

$O_7(3) \pmod{5}$

	blocks	defect	matrix
$G :$	1	1	5×4
	2	1	5×4
	3	1	5×4
	4	0	$105_1 = \chi_4, \varphi_4$
	5	1	5×4
	6	0	$195_1 = \chi_7, \varphi_7$
	7	0	$260_1 = \chi_8, \varphi_8$
	8	0	$260_2 = \chi_9, \varphi_9$
	9	1	5×4
	10	0	$910_1 = \chi_{13}, \varphi_{13}$
	11	0	$910_2 = \chi_{14}, \varphi_{14}$
	12	0	$1365_1 = \chi_{16}, \varphi_{16}$
	13	0	$1365_2 = \chi_{17}, \varphi_{17}$
	14	0	$1560_1 = \chi_{18}, \varphi_{18}$
	$15 = \overline{14}$	0	$1560_2 = \chi_{19}, \varphi_{19}$
	16	0	$1820_1 = \chi_{21}, \varphi_{21}$
	17	0	$2730_1 = \chi_{25}, \varphi_{25}$
	18	0	$2730_2 = \chi_{26}, \varphi_{26}$
	19	0	$2835_1 = \chi_{27}, \varphi_{27}$
	20	0	$4095_1 = \chi_{28}, \varphi_{29}$
	21	0	$4095_2 = \chi_{29}, \varphi_{30}$
	22	0	$5265_1 = \chi_{32}, \varphi_{32}$
	23	0	$5460_1 = \chi_{33}, \varphi_{34}$
	24	0	$5460_2 = \chi_{34}, \varphi_{35}$
	25	0	$5460_3 = \chi_{35}, \varphi_{36}$
	26	0	$7020_1 = \chi_{39}, \varphi_{38}$
	27	0	$7020_2 = \chi_{40}, \varphi_{39}$
	28	0	$7280_1 = \chi_{41}, \varphi_{40}$
	29	0	$7280_2 = \chi_{42}, \varphi_{41}$
	30	0	$7280_3 = \chi_{43}, \varphi_{42}$
	31	0	$8190_1 = \chi_{45}, \varphi_{43}$
	32	0	$8190_2 = \chi_{46}, \varphi_{44}$
	33	0	$16380_1 = \chi_{49}, \varphi_{47}$
	34	0	$16640_1 = \chi_{50}, \varphi_{48}$
	35	0	$16640_2 = \chi_{51}, \varphi_{49}$
	36	0	$17920_1 = \chi_{54}, \varphi_{51}$
	37	0	$17920_2 = \chi_{55}, \varphi_{52}$
	38	0	$21840_1 = \chi_{57}, \varphi_{53}$
$2.G :$	39	0	$520_1 = \chi_{59}, \varphi_{54}$
	40	0	$560_1 = \chi_{60}, \varphi_{55}$

	blocks	defect	matrix
	41	0	$560_2 = \chi_{61}, \varphi_{56}$
	42	1	4×2
	43	1	5×4
	44	0	$3120_1 = \chi_{65}, \varphi_{60}$
	45	0	$3640_1 = \chi_{66}, \varphi_{61}$
	46	0	$6720_1 = \chi_{67}, \varphi_{62}$
	47	0	$6720_2 = \chi_{68}, \varphi_{63}$
	48	0	$7280_4 = \chi_{69}, \varphi_{64}$
	49	0	$7280_5 = \chi_{70}, \varphi_{65}$
	50	0	$7280_6 = \chi_{71}, \varphi_{66}$
	51	0	$7280_7 = \chi_{72}, \varphi_{67}$
	52	0	$10920_1 = \chi_{73}, \varphi_{68}$
	53	0	$14040_1 = \chi_{79}, \varphi_{72}$
	54	0	$15120_1 = \chi_{80}, \varphi_{73}$
	55	0	$15120_2 = \chi_{81}, \varphi_{74}$
	56	0	$16640_3 = \chi_{82}, \varphi_{75}$
	57	0	$16640_4 = \chi_{83}, \varphi_{76}$
	58	0	$17920_3 = \chi_{84}, \varphi_{77}$
	59	0	$17920_4 = \chi_{85}, \varphi_{78}$
	60	0	$21840_2 = \chi_{86}, \varphi_{79}$
	61	0	$21840_3 = \chi_{87}, \varphi_{80}$
3.G :	62	1	5×4
	63 = 62*		
	64	1	5×4
	65 = 64*		
	66	1	5×4
	67 = 66*		
	68	1	5×4
	69 = 68*		
	70	1	5×4
	71 = 70*		
	72	0	$5265_2 = \chi_{102}, \varphi_{93}$
	73 = 72*		
	74	0	$7020_3 = \chi_{103}, \varphi_{95}$
	75 = 74*		
	76	0	$7560_1 = \chi_{106}, \varphi_{98}$
	77 = 76*		
	78	0	$7560_3 = \chi_{107}, \varphi_{99}$
	79 = 78*		
	80	0	$12285_1 = \chi_{110}, \varphi_{101}$

	blocks	defect	matrix
	81 = 80*		
	82	0	$12285_3 = \chi_{111}, \varphi_{102}$
	83 = 82*		
	84	0	$12285_5 = \chi_{112}, \varphi_{103}$
	85 = 84*		
	86	0	$12285_7 = \chi_{113}, \varphi_{104}$
	87 = 86*		
	88	0	$12285_9 = \chi_{114}, \varphi_{105}$
	89 = 88*		
6.G :	90	1	4×2
	91 = 90*		
	92	1	5×4
	93 = 92*		
	94	0	$14040_2 = \chi_{126}, \varphi_{115}$
	95 = 94*		
	96	0	$15120_3 = \chi_{127}, \varphi_{116}$
	97 = 96*		
	98	0	$29160_1 = \chi_{134}, \varphi_{118}$
	99 = 98*		

Block 1:	φ_1	φ_{12}	φ_{23}	φ_{28}	
$1_1 = \chi_1$	1	.	.	.	$\varphi_1 = 1_1$
$819_1 = \chi_{12}$	1	1	.	.	$\varphi_{12} = 818_1$
$2106_1 = \chi_{22}$	.	.	1	.	$\varphi_{23} = 2106_1$
$4536_1 = \chi_{31}$	.	1	.	1	$\varphi_{28} = 3718_1$
$5824_2 = \chi_{37}$	.	.	1	1	

Block 2:	φ_2	φ_5	φ_{24}	φ_{50}	
$78_1 = \chi_2$	1	.	.	.	$\varphi_2 = 78_1$
$168_1 = \chi_5$	.	1	.	.	$\varphi_5 = 168_1$
$2457_1 = \chi_{24}$	.	1	1	.	$\varphi_{24} = 2289_1$
$17472_1 = \chi_{52}$	1	.	.	1	$\varphi_{50} = 17394_1$
$19683_1 = \chi_{56}$	.	.	1	1	

Block 3:	φ_3	φ_{11}	φ_{22}	φ_{33}
$91_1 = \chi_3$	1	.	.	.
$546_1 = \chi_{11}$	.	1	.	.
$2184_1 = \chi_{23}$	1	.	1	.
$5824_1 = \chi_{36}$	.	1	.	1
$7371_1 = \chi_{44}$	.	.	1	1

$$\begin{aligned}
\varphi_3 &= 91_1 \\
\varphi_{11} &= 546_1 \\
\varphi_{22} &= 2093_1 \\
\varphi_{33} &= 5278_1
\end{aligned}$$

Block 5:	φ_6	φ_{15}	φ_{31}	φ_{45}
$182_1 = \chi_6$	1	.	.	.
$1092_1 = \chi_{15}$	.	1	.	.
$4368_1 = \chi_{30}$	1	.	1	.
$11648_1 = \chi_{47}$	.	1	.	1
$14742_1 = \chi_{48}$	.	.	1	1

$$\begin{aligned}
\varphi_6 &= 182_1 \\
\varphi_{15} &= 1092_1 \\
\varphi_{31} &= 4186_1 \\
\varphi_{45} &= 10556_1
\end{aligned}$$

Block 9:	φ_{10}	φ_{20}	φ_{37}	φ_{46}
$273_1 = \chi_{10}$	1	.	.	.
$1638_1 = \chi_{20}$	.	1	.	.
$6552_1 = \chi_{38}$	1	.	1	.
$17472_2 = \chi_{53}$	.	1	.	1
$22113_1 = \chi_{58}$	.	.	1	1

$$\begin{aligned}
\varphi_{10} &= 273_1 \\
\varphi_{20} &= 1638_1 \\
\varphi_{37} &= 6279_1 \\
\varphi_{46} &= 15834_1
\end{aligned}$$

Block 42:	φ_{57}	φ_{69}
$1456_1 = \chi_{62}$	1	.
$11648_2 = \chi_{74}$	.	1
$11648_3 = \chi_{75}$	.	1
$13104_1 = \chi_{76}$	1	1

$$\begin{aligned}
\varphi_{57} &= 1456_1 \\
\varphi_{69} &= 11648_1
\end{aligned}$$

Block 43:	φ_{58}	φ_{59}	φ_{70}	φ_{71}
$1456_2 = \chi_{63}$	1	.	.	.
$1456_3 = \chi_{64}$	.	1	.	.
$13104_2 = \chi_{77}$	1	.	1	.
$13104_3 = \chi_{78}$	.	1	.	1
$23296_1 = \chi_{88}$	.	.	1	1

$$\begin{aligned}
\varphi_{58} &= 1456_2 \\
\varphi_{59} &= 1456_3 \\
\varphi_{70} &= 11648_2 \\
\varphi_{71} &= 11648_3
\end{aligned}$$

Blocks 62, 63:	φ_{81}	φ_{89}	φ_{100}	φ_{107}
$27_1 = \chi_{89}$	1	.	.	.
$2457_2 = \chi_{95}$	.	1	.	.
$9828_1 = \chi_{109}$	1	.	1	.
$16848_1 = \chi_{116}$	.	1	.	1
$24192_1 = \chi_{122}$	.	.	1	1

$$\begin{aligned}
\varphi_{81} &= 27_1 \\
\varphi_{89} &= 2457_1 \\
\varphi_{100} &= 9801_1 \\
\varphi_{107} &= 14391_1
\end{aligned}$$

Blocks 64, 65:	φ_{82}	φ_{91}	φ_{97}	φ_{108}
$351_1 = \chi_{90}$	1	.	.	.
$4914_1 = \chi_{100}$	1	1	.	.
$7371_4 = \chi_{105}$	.	.	1	.
$19656_3 = \chi_{118}$	.	1	.	1
$22464_1 = \chi_{120}$	.	.	1	1

$$\begin{aligned}
\varphi_{82} &= 351_1 \\
\varphi_{91} &= 4563_1 \\
\varphi_{97} &= 7371_3 \\
\varphi_{108} &= 15093_1
\end{aligned}$$

Blocks 66, 67:	φ_{83}	φ_{92}	φ_{96}	φ_{109}
$351_3 = \chi_{91}$	1	.	.	.
$4914_3 = \chi_{101}$	1	1	.	.
$7371_2 = \chi_{104}$	.	.	1	.
$19656_1 = \chi_{117}$	.	1	.	1
$22464_3 = \chi_{121}$	.	.	1	1

$$\begin{aligned}
\varphi_{83} &= 351_3 \\
\varphi_{92} &= 4563_3 \\
\varphi_{96} &= 7371_1 \\
\varphi_{109} &= 15093_3
\end{aligned}$$

Blocks 68, 69:	φ_{84}	φ_{85}	φ_{86}	φ_{88}
$378_1 = \chi_{92}$	1	.	.	.
$1728_1 = \chi_{93}$	.	.	1	.
$2457_4 = \chi_{96}$	1	.	.	1
$2457_6 = \chi_{97}$	.	1	1	.
$2808_1 = \chi_{98}$	.	1	.	1

$$\begin{aligned}
\varphi_{84} &= 378_1 \\
\varphi_{85} &= 729_1 \\
\varphi_{86} &= 1728_1 \\
\varphi_{88} &= 2079_1
\end{aligned}$$

Blocks 70, 71:	φ_{87}	φ_{90}	φ_{94}	φ_{106}
$1728_3 = \chi_{94}$	1	.	.	.
$2808_3 = \chi_{99}$	.	1	.	.
$9477_1 = \chi_{108}$	.	1	1	.
$14742_2 = \chi_{115}$	1	.	.	1
$19683_2 = \chi_{119}$	.	.	1	1

$$\begin{aligned}
\varphi_{87} &= 1728_3 \\
\varphi_{90} &= 2808_1 \\
\varphi_{94} &= 6669_1 \\
\varphi_{106} &= 13014_1
\end{aligned}$$

Blocks 90, 91:	φ_{110}	φ_{117}		
$4536_2 = \chi_{123}$	1	.	φ_{110}	= 4536_1
$19656_5 = \chi_{128}$	.	1	φ_{117}	= 19656_1
$24192_3 = \chi_{132}$	1	1		
$24192_5 = \chi_{133}$	1	1		

Blocks 92, 93:	φ_{111}	φ_{112}	φ_{113}	φ_{114}		
$12096_1 = \chi_{124}$	.	.	1	.	φ_{111}	= 10368_1
$12096_3 = \chi_{125}$	.	.	.	1	φ_{112}	= 10368_3
$20736_1 = \chi_{129}$	1	1	.	.	φ_{113}	= 12096_1
$22464_5 = \chi_{130}$	1	.	1	.	φ_{114}	= 12096_3
$22464_7 = \chi_{131}$	.	1	.	1		