

B: lists

B.0 Here, I give expressions for $Q(i, j, k)$ in terms of the functions V and $\prod$ (these terms are defined in §3.4). I give these forms for $j = 0$ and all $0 \leq i \leq 4$ and all $0 \leq k \leq 2$ (from which, of course, all $Q(i, j, k)$ may be found). I also give the expression for $Q(3, 2, 0)$, which is of special interest.

$$Q(1, 0, 0) = -3V^*(4) + 2\prod\left(\frac{-q^2, -q^3}{q^2, q^3, -q^4, -1}; q^9\right) - \prod\left(\frac{-q, -q^3}{q, q^3, -q^4, -1}; q^9\right)$$

$$Q(1, 0, 1) = -\prod\left(\frac{q^4}{q^2, q^2, q^3}; q^9\right)$$

$$Q(1, 0, 2) = \prod\left(\frac{}{q^2, q^3}; q^9\right)$$

$$Q(2, 0, 0) = -2V^*(4) + \prod\left(\frac{-q}{q, q^4, -1}; q^9\right) - \prod\left(\frac{-q, -q^3}{q, q^3, -q^4, -1}; q^9\right)$$

$$Q(2, 0, 1) = -\prod\left(\frac{}{q, q^3}; q^9\right)$$

$$Q(2, 0, 2) = -q^{-1}V^*(2) + q^{-1}\prod\left(\frac{-q^3, -q^4}{q^3, q^4, -q^2, -1}; q^9\right)$$

$$Q(3, 0, 0) = -2V^*(4) - q\prod\left(\frac{-q^3, -q^3}{q^2, q^4, -q^4, -q^4}; q^9\right)$$

$$Q(3, 0, 1) = -q^{-1}V^*(1) - q^{-1}\prod\left(\frac{-q^2}{q, q^2, -1}; q^9\right) + q^{-1}\prod\left(\frac{-q^3, -q^3}{q, q^4, -q, -q}; q^9\right)$$

$$Q(3, 0, 2) = q^{-1}V^*(2) - q^{-1}\prod\left(\frac{-q^4}{q^2, q^4, -1}; q^9\right)$$

$$Q(4, 0, 0) = -2V^*(4) - q \prod \left(\frac{-q^3, -q^3}{q^2, q^4, -q^4, -q^4} ; q^9 \right)$$

$$Q(4, 0, 1) = q^{-1}V^*(1) - q^{-1} \prod \left(\frac{-q^2}{q, q^2, -1} ; q^9 \right)$$

$$Q(4, 0, 2) = 0.$$

and also

$$Q(3, 2, 0) = -q \prod \left(\frac{}{q^4, q^3} ; q^9 \right)$$

B.1 And here I express all $R(i, j, k)$ in terms of the functions U^* and $\prod$.

$$R(0, 0, 0) = 2q^3U^*(3) - 2q^2 \prod \left(\frac{-q, -q, -q^5, -q^5, -q^7}{q^2, q^2, q^4, q^6, q^6, q^8} ; q^{16} \right)$$

$$R(0, 0, 1) = 2 \prod \left(\frac{-q^3, -q^3, -q^5, -q^7, -q^7}{q^2, q^2, q^4, q^6, q^6, q^8} ; q^{16} \right)$$

$$R(0, 0, 2) = -2q^2 \prod \left(\frac{-q, -q, -q^3, -q^5, -q^7}{q^2, q^2, q^4, q^6, q^6, q^8} ; q^{16} \right)$$

$$R(0, 0, 3) = 2q \prod \left(\frac{-q, -q^3, -q^3, -q^5, -q^7}{q^2, q^2, q^4, q^6, q^6, q^8} ; q^{16} \right)$$

$$R(0, 1, 0) = 2q^3U^*(3) + q \prod \left(\frac{-q^5}{q^4, q^6} ; q^{16} \right) + \prod \left(\frac{-q^7, -q^7}{-q^3, q^4, q^6} ; q^{16} \right)$$

$$R(0, 1, 1) = q^2 \prod \left(\frac{-q}{q^4, q^6} ; q^{16} \right)$$

$$R(0, 1, 2) = 0$$

$$R(0, 1, 3) = \prod \left(\frac{-q^7}{q^4, q^6} ; q^{16} \right)$$

$$R(0, 2, 0) = 2q^3 U^*(3) - q \prod \left(\frac{-q, -q, -q^5, -q^7, -q^7}{q^2, q^2, q^2, q^6, q^6, q^6} ; q^{16} \right) \\ + \prod \left(\frac{-q, -q^7, q^8}{-q^3, q^2, q^4, q^4} ; q^{16} \right)$$

$$R(0, 2, 1) = \prod \left(\frac{-q, -q^3, -q^5, -q^7, -q^7}{q^2, q^2, q^2, q^6, q^6, q^6} ; q^{16} \right)$$

$$R(0, 2, 2) = - \prod \left(\frac{-q, -q^3, -q^5, -q^5, -q^7}{q^2, q^2, q^2, q^6, q^6, q^6} ; q^{16} \right)$$

$$R(0, 2, 3) = \prod \left(\frac{-q, -q^3, -q^3, -q^5, -q^7, q^8}{q^2, q^2, q^4, q^4, q^4, q^6, q^6} ; q^{16} \right) + \prod \left(\frac{-q^3, -q^5}{-q^7, q^4, q^6} ; q^{16} \right)$$

$$R(0, 3, 0) = 2q^3 U^*(3) + q \prod \left(\frac{-q^5}{q^4, q^6} ; q^{16} \right) + \prod \left(\frac{-q^7, -q^7}{-q^3, q^4, q^6} ; q^{16} \right)$$

$$R(0, 3, 1) = \prod \left(\frac{-q^3, -q^5}{-q, q^4, q^6} ; q^{16} \right)$$

$$R(0, 3, 2) = 0$$

$$R(0, 3, 3) = q \prod \left(\frac{-q^3, -q^5}{-q^7, q^4, q^6} ; q^{16} \right)$$

$$R(0, 4, 0) = 2q^3 U^*(3) + \prod \left(\frac{-q^7, -q^7}{-q^3, q^4, q^6} ; q^{16} \right) \\ - q \prod \left(\frac{-q, -q, -q^5, -q^7, -q^7}{q^2, q^2, q^2, q^6, q^6, q^6} ; q^{16} \right)$$

$$R(0, 4, 1) = \prod \left(\frac{-q, -q^3, -q^5, -q^7, -q^7}{q^2, q^2, q^2, q^6, q^6, q^6} ; q^{16} \right) + q^2 \prod \left(\frac{-q}{q^4, q^6} ; q^{16} \right)$$

$$R(0, 4, 2) = -q \prod \left(\begin{matrix} -q, -q, -q^3, -q^5, -q^7, q^8 \\ q^2, q^2, q^4, q^4, q^4, q^6, q^6 \end{matrix} ; q^{16} \right)$$

$$R(0, 4, 3) = \prod \left(\begin{matrix} -q, -q^3, -q^3, -q^5, -q^7, q^8 \\ q^2, q^2, q^4, q^4, q^4, q^6, q^6 \end{matrix} ; q^{16} \right)$$

$$R(1, 0, 0) = -q^3 U^*(3) - \prod \left(\begin{matrix} -q^7, -q^7 \\ -q^3, q^4, q^6 \end{matrix} ; q^{16} \right)$$

$$R(1, 0, 1) = -q^5 U^*(7) + \prod \left(\begin{matrix} -q^5, -q^5 \\ -q^7, q^2, q^4 \end{matrix} ; q^{16} \right)$$

$$R(1, 0, 2) = \prod \left(\begin{matrix} -q, -q^7 \\ -q^3, q^2, q^4 \end{matrix} ; q^{16} \right)$$

$$R(1, 0, 3) = -\prod \left(\begin{matrix} -q^7 \\ q^4, q^6 \end{matrix} ; q^{16} \right)$$

$$R(1, 1, 0) = -q^3 U^*(3) + q \prod \left(\begin{matrix} -q, -q, -q^5, -q^7, -q^7 \\ q^2, q^2, q^2, q^6, q^6, q^6 \end{matrix} ; q^{16} \right)$$

$$R(1, 1, 1) = -q^5 U^*(7) - \prod \left(\begin{matrix} -q^3, -q^3, -q^3, -q^5, -q^5, q^8 \\ q^2, q^2, q^4, q^4, q^4, q^6, q^6 \end{matrix} ; q^{16} \right)$$

$$R(1, 1, 2) = \prod \left(\begin{matrix} -q, -q^3, -q^5, -q^5, -q^7 \\ q^2, q^2, q^2, q^6, q^6, q^6 \end{matrix} ; q^{16} \right)$$

$$R(1, 1, 3) = -2q \prod \left(\begin{matrix} -q, -q^3, -q^3, -q^5, -q^7 \\ q^2, q^2, q^4, q^6, q^6, q^8 \end{matrix} ; q^{16} \right)$$

$$R(1, 2, 0) = -q^3 U^*(3) + q^2 \prod \left(\begin{matrix} -q, q^4 \\ q^2, q^6, q^6 \end{matrix} ; q^{16} \right)$$

$$R(1, 2, 1) = -q^5 U^*(7) + q \prod \left(\begin{matrix} -q^3, -q^5, q^8 \\ -q^7, q^4, q^4, q^6 \end{matrix} ; q^{16} \right)$$

$$R(1, 2, 2) = 0$$

$$R(1, 2, 3) = 0$$

$$R(1, 3, 0) = -q^3 U^*(3) + q \prod \left(\begin{matrix} -q, -q, -q^5, -q^7, -q^7 \\ q^2, q^2, q^2, q^6, q^6, q^6 \end{matrix} ; q^{16} \right)$$

$$R(1, 3, 1) = -q^5 U^*(7) - q \prod \left(\begin{matrix} -q, -q^3, -q^3, -q^5, -q^5 \\ q^2, q^2, q^2, q^6, q^6, q^6 \end{matrix} ; q^{16} \right) \\ - q^2 \prod \left(\begin{matrix} -q \\ q^4, q^6 \end{matrix} ; q^{16} \right)$$

$$R(1, 3, 2) = \prod \left(\begin{matrix} -q, -q^3, -q^5, -q^5, -q^7 \\ q^2, q^2, q^2, q^6, q^6, q^6 \end{matrix} ; q^{16} \right)$$

$$R(1, 3, 3) = - \prod \left(\begin{matrix} -q, -q^3, -q^3, -q^5, -q^7, q^8 \\ q^2, q^2, q^4, q^4, q^4, q^6, q^6 \end{matrix} ; q^{16} \right)$$

$$R(1, 4, 0) = -q^3 U^*(3) - q \prod \left(\begin{matrix} -q^5 \\ q^4, q^6 \end{matrix} ; q^{16} \right)$$

$$R(1, 4, 1) = -q^5 U^*(7) + q \prod \left(\begin{matrix} -q \\ q^2, q^4 \end{matrix} ; q^{16} \right)$$

$$R(1, 4, 2) = \prod \left(\begin{matrix} -q^3 \\ q^2, q^4 \end{matrix} ; q^{16} \right)$$

$$R(1, 4, 3) = -q \prod \left(\begin{matrix} -q^3, -q^5 \\ -q^7, q^4, q^6 \end{matrix} ; q^{16} \right)$$

$$R(2, 0, 0) = - \prod \left(\begin{matrix} -q, -q^3, -q^5, -q^7, -q^7, q^8 \\ q^2, q^2, q^4, q^4, q^4, q^6, q^6 \end{matrix} ; q^{16} \right)$$

$$R(2, 0, 1) = q^5 U^*(7) + \prod \left(\begin{matrix} -q^3, -q^3, -q^3, -q^5, -q^5, q^8 \\ q^2, q^2, q^4, q^4, q^4, q^6, q^6 \end{matrix} ; q^{16} \right)$$

$$R(2, 0, 2) = -2q^2 \prod \left(\begin{matrix} -q, -q, -q^3, -q^5, -q^7 \\ q^2, q^2, q^4, q^6, q^6, q^8 \end{matrix} ; q^{16} \right)$$

$$R(2, 0, 3) = U^*(1) - q^{-1} + q^{-1} \prod \left(\frac{-q^3, -q^3, -q^5, -q^5, -q^7}{q^2, q^2, q^2, q^6, q^6, q^6}; q^{16} \right) \\ - \prod \left(\frac{-q^7}{q^4, q^6}; q^{16} \right)$$

$$R(2, 1, 0) = 0$$

$$R(2, 1, 1) = q^5 U^*(7) - \prod \left(\frac{-q^5, -q^5}{-q^7, q^2, q^4}; q^{16} \right)$$

$$R(2, 1, 2) = 0$$

$$R(2, 1, 3) = U^*(1) - q^{-1} + q^{-1} \prod \left(\frac{-q^7}{q^2, q^4}; q^{16} \right)$$

$$R(2, 2, 0) = -q \prod \left(\frac{-q, -q^3, -q^3, -q^5, -q^7}{q^2, q^2, q^2, q^6, q^6, q^6}; q^{16} \right)$$

$$R(2, 2, 1) = q^5 U^*(7) + q \prod \left(\frac{-q, -q^3, -q^3, -q^5, -q^5}{q^2, q^2, q^2, q^6, q^6, q^6}; q^{16} \right)$$

$$R(2, 2, 2) = - \prod \left(\frac{-q, -q^3, -q^5, -q^5, -q^7}{q^2, q^2, q^2, q^6, q^6, q^6}; q^{16} \right)$$

$$R(2, 2, 3) = U^*(1) - q^{-1} + q^{-1} \prod \left(\frac{-q^3, -q^3, -q^5, -q^5, -q^7}{q^2, q^2, q^2, q^6, q^6, q^6}; q^{16} \right)$$

$$R(2, 3, 0) = 0$$

$$R(2, 3, 1) = q^5 U^*(7) - q \prod \left(\frac{-q}{q^2, q^4}; q^{16} \right)$$

$$R(2, 3, 2) = 0$$

$$R(2, 3, 3) = U^*(1) - q^{-1} + q^{-1} \prod \left(\begin{matrix} -q^3, -q^3 \\ -q, q^2, q^4 \end{matrix} ; q^{16} \right)$$

$$R(2, 4, 0) = -2q \prod \left(\begin{matrix} -q, -q^3, -q^5, -q^7, -q^7 \\ q^2, q^2, q^4, q^6, q^6, q^8 \end{matrix} ; q^{16} \right)$$

$$R(2, 4, 1) = q^5 U^*(7) + q \prod \left(\begin{matrix} -q, -q^3, -q^3, -q^5, -q^5 \\ q^2, q^2, q^2, q^6, q^6, q^6 \end{matrix} ; q^{16} \right) \\ + q^2 \prod \left(\begin{matrix} -q \\ q^4, q^6 \end{matrix} ; q^{16} \right)$$

$$R(2, 4, 2) = -q \prod \left(\begin{matrix} -q, -q, -q^3, -q^5, -q^7, q^8 \\ q^2, q^2, q^4, q^4, q^4, q^6, q^6 \end{matrix} ; q^{16} \right)$$

$$R(2, 4, 3) = U^*(1) - q^{-1} + q^{-1} \prod \left(\begin{matrix} -q^3, -q^3, -q^5, -q^5, -q^5, q^8 \\ q^2, q^2, q^4, q^4, q^4, q^6, q^6 \end{matrix} ; q^{16} \right)$$

$$R(3, 0, 0) = - \prod \left(\begin{matrix} -q^5 \\ q^2, q^4 \end{matrix} ; q^{16} \right)$$

$$R(3, 0, 1) = \prod \left(\begin{matrix} -q^3, -q^5 \\ -q, q^4, q^6 \end{matrix} ; q^{16} \right)$$

$$R(3, 0, 2) = -q^4 U^*(5) + q \prod \left(\begin{matrix} -q^3 \\ q^4, q^6 \end{matrix} ; q^{16} \right)$$

$$R(3, 0, 3) = -U^*(1) + q^{-1} - q^{-1} \prod \left(\begin{matrix} -q^3 \\ q^2, q^4 \end{matrix} ; q^{16} \right)$$

$$R(3, 1, 0) = q \prod \left(\begin{matrix} -q, -q^3, -q^3, -q^5, -q^7 \\ q^2, q^2, q^2, q^6, q^6, q^6 \end{matrix} ; q^{16} \right)$$

$$R(3, 1, 1) = - \prod \left(\begin{matrix} -q, -q^3, -q^5, -q^5, -q^7, q^8 \\ q^2, q^2, q^4, q^4, q^4, q^6, q^6 \end{matrix} ; q^{16} \right)$$

$$R(3, 1, 2) = -q^4 U^*(5) + q \prod \left(\begin{matrix} -q, -q, -q^3, -q^7, -q^7 \\ q^2, q^2, q^2, q^6, q^6, q^6 \end{matrix} ; q^{16} \right)$$

$$R(3,1,3) = -U^*(1) + q^{-1} - q^{-1} \prod \left(\begin{matrix} -q^3, -q^3, -q^5, -q^5, -q^7 \\ q^2, q^2, q^2, q^6, q^6, q^6 \end{matrix} ; q^{16} \right) \\ + \prod \left(\begin{matrix} -q^7 \\ q^4, q^6 \end{matrix} ; q^{16} \right)$$

$$R(3,2,0) = 0$$

$$R(3,2,1) = 0$$

$$R(3,2,2) = -q^4 U^*(5) - \prod \left(\begin{matrix} -q^8, q^4 \\ q^2, q^6, q^6 \end{matrix} ; q^{16} \right)$$

$$R(3,2,3) = -U^*(1) + q^{-1} - q^{-1} \prod \left(\begin{matrix} -q^3, -q^5, q^8 \\ -q, q^4, q^4, q^6 \end{matrix} ; q^{16} \right)$$

$$R(3,3,0) = q \prod \left(\begin{matrix} -q, -q^3, -q^3, -q^5, -q^7 \\ q^2, q^2, q^2, q^6, q^6, q^6 \end{matrix} ; q^{16} \right)$$

$$R(3,3,1) = -2q \prod \left(\begin{matrix} -q, -q^3, -q^5, -q^5, -q^7 \\ q^2, q^2, q^4, q^6, q^6, q^8 \end{matrix} ; q^{16} \right)$$

$$R(3,3,2) = -q^4 U^*(5) + q \prod \left(\begin{matrix} -q, -q, -q^3, -q^7, -q^7 \\ q^2, q^2, q^2, q^6, q^6, q^6 \end{matrix} ; q^{16} \right)$$

$$R(3,3,3) = -U^*(1) + q^{-1} - q^{-1} \prod \left(\begin{matrix} -q^3, -q^3, -q^5, -q^5, -q^5, q^8 \\ q^2, q^2, q^4, q^4, q^4, q^6, q^6 \end{matrix} ; q^{16} \right)$$

$$R(3,4,0) = -q \prod \left(\begin{matrix} -q, -q^7 \\ -q^5, q^2, q^4 \end{matrix} ; q^{16} \right)$$

$$R(3,4,1) = q^2 \prod \left(\begin{matrix} -q \\ q^4, q^6 \end{matrix} ; q^{16} \right)$$

$$R(3, 4, 2) = -q^4 U^*(5) + q^3 \prod \left(\begin{matrix} -q, -q \\ -q^5, q^4, q^6 \end{matrix}; q^{16} \right)$$

$$R(3, 4, 3) = -U^*(1) + q^{-1} - q^{-1} \prod \left(\begin{matrix} -q^3, -q^3 \\ -q, q^2, q^4 \end{matrix}; q^{16} \right)$$

$$R(4, 0, 0) = - \prod \left(\begin{matrix} -q, -q^3, -q^5, -q^7, -q^7, q^8 \\ q^2, q^2, q^4, q^4, q^4, q^6, q^6 \end{matrix}; q^{16} \right)$$

$$R(4, 0, 1) = \prod \left(\begin{matrix} -q, -q^3, -q^5, -q^5, -q^7, q^8 \\ q^2, q^2, q^4, q^4, q^4, q^6, q^6 \end{matrix}; q^{16} \right)$$

$$R(4, 0, 2) = 2q^4 U^*(5) - \prod \left(\begin{matrix} -q, -q, -q^3, -q^7, -q^7 \\ q^2, q^2, q^2, q^6, q^6, q^6 \end{matrix}; q^{16} \right) \\ - q^3 \prod \left(\begin{matrix} -q, -q \\ -q^5, q^4, q^6 \end{matrix}; q^{16} \right)$$

$$R(4, 0, 3) = q \prod \left(\begin{matrix} -q, -q, -q^3, -q^5, -q^7 \\ q^2, q^2, q^2, q^6, q^6, q^6 \end{matrix}; q^{16} \right) - \prod \left(\begin{matrix} -q^7 \\ q^4, q^6 \end{matrix}; q^{16} \right)$$

$$R(4, 1, 0) = 0$$

$$R(4, 1, 1) = - \prod \left(\begin{matrix} -q^3, -q^5 \\ -q, q^4, q^6 \end{matrix}; q^{16} \right)$$

$$R(4, 1, 2) = 2q^4 U^*(5) - \prod \left(\begin{matrix} -q^3 \\ q^4, q^6 \end{matrix}; q^{16} \right) - q^3 \prod \left(\begin{matrix} -q, -q \\ -q^5, q^4, q^6 \end{matrix}; q^{16} \right)$$

$$R(4, 1, 3) = -q \prod \left(\begin{matrix} -q^3, -q^5 \\ -q^7, q^4, q^6 \end{matrix}; q^{16} \right)$$

$$R(4, 2, 0) = -q \prod \left(\begin{matrix} -q, -q^3, -q^3, -q^5, -q^7 \\ q^2, q^2, q^2, q^6, q^6, q^6 \end{matrix}; q^{16} \right)$$

$$R(4, 2, 1) = \prod \left(\begin{matrix} -q, -q^3, -q^5, -q^5, -q^7, q^8 \\ q^2, q^2, q^4, q^4, q^4, q^6, q^6 \end{matrix}; q^{16} \right) - \prod \left(\begin{matrix} -q^3, -q^5 \\ -q, q^4, q^6 \end{matrix}; q^{16} \right)$$

$$R(4, 2, 2) = 2q^4 U^*(5) - q \prod \left(\begin{matrix} -q, -q, -q^3, -q^7, -q^7 \\ q^2, q^2, q^2, q^6, q^6, q^6 \end{matrix}; q^{16} \right) \\ \cdot \prod \left(\begin{matrix} -q, -q^7, q^8 \\ -q^5, q^2, q^4, q^4 \end{matrix}; q^{16} \right)$$

$$R(4, 2, 3) = q \prod \left(\begin{matrix} -q, -q, -q^3, -q^5, -q^7 \\ q^2, q^2, q^2, q^6, q^6, q^6 \end{matrix}; q^{16} \right)$$

$$R(4, 3, 0) = 0$$

$$R(4, 3, 1) = -q^2 \prod \left(\begin{matrix} -q \\ q^4, q^6 \end{matrix}; q^{16} \right)$$

$$R(4, 3, 2) = 2q^4 U^*(5) - q \prod \left(\begin{matrix} -q^3 \\ q^4, q^6 \end{matrix}; q^{16} \right) - q^3 \prod \left(\begin{matrix} -q, -q \\ -q^5, q^4, q^6 \end{matrix}; q^{16} \right)$$

$$R(4, 3, 3) = - \prod \left(\begin{matrix} -q^7 \\ q^4, q^6 \end{matrix}; q^{16} \right)$$

$$R(4, 4, 0) = -2q \prod \left(\begin{matrix} -q, -q^3, -q^5, -q^7, -q^7 \\ q^2, q^2, q^4, q^6, q^6, q^8 \end{matrix}; q^{16} \right)$$

$$R(4, 4, 1) = 2q \prod \left(\begin{matrix} -q, -q^3, -q^5, -q^5, -q^7 \\ q^2, q^2, q^4, q^6, q^6, q^8 \end{matrix}; q^{16} \right)$$

$$R(4, 4, 2) = 2q^4 U^*(5) - 2q \prod \left(\begin{matrix} -q, -q^3, -q^3, -q^7, -q^7 \\ q^2, q^2, q^4, q^6, q^6, q^8 \end{matrix}; q^{16} \right)$$

$$R(4, 4, 3) = 2q^2 \prod \left(\begin{matrix} -q, -q, -q^3, -q^5, -q^5 \\ q^2, q^2, q^4, q^6, q^6, q^8 \end{matrix}; q^{16} \right)$$