$n = 5k + r \quad (r = 0, 1, 2, 3, 4).$

$$\frac{n(3n-1)}{2} = \frac{75}{2}k^2 + 15kr - \frac{5}{2}k + \frac{3}{2}r^2 - \frac{1}{2}r$$

$n = 5k \qquad \frac{n(3n-1)}{2} = \frac{75}{2}k^2 - \frac{5}{2}k = \frac{5}{2}k(15k-1)$

$n = 5k+1 \qquad \frac{n(3n-1)}{2} \quad \frac{75k^2}{2} + \frac{25k}{2} + 1 = 25\frac{k(3k+1)}{2} + 1$

$n = 5k+2 \qquad \frac{n(3n-1)}{2} = \frac{75k^2}{2} + \frac{55k}{2} + 5 = \frac{5}{2}k(15k+11) + 5$

$n = 5k+3 \qquad \frac{n(3n-1)}{2} = \frac{75k^2}{2} + \frac{85k}{2} + 12 = \frac{5k}{2}(15k+17) + 12$

$n = 5k-1 \qquad \frac{n(3n-1)}{2} = \frac{75k^2}{2} - \frac{35k}{2} + 2 = \frac{5k}{2}(15k-7) + 2$

$$(q)_\infty = \sum_k (-1)^{5k} q^{\frac{5k}{2}(15k-1)} + \sum_k (-1)^{5k+2} q^{\frac{5k}{2}(15k+11)+5}$$

$$+ \sum_k (-1)^{5k+1} q^{25k(3k+1)/2+1}$$

$$+ \sum_k (-1)^{5k+3} q^{\frac{5k}{2}(15k+17)+12} + \sum_k (-1)^{5k-1} q^{\frac{5k}{2}(15k-7)+2}$$

$$= j_0(q^5) - q \sum_k (-1)^k (q^{25})^{k(3k+1)/2} + q^2 j_2(q^5)$$

$$(q)_\infty = j_0(q^5) - q\,(q^{25}; q^{25})_\infty + q^2 j_2(q^5)$$

$$\frac{(q)_\infty}{(q^{25}; q^{25})_\infty} = J_0(q^5) - q + q^2 J_2(q^5)$$

where $J_0(q^5) = \dfrac{j_0(q^5)}{(q^{25}; q^{25})_\infty}$, $J_2(q^5) = \dfrac{j_2(q^5)}{(q^{25}; q^{25})_\infty}$.