$q-$**Expansion of the square of the Vandermonde determinant**

Factored form

The first entry in square brackets is the value of the $q-$polynomial for $q = 1$

N = 2

$$[1]q\{2\}$$
$$[-3] - (q^2 + q + 1)\{1^2\}$$

N = 3

$$[1]q^3\{42\}$$
$$[-3] - q^2(q^2 + q + 1)(\{41^2\} + \{3^2\})$$
$$[6] + q(q^2 + q + 1)(q^2 + 1)\{321\}$$
$$[-15] - (q^2 + q + 1)(q^4 + q^3 + q^2 + q + 1)\{2^3\}$$

N = 4

$$[1]q^6\{642\}$$
$$[-3] - q^5(q^2 + q + 1)(\{641^2\} + \{63^2\} + \{5^22\})$$
$$[6] + q^4(q^2 + 1)(q^2 + q + 1)(\{6321\} + \{543\})$$
$$[9] + q^4(q^2 + q + 1)^2\{5^21^2\}$$
$$[-15] - q^3(q^2 + q + 1)(q^4 + q^3 + q^2 + q + 1)(\{62^3\} + \{4^3\})$$
$$[-12] - q^3(q^2 + q + 1)(q^2 + 1)^2\{5421\}$$
$$[-9] - q^3(q^2 - q + 1)(q^2 + q + 1)^2\{53^21\}$$
$$[-6] - q^3(q^2 + q + 1)(q^4 + 1)\{4^22^2\}$$
$$[27] + q^2(q^2 - q + 1)(q^2 + q + 1)^3(\{532^2\} + \{4^231\})$$
$$[-45] - q(q^2 - q + 1)(q^4 + q^3 + q^2 + q + 1)(q^2 + q + 1)^2\{43^22\}$$
$$[105] + (q^2 + q + 1)(q^4 + q^3 + q^2 + q + 1)(q^6 + q^5 + q^4 + q^3 + q^2 + q + 1)\{3^4\}$$

$[1]q^{10}\{8642\}$

$[-3] - q^9(q^2+q+1)(\{8641^2\} + \{863^2\} + \{85^22\} + \{7^242\})$

$[6] + q^8(q^2+1)(q^2+q+1)(\{86321\} + \{8543\} + \{7652\})$

$[9] + q^8(q^2+q+1)^2(\{85^21^2\} + \{7^241^2\} + \{7^23^2\})$

$[-12] - q^7(q^2+q+1)(q^2+1)^2(\{85421\} + \{7643\})$

$[-9] - q^7(q^2-q+1)(q^2+q+1)^2(\{853^21\} + \{75^23\})$

$[-6] - q^7(q^2+q+1)(q^4+1)(\{84^22^2\} + \{6^24^2\}$

$[-15] - q^7(q^2+q+1)(q^4+q^3+q^2+q+1)(\{862^3\} + \{84^3\} + \{6^32\})$

$[-18] - q^7(q^2+1)(q^2+q+1)^2(\{7^2321\} + \{7651^2\})$

$[27] + q^6(q^2-q+1)(q^2+q+1)^3(\{8532^2\} + \{84^231\} + \{754^2\} + \{6^253\})$

$[24] + q^6(q^2+q+1)(q^2+1)^3\{76421\}$

$[18] + q^6(q^2+1)(q^2-q+1)(q^2+q+1)^2(\{763^21\} + \{75^221\})$

$[45] + q^6(q^4+q^3+q^2+q+1)(q^2+q+1)^2(\{7^22^3\} + \{6^31^2\})$

$[-45] - q^5(q^2-q+1)(q^4+q^3+q^2+q+1)(q^2+q+1)^2(\{843^22\} + \{65^24\})$

$[-54] - q^5(q^2+1)(q^2-q+1)(q^2+q+1)^3(\{7632^2\} + \{6^2521\})$

$[-36] - q^5(q^2-q+1)(q^2+q+1)^2(q^2+1)^2(\{75431\} + \{74^31\})$

$[-27] - q^5(q^2-q+1)^2(q^2+q+1)^3(\{7542^2\} + \{6^2431\})$

$[-18] - q^5(q^2-q+1)(q^4+1)(q^2+q+1)^2(\{6^23^22\} + \{65^22^2\})$

$[105] + q^4(q^2+q+1)(q^4+q^3+q^2+q+1)(q^6+q^5+q^4+q^3+q^2+q+1)(\{83^4\} + \{5^4\})$

$[16] + q^4(q^2-q+1)^2(q^2+q+1)^4(\{753^22\} + \{65^231\})$

$[72] + q^4(q^4+1)(q^2+1)^2(q^2+q+1)^2(\{74^232\} + \{654^21\})$

$[111] + q^4(q^2+q+1)(q^{10}+2q^9+4q^8+3q^7+6q^6+5q^5+6q^4+3q^3+4q^2+2q+1)\{6^242^2\}$

$[54] + q^4(q^4-q^3+q^2-q+1)(q^4+q^3+q^2+q+1)(q^2+q+1)^2(\{653^3\} + \{5^332\})$

$[-180] - q^3(q^2+1)(q^4+q^3+q^2+q+1)(q^4+1)(q^2+q+1)^2(\{743^3\} + \{5^341\})$

$[-144] - q^3(q^4+1)(q^2+q+1)^2(q^2+1)^3\{65432\}$

$[-90] - q^3(q^4+q^3+q^2+q+1)(q^2-q+1)(q^4+1)(q^2+q+1)^2\{64^32\}$

$[-75] - q^3(q^2+q+1)(q^4-q^3+q^2-q+1)(q^4+q^3+q^2+q+1)^2\{5^243^2\}$

$[270] + q^2(q^4+q^3+q^2+q+1)(q^2-q+1)(q^4+1)(q^2+q+1)^3(\{64^23^2\} + \{5^24^22\})$

$[-420] - q(q^2+q+1)(q^2+1)(q^4+q^3+q^2+q+1)(q^4+1)(q^6+q^5+q^4+q^3+q^2+q+1)\{54^33\}$

$[945] + (q^4+q^3+q^2+q+1)(q^6+q^3+1)(q^6+q^5+q^4+q^3+q^2+q+1)(q^2+q+1)^2\{4^5\}$

N = 6

$[1]q^{15}\{10\ 8642\}$

$[-3] - q^{14}(q^2 + q + 1)(\{10\ 8641^2\} + \{10\ 863^2\} + \{10\ 85^22\} + \{10\ 7^242\} + \{9^2642\})$

$[6] + q^{13}(q^2 + q + 1)(q^2 + 1)(\{10\ 86321\} + \{10\ 8543\} + \{10\ 7652\} + \{98742\})$

$[9] + q^{13}(q^2 + q + 1)^2(\{10\ 85^21^2\} + \{10\ 7^241^2\} + \{10\ 7^23^2\} + \{9^2641^2\} + \{9^263^2\} + \{9^25^22\})$

$[-15] - q^{12}(q^2 + q + 1)(q^4 + q^3 + q^2 + q + 1)(\{10\ 862^3\} + \{10\ 84^3\} + \{10\ 6^32\} + \{8^342\})$

$[-9] - q^{12}(q^2 - q + 1)(q^2 + q + 1)^2(\{10\ 853^21\} + \{10\ 75^23\} + \{97^252\})$

$[-12] - q^{12}(q^2 + q + 1)(q^2 + 1)^2(\{10\ 85421\} + \{10\ 7643\} + \{98652\})$

$[-6] - q^{12}(q^2 + q + 1)(q^4 + 1)(\{10\ 84^22^2\} + \{10\ 6^24^2\} + \{8^26^22\})$

$[-18] - q^{12}(q^2 + 1)(q^2 + q + 1)^2(\{10\ 7^2321\} + \{10\ 7651^2\} + \{9^26321\} + \{9^2543\} + \{98741^2\} + \{9873^2\})$

$[-27] - q^{12}(q^2 + q + 1)^3\{9^25^21^2\}$

$[27] + q^{11}(q^2 - q + 1)(q^2 + q + 1)^3(\{10\ 8532^2\} + \{10\ 84^231\} + \{10\ 754^2\} + \{10\ 6^253\}$
$\qquad + \{9^253^21\} + \{97^251^2\} + \{976^22\} + \{8^2752\})$

$[24] + q^{11}(q^2 + q + 1)(q^2 + 1)^3(\{10\ 76421\} + \{98643\})$

$[45] + q^{11}(q^4 + q^3 + q^2 + q + 1)(q^2 + q + 1)^2(\{10\ 7^22^3\} + \{10\ 6^31^2\}$
$\qquad + \{9^262^3\} + \{9^24^3\} + \{8^341^2\} + \{8^33^2\})$

$[18] + q^{11}(q^2 - q + 1)(q^2 + 1)(q^2 + q + 1)^2(\{10\ 763^21\} + \{10\ 75^221\} + \{985^23\} + \{97^243\})$

$[36] + q^{11}(q^2 + 1)^2(q^2 + q + 1)^2(\{9^25421\} + \{987321\}) + \{98651^2\})$

$[18] + q^{11}(q^4 + 1)(q^2 + q + 1)^2(\{9^24^22^2\} + \{8^26^21^2\})$

$[-36] - q^{10}(q^2 + 1)(q^4 + 1)(q^2 + q + 1)^2(\{10\ 74^31\} + \{96^33\})$

$[-45] - q^{10}(q^2 - q + 1)(q^4 + q^3 + q^2 + q + 1)(q^2 + q + 1)^2(\{10\ 843^22\} + \{10\ 65^24\} + \{87^262\})$

$[-54] - q^{10}(q^2 - q + 1)(q^2 + 1)(q^2 + q + 1)^3(\{10\ 7632^2\} + \{10\ 6^2521\} + \{9854^2\} + \{8^2743\})$

$[-36] - q^{10}(q^2 - q + 1)(q^2 + 1)^2(q^2 + q + 1)^2(\{10\ 75431\} + \{9863^21\} + \{985^221\} + \{97^2421\} + \{97653\})$

$[-27] - q^{10}(q^2 - q + 1)^2(q^2 + q + 1)^3(\{10\ 7542^2\} + \{10\ 6^2431\} + \{97^23^21\} + \{9764^2\} + \{8^2653\})$

$[-18] - q^{10}(q^2 - q + 1)(q^4 + 1)(q^2 + q + 1)^2(\{10\ 6^23^22\} + \{10\ 65^22^2\} + \{8^25^24\} + \{87^24^2\})$

$[-81] - q^{10}(q^2 - q + 1)(q^2 + q + 1)^4(\{9^2532^2\} + \{9^24^231\} + \{976^21^2\} + \{8^2751^2\})$

$[-90] - q^{10}(q^2 + 1)(q^4 + q^3 + q^2 + q + 1)(q^2 + q + 1)^2(\{9872^3\} + \{8^3321\})$

$[-48] - q^{10}(q^2 + q + 1)(q^2 + 1)^4\{986421\}$

$[105] + q^9(q^2 + q + 1)(q^4 + q^3 + q^2 + q + 1)(q^6 + q^5 + q^4 + q^3 + q^2 + q + 1)(\{10\ 83^4\} + \{10\ 5^4\} + \{7^42\})$

$[81] + q^9(q^2 - q + 1)^2(q^2 + q + 1)^4(\{10\ 753^22\} + \{10\ 65^231\} + \{97^232^2\} + \{975^24\} + \{8^273^21\} + \{87^253\})$

$[72] + q^9(q^4 + 1)(q^2 + 1)^2(q^2 + q + 1)^2(\{10\ 74^232\} + \{10\ 654^21\} + \{984^31\}$
$\qquad + \{96^321\} + \{96^254\} + \{876^23\})$

$[111] + q^9(q^2 + q + 1)(q^{10} + 2q^9 + 4q^8 + 3q^7 + 6q^6 + 5q^5 + 6q^4 + 3q^3 + 4q^2 + 2q + 1)(\{10\ 6^242^2\} + \{8^264^2\})$

$[45] + q^9(q^4 + q^3 + q^2 + q + 1)(q^4 - q^3 + q^2 - q + 1)(q^2 + q + 1)^2(\{10\ 653^3\} + \{10\ 5^332\} + \{875^3\} + \{7^354\})$

$[135] + q^9(q^2 - q + 1)(q^4 + q^3 + q^2 + q + 1)(q^2 + q + 1)^3(\{9^243^22\} + \{87^261^2\})$

$[108] + q^9(q^2 - q + 1)(q^2 + 1)^2(q^2 + q + 1)^3(\{98632^2\} + \{8^27421\})$

$[72] + q^9(q^2 - q + 1)(q^2 + q + 1)^2(q^2 + 1)^3(\{985431\} + \{976521\})$

$[54] + q^9(q^2 + 1)(q^2 - q + 1)^2(q^2 + q + 1)^3(\{98542^2\} + \{8^26521\})$

$[99] + q^9(q^2 - q + 1)(q^2 + q + 1)^2(2q^6 + 4q^4 - q^3 + 4q^2 + 2)\{976431\}$

$[81] + q^9(q^2 - q + 1)(q^2 + q + 1)^4(2q^2 - 3q + 2)(\{975^22^2\} + \{8^25^231\})$

$[225] + q^9(q^2 + q + 1)^2(q^4 + q^3 + q^2 + q + 1)^2\{8^32^3\}$

$[-180] - q^8(q^2 + 1)(q^4 + q^3 + q^2 + q + 1)(q^4 + 1)(q^2 + q + 1)^2(\{10\ 743^3\} + \{10\ 5^341\} + \{965^3\} + \{7^363\})$

$[-144] - q^8(q^4 + 1)(q^2 + q + 1)^2(q^2 + 1)^3(\{10\ 65432\} + \{984^232\} + \{876^221\} + \{87654\})$

$[-90] - q^8(q^4 + q^3 + q^2 + q + 1)(q^2 - q + 1)(q^4 + 1)(q^2 + q + 1)^2(\{10\ 64^32\} + \{86^34\}$

$[-75] - q^8(q^2 + q + 1)(q^4 - q^3 + q^2 - q + 1)(q^4 + q^3 + q^2 + q + 1)^2(\{10\ 5^243^2\} + \{7^265^2\})$

$[-315] - q^8(q^4 + q^3 + q^2 + q + 1)(q^6 + q^5 + q^4 + q^3 + q^2 + q + 1)(q^2 + q + 1)^2(\{9^23^4\} + \{7^41^2\})$

$[-162] - q^8(q^2 + 1)(q^2 - q + 1)^2(q^2 + q + 1)^4(\{9853^22\} + \{87^2521\})$

$[-162] - q^8(q^2 + q + 1)^3(q^2 - q + 1)(q^6 + 3q^4 - 2q^3 + 3q^2 + 1)(\{97642^2\} + \{975^231\} + \{8^26431\})$

$[-81] - q^8(q^2 + q + 1)^4(q^2 - q + 1)^3(\{9763^22\} + \{9754^21\} + \{96^2531\} + \{87^2431\})$

$[-117] - q^8(q^2 + q + 1)^2(q^{10} + 3q^8 - q^7 + 4q^6 - q^5 + 4q^4 - q^3 + 3q^2 + 1)(\{96^252^2\} + \{96^24^21\} + \{8^254^21\})$

$[-81] - q^8(q^2 + q + 1)^3(q^8 - q^7 + 2q^6 - q^5 + q^4 - q^3 + 2q^2 - q + 1)(\{96^23^3\} + \{7^34^21\})$

$[-243] - q^8(q^2 + q + 1)^5(q^2 - q + 1)^2\{8^2732^2\}$

$[-69] - q^8(q^2 + q + 1)(q^{12} + 2q^{10} + 6q^8 + 5q^6 + 6q^4 + 2q^2 + 1)\{8^2642^2\}$

$[-153] - q^8(q^2 - q + 1)(q^2 + q + 1)^2(q^8 + 2q^7 + 4q^6 + q^5 + q^4 + q^3 + 4q^2 + 2q + 1)\{8^25^22^2\}$

$[-36] - q^8(q^2 - q + 1)(q^2 + q + 1)^2(q^4 + 1)^2(\{8^24^32\} + \{86^32^2\})$

$[-54] - q^8(q^2 - q + 1)^2(q^2 + q + 1)^3(q^4 + 1)\{87^23^22\}$

$[-90] - q^8(q^2 + q + 1)^2(q^4 + q^3 + q^2 + q + 1)(q^6 + q^4 - 2q^3 + q^2 + 1)\{7^33^3\}$

$[270] + q^7(q^4 + q^3 + q^2 + q + 1)(q^2 - q + 1)(q^4 + 1)(q^2 + q + 1)^3(\{10\ 64^23^2\} + \{10\ 5^24^22\} + \{86^25^2\})$

$[360] + q^7(q^4 + q^3 + q^2 + q + 1)(q^4 + 1)(q^2 + q + 1)^2(q^2 + 1)^2(\{9843^3\} + \{7^3621\})$

$[270] + q^7(q^4 + q^3 + q^2 + q + 1)(q^2 + q + 1)^3(q^2 - q + 1)(q^4 + 1)\{7^26^24\}$

$[162] + q^7(q^2 + 1)(q^2 - q + 1)^3(q^2 + q + 1)^4(\{975432\} + \{876531\})$

$[162] + q^7(q^4 + 1)(q^2 - q + 1)^2(q^2 + q + 1)^4(\{9753^3\} + \{974^32\} + \{86^331\} + \{7^3531\})$

$[234] + q^7(q^2 + 1)(q^2 + q + 1)^2(q^{10} + 3q^8 - q^7 + 4q^6 - q^5 + 4q^4 - q^3 + 3q^2 + 1)(\{96^2432\} + \{8^25432\} + \{87652^2\} + \{8764^21\})$

$[216] + q^7(q^2 + 1)^2(q^4 + 1)(q^2 - q + 1)(q^2 + q + 1)^3\{965^241\}$

$[108] + q^7(q^2 + 1)(q^4 + 1)(q^2 - q + 1)^2(q^2 + q + 1)^3(\{965^232\} + \{875^241\})$

$[225] + q^7(q^2 + q + 1)^2(q^4 + q^3 + q^2 + q + 1)^2(q^4 - q^3 + q^2 - q + 1)\{95^41\}$

$[90] + q^7(q^2 + q + 1)^2(q^4 + q^3 + q^2 + q + 1)(q^4 - q^3 + q^2 - q + 1)(q^4 + 1)(\{95^33^2\} + \{7^25^31\})$

$[45] + q^7(q^2 + q + 1)^2(q^4 - q^2 + 1)(q^4 + q^3 + q^2 + q + 1)(q^4 - q^3 + q^2 - q + 1)(\{7^24^4\} + \{6^43^2\})$

$[333] + q^7(q^2 + q + 1)^2(q^2 - q + 1)(q^{10} + 2q^9 + 4q^8 + 3q^7 + 6q^6 + 5q^5 + 6q^4 + 3q^3 + 4q^2 + 2q + 1)(\{8^263^22\} + \{87^242^2\})$

$[108] + q^7(q^2 + q + 1)^3(q^2 - q + 1)(q^4 + 1)^2(\{8^24^23^2\} + \{7^26^22^2\})$

$[162] + q^7(q^2 + 1)(q^2 + q + 1)^3(q^8 - q^7 + 2q^6 - q^5 + q^4 - q^3 + 2q^2 - q + 1)(\{8763^3\} + \{7^3432\})$

$[-420] - q^6(q^2 + q + 1)(q^2 + 1)(q^4 + q^3 + q^2 + q + 1)(q^4 + 1)(q^6 + q^5 + q^4 + q^3 + q^2 + q + 1)(\{10\ 54^33\} + \{76^35\})$

$[-486] - q^6(q^2 + q + 1)^5(q^2 - q + 1)^2(q^4 + 1)(\{974^23^2\} + \{7^26^231\})$

$[-324] - q^6(q^2 + q + 1)^4(q^2 - q + 1)^2(q^4 + 1)(q^2 + 1)(\{9654^22\} + \{86^2541\})$

$[-405] - q^6(q^2 - q + 1)(q^2 + q + 1)^4(q^4 + q^3 + q^2 + q + 1)(q^4 - q^3 + q^2 - q + 1)(\{95^342\} + \{865^31\})$

$[-711] - q^6(q^2 + q + 1)^2(q^{14} + 2q^{13} + 4q^{12} + 4q^{11} + 8q^{10} + 7q^9 + 10q^8 + 7q^7 + 10q^6 + 7q^5 + 8q^4 + 4q^3 + 4q^2 + 2q + 1)$
$\qquad (\{8^253^3\} + \{7^352^2\})$

$[-468] - q^6(q^2 + 1)^2(q^2 + q + 1)^2(q^{10} + 3q^8 - q^7 + 4q^6 - q^5 + 4q^4 - q^3 + 3q^2 + 1)\{876432\}$

$[-351] - q^6(q^2 - q + 1)(q^2 + q + 1)^3(q^{10} + 3q^8 - q^7 + 4q^6 - q^5 + 4q^4 - q^3 + 3q^2 + 1)\{875^232\}$

$[-201] - q^6(q^2 + q + 1)(q^{16} + q^{15} + 4q^{14} + 2q^{13} + 6q^{12} + 3q^{11} + 9q^{10}$
$\qquad + 3q^9 + 9q^8 + 3q^7 + 9q^6 + 3q^5 + 6q^4 + 2q^3 + 4q^2 + q + 1)\{7^2643^2\}$

$[-162] - q^6(q^4+1)(q^2-q+1)^3(q^2+q+1)^4(\{8754^22\} + \{86^2532\})$

$[-108] - q^6(q^4+1)^2(q^2-q+1)^2(q^2+q+1)^3(\{86^243^2\} + \{7^264^22\})$

$[-288] - q^6(q^4+1)^2(q^2+q+1)^2(q^2+1)^3(\{96543^2\} + \{7^26541\})$

$[-180] - q^6(q^2+1)(q^4+1)(q^2+q+1)^2(q^4+q^3+q^2+q+1)(q^4-q^3+q^2-q+1)\{76^332\}$

$[945] + q^5(q^4+q^3+q^2+q+1)(q^6+q^3+1)(q^6+q^5+q^4+q^3+q^2+q+1)(q^2+q+1)^2(\{10\ 4^5\} + \{6^5\})$

$[720] + q^5(q^4+q^3+q^2+q+1)(q^2+q+1)^2(q^4+1)^2(q^2+1)^2(\{964^33\} + \{76^341\})$

$[675] + q^5(q^4+q^3+q^2+q+1)^2(q^4-q^3+q^2-q+1)(q^2+q+1)^3(q^2-q+1)(\{95^24^23\} + \{76^25^21\})$

$[801] + q^5(q^2+q+1)^2(q^{16}+q^{15}+4q^{14}+2q^{13}+9q^{12}+3q^{11}+13q^{10}$
$\qquad + 4q^9+15q^8+4q^7+13q^6+3q^5+9q^4+2q^3+4q^2+q+1)(\{87543^2\} + \{7^26532\})$

$[666] + q^5(q^4+1)(q^2+q+1)^2(q^{10}+2q^9+4q^8+3q^7+6q^6+5q^5+6q^4+3q^3+4q^2+2q+1)\{86^24^22\}$

$[567] + q^5(q^2+q+1)^3(q^2-q+1)(q^{12}+3q^{10}+q^9+3q^8+5q^6+3q^4+q^3+3q^2+1)\{865^242\}$

$[324] + q^5(q^4+1)^2(q^2-q+1)^2(q^2+q+1)^4(\{865^23^2\} + \{7^25^242\})$

$[405] + q^5(q^4+q^3+q^2+q+1)(q^2+q+1)^4(q^2-q+1)^2(q^4-q^2+1)(\{864^4\} + \{6^442\})$

$[450] + q^5(q^4+q^3+q^2+q+1)^2(q^4-q^3+q^2-q+1)(q^2+q+1)^2)(q^4+1)\{85^42\}$

$[270] + q^5(q^4+q^3+q^2+q+1)(q^4-q^3+q^2-q+1)(q^4+1)(q^2-q+1)(q^2+q+1)^3(\{7^254^23\} + \{76^253^2\})$

$[345] + q^5(q^4+q^3+q^2+q+1)(q^2+q+1)(q^{14}+3q^{12}+4q^{10}-q^9+5q^8-q^7+5q^6-q^5+4q^4+3q^2+1)\{76^24^23\}$

$[225] + q^5(q^4-q^3+q^2-q+1)(q^4-q^2+1)(q^2+q+1)^2(q^4+q^3+q^2+q+1)\{6^34^3\}$

$[-1575] - q^4(q^4+q^3+q^2+q+1)^2(q^4-q^3+q^2-q+1)(q^2+q+1)^2(q^6+q^5+q^4+q^3+q^2+q+1)(\{954^4\} + \{6^451\})$

$[-900] - q^4(q^4+q^3+q^2+q+1)^2(q^4-q^3+q^2-q+1)(q^2+q+1)^2(q^2+1)(q^4+1)(\{85^343\} + \{765^32\})$

$[-1215] - q^4(q^4-q^3+q^2-q+1)(q^4+q^3+q^2+q+1)(q^2+q+1)^5(q^2-q+1)^2(\{8654^23\} + \{76^2542\})$

$[-1422] - q^4(q^4+1)(q^2+q+1)^2(q^{14}+2q^{13}+4q^{12}+4q^{11}+8q^{10}+7q^9+10q^8+7q^7+10q^6+7q^5+8q^4+4q^3+4q^2+2q+1)$
$\qquad \{7^25^23^2\}$

$[-720] - q^4(q^4+q^3+q^2+q+1)(q^2+q+1)^2(q^4+1)(q^2+1)^3(q^4-q^2+1)(\{7654^3\} + \{6^3543\})$

$[2250] + q^3(q^4-q^3+q^2-q+1)(q^4+q^3+q^2+q+1)^3(q^4+1)(q^2+q+1)^2(\{85^24^3\} + \{6^35^22\})$

$[1800] + q^3(q^4-q^3+q^2-q+1)(q^4+q^3+q^2+q+1)^2(q^4+1)(q^2+q+1)^2(q^2+1)^2\{765^243\}$

$[1050] + q^3(q^6+q^5+q^4+q^3+q^2+q+1)(q^4+q^3+q^2+q+1)^2(q^2+q+1)(q^4+1)(q^4-q^3+q^2-q+1)\{75^43\}$

$[945] + q^3(q^6+q^5+q^4+q^3+q^2+q+1)(q^4+q^3+q^2+q+1)(q^4-q^2+1)(q^2+q+1)^3(q^2-q+1)^2\{6^25^24^2\}$

$[-3150] - q^2(q^6+q^5+q^4+q^3+q^2+q+1)(q^4-q^3+q^2-q+1)(q^4+1)(q^2+q+1)^2(q^4+q^3+q^2+q+1)^2$
$\qquad (\{75^34^2\} + \{6^25^33\})$

$[4725] + q(q^6+q^5+q^4+q^3+q^2+q+1)(q^6+q^3+1)(q^4+q^3+q^2+q+1)^2(q^2+q+1)^2\{65^44\}$

$[-10395] - (q^4+q^3+q^2+q+1)(q^6+q^3+1)(q^{10}+q^9+q^8+q^7+q^6+q^5+q^4+q^3+q^2+q+1)$
$\qquad (q^6+q^5+q^4+q^3+q^2+q+1)(q^2+q+1)^2\{5^6\}$