

$O_8^+(3) \pmod{7}$

| | blocks | defect | matrix |
|-------|--------|--------|-------------------------------------|
| $G :$ | 1 | 1 | 7×6 |
| | 2 | 1 | 7×6 |
| | 3 | 1 | 7×6 |
| | 4 | 1 | 7×6 |
| | 5 | 0 | $819_1 = \chi_9, \varphi_9$ |
| | 6 | 0 | $819_2 = \chi_{10}, \varphi_{10}$ |
| | 7 | 0 | $819_3 = \chi_{11}, \varphi_{11}$ |
| | 8 | 0 | $2275_1 = \chi_{12}, \varphi_{12}$ |
| | 9 | 0 | $2275_2 = \chi_{13}, \varphi_{13}$ |
| | 10 | 0 | $2275_3 = \chi_{14}, \varphi_{14}$ |
| | 11 | 0 | $2275_4 = \chi_{15}, \varphi_{15}$ |
| | 12 | 0 | $5460_1 = \chi_{17}, \varphi_{17}$ |
| | 13 | 0 | $5460_2 = \chi_{18}, \varphi_{18}$ |
| | 14 | 0 | $5460_3 = \chi_{19}, \varphi_{19}$ |
| | 15 | 0 | $5460_4 = \chi_{20}, \varphi_{20}$ |
| | 16 | 0 | $5460_5 = \chi_{21}, \varphi_{21}$ |
| | 17 | 0 | $5460_6 = \chi_{22}, \varphi_{22}$ |
| | 18 | 0 | $9450_1 = \chi_{23}, \varphi_{23}$ |
| | 19 | 0 | $18200_1 = \chi_{25}, \varphi_{25}$ |
| | 20 | 0 | $18200_2 = \chi_{26}, \varphi_{26}$ |
| | 21 | 0 | $18200_3 = \chi_{27}, \varphi_{27}$ |
| | 22 | 0 | $18200_4 = \chi_{28}, \varphi_{28}$ |
| | 23 | 0 | $18200_5 = \chi_{29}, \varphi_{29}$ |
| | 24 | 0 | $24192_1 = \chi_{36}, \varphi_{36}$ |
| | 25 | 0 | $27300_1 = \chi_{37}, \varphi_{37}$ |
| | 26 | 0 | $29120_1 = \chi_{38}, \varphi_{38}$ |
| | 27 | 0 | $29120_2 = \chi_{39}, \varphi_{39}$ |
| | 28 | 0 | $29120_3 = \chi_{40}, \varphi_{40}$ |
| | 29 | 0 | $29120_4 = \chi_{41}, \varphi_{41}$ |
| | 30 | 0 | $29120_5 = \chi_{42}, \varphi_{42}$ |
| | 31 | 0 | $29120_6 = \chi_{43}, \varphi_{43}$ |
| | 32 | 0 | $40950_1 = \chi_{44}, \varphi_{44}$ |
| | 33 | 0 | $40950_2 = \chi_{45}, \varphi_{45}$ |
| | 34 | 0 | $40950_3 = \chi_{46}, \varphi_{46}$ |
| | 35 | 0 | $40950_4 = \chi_{47}, \varphi_{47}$ |
| | 36 | 0 | $40950_5 = \chi_{48}, \varphi_{48}$ |
| | 37 | 0 | $40950_6 = \chi_{49}, \varphi_{49}$ |
| | 38 | 0 | $46592_1 = \chi_{50}, \varphi_{50}$ |
| | 39 | 0 | $46592_2 = \chi_{51}, \varphi_{51}$ |
| | 40 | 0 | $46592_3 = \chi_{52}, \varphi_{52}$ |

| | blocks | defect | matrix |
|--|--------|--------|--------------------------------------|
| | 41 | 0 | $49140_1 = \chi_{53}, \varphi_{53}$ |
| | 42 | 0 | $49140_2 = \chi_{54}, \varphi_{54}$ |
| | 43 | 0 | $49140_3 = \chi_{55}, \varphi_{55}$ |
| | 44 | 0 | $49140_4 = \chi_{56}, \varphi_{56}$ |
| | 45 | 0 | $49140_5 = \chi_{57}, \varphi_{57}$ |
| | 46 | 0 | $49140_6 = \chi_{58}, \varphi_{58}$ |
| | 47 | 0 | $54600_1 = \chi_{59}, \varphi_{59}$ |
| | 48 | 0 | $54600_2 = \chi_{60}, \varphi_{60}$ |
| | 49 | 0 | $54600_3 = \chi_{61}, \varphi_{61}$ |
| | 50 | 0 | $54600_4 = \chi_{62}, \varphi_{62}$ |
| | 51 | 0 | $54600_5 = \chi_{63}, \varphi_{63}$ |
| | 52 | 0 | $54600_6 = \chi_{64}, \varphi_{64}$ |
| | 53 | 0 | $54600_7 = \chi_{65}, \varphi_{65}$ |
| | 54 | 0 | $66339_1 = \chi_{66}, \varphi_{66}$ |
| | 55 | 0 | $66339_2 = \chi_{67}, \varphi_{67}$ |
| | 56 | 0 | $66339_3 = \chi_{68}, \varphi_{68}$ |
| | 57 | 0 | $163800_1 = \chi_{69}, \varphi_{69}$ |
| | 58 | 0 | $163800_2 = \chi_{70}, \varphi_{70}$ |
| | 59 | 0 | $163800_3 = \chi_{71}, \varphi_{71}$ |
| | 60 | 0 | $184275_1 = \chi_{72}, \varphi_{72}$ |
| | 61 | 0 | $184275_2 = \chi_{73}, \varphi_{73}$ |
| | 62 | 0 | $184275_3 = \chi_{74}, \varphi_{74}$ |
| | 63 | 0 | $184275_4 = \chi_{75}, \varphi_{75}$ |
| | 64 | 0 | $232960_1 = \chi_{83}, \varphi_{83}$ |
| | 65 | 0 | $232960_2 = \chi_{84}, \varphi_{84}$ |
| | 66 | 0 | $232960_3 = \chi_{85}, \varphi_{85}$ |
| | 67 | 0 | $232960_4 = \chi_{86}, \varphi_{86}$ |
| | 68 | 0 | $232960_5 = \chi_{87}, \varphi_{87}$ |
| | 69 | 0 | $232960_6 = \chi_{88}, \varphi_{88}$ |
| | 70 | 0 | $245700_1 = \chi_{89}, \varphi_{89}$ |
| | 71 | 0 | $262080_1 = \chi_{90}, \varphi_{90}$ |
| | 72 | 0 | $262080_2 = \chi_{91}, \varphi_{91}$ |
| | 73 | 0 | $262080_3 = \chi_{92}, \varphi_{92}$ |
| | 74 | 0 | $262080_4 = \chi_{93}, \varphi_{93}$ |
| | 75 | 0 | $262080_5 = \chi_{94}, \varphi_{94}$ |
| | 76 | 0 | $262080_6 = \chi_{95}, \varphi_{95}$ |
| | 77 | 0 | $291200_1 = \chi_{96}, \varphi_{96}$ |
| | 78 | 0 | $291200_2 = \chi_{97}, \varphi_{97}$ |
| | 79 | 0 | $291200_3 = \chi_{98}, \varphi_{98}$ |
| | 80 | 0 | $291200_4 = \chi_{99}, \varphi_{99}$ |

| | blocks | defect | matrix |
|--|--------|--------|---|
| | 81 | 0 | 291200 ₅ = $\chi_{100}, \varphi_{100}$ |
| | 82 | 0 | 419328 ₁ = $\chi_{105}, \varphi_{102}$ |
| | 83 | 0 | 419328 ₂ = $\chi_{106}, \varphi_{103}$ |
| | 84 | 0 | 419328 ₃ = $\chi_{107}, \varphi_{104}$ |
| | 85 | 0 | 465920 ₁ = $\chi_{108}, \varphi_{105}$ |

| | blocks | defect | matrix |
|--|--------|--------|---|
| | 86 | 0 | 465920 ₂ = $\chi_{109}, \varphi_{106}$ |
| | 87 | 0 | 465920 ₃ = $\chi_{110}, \varphi_{107}$ |
| | 88 | 0 | 491400 ₁ = $\chi_{111}, \varphi_{108}$ |
| | 89 | 0 | 716800 ₁ = $\chi_{113}, \varphi_{109}$ |
| | 90 | 0 | 716800 ₂ = $\chi_{114}, \varphi_{110}$ |

| Block 1: | φ_1 | φ_8 | φ_{16} | φ_{24} | φ_{82} | φ_{101} |
|------------------------------------|-------------|-------------|----------------|----------------|----------------|-----------------|
| 1 ₁ = χ_1 | 1 | . | . | . | . | . |
| 300 ₁ = χ_8 | 1 | 1 | . | . | . | . |
| 2808 ₁ = χ_{16} | . | . | 1 | . | . | . |
| 17550 ₁ = χ_{24} | . | 1 | . | 1 | . | . |
| 218700 ₁ = χ_{82} | . | . | . | 1 | 1 | . |
| 332800 ₁ = χ_{101} | . | . | 1 | . | . | 1 |
| 531441 ₁ = χ_{112} | . | . | . | . | 1 | 1 |

$$\begin{aligned} \varphi_1 &= 1_1 \\ \varphi_8 &= 299_1 \\ \varphi_{16} &= 2808_1 \\ \varphi_{24} &= 17251_1 \\ \varphi_{82} &= 201449_1 \\ \varphi_{101} &= 329992_1 \end{aligned}$$

| Block 2: | φ_2 | φ_5 | φ_{30} | φ_{33} | φ_{72} | φ_{75} |
|------------------------------------|-------------|-------------|----------------|----------------|----------------|----------------|
| 260 ₁ = χ_2 | 1 | . | . | . | . | . |
| 260 ₄ = χ_5 | . | 1 | . | . | . | . |
| 23400 ₁ = χ_{30} | 1 | . | 1 | . | . | . |
| 23400 ₄ = χ_{33} | . | 1 | . | 1 | . | . |
| 189540 ₁ = χ_{76} | . | . | 1 | . | 1 | . |
| 189540 ₄ = χ_{79} | . | . | . | 1 | . | 1 |
| 332800 ₂ = χ_{102} | . | . | . | . | 1 | 1 |

$$\begin{aligned} \varphi_2 &= 260_1 \\ \varphi_5 &= 260_4 \\ \varphi_{30} &= 23140_1 \\ \varphi_{33} &= 23140_4 \\ \varphi_{72} &= 166400_1 \\ \varphi_{75} &= 166400_4 \end{aligned}$$

| Block 3: | φ_3 | φ_6 | φ_{31} | φ_{34} | φ_{73} | φ_{76} |
|------------------------------------|-------------|-------------|----------------|----------------|----------------|----------------|
| 260 ₂ = χ_3 | 1 | . | . | . | . | . |
| 260 ₅ = χ_6 | . | 1 | . | . | . | . |
| 23400 ₂ = χ_{31} | 1 | . | 1 | . | . | . |
| 23400 ₅ = χ_{34} | . | 1 | . | 1 | . | . |
| 189540 ₂ = χ_{77} | . | . | 1 | . | 1 | . |
| 189540 ₅ = χ_{80} | . | . | . | 1 | . | 1 |
| 332800 ₃ = χ_{103} | . | . | . | . | 1 | 1 |

$$\begin{aligned} \varphi_3 &= 260_2 \\ \varphi_6 &= 260_5 \\ \varphi_{31} &= 23140_2 \\ \varphi_{34} &= 23140_5 \\ \varphi_{73} &= 166400_2 \\ \varphi_{76} &= 166400_5 \end{aligned}$$

| Block 4: | φ_4 | φ_7 | φ_{32} | φ_{35} | φ_{74} | φ_{77} |
|-------------------------|-------------|-------------|----------------|----------------|----------------|----------------|
| $260_3 = \chi_4$ | 1 | . | . | . | . | . |
| $260_6 = \chi_7$ | . | 1 | . | . | . | . |
| $23400_3 = \chi_{32}$ | 1 | . | 1 | . | . | . |
| $23400_6 = \chi_{35}$ | . | 1 | . | 1 | . | . |
| $189540_3 = \chi_{78}$ | . | . | 1 | . | 1 | . |
| $189540_6 = \chi_{81}$ | . | . | . | 1 | . | 1 |
| $332800_4 = \chi_{104}$ | . | . | . | . | 1 | 1 |

$$\begin{aligned} \varphi_4 &= 260_3 \\ \varphi_7 &= 260_6 \\ \varphi_{32} &= 23140_3 \\ \varphi_{35} &= 23140_6 \\ \varphi_{74} &= 166400_3 \\ \varphi_{77} &= 166400_6 \end{aligned}$$