

$$F_4(2) \pmod{5}$$

	blocks	defect	matrix
$G :$	1	2	20×16
	2	1	5×4
	3	1	5×4
	4	1	5×4
	5	1	5×4
	6	0	$44200_1 = \chi_{11}, \varphi_{11}$
	7	0	$44200_2 = \chi_{12}, \varphi_{12}$
	8	0	$63700_1 = \chi_{13}, \varphi_{13}$
	9	0	$99450_1 = \chi_{14}, \varphi_{14}$
	10	0	$99450_2 = \chi_{15}, \varphi_{15}$
	11	1	5×4
	12	1	5×4
	13	0	$183600_1 = \chi_{20}, \varphi_{20}$
	$14 = \overline{13}$	0	$183600_2 = \chi_{21}, \varphi_{21}$
	15	0	$249900_1 = \chi_{24}, \varphi_{24}$
	16	0	$270725_1 = \chi_{26}, \varphi_{26}$
	17	0	$348075_1 = \chi_{28}, \varphi_{28}$
	18	0	$348075_2 = \chi_{29}, \varphi_{29}$
	19	0	$541450_1 = \chi_{33}, \varphi_{33}$
	20	0	$541450_2 = \chi_{34}, \varphi_{34}$
	21	0	$541450_3 = \chi_{35}, \varphi_{35}$
	22	0	$541450_4 = \chi_{36}, \varphi_{36}$
	23	0	$812175_1 = \chi_{40}, \varphi_{40}$
	24	0	$812175_2 = \chi_{41}, \varphi_{41}$
	25	0	$947700_1 = \chi_{44}, \varphi_{43}$
	26	0	$1082900_1 = \chi_{45}, \varphi_{44}$
	27	0	$1342575_1 = \chi_{48}, \varphi_{47}$
	28	0	$1342575_2 = \chi_{49}, \varphi_{48}$
	29	0	$2165800_1 = \chi_{52}, \varphi_{51}$
	30	0	$2165800_2 = \chi_{53}, \varphi_{52}$
	31	0	$2784600_1 = \chi_{54}, \varphi_{53}$
	32	0	$2784600_2 = \chi_{55}, \varphi_{54}$
	33	0	$2828800_1 = \chi_{56}, \varphi_{55}$
	34	0	$2828800_2 = \chi_{57}, \varphi_{56}$
	35	0	$4331600_1 = \chi_{61}, \varphi_{65}$
	36	0	$4331600_2 = \chi_{62}, \varphi_{66}$
	37	0	$6497400_1 = \chi_{73}, \varphi_{67}$
	38	0	$6497400_2 = \chi_{74}, \varphi_{68}$
	39	0	$7309575_1 = \chi_{75}, \varphi_{69}$
	40	0	$7309575_2 = \chi_{76}, \varphi_{70}$

	blocks	defect	matrix
	41	0	$8055450_1 = \chi_{78}, \varphi_{71}$
	42	0	$8055450_2 = \chi_{79}, \varphi_{72}$
	43	0	$9398025_1 = \chi_{82}, \varphi_{76}$
	44	0	$9398025_2 = \chi_{83}, \varphi_{77}$
	45	0	$10740600_1 = \chi_{84}, \varphi_{78}$
	46	0	$10740600_2 = \chi_{85}, \varphi_{79}$
	47	0	$11609325_1 = \chi_{86}, \varphi_{80}$
	48	0	$11609325_2 = \chi_{87}, \varphi_{81}$
	49	0	$14619150_1 = \chi_{91}, \varphi_{82}$
	50	0	$14619150_2 = \chi_{92}, \varphi_{83}$
	51	0	$15181425_1 = \chi_{93}, \varphi_{84}$
	52	0	$17326400_1 = \chi_{95}, \varphi_{85}$
2.G :	53	2	20×16
	54	1	5×4
	55	1	5×4
	56	0	$22100_1 = \chi_{101}, \varphi_{91}$
	57	0	$46800_1 = \chi_{103}, \varphi_{93}$
	58	1	5×4
	59	1	5×4
	60	1	5×4
	61	0	$1082900_2 = \chi_{115}, \varphi_{108}$
	62	0	$1082900_3 = \chi_{116}, \varphi_{109}$
	63	0	$1082900_4 = \chi_{117}, \varphi_{110}$
	64	0	$1146600_1 = \chi_{118}, \varphi_{111}$
	65	0	$1591200_1 = \chi_{125}, \varphi_{116}$
	66	0	$1591200_2 = \chi_{126}, \varphi_{117}$
	67	0	$2165800_3 = \chi_{129}, \varphi_{120}$
	68	0	$2784600_3 = \chi_{132}, \varphi_{122}$
	69	0	$2784600_4 = \chi_{133}, \varphi_{123}$
	70	0	$3572100_1 = \chi_{134}, \varphi_{124}$
	71	0	$3572100_2 = \chi_{135}, \varphi_{125}$
	72	0	$4950400_1 = \chi_{138}, \varphi_{132}$
	73	0	$4950400_2 = \chi_{139}, \varphi_{133}$
	74	0	$5370300_1 = \chi_{142}, \varphi_{136}$
	75	0	$5370300_2 = \chi_{143}, \varphi_{137}$
	76	0	$6497400_3 = \chi_{146}, \varphi_{139}$
	77	0	$6497400_4 = \chi_{147}, \varphi_{140}$
	78	1	5×4
	79	0	$8663200_1 = \chi_{155}, \varphi_{143}$
	80	0	$8663200_2 = \chi_{156}, \varphi_{144}$

	blocks	defect	matrix
	81	0	$9547200_1 = \chi_{158}, \varphi_{147}$
	82	0	$15163200_1 = \chi_{167}, \varphi_{148}$
	83	0	$15163200_2 = \chi_{168}, \varphi_{149}$
	84	0	$16307200_1 = \chi_{169}, \varphi_{150}$

Block 1:	φ_1	φ_2	φ_5	φ_6	φ_7	φ_8	φ_{16}	φ_{17}	φ_{25}	φ_{27}	φ_{32}	φ_{37}	φ_{42}	φ_{57}
$1_1 = \chi_1$	1	.	.	.	.	.	.	.	.	.	.	.	.	.
$833_1 = \chi_2$	.	1	.	.	.	.	.	.	.	.	.	.	.	.
$1326_1 = \chi_5$	.	.	1	.	.	.	.	.	.	.	.	.	.	.
$1377_1 = \chi_6$	.	.	.	1	.	.	.	.	.	.	.	.	.	.
$21658_1 = \chi_7$	.	.	.	.	.	1	.	.	.	.	.	.	.	.
$22932_1 = \chi_8$	1	.	.	1	1	.	.	.	.	.	.	.	.	.
$142884_1 = \chi_{16}$	.	.	.	.	.	.	1	.	.	.	.	.	.	.
$142884_2 = \chi_{17}$	.	.	.	.	.	.	.	1	.	.	.	.	.	.
$269892_1 = \chi_{25}$	.	1	.	.	.	.	.	.	1	.	.	.	.	.
$322218_1 = \chi_{27}$	.	.	.	.	1	.	.	.	.	1	.	.	.	.
$519792_1 = \chi_{32}$	1	.	.	.	1	.	.	.	.	.	1	.	.	.
$584766_1 = \chi_{37}$	.	.	.	1	1	.	.	.	.	.	.	1	.	.
$877149_1 = \chi_{42}$	.	.	1	.	.	.	.	.	.	.	.	.	1	.
$877149_2 = \chi_{43}$	.	.	.	.	.	1	1	1	1	1	.	.	.	.
$3411968_1 = \chi_{58}$	.	.	.	.	.	1	1	1	1	.	.	.	.	1
$5640192_1 = \chi_{71}$	.	.	.	.	.	.	.	.	.	.	.	1	1	.
$5870592_1 = \chi_{72}$	.	.	.	.	1	.	1	1	.	1	1	1	.	.
$7894341_1 = \chi_{77}$	.	1	.	.	.	.	1	1	1	1	.	.	.	1
$14034384_1 = \chi_{90}$	.	1	.	.	.	.	.	.	.	.	.	.	1	.
$16777216_1 = \chi_{94}$	.	.	.	.	.	.	1	1	.	.	1	.	.	1

(Block 1:)	φ_{64}	φ_{75}		
$1_1 = \chi_1$	.	.		
$833_1 = \chi_2$	.	.	$\varphi_1 =$	1_1
$1326_1 = \chi_5$	.	.	$\varphi_2 =$	833_1
$1377_1 = \chi_6$	.	.	$\varphi_5 =$	1326_1
$21658_1 = \chi_7$	.	.	$\varphi_6 =$	1377_1
$22932_1 = \chi_8$	.	.	$\varphi_7 =$	21554_1
$142884_1 = \chi_{16}$	.	.	$\varphi_8 =$	21658_1
$142884_2 = \chi_{17}$	.	.	$\varphi_{16} =$	142884_1
$269892_1 = \chi_{25}$	.	.	$\varphi_{17} =$	142884_2
$322218_1 = \chi_{27}$	.	.	$\varphi_{25} =$	269059_1
$519792_1 = \chi_{32}$	.	.	$\varphi_{27} =$	300664_1
$584766_1 = \chi_{37}$	.	.	$\varphi_{32} =$	498237_1
$877149_1 = \chi_{42}$	.	.	$\varphi_{37} =$	561835_1
$877149_2 = \chi_{43}$	.	.	$\varphi_{42} =$	875823_1
$3411968_1 = \chi_{58}$	.	.	$\varphi_{57} =$	2835483_1
$5640192_1 = \chi_{71}$	1	.	$\varphi_{64} =$	4202534_1
$5870592_1 = \chi_{72}$	1	.	$\varphi_{75} =$	8955194_1
$7894341_1 = \chi_{77}$	1	.		
$14034384_1 = \chi_{90}$	1	1		
$16777216_1 = \chi_{94}$	1	1		

Block 2:	φ_3	φ_{22}	φ_{30}	φ_{62}		
$1105_1 = \chi_3$	1	.	.	.	$\varphi_3 =$	1105_1
$216580_2 = \chi_{23}$	.	1	.	.	$\varphi_{22} =$	216580_1
$358020_1 = \chi_{30}$	1	.	1	.	$\varphi_{30} =$	356915_1
$4385745_3 = \chi_{65}$	.	1	.	1	$\varphi_{62} =$	4169165_1
$4526080_1 = \chi_{67}$	.	.	1	1		

Block 3:	φ_4	φ_{23}	φ_{31}	φ_{63}		
$1105_2 = \chi_4$	1	.	.	.	$\varphi_4 =$	1105_2
$216580_1 = \chi_{22}$	.	1	.	.	$\varphi_{23} =$	216580_2
$358020_2 = \chi_{31}$	1	.	1	.	$\varphi_{31} =$	356915_2
$4385745_4 = \chi_{66}$	.	1	.	1	$\varphi_{63} =$	4169165_2
$4526080_2 = \chi_{68}$	.	.	1	1		

Block 4:	φ_9	φ_{45}	φ_{49}	φ_{58}
$23205_1 = \chi_9$	1	.	.	.
$1299480_2 = \chi_{47}$	.	1	.	.
$1949220_1 = \chi_{50}$	1	.	1	.
$4385745_2 = \chi_{64}$	.	1	.	1
$5012280_1 = \chi_{69}$	.	.	1	1

$$\begin{aligned}
\varphi_9 &= 23205_1 \\
\varphi_{45} &= 1299480_1 \\
\varphi_{49} &= 1926015_1 \\
\varphi_{58} &= 3086265_1
\end{aligned}$$

Block 5:	φ_{10}	φ_{46}	φ_{50}	φ_{59}
$23205_2 = \chi_{10}$	1	.	.	.
$1299480_1 = \chi_{46}$	.	1	.	.
$1949220_2 = \chi_{51}$	1	.	1	.
$4385745_1 = \chi_{63}$	.	1	.	1
$5012280_2 = \chi_{70}$	.	.	1	1

$$\begin{aligned}
\varphi_{10} &= 23205_2 \\
\varphi_{46} &= 1299480_2 \\
\varphi_{50} &= 1926015_2 \\
\varphi_{59} &= 3086265_2
\end{aligned}$$

Block 11:	φ_{18}	φ_{38}	φ_{60}	φ_{73}
$162435_1 = \chi_{18}$	1	.	.	.
$626535_2 = \chi_{39}$	.	1	.	.
$3898440_2 = \chi_{60}$	.	1	1	.
$8771490_1 = \chi_{80}$	1	.	.	1
$11880960_1 = \chi_{88}$	.	.	1	1

$$\begin{aligned}
\varphi_{18} &= 162435_1 \\
\varphi_{38} &= 626535_1 \\
\varphi_{60} &= 3271905_1 \\
\varphi_{73} &= 8609055_1
\end{aligned}$$

Block 12:	φ_{19}	φ_{39}	φ_{61}	φ_{74}
$162435_2 = \chi_{19}$	1	.	.	.
$626535_1 = \chi_{38}$	.	1	.	.
$3898440_1 = \chi_{59}$	.	1	1	.
$8771490_2 = \chi_{81}$	1	.	.	1
$11880960_2 = \chi_{89}$	.	.	1	1

$$\begin{aligned}
\varphi_{19} &= 162435_2 \\
\varphi_{39} &= 626535_2 \\
\varphi_{61} &= 3271905_2 \\
\varphi_{74} &= 8609055_2
\end{aligned}$$

[illegible]

(Block 53:)	φ_{115}	φ_{121}	φ_{126}	φ_{127}	φ_{138}	
$52_1 = \chi_{96}$	.	.	.	.	.	
$12376_1 = \chi_{99}$	.	.	.	.	.	$\varphi_{86} = 52_1$
$12376_2 = \chi_{100}$	.	.	.	.	.	$\varphi_{89} = 12376_1$
$43316_1 = \chi_{102}$	.	.	.	.	.	$\varphi_{90} = 12376_2$
$572832_1 = \chi_{111}$	.	.	.	.	.	$\varphi_{92} = 43316_1$
$572832_2 = \chi_{112}$	.	.	.	.	.	$\varphi_{102} = 560404_1$
$1233792_1 = \chi_{119}$	.	.	.	.	.	$\varphi_{103} = 560404_2$
$1233792_2 = \chi_{120}$	.	.	.	.	.	$\varphi_{104} = 650844_1$
$1503684_1 = \chi_{123}$	.	.	.	.	.	$\varphi_{105} = 650844_2$
$1503684_2 = \chi_{124}$	1	.	.	.	.	$\varphi_{106} = 661012_1$
$2772224_1 = \chi_{130}$	.	.	.	.	.	$\varphi_{107} = 661012_2$
$2772224_2 = \chi_{131}$	1	.	.	.	.	$\varphi_{114} = 1460368_1$
$6873984_1 = \chi_{148}$	.	.	1	.	.	$\varphi_{115} = 1460368_2$
$6873984_2 = \chi_{149}$	1	.	.	1	.	$\varphi_{121} = 2264536_1$
$7017192_1 = \chi_{152}$	.	1	1	.	.	$\varphi_{126} = 4192200_1$
$7017192_2 = \chi_{153}$	.	1	.	1	.	$\varphi_{127} = 4192200_2$
$7429968_1 = \chi_{154}$	.	.	.	.	1	$\varphi_{138} = 6128280_1$
$12475008_1 = \chi_{163}$	.	.	1	.	1	
$12475008_2 = \chi_{164}$	1	.	.	1	1	
$16777216_2 = \chi_{170}$	.	1	1	1	1	

Block 54:	φ_{87}	φ_{118}	φ_{134}	φ_{145}	
$2380_1 = \chi_{97}$	1	.	.	.	$\varphi_{87} = 2380_1$
$1949220_3 = \chi_{127}$	1	1	.	.	$\varphi_{118} = 1946840_1$
$5012280_4 = \chi_{141}$	.	.	1	.	$\varphi_{134} = 5012280_1$
$10795680_1 = \chi_{159}$	.	1	.	1	$\varphi_{145} = 8848840_1$
$13861120_2 = \chi_{166}$	.	.	1	1	

Block 55:	φ_{88}	φ_{119}	φ_{135}	φ_{146}	
$2380_2 = \chi_{98}$	1	.	.	.	$\varphi_{88} = 2380_2$
$1949220_4 = \chi_{128}$	1	1	.	.	$\varphi_{119} = 1946840_2$
$5012280_3 = \chi_{140}$	.	.	1	.	$\varphi_{135} = 5012280_2$
$10795680_2 = \chi_{160}$	.	1	.	1	$\varphi_{146} = 8848840_2$
$13861120_1 = \chi_{165}$	.	.	1	1	

Block 58:	φ_{94}	φ_{98}	φ_{112}	φ_{128}	
$55080_1 = \chi_{104}$	1	.	.	.	$\varphi_{94} = 55080_1$
$424320_1 = \chi_{106}$	1	1	.	.	$\varphi_{98} = 369240_1$
$1299480_4 = \chi_{122}$	.	.	1	.	$\varphi_{112} = 1299480_3$
$4798080_1 = \chi_{136}$	.	1	.	1	$\varphi_{128} = 4428840_1$
$5728320_1 = \chi_{144}$	.	.	1	1	

Block 59:	φ_{95}	φ_{99}	φ_{113}	φ_{129}	
$55080_2 = \chi_{105}$	1	.	.	.	$\varphi_{95} = 55080_2$
$424320_2 = \chi_{107}$	1	1	.	.	$\varphi_{99} = 369240_2$
$1299480_3 = \chi_{121}$	.	.	1	.	$\varphi_{113} = 1299480_4$
$4798080_2 = \chi_{137}$	.	1	.	1	$\varphi_{129} = 4428840_2$
$5728320_2 = \chi_{145}$	.	.	1	1	

Block 60:	φ_{96}	φ_{97}	φ_{100}	φ_{101}	
$433160_1 = \chi_{108}$	.	.	1	.	$\varphi_{96} = 282880_1$
$433160_2 = \chi_{109}$	.	.	.	1	$\varphi_{97} = 282880_2$
$565760_1 = \chi_{110}$	1	1	.	.	$\varphi_{100} = 433160_1$
$716040_1 = \chi_{113}$	1	.	1	.	$\varphi_{101} = 433160_2$
$716040_2 = \chi_{114}$	.	1	.	1	

Block 78:	φ_{130}	φ_{131}	φ_{141}	φ_{142}	
$6930560_1 = \chi_{150}$	.	.	1	.	$\varphi_{130} = 4526080_1$
$6930560_2 = \chi_{151}$	.	.	.	1	$\varphi_{131} = 4526080_2$
$9052160_1 = \chi_{157}$	1	1	.	.	$\varphi_{141} = 6930560_1$
$11456640_1 = \chi_{161}$	1	.	1	.	$\varphi_{142} = 6930560_2$
$11456640_2 = \chi_{162}$	.	1	.	1	