Semiempirical Shell Model Tabulated Masses for Translead Elements with Magic Proton Number \( Z = 126 \)

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We present two tables of calculated masses of translead nuclei, for 351 nuclei with \( 94 \leq N \leq 126, \ 82 \leq Z \leq 100 \) and for 1969 nuclei with \( 126 \leq N \leq 184, \ 82 \leq Z \leq 126 \). The tables are calculated from a semiempirical shell-model mass equation based on \( Z = 126 \) as a proton magic number which seems to be highly extrapolatable inside shell regions. Useful separation and decay energies are given as well. Some properties of the calculated masses and applications to superheavy elements are indicated in the introduction.

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INTRODUCTION

1. Overview

The present mass tables are offered as a substitute and extension for translead nuclei of the semiempirical shell-model mass equation (SSME) table presented in ref. [1]. They have both been calculated in the same framework of the semiempirical shell model [2], with the

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difference that here the major proton valence shell beyond lead extends through $Z = 126$ rather than $Z = 114$. This extends the range of applicability of the equation from $Z = 114$ to $Z = 126$.

The need to go beyond $Z = 114$ arises from recent experimental results on superheavy elements (SHE) \cite{3}, where the nucleus $^{293}118$ was presumably formed and $\alpha$-decayed sequentially down to $^{265}Rf$ ($Z = 104$), with $\alpha$-decay energies varying rather smoothly along the chain. If the results are confirmed, and the decaying nuclei are formed in or near their ground states (g.s.), then the smooth variation seems to preclude the traditional macroscopic-microscopic $\text{[1]}$ $Z = 114$ as a major proton magic number in these nuclei, and suggests that all of them belong to the same major proton valence shell extending up to $Z = 118$ or beyond.

Moreover, the SSME \cite{1} which adopts $Z = 114$ as an upper proton shell boundary and stops there becomes unsuitable for extrapolation to higher $Z$-values already earlier, beyond Hs ($Z = 108$), as shown by its increasing deviations from the data when $Z$ increases \cite{3,6}.

Which is the major spherical proton magic number after lead? During the early stages of developing the SSME \cite{1}, when it was adjusted separately in individual shell regions in the $N$ - $Z$ plane, both $Z = 114$ and $Z = 126$ were considered possible alternative candidates for the post lead proton magic number \cite{5}. They were both tried as a shell boundary in each of the two heaviest regions with $Z \geq 82$ and respective $N$ boundaries $82 \leq N \leq 126$ (called here region A) and $126 \leq N \leq 184$ (called region B). The agreement with the data was about the same for both choices, and the prevailing view in the mid nineteen-seventies led to the choice of $Z = 114$ for the SSME mass table.

When the $Z = 118$ results were obtained the SSME \cite{1} could not reproduce them \cite{3} but the early $Z = 126$ results agreed with them rather well \cite{9}. Phenomenological studies of $B(E2)$ systematics \cite{10} likewise indicate a superior magicity of $Z = 126$ as compared to $Z = 114$, and the plausibility of $Z = 126$ as a spherical proton magic number after lead is indicated as well by the persistence of the Wigner term in masses of heavy nuclei \cite{11}. The masses presented in the present tables have been calculated on this assumption. For region B they are the same as calculated in ref. \cite{7}. For region A a partial readjustment of the coefficients was found necessary \cite{12} (see sect. 3).

Recent self-consistent (SC) and relativistic mean field calculations \cite{13-15} variously predict proton magicity for $Z = 114, 120, 124$ and 126, depending on the interaction used. In this connection it is worthwhile emphasizing that the rather suggestive agreement with the data obtained with $Z = 126$ is not a proof of superior magicity of $Z = 126$ as compared to $Z = 120$ or 124, because no comparative mass studies of this kind were made.

The rest of the Introduction is organized as follows: The mass equation is presented in sect. 2. Sect. 3 addresses its extrapolatability and sect. 4 considers its smoothness and continuity. Finally, sect. 5 briefly illustrates some applications to SHE.

### 2. The Mass Equation

In the SSME the total nuclear energy in the g.s. is written \cite{12} as a sum of pairing, deformation and Coulomb energies:

$$E(N,Z) = E_{\text{pair}}(N,Z) + E_{\text{def}}(N,Z) + E_{\text{Coul}}(N,Z).$$  \hspace{1cm} (1)

The form of $E_{\text{Coul}}$, which describes the Coulomb energy of the protons, is the same in
all shell regions:

\[ E_{\text{Coul}} (N, Z) = \left( \frac{2Z_0}{A} \right)^{1/3} \left[ \alpha^C + \beta^C (Z - Z_0) + \gamma^C (Z - Z_0)^2 \right]. \] (2)

The form of \( E_{\text{pair}} \), which describes the energy of strongly interacting nucleon pairs in a lowest seniority approximation, is the same separately in all diagonal shell regions, where the major valence shells are the same for neutrons and protons, and in all non-diagonal regions, where they are different. Unlike in ref. [1], with \( Z = 126 \) rather than 114 as an upper proton boundary region \( A \) becomes a diagonal region with

\[ E_{\text{pair}} (N, Z) = \left( \frac{A_0}{A} \right) [\alpha + \beta (A - A_0) + \gamma (A - A_0)^2 + \varepsilon T (T + 1) \right.
\[ + \frac{1 - (-1)^A}{2} \Theta + \frac{1 - (-1)^{NZ}}{2} \kappa]. \] (3)

For the non-diagonal region \( B \) one has:

\[ E_{\text{pair}} (N, Z) = \left( \frac{A_0}{A} \right) [\alpha + \beta_1 (N - N_0) + \beta_2 (Z - Z_0) \right.
\[ + \gamma_1 (N - N_0)^2 + \gamma_2 (Z - Z_0)^2 + \gamma_3 (N - N_0)(Z - Z_0) \right.
\[ + \frac{1 - (-1)^N}{2} \Theta_1 + \frac{1 - (-1)^Z}{2} \Theta_2 + \frac{1 - (-1)^{NZ}}{2} \mu]. \] (4)

The part \( E_{\text{def}} \) describes additional negative energy due to configuration interaction, largely with pair breaking and deformation. For region \( A \) it is given by [7,12]

\[ E_{\text{def}} (N, Z) = \left( \frac{A_0}{A} \right) [\varphi_{11} \Phi_{11} (N, Z) + \psi_{20} [\Psi_{20} (N, Z) + \Psi_{20} (Z, N)]] \] (5)

with

\[ \Phi_{11} (N, Z) = (N - 82) (126 - N) (Z - 82) (126 - Z), \] (6)

\[ \Psi_{20} (N, Z) = (N - 82)^2 (126 - N)^2 (N - 104). \] (7)

For region \( B \) it is given by [7,14]

\[ E_{\text{def}} (N, Z) = \left( \frac{A_0}{A} \right) [\varphi_{21} \Phi_{21} (N, Z) + \varphi_{31} \Phi_{31} (N, Z) + \chi_{12} X_{12} (N, Z)] \] (8)

with

\[ \Phi_{21} (N, Z) = (N - 126)^2 (184 - N)^2 (Z - 82) (126 - Z), \] (9)

\[ \Phi_{31} (N, Z) = (N - 126)^3 (184 - N)^3 (Z - 82) (126 - Z), \] (10)

\[ X_{12} (N, Z) = (N - 126) (184 - N)(N - 155)(Z - 82)^2 (126 - Z)^2 (Z - 104). \] (11)
In eqs. (2)-(5) and (8) \( A = N + Z \) and \( T = |T_z| = \frac{1}{2} |N - Z| \). The respective values of \( (N_0, Z_0, A_0) \) in regions A and B are (82, 82, 164) and (126, 82, 208). The coefficients multiplying the functions of \( N \) and \( Z \) are adjustable parameters determined by a least squares adjustment to the data, separately for region B [7] and for region A [7,12]. Their values are given in table I. The atomic mass excesses \( \Delta M(N,Z) \) are obtained by adding to the adjusted energies \( E(N,Z) \) the sum of nucleon mass excesses \( N\Delta M_n + Z\Delta M_H \).

In region B the equation has 15 adjustable parameters and it has respective overall average and root-mean-square (rms) deviations of 13 and 156 keV from the 267 presently known masses, and corresponding -5 and 178 keV from the 231 know \( Q_\alpha \) values. In region A there are 11 adjustable parameters, and respective overall average and rms deviations of 2 and 246 keV from the 150 known masses, and 2 and 99 keV from the 109 known \( Q_\alpha \) values. More details are given in sect. 3.

Mass predictions calculated from the above equations for the respective regions A and B are given in tables A and B. Useful separation and decay energies connecting nuclei in the same region are given as well. The tables include particle-stable nuclei and proton-unstable ones a short distance beyond the even proton drip line.

### TABLE I. Values of the coefficients of eq. (1) determined by adjustment to the data.

| Coefficient | Region B Value (keV) | Region A Value (keV) |
|-------------|----------------------|----------------------|
| \( \alpha \) | \(-2.3859605 \times 10^6\) | \(-1.987628 \times 10^6\) |
| \( \beta_1 \) | \(-1.496441 \times 10^4\) | \(-2.4773664 \times 10^4\) |
| \( \beta_2 \) | \(-3.3866255 \times 10^4\) | \(-8.51085 \times 10^4\) |
| \( \gamma_1 \) | \(3.022233 \times 10^1\) | \(4.585496 \times 10^2\) |
| \( \gamma_2 \) | \(2.811903 \times 10^1\) | \(1.2183 \times 10^3\) |
| \( \gamma_3 \) | \(-3.6159266 \times 10^2\) | \(2.1937 \times 10^3\) |
| \( \Theta_1 \) | \(8.16 \times 10^2\) | \(7.968418 \times 10^5\) |
| \( \Theta_2 \) | \(1.007 \times 10^3\) | \(2.032906 \times 10^4\) |
| \( \mu \) | \(-2.121 \times 10^2\) | \(9.819137 \times 10^4\) |
| \( \alpha^C \) | \(8.111517 \times 10^5\) | \(-4.794 \times 10^{-2}\) |
| \( \beta^C \) | \(2.0282913 \times 10^4\) | \(9.095 \times 10^{-4}\) |
| \( \gamma^C \) | \(1.0930065 \times 10^2\) | \(9.020202 \times 10^4\) |
| \( \varphi_{21} \) | \(-9.87874 \times 10^{-5}\) | \(-9.095 \times 10^{-4}\) |
| \( \varphi_{31} \) | \(3.13824 \times 10^{-8}\) | \(9.095 \times 10^{-4}\) |
| \( \chi_{12} \) | \(-1.428529 \times 10^{-7}\) | \(9.095 \times 10^{-4}\) |

3. Extrapolatability of the Mass Equation

We discuss extrapolatability by considering the new data measured after the 1973 ad-

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1 In the as yet unknown odd-odd \( N = Z \) translead nuclei the g.s. is expected to have \( T = |T_z| + 1 \) and seniority zero, whereas eq. (1) with \( T = |T_z| \) gives the energy of a low excited seniority two state \[8\].
justments [1], like in refs. [12,16,18]. We do it separately for each region, starting with region B.

The experimental data used in the adjustments in region B included 211 masses (ref. [19] augmented by data from the literature up to Spring 1973). Presently there are 267 known masses (ref. [20] (excluding values denoted “systematics” (#)) and recent literature). They include 56 new masses that were not used in the adjustments.

Fig. 1 shows the deviations from the data of the predictions of eq. (1) for the 56 newer masses, plotted as function of the distance from the line of $\beta$-stability, $\text{NFS} = N - Z - 0.4A^2/(A + 200)$ [16]. Empty circles denote the deviations of the $N = 126 - 128$ nuclei $^{216}\text{Ac}, \, ^{218}\text{Pa}, \, ^{216}\text{Th}, \, ^{217}\text{Pa}, \, ^{219}\text{Pa}, \, ^{219}\text{U}$ and $^{218}\text{U}$, which increase in this order and indicate increasing underbinding of extrapolated $N \approx 126$ nuclei when $Z$ increases away from the data. This will be further considered in subsect. 4.2.

![Fig. 1](image)

**FIG. 1.** Deviations of the predicted masses (eq. (1)) from the data for the 56 new masses in region B measured after the original adjustments were made. The deviations are plotted as function of the variable $\text{NFS} = N - Z - 0.4A^2/(A + 200)$ [16]. Taken from ref. [9].

The deviations of the remaining 49 nuclei with $N \geq 129$, which do not follow the $N = 126$ boundary but extend into the interior of the shell region, are marked by full circles. They are about equally positive and negative, have similar magnitudes, and do not seem to be correlated with NFS.

Table II, patterned after similar more elaborate ones [17,18], shows $\delta_{av}$ and $\delta_{rms}$, the respective average and rms deviations of eq. (1) from the data, for $\Delta M, S_n, S_p, Q_{\beta^{-}}$ and $Q_{\alpha}$. The deviations are shown separately for the older data that were used in the 1973 adjustments and for the newer data. The last column shows the error ratios $\delta_{rms}^{new}/\delta_{rms}^{old}$. 
TABLE II. Numbers of data N, average deviations $\delta_{av}$, and rms deviations $\delta_{rms}$, for eq. (1) with the coefficients of table I for region B. The numbers in brackets are obtained when nuclei with $N = 126 - 128$ are excluded. The last column shows the ratios $\delta_{rms}^{new} : \delta_{rms}^{old}$. Taken from ref. [9].

| Data  | Original nuclei (1973) | New nuclei (1973-1999) | Error ratio |
|-------|------------------------|------------------------|-------------|
|       | $\delta_{av}$ (keV)    | $\delta_{rms}$ (keV)   | $\delta_{av}$ (keV) | $\delta_{rms}$ (keV) | |
| $\Delta M$ | 211 2 | 126 | 56 (49) | 236 (155) | 1.87 (1.23) |
| $S_n$ | 169 1 | 117 | 45 (38) | 171 (145) | 1.46 (1.24) |
| $S_p$ | 162 $-4$ | 121 | 52 (44) | 184 (148) | 1.52 (1.22) |
| $Q_{\beta^-}$ | 146 $-7$ | 158 | 51 (44) | 209 (169) | 1.32 (1.07) |
| $Q_\alpha$ | 174 $-6$ | 162 | 57 (55) | 220 (220) | 1.36 (1.36) |

For the old data the magnitudes of $\delta_{av}$ are single keVs, and those of $\delta_{rms}$ are in the range 110–170 keV. For the new data they are larger, with respective highest values of 53 and 236 keV for $\Delta M$ and smaller values for $S_n, S_p, Q_{\beta^-}$ and $Q_\alpha$.

The table shows as well in brackets the corresponding deviations for the 49 $N \geq 129$ nuclei extending into the interior of the shell region, where SHE are presently searched for. Except for $Q_\alpha$ they are smaller than the unbracketed deviations.

The deviations shown in table II are smaller than the corresponding ones for several current mass models. This is presumably mainly due to the inclusion in eq. (1) of the particle-hole(p-h)-symmetric configuration interaction terms $E_{def}$ (eq. (8)) [9]. Configuration interaction is largely missing in macroscopic-microscopic Strutinsky type and in SC mean field calculations, where the included $T = 1, J = 0$ pairing correlations seem not to be enough. Based on the above analysis we have recently [9] proposed the use of the masses given in table B as a substitute for the SSME [1] in the interior of region B.

The situation in region A is less simple. The experimental data used in the 1973 adjustment included 29 masses and 62 $Q_\alpha$ values connecting unknown masses (ref. [19] augmented by data from the literature up to Spring 1973). Presently there are 150 known masses and 3 $Q_\alpha$ values connecting unknown masses (refs. [20] (excluding values denoted “systematics” (#)) and [21] and recent literature). There are 121 new masses that were not used in the adjustments.

Comparing the deviations of the predicted [7] 121 new masses to those of the 29 original ones, one observes [12] that the new deviations are as a rule considerably larger and almost all negative, with respective average and rms values of -807 and 1008 keV, as compared to -29 and 146 keV for the 29 original masses. For the 31 new $Q_\alpha$ values, though, the deviations have perhaps even very slightly improved, becoming respectively 40 and 89 keV as compared to 5 and 103 keV before.

Closer scrutiny [12] shows that the worse fit to the new masses is mainly due to inadequate adjusted values of the coefficients $\alpha, \varepsilon, \Theta$ and $\kappa$. These coefficients largely cancel in $Q_\alpha$ and they were determined essentially by the 29 original masses nearer to $\beta$-stability, where the values of $\alpha, \Theta$ and $\kappa$ are smaller (see ref. [22] for $\Theta$) and that of $\varepsilon$ is larger than for the 121 new nuclei nearer to the proton drip line. Consequently a new least-squares adjustment of eq. (1) to all the 150 presently known masses was made [12], with only four adjustable...
parameters $\alpha$, $\varepsilon$, $\Theta$ and $\kappa$ while the other seven parameters were held fixed on their old adjusted values \cite{7}. It was found that the new adjusted coefficients have shifted in the expected directions, and the resulting equation retains the high agreement with the data of the old $Q_\alpha$ predictions, while at the same time the quality of its agreement with the mass data has been largely improved. The resulting set of coefficients for region A is the one given in table I.

Fig. 2 shows the deviations of the new predicted mass values for all the 150 known masses. For ease of comparison empty circles denote the deviations of the 29 originally adjusted masses and full circles mark the deviations of the 121 new ones. As already mentioned the deviations of the latter are considerably smaller than for the original predictions. The deviations of the 29 older data have worsened, though.

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|c|c|}
\hline
Data & $N$ & $\delta_{av}$ (keV) & $\delta_{rms}$ (keV) & $N$ & $\delta_{av}$ (keV) & $\delta_{rms}$ (keV) \\
\hline
$\Delta M$ & 29 & −193 & 344 & 121 & 48 & 216 \\
$S_n$ & 158 & 416 & 120 & −10 & 205 \\
$S_p$ & 22 & −144 & 202 & 104 & 18 & 184 \\
$Q_{\beta^-}$ & 15 & −257 & 475 & 101 & 15 & 277 \\
$Q_\alpha$ & 78 & −5 & 104 & 31 & 18 & 85 \\
\hline
\end{tabular}
\caption{
\label{tab:deviations}
Numbers of data $N$, average deviations $\delta_{av}$, and rms deviations $\delta_{rms}$, for eq. (1) with the new values of the coefficients $\alpha$, $\varepsilon$, $\Theta$, $\kappa$ and the old values of the other seven coefficients from Table I for region A. Taken from ref. \cite{12}.
}
\end{table}
Like in table II, the deviations shown in table III are smaller than the corresponding ones for several current mass models. Based on the above analysis we have recently [12] proposed the use of the masses given in table A as a substitute for the SSME [1] in the interior of region A, particularly for the extrapolatable-proven $Q_\alpha$ values.

4. Two Weak Points

4.1. Over-smoothness inside shell regions

Inside a shell region eq. (1) describes a mass surface which is smoother than the empirical surface and is inadequate for describing fine structure effects [1,9].

This is illustrated in fig. 3 showing $Q_\alpha$ systematics for the heaviest $N \geq 140$ even-Z nuclei from Pu through $Z = 110$ [20]. Respective full and empty circles denote experimental values and values estimated from systematics. The small circles connected by thin lines show the predictions of eq. (1).

![Figure 3](image.png)

**FIG. 3.** $Q_\alpha$ systematics of even-Z elements from Pu through $Z = 110$ for $N \geq 140$. Data taken from ref. [20] and predictions from refs. [7,9].

As a rule the experimental isotopic lines show similar negative trends when $N$ increases, and they shift upwards rather uniformly when $Z$ increases. This regular pattern breaks down for nuclei in the vicinity of the deformed doubly submagic nuclei $(N_0, Z_0) = ^{252}\text{Fm}$ ($N_0 = 152$, $Z_0 = 100$) and (presumably even more so) $^{270}\text{Hs}$ ($N_0 = 162$, $Z_0 = 108$) [1,5,23], where the
trend of isotopic lines between \( N = N_0 \) and \( N = N_0 + 2 \) is positive, and the vertical distance between isotopic lines with \( Z = Z_0 \) and \( Z = Z_0 + 2 \) for \( N \approx N_0 \) is larger than for other \( Z \) values.

None of these submagic number effects is shown by the predicted thin lines systematics.

Another illustration of over-smoothness of eq. (1) as compared to the data is seen in fig. 4. Additional examples are documented in ref. [1].

In the SSME non-smooth abrupt local changes associated with subshell and deformation effects are assumed to have been smoothed out by configuration interaction, eqs. (5) and (8), and the mass equation describes a smooth surface representing their average. The deviations from the average are mostly small, though, with an overall rms as given in table II.

4.2. Discontinuities along shell region boundaries

Because the mass surface was adjusted in regions A and B separately it has different upwards curvings in the two regions, resulting in an unphysical discontinuity along the boundary line \( N = 126 \), which increases monotonically away from the data [7, 24, 25]. This discontinuity is as a rule a few hundreds keV for the experimentally known \( N = 126 \) nuclides between \(^{208}\text{Pb}\) and \(^{238}\text{U}\), and it reaches 1.3 MeV in \(^{227}\text{Md}\), which is the heaviest \( N = 126 \) isotope included in the tables.

On the other hand, consistency with the shell model requires the occurrence of discontinuous drops of predicted nucleon separation energies when crossing a corresponding shell boundary towards heavier nuclei. In the present case the expected drops of two-neutron separation energies when crossing \( N = 126 \) into region B are observed for all the elements included in the tables.

5. Illustrative Applications

The mass tables are intended to be used as a predictive tool in the interiors of regions A and B. We briefly apply them to four recent SHE experiments [3, 26–28].

In the first experiment [3] cold fusion of \(^{208}\text{Pb}\) target nuclei and 449 MeV bombarding \(^{86}\text{Kr}\) ions was studied. Three observed seven-members \( \alpha \)-decay chains are consistent with the formation of \(^{293}\text{118}\) and its sequential decay down to \(^{265}\text{Rf}\) (\( Z = 104 \)).

The compound nucleus (CN) formed in the reaction is \(^{294}\text{118}\). According to the \(^{208}\text{Pb}\) and \(^{86}\text{Kr}\) masses [20] and the predicted mass of the CN from table B it is formed at an excitation energy \( (E_x) \) of about 12 MeV, which allows it to emit one neutron, leaving the evaporation residue (EVR) \(^{293}\text{118}\) at \( E_x \leq 4 \) MeV. Both isotopes might be considered possible parents of the \( \alpha \)-decaying chain.

For the assigned parent \(^{293}\text{118}\), assuming that the decays proceed through or near the g.s., the respective average and rms deviations of the predicted \( Q_\alpha \) values from the observed ones are \( \delta_{av} = -197 \) keV and \( \delta_{rms} = 308 \) keV. The \( \delta_{rms} \) value is consistent with table II, but the \( \delta_{av} \) is too negative. The largest deviation of -735 keV for \(^{293}\text{118}\) might also be too negative.

\[ ^2\text{In refs. [4] and [25] such unphysical discontinuities along shell region boundaries were avoided by adjusting to the data in the two regions simultaneously, with continuity requirements along the boundary imposed as additional constraints.} \]
Fig. 4 shows the measured and predicted $Q_\alpha$ values. One observes the over-smoothness mentioned in subsect. 4.1, and the large negative deviation of $^{293}118$. The authors of ref. [29] mention the possibility that the observed transitions may occur between structurally similar low lying $[611]\frac{1}{2}^+$ Nilsson levels which in some of the nuclei are not g.s. Using their calculated levels this would reduce the $^{293}118$ deviation to -575 keV.

For the CN $^{294}118$ considered as a parent the deviations are larger: $\delta_{av} = -366$ keV, $\delta_{rms} = 464$ keV and $\delta^{(294118)} = -1011$ keV. This might perhaps lend some additional support to the authors’ assignment of $^{293}118$ as the parent. The authors of ref. [29] likewise obtained better agreement of their SC calculations with the $^{293}118$ scenario.

![Graph showing $Q_\alpha$ values vs. Atomic Number Z]

**FIG. 4.** Experimental [3] and predicted [7,9] $Q_\alpha$ values of the $^{293}118$ decay chain.

The relations of the results shown in fig. 4 to several current mass models are considered in ref. [9].

The CN and EVR parents, their corresponding formation channels, estimated $^3$ values of their excitation energies when formed, and the deviations $\delta_{av}$ and $\delta_{rms}$ from the data of the corresponding predicted $Q_\alpha$ values assuming that the decays go through or near the g.s., are given in table IV.

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$^3$The estimated values of $E^x$ in tables IV - VII are obtained from the kinematics of the reactions assuming that the evaporated neutrons have zero kinetic energy and the evaporated charged particles (p and $\alpha$) have a kinetic energy which is equal to their potential energy at the top of the Coulomb barrier. Higher kinetic energies of the evaporated particles would reduce the estimates given in the tables.
TABLE IV. Conceivable parents of the $\alpha$-decay chains [3] with their formation channels, deduced upper values (see footnote 3) of the excitation energies $E^x$ of the radiative capture and the evaporated residue nuclei, and the deviations $\delta_{av}$ and $\delta_{rms}$ from the data of the corresponding predicted $Q_{\alpha}$ values.

| Parent | Channel | $E^x$ (MeV) | $\delta_{av}$ (MeV) | $\delta_{rms}$ (MeV) |
|--------|---------|-------------|---------------------|---------------------|
| $^{294}$118 | CN | 12 | -0.366 | 0.464 |
| $^{293}$118 | 1n | 4 | -0.197 | 0.308 |

The three other experiments were performed at higher excitation energies of the CN. In the second experiment [26] a $^{249}$Pu target was bombarded by 236 MeV $^{48}$Ca ions. An observed three-members $\alpha$-decay chain is considered a good candidate for originating from the parent $^{289}$114 and its sequential decay down to $^{277}$Hs ($Z = 108$).

The CN formed in the reaction is $^{292}$114 at $E^x \approx 27$ MeV (ref. [20] and table B). At this higher energy more channels for particle emission might be open than in the $Z = 118$ cold fusion experiment, including up to 3n and also p or $\alpha$ emission. Four conceivable EVR parents, their formation channels, estimated excitation energies at which they were formed, and the deviations $\delta_{av}$ and $\delta_{rms}$ from the data of the corresponding predicted $Q_{\alpha}$ values assuming that the decays go through or near the g.s., are given in table V.

TABLE V. Conceivable EVR parents of the $\alpha$-decay chain [26] with their formation channels, their estimated values of $E^x$, and the deviations $\delta_{av}$ and $\delta_{rms}$ from the data of the corresponding predicted $Q_{\alpha}$ values.

| EVR parent | Evaporation channel | Estimated$^a$ $E^x$ (MeV) | $\delta_{av}$ (MeV) | $\delta_{rms}$ (MeV) |
|------------|---------------------|-----------------------------|---------------------|---------------------|
| $^{290}$114 | 2n | 16 | 0.643 | 0.720 |
| $^{289}$114 | 3n | 9 | 0.847 | 0.905 |
| $^{291}$113 | p | 8 | -0.241 | 0.414 |
| $^{288}$112 | $\alpha$ | 9 | -0.181 | 0.363 |

$^a$ See footnote 3.

In the third experiment [27] a $^{249}$Bk target was bombarded by 117 MeV and 123 MeV $^{22}$Ne ions. We address the five observed two-members $\alpha$-decay chains which are assigned to the parent $^{267}$Bh ($Z = 107$).

The CN formed in the reaction is $^{271}$Bh at respective $E^x$ values of about 43 and 48 MeV (ref. [20] and table B), which is higher than in the $Z = 114$ experiment, and presumably has more allowed evaporation channels. Table VI, arranged like table V, gives details for four conceivable EVR parents.

$^4$Other EVRs, formed by $\alpha$2n and $\alpha$3n emissions, lead to results which seem to be in conflict with known decay characteristics of the nuclei involved.
TABLE VI. Conceivable EVR parents of the two-members α-decay chains [27] with their formation channels, their estimated values of $E^x$, and the deviations $\delta_{\text{av}}$ and $\delta_{\text{rms}}$ from the data of the corresponding predicted $Q_\alpha$ values.

| EVR parent | Evaporation channel | Estimated$^{a,b}$ $E^x$ (MeV) | $\delta_{\text{av}}$ (MeV) | $\delta_{\text{rms}}$ (MeV) |
|------------|---------------------|-------------------------------|-----------------------------|-----------------------------|
| $^{267}$Bh | 4n                  | 18, 23                        | 0.616                       | 0.629                       |
| $^{266}$Bh | 5n                  | 11, 16                        | 0.712                       | 0.723                       |
| $^{268}$Sg | p2n                 | 14, 19                        | -0.035                      | 0.134                       |
| $^{267}$Sg | p3n                 | 7, 12                         | 0.066                       | 0.146                       |

$^a$ See footnote 3.

$^b$ The two estimated values correspond to the two bombarding energies.

The first two lines in tables V and VI correspond to xn emissions including the EVR parents assigned by the authors. Their deviations considerably exceed the values expected from table II for g.s. transitions. If the above assignments are confirmed, the large deviations might indicate that the decay chains do not proceed through levels in the vicinity of the g.s.

The two subsequent lines in the tables correspond to conceivable EVR parents formed by p, α and pxn emissions. Their deviations are smaller, with $\delta_{\text{rms}}$ values consistent with table II. This might lend some support to scenarios with pxn and αxn emissions, in addition to the pure xn evaporations commonly considered.

Finally, in the fourth experiment [28] a $^{248}$Cm target was bombarded by 240 MeV $^{48}$Ca ions. An observed three-members α-decay chain is assigned to the nuclide $^{292}$116 and its sequential decay down to $^{280}$110.

The CN formed in the reaction is $^{296}$116 at $E^x \approx 27$ MeV (ref. [20] and table B). Table VII gives details for four conceivable EVR parents in addition to the assigned parent $^{292}$116.

TABLE VII. Conceivable EVR parents of the α-decay chain [28] with their formation channels, their estimated values of $E^x$, and the deviations $\delta_{\text{av}}$ and $\delta_{\text{rms}}$ from the data of the corresponding predicted $Q_\alpha$ values.

| EVR parent | Evaporation channel | Estimated$^a$ $E^x$ (MeV) | $\delta_{\text{av}}$ (MeV) | $\delta_{\text{rms}}$ (MeV) |
|------------|---------------------|----------------------------|-----------------------------|-----------------------------|
| $^{294}$116 | 2n                  | 14                         | 0.177                       | 0.466                       |
| $^{293}$116 | 3n                  | 7                          | 0.423                       | 0.577                       |
| $^{292}$116 | 4n                  | 2                          | 0.669                       | 0.758                       |
| $^{295}$115 | p                   | 7                          | -0.767                      | 0.905                       |
| $^{292}$114 | $\alpha$            | 8                          | -0.590                      | 0.699                       |

$^a$ See footnote 3.

The smallest deviations in increasing order occur for the respective EVR parents $^{294}$116 and $^{293}$116 formed by 2n and 3n emissions. Their $\delta_{\text{rms}}$ values are consistent with table II. This might lend some support to a 2n (and possibly also 3n) scenario as compared to the 4n, p and $\alpha$ evaporation channels.
The last two members of the $\alpha$-decay chain seen in this experiment agree with the two-members $\alpha$-decay chains observed before in a $Z = 114$ experiment [28,30]. If they are the same, a formation of the present $Z = 116$ parent by $2n$ (or $3n$) emission would imply the same formation channel(s) for the $Z = 114$ EVR parent in ref. [30], rather than the assigned $4n$ channel.

We thank Yuri Lobanov and Yuri Oganessian for prepublication results of ref. [28] and a preprint of ref. [30] and for useful correspondence.

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EXPLANATION OF TABLES

| Symbol | Description |
|--------|-------------|
| Z      | Proton number. |
| N      | Neutron number. |
| A      | Mass number: N + Z. |
| $\Delta M(N,Z)$ | Atomic mass excess: E(N,Z) + 8071.323N + 7288.969Z keV, where E(N,Z) is the adjusted g.s. energy, eq. (1). |
| $S_n(N,Z)$ | Neutron separation energy: $\Delta M(N-1,Z) - \Delta M(N,Z) + 8071.323$ keV. |
| $S_p(N,Z)$ | Proton separation energy: $\Delta M(N,Z-1) - \Delta M(N,Z) + 7288.969$ keV. |
| $Q_\alpha(N,Z)$ | Q-alpha value: $\Delta M(N,Z) - \Delta M(N-2,Z-2) - 2424.911$ keV. |
| $Q_\beta(N,Z)$ | Q-beta value: $\Delta M(N,Z) - \Delta M(N-1,Z+1)$. |
| $S_{2n}(N,Z)$ | Two-neutron separation energy: $\Delta M(N-2,Z) - \Delta M(N,Z) + 16142.646$ keV. |
| $S_{2p}(N,Z)$ | Two-proton separation energy: $\Delta M(N,Z-2) - \Delta M(N,Z) + 14577.938$ keV. |
TABLE A. Atomic mass excesses and mass differences in keV for nuclei in the shell region $82 \leq N,Z \leq 126$, calculated from eq. (1) with the coefficients of region A in table I.

| Z  | N   | A   | $\Delta M$ | $S_n$ | $S_p$ | $Q_\alpha$ | $Q_\beta$ | $S_{2n}$ | $S_{2p}$ |
|----|-----|-----|------------|-------|-------|------------|------------|----------|----------|
| 82 | 94  | 176 | 10857      | 12871 |       | -15377     | 23676      |          |          |
| 82 | 95  | 177 | 8541       | 10387 |       | -12831     | 23259      |          |          |
| 82 | 96  | 178 | 4177       | 12435 |       | -14360     | 22822      |          |          |
| 82 | 97  | 179 | 2263       | 9985  |       | -11857     | 22420      |          |          |
| 82 | 98  | 180 | -1682      | 12017 |       | -13385     | 22002      |          |          |
| 82 | 99  | 181 | -3215      | 9603  |       | -10927     | 21621      |          |          |
| 82 | 100 | 182 | -6767      | 11624 |       | -12457     | 21227      |          |          |
| 82 | 101 | 183 | -7944      | 9247  |       | -10045     | 20871      |          |          |
| 82 | 102 | 184 | -11130     | 11257 |       | -11577     | 20505      |          |          |
| 82 | 103 | 185 | -11979     | 8919  |       | -9212      | 20177      |          |          |
| 82 | 104 | 186 | -14827     | 10920 |       | -10748     | 19839      |          |          |
| 82 | 105 | 187 | -15376     | 8619  |       | -8429      | 19539      |          |          |
| 82 | 106 | 188 | -17916     | 10611 |       | -9969      | 19231      |          |          |
| 82 | 107 | 189 | -18192     | 8347  |       | -7694      | 18958      |          |          |
| 82 | 108 | 190 | -20450     | 10329 |       | -9237      | 18676      |          |          |
| 82 | 109 | 191 | -20479     | 8100  |       | -7005      | 18429      |          |          |
| 82 | 110 | 192 | -22480     | 10071 |       | -8550      | 18172      |          |          |
| 82 | 111 | 193 | -22283     | 7875  |       | -6358      | 17946      |          |          |
| 82 | 112 | 194 | -24046     | 9834  |       | -7903      | 17709      |          |          |
| 82 | 113 | 195 | -23641     | 7666  |       | -5747      | 17500      |          |          |
| 82 | 114 | 196 | -25180     | 9610  |       | -7289      | 17276      |          |          |
| 82 | 115 | 197 | -24578     | 7468  |       | -5167      | 17078      |          |          |
| 82 | 116 | 198 | -25901     | 9394  |       | -6702      | 16862      |          |          |
| 82 | 117 | 199 | -25103     | 7273  |       | -4609      | 16668      |          |          |
| 82 | 118 | 200 | -26210     | 9178  |       | -6134      | 16452      |          |          |
| 82 | 119 | 201 | -25213     | 7074  |       | -4064      | 16252      |          |          |
| 82 | 120 | 202 | -26095     | 8953  |       | -5574      | 16027      |          |          |
| 82 | 121 | 203 | -24884     | 6860  |       | -3522      | 15813      |          |          |
| 82 | 122 | 204 | -25522     | 8708  |       | -5013      | 15569      |          |          |
| 82 | 123 | 205 | -24073     | 6622  |       | -2974      | 15331      |          |          |
| 82 | 124 | 206 | -24437     | 8435  |       | -4439      | 15057      |          |          |
| 82 | 125 | 207 | -22714     | 6348  |       | -2406      | 14783      |          |          |
| 82 | 126 | 208 | -22764     | 8120  |       | -3840      | 14469      |          |          |
| 83 | 95  | 178 | 18538      | 10906 |       | -2707      | -11438     | 23839     |          |
| 83 | 96  | 179 | 14121      | 12487 |       | -2655      | -12965     | 23393     |          |
| 83 | 97  | 180 | 11703      | 10489 |       | -2150      | -10482     | 22977     |          |
| 83 | 98  | 181 | 7712       | 12061 |       | -2106      | -12008     | 22551     |          |
| 83 | 99  | 182 | 5689       | 10094 |       | -1615      | -9569      | 22156     |          |
| 83 | 100 | 183 | 2101       | 11659 |       | -1580      | -11095     | 21754     |          |
| 83 | 101 | 184 | 447        | 9725  |       | -1102      | -8701      | 21385     |          |
| Z | N  | A  | ΔM  | S_n  | S_p  | Q_α | Q_δ | S_{2n} | S_{2p} |
|---|----|----|-----|------|------|-----|-----|--------|--------|
| 83| 102| 185| -2766| 11285| -1075| -10230| 21010|
| 83| 103| 186| -4079| 9383 | -610 | -7882 | 20668|
| 83| 104| 187| -6947| 10939| -591 | -9414 | 20323|
| 83| 105| 188| -7947| 9071 | -140 | -7111 | 20010|
| 83| 106| 189| -10498| 10622| -129 | -8647 | 19693|
| 83| 107| 190| -11212| 8786 | 309 | -6388 | 19408|
| 83| 108| 191| -13474| 10332| 312 | -7927 | 19118|
| 83| 109| 192| -13929| 8526 | 738 | -5709 | 18859|
| 83| 110| 193| -15925| 10067| 734 | -7249 | 18593|
| 83| 111| 194| -16143| 8288 | 1148| -5071 | 18356|
| 83| 112| 195| -17894| 9821 | 1136| -6611 | 18110|
| 83| 113| 196| -17891| 8068 | 1538| -4469 | 17890|
| 83| 114| 197| -19410| 9590 | 1518| -6005 | 17659|
| 83| 115| 198| -19198| 7858 | 1909| -3895 | 17449|
| 83| 116| 199| -20494| 9367 | 1882| -5425 | 17226|
| 83| 117| 200| -20076| 7652 | 2261| -3343 | 17020|
| 83| 118| 201| -21149| 9144 | 2227| -4863 | 16797|
| 83| 119| 202| -20520| 7442 | 2595| -2804 | 16586|
| 83| 120| 203| -21361| 8912 | 2555| -4308 | 16355|
| 83| 121| 204| -20508| 7218 | 2912| -2268 | 16130|
| 83| 122| 205| -21099| 8662 | 2865| -3752 | 15880|
| 83| 123| 206| -19997| 6969 | 3213| -1723 | 15631|
| 83| 124| 207| -20308| 8382 | 3160| -3182 | 15351|
| 83| 125| 208| -18923| 6686 | 3497| -1158 | 15068|
| 83| 126| 209| -18913| 8061 | 3438| -2586 | 14747|

| 84| 96 | 180| 22186| 12972| -775 | 8903 | -15599| 23933| -3430|
| 84| 97 | 181| 19721| 10536| -728 | 8754 | -13114| 23509| -2879|
| 84| 98 | 182| 15258| 12533| -256 | 8656 | -14615| 23070| -2363|
| 84| 99 | 183| 13196| 10133| -218 | 8508 | -12173| 22667| -1833|
| 84| 100| 184| 9148 | 12119| 241 | 8406 | -13675| 22252| -1338|
| 84| 101| 185| 7464 | 9756 | 272 | 8254 | -11278| 21875| -830|
| 84| 102| 186| 3803 | 11732| 719 | 8146 | -12782| 21488| -356|
| 84| 103| 187| 2467 | 9406 | 742 | 7986 | -10430| 21139| 131|
| 84| 104| 188| -835 | 11374| 1177| 7870 | -11939| 20781| 585|
| 84| 105| 189| -1850| 9086 | 1192| 7703 | -9631 | 20460| 1052|
| 84| 106| 190| -4824| 11045| 1615| 7578 | -11143| 20132| 1486|
| 84| 107| 191| -5547| 8793 | 1623| 7403 | -8879 | 19839| 1932|
| 84| 108| 192| -8220| 10744| 2034| 7271 | -10394| 19538| 2347|
| 84| 109| 193| -8675| 8527 | 2035| 7091 | -8172 | 19271| 2774|
| 84| 110| 194| -11071| 10467| 2435| 6953 | -9688 | 18994| 3169|
| 84| 111| 195| -11282| 8282 | 2428| 6771 | -7505 | 18749| 3576|
| 84| 112| 196| -13421| 10210| 2816| 6633 | -9020 | 18492| 3953|
| 84| 113| 197| -13405| 8054 | 2802| 6453 | -6873 | 18265| 4341|
| Z  | N   | A   | ΔM  | Sₙ  | Sₚ  | Qₐ  | Qₛ  | S₂ₙ | S₂ₚ |
|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 84 | 114 | 198 | -15302 | 9968 | 3180 | 6319 | -8385 | 18023 | 4699 |
| 84 | 115 | 199 | -15069 | 7837 | 3159 | 6147 | -6270 | 17806 | 5069 |
| 84 | 116 | 200 | -16732 | 9734 | 3526 | 6023 | -7776 | 17572 | 5409 |
| 84 | 117 | 201 | -16286 | 7625 | 3498 | 5866 | -5688 | 17359 | 5760 |
| 84 | 118 | 202 | -17715 | 9501 | 3855 | 5760 | -7184 | 17126 | 6083 |
| 84 | 119 | 203 | -17052 | 7408 | 3821 | 5625 | -5119 | 16909 | 6417 |
| 84 | 120 | 204 | -18240 | 9258 | 4167 | 5545 | -6600 | 16667 | 6722 |
| 84 | 121 | 205 | -17346 | 7177 | 4127 | 5441 | -4553 | 16436 | 7039 |
| 84 | 122 | 206 | -18274 | 8998 | 4463 | 5396 | -6014 | 16176 | 7329 |
| 84 | 123 | 207 | -17126 | 6923 | 4417 | 5333 | -3978 | 15921 | 7630 |
| 84 | 124 | 208 | -17764 | 8709 | 4744 | 5332 | -5414 | 15632 | 7904 |
| 84 | 125 | 209 | -16327 | 6634 | 4692 | 5321 | -3384 | 15343 | 8190 |
| 84 | 126 | 210 | -16636 | 8380 | 5011 | 5376 | -4788 | 15014 | 8450 |
| 85 | 97  | 182 | 29873 | 11032 | -2863 | 8910 | -11777 | 24054 | -3592 |
| 85 | 98  | 183 | 25370 | 12575 | -2822 | 8823 | -13275 | 23607 | -3079 |
| 85 | 99  | 184 | 22824 | 10617 | -2338 | 8695 | -10852 | 23192 | -2556 |
| 85 | 100 | 185 | 18742 | 12153 | -2304 | 8604 | -12351 | 22770 | -2063 |
| 85 | 101 | 186 | 16586 | 10227 | -1833 | 8471 | -9972 | 22380 | -1561 |
| 85 | 102 | 187 | 12898 | 11758 | -1806 | 8372 | -11474 | 21986 | -1087 |
| 85 | 103 | 188 | 11103 | 9866 | -1347 | 8231 | -9139 | 21625 | -604 |
| 85 | 104 | 189 | 7781 | 11393 | -1327 | 8122 | -10644 | 21259 | -150 |
| 85 | 105 | 190 | 6318 | 9533 | -880 | 7973 | -8353 | 20927 | 312 |
| 85 | 106 | 191 | 3332 | 11057 | -868 | 7854 | -9860 | 20591 | 747 |
| 85 | 107 | 192 | 2174 | 9229 | -432 | 7696 | -7612 | 20287 | 1190 |
| 85 | 108 | 193 | -503 | 10749 | -427 | 7569 | -9122 | 19978 | 1607 |
| 85 | 109 | 194 | -1383 | 8951 | -3 | 7404 | -6915 | 19700 | 2031 |
| 85 | 110 | 195 | -3777 | 10465 | -5 | 7271 | -8426 | 19416 | 2429 |
| 85 | 111 | 196 | -4401 | 8694 | 407 | 7103 | -6257 | 19160 | 2835 |
| 85 | 112 | 197 | -6531 | 10201 | 398 | 6968 | -7768 | 18896 | 3215 |
| 85 | 113 | 198 | -6916 | 8456 | 800 | 6801 | -5634 | 18658 | 3603 |
| 85 | 114 | 199 | -8798 | 9953 | 785 | 6670 | -7141 | 18409 | 3965 |
| 85 | 115 | 200 | -8956 | 8228 | 1175 | 6510 | -5039 | 18181 | 4335 |
| 85 | 116 | 201 | -10597 | 9712 | 1154 | 6388 | -6539 | 17941 | 4680 |
| 85 | 117 | 202 | -10531 | 8005 | 1534 | 6241 | -4463 | 17718 | 5033 |
| 85 | 118 | 203 | -11933 | 9472 | 1506 | 6136 | -5953 | 17478 | 5361 |
| 85 | 119 | 204 | -11640 | 7778 | 1876 | 6011 | -3900 | 17251 | 5697 |
| 85 | 120 | 205 | -12793 | 9224 | 1842 | 5930 | -5375 | 17002 | 6009 |
| 85 | 121 | 206 | -12260 | 7537 | 2202 | 5835 | -3339 | 16762 | 6329 |
| 85 | 122 | 207 | -13147 | 8958 | 2162 | 5789 | -4793 | 16496 | 6626 |
| 85 | 123 | 208 | -12350 | 7273 | 2512 | 5733 | -2768 | 16232 | 6930 |
| 85 | 124 | 209 | -12942 | 8664 | 2467 | 5731 | -4198 | 15938 | 7212 |
| 85 | 125 | 210 | -11847 | 6975 | 2808 | 5725 | -2178 | 15639 | 7501 |
| 85 | 126 | 211 | -12105 | 8329 | 2758 | 5777 | -3576 | 15305 | 7769 |
| Z | N  | A  | ΔM   | S_n  | S_p  | Q_α  | Q_β  | S_{2n} | S_{2p} |
|---|----|----|------|------|------|------|------|--------|--------|
| 86| 98 | 184| 33676 | 13040 | -1017| 9065 | -15873| 24116  | -3840  |
| 86| 99 | 185| 31094 | 10654 | -981 | 8948 | -13448| 23694  | -3319  |
| 86| 100| 186| 26558 | 12606 | -527 | 8875 | -14923| 23260  | -2832  |
| 86| 101| 187| 24372 | 10257 | -497 | 8751 | -12541| 22863  | -2330  |
| 86| 102| 188| 20243 | 12200 | -55  | 8669 | -14019| 22458  | -1861  |
| 86| 103| 189| 18425 | 9889  | -32  | 8536 | -11681| 22090  | -1379  |
| 86| 104| 190| 14671 | 11824 | 398  | 8443 | -13162| 21713  | -929   |
| 86| 105| 191| 13193 | 9549  | 414  | 8300 | -10867| 21374  | -465   |
| 86| 106| 192| 9786  | 11477 | 834  | 8197 | -12352| 21027  | -33    |
| 86| 107| 193| 8619  | 9239  | 844  | 8044 | -10099| 20716  | 411    |
| 86| 108| 194| 5531  | 11158 | 1253 | 7931 | -11586| 20397  | 825    |
| 86| 109| 195| 4649  | 8953  | 1256 | 7771 | -9374 | 20112  | 1252   |
| 86| 110| 196| 1856  | 10864 | 1654 | 7651 | -10862| 19818  | 1649   |
| 86| 111| 197| 1236  | 8691  | 1651 | 7487 | -8689 | 19555  | 2058   |
| 86| 112| 198| -1282 | 10590 | 2039 | 7364 | -10176| 19281  | 2438   |
| 86| 113| 199| -1657 | 8446  | 2029 | 7200 | -8037 | 19036  | 2829   |
| 86| 114| 200| -3917 | 10331 | 2407 | 7080 | -9521 | 18777  | 3192   |
| 86| 115| 201| -4058 | 8212  | 2391 | 6922 | -7413 | 18543  | 3567   |
| 86| 116| 202| -6067 | 10080 | 2759 | 6809 | -8890 | 18293  | 3913   |
| 86| 117| 203| -5979 | 7983  | 2736 | 6664 | -6809 | 18064  | 4271   |
| 86| 118| 204| -7739 | 9831  | 3095 | 6567 | -8276 | 17814  | 4601   |
| 86| 119| 205| -7418 | 7750  | 3067 | 6442 | -6217 | 17581  | 4943   |
| 86| 120| 206| -8920 | 9573  | 3416 | 6370 | -7669 | 17323  | 5258   |
| 86| 121| 207| -8353 | 7504  | 3382 | 6274 | -5627 | 17077  | 5584   |
| 86| 122| 208| -9581 | 9298  | 3722 | 6234 | -7058 | 16802  | 5884   |
| 86| 123| 209| -8744 | 7234  | 3683 | 6177 | -5027 | 16533  | 6196   |
| 86| 124| 210| -9668 | 8995  | 4014 | 6180 | -6434 | 16230  | 6482   |
| 86| 125| 211| -8529 | 6931  | 3970 | 6172 | -4408 | 15927  | 6779   |
| 86| 126| 212| -9110 | 8652  | 4293 | 6228 | -5784 | 15584  | 7052   |
| 87| 100| 187| 36914 | 12639 | -3066| 9119 | -13630| 23770  | -3594  |
| 87| 101| 188| 34262 | 10723 | -2600| 9013 | -11266| 23362  | -3098  |
| 87| 102| 189| 30106 | 12227 | -2574| 8939 | -12741| 22950  | -2630  |
| 87| 103| 190| 27384 | 10343 | -2119| 8823 | -10420| 22570  | -2152  |
| 87| 104| 191| 24061 | 11844 | -2100| 8737 | -11897| 22188  | -1701  |
| 87| 105| 192| 22138 | 9993  | -1656| 8610 | -9619 | 21838  | -1242  |
| 87| 106| 193| 18718 | 11491 | -1643| 8512 | -11100| 21484  | -808   |
| 87| 107| 194| 17118 | 9671  | -1210| 8374 | -8863 | 21162  | -366   |
| 87| 108| 195| 14024 | 11165 | -1203| 8266 | -10346| 20837  | 50     |
| 87| 109| 196| 12719 | 9376  | -781 | 8120 | -8149 | 20541  | 475    |
| 87| 110| 197| 9925  | 10865 | -780 | 8004 | -9633 | 20241  | 874    |
| 87| 111| 198| 8893  | 9102  | -368 | 7852 | -7473 | 19968  | 1282   |
| 87| 112| 199| 6380  | 10585 | -373 | 7732 | -8955 | 19688  | 1665   |
| 87| 113| 200| 5604  | 8847  | 27  | 7580 | -6830 | 19432  | 2057   |
| Z  | N  | A  | ΔM  | S_n | S_p | Qα  | Qβ  | S_{2n} | S_{2p} |
|----|----|----|-----|-----|-----|-----|-----|-------|-------|
| 87 | 114| 201| 3355 | 10320 | 16  | 7462 | -8309 | 19167 | 2424  |
| 87 | 115| 202| 2822 | 8603  | 408 | 7314 | -6214 | 18924 | 2799  |
| 87 | 116| 203| 829  | 10064 | 391 | 7203 | -7685 | 18667 | 3150  |
| 87 | 117| 204| 536  | 8364  | 772 | 7067 | -5617 | 18428 | 3509  |
| 87 | 118| 205| -1201| 9808  | 750 | 6971 | -7078 | 18173 | 3845  |
| 87 | 119| 206| -1251| 8122  | 1122| 6854 | -5031 | 17931 | 4189  |
| 87 | 120| 207| -2726| 7866  | 1457| 6693 | -4446 | 17412 | 4840  |
| 87 | 121| 208| -3716| 9265  | 1424| 6652 | -5872 | 17132 | 5147  |
| 87 | 122| 209| -3234| 7588  | 1778| 6601 | -3851 | 16854 | 5461  |
| 87 | 123| 210| -4120| 8957  | 1740| 6601 | -5252 | 16546 | 5755  |
| 87 | 124| 211| -3326| 7277  | 1778| 6601 | -3851 | 16234 | 6057  |
| 87 | 125| 212| -4120| 8957  | 1740| 6601 | -5252 | 16546 | 5755  |
| 87 | 126| 213| -3865| 8610  | 2043| 6652 | -4606 | 15887 | 6337  |

| Z  | N  | A  | ΔM  | S_n | S_p | Qα  | Qβ  | S_{2n} | S_{2p} |
|----|----|----|-----|-----|-----|-----|-----|-------|-------|
| 88 | 102| 190| 38254| 12664 |     | 9270 | -15272| 23416 | -3433 |
| 88 | 103| 191| 35959| 10366 |     | 9161 | -12948| 23031 | -2955 |
| 88 | 104| 192| 31758| 12271 |     | 9090 | -14403| 22638 | -2508 |
| 88 | 105| 193| 29819| 10010 |     | 8968 | -12122| 22282 | -2047 |
| 88 | 106| 194| 25982| 11908 |     | 8885 | -13579| 21919 | -1617 |
| 88 | 107| 195| 24370| 9682  |     | 8752 | -11339| 21591 | -1173 |
| 88 | 108| 196| 20868| 11573 |     | 8656 | -12799| 21255 | -758  |
| 88 | 109| 197| 19558| 9381  |     | 8514 | -10598| 20954 | -331  |
| 88 | 110| 198| 16367| 11262 |     | 8410 | -12059| 20644 |  67   |
| 88 | 111| 199| 15336| 9102  |     | 8261 | -9895 | 20365 |  478  |
| 88 | 112| 200| 12434| 10973 |     | 8152 | -11355| 20075 |  861  |
| 88 | 113| 201| 11664| 8841  |     | 8002 | -9225 | 19814 | 1256  |
| 88 | 114| 202| 9036 | 10698 |     | 7894 | -10681| 19540 | 1624  |
| 88 | 115| 203| 8515 | 8592  |     | 7747 | -8581 | 19291 | 2003  |
| 88 | 116| 204| 6153 | 10433 |     | 7645 | -10031| 19025 | 2356  |
| 88 | 117| 205| 5877 | 8347  |     | 7510 | -7957 | 18781 | 2720  |
| 88 | 118| 206| 3779 | 10169 |     | 7422 | -9395 | 18517 | 3059  |
| 88 | 119| 207| 3750 | 8099  |     | 7305 | -7343 | 18269 | 3408  |
| 88 | 120| 208| 9234 | 9897  |     | 7238 | -8767 | 17997 | 3732  |
| 88 | 121| 209| 2155 | 7839  |     | 7149 | -6730 | 17737 | 4068  |
| 88 | 122| 210| 617  | 9609  |     | 7113 | -8134 | 17448 | 4379  |
| 88 | 123| 211| 1132 | 7557  |     | 7060 | -6108 | 17166 | 4701  |
| 88 | 124| 212| -89  | 9293  |     | 7066 | -7487 | 16850 | 4998  |
| 88 | 125| 213| 740  | 7240  |     | 7060 | -5465 | 16534 | 5308  |
| 88 | 126| 214| -126 | 8938  |     | 7117 | -6813 | 16179 | 5593  |

| Z  | N  | A  | ΔM  | S_n | S_p | Qα  | Qβ  | S_{2n} | S_{2p} |
|----|----|----|-----|-----|-----|-----|-----|-------|-------|
| 89 | 104| 193| 41941| 12292 | -2893| 9409 | -13162| 23109 | -3302 |
| 89 | 105| 194| 39561| 10450 | -2453| 9302 | -10897| 22742 | -2845 |
| 89 | 106| 195| 35710| 11923 | -2439| 9224 | -12352| 22373 | -2413 |
| 89 | 107| 196| 33668| 10112 | -2008| 9104 | -10127| 22036 | -1971 |
| Z | N  | A  | ΔM  | S_n | S_p  | Q_α | Q_β   | S_{2n} | S_{2p} |
|---|----|----|-----|-----|------|-----|-------|--------|--------|
| 89| 108| 197| 30157| 11582 | -1999 | 9013 | -11583 | 21695 | -1555  |
| 89| 109| 198| 28426| 9801  | -1579 | 8883 | -9397 | 21384 | -1129  |
| 89| 110| 199| 25231| 11266 | -1575 | 8782 | -10854| 21068 | -728   |
| 89| 111| 200| 23789| 9513  | -1164 | 8645 | -8704 | 20779 | -317   |
| 89| 112| 201| 20889| 10971 | -1166 | 8539 | -10160| 20484 | 68     |
| 89| 113| 202| 19718| 9242  | -765  | 8399 | -8043 | 20214 | 463    |
| 89| 114| 203| 17097| 10692 | -771  | 8292 | -9495 | 19934 | 835    |
| 89| 115| 204| 16184| 8983  | -379  | 8155 | -7407 | 19676 | 1215   |
| 89| 116| 205| 13834| 10421 | -391  | 8054 | -8852 | 19405 | 1573   |
| 89| 117| 206| 13175| 8730  | -8    | 7927 | -6790 | 19152 | 1939   |
| 89| 118| 207| 11093| 10152 | -25   | 7839 | -8224 | 18883 | 2283   |
| 89| 119| 208| 10691| 8474  | 348   | 7729 | -6183 | 18626 | 2634   |
| 89| 120| 209| 8886 | 9876  | 326   | 7662 | -7601 | 18350 | 2965   |
| 89| 121| 210| 8752 | 8205  | 692   | 7579 | -5576 | 18081 | 3303   |
| 89| 122| 211| 7240 | 9583  | 666   | 7542 | -6974 | 17788 | 3621   |
| 89| 123| 212| 7397 | 7914  | 1023  | 7494 | -4959 | 17497 | 3946   |
| 89| 124| 213| 6205 | 9262  | 993   | 7497 | -6332 | 17177 | 4251   |
| 89| 125| 214| 6686 | 7590  | 1343  | 7495 | -4320 | 16853 | 4565   |
| 89| 126| 215| 5853 | 8904  | 1308  | 7549 | -5662 | 16494 | 4858   |
| 90| 106| 196| 43795| 12337 | -796  | 9612 | -14814| 22806 | -3235  |
| 90| 107| 197| 41741| 10125 | -783  | 9497 | -12586| 22463 | -2792  |
| 90| 108| 198| 37824| 11987 | -378  | 9417 | -14021| 22113 | -2377  |
| 90| 109| 199| 36086| 9809  | -370  | 9290 | -11831| 21797 | -1949  |
| 90| 110| 200| 32494| 11663 | -26   | 9200 | -13266| 21472 | -1549  |
| 90| 111| 201| 31049| 9515  | 29    | 9066 | -11112| 21179 | -1135  |
| 90| 112| 202| 27761| 11359 | 416   | 8969 | -12546| 20875 | -749   |
| 90| 113| 203| 26592| 9240  | 414   | 8831 | -10424| 20599 | -350   |
| 90| 114| 204| 23592| 11071 | 793   | 8733 | -11854| 20311 | 22     |
| 90| 115| 205| 22686| 8977  | 786   | 8597 | -9763 | 20048 | 406    |
| 90| 116| 206| 19965| 10792 | 1157  | 8504 | -11185| 19769 | 765    |
| 90| 117| 207| 19318| 8718  | 1145  | 8377 | -9119 | 19511 | 1137   |
| 90| 118| 208| 16874| 10515 | 1508  | 8295 | -10531| 19233 | 1482   |
| 90| 119| 209| 16487| 8457  | 1492  | 8185 | -8485 | 18972 | 1840   |
| 90| 120| 210| 14328| 10230 | 1846  | 8124 | -9882 | 18688 | 2173   |
| 90| 121| 211| 14215| 8184  | 1826  | 8039 | -7851 | 18415 | 2518   |
| 90| 122| 212| 13256| 9929  | 2172  | 8007 | -9228 | 18114 | 2839   |
| 90| 123| 213| 12538| 7889  | 2148  | 7957 | -7207 | 17819 | 3171   |
| 90| 124| 214| 11007| 9602  | 2487  | 7964 | -8559 | 17492 | 3481   |
| 90| 125| 215| 11516| 7561  | 2458  | 7959 | -6542 | 17164 | 3802   |
| 90| 126| 216| 10351| 9236  | 2791  | 8016 | -7863 | 16798 | 4100   |
| 91| 108| 199| 47917| 11999 | -2803 | 9782 | -12823| 22552 | -3182  |
| 91| 109| 200| 45760| 10228 | -2385 | 9667 | -10648| 22227 | -2755  |
| Z | N  | A  | ΔM | S_n | S_p  | Q_x | Q_β  | S_{2n} | S_{2p} |
|---|----|----|----|-----|------|-----|------|--------|--------|
| 91| 110| 201| 42162| 11669| -2378| 9579| -12080| 21897 | -2352 |
| 91| 111| 202| 40307| 9925 | -1968| 9455| -9940 | 21595 | -1939 |
| 91| 112| 203| 37017| 11361| -1966| 9360| -11369| 21287 | -1549 |
| 91| 113| 204| 35447| 9641 | -1565| 9232| -9262 | 21002 | -1151 |
| 91| 114| 205| 32449| 11068| -1568| 9135| -10687| 20710 | -774  |
| 91| 115| 206| 31151| 9369 | -1175| 9008| -8609 | 20438 | -388  |
| 91| 116| 207| 28437| 10785| -1182| 8915| -10027| 20155 | -25   |
| 91| 117| 208| 27405| 9103 | -798 | 8796| -9380 | 19888 | 347   |
| 91| 118| 209| 24973| 10503| -809 | 8713| -9380 | 19606 | 698   |
| 91| 119| 210| 24210| 8833 | -433 | 8610| -7345 | 19337 | 1058  |
| 91| 120| 211| 22066| 10215| -449 | 8547| -8737 | 19049 | 1397  |
| 91| 121| 212| 21585| 8552 | -80  | 8469| -6718 | 18768 | 1745  |
| 91| 122| 213| 19745| 9910 | -100 | 8434| -8090 | 18463 | 2072  |
| 91| 123| 214| 19566| 8250 | 260  | 8389| -6079 | 18161 | 2408  |
| 91| 124| 215| 18058| 9579 | 237  | 8393| -7426 | 17829 | 2725  |
| 91| 125| 216| 18214| 7915 | 591  | 8392| -5419 | 17494 | 3050  |
| 91| 126| 217| 17075| 9210 | 564  | 8444| -6735 | 17125 | 3356  |
| 92| 110| 202| 50247| 12065| -796 | 9998| -14472| 22303 | -3175 |
| 92| 111| 203| 48387| 9931 | -790 | 9876| -12328| 21997 | -2759 |
| 92| 112| 204| 44709| 11749| -403 | 9790| -13737| 21680 | -2370 |
| 92| 113| 205| 43137| 9643 | -401 | 9663| -11625| 21392 | -1967 |
| 92| 114| 206| 39760| 11448| -21  | 9574| -13030| 21091 | -1590 |
| 92| 115| 207| 38464| 9367 | -24  | 9447| -10947| 20815 | -1200 |
| 92| 116| 208| 35378| 11157| 347  | 9361| -12344| 20524 | -834  |
| 92| 117| 209| 34353| 9096 | 341  | 9241| -10285| 20253 | -457  |
| 92| 118| 210| 31556| 10868| 705  | 9165| -11672| 19964 | -104  |
| 92| 119| 211| 30804| 8823 | 695  | 9061| -9633 | 19691 | 261   |
| 92| 120| 212| 28303| 10572| 1052 | 9004| -11004| 19395 | 603   |
| 92| 121| 213| 27835| 8538 | 1038 | 8923| -8979 | 19111 | 957   |
| 92| 122| 214| 25646| 10260| 1388 | 8893| -10330| 18799 | 1287  |
| 92| 123| 215| 25485| 8232 | 1370 | 8845| -8315 | 18493 | 1630  |
| 92| 124| 216| 23633| 9922 | 1713 | 8852| -9641 | 18155 | 1951  |
| 92| 125| 217| 23810| 7894 | 1692 | 8847| -7629 | 17817 | 2283  |
| 92| 126| 218| 22334| 9547 | 2029 | 8902| -8924 | 17441 | 2594  |
| 93| 112| 205| 54763| 11754| -2764| 10176| -12575| 22095 | -3168 |
| 93| 113| 206| 52791| 10043| -2364| 10058| -10477| 21798 | -2765 |
| 93| 114| 207| 49412| 11450| -2362| 9969| -11878| 21494 | -2384 |
| 93| 115| 208| 47723| 9760 | -1969| 9850| -9808 | 21210 | -1993 |
| 93| 116| 209| 44639| 11155| -1971| 9764| -11201| 20915 | -1623 |
| 93| 117| 210| 43228| 9481 | -1586| 9652| -9154 | 20637 | -1245 |
| 93| 118| 211| 40437| 10862| -1592| 9575| -10536| 20344 | -886  |
| 93| 119| 212| 39307| 9201 | -1214| 9476| -8509 | 20063 | -518  |
| Z  | N   | A   | ΔM  | S_n | S_p  | Q_α  | Q_β  | S_{2n} | S_{2p} |
|----|-----|-----|-----|-----|-----|------|------|--------|--------|
| 93 | 120 | 213 | 36815 | 10563 | -1223 | 9417 | -9875 | 19764 | -171   |
| 93 | 121 | 214 | 35977 | 8909  | -852  | 9341 | -7862 | 19472 | 185    |
| 93 | 122 | 215 | 33800 | 10247 | -865  | 9309 | -9209 | 19157 | 522    |
| 93 | 123 | 216 | 33275 | 8596  | -501  | 9265 | -7204 | 18844 | 869    |
| 93 | 124 | 217 | 31440 | 9906  | -517  | 9269 | -8525 | 18503 | 1196   |
| 93 | 125 | 218 | 31259 | 8251  | -159  | 9268 | -6523 | 18158 | 1532   |
| 93 | 126 | 219 | 29802 | 9528  | -178  | 9318 | -7814 | 17780 | 1851   |
| 94 | 114 | 208 | 57531 | 11830 | -830  | 10396 | -14199 | 21879 | -3192  |
| 94 | 115 | 209 | 55840 | 9762  | -828  | 10277 | -12125 | 21592 | -2797  |
| 94 | 116 | 210 | 52383 | 11528 | -455  | 10197 | -13498 | 21290 | -2426  |
| 94 | 117 | 211 | 50974 | 9480  | -456  | 10084 | -11447 | 21008 | -2042  |
| 94 | 118 | 212 | 47816 | 11228 | -90   | 10013 | -12809 | 20709 | -1682  |
| 94 | 119 | 213 | 46691 | 9196  | -95   | 9913  | -10778 | 20425 | -1309  |
| 94 | 120 | 214 | 43840 | 10922 | 264   | 9858  | -12124 | 20119 | -958   |
| 94 | 121 | 215 | 43010 | 8901  | 256   | 9780  | -10106 | 19824 | -596   |
| 94 | 122 | 216 | 40480 | 10601 | 609   | 9751  | -11433 | 19502 | -255   |
| 94 | 123 | 217 | 39965 | 8585  | 598   | 9705  | -9424  | 19186 | 97     |
| 94 | 124 | 218 | 37783 | 10253 | 945   | 9712  | -10725 | 18839 | 428    |
| 94 | 125 | 219 | 37616 | 8238  | 931   | 9706  | -8718  | 18492 | 772    |
| 94 | 126 | 220 | 35818 | 9869  | 1273  | 9759  | -9988  | 18107 | 1094   |
| 95 | 116 | 211 | 62422 | 11530 | -2749 | 10585 | -12366 | 21686 | -3204  |
| 95 | 117 | 212 | 60626 | 9866  | -2363 | 10478 | -10328 | 21397 | -2819  |
| 95 | 118 | 213 | 57469 | 11228 | -2363 | 10405 | -11685 | 21094 | -2454  |
| 95 | 119 | 214 | 55964 | 9576  | -1984 | 10311 | -9666  | 20804 | -2079  |
| 95 | 120 | 215 | 53116 | 10919 | -1987 | 10254 | -11008 | 20495 | -1723  |
| 95 | 121 | 216 | 51913 | 9274  | -1614 | 10180 | -9002  | 20193 | -1357  |
| 95 | 122 | 217 | 49389 | 10594 | -1620 | 10149 | -10324 | 19869 | -1011  |
| 95 | 123 | 218 | 48508 | 8952  | -1253 | 10106 | -8325  | 19547 | -655   |
| 95 | 124 | 219 | 46335 | 10244 | -1262 | 10109 | -9622  | 19197 | -316   |
| 95 | 125 | 220 | 45807 | 8599  | -901  | 10106 | -7626  | 18844 | 30     |
| 95 | 126 | 221 | 44020 | 9858  | -912  | 10155 | -8891  | 18457 | 360    |
| 96 | 118 | 214 | 65630 | 11596 | -872  | 10822 | -13936 | 21466 | -3236  |
| 96 | 119 | 215 | 64125 | 9576  | -871  | 10726 | -11913 | 21173 | -2855  |
| 96 | 120 | 216 | 60915 | 11281 | -509  | 10673 | -13236 | 20858 | -2497  |
| 96 | 121 | 217 | 59714 | 9272  | -511  | 10597 | -11225 | 20553 | -2126  |
| 96 | 122 | 218 | 56834 | 10950 | -155  | 10569 | -12528 | 20223 | -1776  |
| 96 | 123 | 219 | 55957 | 8948  | -159  | 10522 | -10525 | 19899 | -1413  |
| 96 | 124 | 220 | 53433 | 10595 | 190   | 10528 | -11803 | 19543 | -1072  |
| 96 | 125 | 221 | 52912 | 8592  | 184   | 10521 | -9802  | 19187 | -717   |
| 96 | 126 | 222 | 50779 | 10203 | 529   | 10571 | -11049 | 18796 | -383   |
| Z  | N   | A   | ΔM   | $S_n$ | $S_p$ | $Q_\alpha$ | $Q_\beta$ | $S_{2n}$ | $S_{2p}$ |
|----|-----|-----|------|------|------|-------------|------------|--------|--------|
| 97 | 120 | 217 | 70939 | 11282 | -2735 | 11045       | -12129     | 21241  | -3244  |
| 97 | 121 | 218 | 69362 | 9648  | -2359 | 10973       | -10130     | 20931  | -2871  |
| 97 | 122 | 219 | 66483 | 10950 | -2359 | 10941       | -11428     | 20599  | -2515  |
| 97 | 123 | 220 | 65236 | 9318  | -1990 | 10898       | -9437      | 20268  | -2150  |
| 97 | 124 | 221 | 62714 | 10593 | -1992 | 10899       | -10710     | 19911  | -1801  |
| 97 | 125 | 222 | 61828 | 8957  | -1627 | 10895       | -8720      | 19550  | -1443  |
| 97 | 126 | 223 | 59700 | 10199 | -1631 | 10940       | -9962      | 19156  | -1102  |
| 98 | 122 | 220 | 74673 | 11309 | -901  | 11333       | -13611     | 20961  | -3261  |
| 98 | 123 | 221 | 73425 | 9319  | -899  | 11286       | -11615     | 20629  | -2889  |
| 98 | 124 | 222 | 70549 | 10947 | -545  | 11289       | -12870     | 20267  | -2537  |
| 98 | 125 | 223 | 69663 | 8957  | -545  | 11280       | -10876     | 19904  | -2173  |
| 98 | 126 | 224 | 67185 | 10548 | -196  | 11327       | -12099     | 19506  | -1828  |
| 99 | 124 | 223 | 80539 | 10951 | -2701 | 11631       | -11785     | 20643  | -3246  |
| 99 | 125 | 224 | 79285 | 9325  | -2333 | 11624       | -9801      | 20276  | -2878  |
| 99 | 126 | 225 | 76805 | 10551 | -2330 | 11665       | -11021     | 19876  | -2526  |
| 100| 126 | 226 | 84993 | 10904 | -899  | 12019       | -13137     | 20236  | -3229  |
TABLE B. Atomic mass excesses and mass differences in keV for nuclei in the shell region
$126 \leq N \leq 184, 82 \leq Z \leq 126$, calculated from eq. (1) with the coefficients of region B in table I.

| Z | N  | A  | $\Delta M$ | $S_n$ | $S_p$ | $Q_\alpha$ | $Q_\beta$ | $S_{2n}$ | $S_{2p}$ |
|---|----|----|-----------|--------|--------|------------|------------|--------|--------|
| 82 | 126 | 208 | -21909    |        |        |            |            |        |        |
| 82 | 127 | 209 | -17669    | 3831   |        |            |            |        |        |
| 82 | 128 | 210 | -14954    | 5355   |        | -428       |            | 9187   |        |
| 82 | 129 | 211 | -10522    | 3640   |        |            | 1379       |        | 8995   |
| 82 | 130 | 212 | -7602     | 5151   |        | 402        |            | 8791   |        |
| 82 | 131 | 213 | -2985     | 3453   |        |            | 2223       |        | 8605   |
| 82 | 132 | 214 | 132       | 4952   |        |            | 1280       |        | 8406   |
| 82 | 133 | 215 | 4931      | 3272   |        |            | 3102       |        | 8225   |
| 82 | 134 | 216 | 8242      | 4759   |        |            | 2180       |        | 8032   |
| 82 | 135 | 217 | 13217     | 3096   |        |            | 3993       |        | 7856   |
| 82 | 136 | 218 | 16717     | 4571   |        |            | 3084       |        | 7668   |
| 82 | 137 | 219 | 21862     | 2925   |        |            | 4881       |        | 7497   |
| 82 | 138 | 220 | 25545     | 4388   |        |            | 3977       |        | 7314   |
| 82 | 139 | 221 | 30857     | 2759   |        |            | 5752       |        | 7147   |
| 82 | 140 | 222 | 34719     | 4209   |        |            | 4848       |        | 6969   |
| 82 | 141 | 223 | 40193     | 2597   |        |            | 6597       |        | 6807   |
| 82 | 142 | 224 | 44228     | 4036   |        |            | 5690       |        | 6633   |
| 82 | 143 | 225 | 49860     | 2439   |        |            | 7411       |        | 6475   |
| 82 | 144 | 226 | 54064     | 3867   |        |            | 6497       |        | 6306   |
| 82 | 145 | 227 | 59850     | 2285   |        |            | 8188       |        | 6152   |
| 82 | 146 | 228 | 64220     | 3702   |        |            | 7267       |        | 5987   |
| 82 | 147 | 229 | 70155     | 2135   |        |            | 8926       |        | 5837   |
| 82 | 148 | 230 | 74685     | 3541   |        |            | 7996       |        | 5677   |
| 82 | 149 | 231 | 80767     | 1989   |        |            | 9623       |        | 5531   |
| 82 | 150 | 232 | 85453     | 3384   |        |            | 8684       |        | 5374   |
| 82 | 151 | 233 | 91677     | 1847   |        |            | 10280      |        | 5232   |
| 82 | 152 | 234 | 96516     | 3231   |        |            | 9331       |        | 5079   |
| 82 | 153 | 235 | 102878    | 1709   |        |            | 10896      |        | 4941   |
| 82 | 154 | 236 | 107867    | 3082   |        |            | 9937       |        | 4792   |
| 82 | 155 | 237 | 114364    | 1574   |        |            | 11472      |        | 4656   |
| 82 | 156 | 238 | 119498    | 2937   |        |            | 10504      |        | 4511   |
| 82 | 157 | 239 | 126127    | 1442   |        |            | 12008      |        | 4379   |
| 82 | 158 | 240 | 131403    | 2795   |        |            | 11032      |        | 4237   |
| 82 | 159 | 241 | 138160    | 1314   |        |            | 12507      |        | 4109   |
| 82 | 160 | 242 | 143574    | 2656   |        |            | 11522      |        | 3970   |
| 82 | 161 | 243 | 150457    | 1189   |        |            | 12969      |        | 3845   |
| 82 | 162 | 244 | 156006    | 2521   |        |            | 11976      |        | 3710   |
| 82 | 163 | 245 | 163011    | 1066   |        |            | 13396      |        | 3588   |
| 82 | 164 | 246 | 168693    | 2389   |        |            | 12397      |        | 3456   |
| 82 | 165 | 247 | 175817    | 947    |        |            | 13791      |        | 3337   |
| 82 | 166 | 248 | 181627    | 2260   |        |            | 12785      |        | 3207   |
| Z  | N  | A   | ΔM       | S_n | S_p | Q_α | Q_β | S_{2n} | S_{2p}  |
|----|----|-----|----------|-----|-----|-----|-----|-------|---------|
| 82 | 167| 249 | 188867   | 831 |     |     |     | 14155 | 3091    |
| 82 | 168| 250 | 194804   | 2134|     |     |     | 13146 | 2965    |
| 82 | 169| 251 | 202158   | 717 |     |     |     | 14493 | 2852    |
| 82 | 170| 252 | 208218   | 2011|     |     |     | 13481 | 2728    |
| 82 | 171| 253 | 215683   | 606 |     |     |     | 14808 | 2617    |
| 82 | 172| 254 | 221863   | 1891|     |     |     | 13797 | 2497    |
| 82 | 173| 255 | 229436   | 498 |     |     |     | 15107 | 2389    |
| 82 | 174| 256 | 235733   | 1773|     |     |     | 14099 | 2271    |
| 82 | 175| 257 | 243412   | 392 |     |     |     | 15396 | 2166    |
| 82 | 176| 258 | 249825   | 1658|     |     |     | 14395 | 2051    |
| 82 | 177| 259 | 257607   | 289 |     |     |     | 15685 | 1947    |
| 82 | 178| 260 | 264132   | 1546|     |     |     | 14696 | 1835    |
| 82 | 179| 261 | 272015   | 187 |     |     |     | 15983 | 1734    |
| 82 | 180| 262 | 278650   | 1436|     |     |     | 15013 | 1624    |
| 82 | 181| 263 | 286632   | 89  |     |     |     | 16306 | 1526    |
| 82 | 182| 264 | 293374   | 1329|     |     |     | 15363 | 1418    |
| 82 | 183| 265 | 301453   | -7  |     |     |     | 16670 | 1321    |
| 82 | 184| 266 | 308300   | 1223|     |     |     | 15763 | 1216    |
| 83 | 126| 209 | -18266   | 3646|     |     |     | 1685  |         |
| 83 | 127| 210 | -14525   | 4330| 4145|     |     |       |         |
| 83 | 128| 211 | -11902   | 5447| 4236|     |     | 650   | 9778    |
| 83 | 129| 212 | -8005    | 4174| 4771|     |     | 2435  | 9622    |
| 83 | 130| 213 | -5209    | 5275| 4895|     |     | 1450  | 9449    |
| 83 | 131| 214 | -1147    | 4009| 5450|     |     | 3251  | 9284    |
| 83 | 132| 215 | 1828     | 5095| 5592|     |     | 2302  | 9104    |
| 83 | 133| 216 | 6062     | 3837| 6157|     |     | 4106  | 8932    |
| 83 | 134| 217 | 9223     | 4910| 6308|     |     | 3179  | 8748    |
| 83 | 135| 218 | 13632    | 3661| 6873|     |     | 4976  | 8572    |
| 83 | 136| 219 | 16981    | 4722| 7024|     |     | 4063  | 8384    |
| 83 | 137| 220 | 21568    | 3484| 7583|     |     | 5844  | 8207    |
| 83 | 138| 221 | 25105    | 4534| 7729|     |     | 4937  | 8018    |
| 83 | 139| 222 | 29870    | 3305| 8276|     |     | 6698  | 7840    |
| 83 | 140| 223 | 33595    | 4346| 8412|     |     | 5792  | 7652    |
| 83 | 141| 224 | 38538    | 3128| 8944|     |     | 7527  | 7475    |
| 83 | 142| 225 | 42449    | 4160| 9068|     |     | 6617  | 7288    |
| 83 | 143| 226 | 47567    | 2953| 9582|     |     | 8325  | 7113    |
| 83 | 144| 227 | 51662    | 3975| 9691|     |     | 7410  | 6929    |
| 83 | 145| 228 | 56953    | 2780| 10186|    |     | 9087  | 6756    |
| 83 | 146| 229 | 61229    | 3795| 10279|   |     | 8164  | 6575    |
| 83 | 147| 230 | 66889    | 3211| 10755|   |     | 9811  | 6406    |
| 83 | 148| 231 | 71143    | 3617| 10831|   |     | 8880  | 6228    |
| 83 | 149| 232 | 76769    | 2445| 11286|   |     | 10496| 6062    |
| 83 | 150| 233 | 81396    | 3444| 11346|   |     | 9555  | 5889    |
| Z  | N   | A   | ΔM  | S_n | S_p  | Q_α  | Q_β  | S_{2n} | S_{2p} |
|----|-----|-----|-----|-----|------|------|------|--------|--------|
| 83 | 151 | 234 | 87185 | 2282 | 11780 | 11140 | 5726 |
| 83 | 152 | 235 | 91982 | 3274 | 11823 | 10191 | 5556 |
| 83 | 153 | 236 | 97929 | 2124 | 12238 | 11745 | 5398 |
| 83 | 154 | 237 | 102892 | 3108 | 12264 | 10786 | 5232 |
| 83 | 155 | 238 | 108994 | 1969 | 12659 | 12311 | 5078 |
| 83 | 156 | 239 | 114118 | 2947 | 12669 | 11344 | 4916 |
| 83 | 157 | 240 | 120370 | 1818 | 13045 | 12839 | 4765 |
| 83 | 158 | 241 | 125652 | 2789 | 13039 | 11863 | 4608 |
| 83 | 159 | 242 | 132052 | 1671 | 13396 | 13330 | 4461 |
| 83 | 160 | 243 | 137487 | 2636 | 13376 | 12347 | 4307 |
| 83 | 161 | 244 | 144030 | 1528 | 13715 | 13787 | 4164 |
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| 83 | 163 | 246 | 156296 | 1390 | 14004 | 14211 | 3876 |
| 83 | 164 | 247 | 162026 | 2341 | 13956 | 13215 | 3731 |
| 83 | 165 | 248 | 168842 | 1255 | 14264 | 14604 | 3596 |
| 83 | 166 | 249 | 174712 | 2200 | 14204 | 13604 | 3456 |
| 83 | 167 | 250 | 181658 | 1125 | 14498 | 14969 | 3326 |
| 83 | 168 | 251 | 187665 | 2064 | 14428 | 13965 | 3190 |
| 83 | 169 | 252 | 194736 | 999  | 14710 | 15308 | 3064 |
| 83 | 170 | 253 | 200874 | 1933 | 14633 | 14302 | 2933 |
| 83 | 171 | 254 | 208065 | 879  | 14906 | 15626 | 2813 |
| 83 | 172 | 255 | 214328 | 1808 | 14823 | 14621 | 2688 |
| 83 | 173 | 256 | 221634 | 765  | 15090 | 15928 | 2573 |
| 83 | 174 | 257 | 228015 | 1689 | 15006 | 14925 | 2455 |
| 83 | 175 | 258 | 235429 | 657  | 15272 | 16219 | 2347 |
| 83 | 176 | 259 | 241922 | 1578 | 15191 | 15223 | 2236 |
| 83 | 177 | 260 | 249435 | 557  | 15460 | 16508 | 2136 |
| 83 | 178 | 261 | 256032 | 1475 | 15389 | 15522 | 2032 |
| 83 | 179 | 262 | 263636 | 466  | 15668 | 16803 | 1942 |
| 83 | 180 | 263 | 270325 | 1381 | 15613 | 15833 | 1848 |
| 83 | 181 | 264 | 278011 | 385  | 15909 | 17116 | 1767 |
| 83 | 182 | 265 | 284783 | 1299 | 15880 | 16170 | 1685 |
| 83 | 183 | 266 | 292537 | 316  | 16204 | 17463 | 1616 |
| 83 | 184 | 267 | 299378 | 1230 | 16211 | 16548 | 1547 |
| 84 | 126 | 210 | -16211 | 5234 |        |     |     |        |        |
| 84 | 127 | 211 | -12552 | 4412 | 5315  | -803 |     |        |        |
| 84 | 128 | 212 | -10440 | 5959 | 5827  | 9043 | -1833 | 10371 | 10064 |
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| 84 | 130 | 214 | -4399  | 5810 | 6478  | 8130 | -1032 | 10101 | 11374 |
| 84 | 131 | 215 | -473   | 4145 | 6615  | 7624 | 764   | 9956  | 12065 |
| 84 | 132 | 216 | 1956   | 5641 | 7161  | 7134 | -176  | 9787  | 12754 |
| 84 | 133 | 217 | 6043   | 3983 | 7307  | 6604 | 1625  | 9625  | 13465 |
| 84 | 134 | 218 | 8656   | 5458 | 7856  | 6098 | 709   | 9442  | 14164 |
| Z  | N  | A   | ΔM  | Sₙ  | Sₚ  | Q₀  | Q₃  | S₂n | S₂p |
|----|----|-----|-----|-----|-----|-----|-----|-----|-----|
| 84 | 135| 219 | 12918 | 3809 | 8003 | 5561 | 2505 | 9268 | 14877 |
| 84 | 136| 220 | 15723 | 5265 | 8546 | 5055 | 1604 | 9075 | 15571 |
| 84 | 137| 221 | 20167 | 3627 | 9356 | 3515 | 4254 | 8506 | 17632 |
| 84 | 138| 222 | 23172 | 3627 | 9356 | 3515 | 4254 | 8506 | 17632 |
| 84 | 139| 223 | 27803 | 4660 | 10496 | 1211 | 5012 | 7519 | 20777 |
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| 84 | 143| 227 | 44252 | 4258 | 11640 | 387 | 5784 | 7130 | 21920 |
| 84 | 144| 228 | 47865 | 4458 | 11086 | 1211 | 5012 | 7519 | 20777 |
| 84 | 145| 229 | 53064 | 2872 | 11177 | 778 | 6692 | 7330 | 21364 |
| 84 | 146| 230 | 58677 | 4258 | 11640 | 387 | 5784 | 7130 | 21920 |
| 84 | 147| 231 | 62262 | 2686 | 11715 | -13 | 7434 | 6944 | 22470 |
| 84 | 148| 232 | 66273 | 4660 | 10496 | -371 | 6517 | 6747 | 22990 |
| 84 | 149| 233 | 71840 | 2324 | 12683 | -1401 | 8800 | 6192 | 24464 |
| 84 | 150| 234 | 76044 | 3138 | 13113 | -1996 | 9424 | 5828 | 25351 |
| 84 | 151| 235 | 81791 | 2324 | 12683 | -1401 | 8800 | 6192 | 24464 |
| 84 | 152| 236 | 86184 | 3678 | 13087 | -1694 | 7865 | 6003 | 24910 |
| 84 | 153| 237 | 92105 | 2150 | 13113 | -1996 | 9424 | 5828 | 25351 |
| 84 | 154| 238 | 96682 | 3493 | 13498 | -2258 | 8481 | 5643 | 25762 |
| 84 | 155| 239 | 102774 | 1979 | 13508 | -2529 | 10010 | 5473 | 26168 |
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| 84 | 157| 241 | 113789 | 1814 | 13870 | -3000 | 10559 | 5127 | 26916 |
| 84 | 158| 242 | 118721 | 3138 | 14220 | -3201 | 9599 | 4952 | 27259 |
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| 84 | 161| 245 | 136816 | 1497 | 14502 | -3768 | 11552 | 4465 | 28218 |
| 84 | 162| 246 | 142084 | 2803 | 14819 | -3915 | 10579 | 4300 | 28500 |
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| 84 | 166| 250 | 166689 | 2490 | 15312 | -4428 | 11434 | 3690 | 29516 |
| 84 | 167| 251 | 173699 | 1060 | 15247 | -4542 | 12807 | 3551 | 29746 |
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| 84 | 169| 253 | 186571 | 928 | 15454 | -4721 | 13172 | 3271 | 30165 |
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| 84 | 171| 255 | 199707 | 803 | 15647 | -4876 | 13515 | 3006 | 30553 |
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| 84 | 174| 258 | 219209 | 1951 | 16095 | -5078 | 12854 | 2638 | 31102 |
| 84 | 175| 259 | 226698 | 582 | 16019 | -5162 | 14154 | 2533 | 31291 |
| 84 | 176| 260 | 232927 | 1842 | 16283 | -5230 | 13172 | 2424 | 31475 |
| 84 | 177| 261 | 240509 | 489 | 16215 | -5328 | 14462 | 2332 | 31675 |
| 84 | 178| 262 | 246833 | 1747 | 16487 | -5416 | 13488 | 2237 | 31876 |
| Z | N  | A   | \(\Delta M\) | \(S_n\) | \(S_p\) | \(Q_\alpha\) | \(Q_\beta\) | \(S_{2n}\) | \(S_{2p}\) |
|---|----|-----|-------------|--------|--------|-------------|-------------|--------|--------|
| 84| 179| 263 | 254492      | 412    | 16433  | -5540       | 14771       | 2159   | 32101 |
| 84| 180| 264 | 260894      | 1668   | 16720  | -5662       | 13810       | 2081   | 32333 |
| 84| 181| 265 | 268612      | 353    | 16687  | -5827       | 15092       | 2022   | 32597 |
| 84| 182| 266 | 275074      | 1609   | 16997  | -6000       | 14150       | 1963   | 32878 |
| 84| 183| 267 | 282830      | 315    | 16995  | -6226       | 15436       | 1924   | 33200 |
| 84| 184| 268 | 289327      | 1574   | 17339  | -6472       | 14520       | 1889   | 33551 |
| 85| 126| 211 | -11748      |        |        | 2826        |             |        | 8059  |
| 85| 127| 212 | -6606       | 4929   | 3343   | 256         |             |        | 8658  |
| 85| 128| 213 | -6604       | 6068   | 3452   | 9237        | -787        | 10998  | 9280  |
| 85| 129| 214 | -3366       | 4833   | 3995   | 8734        | 966         | 10902  | 9938  |
| 85| 130| 215 | -1237       | 5942   | 4127   | 8239        | -21         | 10775  | 10606 |
| 85| 131| 216 | 2132        | 4701   | 4683   | 7712        | 1753        | 10644  | 11298 |
| 85| 132| 217 | 4418        | 5785   | 4826   | 7202        | 806         | 10487  | 11988 |
| 85| 133| 218 | 7946        | 4542   | 5386   | 6668        | 2588        | 10328  | 12693 |
| 85| 134| 219 | 10412       | 5605   | 5533   | 6158        | 1667        | 10148  | 13389 |
| 85| 135| 220 | 14119       | 4364   | 6087   | 5631        | 3446        | 9970   | 14091 |
| 85| 136| 221 | 16781       | 5409   | 6231   | 5132        | 2542        | 9773   | 14778 |
| 85| 137| 222 | 20680       | 4172   | 6776   | 4622        | 4309        | 9581   | 15466 |
| 85| 138| 223 | 23549       | 5202   | 6912   | 4143        | 3412        | 9374   | 16134 |
| 85| 139| 224 | 27649       | 3971   | 7443   | 3655        | 5161        | 9173   | 16799 |
| 85| 140| 225 | 30732       | 4987   | 7567   | 3202        | 4267        | 8959   | 17440 |
| 85| 141| 226 | 35038       | 3765   | 8081   | 2742        | 5992        | 8753   | 18077 |
| 85| 142| 227 | 38339       | 4770   | 8191   | 2318        | 5096        | 8536   | 18688 |
| 85| 143| 228 | 42853       | 3557   | 8688   | 1890        | 6795        | 8327   | 19291 |
| 85| 144| 229 | 46371       | 4552   | 8782   | 1497        | 5895        | 8110   | 19868 |
| 85| 145| 230 | 51093       | 3349   | 9260   | 1101        | 7565        | 7902   | 20437 |
| 85| 146| 231 | 54828       | 4336   | 9338   | 740         | 6658        | 7686   | 20979 |
| 85| 147| 232 | 59755       | 3144   | 9796   | 377         | 8299        | 7480   | 21512 |
| 85| 148| 233 | 63703       | 4123   | 9858   | 49          | 7384        | 7267   | 22017 |
| 85| 149| 234 | 68832       | 2941   | 10296  | -281        | 8994        | 7064   | 22514 |
| 85| 150| 235 | 72990       | 3913   | 10342  | -577        | 8071        | 6855   | 22983 |
| 85| 151| 236 | 78318       | 2743   | 10761  | -876        | 9652        | 6657   | 23444 |
| 85| 152| 237 | 82680       | 3708   | 10792  | -1140       | 8720        | 6452   | 23879 |
| 85| 153| 238 | 88201       | 2550   | 11192  | -1408       | 10271       | 6259   | 24305 |
| 85| 154| 239 | 92763       | 3509   | 11207  | -1643       | 9331        | 6059   | 24706 |
| 85| 155| 240 | 98473       | 2362   | 11590  | -1881       | 10853       | 5871   | 25098 |
| 85| 156| 241 | 103229      | 3314   | 11590  | -2087       | 9906        | 5676   | 25466 |
| 85| 157| 242 | 109122      | 2179   | 11955  | -2296       | 11400       | 5493   | 25826 |
| 85| 158| 243 | 114067      | 3126   | 11943  | -2475       | 10445       | 5305   | 26163 |
| 85| 159| 244 | 120136      | 2001   | 12292  | -2659       | 11912       | 5128   | 26493 |
| 85| 160| 245 | 125264      | 2943   | 12266  | -2812       | 10950       | 4945   | 26800 |
| 85| 161| 246 | 131505      | 1830   | 12600  | -2971       | 12301       | 4773   | 27102 |
| 85| 162| 247 | 136810      | 2766   | 12563  | -3102       | 11423       | 4597   | 27382 |
| Z  | N  | A   | ΔM  | S_n | S_p | Q_α | Q_3 | S_{2n} | S_{2p} |
|----|----|-----|-----|-----|-----|-----|-----|--------|--------|
| 85 | 163| 248 | 143216 | 1665 | 12882 | -3238 | 12839 | 4431 | 27657 |
| 85 | 164| 249 | 148691 | 2596 | 12835 | -3348 | 11866 | 4261 | 27912 |
| 85 | 165| 250 | 155255 | 1507 | 13142 | -3465 | 13258 | 4103 | 28164 |
| 85 | 166| 251 | 160892 | 2433 | 13085 | -3558 | 12281 | 3941 | 28397 |
| 85 | 167| 252 | 167607 | 1356 | 13381 | -3659 | 13650 | 3790 | 28629 |
| 85 | 168| 253 | 173399 | 2279 | 13317 | -3738 | 12669 | 3636 | 28843 |
| 85 | 169| 254 | 180255 | 1215 | 13604 | -3828 | 14017 | 3494 | 29059 |
| 85 | 170| 255 | 186191 | 2135 | 13536 | -3982 | 14362 | 3218 | 29464 |
| 85 | 171| 256 | 193179 | 1083 | 13816 | -4050 | 13378 | 3085 | 29657 |
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| 85 | 173| 258 | 206355 | 964 | 14023 | -4209 | 13705 | 2847 | 30049 |
| 85 | 174| 259 | 212544 | 1882 | 13954 | -4304 | 14999 | 2742 | 30252 |
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| 85 | 180| 265 | 253520 | 1634 | 14663 | -4936 | 14635 | 2342 | 31383 |
| 85 | 181| 266 | 260923 | 668 | 14977 | -5137 | 15902 | 2302 | 31665 |
| 85 | 182| 267 | 267393 | 1601 | 14969 | -5357 | 14952 | 2269 | 31967 |
| 85 | 183| 268 | 274806 | 658 | 15312 | -5629 | 16219 | 2259 | 32308 |
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| 86 | 126| 212 | -8863 | 4403 | 4498 | -2219 | 7229 |
| 86 | 127| 213 | -5816 | 5025 | 4998 | -2219 | 7842 |
| 86 | 128| 214 | -4332 | 6586 | 5017 | 9454 | -2219 | 8469 |
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| 86 | 131| 217 | 3612 | 4837 | 5809 | 7846 | -731 | 11314 | 10492 |
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| 86 | 133| 219 | 8744 | 4684 | 6490 | 6793 | 107 | 11010 | 11877 |
| 86 | 134| 220 | 10672 | 6143 | 7028 | 6291 | -804 | 10828 | 12562 |
| 86 | 135| 221 | 14239 | 4504 | 7169 | 5770 | 973 | 10648 | 13256 |
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| 86 | 137| 223 | 20136 | 4305 | 7832 | 4793 | 1847 | 10245 | 14608 |
| 86 | 138| 224 | 22488 | 5719 | 8350 | 4339 | 963 | 10025 | 15262 |
| 86 | 139| 225 | 26465 | 4094 | 8472 | 3872 | 2714 | 9813 | 15916 |
| 86 | 140| 226 | 29046 | 5490 | 8975 | 3448 | 1834 | 9584 | 16542 |
| 86 | 141| 227 | 32422 | 3875 | 9085 | 3013 | 3562 | 9365 | 17167 |
| 86 | 142| 228 | 36057 | 5256 | 9570 | 2621 | 2681 | 9131 | 17762 |
| 86 | 143| 229 | 40476 | 3652 | 9665 | 2220 | 4384 | 8908 | 18353 |
| 86 | 144| 230 | 43527 | 5020 | 10132 | 1860 | 3500 | 8672 | 18915 |
| 86 | 145| 231 | 48169 | 3429 | 10212 | 1492 | 5175 | 8449 | 19472 |
| 86 | 146| 232 | 51456 | 4784 | 10661 | 1165 | 4284 | 8214 | 19999 |
| Z  | N  | A   | ΔM | S_n | S_p | Q_α | Q_β | S_{2n} | S_{2p} |
|----|----|-----|----|-----|-----|-----|-----|-------|-------|
| 86 | 147| 233 | 56319 | 3208 | 10725 | 829 | 5930 | 7993 | 20521 |
| 86 | 148| 234 | 59838 | 4552 | 11154 | 535 | 5032 | 7760 | 21012 |
| 86 | 149| 235 | 64918 | 2990 | 11202 | 231 | 6648 | 7542 | 21499 |
| 86 | 150| 236 | 68665 | 4324 | 11613 | -32 | 5742 | 7314 | 21956 |
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| 86 | 153| 239 | 83432 | 2569 | 12058 | -783 | 7973 | 6670 | 23250 |
| 86 | 154| 240 | 87619 | 3884 | 12433 | -989 | 7050 | 6453 | 23641 |
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| 86 | 160| 246 | 119114 | 3271 | 13439 | -2032 | 8746 | 5252 | 25706 |
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| 86 | 169| 255 | 173157 | 1151 | 14386 | -2967 | 11927 | 3714 | 27991 |
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| 86 | 172| 258 | 191666 | 2274 | 14870 | -3196 | 11328 | 3292 | 28616 |
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| 86 | 174| 260 | 204755 | 2154 | 15077 | -3375 | 11676 | 3054 | 29032 |
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| 86 | 176| 262 | 218043 | 2055 | 15292 | -3590 | 12007 | 2854 | 29462 |
| 86 | 177| 263 | 225393 | 721 | 15240 | -3730 | 13290 | 2776 | 29693 |
| 86 | 178| 264 | 231484 | 1980 | 15525 | -3868 | 12326 | 2701 | 29926 |
| 86 | 179| 265 | 238885 | 670 | 15487 | -4048 | 13597 | 2650 | 30184 |
| 86 | 180| 266 | 245021 | 1935 | 15787 | -4236 | 12638 | 2605 | 30450 |
| 86 | 181| 267 | 252441 | 651 | 15771 | -4475 | 13900 | 2586 | 30749 |
| 86 | 182| 268 | 258587 | 1925 | 16095 | -4732 | 12951 | 2577 | 31065 |
| 86 | 183| 269 | 265986 | 671 | 16108 | -5050 | 14207 | 2597 | 31421 |
| 86 | 184| 270 | 272100 | 1957 | 16464 | -5399 | 13272 | 2629 | 31805 |
| 87 | 126| 213 | -3597 | 2023 |       |       |       |       | 6426 |
| 87 | 127| 214 | -1070 | 5545 | 2542 | -1173 |       |       | 7041 |
| 87 | 128| 215 | 301 | 6698 | 2655 | 9625 | -2230 | 12243 | 7672 |
| 87 | 129| 216 | 2878 | 5494 | 3194 | 9060 | -513 | 12193 | 8333 |
| 87 | 130| 217 | 4343 | 6606 | 3323 | 8522 | -1508 | 12100 | 8997 |
| Z  | N  | A  | ΔM  | S_n | S_p | Q_α | Q_β | S_2n | S_2p |
|----|----|----|-----|-----|-----|-----|-----|------|------|
| 87 | 131| 218| 7029 | 5385 | 3871 | 7970 | 236 | 11991 | 9680 |
| 87 | 132| 219| 8637 | 6463 | 4009 | 7449 | -712 | 11848 | 10358 |
| 87 | 133| 220| 11476| 5232 | 4557 | 6919 | 1045 | 11695 | 11048 |
| 87 | 134| 221| 13265| 6282 | 4905 | 6422 | 127  | 11514 | 11724 |
| 87 | 135| 222| 16290| 5046 | 5237 | 5919 | 1888 | 11328 | 12406 |
| 87 | 136| 223| 18289| 6072 | 5370 | 5452 | 990  | 11118 | 13069 |
| 87 | 137| 224| 21524| 4836 | 5901 | 4980 | 2742 | 10909 | 13733 |
| 87 | 138| 225| 23751| 5844 | 6025 | 4545 | 1856 | 10680 | 14375 |
| 87 | 139| 226| 27211| 4610 | 6542 | 4106 | 3594 | 10455 | 15015 |
| 87 | 140| 227| 29679| 5603 | 6655 | 3705 | 2713 | 10214 | 15630 |
| 87 | 141| 228| 33375| 4375 | 7155 | 3301 | 4430 | 9978  | 16240 |
| 87 | 142| 229| 36091| 5355 | 7254 | 2934 | 3550 | 9730  | 16825 |
| 87 | 143| 230| 40027| 4135 | 7737 | 2564 | 5243 | 9490  | 17403 |
| 87 | 144| 231| 42994| 5104 | 7822 | 2230 | 4360 | 9239  | 17955 |
| 87 | 145| 232| 47171| 3894 | 8286 | 1893 | 6026 | 8998  | 18499 |
| 87 | 146| 233| 50388| 4854 | 8356 | 1591 | 5138 | 8748  | 19017 |
| 87 | 147| 234| 54805| 3654 | 8802 | 1287 | 6777 | 8508  | 19527 |
| 87 | 148| 235| 58270| 4607 | 8856 | 1016 | 5882 | 8261  | 20011 |
| 87 | 149| 236| 62923| 3418 | 9284 | 743  | 7492 | 8025  | 20487 |
| 87 | 150| 237| 66630| 4364 | 9324 | 502  | 6590 | 7782  | 20938 |
| 87 | 151| 238| 71514| 3187 | 9734 | 256  | 8171 | 7551  | 21381 |
| 87 | 152| 239| 75458| 4127 | 9760 | 43   | 7262 | 7314  | 21799 |
| 87 | 153| 240| 80568| 2961 | 10152| -174 | 8814 | 7089  | 22211 |
| 87 | 154| 241| 84743| 3896 | 10165| -362 | 7897 | 6858  | 22598 |
| 87 | 155| 242| 90071| 2743 | 10541| -555 | 9422 | 6639  | 22979 |
| 87 | 156| 243| 94469| 3672 | 10541| -719 | 8498 | 6416  | 23338 |
| 87 | 157| 244| 100009|3456|10889|-1030|9065|5988|24021|
| 87 | 158| 245| 104624|3456|10889|-1030|9065|5988|24021|
| 87 | 159| 246| 110367|2327|11236|-1179|10536|5784|24347|
| 87 | 160| 247| 115190|3247|11212|-1301|9599|5575|24651|
| 87 | 161| 248| 121130|2131|11545|-1431|11045|5379|24952|
| 87 | 162| 249| 126153|3048|11512|-1536|10102|5179|25234|
| 87 | 163| 250| 132280|1944|11833|-1649|11523|4992|25513|
| 87 | 164| 251| 137494|2857|11790|-1740|10575|4801|25774|
| 87 | 165| 252| 143799|1766|12100|-1841|11973|4623|26033|
| 87 | 166| 253| 149194|2676|12051|-1921|11020|4442|26276|
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| 87 | 170| 257| 173573|2353|12532|-2250|11829|3798|27196|
| 87 | 171| 258| 180338|1306|12821|-2341|13161|3659|27418|
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32
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| 87| 175| 262 | 206036| 1087 | 13280 | -2743 | 13834 | 3185 | 28296 |
| 87| 176| 263 | 212102| 2004 | 13229 | -2866 | 12867 | 3092 | 28522 |
| 87| 177| 264 | 219158| 1015 | 13524 | -3021 | 14141 | 3020 | 28764 |
| 87| 178| 265 | 225288| 1941 | 13485 | -3184 | 13174 | 2957 | 29010 |
| 87| 179| 266 | 232383| 976  | 13791 | -3386 | 14433 | 2917 | 29278 |
| 88| 180| 267 | 238540| 1913 | 13769 | -3605 | 13468 | 2890 | 29557 |
| 88| 181| 268 | 245635| 976  | 14094 | -3872 | 14713 | 2889 | 29865 |
| 88| 182| 269 | 251778| 1928 | 14097 | -4166 | 13752 | 2904 | 30192 |
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| Z | N  | A   | ΔM  | S_n | S_p | Q_α | Q_β | S_2n | S_2p |
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| 88| 126| 214 | 102  | 3590 | 3685 | -3622 | -1228 | 6853 |
| 88| 128| 216 | 3392 | 7211 | 4198 | 9830 | -4681 | 12852 | 7509 |
| 88| 130| 218 | 6792 | 7130 | 4839 | 8700 | -3969 | 12742 | 8163 |
| 88| 131| 219 | 9350 | 5513 | 4968 | 8141 | -2231 | 12644 | 8839 |
| 88| 132| 220 | 10430| 6990 | 5495 | 7627 | -3175 | 12504 | 9505 |
| 88| 133| 221 | 13137| 5364 | 5627 | 7100 | -1422 | 12355 | 10184 |
| 88| 134| 222 | 14402| 6806 | 6151 | 6620 | -2332 | 12170 | 10847 |
| 88| 135| 223 | 17298| 5175 | 6281 | 6129 | -574  | 11981 | 11518 |
| 88| 136| 224 | 18781| 6588 | 6796 | 5684 | -1461 | 11763 | 12167 |
| 88| 137| 225 | 21894| 4958 | 6918 | 5230 | 289   | 11547 | 12820 |
| 88| 138| 226 | 23617| 6347 | 7422 | 4821 | -583  | 11306 | 13448 |
| 88| 139| 227 | 26966| 4722 | 7534 | 4404 | 1154  | 11070 | 14077 |
| 88| 140| 228 | 28945| 6092 | 8023 | 4032 | 288   | 10815 | 14678 |
| 88| 141| 229 | 32541| 4475 | 8123 | 3650 | 2008  | 10567 | 15279 |
| 88| 142| 230 | 34784| 5828 | 8596 | 3313 | 1143  | 10303 | 15851 |
| 88| 143| 231 | 38634| 4221 | 8682 | 2966 | 2840  | 10049 | 16420 |
| 88| 144| 232 | 41144| 5560 | 9138 | 2662 | 1974  | 9782  | 16960 |
| 88| 145| 233 | 45249| 3966 | 9210 | 2348 | 3645  | 9526  | 17497 |
| 88| 146| 234 | 48028| 5292 | 9649 | 2075 | 2774  | 9259  | 18005 |
| 88| 147| 235 | 52837| 3712 | 9707 | 1792 | 4419  | 9005  | 18509 |
| 88| 148| 236 | 55430| 5028 | 10128| 1549 | 3542  | 8740  | 18985 |
| 88| 149| 237 | 60039| 3462 | 10172| 1295 | 5160  | 8490  | 19457 |
| 88| 150| 238 | 63342| 4768 | 10576| 1079 | 4276  | 8230  | 19900 |
| 88| 151| 239 | 68196| 3217 | 10606| 852  | 5865  | 7985  | 20341 |
| 88| 152| 240 | 71753| 4514 | 10994| 662  | 4974  | 7732  | 20754 |
| 88| 153| 241 | 76845| 2979 | 11011| 460  | 6535  | 7493  | 21164 |
| 88| 154| 242 | 80648| 4268 | 11383| 293  | 5637  | 7247  | 21548 |
| 88| 155| 243 | 85971| 2748 | 11388| 114  | 7171  | 7016  | 21930 |
| 88| 156| 244 | 90012| 4029 | 11745| -31  | 6266  | 6778  | 22286 |
| 88| 157| 245 | 95558| 2525 | 11739| -189 | 7773  | 6555  | 22641 |
| 88| 158| 246 | 99830| 3799 | 12082| -315 | 6861  | 6324  | 22971 |
| Z  | N   | A  | ΔM   | Sn   | Sp   | Qα   | Qβ   | S2n  | S2p  |
|----|-----|----|------|------|------|------|------|------|------|
| 88 | 159 | 247| 105591 | 2310 | 12064 | -455 | 8342 | 6110 | 23300 |
| 88 | 160 | 248| 110084 | 3577 | 12394 | -564 | 7424 | 5888 | 23607 |
| 88 | 161 | 249| 116051 | 2104 | 12368 | -688 | 8880 | 5682 | 23913 |
| 88 | 162 | 250| 120756 | 3366 | 12686 | -782 | 7956 | 5470 | 24198 |
| 88 | 163 | 251| 126919 | 1908 | 12650 | -892 | 9387 | 5274 | 24483 |
| 88 | 164 | 252| 131826 | 3164 | 12957 | -975 | 8457 | 5072 | 24748 |
| 88 | 165 | 253| 138174 | 1723 | 12914 | -1075 | 9865 | 4887 | 25015 |
| 88 | 166 | 254| 143270 | 2974 | 13212 | -1150 | 8930 | 4698 | 25263 |
| 88 | 167 | 255| 149791 | 1550 | 13163 | -1244 | 10314 | 4525 | 25515 |
| 88 | 168 | 256| 155064 | 2798 | 13453 | -1316 | 9374 | 4348 | 25750 |
| 88 | 169 | 257| 161743 | 1392 | 13400 | -1410 | 10736 | 4190 | 25991 |
| 88 | 170 | 258| 167177 | 2638 | 13685 | -1485 | 9791 | 4030 | 26217 |
| 88 | 171 | 259| 173996 | 1251 | 13630 | -1585 | 11130 | 3889 | 26451 |
| 88 | 172 | 260| 179570 | 2497 | 13912 | -1670 | 10182 | 3748 | 26673 |
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| 88 | 174 | 262| 192202 | 2379 | 14139 | -1889 | 10546 | 3511 | 27131 |
| 88 | 175 | 263| 199235 | 1037 | 14089 | -2028 | 11842 | 3417 | 27370 |
| 88 | 176 | 264| 205016 | 2290 | 14374 | -2163 | 10886 | 3327 | 27604 |
| 88 | 177 | 265| 212113 | 974  | 14333 | -2339 | 12161 | 3264 | 27858 |
| 88 | 178 | 266| 217950 | 2234 | 14627 | -2518 | 11202 | 3209 | 28112 |
| 88 | 179 | 267| 225072 | 948  | 14599 | -2746 | 12459 | 3183 | 28390 |
| 88 | 180 | 268| 230922 | 2221 | 14907 | -2986 | 11497 | 3170 | 28677 |
| 88 | 181 | 269| 238025 | 968  | 14899 | -3284 | 12736 | 3189 | 28993 |
| 88 | 182 | 270| 243840 | 2256 | 15227 | -3606 | 11774 | 3225 | 29324 |
| 88 | 183 | 271| 250870 | 1041 | 15246 | -3996 | 12996 | 3298 | 29694 |
| 88 | 184 | 272| 256589 | 2351 | 15604 | -4422 | 12036 | 3393 | 30088 |
| 89 | 126 | 215| 6155   | 1236 |       |       |       |       | 4825  |
| 89 | 127 | 216| 8074   | 6152 | 1747  |       | -2578 |       | 5433  |
| 89 | 128 | 217| 8828   | 7316 | 1852  |       | 10000 | -3654 | 13469 | 6050  |
| 89 | 129 | 218| 10761  | 6138 | 2379  |       | 9407  | -1978 | 13455 | 6694  |
| 89 | 130 | 219| 11581  | 7251 | 2499  |       | 8855  | -2985 | 13389 | 7339  |
| 89 | 131 | 220| 13606  | 6046 | 3032  |       | 8302  | -1272 | 13298 | 8000  |
| 89 | 132 | 221| 14559  | 7117 | 3159  |       | 7791  | -2227 | 13164 | 8655  |
| 89 | 133 | 222| 16734  | 5896 | 3691  |       | 7280  | -495  | 13013 | 9319  |
| 89 | 134 | 223| 17873  | 6932 | 3818  |       | 6811  | -1413 | 12829 | 9970  |
| 89 | 135 | 224| 20243  | 5701 | 4344  |       | 6342  | 325   | 12634 | 10625 |
| 89 | 136 | 225| 21604  | 6710 | 4466  |       | 5913  | -566  | 12411 | 11262 |
| 89 | 137 | 226| 24201  | 5474 | 4982  |       | 5485  | 1169  | 12184 | 11901 |
| 89 | 138 | 227| 25811  | 6461 | 5095  |       | 5097  | 293   | 11935 | 12518 |
| 89 | 139 | 228| 28656  | 5225 | 5598  |       | 4707  | 2018  | 11687 | 13132 |
| 89 | 140 | 229| 30532  | 6195 | 5701  |       | 4356  | 1150  | 11420 | 13724 |
| 89 | 141 | 230| 33640  | 4963 | 6189  |       | 4004  | 2859  | 11158 | 14312 |
| 89 | 142 | 231| 35793  | 5918 | 6280  |       | 3688  | 1995  | 10882 | 14876 |
| Z  | N  | A  | ΔM   | S_n | S_p | Q_α | Q_β | S_{2n} | S_{2p} |
|----|----|----|------|-----|-----|-----|-----|--------|--------|
| 89 | 143| 232| 39170| 4693| 6752| 3370| 3682| 10612  | 15434  |
| 90 | 126| 216| 10652| 2792| 4027|      |      |         |        |
| 89 | 144| 233| 41603| 5638| 6830| 3087| 2818| 10332  | 15968  |
| 89 | 145| 234| 45253| 4421| 7285| 2800| 4481| 10059  | 16496  |
| 89 | 146| 235| 47967| 5357| 7350| 2547| 3614| 9778   | 16999  |
| 89 | 147| 236| 51887| 4151| 7788| 2291| 5252| 9508   | 17496  |
| 89 | 148| 237| 54879| 5079| 7839| 2066| 4379| 9230   | 17968  |
| 89 | 149| 238| 59066| 3884| 8262| 1835| 5991| 8963   | 18434  |
| 89 | 150| 239| 62331| 4806| 8300| 1636| 5112| 8691   | 18877  |
| 89 | 151| 240| 66778| 3623| 8706| 1430| 6696| 8430   | 19313  |
| 89 | 152| 241| 70309| 4540| 8732| 1254| 5811| 8164   | 19727  |
| 89 | 153| 242| 75011| 4032| 9516| 617 | 7109| 7910   | 20135  |
| 89 | 154| 243| 78799| 4282| 9137| 916  | 6477| 7652   | 20521  |
| 89 | 155| 244| 83746| 3124| 9513| 753  | 8007| 7406   | 20902  |
| 89 | 156| 245| 87785| 4032| 9516| 617  | 7109| 7910   | 20135  |
| 89 | 157| 246| 92969| 2887| 9878| 473  | 8613| 6920   | 21617  |
| 89 | 158| 247| 97249| 3791| 9870| 354  | 7708| 6679   | 21952  |
| 89 | 159| 248| 102660|2659|10219| 226  | 9187| 6451   | 22284  |
| 89 | 160| 249| 107171|3560|10202| 122  | 8276| 6220   | 22597  |
| 89 | 161| 250| 112800|2442|10539|  8   | 9730| 6002   | 22907  |
| 89 | 162| 251| 117531|3339|10513|- 83  | 8814| 5781   | 23199  |
| 89 | 163| 252| 123368|2334|10839|-186  |10243| 5574   | 23490  |
| 89 | 164| 253| 128309|3130|10806|-269  | 9321| 5365   | 23763  |
| 89 | 165| 254| 134340|2040|11122|-365  |10726| 5170   | 24037  |
| 89 | 166| 255| 139477|2934|11082|-442  | 9799| 4974   | 24295  |
| 89 | 167| 256| 145689|1858|11390|-534  |11180| 4793   | 24554  |
| 89 | 168| 257| 151007|2753|11346|-611  |10248| 4612   | 24799  |
| 89 | 169| 258| 157385|1693|11647|-706  |11606| 4447   | 25048  |
| 89 | 170| 259| 162865|2590|11599|-788  |10667| 4284   | 25285  |
| 89 | 171| 260| 169388|1548|11897|-891  |12002| 4139   | 25527  |
| 89 | 172| 261| 175011|2448|11848|-987  |11058| 3997   | 25760  |
| 89 | 173| 262| 181655|1427|12144|-1107 |12370| 3875   | 26001  |
| 89 | 174| 263| 187393|2333|12097|-1225 |11420| 3760   | 26237  |
| 89 | 175| 264| 194130|1334|12394|-1373 |12709| 3667   | 26483  |
| 89 | 176| 265| 199951|2249|12354|-1525 |11753| 3584   | 26728  |
| 89 | 177| 266| 206747|1275|12655|-1714 |13018| 3525   | 26989  |
| 89 | 178| 267| 212613|2204|12625|-1914 |12056| 3480   | 27252  |
| 89 | 179| 268| 219424|1260|12936|-2158 |13000| 3465   | 27536  |
| 89 | 180| 269| 225289|2206|12921|-2423 |12332| 3466   | 27829  |
| 89 | 181| 270| 232065|1295|13249|-2742 |13552| 3501   | 28148  |
| 89 | 182| 271| 237873|2263|13256|-3092 |12579| 3559   | 28483  |
| 89 | 183| 272| 244553|1391|13605|-3507 |13779| 3655   | 28852  |
| 89 | 184| 273| 250237|2387|13641|-3966 |12800| 3778   | 29245  |
| Z  | N  | A   | ΔM  | S_n | S_p  | Q_α  | Q_β  | S_{2n} | S_{2p} |
|----|----|-----|-----|-----|------|------|------|--------|--------|
| 90 | 127| 217 | 12483 | 6239 | 2879 | -4993 | 4626  |        |        |
| 90 | 128| 218 | 12740 | 7814 | 3377 | 10212 | -6073 | 14054  | 5230   |
| 90 | 129| 219 | 14567 | 6244 | 3483 | 9609  | -4410 | 14059  | 5863   |
| 90 | 130| 220 | 14879 | 7759 | 3991 | 9061  | -5416 | 14003  | 6491   |
| 90 | 131| 221 | 16787 | 6162 | 4107 | 8510  | -3713 | 13922  | 7140   |
| 90 | 132| 222 | 17230 | 7628 | 4618 | 8012  | -4664 | 13791  | 7777   |
| 90 | 133| 223 | 19286 | 6015 | 4737 | 7511  | -2939 | 13643  | 8428   |
| 90 | 134| 224 | 19917 | 7440 | 5244 | 7062  | -3850 | 13455  | 9063   |
| 90 | 135| 225 | 22171 | 5817 | 5361 | 6608  | -2115 | 13258  | 9705   |
| 90 | 136| 226 | 23031 | 7210 | 5861 | 6204  | -2999 | 13028  | 10327  |
| 90 | 137| 227 | 25518 | 5584 | 5972 | 5794  | -1264 | 12795  | 10954  |
| 90 | 138| 228 | 26638 | 6950 | 6461 | 5432  | -2129 | 12535  | 11556  |
| 90 | 139| 229 | 29382 | 6381 | 6563 | 5062  | -403  | 12278  | 12161  |
| 90 | 140| 230 | 30781 | 6671 | 7040 | 4739  | -1258 | 11999  | 12741  |
| 90 | 141| 231 | 33798 | 5054 | 7131 | 4407  | 452   | 11726  | 13320  |
| 90 | 142| 232 | 35488 | 6381 | 7594 | 4117  | -396  | 11436  | 13874  |
| 90 | 143| 233 | 38785 | 4773 | 7674 | 3819  | 1294  | 11155  | 14426  |
| 90 | 144| 234 | 40771 | 6085 | 8121 | 3562  | 446   | 10859  | 14951  |
| 90 | 145| 235 | 44353 | 4489 | 8189 | 3294  | 2115  | 10575  | 15474  |
| 90 | 146| 236 | 46635 | 5789 | 8621 | 3065  | 1264  | 10278  | 15971  |
| 90 | 147| 237 | 50499 | 4206 | 8676 | 2825  | 2909  | 9995   | 16465  |
| 90 | 148| 238 | 53075 | 5495 | 9093 | 2622  | 2054  | 9702   | 16933  |
| 90 | 149| 239 | 57218 | 3927 | 9136 | 2406  | 3673  | 9423   | 17398  |
| 90 | 150| 240 | 60082 | 5207 | 9538 | 2226  | 2813  | 9135   | 17838  |
| 90 | 151| 241 | 64498 | 3655 | 9569 | 2033  | 4406  | 8863   | 18276  |
| 90 | 152| 242 | 67642 | 4927 | 9956 | 1874  | 3539  | 8582   | 18689  |
| 90 | 153| 243 | 72322 | 3390 | 9977 | 1701  | 5106  | 8317   | 19100  |
| 90 | 154| 244 | 75739 | 4655 | 10349 | 1560  | 4233  | 8045   | 19487  |
| 90 | 155| 245 | 80676 | 3134 | 10359 | 1406  | 5774  | 7789   | 19872  |
| 90 | 156| 246 | 84355 | 4392 | 10718 | 1282  | 4895  | 7526   | 20235  |
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| 90 | 158| 248 | 93473 | 4138 | 11065 | 1035  | 5524  | 7025   | 20935  |
| 90 | 159| 249 | 98894 | 2650 | 11055 | 910   | 7013  | 6788   | 21275  |
| 90 | 160| 250 | 103069 | 3895 | 11390 | 814   | 6122  | 6545   | 21593  |
| 90 | 161| 251 | 108717 | 2423 | 11371 | 701   | 7587  | 6319   | 21911  |
| 90 | 162| 252 | 113124 | 3664 | 11696 | 615   | 6690  | 6087   | 22209  |
| 90 | 163| 253 | 118987 | 2208 | 11669 | 511   | 8129  | 5872   | 22509  |
| 90 | 164| 254 | 123613 | 3445 | 11984 | 432   | 7227  | 5653   | 22790  |
| 90 | 165| 255 | 129677 | 2007 | 11951 | 333   | 8642  | 5452   | 23074  |
| 90 | 166| 256 | 134508 | 3240 | 12257 | 257   | 7733  | 5247   | 23339  |
| 90 | 167| 257 | 140759 | 1820 | 12219 | 160   | 9124  | 5060   | 23609  |
| 90 | 168| 258 | 145778 | 3052 | 12517 | 82    | 8210  | 4872   | 23863  |
| 90 | 169| 259 | 152198 | 1651 | 12475 | -18   | 9576  | 4704   | 24123  |
| 90 | 170| 260 | 157385 | 2883 | 12769 | -103  | 8655  | 4535   | 24369  |
| Z  | N  | A   | ΔM    | S_n | S_p  | Q_α  | Q_β  | S_{2n} | S_{2p} |
|----|----|-----|-------|-----|------|------|------|--------|--------|
| 90 | 171| 261 | 163952| 1504| 12724|-216  | 9997 | 4388   | 24622  |
| 90 | 172| 262 | 169284| 2738| 13015|-316  | 9069 | 4243   | 24863  |
| 90 | 173| 263 | 175972| 1383| 12971|-448  | 10386| 4122   | 25115  |
| 90 | 174| 264 | 181421| 2622| 13260|-574  | 9450 | 4006   | 25358  |
| 90 | 175| 265 | 188198| 1294| 13220|-736  | 10742| 3916   | 25615  |
| 90 | 176| 266 | 193728| 2541| 13512|-898  | 9797 | 3835   | 25866  |
| 90 | 177| 267 | 200556| 1242| 13479|-1103 | 11064| 3784   | 26134  |
| 90 | 178| 268 | 206124| 2503| 13777|-1317 | 10110| 3746   | 26403  |
| 90 | 179| 269 | 212957| 1238| 13756|-1580 | 11350| 3741   | 26692  |
| 90 | 180| 270 | 218512| 1405| 14055|-1862 | 10386| 3754   | 26987  |
| 90 | 181| 271 | 225293| 7907| 14405|-2203 | 11064| 3806   | 27310  |
| 90 | 182| 272 | 230774| 6778| 14405|-2573 | 10625| 3881   | 27643  |
| 90 | 183| 273 | 237436| 1409| 14405|-3014 | 11812| 4000   | 28011  |
| 90 | 184| 274 | 242768| 2739| 14757|-3496 | 10826| 4148   | 28399  |
| 91 | 126| 217 | 17477 | 464 |      |      |      |        | 3256   |
| 91 | 127| 218 | 18813 | 6735| 959  |      |      | -3942  | 3838   |
| 91 | 128| 219 | 18977 | 7907| 1051 | 10396| -5041| 14642  | 4429   |
| 91 | 129| 220 | 20295 | 6753| 1560 | 9796 | -3408| 14660  | 5044   |
| 91 | 130| 221 | 20501 | 7865| 1666 | 9247 | -4430| 14618  | 5658   |
| 91 | 131| 222 | 21895 | 6677| 2181 | 8708 | -2754| 14542  | 6288   |
| 91 | 132| 223 | 22226 | 7740| 2293 | 8219 | -3717| 14417  | 6911   |
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| 91 | 139| 230 | 32040 | 5817| 4631 | 5413 | 451  | 12870  | 11194  |
| 91 | 140| 231 | 33345 | 6765| 4725 | 5109 | -404 | 12583  | 11765  |
| 91 | 141| 232 | 35885 | 5531| 5202 | 4803 | 1294 | 12297  | 12333  |
| 91 | 142| 233 | 37490 | 6465| 5286 | 4532 | 445  | 11997  | 12880  |
| 91 | 143| 234 | 40325 | 5236| 5749 | 4259 | 2126 | 11702  | 13423  |
| 91 | 144| 235 | 42237 | 6159| 5822 | 4019 | 1279 | 11395  | 13943  |
| 91 | 145| 236 | 45370 | 4938| 6271 | 3774 | 2940 | 11097  | 14460  |
| 91 | 146| 237 | 47590 | 5851| 6333 | 3561 | 2093 | 10789  | 14954  |
| 91 | 147| 238 | 51020 | 4640| 6767 | 3342 | 3731 | 10492  | 15444  |
| 91 | 148| 239 | 53545 | 5547| 6819 | 3152 | 2880 | 10188  | 15912  |
| 91 | 149| 240 | 57268 | 4347| 7238 | 2956 | 4494 | 9894   | 16375  |
| 91 | 150| 241 | 60091 | 5248| 7279 | 2787 | 3639 | 9505   | 16817  |
| 91 | 151| 242 | 64102 | 4061| 7684 | 2610 | 5227 | 9309   | 17254  |
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| 91 | 153| 244 | 71505 | 3782| 8106 | 2301 | 5930 | 8739   | 18083  |
| 91 | 154| 245 | 74902 | 4674| 8125 | 2167 | 5064 | 8456   | 18475  |
| Z  | N   | A   | ΔM   | S_n  | S_p  | Q_α  | Q_β  | S_{2n} | S_{2p} |
|----|-----|-----|------|------|------|------|------|--------|--------|
| 91 | 155 | 246 | 79460 | 3513 | 8505 | 2024 | 6601 | 8187   | 18864  |
| 91 | 156 | 247 | 83130 | 4401 | 8514 | 1905 | 5730 | 7914   | 19233  |
| 91 | 157 | 248 | 87948 | 3253 | 8880 | 1776 | 7242 | 7654   | 19599  |
| 91 | 158 | 249 | 91880 | 4139 | 8881 | 1669 | 6365 | 7392   | 19946  |
| 91 | 159 | 250 | 96946 | 3004 | 9236 | 1552 | 7852 | 7143   | 20291  |
| 91 | 160 | 251 | 101130| 3887 | 9228 | 1456 | 6969 | 6892   | 20618  |
| 91 | 161 | 252 | 106434| 2767 | 9572 | 1348 | 8432 | 6654   | 20943  |
| 91 | 162 | 253 | 110857| 3648 | 9556 | 1261 | 7543 | 6415   | 21252  |
| 91 | 163 | 254 | 116386| 2542 | 9890 | 1160 | 8981 | 6190   | 21559  |
| 91 | 164 | 255 | 121035| 3422 | 9867 | 1078 | 8087 | 5964   | 21851  |
| 91 | 165 | 256 | 126775| 2331 | 10191| 981  | 9500 | 5754   | 22143  |
| 91 | 166 | 257 | 131634| 3211 | 10163| 900  | 8599 | 5543   | 22420  |
| 91 | 167 | 258 | 137568| 2137 | 10479| 803  | 9989 | 5349   | 22699  |
| 91 | 168 | 259 | 142621| 3018 | 10446| 719  | 9081 | 5156   | 22964  |
| 91 | 169 | 260 | 148730| 1962 | 10756| 615  | 10445| 4980   | 23232  |
| 91 | 170 | 261 | 153954| 2847 | 10720| 522  | 9530 | 4809   | 23489  |
| 91 | 171 | 262 | 160215| 1810 | 11025| 405  | 10869| 4657   | 23750  |
| 91 | 172 | 263 | 165585| 2701 | 10988| 294  | 9945 | 4511   | 24003  |
| 91 | 173 | 264 | 171970| 1686 | 11290| 157  | 11258| 4387   | 24262  |
| 91 | 174 | 265 | 177455| 2586 | 11254| 19   | 10324| 4272   | 24515  |
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| Z  | N   | A   | ΔM   | S_n  | S_p  | Q_α  | Q_β  | S_{2n} | S_{2p} |
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| 92 | 126 | 218 | 22756| 2010 |      |      |      |        |        |
| 92 | 127 | 219 | 24019| 6088 | 2083 | -6318|      |        |        |
| 92 | 128 | 220 | 23704| 8386 | 2562 | 10626| -7421| 15194  | 3613   |
| 92 | 129 | 221 | 24931| 6843 | 2652 | 10023| -5802| 15229  | 4212   |
| 92 | 130 | 222 | 24649| 8353 | 3140 | 9484 | -6825| 15197  | 4807   |
| 92 | 131 | 223 | 25943| 6777 | 3240 | 8951 | -5160| 15130  | 5421   |
| 92 | 132 | 224 | 25782| 8231 | 3732 | 8479 | -6120| 15009  | 6025   |
| 92 | 133 | 225 | 27221| 6632 | 3835 | 8008 | -4426| 14864  | 6643   |
| 92 | 134 | 226 | 27249| 8042 | 4325 | 7594 | -5341| 14675  | 7245   |
| 92 | 135 | 227 | 28891| 6429 | 428 | 7179 | -3630| 14472  | 7857   |
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| 92| 139| 231| 33750| 5909 | 5578 | 5807 |-1945 | 13438 | 10209 |
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| 92| 141| 233| 37045| 5616 | 6128 | 5238 |-1089 | 12847 | 11330 |
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| 92| 145| 237| 45497| 5003 | 7162 | 4286 | 593  | 11603 | 13433 |
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| 92| 147| 239| 50664| 4696 | 7645 | 3886 | 1405 | 10975 | 14413 |
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| 92| 149| 241| 56525| 4393 | 8104 | 3528 | 2193 | 10354 | 15343 |
| 92| 150| 242| 58874| 5649 | 8506 | 3374 | 1356 | 10042 | 15785 |
| 92| 151| 243| 62849| 4096 | 8541 | 3205 | 2952 | 9746  | 16226 |
| 92| 152| 244| 65575| 5345 | 8930 | 3068 | 2111 | 9442  | 16644 |
| 92| 153| 245| 69838| 3808 | 8956 | 2915 | 3683 | 9153  | 17062 |
| 92| 154| 246| 72858| 5050 | 9332 | 2791 | 2836 | 8859  | 17458 |
| 92| 155| 247| 77400| 3529 | 9349 | 2652 | 4383 | 8580  | 17854 |
| 92| 156| 248| 80705| 4765 | 9713 | 2541 | 3531 | 8295  | 18228 |
| 92| 157| 249| 85515| 3261 | 9722 | 2413 | 5054 | 8027  | 18603 |
| 92| 158| 250| 89094| 4492 | 10075| 2313 | 4196 | 7754  | 18956 |
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| 92| 160| 252| 98002| 4230 | 10417| 2104 | 4831 | 7234  | 19645 |
| 92| 161| 253| 103314|2759| 10409| 1994 | 6304 | 6989  | 19981 |
| 92| 162| 254| 107404|3980| 10742| 1909 | 5435 | 6740  | 20298 |
| 92| 163| 255| 112948|2527| 10726| 1805 | 6884 | 6508  | 20617 |
| 92| 164| 256| 117274|3745| 11050| 1724 | 6008 | 6273  | 20917 |
| 92| 165| 257| 123034|2310| 11029| 1622 | 7433 | 6056  | 21220 |
| 92| 166| 258| 127579|3526| 11344| 1540 | 6550 | 5837  | 21507 |
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| 92| 173| 265| 167130|1652| 12128| 753  | 9293 | 4652  | 23419 |
| 92| 174| 266| 172319|2882| 12424| 609  | 8373 | 4535  | 23679 |
| 92| 175| 267| 178826|1565| 12393| 428  | 9663 | 4447  | 23950 |
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| 92| 178| 270| 195931|2779| 12964|-221  | 9040 | 4302  | 24771 |
| 92| 179| 271| 202469|1533| 12945|-512  | 10267| 4313  | 25066 |
| 92| 180| 272| 207727|2813| 13254|-822  | 9300 | 4346  | 25362 |
| 92| 181| 273| 214188|1610| 13248|-1193 | 10492| 4423  | 25682 |
| 92| 182| 274| 219341|2918| 13570|-1596 | 9505 | 4528  | 26010 |
| Z | N  | A  | ΔM  | S_n | S_p | Q_α | Q_β | S_{2n} | S_{2p} |
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| 92 | 184 | 276 | 230608 | 3109 | 13924 | -2590 | 9650 | 4875 | 26737 |
| 93 | 126 | 219 | 30337 | -293 | 1717 |
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| 93 | 148 | 241 | 54259 | 6014 | 5804 | 4244 | 1390 | 11141 | 13863 |
| 93 | 149 | 242 | 57518 | 4812 | 6223 | 4072 | 3005 | 10826 | 14328 |
| 93 | 150 | 243 | 59896 | 5693 | 6267 | 3926 | 2173 | 10505 | 14773 |
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| 93 | 154 | 247 | 73016 | 5076 | 7131 | 3374 | 3657 | 9281 | 16464 |
| 93 | 155 | 248 | 77173 | 3913 | 7515 | 3243 | 5201 | 8990 | 16864 |
| 93 | 156 | 249 | 80460 | 4784 | 7533 | 3133 | 4356 | 8698 | 17247 |
| 93 | 157 | 250 | 84897 | 3634 | 7906 | 3012 | 5876 | 8418 | 17628 |
| 93 | 158 | 251 | 88466 | 4502 | 7916 | 2911 | 5026 | 8136 | 17991 |
| 93 | 159 | 252 | 93171 | 3366 | 8278 | 2797 | 6523 | 7869 | 18353 |
| 93 | 160 | 253 | 97009 | 4232 | 8281 | 2704 | 5667 | 7599 | 18698 |
| 93 | 161 | 254 | 101969 | 3111 | 8633 | 2597 | 7139 | 7344 | 19043 |
| 93 | 162 | 255 | 106064 | 3976 | 8629 | 2508 | 6278 | 7088 | 19371 |
| 93 | 163 | 256 | 111265 | 2870 | 8972 | 2405 | 7726 | 6846 | 19699 |
| 93 | 164 | 257 | 115601 | 3734 | 8961 | 2319 | 6858 | 6604 | 20011 |
| 93 | 165 | 258 | 121028 | 2644 | 9295 | 2217 | 8282 | 6379 | 20324 |
| 93 | 166 | 259 | 125589 | 3510 | 9278 | 2129 | 7407 | 6154 | 20622 |
| Z  | N  | A   | ΔM    | S_n | S_p  | Q_α  | Q_β  | S_{2n} | S_{2p} |
|----|----|-----|-------|-----|------|------|------|--------|--------|
| 93 | 167| 260 | 131224| 2436| 9604 | 2024 | 8805 | 5947   | 20922  |
| 93 | 168| 261 | 135990| 3305| 9583 | 1930 | 7922 | 5742   | 21208  |
| 93 | 169| 262 | 141810| 2251| 9002 | 1817 | 9294 | 5556   | 21497  |
| 93 | 170| 263 | 146757| 3124| 9877 | 1711 | 8402 | 5375   | 21774  |
| 93 | 171| 264 | 152738| 2090| 10190| 1583 | 9746 | 5215   | 22055  |
| 93 | 172| 265 | 157837| 2972| 10163| 1457 | 8843 | 5062   | 22326  |
| 93 | 173| 266 | 163946| 1962| 10473| 1305 | 10158| 4934   | 22602  |
| 93 | 174| 267 | 169162| 2855| 10446| 1151 | 9242 | 4817   | 22870  |
| 93 | 175| 268 | 175360| 1873| 10754| 964  | 10526| 4728   | 23147  |
| 93 | 176| 269 | 180650| 2781| 10729| 770  | 9594 | 4654   | 23419  |
| 93 | 177| 270 | 186890| 1831| 11038| 535  | 10845| 4612   | 23701  |
| 93 | 178| 271 | 192202| 2759| 11018| 285  | 9895 | 4591   | 23982  |
| 94 | 126| 220 | 36383  |1243 |       |      |      |        |        |
| 94 | 127| 221 | 37115  |6326 |       |      |      |        |        |
| 94 | 128| 222 | 38267  |3619 |       |      |      |        |        |
| 94 | 129| 223 | 39634  |8397 |       |      |      |        |        |
| 94 | 130| 224 | 40696  |1438 |       |      |      |        |        |
| 94 | 131| 225 | 41814  |1318 |       |      |      |        |        |
| 94 | 132| 226 | 43086  |3419 |       |      |      |        |        |
| 94 | 133| 227 | 44942  |1714 |       |      |      |        |        |
| 94 | 134| 228 | 46402  |2997 |       |      |      |        |        |
| 94 | 135| 229 | 47643  |3459 |       |      |      |        |        |
| 94 | 136| 230 | 48767  |6882 |       |      |      |        |        |
| 94 | 137| 231 | 49842  |7814 |       |      |      |        |        |
| 94 | 138| 232 | 50502  |2387 |       |      |      |        |        |
| 94 | 139| 233 | 51703  |6499 |       |      |      |        |        |
| 94 | 140| 234 | 53214  |4778 |       |      |      |        |        |
| 94 | 141| 235 | 54485  |2357 |       |      |      |        |        |
| 94 | 142| 236 | 54914  |6662 |       |      |      |        |        |
| 94 | 143| 237 | 55724  |7814 |       |      |      |        |        |
| 94 | 144| 238 | 56437  |2387 |       |      |      |        |        |
| 94 | 145| 239 | 57647  |3459 |       |      |      |        |        |
| 94 | 146| 240 | 59981  |7814 |       |      |      |        |        |
| 94 | 147| 241 | 52868  |2357 |       |      |      |        |        |
| 94 | 148| 242 | 54512  |6662 |       |      |      |        |        |
| 94 | 149| 243 | 57723  |4789 |       |      |      |        |        |
| 94 | 150| 244 | 59698  |7814 |       |      |      |        |        |
| Z  | N   | A   | ΔM | Sn  | Sp  | Qα  | Qβ  | S2n | S2p  |
|----|-----|-----|----|-----|-----|-----|-----|-----|------|
| 94 | 151 | 245 | 63225 | 4544 | 7527 | 4347 | 1508 | 10640 | 14201 |
| 94 | 152 | 246 | 65524 | 5772 | 7919 | 4224 | 689  | 10316 | 14628 |
| 94 | 153 | 247 | 69358 | 4236 | 7951 | 4084 | 2266 | 10009 | 15057 |
| 94 | 154 | 248 | 71972 | 5458 | 8333 | 3972 | 1444 | 9694  | 15464 |
| 94 | 155 | 249 | 76104 | 3939 | 8358 | 3841 | 2997 | 9397  | 15873 |
| 94 | 156 | 250 | 79020 | 5154 | 8729 | 3737 | 2171 | 9094  | 16262 |
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| 94 | 158 | 252 | 86648 | 4862 | 9107 | 3517 | 2870 | 8515  | 17024 |
| 94 | 159 | 253 | 91342 | 3377 | 9117 | 3401 | 4376 | 8240  | 17396 |
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| 94 | 169 | 263 | 138355| 2232 | 10744| 2390 | 7293 | 5854  | 20646 |
| 94 | 170 | 264 | 142991| 3435 | 11055| 2282 | 6418 | 5667  | 20932 |
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| 94 | 172 | 266 | 153787| 3277 | 11338| 2016 | 6883 | 5346  | 21502 |
| 94 | 173 | 267 | 159920| 1938 | 11314| 1855 | 8205 | 5216  | 21788 |
| 94 | 174 | 268 | 164834| 3157 | 11617| 1697 | 7303 | 5096  | 22063 |
| 94 | 175 | 269 | 171056| 1849 | 11593| 1500 | 8593 | 5006  | 22347 |
| 94 | 176 | 270 | 176045| 3082 | 11894| 1300 | 7673 | 4931  | 22623 |
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| 94 | 178 | 272 | 187316| 3061 | 12174| 800  | 7985 | 4871  | 23192 |
| 94 | 179 | 273 | 193557| 1830 | 12158| 492  | 9200 | 4891  | 23489 |
| 94 | 180 | 274 | 198521| 3108 | 12464| 164  | 8235 | 4938  | 23784 |
| 94 | 181 | 275 | 204668| 1923 | 12456| -225 | 9407 | 5032  | 24098 |
| 94 | 182 | 276 | 209504| 3235 | 12771| -647 | 8413 | 5158  | 24414 |
| 94 | 183 | 277 | 215470| 2105 | 12776| -1142| 9539 | 5340  | 24754 |
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| 95 | 149 | 244 | 59789 | 5280 | 5222 | 5162 | 1531 | 11762 | 12306 |
| 95 | 150 | 245 | 61717 | 6143 | 5270 | 5032 | 719 | 11424 | 12757 |
| 95 | 151 | 246 | 64834 | 4954 | 5679 | 4890 | 2313 | 11098 | 13207 |
| 95 | 152 | 247 | 67092 | 5813 | 5720 | 4771 | 1500 | 10767 | 13640 |
| 95 | 153 | 248 | 70527 | 4636 | 6120 | 4638 | 3072 | 10449 | 14072 |
| 95 | 154 | 249 | 73106 | 5492 | 6514 | 4526 | 2255 | 10128 | 14487 |
| 95 | 155 | 250 | 76848 | 4328 | 6544 | 4401 | 3805 | 9821 | 14902 |
| 95 | 156 | 251 | 79738 | 5182 | 6571 | 4296 | 2985 | 9510 | 15300 |
| 95 | 157 | 252 | 83777 | 4032 | 6951 | 4178 | 4512 | 9214 | 15698 |
| 95 | 158 | 253 | 86965 | 4883 | 6971 | 4079 | 3689 | 8915 | 16079 |
| 95 | 159 | 254 | 91288 | 3747 | 7342 | 3965 | 5193 | 8631 | 16460 |
| 95 | 160 | 255 | 94762 | 4597 | 7356 | 3870 | 4364 | 8345 | 16825 |
| 95 | 161 | 256 | 99357 | 3476 | 7717 | 3761 | 5845 | 8073 | 17189 |
| 95 | 162 | 257 | 103103 | 4325 | 7724 | 3668 | 5011 | 7801 | 17538 |
| 95 | 163 | 258 | 107955 | 3219 | 8076 | 3560 | 6468 | 7544 | 17888 |
| 95 | 164 | 259 | 111957 | 4068 | 8077 | 3468 | 5627 | 7288 | 18222 |
| 95 | 165 | 260 | 117049 | 2979 | 8421 | 3359 | 7059 | 7048 | 18556 |
| 95 | 166 | 261 | 121290 | 3830 | 8416 | 3264 | 6211 | 6809 | 18876 |
| 95 | 167 | 262 | 126603 | 2758 | 8752 | 3150 | 7618 | 6588 | 19198 |
| 95 | 168 | 263 | 131062 | 3613 | 8743 | 3047 | 6761 | 6371 | 19506 |
| 95 | 169 | 264 | 136573 | 2560 | 9071 | 2924 | 8140 | 6173 | 19815 |
| 95 | 170 | 265 | 141223 | 3421 | 9057 | 2807 | 7272 | 5981 | 20112 |
| 95 | 171 | 266 | 146904 | 2390 | 9379 | 2668 | 8622 | 5811 | 20412 |
| 95 | 172 | 267 | 151714 | 3260 | 9362 | 2531 | 7740 | 5651 | 20700 |
| 95 | 173 | 268 | 157530 | 2255 | 9678 | 2367 | 9059 | 5516 | 20993 |
| 95 | 174 | 269 | 162463 | 3138 | 9659 | 2200 | 8161 | 5393 | 21277 |
| 95 | 175 | 270 | 168372 | 2162 | 9972 | 2001 | 9446 | 5300 | 21566 |
| 95 | 176 | 271 | 173380 | 3063 | 9954 | 1792 | 8528 | 5225 | 21848 |
| 95 | 177 | 272 | 179330 | 2120 | 10265 | 1545 | 9775 | 5184 | 22137 |
| 95 | 178 | 273 | 184357 | 3045 | 10248 | 1281 | 8834 | 5165 | 22423 |
| Z  | N  | A   | ΔM  | S_n | S_p | Q_x | Q_y | S_{2n} | S_{2p} |
|----|----|-----|-----|-----|-----|-----|-----|--------|--------|
| 95 | 179| 274 | 190285 | 2142 | 10561 | 970 | 10039 | 5187 | 22719 |
| 95 | 180| 275 | 195260 | 3096 | 10549 | 633 | 9071 | 5238 | 23013 |
| 95 | 181| 276 | 201091 | 2240 | 10865 | 239 | 10230 | 5336 | 23322 |
| 95 | 182| 277 | 205931 | 3231 | 10861 | -189 | 9229 | 5471 | 23633 |
| 95 | 183| 278 | 211573 | 2429 | 11186 | -687 | 10338 | 5660 | 23962 |
| 95 | 184| 279 | 216178 | 3466 | 11195 | -1233 | 9298 | 5896 | 24299 |
| 96 | 126| 222 | 51506  | 490  |   | -8812 | 17245 | 441  |
| 96 | 127| 223 | 51746  | 7831 | 528 |   | 17455 | 441  |
| 96 | 128| 224 | 50403  | 9413 | 965 | 11594 | -9961 | 17245 | 441  |
| 96 | 129| 225 | 50550  | 7923 | 1019 | 11010 | -8431 | 17337 | 961  |
| 96 | 130| 226 | 49195  | 9426 | 1465 | 10503 | -9489 | 17350 | 1478 |
| 96 | 131| 227 | 49375  | 7891 | 1530 | 10016 | -7900 | 17317 | 2016 |
| 96 | 132| 228 | 48118  | 9328 | 1981 | 9596  | -8886 | 17220 | 2546 |
| 96 | 133| 229 | 48427  | 7761 | 2053 | 9188  | -7256 | 17090 | 3092 |
| 96 | 134| 230 | 47352  | 9147 | 2506 | 8841  | -8186 | 16908 | 3628 |
| 96 | 135| 231 | 47865  | 7558 | 2580 | 8497  | -6530 | 16705 | 4176 |
| 96 | 136| 232 | 47034  | 8902 | 3032 | 8207  | -7417 | 16460 | 4711 |
| 96 | 137| 233 | 47803  | 7301 | 3107 | 7915  | -5746 | 16204 | 5256 |
| 96 | 138| 234 | 47263  | 8611 | 3555 | 7670  | -6601 | 15913 | 5785 |
| 96 | 139| 235 | 48327  | 7007 | 3629 | 7419  | -4925 | 15619 | 6323 |
| 96 | 140| 236 | 48107  | 8291 | 4072 | 7211  | -5758 | 15298 | 6844 |
| 96 | 141| 237 | 49490  | 6687 | 4143 | 6992  | -4084 | 14979 | 7372 |
| 96 | 142| 238 | 49610  | 7951 | 4579 | 6811  | -4901 | 14639 | 7881 |
| 96 | 143| 239 | 51328  | 6353 | 4647 | 6618  | -3235 | 14305 | 8397 |
| 96 | 144| 240 | 51798  | 7600 | 5075 | 6458  | -4041 | 13954 | 8894 |
| 96 | 145| 241 | 53857  | 6012 | 5138 | 6284  | -2388 | 13613 | 9395 |
| 96 | 146| 242 | 54681  | 7247 | 5559 | 6141  | -3188 | 13259 | 9878 |
| 96 | 147| 243 | 57081  | 5670 | 5617 | 5982  | -1550 | 12918 | 10364 |
| 96 | 148| 244 | 58258  | 6894 | 6029 | 5851  | -2347 | 12565 | 10832 |
| 96 | 149| 245 | 60997  | 5332 | 6081 | 5703  | -728  | 12227 | 11303 |
| 96 | 150| 246 | 62521  | 6547 | 6485 | 5583  | -1524 | 11880 | 11755 |
| 96 | 151| 247 | 65592  | 4999 | 6530 | 5444  | 75    | 11547 | 12210 |
| 96 | 152| 248 | 67455  | 6208 | 6925 | 5331  | -721  | 11208 | 12646 |
| 96 | 153| 249 | 70850  | 4676 | 6966 | 5200  | 857   | 10884 | 13086 |
| 96 | 154| 250 | 73043  | 5878 | 7352 | 5093  | 58    | 10554 | 13506 |
| 96 | 155| 251 | 76752  | 4362 | 7385 | 4968  | 1616  | 10240 | 13930 |
| 96 | 156| 252 | 79264  | 5559 | 7762 | 4867  | 814   | 9921  | 14334 |
| 96 | 157| 253 | 83275  | 4059 | 7790 | 4746  | 2349  | 9618  | 14741 |
| 96 | 158| 254 | 86095  | 5251 | 8158 | 4649  | 1544  | 9311  | 15130 |
| 96 | 159| 255 | 90397  | 3768 | 8179 | 4533  | 3057  | 9020  | 15522 |
| 96 | 160| 256 | 93512  | 4956 | 8539 | 4439  | 2247  | 8725  | 15895 |
| 96 | 161| 257 | 98092  | 3491 | 8554 | 4325  | 3737  | 8448  | 16271 |
| 96 | 162| 258 | 101487 | 4676 | 8905 | 4232  | 2922  | 8167  | 16629 |
| Z  | N   | A   | ΔM     | S_n | S_p | Q_α  | Q_β   | S_{2n} | S_{2p} |
|----|-----|-----|--------|-----|-----|-------|-------|-------|-------|
| 96 | 163 | 259 | 106330 | 3228| 8914| 4119  | 4388  | 7904  | 16990 |
| 96 | 164 | 260 | 109989 | 4411| 9256| 4026  | 3567  | 7639  | 17334 |
| 96 | 165 | 261 | 115079 | 2982| 9259| 3911  | 5009  | 7393  | 17681 |
| 96 | 166 | 262 | 118985 | 4164| 9594| 3814  | 4179  | 7146  | 18010 |
| 96 | 167 | 263 | 124301 | 2755| 9591| 3693  | 5595  | 6920  | 18344 |
| 96 | 168 | 264 | 128433 | 3939| 9918| 3589  | 4756  | 6695  | 18661 |
| 96 | 169 | 265 | 133951 | 2553| 9911| 3458  | 6144  | 6492  | 18982 |
| 96 | 170 | 266 | 138281 | 3740| 10230| 3340  | 5294  | 6293  | 19287 |
| 96 | 171 | 267 | 143974 | 2379| 10129| 3193  | 6652  | 6119  | 19598 |
| 96 | 172 | 268 | 148471 | 3574| 10532| 3054  | 5787  | 5953  | 19894 |
| 96 | 173 | 269 | 154301 | 2240| 10157| 2882  | 7113  | 5814  | 20196 |
| 96 | 174 | 270 | 158926 | 3446| 10825| 2713  | 6230  | 5687  | 20485 |
| 96 | 175 | 271 | 164851 | 2145| 10809| 2506  | 7521  | 5592  | 20782 |
| 96 | 176 | 272 | 169555 | 3367| 11113| 2296  | 6617  | 5513  | 21068 |
| 96 | 177 | 273 | 175522 | 2104| 11097| 2041  | 7868  | 5471  | 21362 |
| 96 | 178 | 274 | 180245 | 3348| 11400| 1775  | 6937  | 5452  | 21648 |
| 96 | 179 | 275 | 186189 | 2127| 11385| 1457  | 8144  | 5475  | 21946 |
| 96 | 180 | 276 | 190860 | 3400| 11689| 1119  | 7184  | 5527  | 22238 |
| 96 | 181 | 277 | 196702 | 2229| 11678| 719   | 8342  | 5629  | 22544 |
| 96 | 182 | 278 | 201235 | 3538| 11985| 289   | 7344  | 5768  | 22847 |
| 96 | 183 | 279 | 206879 | 2426| 11982| -213  | 8448  | 5965  | 23169 |
| 96 | 184 | 280 | 211169 | 3781| 12297| -759  | 7408  | 6207  | 23492 |
| 97 | 126 | 223 | 60558  | -1763|     |       |       |       | -1272 |
| 97 | 127 | 224 | 60365  | -8264| -1330| -7730 |       |       | -801  |
| 97 | 128 | 225 | 58982  | 9454 | 1290 | 11850 | -8897 | 17718 | -324  |
| 97 | 129 | 226 | 58684  | 8369 | -845 | 11274 | -7395 | 17823 | 174   |
| 97 | 130 | 227 | 57276  | 9479 | -792 | 10771 | -8468 | 17848 | 673   |
| 97 | 131 | 228 | 57004  | 8343 | -339 | 10298 | -6906 | 17823 | 1190  |
| 97 | 132 | 229 | 55684  | 9390 | -277 | 9887  | -7905 | 17734 | 1704  |
| 97 | 133 | 230 | 55358  | 8217 | 178  | 9496  | -6299 | 17608 | 2231  |
| 97 | 134 | 231 | 54395  | 9214 | 245  | 9159  | -7240 | 17431 | 2752  |
| 97 | 135 | 232 | 54451  | 8015 | 702  | 8834  | -5605 | 17229 | 3283  |
| 97 | 136 | 233 | 53550  | 8972 | 773  | 8555  | -6501 | 16987 | 3805  |
| 97 | 137 | 234 | 53864  | 7756 | 1227 | 8283  | -4850 | 16729 | 4335  |
| 97 | 138 | 235 | 53253  | 8683 | 1299 | 8050  | -5712 | 16439 | 4584  |
| 97 | 139 | 236 | 53865  | 7458 | 1750 | 7817  | -4053 | 16142 | 5380  |
| 97 | 140 | 237 | 53575  | 8361 | 1821 | 7620  | -4891 | 15820 | 5893  |
| 97 | 141 | 238 | 54511  | 7134 | 2267 | 7419  | -3232 | 15496 | 6411  |
| 97 | 142 | 239 | 54563  | 8019 | 2366 | 7248  | -4052 | 15154 | 6915  |
| 97 | 143 | 240 | 55840  | 6794 | 2776 | 7070  | -2399 | 14814 | 7424  |
| 97 | 144 | 241 | 56245  | 7666 | 2842 | 6919  | -3208 | 14460 | 7917  |
| 97 | 145 | 242 | 57870  | 6446 | 3276 | 6758  | -1566 | 14112 | 8414  |
| 97 | 146 | 243 | 58632  | 7308 | 3337 | 6622  | -2366 | 13755 | 8897  |
| Z | N  | A   | ΔM  | S_n | S_p | Q_α | Q_β | S_{2n} | S_{2p} |
|---|----|-----|-----|-----|-----|-----|-----|--------|--------|
| 97| 147| 244 | 60606| 6097 | 3764 | 6474 | -738 | 13406  | 9381   |
| 97| 148| 245 | 61726| 6951 | 3821 | 6348 | -1534| 13049  | 9850   |
| 97| 149| 246 | 64045| 5751 | 4240 | 6210 | 76  | 12703  | 10322  |
| 97| 150| 247 | 65517| 6599 | 4292 | 6093 | -717 | 12351  | 10778  |
| 97| 151| 248 | 68177| 5411 | 4704 | 5962 | 876 | 12011  | 11235  |
| 97| 152| 249 | 69992| 6255 | 4751 | 5850 | 82  | 11666  | 11677  |
| 97| 153| 250 | 72984| 5079 | 5154 | 5725 | 1655| 11335  | 12120  |
| 97| 154| 251 | 75135| 5920 | 5196 | 5618 | 861 | 10999  | 12548  |
| 97| 155| 252 | 78449| 4757 | 5591 | 5497 | 2414 | 10677  | 12976  |
| 97| 156| 253 | 80926| 5595 | 5627 | 5394 | 1617| 10352  | 13389  |
| 97| 157| 254 | 84550| 4446 | 6013 | 5277 | 3149 | 10041  | 13804  |
| 97| 158| 255 | 87340| 5282 | 6043 | 5177 | 2350| 9728   | 14202  |
| 97| 159| 256 | 91264| 4146 | 6422 | 5062 | 3860| 9429   | 14601  |
| 97| 160| 257 | 94354| 4981 | 6446 | 4964 | 3056| 9128   | 14985  |
| 97| 161| 258 | 98564| 3860 | 6816 | 4851 | 4544| 8842   | 15370  |
| 97| 162| 259 | 101941| 4694 | 6834 | 4753 | 3736| 8555   | 15740  |
| 97| 163| 260 | 106422| 3589 | 7196 | 4640 | 5201| 8284   | 16110  |
| 97| 164| 261 | 110070| 4424 | 7208 | 4541 | 4386| 8013   | 16465  |
| 97| 165| 262 | 114806| 3335 | 7561 | 4426 | 5827| 7759   | 16821  |
| 97| 166| 263 | 118705| 4172 | 7569 | 4323 | 5004| 7507   | 17163  |
| 97| 167| 264 | 123676| 3100 | 7913 | 4201 | 6419| 7272   | 17505  |
| 97| 168| 265 | 127806| 3941 | 7915 | 4090 | 5587| 7042   | 17833  |
| 97| 169| 266 | 132987| 2889 | 8252 | 3958 | 6974| 6831   | 18163  |
| 97| 170| 267 | 137321| 3737 | 8249 | 3834 | 6130| 6627   | 18479  |
| 97| 171| 268 | 142683| 2708 | 8579 | 3685 | 7487| 6446   | 18798  |
| 97| 172| 269 | 147188| 3566 | 8572 | 3539 | 6627| 6275   | 19104  |
| 97| 173| 270 | 152695| 2563 | 8895 | 3366 | 7951| 6130   | 19413  |
| 97| 174| 271 | 157330| 3436 | 8884 | 3190 | 7073| 6000   | 19710  |
| 97| 175| 272 | 162938| 2463 | 9202 | 2982 | 8360| 5899   | 20012  |
| 97| 176| 273 | 167654| 3355 | 9189 | 2766 | 7459| 5818   | 20303  |
| 97| 177| 274 | 173007| 2417 | 9503 | 2510 | 8705| 5773   | 20600  |
| 97| 178| 275 | 178044| 3334 | 9490 | 2239 | 7776| 5752   | 20890  |
| 97| 179| 276 | 183676| 2439 | 9801 | 1921 | 8976| 5773   | 21186  |
| 97| 180| 277 | 188360| 3387 | 9789 | 1578 | 8014| 5827   | 21478  |
| 97| 181| 278 | 193890| 2541 | 10101| 1179 | 9162| 5929   | 21779  |
| 97| 182| 279 | 198431| 3530 | 10092| 745  | 8161| 6071   | 22078  |
| 97| 183| 280 | 203761| 2741 | 10407| 244  | 9251| 6271   | 22389  |
| 97| 184| 281 | 208053| 3779 | 10405| 303  | 8203| 6520   | 22702  |
| 97| 185| 282 | 212450| 4817 | 10809| -536 | 9055| 6769   | 23012  |
| 97| 186| 283 | 216914| 5859 | 11212| -712| 9055 | 6769   | 23012  |

46
|   |   |   | ΔM     |   |   |   |   |   |   |
|---|---|---|--------|---|---|---|---|---|---|
| 98| 131| 229| 63590  | 8392| 703| 10614| -9184| 18298| 363|
| 98| 132| 230| 61838  | 9823| 1135| 10217| -10182| 18215| 858|
| 98| 133| 231| 61635  | 8273| 1191| 9835 | -8586| 18096| 1370|
| 98| 134| 232| 60057  | 9649| 1627| 9514 | -9524| 17923| 1872|
| 98| 135| 233| 60052  | 8076| 1688| 9199 | -7986| 17726| 2391|
| 98| 136| 234| 58715  | 9408| 2124| 8937 | -8788| 17484| 2897|
| 98| 137| 235| 58965  | 7820| 2188| 8675 | -7142| 17229| 3416|
| 98| 138| 236| 57919  | 7117| 2622| 8459 | -7999| 16938| 3922|
| 98| 139| 237| 58466  | 7523| 2687| 8237 | -6344| 16641| 4438|
| 98| 140| 238| 57744  | 8793| 3119| 8056 | -7174| 16317| 4940|
| 98| 141| 239| 58616  | 7199| 3184| 7864 | -5517| 15992| 5452|
| 98| 142| 240| 58240  | 8447| 3612| 7708 | -6329| 15646| 5948|
| 98| 143| 241| 59453  | 6857| 3675| 7538 | -4676| 15305| 6452|
| 98| 144| 242| 59436  | 8088| 4098| 7400 | -5474| 14946| 6940|
| 98| 145| 243| 60999  | 6505| 4159| 7246 | -3831| 14597| 7435|
| 98| 146| 244| 61344  | 7725| 4576| 7121 | -4620| 14233| 7914|
| 98| 147| 245| 62660  | 6155| 4634| 6978 | -2990| 13881| 8399|
| 98| 148| 246| 63968  | 7363| 5046| 6862 | -3773| 13518| 8867|
| 98| 149| 247| 66234  | 5805| 5100| 6727 | -2158| 13168| 9341|
| 98| 150| 248| 67301  | 7004| 5504| 6617 | -2938| 12810| 9797|
| 98| 151| 249| 69910  | 5461| 5555| 6488 | -1341| 12466| 10259|
| 98| 152| 250| 71328  | 6653| 5953| 6382 | -2119| 12115| 10704|
| 98| 153| 251| 74274  | 5125| 5999| 6257 | -540 | 11778| 11153|
| 98| 154| 252| 76035  | 6310| 6389| 6155 | -1319| 11435| 11585|
| 98| 155| 253| 79308  | 4798| 6430| 6032 | 239  | 11108| 12021|
| 98| 156| 254| 81401  | 5978| 6813| 5933 | -540 | 10776| 12440|
| 98| 157| 255| 84990  | 4482| 6849| 5813 | 998  | 10460| 12863|
| 98| 158| 256| 87404  | 5657| 7224| 5715 | 215  | 10139| 13268|
| 98| 159| 257| 91297  | 4177| 7256| 5596 | 1734 | 9835 | 13678|
| 98| 160| 258| 94019  | 5348| 7623| 5499 | 947  | 9526 | 14069|
| 98| 161| 259| 98204  | 3886| 7648| 5382 | 2444 | 9235 | 14465|
| 98| 162| 260| 101221 | 5054| 8008| 5284 | 1653 | 8940 | 14843|
| 98| 163| 261| 105683 | 3609| 8028| 5166 | 3127 | 8663 | 15224|
| 98| 164| 262| 108979 | 4775| 8379| 5067 | 2330 | 8385 | 15588|
| 98| 165| 263| 113701 | 3349| 8394| 4946 | 3780 | 8125 | 15956|
| 98| 166| 264| 117257 | 4515| 8737| 4842 | 2975 | 7864 | 16306|
| 98| 167| 265| 122218 | 3109| 8746| 4714 | 4399 | 7624 | 16660|
| 98| 168| 266| 126013 | 4276| 9081| 4602 | 3585 | 7386 | 16997|
| 98| 169| 267| 131191 | 2893| 9085| 4464 | 4981 | 7170 | 17338|
| 98| 170| 268| 135196 | 4065| 9413| 4338 | 4154 | 6959 | 17663|
| 98| 171| 269| 140560 | 2707| 9412| 4184 | 5519 | 6773 | 17991|
| 98| 172| 270| 144744 | 3887| 9733| 4037 | 4677 | 6595 | 18305|
| 98| 173| 271| 150256 | 2558| 9727| 3857 | 6008 | 6446 | 18622|
| 98| 174| 272| 154577 | 3750| 10041| 3681| 5146 | 6308 | 18926|
|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 98 | 175 | 273 | 160194 | 2454 | 10032 | 3468 | 6440 | 6204 | 19234 |
| 98 | 176 | 274 | 164602 | 3663 | 10341 | 3251 | 5553 | 6118 | 19530 |
| 98 | 177 | 275 | 170267 | 2405 | 10329 | 2991 | 6805 | 6069 | 19832 |
| 98 | 178 | 276 | 174700 | 3639 | 10633 | 2719 | 5889 | 6044 | 20123 |
| 98 | 179 | 277 | 180345 | 2425 | 10620 | 2397 | 7092 | 6065 | 20422 |
| 98 | 180 | 278 | 184727 | 3689 | 10921 | 2056 | 6140 | 6115 | 20711 |
| 98 | 181 | 279 | 190269 | 2528 | 10909 | 1655 | 7289 | 6218 | 21010 |
| 98 | 182 | 280 | 194509 | 3831 | 11210 | 1224 | 6295 | 6360 | 21303 |
| 98 | 183 | 281 | 199850 | 2731 | 11200 | 722 | 7383 | 6562 | 21607 |
| 98 | 184 | 282 | 203839 | 4081 | 11503 | 179 | 6338 | 6813 | 21908 |
| 99 | 126 | 225 | 77862 | -2478 |   |   |   |   |   |
| 99 | 127 | 226 | 77232 | 8701 | -2063 |   | -8892 |   | -2288 |
| 99 | 128 | 227 | 75407 | 9895 | -2038 | 12424 | -10076 | 18597 | -1847 |
| 99 | 129 | 228 | 74647 | 8832 | -1612 | 11856 | -8613 | 18727 | -1384 |
| 99 | 130 | 229 | 72774 | 9943 | -1575 | 11367 | -9701 | 18775 | -920 |
| 99 | 131 | 230 | 72020 | 8825 | -1141 | 10910 | -8174 | 18769 | -438 |
| 99 | 132 | 231 | 70221 | 9870 | -1094 | 10520 | -9185 | 18695 |   | 40 |
| 99 | 133 | 232 | 69581 | 8711 | -656 | 10152 | -7612 | 18581 | 535 |
| 99 | 134 | 233 | 67949 | 9703 | -602 | 9839 | -8561 | 18415 | 1024 |
| 99 | 135 | 234 | 67503 | 8516 | -162 | 9540 | -6955 | 18220 | 1525 |
| 99 | 136 | 235 | 66108 | 9466 | -104 | 9288 | -7857 | 17983 | 2019 |
| 99 | 137 | 236 | 65918 | 8261 | 336 | 9041 | -6230 | 17728 | 2524 |
| 99 | 138 | 237 | 64810 | 9178 | 397 | 8835 | -7095 | 17440 | 3020 |
| 99 | 139 | 238 | 64919 | 7963 | 836 | 8629 | -5457 | 17142 | 3524 |
| 99 | 140 | 239 | 64134 | 8856 | 899 | 8456 | -6294 | 16819 | 4018 |
| 99 | 141 | 240 | 64569 | 7636 | 1335 | 8279 | -4653 | 16492 | 4520 |
| 99 | 142 | 241 | 64130 | 8510 | 1398 | 8130 | -5469 | 16146 | 5010 |
| 99 | 143 | 242 | 64910 | 7291 | 1831 | 7974 | -3831 | 15801 | 5507 |
| 99 | 144 | 243 | 64831 | 8151 | 1893 | 7842 | -4632 | 15442 | 5992 |
| 99 | 145 | 244 | 65965 | 6936 | 2322 | 7700 | -3002 | 15088 | 6482 |
| 99 | 146 | 245 | 66250 | 7785 | 2382 | 7580 | -3793 | 14722 | 6959 |
| 99 | 147 | 246 | 67742 | 6579 | 2807 | 7447 | -2174 | 14365 | 7441 |
| 99 | 148 | 247 | 68392 | 7420 | 2864 | 7335 | -2957 | 14000 | 7911 |
| 99 | 149 | 248 | 70239 | 6224 | 3283 | 7208 | -1352 | 13645 | 8383 |
| 99 | 150 | 249 | 71251 | 7059 | 3338 | 7100 | -2131 | 13283 | 8843 |
| 99 | 151 | 250 | 73448 | 5874 | 3750 | 6978 | -542 | 12933 | 9306 |
| 99 | 152 | 251 | 74815 | 6704 | 3802 | 6873 | -1319 | 12578 | 9755 |
| 99 | 153 | 252 | 77355 | 5531 | 4208 | 6753 | 252 | 12235 | 10207 |
| 99 | 154 | 253 | 79068 | 6358 | 4256 | 6650 | -523 | 11889 | 10645 |
| 99 | 155 | 254 | 81941 | 5197 | 4655 | 6532 | 1030 | 11556 | 11086 |
| 99 | 156 | 255 | 83991 | 6021 | 4985 | 6430 | 253 | 11219 | 11512 |
| 99 | 157 | 256 | 87188 | 4874 | 5009 | 6313 | 1788 | 10896 | 11940 |
| 99 | 158 | 257 | 89563 | 5696 | 5129 | 6212 | 1009 | 10570 | 12354 |

48
| Z | N  | A  | ΔM  | S_n | S_p | Q_α | Q_β | S_{2n} | S_{2p} |
|---|----|----|-----|-----|-----|-----|-----|--------|--------|
| 99 | 159 | 258 | 93072 | 4562 | 5514 | 6096 | 2524 | 10258 | 12770 |
| 99 | 160 | 259 | 95760 | 5383 | 5548 | 5995 | 1742 | 9945 | 13171 |
| 99 | 161 | 260 | 99568 | 4263 | 5925 | 5878 | 3236 | 9646 | 13574 |
| 99 | 162 | 261 | 102556 | 5083 | 5954 | 5777 | 2451 | 9346 | 13962 |
| 99 | 163 | 262 | 106648 | 3978 | 6323 | 5659 | 3922 | 9061 | 14351 |
| 99 | 164 | 263 | 109920 | 4799 | 6347 | 5554 | 3131 | 8778 | 14727 |
| 99 | 165 | 264 | 114281 | 3710 | 6708 | 5433 | 4579 | 8509 | 15102 |
| 99 | 166 | 265 | 117819 | 4533 | 6726 | 5324 | 3781 | 8244 | 15464 |
| 99 | 167 | 266 | 122428 | 3462 | 7079 | 5197 | 5203 | 7995 | 15826 |
| 99 | 168 | 267 | 126209 | 4289 | 7092 | 5079 | 4396 | 7752 | 16174 |
| 99 | 169 | 268 | 131042 | 3238 | 7437 | 4940 | 5790 | 7528 | 16523 |
| 99 | 170 | 269 | 135040 | 4073 | 7445 | 4809 | 4970 | 7312 | 16858 |
| 99 | 171 | 270 | 140066 | 3044 | 7782 | 4654 | 6334 | 7118 | 17194 |
| 99 | 172 | 271 | 144247 | 3890 | 7785 | 4501 | 5497 | 6935 | 17518 |
| 99 | 173 | 272 | 149431 | 2888 | 8114 | 4322 | 6827 | 6778 | 17842 |
| 99 | 174 | 273 | 153754 | 3748 | 8112 | 4141 | 5970 | 6636 | 18153 |
| 99 | 175 | 274 | 159048 | 2777 | 8435 | 3928 | 7262 | 6525 | 18467 |
| 99 | 176 | 275 | 163462 | 3657 | 8428 | 3707 | 6380 | 6434 | 18769 |
| 99 | 177 | 276 | 168811 | 2722 | 8745 | 3447 | 7627 | 6380 | 19074 |
| 99 | 178 | 277 | 173253 | 3629 | 8736 | 3173 | 6715 | 6352 | 19369 |
| 99 | 179 | 278 | 178586 | 2737 | 9047 | 2853 | 7913 | 6366 | 19668 |
| 99 | 180 | 279 | 182980 | 3677 | 9036 | 2510 | 6963 | 6415 | 19958 |
| 99 | 181 | 280 | 188214 | 2837 | 9344 | 2112 | 8104 | 6514 | 20253 |
| 99 | 182 | 281 | 192466 | 3818 | 9331 | 1681 | 7109 | 6655 | 20542 |
| 99 | 183 | 282 | 197500 | 3037 | 9638 | 1185 | 8187 | 6856 | 20838 |
| 99 | 184 | 283 | 201501 | 4071 | 9627 | 644 | 7138 | 7108 | 21130 |

| Z | N  | A  | ΔM  | S_n | S_p | Q_α | Q_β | S_{2n} | S_{2p} |
|---|----|----|-----|-----|-----|-----|-----|--------|--------|
| 100 | 126 | 226 | 86124 | -973 | -963 | -11109 | -11109 |
| 100 | 127 | 227 | 85484 | 8711 | -963 | -11109 | -11109 |
| 100 | 128 | 228 | 83260 | 10295 | -563 | 12740 | -12292 |
| 100 | 129 | 229 | 82476 | 8855 | -540 | 12171 | -10840 |
| 100 | 130 | 230 | 80195 | 10352 | -131 | 11690 | -11926 |
| 100 | 131 | 231 | 79407 | 8859 | -97 | 11236 | -10409 |
| 100 | 132 | 232 | 77193 | 10285 | 317 | 10857 | -11418 |
| 100 | 133 | 233 | 76510 | 8754 | 359 | 10495 | -9853 |
| 100 | 134 | 234 | 74459 | 10122 | 778 | 10196 | -10800 |
| 100 | 135 | 235 | 73965 | 8565 | 827 | 9904 | -9201 |
| 100 | 136 | 236 | 72149 | 9887 | 1248 | 9666 | -10099 |
| 100 | 137 | 237 | 71906 | 8314 | 1301 | 9429 | -8479 |
| 100 | 138 | 238 | 70376 | 9600 | 1723 | 9236 | -9338 |
| 100 | 139 | 239 | 70428 | 8019 | 1779 | 9038 | -7706 |
| 100 | 140 | 240 | 69223 | 9276 | 2200 | 8879 | -8536 |
| 100 | 141 | 241 | 69600 | 7694 | 2257 | 8708 | -6899 |
| 100 | 142 | 242 | 68742 | 8929 | 2677 | 8573 | -7707 | 16623 | 4075 |
| Z   | N    | A    | ΔM   | S_n  | S_p  | Q_α  | Q_β  | S_{2n} | S_{2p} |
|-----|------|------|------|------|------|------|------|--------|--------|
| 100 | 143  | 243  | 69464| 7349 | 2735 | 8422 | -6071| 16279  | 4567   |
| 100 | 144  | 244  | 68968| 8567 | 3152 | 8302 | -6864| 15917  | 5046   |
| 100 | 145  | 245  | 70044| 6995 | 3210 | 8165 | -5234| 15562  | 5533   |
| 100 | 146  | 246  | 69916| 8199 | 3623 | 8055 | -6015| 15194  | 6006   |
| 100 | 147  | 247  | 71350| 6637 | 3680 | 7926 | -4395| 14836  | 6487   |
| 100 | 148  | 248  | 71592| 7829 | 4089 | 7822 | -5168| 14466  | 6954   |
| 100 | 149  | 249  | 73383| 6280 | 4145 | 7697 | -3561| 14109  | 7428   |
| 100 | 150  | 250  | 73990| 7463 | 4549 | 7597 | -4328| 13744  | 7888   |
| 100 | 151  | 251  | 76134| 5927 | 4602 | 7475 | -2736| 13391  | 8353   |
| 100 | 152  | 252  | 77102| 7103 | 5001 | 7376 | -3500| 13031  | 8804   |
| 100 | 153  | 253  | 79591| 5581 | 5052 | 7256 | -1924| 12685  | 9260   |
| 100 | 154  | 254  | 80911| 6751 | 5445 | 7157 | -2686| 12333  | 9701   |
| 100 | 155  | 255  | 83737| 5245 | 5492 | 7038 | -1128| 11996  | 10148  |
| 100 | 156  | 256  | 85400| 6408 | 5880 | 6939 | -1890| 11563  | 10578  |
| 100 | 157  | 257  | 88553| 4918 | 5923 | 6820 | -350  | 11326  | 11014  |
| 100 | 158  | 258  | 90548| 6076 | 6304 | 6721 | -1113| 10994  | 11434  |
| 100 | 159  | 259  | 94017| 4601 | 6343 | 6602 | 407  | 10678  | 11858  |
| 100 | 160  | 260  | 96331| 5756 | 6717 | 6502 | -357 | 10358  | 12266  |
| 100 | 161  | 261  | 100106|4298 | 6752 | 6382 | 1143 | 10054 | 12677  |
| 100 | 162  | 262  | 102726|5449 | 7118 | 6281 | 374  | 9748   | 13073  |
| 100 | 163  | 263  | 106789|4008 | 7148 | 6159 | 1853 | 9458   | 13472  |
| 100 | 164  | 264  | 109702|5158 | 7507 | 6055 | 1079 | 9166   | 13855  |
| 100 | 165  | 265  | 114037|3735 | 7532 | 5929 | 2535 | 8893   | 14241  |
| 100 | 166  | 266  | 117224|4884 | 7883 | 5820 | 1754 | 8620   | 14610  |
| 100 | 167  | 267  | 121813|3482 | 7903 | 5687 | 3184 | 8366   | 14983  |
| 100 | 168  | 268  | 125251|4633 | 8247 | 5569 | 2394 | 8115   | 15339  |
| 100 | 169  | 269  | 130070|3253 | 8261 | 5426 | 3797 | 7886   | 15698  |
| 100 | 170  | 270  | 133732|4408 | 8596 | 5294 | 2994 | 7661   | 16042  |
| 100 | 171  | 271  | 138750|3053 | 8605 | 5134 | 4366 | 7462   | 16388  |
| 100 | 172  | 272  | 142603|4217 | 8933 | 4982 | 3546 | 7271   | 16718  |
| 100 | 173  | 273  | 147783|2891 | 8936 | 4798 | 4885 | 7109   | 17051  |
| 100 | 174  | 274  | 151786|4068 | 9256 | 4617 | 4044 | 6959   | 17369  |
| 100 | 175  | 275  | 157082|2775 | 9255 | 4400 | 5343 | 6843   | 17690  |
| 100 | 176  | 276  | 161183|3970 | 9568 | 4180 | 4476 | 6476   | 17997  |
| 100 | 177  | 277  | 166537|2716 | 9562 | 3918 | 5731 | 6687   | 18307  |
| 100 | 178  | 278  | 170673|3935 | 9868 | 3645 | 4832 | 6652   | 18604  |
| 100 | 179  | 279  | 176017|2727 | 9858 | 3324 | 6036 | 6663   | 18906  |
| 100 | 180  | 280  | 180109|3978 | 10159| 2984 | 5098 | 6706   | 19195  |
| 100 | 181  | 281  | 185357|2823 | 10146| 2586 | 6243 | 6802   | 19490  |
| 100 | 182  | 282  | 189313|4115 | 10442| 2161 | 5258 | 6938   | 19774  |
| 100 | 183  | 283  | 194362|3022 | 10427| 1667 | 6337 | 7137   | 20065  |
| 100 | 184  | 284  | 198069|4364 | 10720| 1134 | 5296 | 7386   | 20348  |

| Z   | N    | A    | ΔM   | S_n  | S_p  | Q_α  | Q_β  | S_{2n} | S_{2p} |
|-----|------|------|------|------|------|------|------|--------|--------|
| 101 | 126  | 227  | 96594| -3180| -4153| -3180| -4153| -3180  | -4153  |

50
| Z  | N  | A  | ΔM  | S_n  | S_p  | Q_α  | Q_β  | S_{2n} | S_{2p} |
|----|----|----|-----|------|------|------|------|-------|-------|
| 101| 127| 228| 95553| 9111 | -2779| -10014| -10014| 19420 | -3743 |
| 101| 128| 229| 93316| 10308| -2766| 13028 | -11210| 19573 | -2897 |
| 101| 129| 230| 92122| 9265 | -2356| 12465 | -9780 | 19642 | -2464 |
| 101| 130| 231| 89817| 10376| -2332| 11984 | -10879| 19652 | -2013 |
| 101| 131| 232| 88611| 9276 | -1915| 11540 | -9385 | 19595 | -1564 |
| 101| 132| 233| 86364| 10319| -1881| 11164 | -10405| 19539 |  166  |
| 101| 133| 234| 85259| 9175 | -1460| 10814 | -8862 | 19494 | -1100 |
| 101| 134| 235| 83167| 10163| -1419| 10520 | -9820 | 19339 | -640  |
| 101| 135| 236| 82248| 8990 | -994 | 10242 | -8242 | 19153 | -166  |
| 101| 136| 237| 80385| 9934 | -947 | 10011 | -9150 | 18924 |  301  |
| 101| 137| 238| 79715| 8741 | -720 | 9786  | -7549 | 18675 |  780  |
| 101| 138| 239| 78134| 9652 | -569 | 9601  | -8417 | 18393 | 1253  |
| 101| 139| 240| 77759| 8446 | -42  | 9416  | -6802 | 18098 | 1737  |
| 101| 140| 241| 76499| 9331 |  12  | 9263  | -7640 | 17777 | 2212  |
| 101| 141| 242| 76450| 8120 |  439 | 9106  | -6019 | 17451 | 2697  |
| 101| 142| 243| 75535| 8985 |  495 | 8976  | -6834 | 17106 | 3172  |
| 101| 143| 244| 75832| 7774 |  920 | 8837  | -5213 | 16760 | 3656  |
| 101| 144| 245| 75278| 8625 |  978 | 8722  | -6010 | 16399 | 4130  |
| 101| 145| 246| 75931| 7418 | 1401 | 8595  | -4395 | 16043 | 4611  |
| 101| 146| 247| 75746| 8256 | 1459 | 8489  | -5179 | 15675 | 5082  |
| 101| 147| 248| 76760| 7056 | 1878 | 8370  | -3572 | 15313 | 5559  |
| 101| 148| 249| 76944| 7887 | 1936 | 8268  | -4347 | 14944 | 6026  |
| 101| 149| 250| 78319| 6696 | 2352 | 8152  | -2751 | 14583 | 6498  |
| 101| 150| 251| 78870| 7520 | 2409 | 8053  | -3519 | 14216 | 6958  |
| 101| 151| 252| 80602| 6339 | 2820 | 7938  | -1937 | 13859 | 7423  |
| 101| 152| 253| 81516| 7158 | 2875 | 7839  | -2701 | 13497 | 7877  |
| 101| 153| 254| 83598| 5989 | 3282 | 7724  | -1133 | 13147 | 8334  |
| 101| 154| 255| 84865| 6803 | 3334 | 7625  | -1895 | 12792 | 8780  |
| 101| 155| 256| 87290| 5646 | 3736 | 7510  | -343  | 12450 | 9229  |
| 101| 156| 257| 88903| 6458 | 3785 | 7410  | -1103 | 12104 | 9665  |
| 101| 157| 258| 91661| 5313 | 4181 | 7294  |  429 | 11772 | 10105 |
| 101| 158| 259| 93609| 6122 | 4227 | 7193  | -330  | 11436 | 10531 |
| 101| 159| 260| 96689| 4991 | 4616 | 7076  | 1185  | 11114 | 10960 |
| 101| 160| 261| 98962| 5798 | 4658 | 6973  |  423 | 10790 | 11376 |
| 101| 161| 262| 102352|5041 | 5041 | 6855  | 1919  | 10479 | 11793 |
| 101| 162| 263| 104935|5487 | 5079 | 6750  | 1155  | 10168 | 12198 |
| 101| 163| 264| 108622|4384 | 5455 | 6629  | 2631  | 9872  | 12603 |
| 101| 164| 265| 111502|5191 | 5488 | 6521  | 1862  | 9575  | 12996 |
| 101| 165| 266| 115470|4103 | 5856 | 6396  | 3315  | 9295  | 13389 |
| 101| 166| 267| 118628|4912 | 5884 | 6283  | 2539  | 9016  | 13768 |
| 101| 167| 268| 122857|3842 | 6245 | 6151  | 3968  | 8755  | 14148 |
| 101| 168| 269| 126272|4656 | 6268 | 6028  | 3183  | 8498  | 14515 |
| 101| 169| 270| 130738|3605 | 6620 | 5885  | 4585  | 8261  | 14881 |
| 101| 170| 271| 134383|4426 | 6638 | 5748  | 3788  | 8031  | 15234 |
|   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|
| Z | N | A | ΔM | S_n | S_p | Q_α | Q_β | S_{2n} | S_{2p} |
|---|---|---|----|-----|-----|-----|-----|--------|--------|
| 101 | 171 | 272 | 139056 | 3397 | 6982 | 5589 | 5159 | 7824 | 15587 |
| 101 | 172 | 273 | 142898 | 4229 | 6994 | 5433 | 4345 | 7627 | 15927 |
| 101 | 173 | 274 | 147741 | 3227 | 7330 | 5250 | 5682 | 7457 | 16267 |
| 101 | 174 | 275 | 151738 | 4074 | 7336 | 5065 | 4848 | 7302 | 16593 |
| 101 | 175 | 276 | 156706 | 3103 | 7665 | 4849 | 6145 | 7178 | 16920 |
| 101 | 176 | 277 | 160806 | 3971 | 7665 | 4627 | 5284 | 7075 | 17234 |
| 101 | 177 | 278 | 165840 | 3037 | 7986 | 4367 | 6536 | 7008 | 17548 |
| 101 | 178 | 279 | 169980 | 3931 | 7981 | 4093 | 5643 | 6968 | 17850 |
| 101 | 179 | 280 | 175011 | 3040 | 8294 | 3775 | 6843 | 6972 | 18153 |
| 101 | 180 | 281 | 179113 | 3969 | 8285 | 3435 | 5909 | 7010 | 18444 |
| 101 | 181 | 282 | 184054 | 3130 | 8591 | 3043 | 7050 | 7099 | 18737 |
| 101 | 182 | 283 | 188024 | 4101 | 8578 | 2619 | 6067 | 7231 | 19020 |
| 101 | 183 | 284 | 192772 | 3322 | 8878 | 2133 | 7140 | 7424 | 19306 |
| 101 | 184 | 285 | 196496 | 4347 | 8861 | 1604 | 6098 | 7670 | 19582 |
| 102 | 130 | 232 | 97997 | 10770 | -891 | 12311 | -13065 | 20048 | -3224 |
| 102 | 131 | 233 | 96769 | 9298 | -869 | 11686 | -11578 | 20069 | -2784 |
| 102 | 132 | 234 | 94122 | 10718 | -469 | 11502 | -12595 | 20017 | -2351 |
| 102 | 133 | 235 | 92987 | 9206 | -438 | 11155 | -11060 | 19924 | -1899 |
| 102 | 134 | 236 | 90491 | 10567 | -34 | 10873 | -12014 | 19774 | -1453 |
| 102 | 135 | 237 | 89535 | 9027 | 2 | 10599 | -10444 | 19595 | -991 |
| 102 | 136 | 238 | 87264 | 10341 | 409 | 10380 | -11347 | 19369 | -537 |
| 102 | 137 | 239 | 86552 | 8784 | 452 | 10161 | -9753 | 19125 | -68 |
| 102 | 138 | 240 | 84562 | 10060 | 861 | 9988 | -10616 | 18844 | 392 |
| 102 | 139 | 241 | 84140 | 8493 | 908 | 9809 | -9007 | 18554 | 866 |
| 102 | 140 | 242 | 82470 | 9741 | 1318 | 9668 | -9839 | 18234 | 1330 |
| 102 | 141 | 243 | 82370 | 8171 | 1369 | 9516 | -8223 | 17912 | 1808 |
| 102 | 142 | 244 | 81046 | 9395 | 1778 | 9398 | -9032 | 17566 | 2274 |
| 102 | 143 | 245 | 81289 | 7827 | 1831 | 9264 | -7414 | 17223 | 2752 |
| 102 | 144 | 246 | 80326 | 9034 | 2240 | 9159 | -8204 | 16861 | 3219 |
| 102 | 145 | 247 | 80925 | 7472 | 2295 | 9036 | -6590 | 16506 | 3696 |
| 102 | 146 | 248 | 80332 | 8664 | 2702 | 8939 | -7367 | 16136 | 4161 |
| 102 | 147 | 249 | 81291 | 7112 | 2757 | 8822 | -5760 | 15776 | 4636 |
| 102 | 148 | 250 | 81070 | 8292 | 3162 | 8729 | -6526 | 15404 | 5099 |
| 102 | 149 | 251 | 82390 | 6751 | 3218 | 8614 | -4930 | 15043 | 5570 |
| 102 | 150 | 252 | 82539 | 7921 | 3619 | 8522 | -5689 | 14673 | 6028 |
| 102 | 151 | 253 | 84217 | 6394 | 3674 | 8408 | -4105 | 14315 | 6495 |
| 102 | 152 | 254 | 84731 | 7556 | 4073 | 8316 | -4858 | 13950 | 6948 |
| 102 | 153 | 255 | 86760 | 6042 | 4126 | 8201 | -3288 | 13598 | 7408 |
| 102 | 154 | 256 | 87634 | 7197 | 4520 | 8106 | -4038 | 13240 | 7855 |
| 102 | 155 | 257 | 90007 | 5698 | 4571 | 7990 | -2484 | 12895 | 8308 |
| 102 | 156 | 258 | 91231 | 6847 | 4961 | 7894 | -3231 | 12545 | 8747 |
| 102 | 157 | 259 | 93939 | 5362 | 5010 | 7777 | -1693 | 12210 | 9191 |
| 102 | 158 | 260 | 95504 | 6507 | 5394 | 7678 | -2440 | 11869 | 9621 |
| Z | N  | A   | ΔM  | S_n | S_p | Q_α  | Q_β  | S_{2n} | S_{2p} |
|---|----|-----|-----|-----|-----|------|------|--------|--------|
| 102 | 159 | 261 | 98538 | 5037 | 5440 | 7559 | -920 | 11544 | 10057 |
| 102 | 160 | 262 | 100432 | 6177 | 5818 | 7459 | -1667 | 11214 | 10477 |
| 102 | 161 | 263 | 103780 | 4723 | 5861 | 7337 | -165 | 10900 | 10902 |
| 102 | 162 | 264 | 105991 | 5859 | 6232 | 7235 | -915 | 10583 | 11312 |
| 102 | 163 | 265 | 109640 | 4422 | 6271 | 7110 | 566 | 10282 | 11726 |
| 102 | 164 | 266 | 112155 | 5556 | 6636 | 7003 | -186 | 9979 | 12124 |
| 102 | 165 | 267 | 116088 | 4137 | 6670 | 6875 | 1273 | 9694 | 12526 |
| 102 | 166 | 268 | 118889 | 5271 | 7028 | 6762 | 513 | 9408 | 12913 |
| 102 | 167 | 269 | 123088 | 3871 | 7057 | 6626 | 1949 | 9142 | 13302 |
| 102 | 168 | 270 | 126153 | 5006 | 7408 | 6503 | 1181 | 8878 | 13676 |
| 102 | 169 | 271 | 130595 | 3629 | 7432 | 6356 | 2590 | 8636 | 14052 |
| 102 | 170 | 272 | 133897 | 4768 | 7774 | 6220 | 1810 | 8398 | 14412 |
| 102 | 171 | 273 | 138552 | 3416 | 7793 | 6057 | 3189 | 8185 | 14775 |
| 102 | 172 | 274 | 142059 | 4564 | 8127 | 5902 | 2392 | 7980 | 15122 |
| 102 | 173 | 275 | 146890 | 3240 | 8140 | 5715 | 3737 | 7804 | 15470 |
| 102 | 174 | 276 | 150560 | 4401 | 8466 | 5532 | 2919 | 7641 | 15803 |
| 102 | 175 | 277 | 155521 | 3110 | 8473 | 5313 | 4225 | 7511 | 16138 |
| 102 | 176 | 278 | 159303 | 4289 | 8791 | 5092 | 3380 | 7399 | 16457 |
| 102 | 177 | 279 | 164337 | 3037 | 8791 | 4830 | 4641 | 7326 | 16778 |
| 102 | 178 | 280 | 168167 | 4241 | 9102 | 4559 | 3762 | 7278 | 17083 |
| 102 | 179 | 281 | 173203 | 3035 | 9096 | 4241 | 4970 | 7276 | 17390 |
| 102 | 180 | 282 | 177004 | 4271 | 9398 | 3906 | 4050 | 7306 | 17683 |
| 102 | 181 | 283 | 181956 | 3118 | 9386 | 3514 | 5198 | 7389 | 17978 |
| 102 | 182 | 284 | 185632 | 4395 | 9680 | 3098 | 4228 | 7514 | 18258 |
| 102 | 183 | 285 | 190397 | 3306 | 9663 | 2615 | 5305 | 7701 | 18542 |
| 102 | 184 | 286 | 193834 | 4634 | 9950 | 2096 | 4275 | 7940 | 18812 |

103 132 235 104048 10741 -2636 11806 -11568 20442 -3106
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103 134 237 99979 10597 -2198 11190 -11017 20211 -2233
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103 137 240 95179 9197 -1338 10505 -8804 19575 -885
103 138 241 93147 10102 -1296 10337 -9677 19300 -435
103 139 242 92310 8908 -881 10169 -8086 19011 27
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103 146 249 87052 8718 569 9349 -6520 16606 3271
103 147 250 87597 7526 983 9240 -4928 16245 3741
103 148 251 87321 8347 1038 9150 -5697 15873 4201

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| \( Z \) | \( N \) | \( A \) | \( \Delta M \) | \( S_n \) | \( S_p \) | \( Q_\alpha \) | \( Q_\beta \) | \( S_{2n} \) | \( S_{2p} \) |
|---|---|---|---|---|---|---|---|---|---|
| 103 | 149 | 252 | 88229 | 7163 | 1450 | 9043 | -4114 | 15511 | 4668 |
| 103 | 150 | 253 | 88322 | 7977 | 1506 | 8953 | -4875 | 15141 | 5126 |
| 103 | 151 | 254 | 89590 | 6803 | 1915 | 8846 | -3303 | 14781 | 5590 |
| 103 | 152 | 255 | 90049 | 7612 | 1971 | 8754 | -4058 | 14415 | 6044 |
| 103 | 153 | 256 | 91673 | 6448 | 2376 | 8645 | -2498 | 14060 | 6503 |
| 103 | 154 | 257 | 92491 | 7252 | 2431 | 8550 | -3249 | 13700 | 6952 |
| 103 | 155 | 258 | 94463 | 6100 | 2833 | 8439 | -1703 | 13352 | 7405 |
| 103 | 156 | 259 | 95633 | 6900 | 2886 | 8342 | -2451 | 13000 | 7847 |
| 103 | 157 | 260 | 97944 | 5760 | 3284 | 8229 | -921 | 12660 | 8294 |
| 103 | 158 | 261 | 99458 | 6557 | 3334 | 8129 | -1666 | 12317 | 8729 |
| 103 | 159 | 262 | 102099 | 5429 | 3727 | 8013 | -153 | 11987 | 9167 |
| 103 | 160 | 263 | 103945 | 6225 | 3775 | 7911 | -898 | 11655 | 9594 |
| 103 | 161 | 264 | 106907 | 5109 | 4161 | 7792 | 597 | 11335 | 10023 |
| 103 | 162 | 265 | 109073 | 5904 | 4207 | 7686 | -148 | 11014 | 10439 |
| 103 | 163 | 266 | 112342 | 4802 | 4587 | 7564 | 1328 | 10707 | 10858 |
| 103 | 164 | 267 | 114815 | 5597 | 4628 | 7455 | 578 | 10400 | 11264 |
| 103 | 165 | 268 | 118375 | 4511 | 5002 | 7327 | 2034 | 10109 | 11672 |
| 103 | 166 | 269 | 121139 | 5307 | 5039 | 7211 | 1279 | 9819 | 12067 |
| 103 | 167 | 270 | 124972 | 4238 | 5405 | 7076 | 2712 | 9546 | 12463 |
| 103 | 168 | 271 | 128004 | 5038 | 5437 | 6950 | 1949 | 9277 | 12846 |
| 103 | 169 | 272 | 132087 | 3988 | 5796 | 6804 | 3356 | 9027 | 13228 |
| 103 | 170 | 273 | 135363 | 4795 | 5823 | 6665 | 2581 | 8784 | 13598 |
| 103 | 171 | 274 | 139666 | 3767 | 6174 | 6503 | 3959 | 8563 | 13967 |
| 103 | 172 | 275 | 143153 | 4585 | 6195 | 6344 | 3168 | 8352 | 14323 |
| 103 | 173 | 276 | 147641 | 3583 | 6538 | 6159 | 4512 | 8168 | 14678 |
| 103 | 174 | 277 | 151296 | 4415 | 6553 | 5973 | 3701 | 7999 | 15020 |
| 103 | 175 | 278 | 155923 | 3444 | 6887 | 5756 | 5005 | 7860 | 15360 |
| 103 | 176 | 279 | 159696 | 4297 | 6896 | 5532 | 4167 | 7742 | 15687 |
| 103 | 177 | 280 | 164405 | 3362 | 7221 | 5273 | 5426 | 7660 | 16013 |
| 103 | 178 | 281 | 168233 | 4242 | 7223 | 5002 | 4554 | 7605 | 16325 |
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| 103 | 180 | 283 | 176758 | 4265 | 7534 | 4353 | 4847 | 7617 | 16932 |
| 103 | 181 | 284 | 181404 | 3425 | 7841 | 3968 | 5992 | 7691 | 17228 |
| 103 | 182 | 285 | 185092 | 4383 | 7829 | 3554 | 5027 | 7809 | 17509 |
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| 103 | 184 | 287 | 193016 | 4614 | 8107 | 2567 | 5075 | 8218 | 18057 |

54
| Z | N  | A   | ΔM  | S_n | S_p  | Q_α  | Q_β  | S_{2n} | S_{2p} |
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| 104| 141| 245 | 96847| 8629| 519  | 10282|-9489 | 18815  | 100    |
| 104| 142| 246 | 95073| 9845| 919  | 10178|-10299| 18475  | 550    |
| 104| 143| 247 | 94854| 8290| 965  | 10059|-8702 | 18135  | 1012   |
| 104| 144| 248 | 93439| 9486| 1366 | 9968 |-9492 | 17776  | 1465   |
| 104| 145| 249 | 93573| 7937| 1415 | 9858 |-7897 | 17424  | 1930   |
| 104| 146| 250 | 92525| 9118| 1815 | 9773 |-8672 | 17056  | 2385   |
| 104| 147| 251 | 93019| 7577| 1687 | 9668 |-7082 | 16696  | 2850   |
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| 104| 152| 256 | 94717| 8007| 3166 | 9207 |-6190 | 14864  | 5137   |
| 104| 153| 257 | 95741| 6502| 3220 | 9098 |-4630 | 14509  | 5597   |
| 104| 154| 258 | 96166| 7645| 3613 | 9010 |-5371 | 14147  | 6045   |
| 104| 155| 259 | 98084| 6153| 3667 | 8898 |-3824 | 13798  | 6500   |
| 104| 156| 260 | 98865| 7290| 4056 | 8806 |-4561 | 13443  | 6943   |
| 104| 157| 261 | 101125| 5812| 4108 | 8692 |-3028 | 13102  | 7392   |
| 104| 158| 262 | 102252| 6943| 4494 | 8596 |-3763 | 12755  | 7829   |
| 104| 159| 263 | 104844| 5480| 4544 | 8479 |-2246 | 12423  | 8272   |
| 104| 160| 264 | 106309| 6605| 4925 | 8380 |-2979 | 12086  | 8700   |
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| 104| 162| 266 | 111013| 6279| 5348 | 8156 |-2212 | 11438  | 9555   |
| 104| 163| 267 | 114237| 4848| 5393 | 8032 |-730  | 11128  | 9981   |
| 104| 164| 268 | 116340| 5967| 5763 | 7924 |-1466 | 10815  | 10392  |
| 104| 165| 269 | 119859| 4552| 5805 | 7794 |-4    | 10520  | 10807  |
| 104| 166| 270 | 122259| 5671| 6168 | 7679 |-745  | 10224  | 11207  |
| 104| 167| 271 | 126054| 4275| 6206 | 7540 | 694  | 9947   | 11611  |
| 104| 168| 272 | 128730| 5395| 6562 | 7416 |-53   | 9671   | 12000  |
| 104| 169| 273 | 132781| 4020| 6595 | 7267 | 1360 | 9416   | 12392  |
| 104| 170| 274 | 135707| 5145| 6944 | 7129 | 601  | 9166   | 12768  |
| 104| 171| 275 | 139984| 3794| 6971 | 6963 | 1987 | 8939   | 13146  |
| 104| 172| 276 | 143128| 4927| 7313 | 6805 | 1212 | 8721   | 13509  |
| 104| 173| 277 | 147595| 3604| 7334 | 6617 | 2564 | 8531   | 13873  |
| 104| 174| 278 | 150917| 4749| 7667 | 6432 | 1769 | 8353   | 14221  |
| 104| 175| 279 | 155529| 3459| 7683 | 6213 | 3083 | 8208   | 14570  |
| 104| 176| 280 | 158978| 4622| 8007 | 5992 | 2261 | 8081   | 14903  |
| 104| 177| 281 | 163678| 3370| 8015 | 5731 | 3529 | 7993   | 15237  |
| 104| 178| 282 | 167192| 4557| 8330 | 5463 | 2674 | 7928   | 15553  |
| 104| 179| 283 | 171911| 3352| 8331 | 5148 | 3889 | 7909   | 15870  |
| 104| 180| 284 | 175411| 4570| 8636 | 4818 | 2992 | 7923   | 16170  |
| 104| 181| 285 | 180064| 3418| 8629 | 4435 | 4146 | 7989   | 16470  |
| 104| 182| 286 | 183457| 4678| 8923 | 4028 | 3196 | 8096   | 16753  |
| 104| 183| 287 | 187941| 3587| 8907 | 3559 | 4278 | 8265   | 17034  |
| 104| 184| 288 | 191114| 4898| 9191 | 3056 | 3266 | 8486   | 17298  |
| Z  | N   | A   | ΔM  | S_n | S_p  | Q_α  | Q_β | S_{2n} | S_{2p} |
|----|-----|-----|-----|-----|------|------|-----|--------|--------|
| 105| 136 | 241 | 113789 | 10799 | -2516 | 11384 | -11548 | 20663 | -2905 |
| 105| 137 | 242 | 112229 | 9631  | -2115 | 11191 | -9998  | 20430 | -2471 |
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| 105| 140 | 245 | 106336 | 10223 | -1641 | 10764 | -10152 | 19573 | -1164 |
| 105| 141 | 246 | 105373 | 9034  | -1236 | 10637 | -8576  | 19258 | -717  |
| 105| 142 | 247 | 103557 | 9887  | -1194 | 10538 | -9394  | 18922 | -275  |
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| 105| 144 | 249 | 101470 | 9532  | -742  | 10341 | -8611  | 18229 | 623   |
| 105| 145 | 250 | 101198 | 8344  | -336  | 10241 | -7032  | 17876 | 1079  |
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| 105| 147 | 252 | 100188 | 7984  | 119   | 10063 | -6238  | 17152 | 1986  |
| 105| 148 | 253 | 99941  | 8798  | 171   | 9984  | -7006  | 16782 | 2437  |
| 105| 149 | 254 | 99910  | 7622  | 577   | 9887  | -5438  | 16420 | 2896  |
| 105| 150 | 255 | 99552  | 8428  | 630   | 9806  | -6196  | 16051 | 3347  |
| 105| 151 | 256 | 100362 | 7261  | 1034  | 9708  | -4637  | 15690 | 3806  |
| 105| 152 | 257 | 100371 | 8062  | 1089  | 9624  | -5386  | 15323 | 4256  |
| 105| 153 | 258 | 101538 | 6904  | 1491  | 9522  | -3839  | 14966 | 4712  |
| 105| 154 | 259 | 101909 | 7700  | 1546  | 9434  | -4581  | 14605 | 5160  |
| 105| 155 | 260 | 103427 | 6553  | 1946  | 9329  | -3046  | 14253 | 5613  |
| 105| 156 | 261 | 104153 | 7344  | 2000  | 9237  | -3784  | 13898 | 6057  |
| 105| 157 | 262 | 106015 | 6209  | 2398  | 9128  | -2261  | 13553 | 6506  |
| 105| 158 | 263 | 107090 | 6997  | 2451  | 9031  | -2995  | 13206 | 6946  |
| 105| 159 | 264 | 109288 | 5872  | 2844  | 8918  | -1487  | 12870 | 7389  |
| 105| 160 | 265 | 110701 | 6658  | 2896  | 8818  | -2220  | 12531 | 7822  |
| 105| 161 | 266 | 113226 | 5546  | 3285  | 8701  | -727   | 12204 | 8258  |
| 105| 162 | 267 | 114967 | 6330  | 3335  | 8597  | -1459  | 11876 | 8684  |
| 105| 163 | 268 | 117807 | 5231  | 3718  | 8475  | 16     | 11561 | 9112  |
| 105| 164 | 269 | 119863 | 6014  | 3766  | 8365  | -716   | 11246 | 9529  |
| 105| 165 | 270 | 123004 | 4930  | 4144  | 8237  | 739    | 10945 | 9949  |
| 105| 166 | 271 | 125360 | 5715  | 4188  | 8119  | 2      | 10646 | 10356 |
| 105| 167 | 272 | 128784 | 4647  | 4559  | 7983  | 1438   | 10362 | 10765 |
| 105| 168 | 273 | 131420 | 5435  | 4599  | 7856  | 694    | 10082 | 11162 |
| 105| 169 | 274 | 135105 | 4385  | 4964  | 7708  | 2105   | 9821  | 11559 |
| 105| 170 | 275 | 137996 | 5180  | 4999  | 7567  | 1351   | 9566  | 11944 |
| 105| 171 | 276 | 141915 | 4152  | 5357  | 7403  | 2734   | 9332  | 12329 |
| 105| 172 | 277 | 145030 | 4956  | 5387  | 7242  | 1966   | 9109  | 12700 |
| 105| 173 | 278 | 149147 | 3954  | 5736  | 7055  | 3317   | 8910  | 13071 |
| 105| 174 | 279 | 152445 | 4773  | 5760  | 6867  | 2528   | 8727  | 13428 |
| 105| 175 | 280 | 156716 | 3800  | 6101  | 6650  | 3841   | 8573  | 13784 |
| 105| 176 | 281 | 160148 | 4639  | 6118  | 6427  | 3026   | 8439  | 14126 |
| 105| 177 | 282 | 164517 | 3702  | 6450  | 6169  | 4294   | 8341  | 14465 |
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| Z  | N  | A  | ΔM   | S_n | S_p | Q_α | Q_β | S_{2n} | S_{2p} |
|----|----|----|------|-----|-----|-----|-----|--------|--------|
| 105| 179| 284| 172419| 3673| 6780| 5589| 4662| 8240   | 15112  |
| 105| 180| 285| 175918| 4572| 6782| 5259| 3772| 8245   | 15418  |
| 105| 181| 286| 180260| 3728| 7092| 4882| 4926| 8301   | 15721  |
| 105| 182| 287| 183662| 4669| 7084| 4478| 3984| 8398   | 16008  |
| 105| 183| 288| 187847| 3886| 7382| 4018| 5067| 8555   | 16290  |
| 105| 184| 289| 191038| 4880| 7364| 3521| 4061| 8766   | 16555  |
| 106| 138| 244| 117797| 10916| -740| 11388| -12987| 20572 | -2822  |
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| 106| 142| 248| 110746| 9190 | 1401| 10915| -11509| 19345 | -1095  |
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| 106| 144| 250| 108230| 9923 | 529 | 10732| -10727| 18658 | -213   |
| 106| 145| 251| 107915| 8386 | 571 | 10635| -9152 | 18310 | 235    |
| 106| 146| 252| 106427| 9559 | 963 | 10563| -9928 | 17946 | 676    |
| 106| 147| 253| 106468| 8030 | 1009| 10470| -8357 | 17589 | 1128   |
| 106| 148| 254| 105349| 9190 | 1401| 10398| -9119 | 17220 | 1572   |
| 106| 149| 255| 105749| 7671 | 1450| 10305| -7555 | 16861 | 2027   |
| 106| 150| 256| 105000| 8820 | 1841| 10231| -8306 | 16491 | 2471   |
| 106| 151| 257| 105758| 7312 | 1892| 10135| -6749 | 16133 | 2927   |
| 106| 152| 258| 105377| 8452 | 2283| 10058| -7492 | 15765 | 3372   |
| 106| 153| 259| 106491| 6957 | 2335| 9958 | -5945 | 15410 | 3827   |
| 106| 154| 260| 106473| 8089 | 2725| 9876 | -6680 | 15046 | 4271   |
| 106| 155| 261| 107938| 6606 | 2778| 9772 | -5145 | 14695 | 4724   |
| 106| 156| 262| 108277| 7732 | 3165| 9685 | -5874 | 14338 | 5166   |
| 106| 157| 263| 110086| 6262 | 3218| 9576 | -4351 | 13994 | 5616   |
| 106| 158| 264| 110776| 7381 | 3603| 9485 | -5076 | 13643 | 6054   |
| 106| 159| 265| 112921| 5925 | 3655| 9371 | -3566 | 13307 | 6500   |
| 106| 160| 266| 113953| 7039 | 4036| 9275 | -4288 | 12965 | 6933   |
| 106| 161| 267| 116427| 5598 | 4088| 9158 | -2793 | 12637 | 7373   |
| 106| 162| 268| 117790| 6707 | 4465| 9056 | -3514 | 12305 | 7800   |
| 106| 163| 269| 120580| 5281 | 4515| 8933 | -2034 | 11988 | 8234   |
| 106| 164| 270| 122264| 6387 | 4888| 8825 | -2756 | 11669 | 8654   |
| 106| 165| 271| 125357| 4978 | 4935| 8695 | -1294 | 11365 | 9079   |
| 106| 166| 272| 127346| 6082 | 5303| 8580 | -2019 | 11061 | 9491   |
| 106| 167| 273| 130725| 4691 | 5347| 8441 | -578  | 10774 | 9906   |
| 106| 168| 274| 133000| 5797 | 5709| 8315 | -1308 | 10488 | 10308  |
| 106| 169| 275| 136645| 4426 | 5749| 8165 | 109   | 10223 | 10713  |
| 106| 170| 276| 139180| 5535 | 6104| 8025 | -630  | 9961  | 11104  |
| 106| 171| 277| 143064| 4188 | 6140| 7857 | 760   | 9723  | 11498  |
| 106| 172| 278| 145830| 5304 | 6488| 7698 | 7     | 9493  | 11875  |
| 106| 173| 279| 149917| 3984 | 6519| 7508 | 1366  | 9289  | 12256  |
| 106| 174| 280| 152875| 5113 | 6859| 7321 | 594   | 9097  | 12620  |
| Z  | N  | A   | ΔM   | S_n | S_p  | Q_α  | Q_δ  | S_{2n} | S_{2p} |
|----|----|-----|------|-----|------|------|------|--------|--------|
| 106| 175| 281 | 157121| 3824| 6883 | 7101 | 1915 | 8937   | 12985  |
| 106| 176| 282 | 160222| 4970| 7214 | 6880 | 1118 | 8795   | 13333  |
| 106| 177| 283 | 164574| 3719| 7232 | 6620 | 2395 | 8690   | 13682  |
| 106| 178| 284 | 167756| 4888| 7553 | 6353 | 1564 | 8608   | 14013  |
| 106| 179| 285 | 172145| 3682| 7562 | 6042 | 2790 | 8571   | 14343  |
| 106| 180| 286 | 175334| 4882| 7873 | 5717 | 1918 | 8565   | 14655  |
| 106| 181| 287 | 179677| 3727| 7872 | 5341 | 3082 | 8610   | 14964  |
| 106| 182| 288 | 182780| 4968| 8170 | 4944 | 2158 | 8696   | 15254  |
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| 107| 144| 251 | 117068| 9961 | -1548| 11085| -9831 | 19091  | -1019  |
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| 107| 146| 253 | 114825| 9601 | -1109| 10930| -9056 | 18384  | -146   |
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| 107| 148| 255 | 113304| 9235 | -666 | 10777| -8270 | 17664  | 735    |
| 107| 149| 256 | 113306| 8069 | -268 | 10692| -6721 | 17305  | 1181   |
| 107| 150| 257 | 112508| 8869 | -219 | 10622| -7478 | 16938  | 1622   |
| 107| 151| 258 | 112869| 7710 | 178  | 10534| -5936 | 16579  | 2071   |
| 107| 152| 259 | 112436| 8503 | 229  | 10459| -6683 | 16214  | 2512   |
| 107| 153| 260 | 113153| 7354 | 626  | 10366| -5150 | 15858  | 2962   |
| 107| 154| 261 | 113083| 8141 | 678  | 10286| -5889 | 15496  | 3404   |
| 107| 155| 262 | 114151| 7002 | 1075| 10188| -4366 | 15144  | 3853   |
| 107| 156| 263 | 114437| 7785 | 1128| 10103| -5098 | 14788  | 4294   |
| 107| 157| 264 | 115852| 6656 | 1522| 10000| -3586 | 14442  | 4741   |
| 107| 158| 265 | 116488| 7435 | 1576| 9909 | -4313 | 14091  | 5180   |
| 107| 159| 266 | 118242| 6317 | 1968| 9801 | -2814 | 13752  | 5624   |
| 107| 160| 267 | 119220| 7093 | 2022| 9705 | -3537 | 13410  | 6059   |
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| 107| 165| 272 | 129365| 5358 | 3281| 9133 | -565 | 11798  | 8216   |
| 107| 166| 273 | 131304| 6132 | 3330| 9015 | -1288 | 11491  | 8633   |
| 107| 167| 274 | 134308| 5067 | 3706| 8879 | 147  | 11199  | 9053   |
| 107| 168| 275 | 136535| 5843 | 3753| 8750 | -579 | 10910  | 9462   |
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| 107| 170| 277 | 142303| 5578 | 4166| 8458 | 99   | 10375  | 10271  |
| 107| 171| 278 | 145823| 4551 | 4529| 8292 | 1486| 10130  | 10670  |
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| Z  | N   | A   | ΔM     | S_n  | S_p  | Q_α   | Q_β   | S_{2n} | S_{2p} |
|----|-----|-----|--------|------|------|-------|-------|--------|--------|
| 107| 173 | 280 | 152281 | 4341 | 4925 | 7940  | 2096  | 9684   | 11444  |
| 107| 174 | 281 | 155206 | 5146 | 4958 | 7750  | 1330  | 9487   | 11817  |
| 107| 175 | 282 | 159104 | 4172 | 5306 | 7532  | 2651  | 9319   | 12189  |
| 107| 176 | 283 | 162178 | 4997 | 5332 | 7308  | 1861  | 9170   | 12547  |
| 107| 177 | 284 | 166191 | 4058 | 5671 | 7050  | 3139  | 9055   | 12903  |
| 107| 178 | 285 | 169355 | 4043 | 6344 | 5777  | 3846  | 8936   | 14216  |
| 107| 179 | 286 | 173415 | 4892 | 6028 | 6148  | 2680  | 8902   | 13901  |
| 107| 180 | 287 | 176594 | 4176 | 6646 | 4934  | 4027  | 9144   | 14805  |
| 107| 181 | 288 | 180622 | 4043 | 6018 | 5777  | 3846  | 8936   | 14216  |
| 107| 182 | 289 | 183725 | 4997 | 6344 | 5382  | 2932  | 9011   | 14514  |
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| 107| 184 | 291 | 190540 | 5151 | 6632 | 4453  | 3049  | 9328   | 15076  |
| 108| 142 | 250 | 127988 | 10687| -682 | 11614 | -12662| 20175  | -2663  |
| 108| 143 | 251 | 126899 | 9160 | -652 | 11522 | -11111| 19848  | -2228  |
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| 108| 150 | 258 | 118805 | 9252 | 991  | 11031 | -9557 | 17364  | 772    |
| 108| 151 | 259 | 119120 | 7756 | 1037 | 10946 | -8018 | 17009  | 1216   |
| 108| 152 | 260 | 118304 | 8887 | 1421 | 10879 | -8760 | 16644  | 1651   |
| 108| 153 | 261 | 118972 | 7402 | 1470 | 10789 | -7230 | 16290  | 2096   |
| 108| 154 | 262 | 118518 | 8525 | 1854 | 10716 | -7963 | 15928  | 2532   |
| 108| 155 | 263 | 119536 | 7053 | 1904 | 10620 | -6442 | 15579  | 2979   |
| 108| 156 | 264 | 119439 | 8168 | 2287 | 10541 | -7167 | 15221  | 3416   |
| 108| 157 | 265 | 120802 | 6708 | 2339 | 10439 | -5656 | 14876  | 3862   |
| 108| 158 | 266 | 121056 | 7816 | 2720 | 10354 | -6376 | 14525  | 4297   |
| 108| 159 | 267 | 122757 | 6370 | 2773 | 10246 | -4876 | 14187  | 4741   |
| 108| 160 | 268 | 123356 | 7473 | 3153 | 10154 | -5591 | 13843  | 5175   |
| 108| 161 | 269 | 125387 | 6039 | 3206 | 10040 | -4104 | 13512  | 5617   |
| 108| 162 | 270 | 126321 | 7137 | 3583 | 9942  | -4815 | 13177  | 6047   |
| 108| 163 | 271 | 128673 | 5719 | 3636 | 9821  | -3342 | 12856  | 6485   |
| 108| 164 | 272 | 129931 | 6813 | 4010 | 9715  | -4051 | 12532  | 6911   |
| 108| 165 | 273 | 132592 | 5410 | 4062 | 9586  | -2594 | 12223  | 7343   |
| 108| 166 | 274 | 134160 | 6502 | 4432 | 9471  | -3304 | 11913  | 7763   |
| 108| 167 | 275 | 137115 | 5116 | 4482 | 9332  | -1865 | 11619  | 8188   |
| 108| 168 | 276 | 138976 | 6209 | 4848 | 9205  | -2579 | 11326  | 8601   |
| 108| 169 | 277 | 142204 | 4843 | 4895 | 9053  | -1160 | 11053  | 9019   |
| 108| 170 | 278 | 144336 | 5939 | 5256 | 8911  | -1882 | 10783  | 9422   |
| 108| 171 | 279 | 147811 | 4595 | 5300 | 8741  | -488  | 10535  | 9830   |
| 108| 172 | 280 | 150184 | 5698 | 5655 | 8579  | -1221 | 10293  | 10223  |
| Z  | N  | A  | ΔM     | S_n | S_p  | Q_α  | Q_β  | S_{2n} | S_{2p} |
|----|----|----|--------|-----|------|------|------|--------|--------|
| 108| 173| 281| 153875 | 4380| 5694 | 8386 | 143  | 10078  | 10619  |
| 108| 174| 282| 156453 | 5493| 6041 | 8197 | -606 | 9874   | 10999  |
| 108| 175| 283| 160317 | 4206| 6075 | 7975 | 723  | 9700   | 11382  |
| 108| 176| 284| 163052 | 5336| 6415 | 7752 | -50  | 9543   | 11747  |
| 108| 177| 285| 167038 | 4085| 6442 | 7491 | 1237 | 9421   | 12113  |
| 108| 178| 286| 169872 | 5210| 7108 | 6593 | 825  | 9239   | 13136  |
| 108| 179| 287| 173914 | 4028| 6790 | 6915 | 1670 | 9266   | 12809  |
| 108| 180| 288| 176775 | 5210| 7117 | 6223 | 2003 | 9263   | 13461  |
| 108| 181| 289| 180793 | 4052| 7117 | 6593 | 825  | 9239   | 13136  |
| 108| 182| 290| 183593 | 5272| 7421 | 5833 | 1108 | 9324   | 13765  |
| 108| 183| 291| 187491 | 4173| 7418 | 5388 | 2216 | 9445   | 14063  |
| 108| 184| 292| 190122 | 5210| 7117 | 5833 | 1108 | 9324   | 13765  |
| 109| 144| 253| 134238 | 10370| -2319| 11796| -10997| 19914  | -2592  |
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| 109| 150| 259| 127139 | 9294 | -1044| 11409| -8720 | 17795  | -52    |
| 109| 151| 260| 127064 | 8145 | -655 | 11333| -7197 | 17440  | 382    |
| 109| 152| 261| 126202 | 8932 | -609 | 11269| -7945 | 17078  | 811    |
| 109| 153| 262| 126481 | 7792 | -219 | 11187| -6429 | 16725  | 1250   |
| 109| 154| 263| 125978 | 8574 | -171 | 11116| -7168 | 16367  | 1682   |
| 109| 155| 264| 126606 | 7442 | 218  | 11028| -5661 | 16017  | 2122   |
| 109| 156| 265| 126458 | 8219 | 269  | 10950| -6391 | 15662  | 2556   |
| 109| 157| 266| 127432 | 7097 | 658  | 10855| -4893 | 15316  | 2997   |
| 109| 158| 267| 127634 | 7869 | 711  | 10771| -5616 | 14967  | 3431   |
| 109| 159| 268| 128947 | 6758 | 1099 | 10669| -4128 | 14628  | 3873   |
| 109| 160| 269| 129491 | 7527 | 1153 | 10578| -4845 | 14285  | 4306   |
| 109| 161| 270| 131136 | 6426 | 1539 | 10469| -3368 | 13953  | 4746   |
| 109| 162| 271| 132015 | 7192 | 1594 | 10370| -4081 | 13618  | 5178   |
| 109| 163| 272| 133983 | 6103 | 1978 | 10253| -2617 | 13295  | 5615   |
| 109| 164| 273| 135186 | 6868 | 2033 | 10145| -3327 | 12971  | 6044   |
| 109| 165| 274| 137465 | 5792 | 2415 | 10019| -1877 | 12660  | 6477   |
| 109| 166| 275| 138980 | 6556 | 2469 | 9902 | -2587 | 12348  | 6901   |
| 109| 167| 276| 141555 | 5495 | 2848 | 9765 | -1154 | 12052  | 7330   |
| 109| 168| 277| 143364 | 6262 | 2900 | 9635 | -1866 | 11758  | 7748   |
| 109| 169| 278| 146218 | 5217 | 3274 | 9485 | -452  | 11480  | 8170   |
| 109| 170| 279| 148299 | 5989 | 3325 | 9338 | -1171 | 11207  | 8581   |
| 109| 171| 280| 151406 | 4965 | 3694 | 9170 | 219   | 10954  | 8994   |
| 109| 172| 281| 153732 | 5745 | 3741 | 9003 | -509  | 10710  | 9396   |
| 109| 173| 282| 157059 | 4743 | 4104 | 8811 | 853   | 10488  | 9799   |
| 109| 174| 283| 159594 | 5536 | 4147 | 8618 | 108   | 10280  | 10189  |
| Z | N  | A   | ΔM  | S_n | S_p  | Q_α  | Q_δ  | S_{2n} | S_{2p} |
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| 109| 175| 284 | 163103 | 4562 | 4503 | 8397 | 1437 | 10099 | 10579 |
| 109| 176| 285 | 165801 | 5373 | 4540 | 8170 | 671  | 9936  | 10955 |
| 109| 177| 286 | 169439 | 4432 | 4887 | 7910 | 1959 | 9806  | 11330 |
| 109| 178| 287 | 172244 | 5266 | 4916 | 7640 | 1163 | 9699  | 11688 |
| 109| 179| 288 | 175949 | 4365 | 5253 | 7333 | 2403 | 9632  | 12044 |
| 109| 180| 289 | 178789 | 5231 | 5274 | 7010 | 1568 | 9596  | 12382 |
| 109| 181| 290 | 182484 | 4376 | 5598 | 6643 | 2750 | 9607  | 12715 |
| 109| 182| 291 | 185274 | 5281 | 5607 | 6255 | 1865 | 9657  | 13028 |
| 109| 183| 292 | 188864 | 4482 | 5916 | 5817 | 2978 | 9763  | 13334 |
| 109| 184| 293 | 191500 | 5435 | 5910 | 5349 | 2031 | 9917  | 13618 |
| 110| 146| 256 | 139095 | 10386 | -645 | 12040 | -12293 | 19616 | -2546 |
| 110| 147| 257 | 138281 | 8885 | -614 | 11974 | -10766 | 19271 | -2128 |
| 110| 148| 258 | 136323 | 10029 | -242 | 11927 | -11535 | 18914 | -1718 |
| 110| 149| 259 | 135859 | 8535 | -207 | 11859 | -10012 | 18564 | -1294 |
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| 110| 151| 261 | 134148 | 8184 | 205  | 11736 | -9249  | 17853 | -450  |
| 110| 152| 262 | 132911 | 9308 | 580  | 11680 | -9993  | 17493 | -29   |
| 110| 153| 263 | 133146 | 7835 | 623  | 11601 | -8482  | 17144 | 403   |
| 110| 154| 264 | 132268 | 8950 | 999  | 11539 | -9216  | 16785 | 828   |
| 110| 155| 265 | 132850 | 7489 | 1045 | 11452 | -7712  | 16439 | 1263  |
| 110| 156| 266 | 132325 | 8595 | 1422 | 11382 | -8437  | 16084 | 1691  |
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| 110| 158| 268 | 133075 | 8246 | 1847 | 11211 | -7658  | 15393 | 2558  |
| 110| 159| 269 | 134337 | 6809 | 1899 | 11110 | -6172  | 15056 | 2998  |
| 110| 160| 270 | 134505 | 7903 | 2275 | 11023 | -6882  | 14713 | 3428  |
| 110| 161| 271 | 136096 | 6479 | 2328 | 10914 | -5406  | 14382 | 3868  |
| 110| 162| 272 | 136600 | 7567 | 2703 | 10819 | -6111  | 14047 | 4298  |
| 110| 163| 273 | 138513 | 6157 | 2758 | 10701 | -4646  | 13725 | 4737  |
| 110| 164| 274 | 139343 | 7242 | 3132 | 10597 | -5348  | 13399 | 5165  |
| 110| 165| 275 | 141567 | 5846 | 3186 | 10469 | -3896  | 13088 | 5602  |
| 110| 166| 276 | 142710 | 6928 | 3558 | 10354 | -4596  | 12775 | 6028  |
| 110| 167| 277 | 145231 | 5550 | 3613 | 10214 | -3160  | 12478 | 6461  |
| 110| 168| 278 | 146671 | 6631 | 3982 | 10085 | -3862  | 12181 | 6883  |
| 110| 169| 279 | 149471 | 5271 | 4036 | 9931  | -2444  | 11903 | 7311  |
| 110| 170| 280 | 151186 | 6355 | 4401 | 9785  | -3150  | 11627 | 7727  |
| 110| 171| 281 | 154241 | 5016 | 4453 | 9612  | -1754  | 11372 | 8147  |
| 110| 172| 282 | 156206 | 6106 | 4814 | 9445  | -2469  | 11122 | 8555  |
| 110| 173| 283 | 159485 | 4792 | 4862 | 9249  | -1100  | 10898 | 8967  |
| 110| 174| 284 | 161665 | 5891 | 5217 | 9055  | -1829  | 10683 | 9365  |
| 110| 175| 285 | 165129 | 4607 | 5262 | 8829  | -492   | 10498 | 9765  |
| 110| 176| 286 | 167479 | 5721 | 5610 | 8601  | -1242  | 10328 | 10150 |
| 110| 177| 287 | 171080 | 4470 | 5648 | 8338  | 55    | 10191 | 10535 |
| 110| 178| 288 | 173546 | 5605 | 5986 | 8068  | -722   | 10076 | 10903 |
| Z  | N  | A   | ΔM  | S_n | S_p  | Q_α | Q_β | S_{2n} | S_{2p} |
|----|----|-----|-----|-----|-----|-----|-----|-------|-------|
| 110| 179| 289 | 177221 | 4395 | 6017 | 7758 | 528 | 10001 | 11270 |
| 110| 180| 290 | 179734 | 5558 | 6344 | 7437 | -287 | 9954  | 11618 |
| 110| 181| 291 | 183409 | 4396 | 6364 | 7070 | 906  | 9954  | 11962 |
| 110| 182| 292 | 185886 | 5594 | 6677 | 6685 | 42   | 9991  | 12284 |
| 110| 183| 293 | 189468 | 4488 | 6684 | 6249 | 1169 | 10083 | 12600 |
| 110| 184| 294 | 191808 | 5731 | 6981 | 5790 | 244  | 10220 | 12891 |
| 111| 148| 259 | 145871 | 10058| -2258| 12286| -10664| 19319 | -2501 |
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| 111| 153| 264 | 141484 | 8216 | -1048| 11995| -7676 | 17563 | -425  |
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| 111| 155| 266 | 140763 | 7870 | -623 | 11856| -6927 | 16863 | 421   |
| 111| 156| 267 | 140192 | 8642 | -577 | 11789| -7658 | 16513 | 844   |
| 111| 157| 268 | 140734 | 7529 | -194 | 11702| -6176 | 16171 | 1276  |
| 111| 158| 269 | 140509 | 8296 | -145 | 11625| -6899 | 15825 | 1702  |
| 111| 159| 270 | 141387 | 7192 | 238  | 11530| -5425 | 15489 | 2137  |
| 111| 160| 271 | 141503 | 7955 | 290  | 11444| -6139 | 15148 | 2566  |
| 111| 161| 272 | 142712 | 6862 | 673  | 11339| -4675 | 14818 | 3002  |
| 111| 162| 273 | 143160 | 7622 | 728  | 11244| -5383 | 14485 | 3432  |
| 111| 163| 274 | 144691 | 6540 | 1111 | 11130| -3928 | 14163 | 3869  |
| 111| 164| 275 | 145464 | 7298 | 1167 | 11024| -4632 | 13838 | 4299  |
| 111| 165| 276 | 147307 | 6228 | 1549 | 10899| -3189 | 13527 | 4736  |
| 111| 166| 277 | 148392 | 6986 | 1606 | 10781| -3890 | 13215 | 5165  |
| 111| 167| 278 | 150533 | 5930 | 1987 | 10642| -2461 | 12916 | 5600  |
| 111| 168| 279 | 151915 | 6689 | 2044 | 10510| -3162 | 12619 | 6027  |
| 111| 169| 280 | 154337 | 5649 | 2422 | 10356| -1750 | 12338 | 6458  |
| 111| 170| 281 | 155996 | 6412 | 2479 | 10206| -2454 | 12061 | 6881  |
| 111| 171| 282 | 158676 | 5391 | 2854 | 10033| -1063 | 11803 | 7307  |
| 111| 172| 283 | 160586 | 6161 | 2909 | 9861 | -1774 | 11552 | 7724  |
| 111| 173| 284 | 163495 | 5162 | 3279 | 9664 | -408  | 11323 | 8142  |
| 111| 174| 285 | 165622 | 5944 | 3332 | 9465 | -1132 | 11106 | 8550  |
| 111| 175| 286 | 168722 | 4971 | 3696 | 9237 | 203   | 10915 | 8958  |
| 111| 176| 287 | 171024 | 5768 | 3744 | 9005 | -540  | 10740 | 9354  |
| 111| 177| 288 | 174269 | 4827 | 4100 | 8740 | 758   | 10596 | 9748  |
| 111| 178| 289 | 176693 | 5647 | 4142 | 8467 | -11   | 10474 | 10128 |
| 111| 179| 290 | 180022 | 4742 | 4488 | 8157 | 1242  | 10389 | 10505 |
| 111| 180| 291 | 182502 | 5590 | 4520 | 7833 | 436   | 10333 | 10865 |
| 111| 181| 292 | 185843 | 4730 | 4855 | 7468 | 1634  | 10321 | 11219 |
| 111| 182| 293 | 188299 | 5615 | 4875 | 7084 | 782   | 10345 | 11553 |
| 111| 183| 294 | 191563 | 4807 | 5193 | 6653 | 1914  | 10422 | 11878 |
| 111| 184| 295 | 193897 | 5737 | 5199 | 6197 | 1003  | 10544 | 12180 |
| Z  | N  | A  | ΔM | S_n | S_p  | Q_α  | Q_β  | S_{2n} | S_{2p} |
|----|----|----|-----|-----|------|-------|-------|--------|--------|
| 112| 150| 262| 151325| 10065| -638 | 12577 | -11939 | 19004 | -2485 |
| 112| 151| 263| 150801| 8595 | -607 | 12517 | -10443 | 18661 | -2075 |
| 112| 152| 264| 149160| 9712 | -242 | 12473 | -11191 | 18307 | -1671 |
| 112| 153| 265| 148979| 8252 | -206 | 12406 | -9701  | 17964 | -1254 |
| 112| 154| 266| 147691| 9359 | 160  | 12354 | -10438 | 17612 | -845  |
| 112| 155| 267| 147851| 7911 | 201  | 12279 | -8954  | 17271 | -422  |
| 112| 156| 268| 146911| 9011 | 570  | 12128 | -9680  | 16922 | -7    |
| 112| 157| 269| 147408| 7574 | 614  | 12133 | -8202  | 16585 | 420   |
| 112| 158| 270| 146813| 8666 | 985  | 12062 | -8920  | 16240 | 840   |
| 112| 159| 271| 147643| 7241 | 1033 | 11967 | -7449  | 15908 | 1271  |
| 112| 160| 272| 147387| 8327 | 1405 | 11886 | -8158  | 15568 | 1695  |
| 112| 161| 273| 148544| 6914 | 1456 | 11782 | -6695  | 15241 | 2130  |
| 112| 162| 274| 148620| 7994 | 1829 | 11690 | -7397  | 14909 | 2557  |
| 112| 163| 275| 150096| 6594 | 1883 | 11575 | -5943  | 14589 | 2995  |
| 112| 164| 276| 150496| 7671 | 2256 | 11471 | -6639  | 14266 | 3424  |
| 112| 165| 277| 152282| 6285 | 2313 | 11343 | -5197  | 13956 | 3863  |
| 112| 166| 278| 152995| 7358 | 2686 | 11227 | -5889  | 13644 | 4292  |
| 112| 167| 279| 155077| 5988 | 2744 | 11085 | -4459  | 13347 | 4731  |
| 112| 168| 280| 156088| 7061 | 3116 | 10952 | -5149  | 13049 | 5161  |
| 112| 169| 281| 158450| 5708 | 3175 | 10794 | -3735  | 12769 | 5598  |
| 112| 170| 282| 159739| 6782 | 3545 | 10643 | -4428  | 12490 | 6025  |
| 112| 171| 283| 162360| 5450 | 3604 | 10464 | -3032  | 12232 | 6458  |
| 112| 172| 284| 163903| 6528 | 3971 | 10291 | -3731  | 11978 | 6881  |
| 112| 173| 285| 166754| 5220 | 4029 | 10088 | -2359  | 11748 | 7308  |
| 112| 174| 286| 168519| 6307 | 4392 | 9887  | -3069  | 11527 | 7724  |
| 112| 175| 287| 171564| 5025 | 4446 | 9654  | -1725  | 11332 | 8143  |
| 112| 176| 288| 173510| 6125 | 4803 | 9419  | -2453  | 11151 | 8547  |
| 112| 177| 289| 176704| 4877 | 4853 | 9149  | -1145  | 11002 | 8953  |
| 112| 178| 290| 178780| 5995 | 5202 | 8875  | -1898  | 10872 | 9344  |
| 112| 179| 291| 182066| 4785 | 5244 | 8560  | -633   | 10780 | 9733  |
| 112| 180| 292| 184208| 5929 | 5582 | 8237  | -1420  | 10714 | 10103 |
| 112| 181| 293| 187516| 4763 | 5615 | 7870  | -208   | 10692 | 10470 |
| 112| 182| 294| 189648| 5939 | 5939 | 7489  | -1040  | 10702 | 10815 |
| 112| 183| 295| 192893| 4826 | 5959 | 7059  | 107    | 10765 | 11152 |
| 112| 184| 296| 194920| 6044 | 6265 | 6609  | -781   | 10870 | 11465 |

113| 152| 265| 158681| 9742 | -2231 | 12858 | -10363 | 18706 | -2473 |
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| 113| 154| 267| 156805| 9395 | -1825 | 12750 | -9634  | 18018 | -1664 |
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| 113| 156| 269| 155611| 9052 | -1411 | 12623 | -8898  | 17336 | -841  |
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| Z  | N   | A   | ΔM  | S_n | S_p | Q_α | Q_β | S_{2n} | S_{2p} |
|----|-----|-----|-----|-----|-----|-----|-----|------|------|
| 113| 159 | 272 | 155545 | 7618 | -613 | 12386 | -6701 | 16330 | 420  |
| 113| 160 | 273 | 155239 | 8377 | -563 | 12305 | -7415 | 15995 | 841  |
| 113| 161 | 274 | 156017 | 7293 | -184 | 12205 | -5965 | 15670 | 1272 |
| 113| 162 | 275 | 156040 | 8048 | -131 | 12112 | -6671 | 15341 | 1698 |
| 113| 163 | 276 | 157136 | 6975 | 249  | 11999 | -5229 | 15023 | 2133 |
| 113| 164 | 277 | 157479 | 7728 | 306  | 11893 | -5928 | 14703 | 2562 |
| 113| 165 | 278 | 158884 | 6666 | 687  | 11767 | -4495 | 14394 | 3000 |
| 113| 166 | 279 | 159536 | 7418 | 747  | 11647 | -5189 | 14085 | 3433 |
| 113| 167 | 280 | 161237 | 6370 | 1128 | 11505 | -3768 | 13789 | 3873 |
| 113| 168 | 281 | 162186 | 7123 | 1190 | 11368 | -459  | 13493 | 4307 |
| 113| 169 | 282 | 164168 | 6089 | 1571 | 11209 | -3052 | 13212 | 4747 |
| 113| 170 | 283 | 165393 | 6845 | 1635 | 11053 | -3744 | 12935 | 5180 |
| 113| 171 | 284 | 167635 | 5829 | 1164 | 10872 | -2354 | 12675 | 5619 |
| 113| 172 | 285 | 169114 | 6592 | 2078 | 10693 | -3050 | 12422 | 6049 |
| 113| 173 | 286 | 171588 | 5596 | 2455 | 10487 | -1681 | 12189 | 6484 |
| 113| 174 | 287 | 173290 | 6369 | 2517 | 10279 | -2387 | 11966 | 6909 |
| 113| 175 | 288 | 175963 | 5398 | 2889 | 10043 | -1046 | 11767 | 7336 |
| 113| 176 | 289 | 177850 | 6185 | 2949 | 9802  | -1767 | 11583 | 7752 |
| 113| 177 | 290 | 180678 | 5243 | 3315 | 9530  | -459  | 11428 | 8168 |
| 113| 178 | 291 | 182699 | 6049 | 3369 | 9250  | -1204 | 11292 | 8571 |
| 113| 179 | 292 | 185629 | 5142 | 3726 | 8935  | 62    | 11191 | 8971 |
| 113| 180 | 293 | 187725 | 5974 | 3771 | 8607  | -714  | 11117 | 9354 |
| 113| 181 | 294 | 190688 | 5107 | 4116 | 8241  | 501   | 11082 | 9732 |
| 113| 182 | 295 | 192786 | 5973 | 4151 | 7858  | -317  | 11081 | 10090|
| 113| 183 | 296 | 195701 | 5155 | 4480 | 7433  | 836   | 11129 | 10439|
| 113| 184 | 297 | 197710 | 6062 | 4498 | 6986  | -37   | 11218 | 10764|

| Z  | N   | A   | ΔM  | S_n | S_p | Q_α | Q_β | S_{2n} | S_{2p} |
|----|-----|-----|-----|-----|-----|-----|-----|------|------|
| 114| 154 | 268 | 164757 | 9753 | -663 | 13171 | -11629 | 18404 | -2488|
| 114| 155 | 269 | 164510 | 8318 | -629 | 13105 | -10166 | 18071 | -2081|
| 114| 156 | 270 | 163169 | 9412 | -268 | 13052 | -10896 | 17730 | -1679|
| 114| 157 | 271 | 163251 | 7988 | -229 | 12975 | -9437  | 17401 | -1265|
| 114| 158 | 272 | 162247 | 9075 | 134  | 12911 | -10157 | 17064 | -856 |
| 114| 159 | 273 | 162655 | 7663 | 178  | 12822 | -8704  | 16738 | -434 |
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| 114| 162 | 276 | 162366 | 8417 | 963  | 12554 | -8667  | 15760 | 832  |
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| 114| 165 | 279 | 164726 | 6724 | 1446 | 12204 | -6487  | 14824 | 2134 |
| 114| 166 | 280 | 165006 | 7791 | 1819 | 12084 | -7174  | 14516 | 2566 |
| 114| 167 | 281 | 166645 | 6431 | 1881 | 11938 | -5752  | 14223 | 3009 |
| 114| 168 | 282 | 167220 | 7496 | 2254 | 11800 | -6435  | 13928 | 3445 |
| 114| 169 | 283 | 169137 | 6154 | 2319 | 11634 | -5026  | 13650 | 3891 |
| 114| 170 | 284 | 169989 | 7219 | 2693 | 11476 | -5708  | 13373 | 4328 |
| Z  | N  | A  | ΔM | $S_n$ | $S_p$ | $Q_α$ | $Q_δ$ | $S_{2n}$ | $S_{2p}$ |
|----|----|----|----|------|------|------|------|---------|---------|
| 114| 171| 285| 172164| 5896| 2759| 11288| -4314| 13115| 4774     |
| 114| 172| 286| 173270| 6965| 3132| 11105| -4999| 12861| 5211     |
| 114| 173| 287| 175678| 5663| 3199| 10892| -3626| 12628| 5654     |
| 114| 174| 288| 177010| 6739| 3569| 10681| -4319| 12402| 6086     |
| 114| 175| 289| 179617| 5463| 3635| 10437| -2971| 12203| 6524     |
| 114| 176| 290| 181137| 6551| 4001| 10193| -3678| 12014| 6950     |
| 114| 177| 291| 183904| 5304| 4062| 9914 | -2361| 11856| 7378     |
| 114| 178| 292| 185566| 6408| 4422| 9631 | -3089| 11713| 7791     |
| 114| 179| 293| 188439| 5198| 4478| 9310 | -1812| 11606| 8204     |
| 114| 180| 294| 190187| 6323| 4827| 8982 | -2570| 11521| 8599     |
| 114| 181| 295| 193104| 5154| 4873| 8612 | -1341| 11478| 8990     |
| 114| 182| 296| 194865| 6309| 5209| 8232 | -2140| 11464| 9360     |
| 114| 183| 297| 197748| 5188| 5242| 7806 | -971 | 11498| 9722     |
| 114| 184| 298| 199438| 6380| 5560| 7365 | -1822| 11569| 10059    |
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| 115| 159| 274| 171397| 8033| -1452| 13239| -7954| 17150| -1274    |
| 115| 160| 275| 170679| 8789| -1406| 13161| -8670| 16823| -861     |
| 115| 161| 276| 171033| 7717| -1031| 13062| -7236| 16506| -437     |
| 115| 162| 277| 170635| 8469| -980 | 12970| -7941| 16186| -16      |
| 115| 163| 278| 171299| 7406| -602 | 12857| -6513| 15876| 414      |
| 115| 164| 279| 171214| 8156| -545 | 12748| -7210| 15563| 843      |
| 115| 165| 280| 172180| 7105| -165 | 12619| -5789| 15261| 1281     |
| 115| 166| 281| 172398| 7853| -103 | 12494| -6478| 14958| 1716     |
| 115| 167| 282| 173655| 6814| 279  | 12346| -5066| 14667| 2160     |
| 115| 168| 283| 174163| 7563| 345  | 12202| -5750| 14377| 2600     |
| 115| 169| 284| 175697| 6537| 729  | 12034| -4349| 14100| 3048     |
| 115| 170| 285| 176479| 7289| 798  | 11868| -5031| 13827| 3492     |
| 115| 171| 286| 178270| 6280| 1183 | 11677| -3644| 13569| 3942     |
| 115| 172| 287| 179304| 7036| 1254 | 11486| -4327| 13317| 4387     |
| 115| 173| 288| 181329| 6046| 1637 | 11269| -2959| 13083| 4836     |
| 115| 174| 289| 182588| 6811| 1710 | 11049| -3648| 12858| 5279     |
| 115| 175| 290| 184816| 5844| 2090 | 10802| -2303| 12656| 5725     |
| 115| 176| 291| 186265| 6621| 2161 | 10550| -3004| 12465| 6162     |
| 115| 177| 292| 188656| 5680| 2537 | 10267| -1688| 12302| 6600     |
| 115| 178| 293| 190252| 6475| 2603 | 9977 | -2409| 12156| 7025     |
| 115| 179| 294| 192757| 5565| 2971 | 9654 | -1130| 12041| 7449     |
| 115| 180| 295| 194445| 6383| 3030 | 9320 | -1879| 11948| 7857     |
| 115| 181| 296| 197005| 5511| 3387 | 8951 | -646 | 11894| 8261     |
| 115| 182| 297| 198719| 6357| 3435 | 8568 | -1433| 11868| 8644     |
| 115| 183| 298| 21261| 5529| 3776 | 8147 | -257 | 11887| 9018     |
| 115| 184| 299| 202919| 6412| 3807 | 7708 | -1094| 11942| 9368     |
| Z  | N  | A  | $\Delta M$ | $S_n$ | $S_p$ | $Q_{\alpha}$ | $Q_{\beta}$ | $S_{2n}$ | $S_{2p}$ |
|----|----|----|------------|------|------|-------------|-------------|---------|---------|
| 116| 158| 274| 179352     | 9472 | -703 | 13758       | -11369      | 17862   | -2526   |
| 116| 159| 275| 179349     | 8074 | -662 | 13672       | -9934       | 17547   | -2115   |
| 116| 160| 276| 178269     | 9151 | -301 | 13597       | -10646      | 17225   | -1708   |
| 116| 161| 277| 178576     | 7764 | -254 | 13496       | -9215       | 16915   | -1286   |
| 116| 162| 278| 177813     | 8834 | 110  | 13404       | -9916       | 16598   | -869    |
| 116| 163| 279| 178424     | 7460 | 164  | 13287       | -8491       | 16294   | -438    |
| 116| 164| 280| 177970     | 8525 | 533  | 13179       | -9182       | 15986   | -11     |
| 116| 165| 281| 178877     | 7164 | 592  | 13044       | -7762       | 15690   | 427     |
| 116| 166| 282| 178722     | 8226 | 965  | 12917       | -8445       | 15390   | 862     |
| 116| 167| 283| 179914     | 6879 | 1030 | 12762       | -7034       | 15105   | 1309    |
| 116| 168| 284| 180046     | 7938 | 1406 | 12615       | -7710       | 14817   | 1751    |
| 116| 169| 285| 181510     | 6067 | 1475 | 12439       | -6308       | 14546   | 2204    |
| 116| 170| 286| 181914     | 7667 | 1853 | 12269       | -6981       | 14274   | 2652    |
| 116| 171| 287| 183632     | 6353 | 1926 | 12070       | -5592       | 14020   | 3109    |
| 116| 172| 288| 184288     | 7415 | 2305 | 11874       | -6265       | 13768   | 3559    |
| 116| 173| 289| 186237     | 6122 | 2380 | 11648       | -4939       | 13537   | 4018    |
| 116| 174| 290| 187119     | 7189 | 2758 | 11423       | -5570       | 13312   | 4468    |
| 116| 175| 291| 189270     | 5920 | 2834 | 11167       | -4219       | 13109   | 4925    |
| 116| 176| 292| 190345     | 6996 | 3209 | 10910       | -4907       | 12916   | 5370    |
| 116| 177| 293| 192661     | 5754 | 3283 | 10619       | -3584       | 12751   | 5820    |
| 116| 178| 294| 193888     | 6844 | 3652 | 10325       | -4289       | 12599   | 6256    |
| 116| 179| 295| 196325     | 5634 | 3721 | 9995        | -3000       | 12479   | 6692    |
| 116| 180| 296| 197652     | 6743 | 4082 | 9660        | -3731       | 12378   | 7112    |
| 116| 181| 297| 200152     | 5571 | 4141 | 9287        | -2486       | 12314   | 7529    |
| 116| 182| 298| 201518     | 6705 | 4489 | 8906        | -3253       | 12276   | 7924    |
| 116| 183| 299| 204014     | 5575 | 4535 | 8485        | -2062       | 12281   | 8311    |
| 116| 184| 300| 205344     | 6741 | 4864 | 8053        | -2877       | 12317   | 8672    |
| 117| 160| 277| 187792     | 9194 | -2234 | 14007       | -9899       | 17633   | -2535   |
| 117| 161| 278| 187730     | 8133 | -1864 | 13907       | -8482       | 17328   | -2118   |
| 117| 162| 279| 186915     | 8885 | -1813 | 13811       | -9188       | 17019   | -1702   |
| 117| 163| 280| 187152     | 7834 | -1438 | 13693       | -7775       | 16720   | -1274   |
| 117| 164| 281| 186640     | 8583 | -1380 | 13579       | -8471       | 16418   | -847    |
| 117| 165| 282| 187167     | 7543 | -1001 | 13443       | -7063       | 16127   | -409    |
| 117| 166| 283| 186948     | 8290 | -937  | 13308       | -7749       | 15834   | 28      |
| 117| 167| 284| 187757     | 7262 | -554  | 13151       | -6347       | 15553   | 476     |
| 117| 168| 285| 187819     | 8009 | -483  | 12995       | -7026       | 15271   | 922     |
| 117| 169| 286| 188896     | 6994 | -96   | 12815       | -5633       | 15003   | 1378    |
| 117| 170| 287| 189225     | 7742 | -21   | 12636       | -6307       | 14736   | 1831    |
| 117| 171| 288| 190554     | 6742 | 367   | 12432       | -4925       | 14484   | 2293    |
| 117| 172| 289| 191130     | 7494 | 446   | 12226       | -5597       | 14237   | 2752    |
| 117| 173| 290| 192690     | 6512 | 836   | 11994       | -4230       | 14006   | 3217    |
| 117| 174| 291| 193490     | 7271 | 917   | 11760       | -4905       | 13783   | 3676    |
| Z  | N  | A  | ΔM | S_n | S_p | Q_α | Q_β | S_{2n} | S_{2p} |
|----|----|----|----|-----|-----|-----|-----|--------|--------|
| 117| 175| 292| 195252| 6308| 1306| 11498| -3558| 13580 | 4141   |
| 117| 176| 293| 196245| 7078| 1388| 11231| -4242| 13387 | 4597   |
| 117| 177| 294| 198177| 6139| 1772| 10936| -2920| 13217 | 5056   |
| 117| 178| 295| 199325| 6923| 1851| 10635| -3619| 13062 | 5504   |
| 117| 179| 296| 201383| 6013| 2230| 10302| -2329| 12936 | 5951   |
| 118| 180| 297| 202639| 6815| 2302| 9962 | -3051| 12828 | 6384   |
| 118| 181| 298| 204772| 5938| 2669| 9589 | -1803| 12754 | 6811   |
| 118| 182| 299| 206077| 6766| 2730| 9206 | -2559| 12704 | 7220   |
| 118| 183| 300| 208221| 5927| 3082| 8790 | -1363| 12693 | 7617   |
| 118| 184| 301| 209506| 6786| 3126| 8361 | -2163| 12713 | 7991   |
| 118| 185| 302| 211669| 5985| 3840| 9092 | -3163| 13109 | 6922   |
| 118| 186| 303| 212616| 7124| 4179| 8672 | -3942| 13110 | 7305   |
| 119| 187| 304| 213655| 6093| 3424| 9886 | -3636| 13197 | 6694   |
| 119| 188| 305| 214640| 7215| 3578| 9506 | -4373| 13134 | 6512   |
| 119| 189| 306| 215649| 7458| 3840| 9092 | -3163| 13109 | 6922   |
| 119| 190| 307| 216666| 7715| 3975| 8672 | -3942| 13110 | 7305   |
| 119| 191| 308| 217687| 7983| 4111| 8241 | -3636| 13197 | 6694   |
| 119| 192| 309| 218688| 8205| 4244| 8672 | -3942| 13110 | 7305   |
| 119| 193| 310| 220712| 8461| 4377| 8241 | -3636| 13197 | 6694   |
| 119| 194| 311| 221639| 7458| 3840| 9092 | -3163| 13109 | 6922   |
| 119| 195| 312| 222666| 7715| 3975| 8672 | -3942| 13110 | 7305   |
| Z  | N  | A  | ΔM  | S_n | S_p | Q_α  | Q_δ  | S_{2n} | S_{2p} |
|----|----|----|------|-----|-----|------|------|--------|--------|
| 119| 173| 292| 205624| 6991 | 60  | 12644| -5484| 14957  | 1643   |
| 119| 174| 293| 205948| 7746 | 151 | 12393| -6147| 14738  | 2119   |
| 119| 175| 294| 207230| 6790 | 546 | 12114| -4799| 14536  | 2600   |
| 119| 176| 295| 207748| 7553 | 638 | 11832| -5467| 14343  | 3075   |
| 119| 177| 296| 209201| 6617 | 1032| 11523| -4141| 14171  | 3554   |
| 119| 178| 297| 209881| 7391 | 1121| 11210| -4821| 13656  | 4022   |
| 119| 179| 298| 211471| 6480 | 1508| 10868| -3523| 13872  | 4490   |
| 119| 180| 299| 212273| 7269 | 1591| 10522| -4221| 13750  | 4944   |
| 119| 181| 300| 213957| 6387 | 1968| 10148| -2960| 13656  | 5392   |
| 119| 182| 301| 214833| 7195 | 2040| 9768 | -3687| 13582  | 5822   |
| 119| 183| 302| 216558| 6346 | 2400| 9361 | -5467| 13536  | 6240   |
| 119| 184| 303| 217450| 7179 | 2454| 8948 | -3239| 13525  | 6633   |
| 120| 166| 286| 211000| 9105 | -670| 14444| -10915| 17153  | -2416  |
| 120| 167| 287| 211383| 7787 | -598| 14261| -9525 | 16893  | -1959  |
| 120| 168| 288| 210612| 8842 | -217| 14082| -10193| 16630  | -1504  |
| 120| 169| 289| 211144| 7538 | -137| 13874| -8809 | 16381  | -1034  |
| 120| 170| 290| 210624| 8591 | 248 | 13669| -9468 | 16130  | -566   |
| 120| 171| 291| 211393| 7302 | 335 | 13435| -8091 | 15894  | -86    |
| 120| 172| 292| 211108| 8355 | 724 | 13204| -8746 | 15658  | 389    |
| 120| 173| 293| 212096| 7083 | 816 | 12943| -7380 | 15439  | 877    |
| 120| 174| 294| 212029| 8137 | 1207| 12684| -8033 | 15221  | 1359   |
| 120| 175| 295| 213216| 6885 | 1302| 12394| -6681 | 15022  | 1849   |
| 120| 176| 296| 213343| 7944 | 1693| 12107| -7338 | 14829  | 2332   |
| 120| 177| 297| 214702| 6712 | 1788| 11789| -6006 | 14656  | 2820   |
| 120| 178| 298| 214995| 7778 | 2175| 11472| -6673 | 14491  | 3296   |
| 120| 179| 299| 216495| 6571 | 2265| 11125| -5367 | 14349  | 3774   |
| 120| 180| 300| 216918| 7648 | 2643| 10779| -6051 | 14219  | 4235   |
| 120| 181| 301| 218520| 6468 | 2725| 10404| -4780 | 14116  | 4693   |
| 120| 182| 302| 219031| 7560 | 3090| 10030| -5489 | 14029  | 5130   |
| 120| 183| 303| 220689| 6413 | 3157| 9628 | -4263 | 13973  | 5558   |
| 120| 184| 304| 221236| 7523 | 3502| 9227 | -5009 | 13937  | 5957   |
| 121| 167| 288| 220805| 8175 | -2132| 14580| -8826 | 17352  | -2731  |
| 121| 168| 289| 219953| 8922 | -2052| 14388| -9496 | 17098  | -2270  |
| 121| 169| 290| 220093| 7932 | -1659| 14172| -8120 | 16855  | -1796  |
| 121| 170| 291| 219484| 8679 | -1571| 13954| -8781 | 16611  | -1323  |
| 121| 171| 292| 219855| 7701 | -1173| 13711| -7412 | 16380  | -837   |
| 121| 172| 293| 219476| 8449 | -1078| 13467| -8067 | 16151  | -353   |
| 121| 173| 294| 220663| 7484 | -677 | 13198| -6707 | 15934  | 139    |
| 121| 174| 295| 219897| 8236 | -578 | 12928| -7360 | 15721  | 628    |
| 121| 175| 296| 220681| 7287 | -176 | 12632| -6013 | 15523  | 1126   |
| 121| 176| 297| 220709| 8043 | -76  | 12335| -6668 | 15331  | 1616   |
| 121| 177| 298| 221668| 7112 | 323  | 12013| -5340 | 15156  | 2111   |
| Z  | N   | A   | ΔM M | S_n | S_p | Q α | Q β | S_{2n} | S_{2p} |
|----|-----|-----|------|-----|-----|-----|-----|--------|--------|
| 121| 178 | 299 | 221863 | 7876 | 420 | 11689 | -6002 | 14988 | 2596   |
| 121| 179 | 300 | 222969 | 6964 | 814 | 11343 | -4698 | 14841 | 3079   |
| 121| 180 | 301 | 223301 | 7739 | 905 | 10995 | -5376 | 14704 | 3549   |
| 121| 181 | 302 | 224521 | 6851 | 1288 | 10624 | -4104 | 14590 | 4014   |
| 121| 182 | 303 | 224953 | 7639 | 1367 | 10254 | -4806 | 14490 | 4458   |
| 121| 183 | 304 | 226246 | 6777 | 1731 | 9864  | -3576 | 14417 | 4889   |
| 121| 184 | 305 | 226733 | 7583 | 1792 | 9475  | -4311 | 14361 | 5294   |
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| 122| 169 | 291 | 228266 | 8018 | -884 | 14457 | -10005 | 17326 | -2543  |
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| 122| 171 | 293 | 227543 | 7795 | -399 | 13974 | -9289  | 16865 | -1572  |
| 122| 172 | 294 | 226771 | 8444 | -5   | 13721 | -9935  | 16639 | -1084  |
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| 122| 174 | 296 | 226695 | 8633 | 491  | 13161 | -9216  | 16218 | -87    |
| 122| 175 | 297 | 227377 | 7389 | 593  | 12855 | -7867  | 16023 | 416    |
| 122| 176 | 298 | 227008 | 8440 | 989  | 12553 | -8511  | 15830 | 913    |
| 122| 177 | 299 | 227865 | 7214 | 1091 | 12224 | -7178  | 15654 | 1414   |
| 122| 178 | 300 | 227668 | 8268 | 1483 | 11899 | -7829  | 15482 | 1904   |
| 122| 179 | 301 | 228677 | 7062 | 1581 | 11550 | -6519  | 15330 | 2395   |
| 122| 180 | 302 | 228626 | 8122 | 1964 | 11206 | -7183  | 15184 | 2870   |
| 122| 181 | 303 | 229759 | 6938 | 2051 | 10839 | -5904  | 15061 | 3339   |
| 122| 182 | 304 | 229823 | 8007 | 2418 | 10479 | -6589  | 14945 | 3786   |
| 122| 183 | 305 | 231045 | 6848 | 2489 | 10100 | -5350  | 14855 | 4221   |
| 122| 184 | 306 | 231187 | 7929 | 2835 | 9731  | -6067  | 14778 | 4627   |
| 123| 170 | 293 | 236833 | 9165 | -2276 | 14454 | -9956  | 17582 | -2770  |
| 123| 171 | 294 | 236706 | 8197 | -1873 | 14188 | -8594  | 17363 | -2273  |
| 123| 172 | 295 | 235831 | 8945 | -1771 | 13922 | -9240  | 17143 | -1777  |
| 123| 173 | 296 | 235912 | 7990 | -1365 | 13632 | -7885  | 16936 | -1271  |
| 123| 174 | 297 | 235244 | 8739 | -1260 | 13343 | -8527  | 16729 | -768   |
| 123| 175 | 298 | 235519 | 7796 | -853  | 13031 | -7183  | 16535 | -259   |
| 123| 176 | 299 | 235044 | 8546 | -746  | 12721 | -7826  | 16343 | 243    |
| 123| 177 | 300 | 235497 | 7617 | -343  | 12390 | -6497  | 16164 | 748    |
| 123| 178 | 301 | 235196 | 8371 | -239  | 12062 | -7145  | 15989 | 1244   |
| 123| 179 | 302 | 235809 | 7458 | 156   | 11716 | -5838  | 15830 | 1738   |
| 123| 180 | 303 | 235663 | 8217 | 252   | 11375 | -6497  | 15676 | 2216   |
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| 124| 172 | 296 | 243798 | 9345 | -677  | 14105 | -11071 | 17645 | -2449  |
| 124| 173 | 297 | 243772 | 8096 | -571  | 13803 | -9714  | 17442 | -1936  |
| Z  | N   | A   | ΔM      | Sₐ  | Sₚ   | Qₐ  | Qₐ  | S₂ₙ | S₂ₚ |
|----|-----|-----|---------|-----|-----|-----|-----|-----|-----|
| 124| 174 | 298 | 242703  | 9140| -169| 13507| -10347| 17237| -1429 |
| 124| 175 | 299 | 242870  | 7904| -61 | 13187| -9000 | 17045| -914  |
| 124| 176 | 300 | 241995  | 8946| 337 | 12874| -9632 | 16850| -409  |
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| 124| 178 | 302 | 241648  | 8765| 837 | 12214| -8937 | 16489| 598   |
| 124| 179 | 303 | 242160  | 7558| 937 | 11870| -7625 | 16323| 1094  |
| 124| 180 | 304 | 241632  | 8599| 1319| 11539| -8273 | 16158| 1571  |
| 124| 181 | 305 | 242294  | 7408| 1406| 11192| -6988 | 16008| 2042  |
| 124| 182 | 306 | 241913  | 8452| 1771| 10862| -7654 | 15861| 2487  |
| 124| 183 | 307 | 242705  | 7279| 1838| 10521| -6405 | 15731| 2918  |
| 124| 184 | 308 | 242450  | 8326| 2176| 10202| -7099 | 15605| 3314  |
| 125| 173 | 298 | 253050  | 8507| -1989| 13919| -9001 | 17961| -2560 |
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| 125| 176 | 301 | 250642  | 9056| -1358| 12973| -8922 | 17370| -1020 |
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| 125| 178 | 303 | 249786  | 8869| -849 | 12317| -8229 | 16998| -11   |
| 125| 179 | 304 | 249905  | 7952| -455 | 11983| -6922 | 16822| 481   |
| 125| 180 | 305 | 249283  | 8693| -362 | 11661| -7566 | 16645| 957   |
| 125| 181 | 306 | 249567  | 7787| 16   | 11333| -6284 | 16480| 1422  |
| 125| 182 | 307 | 249111  | 8527| 90   | 11023| -6945 | 16314| 1862  |
| 125| 183 | 308 | 249549  | 7632| 444  | 10712| -5698 | 16160| 2283  |
| 125| 184 | 309 | 249246  | 8374| 493  | 10425| -6386 | 16007| 2669  |
| 126| 174 | 300 | 259919  | 9655| -760 | 13696| -13696| 18274| -2638 |
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| 126| 181 | 307 | 256057  | 7866| 799  | 11471| -11471| 16935| 815   |
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| 126| 183 | 309 | 255632  | 7687| 1206| 10912| -10912| 16567| 1651  |
| 126| 184 | 310 | 255007  | 8695| 1527| 10669| -10669| 16383| 2020  |