

# $A_{15} \pmod{5}$

	blocks	defect	matrix
$G :$	1	3	$37 \times 20$
	2	2	$20 \times 14$
	3	1	$5 \times 4$
	4	1	$5 \times 4$
	5	1	$5 \times 4$
	6	1	$5 \times 4$
	7	1	$5 \times 4$
	8	0	$11375_1 = \chi_{27}, \varphi_{28}$

	blocks	defect	matrix
	9	1	$5 \times 4$
	10	0	$53625_1 = \chi_{57}, \varphi_{52}$
	11	0	$78000_1 = \chi_{66}, \varphi_{55}$
	12	0	$78000_2 = \chi_{67}, \varphi_{56}$
	13	0	$91000_1 = \chi_{71}, \varphi_{59}$
	14	0	$125125_1 = \chi_{80}, \varphi_{62}$
	15	0	$159250_1 = \chi_{87}, \varphi_{65}$

<b>Block 1:</b>	$\varphi_1$	$\varphi_2$	$\varphi_3$	$\varphi_5$	$\varphi_7$	$\varphi_9$	$\varphi_{12}$	$\varphi_{13}$	$\varphi_{14}$	$\varphi_{19}$	$\varphi_{20}$	$\varphi_{21}$	$\varphi_{22}$	$\varphi_{24}$	$\varphi_{29}$
$1_1 = \chi_1$	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
$14_1 = \chi_2$	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.
$91_1 = \chi_4$	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.
$364_1 = \chi_6$	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.
$1001_1 = \chi_9$	.	.	.	1	.	1	.	.	.	.	.	.	.	.	.
$1638_1 = \chi_{11}$	.	1	.	.	.	.	.	1	.	.	.	.	.	.	.
$1716_1 = \chi_{12}$	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.
$1716_2 = \chi_{13}$	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.
$2002_1 = \chi_{15}$	.	.	.	.	1	.	.	1	.	.	.	.	.	.	.
$2002_2 = \chi_{16}$	.	.	.	.	.	1	1	.	.	.	.	.	.	.	.
$3003_1 = \chi_{19}$	.	.	.	.	.	.	1	.	1	.	.	.	.	.	.
$6006_1 = \chi_{21}$	.	.	1	.	1	.	.	.	.	.	.	.	1	.	.
$7007_1 = \chi_{22}$	1	1	1	.	.	.	.	1	.	.	1	.	.	.	.
$7722_1 = \chi_{23}$	.	.	.	1	.	1	1	.	.	.	.	1	.	.	.
$11088_1 = \chi_{26}$	.	.	1	1	.	.	.	.	.	.	1	1	.	.	.
$11583_1 = \chi_{28}$	.	.	.	.	1	.	.	1	.	1	1	.	.	.	.
$12012_1 = \chi_{29}$	1	.	.	.	.	.	.	.	.	.	.	.	.	.	1
$12012_2 = \chi_{30}$	1	.	.	.	.	.	.	.	.	.	.	.	.	.	1
$22113_1 = \chi_{36}$	1	1	.	.	1	.	.	1	.	.	1	.	.	.	.
$24948_1 = \chi_{37}$	.	.	.	.	.	.	1	.	1	.	.	1	.	.	.
$27027_1 = \chi_{42}$	1	.	.	.	.	.	.	.	.	1	1	1	.	.	1
$28028_1 = \chi_{43}$	.	.	.	.	.	.	1	.	.	.	.	1	.	1	1
$32032_1 = \chi_{45}$	.	1	1	.	1	.	.	1	.	1	1	.	1	.	.
$34398_1 = \chi_{46}$	.	.	.	.	.	.	1	.	1	.	.	.	.	1	.
$42042_1 = \chi_{49}$	.	.	.	.	.	.	.	.	.	.	1	1	.	.	.
$42042_2 = \chi_{50}$	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.
$54054_1 = \chi_{58}$	.	1	1	1	1	.	.	.	.	1	.	.	1	.	.
$58968_1 = \chi_{60}$	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.
$81081_1 = \chi_{69}$	1	1	.	.	.	.	.	.	.	1	.	.	.	1	2
$108108_1 = \chi_{76}$	1	1	1	1	1	.	.	.	.	1	1	1	1	.	1
$112112_1 = \chi_{77}$	.	1	.	.	1	.	.	.	.	.	.	.	1	1	.
$112112_2 = \chi_{78}$	.	.	.	.	.	1	1	.	1	.	.	.	1	1	.
$126126_1 = \chi_{81}$	.	.	.	1	1	1	.	.	.	1	.	.	1	.	.
$146432_1 = \chi_{84}$	.	.	.	.	1	.	.	.	.	1	.	.	1	1	1
$146432_2 = \chi_{85}$	.	.	.	.	1	.	.	.	.	1	.	.	1	1	1
$162162_1 = \chi_{88}$	.	.	.	1	.	1	1	.	1	.	.	1	.	1	1
$243243_1 = \chi_{94}$	.	.	.	.	.	.	.	.	2	.	.	.	1	1	.

<b>(Block 1:)</b>	$\varphi_{32}$	$\varphi_{34}$	$\varphi_{37}$	$\varphi_{47}$	$\varphi_{53}$	
$1_1 = \chi_1$	.	.	.	.	.	
$14_1 = \chi_2$	.	.	.	.	.	
$91_1 = \chi_4$	.	.	.	.	.	
$364_1 = \chi_6$	.	.	.	.	.	
$1001_1 = \chi_9$	.	.	.	.	.	
$1638_1 = \chi_{11}$	.	.	.	.	.	
$1716_1 = \chi_{12}$	.	.	.	.	.	
$1716_2 = \chi_{13}$	.	.	.	.	.	
$2002_1 = \chi_{15}$	.	.	.	.	.	$\varphi_1 = 1_1$
$2002_2 = \chi_{16}$	.	.	.	.	.	$\varphi_2 = 13_1$
$3003_1 = \chi_{19}$	.	.	.	.	.	$\varphi_3 = 78_1$
$6006_1 = \chi_{21}$	.	.	.	.	.	$\varphi_5 = 286_1$
$7007_1 = \chi_{22}$	.	.	.	.	.	$\varphi_7 = 377_1$
$7722_1 = \chi_{23}$	.	.	.	.	.	$\varphi_9 = 715_1$
$11088_1 = \chi_{26}$	.	.	.	.	.	$\varphi_{12} = 1287_1$
$11583_1 = \chi_{28}$	.	.	.	.	.	$\varphi_{13} = 1625_1$
$12012_1 = \chi_{29}$	.	.	.	.	.	$\varphi_{14} = 1716_1$
$12012_2 = \chi_{30}$	.	.	.	.	.	$\varphi_{19} = 4291_1$
$22113_1 = \chi_{36}$	1	.	.	.	.	$\varphi_{20} = 5290_1$
$24948_1 = \chi_{37}$	.	1	.	.	.	$\varphi_{21} = 5434_1$
$27027_1 = \chi_{42}$	.	.	.	.	.	$\varphi_{22} = 5551_1$
$28028_1 = \chi_{43}$	.	.	.	.	.	$\varphi_{24} = 9296_1$
$32032_1 = \chi_{45}$	1	.	.	.	.	$\varphi_{29} = 12011_1$
$34398_1 = \chi_{46}$	.	.	1	.	.	$\varphi_{32} = 14807_1$
$42042_1 = \chi_{49}$	1	1	.	.	.	$\varphi_{34} = 16511_1$
$42042_2 = \chi_{50}$	.	1	1	.	.	$\varphi_{37} = 22099_1$
$54054_1 = \chi_{58}$	.	.	.	1	.	$\varphi_{47} = 43458_1$
$58968_1 = \chi_{60}$	1	1	1	.	.	$\varphi_{53} = 71448_1$
$81081_1 = \chi_{69}$	.	.	.	1	.	
$108108_1 = \chi_{76}$	1	1	.	1	.	
$112112_1 = \chi_{77}$	1	1	1	1	.	
$112112_2 = \chi_{78}$	.	.	1	.	1	
$126126_1 = \chi_{81}$	.	.	.	1	1	
$146432_1 = \chi_{84}$	.	.	.	1	1	
$146432_2 = \chi_{85}$	.	.	.	1	1	
$162162_1 = \chi_{88}$	.	1	.	1	1	
$243243_1 = \chi_{94}$	.	1	1	1	2	

<b>Block 2:</b>	$\varphi_4$	$\varphi_8$	$\varphi_{10}$	$\varphi_{11}$	$\varphi_{16}$	$\varphi_{17}$	$\varphi_{27}$	$\varphi_{35}$	$\varphi_{38}$	$\varphi_{42}$	$\varphi_{44}$	$\varphi_{50}$	$\varphi_{54}$	$\varphi_{64}$
$90_1 = \chi_3$	1	.	.	.	.	.	.	.	.	.	.	.	.	.
$715_1 = \chi_7$	.	.	1	.	.	.	.	.	.	.	.	.	.	.
$910_1 = \chi_8$	1	.	.	1	.	.	.	.	.	.	.	.	.	.
$1430_1 = \chi_{10}$	.	1	.	1	.	.	.	.	.	.	.	.	.	.
$2835_1 = \chi_{17}$	.	.	1	.	1	.	.	.	.	.	.	.	.	.
$5005_1 = \chi_{20}$	.	.	.	.	1	1	.	.	.	.	.	.	.	.
$12740_1 = \chi_{31}$	.	.	.	.	1	.	1	.	.	.	.	.	.	.
$19305_1 = \chi_{34}$	.	.	.	.	.	.	.	1	.	.	.	.	.	.
$30030_1 = \chi_{44}$	.	1	1	.	.	.	.	.	.	1	.	.	.	.
$35035_1 = \chi_{47}$	1	1	.	1	.	.	.	.	.	.	1	.	.	.
$43120_1 = \chi_{51}$	.	.	.	.	.	.	.	1	1	.	.	.	.	.
$45045_1 = \chi_{53}$	.	.	1	.	1	1	1	.	.	1	.	.	.	.
$57330_1 = \chi_{59}$	.	.	.	.	.	.	.	.	1	.	1	.	.	.
$70070_1 = \chi_{63}$	.	.	.	.	.	.	.	1	.	.	.	1	.	.
$80080_1 = \chi_{68}$	1	.	.	.	.	1	.	.	.	.	.	.	1	.
$90090_1 = \chi_{70}$	.	.	.	.	.	.	1	.	.	1	.	1	.	.
$135135_1 = \chi_{83}$	1	1	.	.	.	.	.	.	1	.	1	.	1	.
$210210_1 = \chi_{91}$	.	1	.	.	.	1	.	.	.	1	.	1	.	1
$221130_1 = \chi_{92}$	.	.	.	.	.	.	.	1	1	.	.	1	.	1
$231660_1 = \chi_{93}$	.	1	.	.	.	1	.	.	1	.	.	.	1	1

$$\begin{aligned}
\varphi_4 &= 90_1 & \varphi_{35} &= 19305_1 \\
\varphi_8 &= 610_1 & \varphi_{38} &= 23815_1 \\
\varphi_{10} &= 715_2 & \varphi_{42} &= 28705_1 \\
\varphi_{11} &= 820_1 & \varphi_{44} &= 33515_1 \\
\varphi_{16} &= 2120_1 & \varphi_{50} &= 50765_1 \\
\varphi_{17} &= 2885_1 & \varphi_{54} &= 77105_1 \\
\varphi_{27} &= 10620_1 & \varphi_{64} &= 127245_1
\end{aligned}$$

<b>Block 3:</b>	$\varphi_6$	$\varphi_{39}$	$\varphi_{51}$	$\varphi_{60}$
$350_1 = \chi_5$	1	.	.	.
$25025_3 = \chi_{40}$	1	1	.	.
$51975_1 = \chi_{56}$	.	.	1	.
$122850_1 = \chi_{79}$	.	1	.	1
$150150_1 = \chi_{86}$	.	.	1	1

$$\begin{aligned}
\varphi_6 &= 350_1 \\
\varphi_{39} &= 24675_1 \\
\varphi_{51} &= 51975_1 \\
\varphi_{60} &= 98175_1
\end{aligned}$$

<b>Block 4:</b>	$\varphi_{15}$	$\varphi_{36}$	$\varphi_{43}$	$\varphi_{48}$
$1925_1 = \chi_{14}$	1	.	.	.
$21450_1 = \chi_{35}$	1	1	.	.
$44550_1 = \chi_{52}$	.	.	.	1
$50050_2 = \chi_{55}$	.	1	1	.
$75075_2 = \chi_{65}$	.	.	1	1

$$\begin{aligned}\varphi_{15} &= 1925_1 \\ \varphi_{36} &= 19525_1 \\ \varphi_{43} &= 30525_1 \\ \varphi_{48} &= 44550_1\end{aligned}$$

<b>Block 5:</b>	$\varphi_{18}$	$\varphi_{31}$	$\varphi_{49}$	$\varphi_{63}$
$2925_1 = \chi_{18}$	1	.	.	.
$14300_1 = \chi_{33}$	.	1	.	.
$63700_1 = \chi_{62}$	.	1	1	.
$128700_1 = \chi_{82}$	1	.	.	1
$175175_1 = \chi_{89}$	.	.	1	1

$$\begin{aligned}\varphi_{18} &= 2925_1 \\ \varphi_{31} &= 14300_1 \\ \varphi_{49} &= 49400_1 \\ \varphi_{63} &= 125775_1\end{aligned}$$

<b>Block 6:</b>	$\varphi_{23}$	$\varphi_{33}$	$\varphi_{57}$	$\varphi_{61}$
$9100_1 = \chi_{24}$	1	.	.	.
$25025_2 = \chi_{39}$	1	1	.	.
$100100_2 = \chi_{74}$	.	.	.	1
$100100_3 = \chi_{75}$	.	1	1	.
$184275_1 = \chi_{90}$	.	.	1	1

$$\begin{aligned}\varphi_{23} &= 9100_1 \\ \varphi_{33} &= 15925_1 \\ \varphi_{57} &= 84175_1 \\ \varphi_{61} &= 100100_1\end{aligned}$$

<b>Block 7:</b>	$\varphi_{25}$	$\varphi_{41}$	$\varphi_{45}$	$\varphi_{46}$
$9450_1 = \chi_{25}$	1	.	.	.
$26950_1 = \chi_{41}$	.	1	.	.
$50050_1 = \chi_{54}$	1	.	.	1
$61425_1 = \chi_{61}$	.	1	1	.
$75075_1 = \chi_{64}$	.	.	1	1

$$\begin{aligned}\varphi_{25} &= 9450_1 \\ \varphi_{41} &= 26950_1 \\ \varphi_{45} &= 34475_1 \\ \varphi_{46} &= 40600_1\end{aligned}$$

<b>Block 9:</b>	$\varphi_{26}$	$\varphi_{30}$	$\varphi_{40}$	$\varphi_{58}$
$13650_1 = \chi_{32}$	.	1	.	.
$25025_1 = \chi_{38}$	.	.	1	.
$35100_1 = \chi_{48}$	1	.	1	.
$96525_1 = \chi_{72}$	1	.	.	1
$100100_1 = \chi_{73}$	.	1	.	1

$$\begin{aligned}\varphi_{26} &= 10075_1 \\ \varphi_{30} &= 13650_1 \\ \varphi_{40} &= 25025_1 \\ \varphi_{58} &= 86450_1\end{aligned}$$