

# $R(27).3 \pmod{13}$

|       | blocks               | defect | matrix                                  |
|-------|----------------------|--------|-----------------------------------------|
| $G :$ | 1                    | 1      | $8 \times 6$                            |
|       | 2                    | 1      | $8 \times 6$                            |
|       | 3                    | 0      | $741_1 = \chi_{3,0}, \varphi_{3,0}$     |
|       | 4                    | 0      | $741_2 = \chi_{3,1}, \varphi_{3,1}$     |
|       | 5                    | 0      | $741_3 = \chi_{3,2}, \varphi_{3,2}$     |
|       | $6 = \overline{3}$   | 0      | $741_4 = \chi_{4,0}, \varphi_{4,0}$     |
|       | $7 = \overline{5}$   | 0      | $741_5 = \chi_{4,1}, \varphi_{4,1}$     |
|       | $8 = \overline{4}$   | 0      | $741_6 = \chi_{4,2}, \varphi_{4,2}$     |
|       | 9                    | 0      | $1443_1 = \chi_{5,0}, \varphi_{5,0}$    |
|       | 10                   | 0      | $1443_2 = \chi_{5,1}, \varphi_{5,1}$    |
|       | 11                   | 0      | $1443_3 = \chi_{5,2}, \varphi_{5,2}$    |
|       | $12 = \overline{9}$  | 0      | $1443_4 = \chi_{6,0}, \varphi_{6,0}$    |
|       | $13 = \overline{11}$ | 0      | $1443_5 = \chi_{6,1}, \varphi_{6,1}$    |
|       | $14 = \overline{10}$ | 0      | $1443_6 = \chi_{6,2}, \varphi_{6,2}$    |
|       | 15                   | 0      | $2184_1 = \chi_{7,0}, \varphi_{7,0}$    |
|       | 16                   | 0      | $2184_2 = \chi_{7,1}, \varphi_{7,1}$    |
|       | 17                   | 0      | $2184_3 = \chi_{7,2}, \varphi_{7,2}$    |
|       | $18 = \overline{15}$ | 0      | $2184_4 = \chi_{8,0}, \varphi_{8,0}$    |
|       | $19 = \overline{17}$ | 0      | $2184_5 = \chi_{8,1}, \varphi_{8,1}$    |
|       | $20 = \overline{16}$ | 0      | $2184_6 = \chi_{8,2}, \varphi_{8,2}$    |
|       | 21                   | 0      | $41496_1 = \chi_{9+}, \varphi_{9+}$     |
|       | 22                   | 0      | $41496_2 = \chi_{12+}, \varphi_{12+}$   |
|       | 23                   | 0      | $18278_1 = \chi_{15,0}, \varphi_{15,0}$ |
|       | 24                   | 0      | $18278_2 = \chi_{15,1}, \varphi_{15,1}$ |
|       | $25 = \overline{24}$ | 0      | $18278_3 = \chi_{15,2}, \varphi_{15,2}$ |
|       | 26                   | 0      | $54834_1 = \chi_{16+}, \varphi_{16+}$   |
|       | 27                   | 0      | $80808_1 = \chi_{33+}, \varphi_{21+}$   |

| Block 1:                | $\varphi_{1,0}$ | $\varphi_{1,1}$ | $\varphi_{1,2}$ | $\varphi_{20,0}$ | $\varphi_{20,1}$ | $\varphi_{20,2}$ |                            |
|-------------------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|----------------------------|
| $1_1 = \chi_{1,0}$      | 1               | .               | .               | .                | .                | .                | $\varphi_{1,0} = 1_1$      |
| $1_2 = \chi_{1,1}$      | .               | 1               | .               | .                | .                | .                | $\varphi_{1,1} = 1_2$      |
| $1_3 = \chi_{1,2}$      | .               | .               | 1               | .                | .                | .                | $\varphi_{1,2} = 1_3$      |
| $19683_1 = \chi_{20,0}$ | .               | .               | .               | 1                | .                | .                | $\varphi_{20,0} = 19683_1$ |
| $19683_2 = \chi_{20,1}$ | .               | .               | .               | .                | 1                | .                | $\varphi_{20,1} = 19683_2$ |
| $19683_3 = \chi_{20,2}$ | .               | .               | .               | .                | .                | 1                | $\varphi_{20,2} = 19683_3$ |
| $59052_1 = \chi_{21+}$  | 1               | 1               | 1               | 1                | 1                | 1                |                            |
| $59052_2 = \chi_{24+}$  | 1               | 1               | 1               | 1                | 1                | 1                |                            |

| <b>Block 2:</b>         | $\varphi_{2,0}$ | $\varphi_{2,1}$ | $\varphi_{2,2}$ | $\varphi_{19,0}$ | $\varphi_{19,1}$ | $\varphi_{19,2}$ |                            |
|-------------------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|----------------------------|
| $703_1 = \chi_{2,0}$    | 1               | .               | .               | .                | .                | .                | $\varphi_{2,0} = 703_1$    |
| $703_2 = \chi_{2,1}$    | .               | 1               | .               | .                | .                | .                | $\varphi_{2,1} = 703_2$    |
| $703_3 = \chi_{2,2}$    | .               | .               | 1               | .                | .                | .                | $\varphi_{2,2} = 703_3$    |
| $18981_1 = \chi_{19,0}$ | .               | .               | .               | 1                | .                | .                | $\varphi_{19,0} = 18981_1$ |
| $18981_2 = \chi_{19,1}$ | .               | .               | .               | .                | 1                | .                | $\varphi_{19,1} = 18981_2$ |
| $18981_3 = \chi_{19,2}$ | .               | .               | .               | .                | .                | 1                | $\varphi_{19,2} = 18981_3$ |
| $59052_3 = \chi_{27+}$  | 1               | 1               | 1               | 1                | 1                | 1                |                            |
| $59052_4 = \chi_{30+}$  | 1               | 1               | 1               | 1                | 1                | 1                |                            |