

$A_{15.2} \pmod{7}$

	blocks	defect	matrix
$G :$	1	2	35×27
	2	1	7×6
	3	1	7×6
	4	1	7×6
	5	1	7×6
	6	1	7×6
	7	1	7×6
	8	1	7×6
	9	1	7×6
	10	1	7×6
	11	1	7×6
	12	1	7×6
	13	1	7×6
	14	1	7×6
	15	1	7×6
	16	0	$7007_1 = \chi_{22,0}, \varphi_{25,0}$
	17	0	$7007_2 = \chi_{22,1}, \varphi_{25,1}$
	18	1	7×6
	19	0	$12740_1 = \chi_{31,0}, \varphi_{34,0}$
	20	0	$12740_2 = \chi_{31,1}, \varphi_{34,1}$
	21	0	$26950_1 = \chi_{41,0}, \varphi_{46,0}$
	22	0	$26950_2 = \chi_{41,1}, \varphi_{46,1}$
	23	0	$28028_1 = \chi_{43,0}, \varphi_{47,0}$
	24	0	$28028_2 = \chi_{43,1}, \varphi_{47,1}$
	25	0	$34398_1 = \chi_{46,0}, \varphi_{49,0}$
	26	0	$34398_2 = \chi_{46,1}, \varphi_{49,1}$

	blocks	defect	matrix
	27	0	$35035_1 = \chi_{47,0}, \varphi_{50,0}$
	28	0	$35035_2 = \chi_{47,1}, \varphi_{50,1}$
	29	0	$42042_1 = \chi_{49,0}, \varphi_{51,0}$
	30	0	$42042_2 = \chi_{49,1}, \varphi_{51,1}$
	31	0	$42042_3 = \chi_{50,0}, \varphi_{52,0}$
	32	0	$42042_4 = \chi_{50,1}, \varphi_{52,1}$
	33	0	$43120_1 = \chi_{51,0}, \varphi_{53,0}$
	34	0	$43120_2 = \chi_{51,1}, \varphi_{53,1}$
	35	0	$57330_1 = \chi_{59,0}, \varphi_{62,0}$
	36	0	$57330_2 = \chi_{59,1}, \varphi_{62,1}$
	37	0	$63700_1 = \chi_{62,0}, \varphi_{64,0}$
	38	0	$63700_2 = \chi_{62,1}, \varphi_{64,1}$
	39	0	$70070_1 = \chi_{63,0}, \varphi_{66,0}$
	40	0	$70070_2 = \chi_{63,1}, \varphi_{66,1}$
	41	0	$112112_1 = \chi_{77,0}, \varphi_{75,0}$
	42	0	$112112_2 = \chi_{77,1}, \varphi_{75,1}$
	43	0	$112112_3 = \chi_{78,0}, \varphi_{76,1}$
	44	0	$112112_4 = \chi_{78,1}, \varphi_{76,0}$
	45	0	$126126_1 = \chi_{81,0}, \varphi_{77,0}$
	46	0	$126126_2 = \chi_{81,1}, \varphi_{77,1}$
	47	0	$159250_1 = \chi_{87,0}, \varphi_{79,0}$
	48	0	$159250_2 = \chi_{87,1}, \varphi_{79,1}$
	49	0	$175175_1 = \chi_{89,0}, \varphi_{80,0}$
	50	0	$175175_2 = \chi_{89,1}, \varphi_{80,1}$
	51	0	$210210_1 = \chi_{91,0}, \varphi_{81,0}$
	52	0	$210210_2 = \chi_{91,1}, \varphi_{81,1}$

(Block 1:)	$\varphi_{24,0}$	$\varphi_{24,1}$	φ_{20+}	$\varphi_{27,0}$	$\varphi_{27,1}$	$\varphi_{30,0}$	$\varphi_{30,1}$	$\varphi_{32,0}$	$\varphi_{32,1}$	$\varphi_{40,0}$
$1_1 = \chi_{1,0}$
$1_2 = \chi_{1,1}$
$90_1 = \chi_{3,0}$
$90_2 = \chi_{3,1}$
$715_1 = \chi_{7,0}$
$715_2 = \chi_{7,1}$
$1430_1 = \chi_{10,0}$
$1430_2 = \chi_{10,1}$
$2925_1 = \chi_{18,0}$
$2925_2 = \chi_{18,1}$
$3432_1 = \chi_{12+}$
$7722_1 = \chi_{23,0}$	1	.	.	.	.	.	.	.	.	.
$7722_2 = \chi_{23,1}$.	1	.	.	.	.	.	.	.	.
$11583_1 = \chi_{28,0}$	1	.	.	.	.
$11583_2 = \chi_{28,1}$	1	.	.	.
$14300_1 = \chi_{33,0}$	1	.	.	1	.	.	.	.	.	.
$14300_2 = \chi_{33,1}$.	1	.	.	1	.	.	.	.	.
$19305_1 = \chi_{34,0}$.	.	1	1	.	.	.	.	.	.
$19305_2 = \chi_{34,1}$.	.	1	.	1	.	.	.	.	.
$21450_1 = \chi_{35,0}$	1	.	1	.	.
$21450_2 = \chi_{35,1}$	1	.	1	.
$35100_1 = \chi_{48,0}$	1	.	.	.	1
$35100_2 = \chi_{48,1}$	1	.	.	.
$44550_1 = \chi_{52,0}$	1	.	1	1	.	.	.	.	.	.
$44550_2 = \chi_{52,1}$.	1	1	.	1	.	.	.	.	.
$53625_1 = \chi_{57,0}$	1	.	.	.	.	.	.	.	.	1
$53625_2 = \chi_{57,1}$.	1	.	.	.	.	.	.	.	.
$96525_1 = \chi_{72,0}$	1	.
$96525_2 = \chi_{72,1}$	1	.	.
$128700_1 = \chi_{82,0}$	1	.	1	.	1
$128700_2 = \chi_{82,1}$	1	.	1	.
$156000_1 = \chi_{66+}$.	.	1	.	.	.	.	.	.	.
$231660_1 = \chi_{93,0}$	1
$231660_2 = \chi_{93,1}$
$292864_1 = \chi_{84+}$	1	1	.

(Block 1:)	$\varphi_{40,1}$	$\varphi_{41,0}$	$\varphi_{41,1}$	$\varphi_{71,0}$	$\varphi_{71,1}$	φ_{58+}		
$1_1 = \chi_{1,0}$		
$1_2 = \chi_{1,1}$		
$90_1 = \chi_{3,0}$		
$90_2 = \chi_{3,1}$	$\varphi_{1,0} = 1_1$	
$715_1 = \chi_{7,0}$	$\varphi_{1,1} = 1_2$	
$715_2 = \chi_{7,1}$	$\varphi_{3,0} = 89_1$	
$1430_1 = \chi_{10,0}$	$\varphi_{3,1} = 89_2$	
$1430_2 = \chi_{10,1}$	$\varphi_{7,0} = 626_1$	
$2925_1 = \chi_{18,0}$	$\varphi_{7,1} = 626_2$	
$2925_2 = \chi_{18,1}$	$\varphi_{11,0} = 1341_1$	
$3432_1 = \chi_{12+}$	$\varphi_{11,1} = 1341_2$	
$7722_1 = \chi_{23,0}$	$\varphi_{17,0} = 2299_1$	
$7722_2 = \chi_{23,1}$	$\varphi_{17,1} = 2299_2$	
$11583_1 = \chi_{28,0}$	$\varphi_{13+} = 3432_1$	
$11583_2 = \chi_{28,1}$	$\varphi_{24,0} = 5423_1$	
$14300_1 = \chi_{33,0}$	$\varphi_{24,1} = 5423_2$	
$14300_2 = \chi_{33,1}$	$\varphi_{20+} = 6996_1$	
$19305_1 = \chi_{34,0}$	$\varphi_{27,0} = 8877_1$	
$19305_2 = \chi_{34,1}$	$\varphi_{27,1} = 8877_2$	
$21450_1 = \chi_{35,0}$	$\varphi_{30,0} = 9526_1$	
$21450_2 = \chi_{35,1}$	$\varphi_{30,1} = 9526_2$	
$35100_1 = \chi_{48,0}$	$\varphi_{32,0} = 11923_1$	
$35100_2 = \chi_{48,1}$	1	.	.	.	.	.	$\varphi_{32,1} = 11923_2$	
$44550_1 = \chi_{52,0}$.	1	.	.	.	.	$\varphi_{40,0} = 22649_1$	
$44550_2 = \chi_{52,1}$.	.	1	.	.	.	$\varphi_{40,1} = 22649_2$	
$53625_1 = \chi_{57,0}$.	1	.	.	.	.	$\varphi_{41,0} = 23254_1$	
$53625_2 = \chi_{57,1}$	1	.	1	.	.	.	$\varphi_{41,1} = 23254_2$	
$96525_1 = \chi_{72,0}$.	.	.	1	.	.	$\varphi_{71,0} = 83261_1$	
$96525_2 = \chi_{72,1}$	1	.	$\varphi_{71,1} = 83261_2$	
$128700_1 = \chi_{82,0}$.	.	.	1	.	.	$\varphi_{58+} = 102496_1$	
$128700_2 = \chi_{82,1}$	1	.	.	.	1	.		
$156000_1 = \chi_{66+}$.	1	1	.	.	1		
$231660_1 = \chi_{93,0}$.	1	.	1	.	1		
$231660_2 = \chi_{93,1}$	1	.	1	.	1	1		
$292864_1 = \chi_{84+}$.	.	.	1	1	1		

Block 2:	$\varphi_{2,0}$	$\varphi_{19,1}$	$\varphi_{44,0}$	$\varphi_{57,1}$	$\varphi_{70,0}$	$\varphi_{73,0}$
$14_1 = \chi_{2,0}$	1	.	.	.	.	.
$3003_2 = \chi_{19,1}$	.	1	.	.	.	.
$25025_3 = \chi_{39,0}$	1	.	1	.	.	.
$51975_2 = \chi_{56,1}$	.	1	.	1	.	.
$108108_1 = \chi_{76,0}$	.	.	1	.	1	.
$150150_1 = \chi_{86,0}$	.	.	.	1	.	1
$184275_1 = \chi_{90,0}$	.	.	.	.	1	1

$$\begin{aligned} \varphi_{2,0} &= 14_1 \\ \varphi_{19,1} &= 3003_2 \\ \varphi_{44,0} &= 25011_1 \\ \varphi_{57,1} &= 48972_2 \\ \varphi_{70,0} &= 83097_1 \\ \varphi_{73,0} &= 101178_1 \end{aligned}$$

Block 3:	$\varphi_{2,1}$	$\varphi_{19,0}$	$\varphi_{44,1}$	$\varphi_{57,0}$	$\varphi_{70,1}$	$\varphi_{73,1}$
$14_2 = \chi_{2,1}$	1	.	.	.	.	.
$3003_1 = \chi_{19,0}$	.	1	.	.	.	.
$25025_4 = \chi_{39,1}$	1	.	1	.	.	.
$51975_1 = \chi_{56,0}$	.	1	.	1	.	.
$108108_2 = \chi_{76,1}$	.	.	1	.	1	.
$150150_2 = \chi_{86,1}$	.	.	.	1	.	1
$184275_2 = \chi_{90,1}$	.	.	.	.	1	1

$$\begin{aligned} \varphi_{2,1} &= 14_2 \\ \varphi_{19,0} &= 3003_1 \\ \varphi_{44,1} &= 25011_2 \\ \varphi_{57,0} &= 48972_1 \\ \varphi_{70,1} &= 83097_2 \\ \varphi_{73,1} &= 101178_2 \end{aligned}$$

Block 4:	$\varphi_{4,0}$	$\varphi_{16,1}$	$\varphi_{22,0}$	$\varphi_{67,1}$	$\varphi_{72,0}$	$\varphi_{78,0}$
$91_1 = \chi_{4,0}$	1	.	.	.	.	.
$2002_4 = \chi_{16,1}$	.	1	.	.	.	.
$5005_1 = \chi_{20,0}$	1	.	1	.	.	.
$75075_4 = \chi_{65,1}$	.	1	.	1	.	.
$100100_1 = \chi_{73,0}$	.	.	1	.	1	.
$221130_2 = \chi_{92,1}$	.	.	.	1	.	1
$243243_1 = \chi_{94,0}$	.	.	.	.	1	1

$$\begin{aligned} \varphi_{4,0} &= 91_1 \\ \varphi_{16,1} &= 2002_2 \\ \varphi_{22,0} &= 4914_1 \\ \varphi_{67,1} &= 73073_2 \\ \varphi_{72,0} &= 95186_1 \\ \varphi_{78,0} &= 148057_1 \end{aligned}$$

Block 5:	$\varphi_{4,1}$	$\varphi_{16,0}$	$\varphi_{22,1}$	$\varphi_{67,0}$	$\varphi_{72,1}$	$\varphi_{78,1}$
$91_2 = \chi_{4,1}$	1	.	.	.	.	.
$2002_3 = \chi_{16,0}$	.	1	.	.	.	.
$5005_2 = \chi_{20,1}$	1	.	1	.	.	.
$75075_3 = \chi_{65,0}$	.	1	.	1	.	.
$100100_2 = \chi_{73,1}$	.	.	1	.	1	.
$221130_1 = \chi_{92,0}$	.	.	.	1	.	1
$243243_2 = \chi_{94,1}$	.	.	.	.	1	1

$$\begin{aligned} \varphi_{4,1} &= 91_2 \\ \varphi_{16,0} &= 2002_1 \\ \varphi_{22,1} &= 4914_2 \\ \varphi_{67,0} &= 73073_1 \\ \varphi_{72,1} &= 95186_2 \\ \varphi_{78,1} &= 148057_2 \end{aligned}$$

Block 6:	$\varphi_{5,0}$	$\varphi_{12,0}$	$\varphi_{43,1}$	$\varphi_{56,1}$	$\varphi_{60,0}$	$\varphi_{68,1}$
$350_1 = \chi_{5,0}$	1	.	.	.	.	.
$2002_1 = \chi_{15,0}$	1	1	.	.	.	.
$24948_2 = \chi_{37,1}$	.	.	1	.	.	.
$54054_1 = \chi_{58,0}$	.	1	.	.	1	.
$100100_4 = \chi_{74,1}$	.	.	1	.	.	1
$100100_5 = \chi_{75,0}$	.	.	.	1	1	.
$122850_2 = \chi_{79,1}$	.	.	.	1	.	1

$$\begin{aligned} \varphi_{5,0} &= 350_1 \\ \varphi_{12,0} &= 1652_1 \\ \varphi_{43,1} &= 24948_2 \\ \varphi_{56,1} &= 47698_2 \\ \varphi_{60,0} &= 52402_1 \\ \varphi_{68,1} &= 75152_2 \end{aligned}$$

Block 7:	$\varphi_{5,1}$	$\varphi_{12,1}$	$\varphi_{43,0}$	$\varphi_{56,0}$	$\varphi_{60,1}$	$\varphi_{68,0}$
$350_2 = \chi_{5,1}$	1	.	.	.	.	.
$2002_2 = \chi_{15,1}$	1	1	.	.	.	.
$24948_1 = \chi_{37,0}$	.	.	1	.	.	.
$54054_2 = \chi_{58,1}$	.	1	.	.	1	.
$100100_3 = \chi_{74,0}$	.	.	1	.	.	1
$100100_6 = \chi_{75,1}$	.	.	.	1	1	.
$122850_1 = \chi_{79,0}$	.	.	.	1	.	1

$$\begin{aligned} \varphi_{5,1} &= 350_2 \\ \varphi_{12,1} &= 1652_2 \\ \varphi_{43,0} &= 24948_1 \\ \varphi_{56,0} &= 47698_1 \\ \varphi_{60,1} &= 52402_2 \\ \varphi_{68,0} &= 75152_1 \end{aligned}$$

Block 8:	$\varphi_{6,0}$	$\varphi_{10,1}$	$\varphi_{42,0}$	$\varphi_{45,0}$	$\varphi_{63,1}$	$\varphi_{74,1}$
$364_1 = \chi_{6,0}$	1	.	.	.	.	.
$1001_2 = \chi_{9,1}$	.	1	.	.	.	.
$27027_1 = \chi_{42,0}$	1	.	.	1	.	.
$50050_1 = \chi_{54,0}$	.	.	1	1	.	.
$61425_2 = \chi_{61,1}$	.	1	.	.	1	.
$125125_2 = \chi_{80,1}$	.	.	1	.	.	1
$162162_2 = \chi_{88,1}$	.	.	.	.	1	1

$$\begin{aligned} \varphi_{6,0} &= 364_1 \\ \varphi_{10,1} &= 1001_2 \\ \varphi_{42,0} &= 23387_1 \\ \varphi_{45,0} &= 26663_1 \\ \varphi_{63,1} &= 60424_2 \\ \varphi_{74,1} &= 101738_2 \end{aligned}$$

Block 9:	$\varphi_{6,1}$	$\varphi_{10,0}$	$\varphi_{42,1}$	$\varphi_{45,1}$	$\varphi_{63,0}$	$\varphi_{74,0}$
$364_2 = \chi_{6,1}$	1	.	.	.	.	.
$1001_1 = \chi_{9,0}$	.	1	.	.	.	.
$27027_2 = \chi_{42,1}$	1	.	.	1	.	.
$50050_2 = \chi_{54,1}$	.	.	1	1	.	.
$61425_1 = \chi_{61,0}$	.	1	.	.	1	.
$125125_1 = \chi_{80,0}$	.	.	1	.	.	1
$162162_1 = \chi_{88,0}$	.	.	.	.	1	1

$$\begin{aligned} \varphi_{6,1} &= 364_2 \\ \varphi_{10,0} &= 1001_1 \\ \varphi_{42,1} &= 23387_2 \\ \varphi_{45,1} &= 26663_2 \\ \varphi_{63,0} &= 60424_1 \\ \varphi_{74,0} &= 101738_1 \end{aligned}$$

Block 10:	$\varphi_{8,0}$	$\varphi_{9,0}$	$\varphi_{23,0}$	$\varphi_{36,1}$	$\varphi_{54,1}$	$\varphi_{55,1}$
$910_1 = \chi_{8,0}$	.	1	.	.	.	.
$1638_1 = \chi_{11,0}$	1	1	.	.	.	.
$6006_1 = \chi_{21,0}$	1	.	1	.	.	.
$13650_2 = \chi_{32,1}$	.	.	.	1	.	.
$50050_4 = \chi_{55,1}$	.	.	1	.	1	.
$58968_2 = \chi_{60,1}$	.	.	.	1	.	1
$90090_2 = \chi_{70,1}$	.	.	.	.	1	1

$$\begin{aligned} \varphi_{8,0} &= 728_1 \\ \varphi_{9,0} &= 910_1 \\ \varphi_{23,0} &= 5278_1 \\ \varphi_{36,1} &= 13650_2 \\ \varphi_{54,1} &= 44772_2 \\ \varphi_{55,1} &= 45318_2 \end{aligned}$$

Block 11:	$\varphi_{8,1}$	$\varphi_{9,1}$	$\varphi_{23,1}$	$\varphi_{36,0}$	$\varphi_{54,0}$	$\varphi_{55,0}$
$910_2 = \chi_{8,1}$	.	1	.	.	.	.
$1638_2 = \chi_{11,1}$	1	1	.	.	.	.
$6006_2 = \chi_{21,1}$	1	.	1	.	.	.
$13650_1 = \chi_{32,0}$	.	.	.	1	.	.
$50050_3 = \chi_{55,0}$	.	.	1	.	1	.
$58968_1 = \chi_{60,0}$	.	.	.	1	.	1
$90090_1 = \chi_{70,0}$	.	.	.	.	1	1

$$\begin{aligned} \varphi_{8,1} &= 728_2 \\ \varphi_{9,1} &= 910_2 \\ \varphi_{23,1} &= 5278_2 \\ \varphi_{36,0} &= 13650_1 \\ \varphi_{54,0} &= 44772_1 \\ \varphi_{55,0} &= 45318_1 \end{aligned}$$

Block 12:	$\varphi_{15,0}$	$\varphi_{31,1}$	$\varphi_{37,1}$	$\varphi_{38,0}$	$\varphi_{48,0}$	$\varphi_{65,1}$
$1925_1 = \chi_{14,0}$	1	.	.	.	.	.
$11088_2 = \chi_{26,1}$	.	1	.	.	.	.
$25025_2 = \chi_{38,1}$	.	1	1	.	.	.
$32032_1 = \chi_{45,0}$	1	.	.	.	1	.
$45045_1 = \chi_{53,0}$	.	.	.	1	1	.
$80080_2 = \chi_{68,1}$	.	.	1	.	.	1
$81081_2 = \chi_{69,1}$	.	.	.	1	.	1

$$\begin{aligned} \varphi_{15,0} &= 1925_1 \\ \varphi_{31,1} &= 11088_2 \\ \varphi_{37,1} &= 13937_2 \\ \varphi_{38,0} &= 14938_1 \\ \varphi_{48,0} &= 30107_1 \\ \varphi_{65,1} &= 66143_2 \end{aligned}$$

Block 13:	$\varphi_{15,1}$	$\varphi_{31,0}$	$\varphi_{37,0}$	$\varphi_{38,1}$	$\varphi_{48,1}$	$\varphi_{65,0}$
$1925_2 = \chi_{14,1}$	1	.	.	.	.	.
$11088_1 = \chi_{26,0}$	.	1	.	.	.	.
$25025_1 = \chi_{38,0}$	.	1	1	.	.	.
$32032_2 = \chi_{45,1}$	1	.	.	.	1	.
$45045_2 = \chi_{53,1}$	.	.	.	1	1	.
$80080_1 = \chi_{68,0}$	.	.	1	.	.	1
$81081_1 = \chi_{69,0}$	.	.	.	1	.	1

$$\begin{aligned} \varphi_{15,1} &= 1925_2 \\ \varphi_{31,0} &= 11088_1 \\ \varphi_{37,0} &= 13937_1 \\ \varphi_{38,1} &= 14938_2 \\ \varphi_{48,1} &= 30107_2 \\ \varphi_{65,0} &= 66143_1 \end{aligned}$$

Block 14:	$\varphi_{18,0}$	$\varphi_{26,0}$	$\varphi_{29,1}$	$\varphi_{39,0}$	$\varphi_{61,1}$	$\varphi_{69,1}$	
$2835_1 = \chi_{17,0}$	1	.	.	.	.	.	$\varphi_{18,0} = 2835_1$
$9450_2 = \chi_{25,1}$	.	.	1	.	.	.	$\varphi_{26,0} = 8540_1$
$11375_1 = \chi_{27,0}$	1	1	.	.	.	.	$\varphi_{29,1} = 9450_2$
$30030_1 = \chi_{44,0}$	.	1	.	1	.	.	$\varphi_{39,0} = 21490_1$
$75075_2 = \chi_{64,1}$	.	.	.	1	1	.	$\varphi_{61,1} = 53585_2$
$91000_2 = \chi_{71,1}$	.	.	1	.	.	1	$\varphi_{69,1} = 81550_2$
$135135_2 = \chi_{83,1}$	.	.	.	.	1	1	

Block 15:	$\varphi_{18,1}$	$\varphi_{26,1}$	$\varphi_{29,0}$	$\varphi_{39,1}$	$\varphi_{61,0}$	$\varphi_{69,0}$	
$2835_2 = \chi_{17,1}$	1	.	.	.	.	.	$\varphi_{18,1} = 2835_2$
$9450_1 = \chi_{25,0}$	.	.	1	.	.	.	$\varphi_{26,1} = 8540_2$
$11375_2 = \chi_{27,1}$	1	1	.	.	.	.	$\varphi_{29,0} = 9450_1$
$30030_2 = \chi_{44,1}$	.	1	.	1	.	.	$\varphi_{39,1} = 21490_2$
$75075_1 = \chi_{64,0}$	.	.	.	1	1	.	$\varphi_{61,0} = 53585_1$
$91000_1 = \chi_{71,0}$	.	.	1	.	.	1	$\varphi_{69,0} = 81550_1$
$135135_1 = \chi_{83,0}$	.	.	.	.	1	1	

Block 18:	$\varphi_{28,0}$	$\varphi_{28,1}$	$\varphi_{33,0}$	$\varphi_{33,1}$	$\varphi_{35,0}$	$\varphi_{35,1}$	
$9100_1 = \chi_{24,0}$	1	.	.	.	.	.	$\varphi_{28,0} = 9100_1$
$9100_2 = \chi_{24,1}$	.	1	.	.	.	.	$\varphi_{28,1} = 9100_2$
$22113_1 = \chi_{36,0}$	1	.	.	.	1	.	$\varphi_{33,0} = 12012_1$
$22113_2 = \chi_{36,1}$	.	1	.	.	.	1	$\varphi_{33,1} = 12012_2$
$24024_1 = \chi_{29+}$	.	.	1	1	.	.	$\varphi_{35,0} = 13013_1$
$25025_5 = \chi_{40,0}$	.	.	1	.	1	.	$\varphi_{35,1} = 13013_2$
$25025_6 = \chi_{40,1}$	.	.	.	1	.	1	