

$$F_4(2) \pmod{13}$$

	blocks	defect	matrix
$G :$	1	1	13×12
	2	0	$1105_1 = \chi_3, \varphi_3$
	3	0	$1105_2 = \chi_4, \varphi_4$
	4	0	$1326_1 = \chi_5, \varphi_5$
	5	0	$21658_1 = \chi_7, \varphi_7$
	6	0	$22932_1 = \chi_8, \varphi_8$
	7	0	$23205_1 = \chi_9, \varphi_9$
	8	0	$23205_2 = \chi_{10}, \varphi_{10}$
	9	0	$44200_1 = \chi_{11}, \varphi_{11}$
	10	0	$44200_2 = \chi_{12}, \varphi_{12}$
	11	0	$63700_1 = \chi_{13}, \varphi_{13}$
	12	0	$99450_1 = \chi_{14}, \varphi_{14}$
	13	0	$99450_2 = \chi_{15}, \varphi_{15}$
	14	0	$162435_1 = \chi_{18}, \varphi_{18}$
	15	0	$162435_2 = \chi_{19}, \varphi_{19}$
	16	0	$216580_1 = \chi_{22}, \varphi_{22}$
	17	0	$216580_2 = \chi_{23}, \varphi_{23}$
	18	0	$270725_1 = \chi_{26}, \varphi_{26}$
	19	0	$322218_1 = \chi_{27}, \varphi_{27}$
	20	0	$348075_1 = \chi_{28}, \varphi_{28}$
	21	0	$348075_2 = \chi_{29}, \varphi_{29}$
	22	0	$358020_1 = \chi_{30}, \varphi_{30}$
	23	0	$358020_2 = \chi_{31}, \varphi_{31}$
	24	0	$519792_1 = \chi_{32}, \varphi_{32}$
	25	0	$541450_1 = \chi_{33}, \varphi_{33}$
	26	0	$541450_2 = \chi_{34}, \varphi_{34}$
	27	0	$541450_3 = \chi_{35}, \varphi_{35}$
	28	0	$541450_4 = \chi_{36}, \varphi_{36}$
	29	0	$584766_1 = \chi_{37}, \varphi_{37}$
	30	0	$626535_1 = \chi_{38}, \varphi_{38}$
	31	0	$626535_2 = \chi_{39}, \varphi_{39}$
	32	0	$812175_1 = \chi_{40}, \varphi_{40}$
	33	0	$812175_2 = \chi_{41}, \varphi_{41}$
	34	0	$877149_1 = \chi_{42}, \varphi_{42}$
	35	0	$877149_2 = \chi_{43}, \varphi_{43}$
	36	0	$947700_1 = \chi_{44}, \varphi_{44}$
	37	0	$1082900_1 = \chi_{45}, \varphi_{45}$
	38	0	$1299480_1 = \chi_{46}, \varphi_{46}$
	39	0	$1299480_2 = \chi_{47}, \varphi_{47}$
	40	0	$1342575_1 = \chi_{48}, \varphi_{48}$

	blocks	defect	matrix
	41	0	$1342575_2 = \chi_{49}, \varphi_{49}$
	42	0	$1949220_1 = \chi_{50}, \varphi_{50}$
	43	0	$1949220_2 = \chi_{51}, \varphi_{51}$
	44	0	$2165800_1 = \chi_{52}, \varphi_{52}$
	45	0	$2165800_2 = \chi_{53}, \varphi_{53}$
	46	0	$2784600_1 = \chi_{54}, \varphi_{54}$
	47	0	$2784600_2 = \chi_{55}, \varphi_{55}$
	48	0	$2828800_1 = \chi_{56}, \varphi_{56}$
	49	0	$2828800_2 = \chi_{57}, \varphi_{57}$
	50	0	$3898440_1 = \chi_{59}, \varphi_{59}$
	51	0	$3898440_2 = \chi_{60}, \varphi_{60}$
	52	0	$4331600_1 = \chi_{61}, \varphi_{61}$
	53	0	$4331600_2 = \chi_{62}, \varphi_{62}$
	54	0	$4385745_1 = \chi_{63}, \varphi_{63}$
	55	0	$4385745_2 = \chi_{64}, \varphi_{64}$
	56	0	$4385745_3 = \chi_{65}, \varphi_{65}$
	57	0	$4385745_4 = \chi_{66}, \varphi_{66}$
	58	0	$4526080_1 = \chi_{67}, \varphi_{67}$
	59	0	$4526080_2 = \chi_{68}, \varphi_{68}$
	60	0	$5012280_1 = \chi_{69}, \varphi_{69}$
	61	0	$5012280_2 = \chi_{70}, \varphi_{70}$
	62	0	$5870592_1 = \chi_{72}, \varphi_{72}$
	63	0	$6497400_1 = \chi_{73}, \varphi_{73}$
	64	0	$6497400_2 = \chi_{74}, \varphi_{74}$
	65	0	$7309575_1 = \chi_{75}, \varphi_{75}$
	66	0	$7309575_2 = \chi_{76}, \varphi_{76}$
	67	0	$7894341_1 = \chi_{77}, \varphi_{77}$
	68	0	$8055450_1 = \chi_{78}, \varphi_{78}$
	69	0	$8055450_2 = \chi_{79}, \varphi_{79}$
	70	0	$8771490_1 = \chi_{80}, \varphi_{80}$
	71	0	$8771490_2 = \chi_{81}, \varphi_{81}$
	72	0	$9398025_1 = \chi_{82}, \varphi_{82}$
	73	0	$9398025_2 = \chi_{83}, \varphi_{83}$
	74	0	$10740600_1 = \chi_{84}, \varphi_{84}$
	75	0	$10740600_2 = \chi_{85}, \varphi_{85}$
	76	0	$11609325_1 = \chi_{86}, \varphi_{87}$
	77	0	$11609325_2 = \chi_{87}, \varphi_{88}$
	78	0	$11880960_1 = \chi_{88}, \varphi_{89}$
	79	0	$11880960_2 = \chi_{89}, \varphi_{90}$
	80	0	$14034384_1 = \chi_{90}, \varphi_{91}$

	blocks	defect	matrix
	81	0	$14619150_1 = \chi_{91}, \varphi_{92}$
	82	0	$14619150_2 = \chi_{92}, \varphi_{93}$
	83	0	$17326400_1 = \chi_{95}, \varphi_{94}$
2.G :	84	0	$52_1 = \chi_{96}, \varphi_{95}$
	85	1	13×12
	86	0	$12376_1 = \chi_{99}, \varphi_{98}$
	87	0	$12376_2 = \chi_{100}, \varphi_{99}$
	88	0	$22100_1 = \chi_{101}, \varphi_{100}$
	89	0	$43316_1 = \chi_{102}, \varphi_{101}$
	90	0	$46800_1 = \chi_{103}, \varphi_{102}$
	91	0	$424320_1 = \chi_{106}, \varphi_{105}$
	92	0	$424320_2 = \chi_{107}, \varphi_{106}$
	93	0	$433160_1 = \chi_{108}, \varphi_{107}$
	94	0	$433160_2 = \chi_{109}, \varphi_{108}$
	95	0	$565760_1 = \chi_{110}, \varphi_{109}$
	96	0	$572832_1 = \chi_{111}, \varphi_{110}$
	97	0	$572832_2 = \chi_{112}, \varphi_{111}$
	98	0	$716040_1 = \chi_{113}, \varphi_{112}$
	99	0	$716040_2 = \chi_{114}, \varphi_{113}$
	100	0	$1082900_2 = \chi_{115}, \varphi_{114}$
	101	0	$1082900_3 = \chi_{116}, \varphi_{115}$
	102	0	$1082900_4 = \chi_{117}, \varphi_{116}$
	103	0	$1146600_1 = \chi_{118}, \varphi_{117}$
	104	0	$1299480_3 = \chi_{121}, \varphi_{120}$
	105	0	$1299480_4 = \chi_{122}, \varphi_{121}$
	106	0	$1503684_1 = \chi_{123}, \varphi_{122}$
	107	0	$1503684_2 = \chi_{124}, \varphi_{123}$
	108	0	$1591200_1 = \chi_{125}, \varphi_{124}$
	109	0	$1591200_2 = \chi_{126}, \varphi_{125}$
	110	0	$1949220_3 = \chi_{127}, \varphi_{126}$
	111	0	$1949220_4 = \chi_{128}, \varphi_{127}$
	112	0	$2165800_3 = \chi_{129}, \varphi_{128}$
	113	0	$2772224_1 = \chi_{130}, \varphi_{133}$
	114	0	$2772224_2 = \chi_{131}, \varphi_{134}$
	115	0	$2784600_3 = \chi_{132}, \varphi_{135}$
	116	0	$2784600_4 = \chi_{133}, \varphi_{136}$
	117	0	$4950400_1 = \chi_{138}, \varphi_{137}$
	118	0	$4950400_2 = \chi_{139}, \varphi_{138}$
	119	0	$5012280_3 = \chi_{140}, \varphi_{139}$
	120	0	$5012280_4 = \chi_{141}, \varphi_{140}$

	blocks	defect	matrix
	121	0	$5370300_1 = \chi_{142}, \varphi_{141}$
	122	0	$5370300_2 = \chi_{143}, \varphi_{142}$
	123	0	$5728320_1 = \chi_{144}, \varphi_{143}$
	124	0	$5728320_2 = \chi_{145}, \varphi_{144}$
	125	0	$6497400_3 = \chi_{146}, \varphi_{145}$
	126	0	$6497400_4 = \chi_{147}, \varphi_{146}$
	127	0	$6873984_1 = \chi_{148}, \varphi_{147}$
	128	0	$6873984_2 = \chi_{149}, \varphi_{148}$
	129	0	$6930560_1 = \chi_{150}, \varphi_{149}$
	130	0	$6930560_2 = \chi_{151}, \varphi_{150}$
	131	0	$7017192_1 = \chi_{152}, \varphi_{151}$
	132	0	$7017192_2 = \chi_{153}, \varphi_{152}$
	133	0	$7429968_1 = \chi_{154}, \varphi_{153}$
	134	0	$8663200_1 = \chi_{155}, \varphi_{156}$
	135	0	$8663200_2 = \chi_{156}, \varphi_{157}$
	136	0	$9052160_1 = \chi_{157}, \varphi_{158}$
	137	0	$9547200_1 = \chi_{158}, \varphi_{159}$
	138	0	$11456640_1 = \chi_{161}, \varphi_{160}$
	139	0	$11456640_2 = \chi_{162}, \varphi_{161}$
	140	0	$12475008_1 = \chi_{163}, \varphi_{162}$
	141	0	$12475008_2 = \chi_{164}, \varphi_{163}$
	142	0	$13861120_1 = \chi_{165}, \varphi_{164}$
	143	0	$13861120_2 = \chi_{166}, \varphi_{165}$
	144	0	$15163200_1 = \chi_{167}, \varphi_{166}$
	145	0	$15163200_2 = \chi_{168}, \varphi_{167}$
	146	0	$16307200_1 = \chi_{169}, \varphi_{168}$

[illegible]

$$\begin{array}{ll} \varphi_1 &= 1_1 & \varphi_{21} &= 183600_2 \\ \varphi_2 &= 833_1 & \varphi_{24} &= 248524_1 \\ \varphi_6 &= 1376_1 & \varphi_{25} &= 269059_1 \\ \varphi_{16} &= 142884_1 & \varphi_{58} &= 3142909_1 \\ \varphi_{17} &= 142884_2 & \varphi_{71} &= 5391668_1 \\ \varphi_{20} &= 183600_1 & \varphi_{86} &= 11385548_1 \end{array}$$

[illegible]

(Block 85:)	φ_{155}
$2380_1 = \chi_{97}$	.
$2380_2 = \chi_{98}$	.
$55080_1 = \chi_{104}$	.
$55080_2 = \chi_{105}$	.
$1233792_1 = \chi_{119}$	.
$1233792_2 = \chi_{120}$	.
$3572100_1 = \chi_{134}$	.
$3572100_2 = \chi_{135}$	.
$4798080_1 = \chi_{136}$	.
$4798080_2 = \chi_{137}$	.
$10795680_1 = \chi_{159}$	.
$10795680_2 = \chi_{160}$	1
$16777216_2 = \chi_{170}$	1

$$\begin{aligned}
\varphi_{96} &= 2380_1 \\
\varphi_{97} &= 2380_2 \\
\varphi_{103} &= 52700_1 \\
\varphi_{104} &= 52700_2 \\
\varphi_{118} &= 1181092_1 \\
\varphi_{119} &= 1181092_2 \\
\varphi_{129} &= 2391008_1 \\
\varphi_{130} &= 2391008_2 \\
\varphi_{131} &= 2407072_1 \\
\varphi_{132} &= 2407072_2 \\
\varphi_{154} &= 8388608_1 \\
\varphi_{155} &= 8388608_2
\end{aligned}$$