

# $A_7 \pmod{5}$

|         | blocks        | defect | matrix                           |
|---------|---------------|--------|----------------------------------|
| $G :$   | 1             | 1      | $5 \times 4$                     |
|         | 2             | 0      | $10_1 = \chi_3, \varphi_4$       |
|         | $3 = \bar{2}$ | 0      | $10_2 = \chi_4, \varphi_5$       |
|         | 4             | 0      | $15_1 = \chi_7, \varphi_7$       |
|         | 5             | 0      | $35_1 = \chi_9, \varphi_8$       |
| $2.G :$ | 6             | 1      | $5 \times 4$                     |
|         | 7             | 0      | $20_1 = \chi_{14}, \varphi_{13}$ |
|         | 8             | 0      | $20_2 = \chi_{15}, \varphi_{14}$ |

|         | blocks      | defect | matrix                           |
|---------|-------------|--------|----------------------------------|
| $3.G :$ | 9           | 1      | $5 \times 4$                     |
|         | $10 = 9^*$  |        |                                  |
|         | 11          | 0      | $15_2 = \chi_{18}, \varphi_{17}$ |
|         | $12 = 11^*$ |        |                                  |
|         | 13          | 0      | $15_4 = \chi_{19}, \varphi_{18}$ |
| $6.G :$ | 14 = 13*    |        |                                  |
|         | 15          | 1      | $5 \times 4$                     |
|         | $16 = 15^*$ |        |                                  |

| Block 1:        | $\varphi_1$ | $\varphi_2$ | $\varphi_3$ | $\varphi_6$ |                    |
|-----------------|-------------|-------------|-------------|-------------|--------------------|
| $1_1 = \chi_1$  | 1           | .           | .           | .           | $\varphi_1 = 1_1$  |
| $6_1 = \chi_2$  | .           | 1           | .           | .           | $\varphi_2 = 6_1$  |
| $14_1 = \chi_5$ | .           | 1           | 1           | .           | $\varphi_3 = 8_1$  |
| $14_2 = \chi_6$ | 1           | .           | .           | 1           | $\varphi_6 = 13_1$ |
| $21_1 = \chi_8$ | .           | .           | 1           | 1           |                    |

| Block 6:           | $\varphi_9$ | $\varphi_{10}$ | $\varphi_{11}$ | $\varphi_{12}$ |                       |
|--------------------|-------------|----------------|----------------|----------------|-----------------------|
| $4_1 = \chi_{10}$  | 1           | .              | .              | .              | $\varphi_9 = 4_1$     |
| $4_2 = \chi_{11}$  | .           | 1              | .              | .              | $\varphi_{10} = 4_2$  |
| $14_3 = \chi_{12}$ | .           | .              | 1              | .              | $\varphi_{11} = 14_1$ |
| $14_4 = \chi_{13}$ | .           | .              | .              | 1              | $\varphi_{12} = 14_2$ |
| $36_1 = \chi_{16}$ | 1           | 1              | 1              | 1              |                       |

| Blocks 9, 10:      | $\varphi_{15}$ | $\varphi_{16}$ | $\varphi_{19}$ | $\varphi_{20}$ |                       |
|--------------------|----------------|----------------|----------------|----------------|-----------------------|
| $6_2 = \chi_{17}$  | .              | 1              | .              | .              | $\varphi_{15} = 3_1$  |
| $21_2 = \chi_{20}$ | .              | .              | .              | 1              | $\varphi_{16} = 6_2$  |
| $21_4 = \chi_{21}$ | 1              | .              | 1              | .              | $\varphi_{19} = 18_1$ |
| $24_1 = \chi_{22}$ | 1              | .              | .              | 1              | $\varphi_{20} = 21_1$ |
| $24_3 = \chi_{23}$ | .              | 1              | 1              | .              |                       |

| <b>Blocks 15, 16:</b> | $\varphi_{21}$ | $\varphi_{22}$ | $\varphi_{23}$ | $\varphi_{24}$ |
|-----------------------|----------------|----------------|----------------|----------------|
| $6_4 = \chi_{24}$     | 1              | .              | .              | .              |
| $6_6 = \chi_{25}$     | .              | 1              | .              | .              |
| $24_5 = \chi_{26}$    | 1              | 1              | 1              | .              |
| $24_7 = \chi_{27}$    | .              | .              | .              | 1              |
| $36_2 = \chi_{28}$    | .              | .              | 1              | 1              |

$$\begin{aligned} \varphi_{21} &= 6_4 \\ \varphi_{22} &= 6_6 \\ \varphi_{23} &= 12_1 \\ \varphi_{24} &= 24_1 \end{aligned}$$