = $\chi_{80}, \varphi_{81}$
	73	0	140095612800 <sub>2</sub> = $\chi_{81}, \varphi_{82}$
	74	0	142169187069 <sub>1</sub> = $\chi_{82}, \varphi_{83}$
	75	0	142378652416 <sub>1</sub> = $\chi_{83}, \varphi_{84}$
	76	0	145650089984 <sub>1</sub> = $\chi_{84}, \varphi_{85}$
	77	0	150201655296 <sub>1</sub> = $\chi_{85}, \varphi_{86}$
	78	0	151397207325 <sub>1</sub> = $\chi_{86}, \varphi_{87}$
	79	0	151397207325 <sub>2</sub> = $\chi_{87}, \varphi_{88}$
	80	0	156321775827 <sub>1</sub> = $\chi_{88}, \varphi_{89}$

	blocks	defect	matrix
	81	0	$156321775827_2 = \chi_{89}, \varphi_{90}$
	82	0	$160313753600_1 = \chi_{90}, \varphi_{91}$
	83	0	$164572397352_1 = \chi_{91}, \varphi_{92}$
	84	0	$164572397352_2 = \chi_{92}, \varphi_{93}$
	85	0	$169598100672_1 = \chi_{93}, \varphi_{94}$
	86	0	$184117100544_1 = \chi_{95}, \varphi_{95}$
	87	0	$190685695200_1 = \chi_{96}, \varphi_{96}$
	88	0	$200219979960_1 = \chi_{99}, \varphi_{98}$
	89	0	$200219979960_2 = \chi_{100}, \varphi_{99}$
	90	0	$205353825600_1 = \chi_{101}, \varphi_{100}$
	91	0	$205353825600_2 = \chi_{102}, \varphi_{101}$
	92	0	$205940550816_1 = \chi_{103}, \varphi_{102}$
	93	0	$222758961152_1 = \chi_{104}, \varphi_{103}$
	94	0	$225247477455_1 = \chi_{105}, \varphi_{104}$
	95	0	$250274974950_1 = \chi_{106}, \varphi_{105}$
	96	0	$336033532800_1 = \chi_{108}, \varphi_{106}$
3.G :	97	1	$13 \times 11$
	98 = 97*		
	99	0	$64584_1 = \chi_{110}, \varphi_{108}$
	100 = 99*		
	101	0	$306153_1 = \chi_{111}, \varphi_{109}$
	102 = 101*		
	103	0	$306153_3 = \chi_{112}, \varphi_{110}$
	104 = 103*		
	105	0	$6724809_1 = \chi_{113}, \varphi_{111}$
	106 = 105*		
	107	0	$25356672_1 = \chi_{115}, \varphi_{113}$
	108 = 107*		
	109	0	$43779879_1 = \chi_{116}, \varphi_{114}$
	110 = 109*		
	111	0	$195019461_1 = \chi_{117}, \varphi_{115}$
	112 = 111*		
	113	0	$195019461_3 = \chi_{118}, \varphi_{116}$
	114 = 113*		
	115	0	$203843871_1 = \chi_{119}, \varphi_{117}$
	116 = 115*		
	117	0	$216154575_1 = \chi_{120}, \varphi_{118}$
	118 = 117*		
	119 = $\overline{118}$	0	$216154575_3 = \chi_{121}, \varphi_{119}$
	120 = 119*		

	blocks	defect	matrix
	121	0	$330032934_1 = \chi_{122}, \varphi_{120}$
	122 = 121*		
	123	0	$1050717096_1 = \chi_{123}, \varphi_{121}$
	124 = 123*		
	125	0	$1349587008_1 = \chi_{128}, \varphi_{125}$
	126 = 125*		
	127 = $\overline{126}$	0	$1349587008_3 = \chi_{129}, \varphi_{126}$
	128 = 127*		
	129	0	$1553430879_1 = \chi_{130}, \varphi_{127}$
	130 = 129*		
	131	0	$1818548820_1 = \chi_{131}, \varphi_{128}$
	132 = 131*		
	133	0	$2400239520_1 = \chi_{132}, \varphi_{129}$
	134 = 133*		
	135	0	$2801912256_1 = \chi_{133}, \varphi_{130}$
	136 = 135*		
	137	0	$4290428142_1 = \chi_{135}, \varphi_{132}$
	138 = 137*		
	139	0	$4416617205_1 = \chi_{136}, \varphi_{133}$
	140 = 139*		
	141	0	$4620461076_1 = \chi_{137}, \varphi_{134}$
	142 = 141*		
	143	0	$8250621525_1 = \chi_{138}, \varphi_{135}$
	144 = 143*		
	145	0	$8250621525_3 = \chi_{139}, \varphi_{136}$
	146 = 145*		
	147	0	$9456453864_1 = \chi_{142}, \varphi_{139}$
	148 = 147*		
	149	0	$10726070355_1 = \chi_{143}, \varphi_{140}$
	150 = 149*		
	151	0	$12258366120_1 = \chi_{144}, \varphi_{141}$
	152 = 151*		
	153	0	$14507059905_2 = \chi_{145}, \varphi_{142}$
	154 = 153*		
	155	0	$15016498497_1 = \chi_{146}, \varphi_{143}$
	156 = 155*		
	157	0	$21014341920_1 = \chi_{147}, \varphi_{144}$
	158 = 157*		
	159	0	$21096751104_1 = \chi_{148}, \varphi_{145}$
	160 = 159*		

	blocks	defect	matrix
	161	0	$21122107776_1 = \chi_{149}, \varphi_{146}$
	$162 = 161^*$		
	163	0	$21842179632_1 = \chi_{150}, \varphi_{147}$
	$164 = 163^*$		
	165	0	$34128405675_1 = \chi_{151}, \varphi_{148}$
	$166 = 165^*$		
	167	0	$34128405675_3 = \chi_{152}, \varphi_{149}$
	$168 = 167^*$		
	169	0	$63831063582_2 = \chi_{154}, \varphi_{151}$
	$170 = 169^*$		
	171	0	$80256172032_1 = \chi_{156}, \varphi_{153}$
	$172 = 171^*$		
	173	0	$80256172032_3 = \chi_{157}, \varphi_{154}$
	$174 = 173^*$		
	175	0	$84057367680_1 = \chi_{158}, \varphi_{155}$
	$176 = 175^*$		
	177	0	$103562058600_1 = \chi_{159}, \varphi_{157}$
	$178 = 177^*$		
	179	0	$115511526900_1 = \chi_{160}, \varphi_{158}$
	$180 = 179^*$		
	181	0	$120131987976_1 = \chi_{161}, \varphi_{159}$
	$182 = 181^*$		
	183	0	$135605256192_1 = \chi_{162}, \varphi_{160}$
	$184 = 183^*$		
	185	0	$135605256192_3 = \chi_{163}, \varphi_{161}$
	$186 = 185^*$		
	187	0	$142169187069_2 = \chi_{164}, \varphi_{162}$
	$188 = 187^*$		
	189	0	$150164984970_1 = \chi_{165}, \varphi_{163}$
	$190 = 189^*$		
	191	0	$151397207325_3 = \chi_{166}, \varphi_{164}$
	$192 = 191^*$		
	$193 = \overline{192}$	0	$151397207325_5 = \chi_{167}, \varphi_{165}$
	$194 = 193^*$		
	195	0	$154455413112_1 = \chi_{168}, \varphi_{166}$
	$196 = 195^*$		
	197	0	$185161334400_1 = \chi_{171}, \varphi_{167}$
	$198 = 197^*$		
	199	0	$203775436800_1 = \chi_{172}, \varphi_{168}$
	$200 = 199^*$		

	blocks	defect	matrix
	201	0	$210555861318_1 = \chi_{173}, \varphi_{169}$
	202 = 201*		
	203	0	$215861428224_1 = \chi_{174}, \varphi_{170}$
	204 = 203*		
	205	0	$256966819200_1 = \chi_{175}, \varphi_{171}$
	206 = 205*		
	207	0	$259900935525_1 = \chi_{176}, \varphi_{172}$
	208 = 207*		
	209	0	$274587401088_1 = \chi_{177}, \varphi_{173}$
	210 = 209*		
	211	0	$274910709213_1 = \chi_{178}, \varphi_{174}$
	212 = 211*		
	213	0	$295709508864_1 = \chi_{179}, \varphi_{175}$
	214 = 213*		
	215	0	$358644768768_1 = \chi_{180}, \varphi_{176}$
	216 = 215*		
	217	0	$375412462425_1 = \chi_{181}, \varphi_{177}$
	218 = 217*		
	219	0	$405445459419_1 = \chi_{182}, \varphi_{178}$
	220 = 219*		

<b>Block 1:</b>	$\varphi_1$	$\varphi_6$	$\varphi_{10}$	$\varphi_{18}$	$\varphi_{31}$	$\varphi_{34}$	$\varphi_{58}$	$\varphi_{67}$	$\varphi_{73}$	$\varphi_{78}$	$\varphi_{97}$
$1_1 = \chi_1$	1	.	.	.	.	.	.	.	.	.	.
$1603525_1 = \chi_6$	.	1	.	.	.	.	.	.	.	.	.
$1603525_2 = \chi_7$	.	1	.	.	.	.	.	.	.	.	.
$35873145_1 = \chi_{11}$	1	.	1	.	.	.	.	.	.	.	.
$281380736_1 = \chi_{19}$	.	1	.	1	.	.	.	.	.	.	.
$5775278080_1 = \chi_{32}$	.	.	.	1	1	.	.	.	.	.	.
$8529641472_1 = \chi_{35}$	.	.	1	.	.	1	.	.	.	.	.
$77379702400_1 = \chi_{72}$	.	.	.	.	.	1	.	1	.	.	.
$139317477376_1 = \chi_{79}$	.	.	.	.	.	.	1	.	1	.	.
$178514751987_1 = \chi_{94}$	.	.	.	.	.	.	1	.	.	1	.
$197813862400_1 = \chi_{97}$	.	.	.	.	.	.	.	1	.	1	.
$197813862400_2 = \chi_{98}$	.	.	.	.	1	.	.	.	.	.	1
$282049015248_1 = \chi_{107}$	.	.	.	.	.	.	.	.	1	.	1

$$\begin{aligned}
\varphi_1 &= 1_1 & \varphi_{58} &= 49586823659_1 \\
\varphi_6 &= 1603525_1 & \varphi_{67} &= 68885934072_1 \\
\varphi_{10} &= 35873144_1 & \varphi_{73} &= 89730653717_1 \\
\varphi_{18} &= 279777211_1 & \varphi_{78} &= 128927928328_1 \\
\varphi_{31} &= 5495500869_1 & \varphi_{97} &= 192318361531_1 \\
\varphi_{34} &= 8493768328_1 & &
\end{aligned}$$

<b>Blocks 97, 98:</b>	$\varphi_{107}$	$\varphi_{112}$	$\varphi_{122}$	$\varphi_{123}$	$\varphi_{124}$	$\varphi_{131}$	$\varphi_{137}$	$\varphi_{138}$	$\varphi_{150}$
$783_1 = \chi_{109}$	1	.	.	.	.	.	.	.	.
$19034730_1 = \chi_{114}$	1	1	.	.	.	.	.	.	.
$1152161010_1 = \chi_{124}$	.	.	1	.	.	.	.	.	.
$1152161010_3 = \chi_{125}$	.	.	.	1	.	.	.	.	.
$1255560075_1 = \chi_{126}$	.	.	.	.	1	.	.	.	.
$1255560075_3 = \chi_{127}$	.	.	.	.	1	.	.	.	.
$3264456195_1 = \chi_{134}$	.	1	.	.	.	1	.	.	.
$8993909925_1 = \chi_{140}$	.	.	.	.	.	.	1	.	.
$8993909925_3 = \chi_{141}$	.	.	.	.	.	.	.	1	.
$41785039296_1 = \chi_{153}$	.	.	.	.	.	1	.	.	1
$78346948680_1 = \chi_{155}$	.	.	.	.	1	.	.	.	.
$160255122300_1 = \chi_{169}$	.	.	1	1	.	.	1	1	1
$178514751987_2 = \chi_{170}$	.	.	.	.	.	.	.	.	.

<b>(Blocks 97, 98:)</b>	$\varphi_{152}$	$\varphi_{156}$	
$783_1 = \chi_{109}$	.	.	$\varphi_{107} = 783_1$
$19034730_1 = \chi_{114}$	.	.	$\varphi_{112} = 19033947_1$
$1152161010_1 = \chi_{124}$	.	.	$\varphi_{122} = 1152161010_1$
$1152161010_3 = \chi_{125}$	.	.	$\varphi_{123} = 1152161010_3$
$1255560075_1 = \chi_{126}$	.	.	$\varphi_{124} = 1255560075_1$
$1255560075_3 = \chi_{127}$	.	.	$\varphi_{131} = 3245422248_1$
$3264456195_1 = \chi_{134}$	.	.	$\varphi_{137} = 8993909925_1$
$8993909925_1 = \chi_{140}$	.	.	$\varphi_{138} = 8993909925_3$
$8993909925_3 = \chi_{141}$	.	.	$\varphi_{150} = 38539617048_1$
$41785039296_1 = \chi_{153}$	.	.	$\varphi_{152} = 77091388605_1$
$78346948680_1 = \chi_{155}$	1	.	$\varphi_{156} = 101423363382_1$
$160255122300_1 = \chi_{169}$	.	1	
$178514751987_2 = \chi_{170}$	1	1	