

$Fi_{22} \pmod{2}$

|       | blocks      | defect | matrix          |
|-------|-------------|--------|-----------------|
| 2.G : | 1           | 18     | $108 \times 14$ |
|       | 2           | 1      | $2 \times 1$    |
|       | 3           | 2      | $4 \times 1$    |
| 6.G : | 4<br>5 = 4* | 18     | $84 \times 11$  |

| <b>Block 1:</b>        | $\varphi_1$ | $\varphi_2$ | $\varphi_3$ | $\varphi_4$ | $\varphi_5$ | $\varphi_6$ | $\varphi_7$ | $\varphi_8$ | $\varphi_9$ | $\varphi_{10}$ | $\varphi_{11}$ | $\varphi_{12}$ | $\varphi_{13}$ | $\varphi_{14}$ |
|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------|----------------|----------------|----------------|----------------|
| $1_1 = \chi_1$         | 1           | .           | .           | .           | .           | .           | .           | .           | .           | .              | .              | .              | .              | .              |
| $78_1 = \chi_2$        | .           | 1           | .           | .           | .           | .           | .           | .           | .           | .              | .              | .              | .              | .              |
| $429_1 = \chi_3$       | 1           | 1           | 1           | .           | .           | .           | .           | .           | .           | .              | .              | .              | .              | .              |
| $1001_1 = \chi_4$      | 1           | 1           | 1           | 1           | .           | .           | .           | .           | .           | .              | .              | .              | .              | .              |
| $1430_1 = \chi_5$      | .           | 1           | .           | .           | 1           | .           | .           | .           | .           | .              | .              | .              | .              | .              |
| $3003_1 = \chi_6$      | 1           | 2           | 1           | 2           | 1           | .           | .           | .           | .           | .              | .              | .              | .              | .              |
| $3080_1 = \chi_7$      | .           | 3           | 1           | 2           | 1           | .           | .           | .           | .           | .              | .              | .              | .              | .              |
| $10725_1 = \chi_8$     | 3           | 2           | 2           | 1           | 1           | .           | .           | 1           | .           | .              | .              | .              | .              | .              |
| $13650_1 = \chi_9$     | 4           | 3           | 3           | 3           | 2           | .           | .           | 1           | .           | .              | .              | .              | .              | .              |
| $30030_1 = \chi_{10}$  | .           | 3           | .           | 2           | 3           | .           | .           | .           | 1           | .              | .              | .              | .              | .              |
| $32032_1 = \chi_{11}$  | 2           | 5           | 2           | 4           | 3           | .           | .           | .           | 1           | .              | .              | .              | .              | .              |
| $43680_1 = \chi_{12}$  | 2           | 5           | 2           | 4           | 3           | 1           | 1           | .           | 1           | .              | .              | .              | .              | .              |
| $45045_1 = \chi_{13}$  | 3           | 4           | 2           | 3           | 2           | .           | .           | 1           | .           | 1              | .              | .              | .              | .              |
| $48048_1 = \chi_{14}$  | 4           | 4           | 3           | 2           | 2           | .           | .           | 1           | .           | .              | 1              | .              | .              | .              |
| $50050_1 = \chi_{15}$  | 4           | 7           | 3           | 6           | 4           | .           | .           | 1           | .           | 1              | .              | .              | .              | .              |
| $50050_2 = \chi_{16}$  | 4           | 5           | 3           | 3           | 3           | .           | .           | 1           | .           | .              | 1              | .              | .              | .              |
| $75075_1 = \chi_{17}$  | 3           | 5           | 2           | 2           | 4           | .           | .           | 1           | 1           | .              | 1              | .              | .              | .              |
| $75075_2 = \chi_{18}$  | 1           | 6           | 1           | 4           | 3           | 1           | 1           | .           | 1           | 1              | .              | .              | .              | .              |
| $75075_3 = \chi_{19}$  | 3           | 7           | 2           | 5           | 5           | .           | .           | 1           | 1           | 1              | .              | .              | .              | .              |
| $81081_1 = \chi_{20}$  | 5           | 9           | 4           | 6           | 6           | .           | .           | 1           | 1           | .              | 1              | .              | .              | .              |
| $114400_1 = \chi_{21}$ | 2           | 9           | 2           | 6           | 5           | 1           | 1           | .           | 1           | 1              | 1              | .              | .              | .              |
| $138600_1 = \chi_{22}$ | 2           | 6           | 1           | 5           | 3           | 1           | 1           | .           | 1           | 1              | .              | .              | 1              | .              |
| $138600_2 = \chi_{23}$ | 2           | 6           | 1           | 5           | 3           | 1           | 1           | .           | 1           | 1              | .              | 1              | .              | .              |
| $150150_1 = \chi_{24}$ | 4           | 11          | 3           | 6           | 7           | 1           | 1           | 1           | 2           | 1              | 1              | .              | .              | .              |
| $205920_1 = \chi_{25}$ | 4           | 7           | 2           | 4           | 5           | .           | .           | 1           | 1           | .              | .              | .              | .              | 1              |
| $289575_1 = \chi_{26}$ | 7           | 14          | 5           | 10          | 7           | 1           | 1           | 1           | 1           | 1              | 2              | 1              | 1              | .              |
| $300300_1 = \chi_{27}$ | 2           | 12          | 1           | 6           | 9           | 1           | 1           | .           | 3           | .              | 1              | .              | .              | 1              |
| $320320_1 = \chi_{28}$ | 6           | 16          | 4           | 10          | 10          | 1           | 1           | 1           | 2           | 1              | 1              | .              | .              | 1              |
| $360855_1 = \chi_{29}$ | 9           | 20          | 6           | 15          | 12          | 2           | 2           | 1           | 3           | 1              | 2              | 1              | 1              | .              |
| $370656_1 = \chi_{30}$ | 12          | 23          | 9           | 16          | 13          | 1           | 1           | 2           | 2           | 1              | 3              | 1              | 1              | .              |
| $400400_1 = \chi_{31}$ | 4           | 12          | 2           | 8           | 7           | 1           | 1           | .           | 2           | .              | 1              | 1              | 1              | 1              |
| $400400_2 = \chi_{32}$ | 4           | 12          | 2           | 8           | 7           | 1           | 1           | .           | 2           | .              | 1              | 1              | 1              | 1              |
| $400400_3 = \chi_{33}$ | 10          | 22          | 7           | 14          | 12          | 2           | 2           | 2           | 3           | 2              | 2              | 1              | 1              | .              |
| $400400_4 = \chi_{34}$ | 10          | 22          | 7           | 14          | 12          | 2           | 2           | 2           | 3           | 2              | 2              | 1              | 1              | .              |
| $450450_1 = \chi_{35}$ | 8           | 17          | 5           | 11          | 10          | 1           | 1           | 1           | 2           | .              | 2              | 1              | 1              | 1              |
| $450450_2 = \chi_{36}$ | 14          | 29          | 10          | 20          | 16          | 2           | 2           | 3           | 3           | 3              | 2              | 1              | 1              | .              |
| $576576_1 = \chi_{37}$ | 16          | 30          | 11          | 20          | 18          | 1           | 1           | 3           | 3           | 1              | 3              | 1              | 1              | 1              |
| $577368_1 = \chi_{38}$ | 12          | 27          | 8           | 16          | 15          | 2           | 2           | 3           | 3           | 2              | 2              | 1              | 1              | 1              |
| $579150_1 = \chi_{39}$ | 16          | 29          | 11          | 19          | 18          | 1           | 1           | 3           | 3           | .              | 4              | 1              | 1              | 1              |
| $582400_1 = \chi_{40}$ | 16          | 30          | 11          | 20          | 18          | 2           | 1           | 3           | 3           | 1              | 3              | 1              | 1              | 1              |

| (Block 1:)                         | $\varphi_1$ | $\varphi_2$ | $\varphi_3$ | $\varphi_4$ | $\varphi_5$ | $\varphi_6$ | $\varphi_7$ | $\varphi_8$ | $\varphi_9$ | $\varphi_{10}$ | $\varphi_{11}$ | $\varphi_{12}$ | $\varphi_{13}$ | $\varphi_{14}$ |
|------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------|----------------|----------------|----------------|----------------|
| 582400 <sub>2</sub> = $\chi_{41}$  | 16          | 30          | 11          | 20          | 18          | 1           | 2           | 3           | 3           | 1              | 3              | 1              | 1              | 1              |
| 600600 <sub>1</sub> = $\chi_{42}$  | 10          | 27          | 7           | 16          | 15          | 3           | 3           | 1           | 4           | 1              | 3              | 1              | 1              | 1              |
| 600600 <sub>2</sub> = $\chi_{43}$  | 12          | 28          | 8           | 17          | 17          | 2           | 2           | 2           | 4           | 1              | 3              | 1              | 1              | 1              |
| 600600 <sub>3</sub> = $\chi_{44}$  | 12          | 28          | 8           | 17          | 17          | 2           | 2           | 2           | 4           | 1              | 3              | 1              | 1              | 1              |
| 675675 <sub>1</sub> = $\chi_{45}$  | 17          | 29          | 11          | 21          | 16          | 1           | 1           | 3           | 2           | 1              | 3              | 2              | 2              | 1              |
| 720720 <sub>1</sub> = $\chi_{46}$  | 16          | 38          | 11          | 24          | 22          | 3           | 3           | 3           | 5           | 3              | 3              | 1              | 1              | 1              |
| 800800 <sub>1</sub> = $\chi_{47}$  | 24          | 39          | 16          | 26          | 23          | 1           | 1           | 5           | 3           | 1              | 5              | 2              | 2              | 1              |
| 852930 <sub>1</sub> = $\chi_{48}$  | 18          | 41          | 12          | 26          | 23          | 3           | 3           | 3           | 5           | 2              | 4              | 2              | 2              | 1              |
| 938223 <sub>1</sub> = $\chi_{49}$  | 17          | 36          | 11          | 23          | 21          | 2           | 2           | 2           | 4           | .              | 5              | 2              | 2              | 2              |
| 972972 <sub>1</sub> = $\chi_{50}$  | 16          | 38          | 10          | 24          | 22          | 3           | 3           | 2           | 5           | 1              | 4              | 2              | 2              | 2              |
| 982800 <sub>1</sub> = $\chi_{51}$  | 20          | 42          | 13          | 28          | 25          | 3           | 2           | 3           | 5           | 1              | 4              | 2              | 2              | 2              |
| 982800 <sub>2</sub> = $\chi_{52}$  | 20          | 42          | 13          | 28          | 25          | 2           | 3           | 3           | 5           | 1              | 4              | 2              | 2              | 2              |
| 1201200 <sub>1</sub> = $\chi_{53}$ | 26          | 52          | 17          | 36          | 29          | 3           | 3           | 4           | 5           | 2              | 5              | 3              | 3              | 2              |
| 1360800 <sub>1</sub> = $\chi_{54}$ | 32          | 64          | 22          | 40          | 36          | 3           | 3           | 6           | 6           | 2              | 8              | 3              | 3              | 2              |
| 1372800 <sub>1</sub> = $\chi_{55}$ | 26          | 62          | 17          | 40          | 35          | 5           | 5           | 4           | 8           | 4              | 5              | 3              | 3              | 2              |
| 1791153 <sub>1</sub> = $\chi_{57}$ | 35          | 77          | 23          | 49          | 44          | 5           | 5           | 5           | 9           | 2              | 9              | 4              | 4              | 3              |
| 1876446 <sub>1</sub> = $\chi_{58}$ | 38          | 83          | 25          | 54          | 48          | 6           | 6           | 6           | 10          | 3              | 9              | 4              | 4              | 3              |
| 2027025 <sub>1</sub> = $\chi_{59}$ | 37          | 85          | 24          | 54          | 50          | 6           | 6           | 5           | 11          | 2              | 9              | 4              | 4              | 4              |
| 2050048 <sub>1</sub> = $\chi_{60}$ | 34          | 74          | 21          | 46          | 42          | 6           | 6           | 4           | 9           | .              | 10             | 5              | 5              | 4              |
| 2316600 <sub>1</sub> = $\chi_{61}$ | 44          | 99          | 29          | 64          | 57          | 7           | 7           | 6           | 12          | 3              | 11             | 5              | 5              | 4              |
| 2402400 <sub>1</sub> = $\chi_{62}$ | 42          | 95          | 27          | 60          | 55          | 7           | 7           | 5           | 12          | 1              | 11             | 5              | 5              | 5              |
| 2729376 <sub>1</sub> = $\chi_{65}$ | 52          | 113         | 34          | 72          | 65          | 7           | 7           | 7           | 13          | 2              | 14             | 6              | 6              | 5              |
| 352 <sub>1</sub> = $\chi_{66}$     | 2           | .           | 1           | .           | .           | .           | .           | .           | .           | .              | .              | .              | .              | .              |
| 2080 <sub>1</sub> = $\chi_{67}$    | .           | 2           | .           | 1           | 1           | .           | .           | .           | .           | .              | .              | .              | .              | .              |
| 2080 <sub>2</sub> = $\chi_{68}$    | .           | 2           | .           | 1           | 1           | .           | .           | .           | .           | .              | .              | .              | .              | .              |
| 5824 <sub>1</sub> = $\chi_{69}$    | .           | .           | .           | .           | .           | 1           | .           | .           | .           | .              | .              | .              | .              | .              |
| 5824 <sub>2</sub> = $\chi_{70}$    | .           | .           | .           | .           | .           | .           | 1           | .           | .           | .              | .              | .              | .              | .              |
| 5824 <sub>3</sub> = $\chi_{71}$    | .           | .           | .           | .           | .           | 1           | .           | .           | .           | .              | .              | .              | .              | .              |
| 5824 <sub>4</sub> = $\chi_{72}$    | .           | .           | .           | .           | .           | .           | 1           | .           | .           | .              | .              | .              | .              | .              |
| 13728 <sub>1</sub> = $\chi_{73}$   | 4           | 4           | 3           | 3           | 2           | .           | .           | 1           | .           | .              | .              | .              | .              | .              |
| 13728 <sub>2</sub> = $\chi_{74}$   | 4           | 4           | 3           | 3           | 2           | .           | .           | 1           | .           | .              | .              | .              | .              | .              |
| 27456 <sub>1</sub> = $\chi_{75}$   | .           | 2           | .           | .           | 2           | .           | .           | .           | 1           | .              | .              | .              | .              | .              |
| 48048 <sub>2</sub> = $\chi_{76}$   | 4           | 6           | 3           | 5           | 3           | .           | .           | 1           | .           | 1              | .              | .              | .              | .              |
| 48048 <sub>3</sub> = $\chi_{77}$   | 4           | 6           | 3           | 5           | 3           | .           | .           | 1           | .           | 1              | .              | .              | .              | .              |
| 105600 <sub>1</sub> = $\chi_{78}$  | 2           | 6           | 1           | 4           | 5           | 1           | 1           | .           | 2           | .              | 1              | .              | .              | .              |
| 105600 <sub>2</sub> = $\chi_{79}$  | 2           | 6           | 1           | 4           | 5           | 1           | 1           | .           | 2           | .              | 1              | .              | .              | .              |
| 123200 <sub>1</sub> = $\chi_{80}$  | 6           | 10          | 5           | 4           | 6           | .           | .           | 2           | 1           | .              | 2              | .              | .              | .              |
| 133056 <sub>1</sub> = $\chi_{81}$  | 4           | 4           | 2           | 6           | 2           | .           | .           | .           | .           | .              | .              | 1              | 1              | .              |
| 146432 <sub>1</sub> = $\chi_{82}$  | 4           | 14          | 4           | 10          | 8           | 1           | 1           | .           | 2           | 1              | 1              | .              | .              | .              |
| 146432 <sub>2</sub> = $\chi_{83}$  | 4           | 14          | 4           | 10          | 8           | 1           | 1           | .           | 2           | 1              | 1              | .              | .              | .              |

| (Block 1:)               | $\varphi_1$ | $\varphi_2$ | $\varphi_3$ | $\varphi_4$ | $\varphi_5$ | $\varphi_6$ | $\varphi_7$ | $\varphi_8$ | $\varphi_9$ | $\varphi_{10}$ | $\varphi_{11}$ | $\varphi_{12}$ | $\varphi_{13}$ | $\varphi_{14}$ |
|--------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------|----------------|----------------|----------------|----------------|
| $228800_1 = \chi_{84}$   | 10          | 12          | 7           | 10          | 6           | .           | .           | 2           | .           | .              | 2              | 1              | 1              | .              |
| $235872_1 = \chi_{85}$   | 2           | 8           | 1           | 5           | 6           | 1           | 1           | .           | 2           | .              | .              | .              | .              | 1              |
| $235872_2 = \chi_{86}$   | 2           | 8           | 1           | 5           | 6           | 1           | 1           | .           | 2           | .              | .              | .              | .              | 1              |
| $320320_2 = \chi_{87}$   | 6           | 16          | 4           | 10          | 10          | 1           | 1           | 1           | 2           | 1              | 1              | .              | .              | 1              |
| $320320_3 = \chi_{88}$   | 6           | 16          | 4           | 10          | 10          | 1           | 1           | 1           | 2           | 1              | 1              | .              | .              | 1              |
| $400400_5 = \chi_{89}$   | 10          | 24          | 7           | 17          | 13          | 2           | 2           | 2           | 3           | 3              | 1              | 1              | 1              | .              |
| $400400_6 = \chi_{90}$   | 10          | 24          | 7           | 17          | 13          | 2           | 2           | 2           | 3           | 3              | 1              | 1              | 1              | .              |
| $436800_1 = \chi_{91}$   | 10          | 24          | 7           | 14          | 13          | 2           | 2           | 2           | 3           | 2              | 3              | 1              | 1              | .              |
| $436800_2 = \chi_{92}$   | 10          | 24          | 7           | 14          | 13          | 2           | 2           | 2           | 3           | 2              | 3              | 1              | 1              | .              |
| $480480_1 = \chi_{93}$   | 8           | 20          | 5           | 13          | 13          | 1           | 1           | 1           | 3           | .              | 2              | 1              | 1              | 1              |
| $480480_2 = \chi_{94}$   | 8           | 20          | 5           | 13          | 13          | 1           | 1           | 1           | 3           | .              | 2              | 1              | 1              | 1              |
| $686400_1 = \chi_{95}$   | 16          | 36          | 11          | 22          | 21          | 3           | 3           | 3           | 5           | 2              | 3              | 1              | 1              | 1              |
| $686400_2 = \chi_{96}$   | 16          | 36          | 11          | 22          | 21          | 3           | 3           | 3           | 5           | 2              | 3              | 1              | 1              | 1              |
| $915200_1 = \chi_{97}$   | 26          | 48          | 18          | 32          | 28          | 2           | 2           | 5           | 4           | 2              | 6              | 2              | 2              | 1              |
| $915200_2 = \chi_{98}$   | 26          | 48          | 18          | 32          | 28          | 2           | 2           | 5           | 4           | 2              | 6              | 2              | 2              | 1              |
| $1029600_1 = \chi_{99}$  | 24          | 46          | 16          | 30          | 28          | 2           | 2           | 4           | 5           | .              | 6              | 2              | 2              | 2              |
| $1201200_2 = \chi_{100}$ | 26          | 50          | 17          | 33          | 28          | 3           | 3           | 4           | 5           | 1              | 6              | 3              | 3              | 2              |
| $1201200_3 = \chi_{101}$ | 26          | 50          | 17          | 33          | 28          | 3           | 3           | 4           | 5           | 1              | 6              | 3              | 3              | 2              |
| $1297296_1 = \chi_{102}$ | 22          | 54          | 14          | 35          | 30          | 5           | 5           | 3           | 7           | 3              | 5              | 3              | 3              | 2              |
| $1297296_2 = \chi_{103}$ | 22          | 54          | 14          | 35          | 30          | 5           | 5           | 3           | 7           | 3              | 5              | 3              | 3              | 2              |
| $1663200_1 = \chi_{105}$ | 36          | 74          | 24          | 48          | 43          | 4           | 4           | 6           | 8           | 2              | 8              | 4              | 3              | 3              |
| $1663200_2 = \chi_{106}$ | 36          | 74          | 24          | 48          | 43          | 4           | 4           | 6           | 8           | 2              | 8              | 3              | 4              | 3              |
| $2196480_1 = \chi_{107}$ | 38          | 88          | 25          | 56          | 50          | 7           | 7           | 4           | 11          | 1              | 11             | 5              | 5              | 4              |
| $2196480_2 = \chi_{108}$ | 38          | 88          | 25          | 56          | 50          | 7           | 7           | 4           | 11          | 1              | 11             | 5              | 5              | 4              |
| $2358720_1 = \chi_{109}$ | 40          | 90          | 25          | 56          | 52          | 6           | 6           | 5           | 11          | 1              | 11             | 5              | 5              | 5              |
| $2358720_2 = \chi_{110}$ | 40          | 90          | 25          | 56          | 52          | 6           | 6           | 5           | 11          | 1              | 11             | 5              | 5              | 5              |
| $2402400_2 = \chi_{111}$ | 50          | 108         | 33          | 70          | 63          | 7           | 7           | 8           | 13          | 4              | 11             | 5              | 5              | 4              |
| $2402400_3 = \chi_{112}$ | 50          | 108         | 33          | 70          | 63          | 7           | 7           | 8           | 13          | 4              | 11             | 5              | 5              | 4              |

$$\begin{aligned}
\varphi_1 &= 1_1 & \varphi_8 &= 7942_1 \\
\varphi_2 &= 78_1 & \varphi_9 &= 24596_1 \\
\varphi_3 &= 350_1 & \varphi_{10} &= 31668_1 \\
\varphi_4 &= 572_1 & \varphi_{11} &= 34892_1 \\
\varphi_5 &= 1352_1 & \varphi_{12} &= 62952_1 \\
\varphi_6 &= 5824_1 & \varphi_{13} &= 62952_2 \\
\varphi_7 &= 5824_2 & \varphi_{14} &= 163084_1
\end{aligned}$$

| Block 2:                 | $\varphi_{15}$ |
|--------------------------|----------------|
| $1441792_1 = \chi_{56}$  | 1              |
| $1441792_2 = \chi_{104}$ | 1              |

$$\varphi_{15} = 1441792_1$$

| <b>Block 3:</b>          | $\varphi_{16}$ |
|--------------------------|----------------|
| $2555904_1 = \chi_{63}$  | 1              |
| $2555904_2 = \chi_{64}$  | 1              |
| $2555904_3 = \chi_{113}$ | 1              |
| $2555904_4 = \chi_{114}$ | 1              |

$$\varphi_{16} = 2555904_1$$

| <b>Blocks 4, 5:</b>      | $\varphi_{17}$ | $\varphi_{18}$ | $\varphi_{19}$ | $\varphi_{20}$ | $\varphi_{21}$ | $\varphi_{22}$ | $\varphi_{23}$ | $\varphi_{24}$ | $\varphi_{25}$ | $\varphi_{26}$ | $\varphi_{27}$ |
|--------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| $351_1 = \chi_{115}$     | 1              | 1              | .              | .              | .              | .              | .              | .              | .              | .              | .              |
| $7722_1 = \chi_{116}$    | 4              | 2              | .              | .              | .              | 1              | .              | .              | .              | .              | .              |
| $12474_1 = \chi_{117}$   | 5              | 2              | .              | .              | 1              | 1              | .              | .              | .              | .              | .              |
| $12474_3 = \chi_{118}$   | 5              | 2              | .              | 1              | .              | 1              | .              | .              | .              | .              | .              |
| $19305_1 = \chi_{119}$   | 7              | 3              | 1              | 1              | 1              | 1              | .              | .              | .              | .              | .              |
| $19656_1 = \chi_{120}$   | 8              | 4              | 1              | 1              | 1              | 1              | .              | .              | .              | .              | .              |
| $27027_1 = \chi_{121}$   | 5              | 2              | .              | 1              | 1              | .              | 1              | .              | .              | .              | .              |
| $42120_1 = \chi_{122}$   | 12             | 5              | .              | 1              | 1              | 2              | 1              | .              | .              | .              | .              |
| $51975_1 = \chi_{123}$   | 15             | 6              | .              | 2              | 2              | 2              | 1              | .              | .              | .              | .              |
| $54054_1 = \chi_{124}$   | 16             | 7              | 1              | 2              | 2              | 2              | 1              | .              | .              | .              | .              |
| $61425_1 = \chi_{125}$   | 19             | 8              | 1              | 2              | 2              | 3              | 1              | .              | .              | .              | .              |
| $96525_1 = \chi_{126}$   | 7              | 4              | .              | 1              | 1              | .              | 1              | 1              | .              | .              | .              |
| $123552_1 = \chi_{127}$  | 18             | 9              | 1              | 2              | 2              | 2              | 1              | 1              | .              | .              | .              |
| $235872_3 = \chi_{128}$  | 18             | 9              | 1              | 2              | 2              | 2              | 1              | 1              | 1              | .              | .              |
| $237600_1 = \chi_{129}$  | 18             | 9              | 2              | 2              | 2              | 2              | 1              | 1              | 1              | .              | .              |
| $289575_2 = \chi_{130}$  | 33             | 15             | 2              | 4              | 4              | 4              | 2              | 1              | 1              | .              | .              |
| $360855_2 = \chi_{131}$  | 49             | 21             | 3              | 7              | 7              | 5              | 4              | .              | .              | 1              | .              |
| $368550_1 = \chi_{132}$  | 34             | 16             | 2              | 4              | 4              | 3              | 3              | 2              | 1              | .              | .              |
| $368550_3 = \chi_{133}$  | 52             | 23             | 3              | 7              | 7              | 6              | 4              | .              | .              | 1              | .              |
| $386100_1 = \chi_{134}$  | 34             | 16             | 2              | 5              | 5              | 2              | 4              | 1              | .              | 1              | .              |
| $405405_1 = \chi_{135}$  | 41             | 19             | 3              | 6              | 6              | 3              | 4              | 1              | .              | 1              | .              |
| $405405_3 = \chi_{136}$  | 41             | 19             | 3              | 6              | 6              | 3              | 4              | 1              | .              | 1              | .              |
| $432432_1 = \chi_{137}$  | 46             | 21             | 3              | 7              | 7              | 3              | 5              | 1              | .              | 1              | .              |
| $494208_1 = \chi_{138}$  | 66             | 30             | 4              | 9              | 9              | 6              | 6              | 1              | .              | 1              | .              |
| $577368_2 = \chi_{139}$  | 40             | 20             | 3              | 5              | 5              | 3              | 4              | 2              | 1              | 1              | .              |
| $608256_1 = \chi_{140}$  | 38             | 18             | 4              | 7              | 7              | .              | 6              | 1              | .              | 2              | .              |
| $675675_2 = \chi_{141}$  | 67             | 31             | 4              | 9              | 9              | 6              | 6              | 2              | 1              | 1              | .              |
| $675675_4 = \chi_{142}$  | 67             | 31             | 4              | 9              | 9              | 6              | 6              | 2              | 1              | 1              | .              |
| $772200_1 = \chi_{143}$  | 74             | 35             | 4              | 10             | 10             | 6              | 7              | 3              | 1              | 1              | .              |
| $852930_2 = \chi_{144}$  | 94             | 43             | 6              | 13             | 13             | 8              | 9              | 2              | .              | 2              | .              |
| $938223_2 = \chi_{145}$  | 43             | 19             | 2              | 6              | 6              | 2              | 5              | 1              | .              | 1              | 1              |
| $997920_1 = \chi_{146}$  | 62             | 27             | 2              | 8              | 8              | 5              | 6              | 1              | .              | 1              | 1              |
| $1235520_1 = \chi_{147}$ | 80             | 36             | 4              | 10             | 10             | 7              | 7              | 2              | 1              | 1              | 1              |
| $1297296_3 = \chi_{148}$ | 72             | 33             | 4              | 10             | 10             | 4              | 8              | 2              | .              | 2              | 1              |
| $1297296_5 = \chi_{149}$ | 72             | 33             | 4              | 10             | 10             | 4              | 8              | 2              | .              | 2              | 1              |
| $1351350_1 = \chi_{150}$ | 88             | 40             | 5              | 12             | 12             | 6              | 9              | 2              | .              | 2              | 1              |
| $1351350_3 = \chi_{151}$ | 88             | 40             | 5              | 12             | 12             | 6              | 9              | 2              | .              | 2              | 1              |
| $1351350_5 = \chi_{152}$ | 88             | 40             | 5              | 12             | 12             | 6              | 9              | 2              | .              | 2              | 1              |
| $1351350_7 = \chi_{153}$ | 88             | 40             | 5              | 12             | 12             | 6              | 9              | 2              | .              | 2              | 1              |
| $1621620_1 = \chi_{154}$ | 114            | 52             | 6              | 15             | 15             | 9              | 11             | 3              | 1              | 2              | 1              |

| (Blocks 4, 5:)                      | $\varphi_{17}$ | $\varphi_{18}$ | $\varphi_{19}$ | $\varphi_{20}$ | $\varphi_{21}$ | $\varphi_{22}$ | $\varphi_{23}$ | $\varphi_{24}$ | $\varphi_{25}$ | $\varphi_{26}$ | $\varphi_{27}$ |
|-------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1658475 <sub>1</sub> = $\chi_{155}$ | 121            | 55             | 7              | 17             | 17             | 9              | 12             | 2              | .              | 3              | 1              |
| 1658475 <sub>3</sub> = $\chi_{156}$ | 103            | 48             | 6              | 14             | 14             | 6              | 11             | 4              | 1              | 2              | 1              |
| 1729728 <sub>1</sub> = $\chi_{157}$ | 118            | 54             | 7              | 17             | 17             | 7              | 13             | 3              | .              | 3              | 1              |
| 1791153 <sub>2</sub> = $\chi_{158}$ | 137            | 62             | 8              | 19             | 19             | 10             | 14             | 3              | .              | 3              | 1              |
| 1853280 <sub>1</sub> = $\chi_{159}$ | 136            | 63             | 8              | 19             | 19             | 9              | 14             | 4              | .              | 3              | 1              |
| 1876446 <sub>2</sub> = $\chi_{160}$ | 132            | 60             | 8              | 18             | 18             | 10             | 13             | 3              | 1              | 3              | 1              |
| 1965600 <sub>1</sub> = $\chi_{161}$ | 136            | 63             | 8              | 19             | 19             | 9              | 14             | 4              | 1              | 3              | 1              |
| 1965600 <sub>3</sub> = $\chi_{162}$ | 136            | 63             | 8              | 19             | 19             | 9              | 14             | 4              | 1              | 3              | 1              |
| 2729376 <sub>2</sub> = $\chi_{163}$ | 180            | 81             | 10             | 25             | 25             | 12             | 19             | 4              | .              | 4              | 2              |
| 3088800 <sub>1</sub> = $\chi_{164}$ | 210            | 96             | 12             | 29             | 29             | 14             | 22             | 5              | .              | 5              | 2              |
| 1728 <sub>1</sub> = $\chi_{165}$    | .              | .              | 1              | .              | .              | .              | .              | .              | .              | .              | .              |
| 1728 <sub>3</sub> = $\chi_{166}$    | .              | .              | 1              | .              | .              | .              | .              | .              | .              | .              | .              |
| 61776 <sub>1</sub> = $\chi_{167}$   | 20             | 9              | 1              | 2              | 2              | 3              | 1              | .              | .              | .              | .              |
| 61776 <sub>3</sub> = $\chi_{168}$   | 20             | 9              | 1              | 2              | 2              | 3              | 1              | .              | .              | .              | .              |
| 71280 <sub>1</sub> = $\chi_{169}$   | 22             | 9              | 1              | 3              | 3              | 3              | 1              | .              | .              | .              | .              |
| 71280 <sub>3</sub> = $\chi_{170}$   | 22             | 9              | 1              | 3              | 3              | 3              | 1              | .              | .              | .              | .              |
| 112320 <sub>1</sub> = $\chi_{171}$  | .              | .              | .              | .              | .              | .              | .              | .              | 1              | .              | .              |
| 112320 <sub>3</sub> = $\chi_{172}$  | .              | .              | .              | .              | .              | .              | .              | .              | 1              | .              | .              |
| 123552 <sub>3</sub> = $\chi_{173}$  | 12             | 6              | .              | 2              | 2              | .              | 2              | 1              | .              | .              | .              |
| 308880 <sub>1</sub> = $\chi_{174}$  | 34             | 15             | 3              | 5              | 5              | 3              | 3              | .              | .              | 1              | .              |
| 308880 <sub>3</sub> = $\chi_{175}$  | 34             | 15             | 3              | 5              | 5              | 3              | 3              | .              | .              | 1              | .              |
| 314496 <sub>1</sub> = $\chi_{176}$  | 18             | 9              | 1              | 2              | 2              | 1              | 2              | 2              | 1              | .              | .              |
| 314496 <sub>3</sub> = $\chi_{177}$  | 36             | 16             | 2              | 5              | 5              | 4              | 3              | .              | .              | 1              | .              |
| 314496 <sub>5</sub> = $\chi_{178}$  | 18             | 9              | 1              | 2              | 2              | 1              | 2              | 2              | 1              | .              | .              |
| 314496 <sub>7</sub> = $\chi_{179}$  | 36             | 16             | 2              | 5              | 5              | 4              | 3              | .              | .              | 1              | .              |
| 359424 <sub>1</sub> = $\chi_{180}$  | 36             | 18             | 2              | 4              | 4              | 4              | 2              | 2              | 1              | .              | .              |
| 359424 <sub>3</sub> = $\chi_{181}$  | 36             | 18             | 2              | 4              | 4              | 4              | 2              | 2              | 1              | .              | .              |
| 432432 <sub>3</sub> = $\chi_{182}$  | 46             | 21             | 3              | 7              | 7              | 3              | 5              | 1              | .              | 1              | .              |
| 432432 <sub>5</sub> = $\chi_{183}$  | 46             | 21             | 3              | 7              | 7              | 3              | 5              | 1              | .              | 1              | .              |
| 967680 <sub>1</sub> = $\chi_{184}$  | 74             | 36             | 6              | 11             | 11             | 4              | 8              | 3              | 1              | 2              | .              |
| 967680 <sub>3</sub> = $\chi_{185}$  | 74             | 36             | 6              | 11             | 11             | 4              | 8              | 3              | 1              | 2              | .              |
| 1123200 <sub>1</sub> = $\chi_{186}$ | 120            | 55             | 7              | 16             | 16             | 11             | 11             | 3              | 1              | 2              | .              |
| 1123200 <sub>3</sub> = $\chi_{187}$ | 120            | 55             | 7              | 16             | 16             | 11             | 11             | 3              | 1              | 2              | .              |
| 1235520 <sub>3</sub> = $\chi_{188}$ | 80             | 36             | 4              | 10             | 10             | 7              | 7              | 2              | 1              | 1              | 1              |
| 1235520 <sub>5</sub> = $\chi_{189}$ | 80             | 36             | 4              | 10             | 10             | 7              | 7              | 2              | 1              | 1              | 1              |
| 1729728 <sub>3</sub> = $\chi_{190}$ | 118            | 54             | 7              | 17             | 17             | 7              | 13             | 3              | .              | 3              | 1              |
| 1729728 <sub>5</sub> = $\chi_{191}$ | 118            | 54             | 7              | 17             | 17             | 7              | 13             | 3              | .              | 3              | 1              |
| 1796256 <sub>1</sub> = $\chi_{192}$ | 139            | 63             | 8              | 19             | 20             | 10             | 14             | 3              | .              | 3              | 1              |
| 1796256 <sub>3</sub> = $\chi_{193}$ | 139            | 63             | 8              | 20             | 19             | 10             | 14             | 3              | .              | 3              | 1              |
| 2594592 <sub>1</sub> = $\chi_{194}$ | 144            | 66             | 8              | 20             | 20             | 8              | 16             | 4              | .              | 4              | 2              |

| <b>(Blocks 4, 5:)</b>    | $\varphi_{17}$ | $\varphi_{18}$ | $\varphi_{19}$ | $\varphi_{20}$ | $\varphi_{21}$ | $\varphi_{22}$ | $\varphi_{23}$ | $\varphi_{24}$ | $\varphi_{25}$ | $\varphi_{26}$ | $\varphi_{27}$ |
|--------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| $2965248_1 = \chi_{195}$ | 198            | 90             | 11             | 27             | 27             | 14             | 20             | 5              | 1              | 4              | 2              |
| $2965248_3 = \chi_{196}$ | 198            | 90             | 11             | 27             | 27             | 14             | 20             | 5              | 1              | 4              | 2              |
| $3088800_3 = \chi_{197}$ | 210            | 96             | 12             | 29             | 29             | 14             | 22             | 5              | .              | 5              | 2              |
| $3088800_5 = \chi_{198}$ | 210            | 96             | 12             | 29             | 29             | 14             | 22             | 5              | .              | 5              | 2              |

$$\varphi_{17} = 27_1$$

$$\varphi_{18} = 324_1$$

$$\varphi_{19} = 1728_1$$

$$\varphi_{20} = 4725_1$$

$$\varphi_{21} = 4725_3$$

$$\varphi_{22} = 6966_1$$

$$\varphi_{23} = 16794_1$$

$$\varphi_{24} = 68796_1$$

$$\varphi_{25} = 112320_1$$

$$\varphi_{26} = 179388_1$$

$$\varphi_{27} = 524664_1$$