

Table 5: *homogeneous spherical polynomials on $Q(l)$*

c	p
$-\frac{8}{5}$	$-\frac{1}{(24\sqrt{-3})}(\alpha + \bar{\alpha})(\beta\bar{\omega} + \bar{\beta}\omega)$
$\frac{4}{5}$	$\frac{1}{725594112000}(-77760(\alpha^4 + \bar{\alpha}^4)(\bar{\omega}^4\beta^4 + \omega^4\bar{\beta}^4)$ $+5508(\alpha^4 + \bar{\alpha}^4)(\bar{\omega}^4\beta^4 - \omega^4\bar{\beta}^4)(\omega - 1)$ $5(\bar{\omega}^4\beta^4 + \omega^4\bar{\beta}^4)(\bar{\omega}^4\beta^4 - \omega^4\bar{\beta}^4)(\omega - 1))$
$-\frac{444}{11}$	$\frac{1}{96}\sqrt{-3}(-\alpha\bar{\alpha} + \frac{1}{3}\beta\bar{\beta})(\alpha + \bar{\alpha})(\beta\bar{\omega} + \bar{\beta}\omega)$
$-\frac{1420}{17}$	$-\frac{1}{6}$
$-\frac{3164}{23}$	$\gamma \sum_{j=0}^7 \sqrt{-3}^{\epsilon_j} (\alpha^j + \bar{\alpha}^j)(\bar{\gamma}_j\beta^{8-j} + \gamma_j\bar{\beta}^{8-j})$

Here

$$\omega = \begin{cases} \frac{1+\sqrt{-l}}{2} & \text{if } l = 11, 23 \\ \sqrt{-l} & \text{if } l = 5, 17 \end{cases}, \quad \epsilon_j = \begin{cases} 0 & \text{if } j \equiv 0 \pmod{2} \\ 1 & \text{if } j \equiv 1 \pmod{2} \end{cases},$$

$$\gamma = 1/(2^{10} \cdot 3^{11} \cdot 5 \cdot 7 \cdot 23^2 \cdot 563 \cdot 12097 \cdot 657091 \cdot 3657710423)$$

$$\gamma_0 = 5243061782684741687520(6294 - 191\omega)$$

$$\gamma_1 = 10(-33603143576874628239500622 + 37963052837943236853045277\omega)$$

$$\gamma_2 = 567(-8526871368213987299465112 - 2827174426923742728102071\omega)$$

$$\gamma_3 = 315(26543621667297354178789965 - 14837494989277917971447633\omega)$$

$$\gamma_4 = 8505(1140188816433281055795759 - 762966980300063885604623\omega)$$

$$\gamma_5 = 8505(919368516535656735049125 - 433378231435979918147431\omega)$$

$$\gamma_6 = 76545(57825307285839344652477 + 39926368991562302889650\omega)$$

$$\gamma_7 = 503010(18163627757235039697542 - 10205765775691775982641\omega)$$