The fundamental critical points of modular elliptic curves

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A Thesis

in

The Department

of

Mathematics and Statistics

Presented in Partial Fulfillment of the Requirements

for the Degree of Master of Science at
Concordia University
Montréal, Québec, Canada
March 1996

ISBN 0-612-10845-7

CONCORDIA UNIVERSITY

School of Graduate Studies

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By: Jack Fearnley

Entitled: The Fundamental Critical Points of Modular Elliptic Curves

and submitted in partial fulfillment of the requirements for the degree of

Master of Science (Mathematics)

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ABSTRACT

The Fundamental Critical Points of Modular Elliptic Curves

Jack Fearnley

In their paper, "Arithmetic of Weil Curves", Mazur and Swinnerton-Dyer prove that the number of fundamental critical points of the normalized weight two modular form associated with an elliptic curve is an upper bound on the analytic rank of the curve. Their calculation of this quantity for all elliptic curves of conductor less than 424 confirmed that, with only 16 exceptions, the bound is sharp.

It is the intention of this thesis to compute the number of fundamental critical points for all curves of conductor less than 4000.

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1 Introduction

A central problem in the theory of elliptic curves is the determination of the rank of the Mordell-Weil group of the curve.
In the early sixties Birch and Swinnerton-Dyer conjectured that the rank of an elliptic curve was identical to the order of vanishing of the associated L−function at the value $s = 1$. We shall call this order of vanishing the *analytic* rank.
An elliptic curve is said to be *modular* if it can be associated with a modular form of a certain type. The nature of this relationship will be described in Section 7.
It is further conjectured (the Taniyama-Shimura conjecture) that all curves are in fact modular. In Wiles' paper [11] it is shown that this conjecture is true for all semi-stable curves.
Let E be a modular elliptic curve defined over $\mathbf{Q}$ and suppose that N_p is the number of points on E modulo a prime p.
Define a multiplicative function, a_n, as follows.

- $a_1 = 1$
- For prime values let $a_p = p + \delta_p - N_p$, where $\delta_p = 0$ if the curve has bad reduction at p and 1 otherwise.
- For prime powers let $a_{p^{k+1}} = a_p a_{p^k} - p a_{p^{k-1}}$ when $p \nmid N$ and $a_{p^k} = a_p^k$ when $p|N$.

Then the function

$$f(z) = \sum_{n=1}^{\infty} a_n e^{2\pi i n z}$$

is a normalized weight two cusp form of level N, where N is the conductor of E.
A fundamental critical point of a modular form is a zero lying on the imaginary axis of the upper half of the complex plane.
In the paper "The Arithmetic of Weil Curves" by Mazur and Swinnerton-Dyer [9] it is proved that the number of fundamental critical points of odd order (FCPs) of the weight two modular form associated with a modular elliptic curve is an upper bound on the analytic rank of that curve. Their

calculation of this quantity for all elliptic curves of conductor less than 424 showed that, with 16 exceptions, the number of FCPs actually equalled the analytic rank.

Since the rank is bounded by the number of fundamental critical points of *odd* order I shall use the abbreviation FCP to mean to mean solely these odd order zeroes.

It is the intention of this thesis to compute the number of FCPs for all curves of conductor less than 4000. These curves are all known to be modular. A catalogue of these curves can be found in the Cremona tables ([7] together with the unpublished extensions to $N = 4000$).

2 Fundamental critical points

Let E be a modular elliptic curve and let f be the associated modular form. Then f is defined over the upper half plane $\mathcal{H}$ by its Fourier expansion at infinity,

$$f(\tau) = \sum_{n=1}^{\infty} a_n e^{2\pi i n \tau}, \tau = x + iy, y > 0$$

and takes real values along the imaginary axis.

Theorem 1 *([9] page 10) Let E be a modular curve. The analytic rank of E is less than or equal to the number of fundamental critical points of E of odd order.*

Proof. The L-series of E is given by the Mellin transform

$$L(E, s) = \frac{(2\pi)^s}{\Gamma(s)} \int_0^{\infty} f(iy) y^{s-1} dy$$

Let $L(E, s)$ have an r-fold zero at $s = 1$. Thus

$$J_t = \int_0^{\infty} f(iy)(\log(y))^t dy = 0 \text{ for } t = 0 \ldots r-1$$

Now let $y_1, \ldots, y_m$ be the turning points of $f(iy)$ in the strict sense that $f(iy)$ is positive on one side of any y_j and negative on the other; thus the y_j are zeroes of odd order of $f(iy)$. So

$$f(iy) \prod_1^m \{\log(y) - \log(y_j)\}$$

is of constant sign on the imaginary axis, and hence the integral

$$\int_0^{\infty} f(iy) \prod_1^m \{\log(y) - \log(y_j)\} dy$$

cannot vanish. But the integral is a linear combination of $J_0, \ldots, J_m$ and we have just seen that $J_0, \ldots, J_{r-1}$ all vanish. Hence $m \geq r$.

□

Since we are dealing here with new forms, applying the Fricke involution gives,

$$f(\tau) = w N^{-k/2} \tau^{-k} f(-1/N\tau)$$

Where k is the weight of the modular form, $-w$ is the sign of the functional equation and N is the conductor. In our case the weight is 2 and $\tau = iy$ giving

$$f(iy) = -wf(i/Ny)y^{-2}/N$$

It is evident that, for $w = +1$, there is an zero of odd order at $y = N^{-1/2}$ and any other zeroes occur in involutory pairs of equal order, giving an odd number of FCPs.
For the case $w = -1$ the zeroes still pair off but there is no central FCP (although there might be a zero of even multiplicity) and so the parity of the number of FCPs is even. Hence the parity of the number of FCPs is the same as the parity of the analytic rank of the associated elliptic curve.
In the subsequent analysis we will call the involutory point $i\rho = iN^{-1/2}$. The other pairs of zeroes will be called $i\rho_n, i\rho_n^*$ where $\rho_n\rho_n^* = \rho^2$.
For large enough y, $f(iy)$ is dominated by its first term which is always positive, since $a_1 = 1$ for a normalized form. So $f(iy)$ must eventually become positive and then tend to zero through positive values as y goes to infinity. This observation leads to the following proposition.

Proposition 1 *For even parity curves the number of FCPs* $= 0 \bmod 4$ *or* $= 2 \bmod 4$ *according as the value of the function at* $i\rho$ *is positive or negative. For odd parity curves the number of FCPs* $= 1 \bmod 4$ *or* $= 3 \bmod 4$ *according as the derivative at* $i\rho$ *is positive or negative.*

Proof. The proof is obvious by inspection of the various possibilities and the fact that the curve must become positive beyond a certain point as $y \to \infty$.

- For even parity curves with positive derivative at $i\rho$, as $y \to \infty$ either $f(iy)$ remains positive or it crosses zero $2n$ times to eventually end up positive. The involution formula reflects these zeroes at points $< i\rho$ giving $4n$ FCPs as stated.

- For even parity curves with negative derivative at $i\rho$, there must be one crossing to become positive followed by an even number of further zeroes as $y \to \infty$. This gives $2(1 + 2n) = 4n + 2$ FCPs as stated.

- For odd parity curves with positive derivative at $i\rho$, either $f(iy)$ remains positive or it crosses zero $2n$ times as $y \to \infty$. This gives $1 + 4n$ FCPs as stated.

- For odd parity curves with negative derivative at $i\rho$, $f(iy)$ must cross zero at least once to become eventually positive. It may the cross $2n$ more times as above. This gives $1+2(2n+1) = 4n+3$ FCPs as stated.

□

In the case of an even parity curve with an even order zero at $i\rho$, the number of FCPs modulo 4 can only be determined by examining higher order derivatives.

3 The Behaviour of the Fourier Series

3.1 Bounding the Zeroes

We will show that, apart from the zero at infinity, there can be no zeroes on the imaginary axis beyond a certain point. Since we can use the Fricke involution to find zeroes below ρ, this will give us finite bounds for our search for FCPs.

Proposition 2 *In the finite upper half plane, there is no zero of $f(iy)$ beyond $y = .254\ldots$.*

Proof.

$$g(y) = \sum_{n=1}^{\infty} a_n e^{-2\pi n y} = e^{-2\pi y} + \sum_{n=2}^{\infty} a_n e^{-2\pi n y}$$

This cannot be negative unless

$$e^{-2\pi y} < |\sum_{n=2}^{\infty} a_n e^{-2\pi n y}|$$

Now we know by Hasse's theorem that $|a_p| \leq 2\sqrt{p}$ which gives ([5] page 479) $|a_n| < d(n)\sqrt{n}$ which is less than sn for some value of s. By the elementary argument given below, we find that $d(n)\sqrt{n} < 1.75n$ for all n. So, for negative values of $g(y)$, we need at least

$$e^{-2\pi y} < \sum_{n=2}^{\infty} sne^{-2\pi n y}$$

Let $q = e^{-2\pi y}$, then the sum on the right is equal to

$$\frac{sq^2}{1-q} + \frac{sq^2}{(1-q)^2}$$

So the inequality gives rise to a quadratic equation in q for the critical value of y.

$$(s+1)q^2 - 2(s+1)q + 1 = 0$$

Giving $q < 1 + s - \sqrt{s/(1+s)}$ or

$$y > \frac{\log(1 + s + \sqrt{s(1+s)})}{2\pi}$$

Setting $s = 1.75$ gives the critical value of .254....

□

In fact, solving the inequality numerically using the $d(n)\sqrt{n}$ bound we find that no zero can exist for $y > .198$.
To complete the above proof we need:

Proposition 3 *The number of divisors of* n, $d(n) < 1.75\sqrt{n}$.

Write $n = 2^a b$ where b is odd. Since $d(n)$ is a multiplicative function it suffices to establish inequalities for the odd and even parts separately.

$$d(b) = \sum_{d|b} 1 = 2 \sum_{d|b, d<\sqrt{b}} 1 + \epsilon(b)$$

where $\epsilon(b) = 1$ when b is a square and zero otherwise. Now the even numbers less than $\sqrt{b}$ can not be divisors and nor can all the primes less than b, so we have

$$d(b) \leq 2(\sqrt{b}/2 - \pi(\sqrt{b}) + \log(b)/\log(3)) + 1$$

since an odd number can not have more than $\log_3(b)$ distinct prime factors.

$$d(b) \leq \sqrt{b} + 1 - 2\pi(\sqrt{b}) + 2\log(b)/\log(3)$$

For $b > 144$, $2\pi(\sqrt{b}) - 2\log(b)/\log(3) - 1$ is positive, so we have $d(b) \leq \sqrt{b}$. Manual checking below 144 shows the worst case at $b = 3$ with

$$d(3)/\sqrt{3} < 1.155$$

Now

$$d(2^a) = a + 1$$

and $d(2^a)/\sqrt{2^a}$ is a strictly decreasing function of a beyond $a = 2$ and so is always less than $d(4)/\sqrt{4}$
Hence $d(n)/\sqrt{(n)} \leq 6/\sqrt{12} < 1.75$ for all n.

□

3.2 Remainder terms for the Fourier series.

For accurate numerical calculation it is important to estimate the remainder term when the Fourier series is summed to a finite number of terms The remainder after summing k terms of the series for $g(y)$ can be bounded using $|a_n| < sn$ for a suitable value of s. That is

$$|\sum_{k}^{\infty} a_n e^{-2\pi n y}| < s \sum_{k}^{\infty} n e^{-2\pi n y} = S$$

Now S is easy to sum. In fact it is

$$S = s\frac{q^k(k-(k-1)q)}{(1-q)^2}$$

where $q = e^{-2\pi y}$. This formula gives an explicit accuracy for a given number of terms k. An iterative version of this formula can give us the number of terms needed for a given accuracy. Namely, for a desired accuracy ϵ

$$k_{new} = \frac{\log(s(k_{old}(1-q)+q)) - \log(\epsilon(1-q)^2)}{2\pi y}$$

A similar calculation can establish the remainder term for $g'(y)$.
In the computations we summed g and g' to the same number of terms using the g' version to establish the number of terms at $i\rho$, namely:

$$k_{new} = \frac{\log(k_{old}^2 - (2k_{old}^2 - 2k_{old} - 1)q + (k_{old}-1)^2q^2) - \log(\epsilon(1-q)^3)}{2\pi y}$$

For values of the argument $y > \rho$ we summed to $k\rho/y$ terms. This is more efficient than recalculating the number of terms for every value of the argument. Tests performed over the ranges of the arguments used in the study show that g always had at least 11 digit accuracy and g' always had at least 8 digit accuracy.

3.3 Preliminary results

We wrote a small number of computer programs, concentrating on curve 219B of the Cremona catalogue as a documented example. This curve is one of the 16 curves specifically mentioned in [9]. It has 3 FCPs and the curve

has rank 1. The central zero is $219^{-1/2} = \rho = .06757$ and the involutory pair of zeroes is $\rho_1 = .09754$ and $\rho_1^* = .04681$. The second zero was computed by roughly bracketing it and then "polishing" it using Newton iterations.
The same approach was used to compute the three zeroes associated with the rank 3 curve of smallest conductor ($N = 5077$). The zeroes here are $.0140344, .169057, .001165$. This last zero would have taken thousands of terms to converge without the involution formula. These, and a number of other preliminary results can be seen in Appendix B.

4 Counting zeroes by contour integration

4.1 General considerations

The integral of $f'(\tau)/f(\tau)$ over a closed contour in the complex plane will count the zeroes and poles of f within the contour. In order to count FCPs by this technique we establish a pole free region enclosing the imaginary axis above $i\rho$. This will give an upper bound for the number of FCPs since it will count *all* zeroes in the region whereas FCPs are only those zeroes on the imaginary axis which have odd multiplicity. Modular forms are holomorphic in the upper half plane so $f(\tau)$ has no poles. The exclusion of off-axis zeroes is more difficult to ensure and the elimination of multiple zeroes of even order is not possible and must be left to a later step in the calculations.
Initial experiments with a rectangular contour proved the feasibility of the approach but a more efficient contour was chosen for the actual computations. This choice will be explained in the following subsections.

4.2 Integration on the circle of involution

While convergence of the series is slower below $i\rho$, integration along the circle of involution has special advantages owing to the following two propositions.

Proposition 4 *Any Fourier series with real coefficients is symmetrical about the imaginary axis with respect to conjugation. That is,* $F(z) = \overline{F(-\bar{z})}$.

Proof. Let

$$F(z) = \sum_{n=1}^{\infty} c_n e^{2\pi i n z}$$

and let $z = u + iv$ so that $\bar{z} = u - iv$. Then (following Apostol [3] page 41)

$$x = e^{2\pi i z} = e^{2\pi i(u+iv)} = e^{-2\pi v} e^{2\pi i u}$$

and

$$\bar{x} = e^{-2\pi v} e^{-2\pi i u} = e^{2\pi i(u-iv)} = e^{2\pi i \bar{z}}$$

Since F is made up of an infinite sum of such terms with real coefficients the result follows.

□

Corollary 1 *The functions f, f' satisfy the above conditions and so does f'/f when f is a cusp form, and they therefore display the same symmetry of conjugation.*

Proof. The proofs for f, f' are immediate. To prove it for f'/f observe that this is the differential of $\log(f(z))$ which, since f is a cusp form, can be formally expanded as a Fourier series with real coefficients. Differentiating the resulting series term by term and dividing by i gives a series satisfying the assumptions of the proposition.

□

When the integration takes place along the circle of involution we can say more.

Proposition 5 *$(f'/f)dz$ has constant real part on the circle of involution.*

Proof. We return to the involution formula and derive an involution formula for the integrand.

$$f(z) = wN^{-k/2}z^{-k}f(-1/Nz)$$

giving, with $N = \rho^{-2}$ and weight 2

$$f(z) = w(\rho/z)^2 f(-\rho^2/z)$$

Differentiating

$$f'(z) = -2w\rho^2 z^{-3}f(-\rho^2/z) + w\rho^2 z^{-2}\rho^2 z^{-2}f'(-\rho^2/z)$$

Letting $h(z) = f'(z)/f(z)$ then dividing the above two equations into one another gives

$$h(z) = \frac{-2w\rho^2 z^{-3}}{w\rho^2 z^{-2}} + \frac{w\rho^2 z^{-2}\rho^2 z^{-2}}{w\rho^2 z^{-2}}h(-\rho^2/z)$$

and then cancelling gives

$$h(z)dz = (\rho/z)^2 h(-\rho^2/z)dz - 2z^{-1}dz$$

On the circle we set $z = \rho e^{i\theta}$ and $dz = \rho i e^{i\theta}d\theta$ giving

$$h(\rho e^{i\theta})\rho e^{i\theta}d\theta = (e^{-2i\theta}h(-\rho e^{-i\theta}) - 2\rho^{-1}e^{-i\theta})\rho e^{i\theta}d\theta$$

This simplifies to

$$h(\rho e^{i\theta})e^{i\theta}d\theta - h(-\rho e^{-i\theta})e^{-i\theta}d\theta = -2\rho^{-1}d\theta$$

But by the previous proposition we know that the pair of terms on the left are conjugate to each other and so their sum is twice the real part of h on the circle. So we have finally

$$\Re(h(\rho e^{i\theta})e^{i\theta}d\theta) = -\rho^{-1}d\theta$$

a constant independent of θ.

□

4.2.1 Avoiding the FCP at $i\rho$

When $f(z)$ has a zero at $z = i\rho$ we must change the contour by adding a small circular arc which avoids the zero. As the radius of this arc tends to zero the arc will tend to a semicircle and its contribution to the total residue will be $1/2$ in the case of a simple zero and half the order of the zero in the case of a multiple zero. That the latter contingency should not be ignored is illustrated by the curve 400B which has a triple zero at $.05i$.
Again we follow Apostol [3] page 38 in making the general statements above rigorous.

Proposition 6 *Let $f(i\rho) = 0$ be a zero of order k. Then the contribution of this zero to the total residue is $k/2$.*

Proof. Near the point $i\rho$ write

$$f(z) = (z - i\rho)^k g(z) \text{where } g(i\rho) \neq 0$$

Then

$$\frac{f'(z)}{f(z)} = \frac{k}{z - i\rho} + \frac{g'(z)}{g(z)}$$

Set $z = i\rho + re^{i\theta}$ where r will ultimately tend to zero, and suppose that this circle intersects the involutory circle at $\theta = -\alpha$ and $\pi + \alpha$ where α will tend to zero as r tends to zero.

$$\frac{1}{2\pi i}\int \frac{f'(z)}{f(z)}dz = \frac{1}{2\pi i}\int_{\pi+\alpha}^{-\alpha}\left(\frac{k}{re^{i\theta}} + \frac{g'(\rho + re^{i\theta})}{g(\rho + re^{i\theta})}\right)re^{i\theta}id\theta$$

$$= \frac{-k(\pi + 2\alpha)}{2\pi} + \frac{r}{2\pi} \int_{\pi+\alpha}^{-\alpha} \frac{g'(\rho + re^{i\theta})}{g(\rho + e^{i\theta})} re^{i\theta} d\theta$$

As r tends to zero the second term tends to zero since the integrand is bounded and also $\alpha \to 0$ giving $-k/2$ as the residue.

□

4.3 The proposed contour

A good contour should have the following properties. It should:

- Take advantage of periodicity to maximize cancellation.
- Follow paths where the integral is known analytically.
- Avoid arguments of small imaginary part where the series are slow to converge.
- Stay close to the imaginary axis to avoid counting off-axis zeroes.

The illustrated contour represents a good compromise.

1. An arc of the involutory circle with avoidance of $i\rho$ if necessary.
2. A segment of a quarter circle above (1) centred at .5 with radius .5.
3. A vertical line at .5 up to $.5 + i$.
4. A horizontal line from $.5 + i$ to $-.5 + i$.
5. A vertical line from $-.5 + i$ to $-.5 + .5i$.
6. A segment of a quarter circle above (1) centred at $-.5$ with radius .5.

The advantages of this contour are as follows:

- Paths (3) and (5) cancel because the integrand is identical due to periodicity and they are traversed in opposite directions.
- Path (4) has a residue of -1

- Path (1) has been analytically computed in the previous two propositions.
- Paths (2) and (6) rise steeply away from the region of slow convergence.
- In the range of interest $(i\rho, .2i)$ the contour is close to the imaginary axis.

The difficulties are concentrated in the regions of slow convergence where paths (2) and (6) intersect with the involutory circle. The problem is exacerbated when f has a zero at $i\rho$ since the pole of f'/f causes the integrand to vary rapidly and require many function evaluations in this region. This can be handled by subtracting $k/(z - i\rho)$ from the integrand in this region where k is the order of the zero. This region seems to reflect the difficulty of calculating the analytic rank.
The rest of the contour is straightforward to evaluate.

4.4 Evaluating the integral

Let

$$R_C = R_1 + R_2 + R_3 + R_4 + R_5 + R_6 = \frac{1}{2\pi i}\int_C h(z)dz$$

Where C is the proposed contour. Let $\phi = 2\arcsin(\rho)$ be as shown in the figure and suppose that there is a zero of order k at $i\rho$. Then we have

$$R_1 = k/2 + \frac{1}{2\pi i}\int_{\pi/2+\phi/2}^{\pi/2-\phi/2} h(\rho e^{i\theta}) i\rho e^{i\theta} d\theta$$

$$R_2 = \frac{1}{2\pi i}\int_{\pi-\phi}^{\pi/2} h(1/2 + (1/2)e^{i\theta})(i/2)e^{i\theta} d\theta$$

R_3 and R_5 cancel because of the periodicity of f. The horizontal path, R_4, only counts a simple pole at infinity and so is a constant,-1, for all cases, giving

$$R_3 + R_4 + R_5 = -1$$

$$R_6 = \frac{1}{2\pi i}\int_{\pi/2}^{\phi} h(-1/2 + (1/2)e^{i\theta})(i/2)e^{i\theta} d\theta$$

Using the constancy of the integrand on the involutory circle we get

$$R_1 = k/2 + \phi/\pi$$

It remains to evaluate $R_2 + R_6$.
The value of this integral is

$$R_2 + R_6 = \frac{1}{4\pi}\int_{\pi-2\phi}^{\pi/2} \Re(h(1/2 + 1/2e^{i\theta})e^{i\theta} - h(1/2 - 1/2e^{-i\theta})e^{-i\theta})d\theta$$

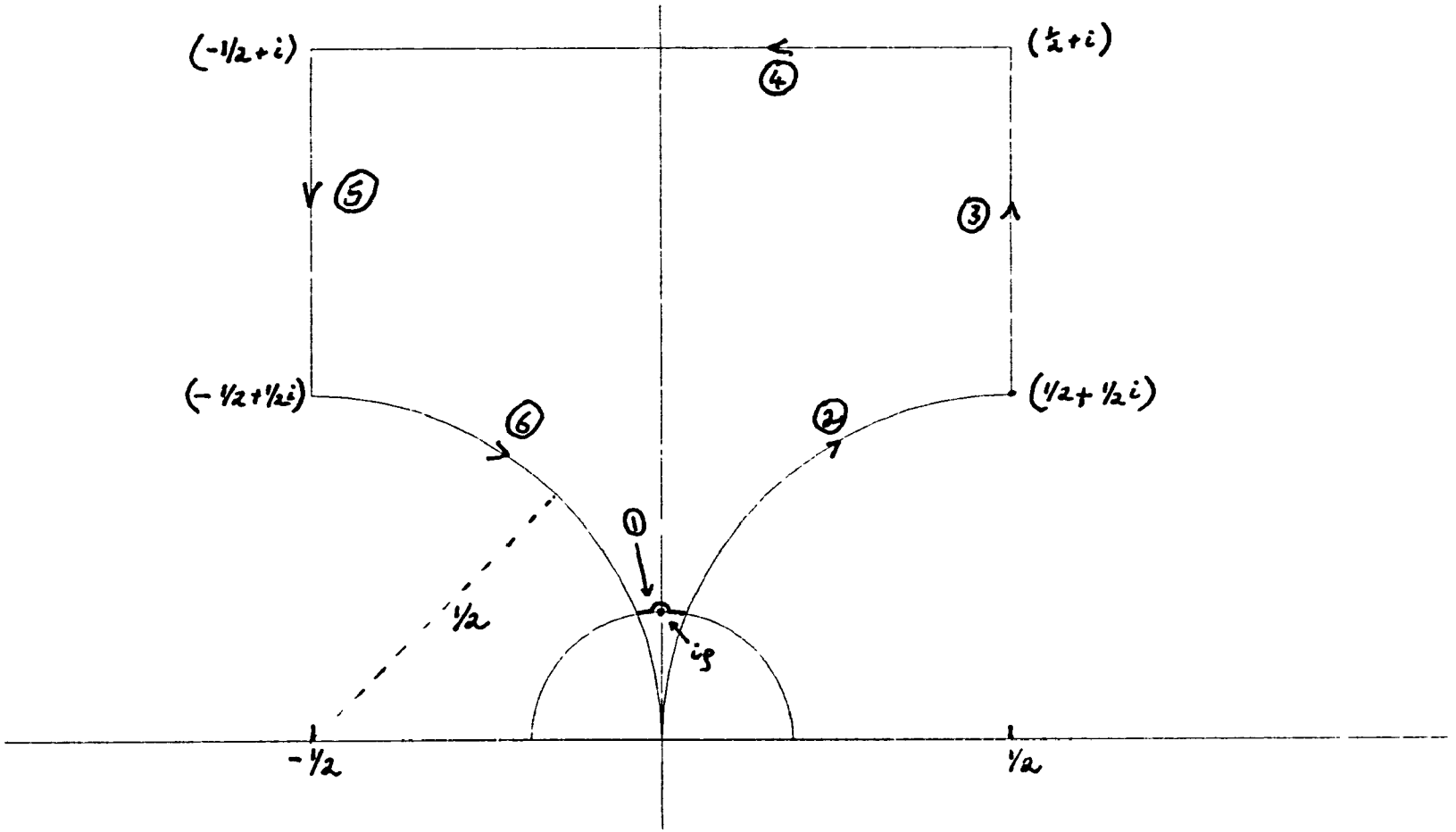
The function h has a pole at $i\rho$ for curves of odd rank. Although the integral does not pass through this point, it approaches it closely enough to make the integration algorithm unstable and significantly slow down the evaluation. We may subtract a function exhibiting the same pole at $i\rho$ from the integrand and then add back the integral of this function at the end.
In our case the integral can be evaluated in closed form. The function we subtract is essentially $1/(z - i\rho)$ but must be transformed to the contours $R_2 + R_6$ by a change of variable giving

$$\frac{1}{2\pi}\frac{1 - 2\rho^2}{1 + 2\rho^2 - \cos(\theta) - 2\rho\sin(\theta)}$$

with indefinite integral

$$\frac{1}{2\pi}(\theta - 2\tan^{-1}(\frac{(1 + \rho^2)\tan(\theta/2 - \rho)}{\rho^2})$$

The above functions are multiplied by the multiplicity of the pole if this is known. In particular, the multiplicity is zero for curves of even rank and is presumed to be one for curves of odd rank unless there is information to the contrary (as in the case $N = 400$).


(-1/2+i)
(1/2+i)
④
⑤
③
(-1/2+1/2i)
(1/2+1/2i)
⑥
②
①
1/2
ig
-1/2
1/2

4.5 The rectangular contour

The rectangular contour mentioned earlier shares a number of advantages with the proposed contour. It takes advantage of periodicity and follows paths where the residue is known analytically. It suffers however from the following problems:

- It remains in the region of poor convergence longer than the proposed contour.
- It passes close to poles of f'/f which are at "harmonics" of the pole at $i\rho$.
- It does not remain close to the imaginary axis.

The analysis goes through as for the proposed contour except that we have

$$R_2 + R_6 = \int_{\rho}^{1/2} \Re(h(i\rho\sqrt{(1-\rho^2)} + \theta)/(\pi i))$$

The function to be subtracted to avoid the effects of the pole is

$$\frac{1}{\pi} \frac{\rho\sqrt{1-\rho^2} - \rho}{\theta^2 + (\rho\sqrt{1-\rho^2} - \rho)^2}$$

And its indefinite integral is

$$\frac{1}{\pi} \tan^{-1}(1/(2(\rho - \rho\sqrt{1-\rho^2}))$$

A performance test was made using Pari-GP on a Macintosh computer to compare the effectiveness of the two contours. The 13 complex multiplication curves presented on page 483 of Silverman's book [10] shown in table 1 were taken as a sample and the integrations were timed for both types of contour.

As can be seen in table 2, the curvilinear contour was superior in all cases, the advantage increasing with the size of the conductor. As well as being slower the rectangular contour was also more variable in its timing relative to conductor size sometimes giving higher times for lower conductor size. This was found to be a consequence of zeroes off the imaginary axis but very close to the lower horizontal segment of the rectangular contour. These zeroes are

No.	D	f	a_1	a_2	a_3	a_4	a_6	N	r
1	-3	1	0	0	1	0	0	27	0
2	-3	2	0	0	0	-15	22	108	0
3	-3	3	0	0	1	-30	63	27	0
4	-4	1	0	0	0	1	0	64	0
5	-4	2	0	0	0	-11	14	32	0
6	-7	1	1	-1	0	-2	-1	49	0
7	-7	2	0	0	0	-595	5586	784	1
8	-8	1	0	4	0	2	0	256	1
9	-11	1	0	-1	1	-7	10	121	1
10	-19	1	0	0	1	-38	90	361	1
11	-43	1	0	0	1	-860	9707	1849	?
12	-67	1	0	0	1	-7370	243528	4489	?
13	-163	1	0	0	1	-2174420	1234136692	26569	

Table 1: Sample CM elliptic curves

No.	zeroes	Klim	curvi	rect	$a(2)$	$a(4)$
1	0	17	3.6	4.2	0	-2
2	0	20	3.7	4.7	0	0
3	0	17	3.6	4.2	0	-2
4	0	27	7.6	11.3	0	0
5	0	19	3.8	8.9	0	0
6	0	44	7.6	10.6	1	-1
7	1	112	19.6	299.3	0	0
8	1	59	17.0	85.9	0	0
9	1	39	8.1	60.5	0	-2
10	1	72	17.9	102.1	0	-2
11	3	180	662.2	941.6	0	-2
12	3	296	370.2	1517.1	0	-2
13	3	792	445.2	failed	0	-2

Table 2: Timings in seconds for the two types of contour

"harmonics" of the zero at $i\rho$ due to the lacunary nature of the Fourier series.

For example, when the second and fourth Fourier coefficients of a curve are both zero, all even coefficients will be zero. This occurs in curves 7 and 8 of the sample and is a simple consequence of the recurrence relationship between these coefficients and their multiplicative properties.

$$F(z) = \sum_{n=1}^{\infty} a_n e^{2\pi i n z} = \sum_{n=1}^{\infty} a_{2n-1} e^{2\pi i (2n-1) z} = e^{-2\pi i z} \sum_{n=1}^{\infty} a_{2n-1} e^{2\pi i n (2z)}$$

and so any zero at $F(z)$ is repeated at $F(z+1/2)$ as well as the usual $F(z+1)$. Other harmonics can also occur, giving computational problems which are complex to resolve.

The detailed results can be seen in table 2. Klim is the number of terms required for the specified accuracy for the argument $z = iN^{-1/2}$; "curvi" and "rect" show the timing, in seconds, for the curvilinear and rectangular contours respectively.

In curve 12 the rectangular contour counted 15 zeroes within its region.

5 Computational approach

5.1 The Data

The data set used in the study was constructed by J. E. Cremona [7]. The curves are published in book form only up to conductor 1000 and are available in electronic form up to conductor 4000. It is this data which forms the basis of the computations in this thesis.
The data is formatted as one record per curve, each record containing

$$N, a_1, a_2, a_3, a_4, a_6, r, t, \deg(\phi)$$

Where N is the conductor followed by a letter to distinguish different curves of the same conductor. The a_i are the Weierstrass coefficients of the minimal curve and r, t are the rank and the size of the torsion respectively. The last item is the degree of the modular parametrization.
There are 13,349 curves in the data set distributed by rank and conductor as shown in table 3.

Conductor	rank 0	rank 1	rank 2
0-999	1321	1123	18
1000-1999	1574	1737	79
2000-2999	1663	1852	146
3000-3999	1664	2006	166

Table 3: Distribution of curves by rank and conductor.

5.2 Programming language

The initial test programs were written in Pari-GP 1.39 [4] on a Macintosh computer. Pari-GP is ideally suited to this kind of work since it is interactive, has unlimited precision and is designed for number theoretical work with an extensive library of functions including ones for manipulating elliptic curves. It was felt initially that the language would not be satisfactory for the full scale processing of thirteen thousand curves since it lacked all but the most primitive form of file management capabilities.

Other candidates for full production runs were Maple and straight C programming. The latter was rejected because, in spite of its extensive file handling power, it lacked unlimited precision arithmetic and suitable libraries. Maple was tried but turned out to be slow and difficult to program for a purely numerical purpose such as this.
In the event the production runs were performed on a UNIX system using Pari-GP. Input and output were piped from 14 specially formatted files of 1000 curves each which simulated interactive keyboard entry. The formatting was facilitated by the use of the AWK file manipulation language [2]. Using this language, the record (for example):

$$3206\ 1\ 1\ 0\ -3636\ 82768\ 1\ 1$$

was changed to

$$init([3206, 1, 1, 0, -3636, 82768, 1, 1]); g()$$

A function *init* was written to call the necessary computations and another function g to write the output which looked like

$$\%912 = [3206, [1, 1, 0, -3636, 82768], 1, 1, 3.00]$$

This file was then further transformed by an AWK program to strip off the unnecessary characters.
This approach, while labour intensive, broke the work down into a large number of simple tasks which could be checked and tested at each stage.

5.3 The computations

The number of zeroes for each curve was computed using integration along the curved contour described above and doubling the answer to take account of the zeroes below $i\rho$ symmetric with respect to the Fricke involution. When the rank was odd, an appropriate function was subtracted from the integrand prior to numerical integration to cancel the effect of the pole at $i\rho$. The analytically known integral was added back at the completion of the numerical integration. Since the answer sought was, by definition, an integer, calculations were done to only three significant digits at this stage. The results were accurate to two significant digits in all but 20 cases.

Once the count of zeroes had been added to the fourteen sub-files, they were reconsolidated into a single file.
In order to properly compute the zeroes on the imaginary axis, this file was then broken out into six files according to the number of zeroes identified. The Pari function *solve* was used with ten digit precision to compute the zeroes. This function requires the specification of a range which brackets the zero sought. In the case of two and three zeroes the brackets were easy to establish since there is only one zero on the imaginary axis between $i\rho$ and $.2i$. In the four and five zero cases, the range from $i\rho$ to $.2i$ was randomly probed until a negative value of the function was detected. This value was then used to split the original range into two disjoint regions and the *solve* function was applied twice. In the three and five zero cases a small quantity (.000001) was added to $i\rho$ to avoid finding the zero at $i\rho$.
Only four curves were discovered with six zeroes and these were handled interactively; visually detecting the crossing points of the function.
The distribution of the number of FCPs against rank is shown in table 4.

Rank	0 FCPs	1 FCP	2 FCPs	3 FCPs	4 FCPs	5 FCPs	6 FCPs	Total
0	5100	-	1033	-	85	-	4	6222
1	-	5351	-	1293	-	74	-	6718
2	-	-	399	-	10	-	0	409
Total	5100	5351	1432	1293	95	74	4	13349

Table 4: Distribution of curves by rank and number of FCPs

As the table shows, in a significant number of cases the number of FCPs exceeds the rank of the curves. In fact this happens for 2499 curves representing 18.72% of the total number studied. This ratio is quite stable over the whole range of values of the conductor. No analysis has been performed to try to identify any special features of these curves which might distinguish them from curves where the number of FCPs equals the rank.
Although these procedures worked for the vast majority of curves, they failed in some cases. In two cases a pair of complex zeroes existed close to the imaginary axis. The other failures (49 curves) displayed multiple zeroes to the working accuracy and were handled on an individual, interactive basis.

The nature of the curves with seemingly multiple zeroes will be dealt with in the next section.

6 Observations

6.1 Apparent multiple zeroes

In Mazur and Swinnerton-Dyer [9] the authors point out the apparent triple zero of the curve of conductor 400 at $.05i$. It turns out that this is not an isolated occurrence, nor is the value of the conductor arbitrary. The current analysis has identified 49 curves with possible multiple zeroes on the imaginary axis and, without exception, their conductors are divisible by high powers of 2 or 3 and all the zeroes are at $i\rho$.
One curve has conductor $3888 = 2^4.3^5$ with a what seems to be a quintuple zero at $i\rho = .01604i$.
A number of curves with even rank which would not, *a priori* as a consequence of the Fricke involution, be expected to have a zero at $i\rho$, nevertheless seem to have a double zero there. The full range of apparent multiple zero behaviour is summarized in table 5.
It should be noted that, for a zero to be an FCP, there must be a sign change; and so the number of FCPs is less than the number of zeroes for these curves.

Multiplicity	2	3	4	5
Number of curves	29	19	0	1

Table 5: Distribution of multiple zeroes

6.2 Curves requiring further investigation

The curve 1008 [0,0,0,-12,-65] of rank 0 showed a contour integral value of .361. Upon investigation the curve showed two distinct zeroes suggesting a true contour value of 2.
The curve 3675 [1, 0, 1, -22076, -1223827] of rank 0 also showed a value of .361 and had identical behaviour.

The curve 2680 [0,0,0,-4028,-100348] of rank 0 had a contour integral value of 1.49 and also showed two distinct zeroes.
All other curves had contour integral values that correctly rounded to the appropriate integer.
The curve 1800 [0, 0, 0, -675, 60750] has a zero at .0333333333. It is more than tempting to believe that this is the rational number 1/30.

7 Rational Maps

In section 5 of Mazur and Swinnerton-Dyer [9] the authors discuss the relationship between FCPs and algebraic points on the elliptic curve. They work out this relationship for the rank 1 curve of conductor $N = 37$. This is, in fact, the earliest occurrence of a curve of rank 1.
In that section they use, amongst other techniques, the explicit parametrization of the elliptic curve by a modular form. They suggest that such calculations are to be avoided in that they depend

> "on long and unattractive calculations of a kind which one would not like to repeat for other values of N."

Since that time the LLL algorithm has been developed which can go a long way to relieving the burden of such an analysis. This technique provides a way of identifying the algebraic nature of a number computed to a sufficiently high precision. We have used this to attempt to identify the algebraic points on curves with conductor less than 100. The results of these computations can be found in tables 6 and 7.

7.1 The LLL method

The LLL method first presented in [1] provides an algorithm to find a reduced basis for a vector space. In our particular case we will be looking for the polynomial corresponding to a high precision machine computed number, say a which we believe to be the truncation of an algebraic number, say α. If α satisfies a minimal polynomial equation of degree n then the numbers $\{1, \alpha, \alpha^2, \ldots, \alpha^n\}$ are linearly dependent over $\mathbf{Z}$.
Evidently a itself is a rational number; however, its representation as a rational number $ua - v = 0$ requires very large integers u, v. The LLL algorithm can be used to find a representation for a of higher degree but with smaller coefficients. When it succeeds we conjecture that α is an exact root of the same equation. Once we have found the equation we can often independently verify that this is indeed the case.
The algorithm itself is heuristic in nature and does not attempt to find the true minimum basis, but over a decade of experience has shown it to be highly successful at identifying complex structures. A thorough tutorial description of the LLL algorithm and its application can be found in chapter 2 of "A

course in computational algebraic number theory" by H. Cohen [6]. The Pari language contains a number of implementations of the algorithm. In particular the function *lindep* was used in the present application.

7.2 The Modular Parametrization

Let $\Gamma_0(N) = \{\begin{pmatrix} a & b \\ c & d \end{pmatrix} \in SL(2,\mathbf{Z}) | c \equiv 0 \bmod N\}$. Then $\Gamma_0(N)$ acts discretely on the extended upper half plane $\mathcal{H}^* = \mathcal{H} \cup \mathbf{Q} \cup \{\infty\}$ obtained by adjoining the cusps $\mathbf{Q} \cup \{\infty\}$ to $\mathcal{H}$. The quotient $X_0(N) = \Gamma_0(N)\backslash\mathcal{H}^*$ can be given the structure of a compact Riemann surface.
According to Eichler-Simura theory, a modular form f will give rise to an elliptic curve of conductor N under the following conditions:

- f is a normalized cusp form of weight 2 and level N
- f is a newform
- The Fourier expansion of f at infinity has integer coefficients

There are maps $X_0(N) \longrightarrow \mathbf{C}/\Lambda \longrightarrow E(\mathbf{C})$.
According to Eichler-Shimura theory, (see, for example Knapp [8] p 302 *et seq.*) $X_0(N), E$ and the mappings can be lifted to maps over $\mathbf{Q}$. Moreover, the $L-$*function of* E is the Mellin transform of the cusp form f.
A fundamental critical point is a zero of $f(z)$ and thus gives an algebraic ramification point on $E(\overline{\mathbf{Q}})$.
In order to relate FCPs to specific points on the elliptic curve we must find a way to express these points in terms of the complex argument $q = e^{2\pi iz}$ used in the Fourier expansion of the weight 2 modular form $f(z)$. This can be done as follows:
Let $x(q), y(q)$ be formal power series satisfying the Weierstrass equation of E together with the condition that the invariant differential

$$x'/(2y(q) + a_1x(q) + a_3) = \sum_{n=1}^{\infty} a(n)q^n$$

Given a sufficient quantity of $a(n)$, this system can be solved recursively for the successive coefficients of $x(q)$ and $y(q)$. If E is modular and the $a(n)$ are

the Fourier coefficients of the associated modular form then $z \rightarrow (x(q), y(q))$ *is* the modular parametrization of E.
The above power series expansions have been provided in the Pari package as the *taniyama* function which generates the Laurent series $x(q)$ and $y(q)$ to as many terms as required.
To quote the Pari manual:

> taniyama(e): computes the modular parametrization of the elliptic curve e (where e is given in the format output by *initell* or *smallinitell*), in the form of a two-component vector $[u, v]$ of power series, given to the current default series precision. This vector is characterized by the following two properties. First the point $(x, y) = (u, v)$ satisfies the equation of the elliptic curve. Second, the differential $du/(2v + a_1u + a_3)$ is equal to $f(z)dz$, a differential form on $\mathcal{H}/\Gamma_0(N)$ where N is the conductor of the curve. The variable used in the power series for u and v is x, which is implicitly understood to be equal to $\exp(2i\pi z)$. It is assumed that the curve is a *strong* Weil curve, and the Manin constant is equal to 1. The equation of the curve e must be minimal (use *globalred* to get a minimal equation).

The value of $x(q)$ corresponding to an FCP, being algebraic, satisfies a polynomial equation which can be identified using the LLL algorithm provided the degree is sufficiently low and the FCP is known to high enough precision. The roots of this polynomial, say α_i, are all $x-$*coordinates of points on* the elliptic curve in $\mathbf{Q}(\alpha)$. The sum of these points produces a rational point on the curve since the sum is invariant under the embeddings of the associated number field and is therefore rational.

N	a_i	degree	trace	generator	multiple
37	[0,0,1,-1,0]	2	[6,14]	[0,0]	6
43	[0,1,1,0,0]	3	[77:363:343]	[0,0]	8
53	[1,-1,1,0,0]	6	[1,-2]	[0,0]	2
57	[0,-1,1,-2,2]	2	[4,6]	[2,1]	6
58	[1,-1,0,-1,1]	1	[15,64]	[0,1]	8
61	[1,0,0,-2,1]	6	[0,14]	[1,0]	2
65	[1,0,0,-1,0]	8	[10,26]	[1,0]	2
77	[0,0,1,2,0]	4	[0,0]	[2,3]	2
79	[1,1,1,-2,0]	5	[33,176]	[0,0]	6
82	[1,0,1,-2,0]	2	[-10:7:8]	[0,0]	3
83	[1,1,1,1,0]	?	[?]	[0,0]	?
88	[0,0,0,-4,4]	1	[8,-22]	[2.2]	6
89	[1,1,1,-1,0]	?	[?]	[0,0]	?
91A	[0,0,1,1,0]	3	[-6:-17:27]	[0,0]	4
91B	[0,1,1,-7,5]	6	[0,1,0]	[-1,3]	?
92	[0,0,0,-1,1]	3	[?]	[1,1]	?
99	[1,-1,1,-2,0]	3	[2,-3]	[0,0]	1

Table 6: Rational points corresponding to the FCP on rank 1 curves of conductor less than 100

N	discriminant	polynomial
37	$2^4 37$	$x^2 - 30x + 77$
43	$-2^4 37^2 43$	$x^3 - 22x^2 - 32x - 28$
53	$2^{14} 53^5 733^2$	$x^6 - 20x^5 + 68x^4 - 70x^3 + 128x^2 - 120x + 77$
57	$2^4 19$	$x^2 - 22x + 45$
58	1	$x - 15$
61	$2^{14} 61^3 97^2$	$x^6 - 14x^5 - x^4 + 90x^3 + 5x^2 - 88x + 64$
65	$2^{24} 5^{16} 13^4$	$x^8 - 14x^7 + 9x^6 + 34x^5 + 44x^4 - 34x^3 + 9x^2 + 14x + 1$
77	$-2^8 5^2\ 7\ 11^4$	$x^4 - 14x^3 + 51x^2 - 58x + 133$
79	$17^2 79^2$	$x^5 - 7x^4 - 33x^3 - 51x^2 - 32x - 7$
82	$2^2 41$	$x^2 - 10x - 16$
83	?	?
88	1	$x - 8$
89	?	?
91A	$-2^4\ 7\ 13^3$	$x^3 - 15x^2 + 7x - 21$
91B	$2^8 7^2 13^3 41^2 1549^2$	$x^6 - 5x^5 - 24x^4 + 39x^3 + 208x^2 - 509x + 303$
92	-23^3	$x^3 - 8x^2 + 3x - 7$
99	$-2^4 3^6 11$	$x^3 - 6x^2 - 24x - 44$

Table 7: Polynomials corresponding to the FCP on rank 1 curves of conductor less than 100

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A #FCPs for $N < 425$

The results in table 8 are quoted in [9] for curves of conductor less than 425 where the number of FCPs is greater than one.

Conductor	a_1	a_2	a_3	a_4	a_6	FCPs	rank
203	0	−1	1	20	−8	2	0
219	0	−1	1	−6	8	3	1
231	1	1	1	−39	36	2	0
245	0	0	1	−7	12	3	1
273	0	−1	1	−26	68	3	1
291	1	1	1	−169	686	2	0
326	1	0	1	−355	1182	2	0
331	1	0	0	−5	4	3	1
355	0	1	1	5	−1	2	0
370	1	0	1	−54	146	2	0
385	1	0	0	0	7	3	1
387	1	−1	1	−266	776	2	0
389*	0	1	1	−2	0	2	2
395	1	−1	1	−7	14	2	0
399	1	1	1	−13	22	3	1
400*	0	0	0	5	10	1	1
423	0	0	1	−9	10	3	1

Table 8: Number of FCPs for curves of conductor less than 425.

For the curves marked with an asterisk the bounds are sharp. Curve 389 is the first curve of rank two and the bound is sharp. Curve 400 has a sharp bound if the FCP is a triple zero.

B Results of preliminary computations

The location of the zeroes of the curves identified in [9] are shown in table 9 together with the rank 3 curve of lowest conductor and a rank 5 curve of relatively low conductor. In the these tables, in the case of FCP values marked with an asterisk, the complementary FCP can be found using the formula $\rho\rho^* = N^{-1}$.

Conductor	a_1	a_2	a_3	a_4	a_6	FCPs	rank	ρ	ρ_1
203	0	−1	1	20	−8	2	0	.13213*	
219	0	−1	1	−6	8	3	1	.06757	.09754*
231	1	1	1	−39	36	2	0	.10141*	
245	0	0	1	−7	12	3	1	.06389	.15613*
273	0	−1	1	−26	68	3	1	.06052	.10415*
291	1	1	1	−169	686	2	0	.10975*	
326	1	0	1	−355	1182	2	0	.11160*	
331	1	0	0	−5	4	3	1	.05496	.10041*
355	0	1	1	5	−1	2	0	.08326*	
370	1	0	1	−54	146	2	0	.09596*	
385	1	0	0	0	7	3	1	.05096	.10377*
387	1	−1	1	−266	776	2	0	.07858*	
389	0	1	1	−2	0	2	2	.15184*	
395	1	−1	1	−7	14	2	0	.05521*	
399	1	1	1	−13	22	3	1	.05006	.07080*
400	0	0	0	5	10	1	1	.05000	
423	0	0	1	−9	10	3	1	.04862	.09077*
5077	0	0	1	−7	6	≥ 3	3	.01403	.16906*
37396136	0	0	0	−532	4420	≥ 5	5	.00016	.00693*
									.11382*

Table 9: Location of FCPs for curves of conductor less than 425 plus two higher rank curves.

C The FCPs of curves of conductor up to 4000

The following pages present the results of the detailed calculations on the 13,349 curves in the Cremona catalogue [7] up to conductor 4000. Curves with only one FCP are omitted since this FCP is located at $iN^{-1/2}$ where N is the conductor of the curve. The format of these tables is as follows:

$$N, a_1, a_2, a_3, a_4, a_6, r, t, C, \mathrm{FCP}, r1, r2, r3$$

An example being

$$3852, 0, 0, 0, -9, 1, 2, 1, 2, 2, 0.06614757211$$

- N is the conductor
- a_1, a_2, a_3, a_4, a_6 are the Weierstrass coefficients of the minimal curve
- r is the rank of the curve
- t is the size of the torsion sub-group
- C is twice the numerical value of the contour integral computed to 3 significant digits
- FCP is the rounded integer value of C and is the number of FCPs for this curve
- rn is the value (or values) of the zero above $N^{-1/2}$ on the imaginary axis. The corresponding FCPs below $N^{-1/2}$ have the value $(Nrn)^{-1}$.

N	a1	a2	a3	a4	a6	r	t	C	FCP	r1
203	0	-1	1	20	-8	0	5	2	2	0.1321319211
222	1	1	0	-182317	29887645	0	1	2	2	0.0780374431
231	1	1	1	-34	62	0	4	2	2	0.1014149101
235	1	1	1	-3551	-82926	0	1	2	2	0.0935437989
242	1	0	1	360	-970	0	3	2	2	0.1063623412
291	1	1	1	-169	686	0	4	2	2	0.1097486532
294	1	1	0	1151	18901	0	1	2	2	0.0824786099
325	0	-1	1	-98	378	0	5	2	2	0.1043177653
326	1	0	1	-355	1182	0	3	2	2	0.1115987654
345	0	-1	1	-731	-7369	0	1	2	2	0.0638478070
355	0	1	1	5	-1	0	3	2	2	0.0832581516
363	1	1	1	-789	8130	0	4	2	2	0.1101808345
370	1	0	1	-19	342	0	3	2	2	0.0959601181
378	1	-1	0	441	-1571	0	1	2	2	0.0727392967
387	1	-1	1	-221	1316	0	4	2	2	0.0785809323
389	0	1	1	-2	0	2	1	2	2	0.1518439730
395	1	-1	1	-7	14	0	4	2	2	0.0552096986
433	1	0	0	0	1	2	1	2	2	0.1338974591
434	1	-1	1	-2364	-43641	0	1	2	2	0.0708917364
435	0	-1	1	79	-1123	0	1	2	2	0.0793643648
446	1	-1	0	-4	4	2	1	2	2	0.1360123678
459	0	0	1	-54	155	0	3	2	2	0.0590406527
464	0	1	0	-4	-24	0	2	2	2	0.0871128008
485	0	1	1	-121	-64	0	3	2	2	0.0980006459
493	1	-1	1	-7741	801682	0	1	2	2	0.0951737079
503	1	0	0	-210	-1189	0	1	2	2	0.0854331995
522	1	-1	0	-6	-54	0	3	2	2	0.0646028751
528	0	-1	0	1	-6	0	2	2	2	0.0678719114
528	0	-1	0	-720	-5184	0	2	2	2	0.0641779076
539	0	-1	1	-4377	-110013	0	1	2	2	0.0908282747
546	1	1	0	-108	-486	0	1	2	2	0.0605227533
550	1	0	1	-206	-1152	0	1	2	2	0.0738548946
550	1	0	1	49	48	0	3	2	2	0.0957373203
561	0	-1	1	-3729	-86416	0	1	2	2	0.0887428214
563	1	1	1	-15	16	2	1	2	2	0.1207123753
565	1	0	1	-19	-33	0	1	2	2	0.0605575667
570	1	1	0	-78	-972	0	2	2	2	0.0663963654
571	0	1	1	-4	2	2	1	2	2	0.1482751398
585	0	0	1	12	-21	0	3	2	2	0.0504512984
594	1	-1	0	-4146	103796	0	3	2	2	0.0779049568
602	1	-1	0	121	-4291	0	2	2	2	0.0799165834
640	0	1	0	-66	-230	0	2	2	2	0.0684653197
643	1	0	0	-4	3	2	1	2	2	0.1274184943
651	1	1	0	-5596	-164045	0	2	2	2	0.0418078330
655	0	0	1	-13	18	2	1	2	2	0.1627244762
658	1	1	0	-117008	18214144	0	1	2	2	0.0688779003
660	0	-1	0	-21	-54	0	2	2	2	0.0474888690
663	1	1	0	-262	-1745	0	2	2	2	0.0616728065

N	a1	a2	a3	a4	a6	r	t	C	FCP	r1
664	0	0	0	-7	10	2	1	2	2	0.1137019796
672	0	-1	0	210	-1764	0	2	2	2	0.0757794808
675	0	0	1	0	6	0	3	2	2	0.0592692333
676	0	1	0	-732	-23516	0	3	2	2	0.0940666061
681	0	-1	1	0	2	2	1	2	2	0.1353922253
693	0	0	1	-804	-8775	0	1	2	2	0.0687501850
702	1	-1	0	-5826	173076	0	3	2	2	0.0682943326
707	0	1	1	-12	12	2	1	2	2	0.1500092171
708	0	-1	0	11	34	0	2	2	2	0.0517925855
709	0	-1	1	-2	0	2	1	2	2	0.1321683565
712	0	1	0	-32	-80	0	2	2	2	0.0441711628
718	1	0	1	-5	0	2	1	2	2	0.1170621505
730	1	-1	0	-865	-9219	0	2	2	2	0.0514780802
730	1	0	1	96	-658	0	3	2	2	0.1041294968
735	0	-1	1	-15206	-1184338	0	1	2	2	0.1099226571
738	1	-1	0	-1575	751869	0	1	2	2	0.0485289526
741	1	1	0	5571	-41634	0	1	2	2	0.0576901853
744	0	-1	0	-32	-84	0	1	2	2	0.0572281698
755	1	0	1	1	-3	0	2	2	2	0.0627432179
770	1	0	1	-914	10596	0	6	2	2	0.0884005782
774	1	-1	0	-397116	-96224252	0	1	2	2	0.0649023249
775	1	0	1	-26	-177	0	2	2	2	0.0702574577
777	1	1	0	-16	19	0	2	2	2	0.0563338663
781	0	0	1	-1378	347	0	1	2	2	0.0691102062
786	1	1	0	-3418	-78356	0	1	2	2	0.0749859509
791	1	0	1	-31	117	0	2	2	2	0.0615365707
791	1	0	1	-38	-93	0	2	2	2	0.0864343456
792	0	0	0	-72147	7458910	0	2	2	2	0.0619003638
794	1	0	1	-3	2	2	1	2	2	0.1191378158
795	0	-1	1	-221	-1198	0	1	2	2	0.0618856286
801	0	0	1	-3972	-169349	0	1	2	2	0.0830518558
802	1	0	0	-9	-11	0	2	2	2	0.0366274322
805	1	-1	1	-163	-758	0	2	2	2	0.0743245820
805	1	-1	1	2	2356	0	4	2	2	0.0792467993
808	0	0	0	-11	-26	0	1	2	2	0.0385643125
817	0	1	1	1	6	2	1	2	2	0.1066363116
832	0	0	0	-16	-24	0	2	2	2	0.0473441614
850	1	1	0	9975	-114875	0	1	2	2	0.0630509261
850	1	-1	1	-255	-1503	0	1	2	2	0.0495629013
880	0	-1	0	-1416	-20240	0	1	2	2	0.0698861238
888	0	-1	0	-200	-1044	0	1	2	2	0.0779970141
891	0	0	1	6	-15	0	3	2	2	0.0811435201
897	1	1	0	-97	5560	0	2	2	2	0.0658786116
901	0	1	1	-17	7	0	3	2	2	0.0662792631
913	1	-1	1	-115	-476	0	1	2	2	0.0640714347
916	0	0	0	-71	-290	0	2	2	2	0.0443166511
916	0	0	0	-4	1	2	1	2	2	0.1090474502
924	0	-1	0	25158	-775719	0	1	2	2	0.0687833531

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930	1	1	0	-203	-1347	0	1	2	2	0.0734964616
936	0	0	0	-5862	-162295	0	2	2	2	0.0525816674
940	0	1	0	21619	-57905	0	1	2	2	0.0529703923
944	0	0	0	-19	34	2	1	2	2	0.1082287705
955	1	-1	1	-1038	13292	0	2	2	2	0.0601336507
957	1	1	0	-491	3984	0	2	2	2	0.0629839841
970	1	0	1	-21444	1420226	0	1	2	2	0.0919458740
974	1	1	0	-9421	-355915	0	1	2	2	0.0924252782
974	1	1	0	8	0	0	2	2	2	0.0500844347
978	1	1	0	-2188119	-1243572651	0	1	2	2	0.0952892943
980	0	0	0	-343	-4802	0	1	2	2	0.0916078321
980	0	0	0	1568	-72716	0	1	2	2	0.0593518352
984	0	-1	0	184	1644	0	1	2	2	0.0499130463
990	1	-1	0	-10734	430740	0	6	2	2	0.0413543014
997	0	-1	1	-5	-3	2	1	2	2	0.0987751086
997	0	-1	1	-24	54	2	1	2	2	0.1270474293
1001	1	-1	1	-16	-198	0	4	2	2	0.0861859232
1001	0	0	1	-199	1092	2	1	2	2	0.1664603691
1008	0	0	0	-12	-65	0	2	0.36	2	0.0495634999
1011	1	1	0	-19	-44	0	1	2	2	0.0601805914
1017	1	-1	1	-16958	-845720	0	1	2	2	0.0838897677
1023	1	1	0	-100521	11855376	0	2	2	2	0.0617523955
1025	1	0	1	-526	-4677	0	2	2	2	0.0644333013
1026	1	-1	0	-311406	66964436	0	1	2	2	0.0668041057
1028	0	1	0	-10	9	2	1	2	2	0.0993063354
1030	1	-1	0	-80	-800	0	1	2	2	0.0623599124
1034	1	0	1	-12	14	2	1	2	2	0.1119002325
1040	0	1	0	-281	-1910	0	2	2	2	0.0783659796
1044	0	0	0	-39	-146	0	1	2	2	0.0627629795
1056	0	-1	0	-34	-56	0	4	2	2	0.0533001791
1056	0	1	0	-10	-16	0	2	2	2	0.0420986613
1058	1	-1	0	-5389	178149	0	2	2	2	0.0599145260
1058	1	0	1	0	2	2	1	2	2	0.1135899259
1065	1	1	0	-13	-32	0	2	2	2	0.0560854555
1070	1	-1	0	-10	16	2	1	2	2	0.1249352427
1071	0	0	1	32082	-2000768	0	1	2	2	0.0596797457
1073	0	-1	1	-45	132	2	1	2	2	0.0977015611
1074	1	1	0	-73400	7623564	0	2	2	2	0.0630505517
1074	1	1	0	-911	-10971	0	2	2	2	0.0878260091
1075	0	1	1	-83	-381	0	1	2	2	0.0741576819
1075	1	0	1	-76	-327	0	1	2	2	0.0710275697
1077	1	1	1	-27	42	2	1	2	2	0.1141204345
1078	1	1	0	-1250	-17114	0	1	2	2	0.0440657505
1078	1	0	0	636	-2612	0	2	2	2	0.0388350715
1083	1	1	1	-549	4050	0	4	2	2	0.1039841202
1085	1	-1	1	23	-24	0	4	2	2	0.0535957666
1088	0	1	0	-25	39	2	2	2	2	0.0990768861
1089	0	0	1	0	-40263	0	1	2	2	0.0657590338

N	a1	a2	a3	a4	a6	r	t	C	FCP	r1
1089	1	-1	0	-204	259	0	2	2	2	0.0490486683
1090	1	1	0	-38963	2942317	0	1	2	2	0.0485946501
1094	1	0	1	-7	6	2	1	2	2	0.1107282323
1100	0	-1	0	67	-263	0	1	2	2	0.0478706134
1102	1	1	0	-29	61	2	1	2	2	0.0989496929
1105	1	-1	1	-14388	-660658	0	2	2	2	0.0826247223
1106	1	-1	0	-98	-444	0	2	2	2	0.0617072846
1115	0	0	1	-22	-40	0	1	2	2	0.0500057935
1116	0	0	0	-27489	1844341	0	1	2	2	0.0480497219
1120	0	0	0	-13	-12	0	4	2	2	0.0407951228
1120	0	0	0	29912	-1953488	0	1	2	2	0.0935049888
1122	1	1	0	-6666	154836	0	2	2	2	0.0680388712
1126	1	-1	0	2	4	2	1	2	2	0.1282128863
1127	1	-1	1	-181	956	0	4	2	2	0.0821836013
1132	0	1	0	-5	4	2	1	2	2	0.0979963022
1134	1	-1	0	9	3	0	3	2	2	0.0604488567
1137	1	1	1	-2	2	2	1	2	2	0.1131298144
1141	1	0	0	-27	94	2	1	2	2	0.1279600927
1143	0	0	1	-39	90	2	1	2	2	0.1097223329
1147	0	-1	1	-9	9	2	1	2	2	0.0941557581
1152	0	0	0	-21	-34	0	2	2	2	0.0510310363
1152	0	0	0	-57	-430	0	2	2	2	0.0658807846
1155	1	1	0	-203	1032	0	2	2	2	0.0439976265
1166	1	-1	0	7	-19	0	2	2	2	0.0541231156
1171	1	-1	1	-3	0	2	1	2	2	0.1388832484
1176	0	-1	0	-359	2724	0	4	2	2	0.0485611021
1185	1	1	0	-107	-474	0	1	2	2	0.0415179665
1197	1	-1	0	-3879	-92016	0	2	2	2	0.0573139755
1200	0	-1	0	167	37	0	1	2	2	0.0500000000
1200	0	-1	0	27	-243	0	1	2	2	0.0500000000
1215	0	0	1	-252	-1540	0	1	2	2	0.0405720413
1215	1	-1	0	-420	3221	0	1	2	2	0.0405720413
1216	0	1	0	-85	-333	0	1	2	2	0.0634072636
1216	0	0	0	-14	-606	0	1	2	2	0.0657506842
1218	1	1	0	1099	159789	0	1	2	2	0.0781194600
1224	0	0	0	-471	-3926	0	2	2	2	0.0559730432
1225	1	1	0	-9825	-412250	0	1	2	2	0.0438792101
1232	0	0	0	-26	51	0	2	2	2	0.0448712251
1232	0	0	0	-467	-3950	0	2	2	2	0.0552845455
1240	0	-1	0	-7201	-234715	0	1	2	2	0.0494350297
1242	1	-1	0	-185193	90733261	0	1	2	2	0.0670209284
1245	1	1	0	-13	-8	0	2	2	2	0.0475738843
1246	1	-1	0	-1	13	2	1	2	2	0.1305926469
1251	1	-1	0	-69	224	0	2	2	2	0.0552023872
1254	1	1	0	-14655	574149	0	2	2	2	0.0692112308
1258	1	0	1	-637	-9384	0	1	2	2	0.1000789449
1274	1	1	0	-225817	-41469595	0	1	2	2	0.0967196621
1284	0	1	0	-13082	-580299	0	1	2	2	0.0424720142

N	a1	a2	a3	a4	a6	r	t	C	FCP	r1
1287	1	-1	0	147	38240	0	2	2	2	0.0487697934
1288	0	0	0	24425	-37215701	0	1	2	2	0.0862537019
1289	1	0	1	-22	-75	0	2	2	2	0.0762808734
1290	1	1	1	-10256	-418831	0	2	1.99	2	0.0345798916
1293	0	1	1	-73	217	0	3	2	2	0.0408713678
1296	0	0	0	-39	-94	0	1	2	2	0.0582700713
1302	1	1	0	28579	171645	0	2	2	2	0.0779242624
1305	1	-1	0	-270	1215	0	2	2	2	0.0468063822
1309	0	-1	1	-22	52	2	1	2	2	0.1291733269
1311	1	1	1	-5654	161282	0	4	2	2	0.1043996372
1320	0	-1	0	-10931	-436260	0	2	2	2	0.0559596448
1323	0	0	1	0	-86	0	1	2	2	0.0413137376
1323	1	-1	0	579	42398	0	1	2	2	0.0511931008
1323	1	-1	1	-4052	-353510	0	1	2	2	0.0970518042
1323	1	-1	0	-9	-36	0	1	2	2	0.0555789004
1324	0	1	0	3	4	2	1	2	2	0.0946352842
1325	1	-1	0	-3442	78591	0	2	2	2	0.0333076055
1325	0	1	1	-8	-6	2	1	2	2	0.1396043804
1334	1	0	1	2310	-26580	0	3	2	2	0.0666123020
1337	1	0	1	-57	-241	0	2	2	2	0.0779816165
1339	1	-1	0	-2	7	0	2	2	2	0.0397631799
1342	1	1	1	-13960	629001	0	5	2	2	0.0565521801
1344	0	1	0	-5	-21	0	2	2	2	0.0373540305
1344	0	-1	0	-29	-387	0	2	2	2	0.0609937546
1349	0	0	1	29362	-123483	0	1	2	2	0.0717051929
1360	0	-1	0	6384	58816	0	1	2	2	0.0600954831
1365	1	1	0	-233	-1248	0	2	2	2	0.0525187789
1374	1	1	0	44	-944	0	2	2	2	0.0877970360
1379	0	1	1	-7	12	0	3	2	2	0.0550551393
1380	0	-1	0	-21	-30	0	2	2	2	0.0399489238
1380	0	-1	0	766939	112645761	0	1	2	2	0.0651209467
1386	1	-1	0	-873	-36099	0	2	2	2	0.0563137221
1392	0	-1	0	-123272	-78495504	0	1	2	2	0.0815739850
1392	0	-1	0	-50	-129	0	1	2	2	0.0599329127
1395	1	-1	0	-90	351	0	2	2	2	0.0443525349
1400	0	1	0	-8	-512	0	2	2	2	0.0595594520
1405	1	0	1	-3659	-85479	0	2	2	2	0.0782271351
1408	0	0	0	-1	-6	0	2	2	2	0.0603257099
1421	1	0	1	-467	-4119	0	2	2	2	0.0757783227
1425	1	1	0	475	0	0	2	1.99	2	0.0304622450
1425	1	1	0	-15	-30	0	1	2	2	0.0537787723
1425	1	0	0	562	-23133	0	4	2	2	0.0313701952
1426	1	0	1	-14286	656000	0	6	2	2	0.0962050368
1428	0	-1	0	-2460477	1486414521	0	1	2	2	0.0710514029
1430	1	0	0	104	0	0	6	2	2	0.0538591126
1431	1	-1	1	-29	-26	2	1	2	2	0.0986652439
1433	1	0	1	-25	81	0	2	2	2	0.0512938899
1436	0	1	0	-12	4	2	1	2	2	0.0933206668

N	a1	a2	a3	a4	a6	r	t	C	FCP	r1
1440	0	0	0	-273	-1672	0	4	2	2	0.0465214397
1442	1	1	0	-577	8565	0	2	2	2	0.0436938935
1443	0	-1	1	109	-121	0	1	2	2	0.0390573966
1443	1	1	1	-9	6	2	2	2	2	0.1104253848
1444	0	-1	0	-2286	34549	0	1	2	2	0.0549013987
1445	1	1	0	717	5422	0	1	2	2	0.0664709660
1445	1	0	1	-2463	-46987	0	2	2	2	0.0342241780
1446	1	1	0	-4	4	2	1	2	2	0.0987505561
1449	1	-1	0	-33	80	0	2	1.99	2	0.0358739648
1452	0	1	0	-24845	1499199	0	1	2	2	0.0577149705
1455	1	1	0	-31548	2143683	0	2	2	2	0.0562726149
1456	0	0	0	-584	-5444	0	1	2	2	0.0559562498
1457	1	-1	1	-36	-34	0	4	2	2	0.0821828054
1466	1	-1	1	-42	105	2	1	2	2	0.0868248391
1470	1	1	0	-24378	-1474668	0	2	2	2	0.0446764697
1472	0	0	0	-652	-7440	0	2	2	2	0.0724462370
1472	0	0	0	-220	-1256	0	1	2	2	0.0869152856
1477	1	0	0	-6	7	2	1	2	2	0.1215040248
1480	0	0	0	-28	52	2	1	2	2	0.1011762797
1482	1	1	0	-13195	696637	0	1	2	2	0.0660904689
1483	0	1	1	2	2	2	1	2	2	0.1396163154
1484	0	0	0	-274532	55353265	0	2	2	2	0.0645809578
1485	0	0	1	-378	2828	0	3	2	2	0.0597192918
1488	0	-1	0	-279	1890	0	2	2	2	0.0579673620
1488	0	-1	0	-9	-12	0	2	2	2	0.0700935840
1507	1	-1	1	-351	2486	0	4	2	2	0.0838314818
1512	0	0	0	-362988	82933524	0	1	2	2	0.0314003853
1512	0	0	0	-27	-810	0	1	2	2	0.0630480480
1517	1	-1	0	-1448	-20845	0	2	2	2	0.0559971257
1521	1	-1	0	-90	-311	0	1	2	2	0.0433270784
1525	1	0	0	-8	7	2	2	2	2	0.1196687316
1530	1	-1	0	-690	-102700	0	2	2	2	0.0611910762
1530	1	-1	0	-720	-8960	0	2	2	2	0.0437503082
1531	0	0	1	-14	20	2	1	2	2	0.0844400490
1534	1	-1	0	5	37	2	1	2	2	0.1256495130
1544	0	0	0	-67	-210	0	2	2	2	0.0613996324
1550	1	-1	0	-142	-684	0	1	2	2	0.0604812663
1552	0	0	0	-31	-66	0	2	2	2	0.0535688225
1555	1	-1	0	5	0	0	2	2	2	0.0519191722
1558	1	-1	0	-110633	-14134195	0	2	2	2	0.0685633798
1560	0	-1	0	-345	-2355	0	1	2	2	0.0438529010
1566	1	-1	0	-1605	-24491	0	1	2	2	0.0607674916
1566	1	-1	0	6600	49472	0	1	2	2	0.0499287728
1568	0	0	0	343	0	0	2	2	2	0.0602398738
1568	0	1	0	-114	-2528	0	2	2	2	0.0776198650
1570	1	0	1	-4	6	2	1	2	2	0.1028525844
1572	0	-1	0	-37	-530	0	2	2	2	0.0394926317
1573	1	1	0	-2301	-27716	0	1	2	2	0.0664463391

N	a1	a2	a3	a4	a6	r	t	C	FCP	r1
1575	0	0	1	-300	-2219	0	1	2	2	0.0413666330
1576	0	1	0	-9	-5	2	1	2	2	0.0910800050
1584	0	0	0	-72147	-7458910	0	2	2	2	0.0420952078
1587	1	1	0	-36247	-2734160	0	2	2	2	0.0775857245
1590	1	1	0	332	-102212	0	2	2	2	0.0817318562
1591	0	0	1	-71	552	2	1	2	2	0.1034025110
1594	1	-1	1	-27	75	2	1	2	2	0.0864647611
1600	0	-1	0	-833	-10463	0	1	2	2	0.0556886921
1600	0	0	0	-200	-1000	0	2	2	2	0.0408736722
1605	1	1	0	-68	-237	0	2	2	2	0.0629403801
1608	0	-1	0	-25	61	2	1	2	2	0.0849315954
1610	1	0	0	-1841	30121	0	6	2	2	0.0398506445
1611	1	-1	1	-1085	-25626	0	1	2	2	0.0523999025
1611	0	0	1	-9	20	2	1	2	2	0.1093004173
1612	0	0	0	-272	80980	0	1	2	2	0.0669130626
1613	0	1	1	-3	0	2	1	2	2	0.0974118561
1615	1	0	0	-215	1192	2	2	2	2	0.1146350245
1617	1	1	0	675	5832	0	2	2	2	0.0317477926
1620	0	0	0	-408	3172	0	3	2	2	0.0521900206
1621	1	-1	1	-4	4	2	1	2	2	0.0967229925
1624	0	0	0	-26	5	0	4	2	2	0.0449209779
1627	1	1	1	-3	-2	2	1	2	2	0.1004605071
1638	1	-1	0	7797	-181819	0	2	2	2	0.0596523389
1638	1	-1	0	-904356	333142096	0	1	2	2	0.0681604893
1638	1	-1	1	-41477	-3246595	0	1	2	2	0.0291099257
1639	1	-1	1	-6	6	2	1	2	2	0.1417281969
1641	0	-1	1	-4	6	2	1	2	2	0.1237635618
1642	1	1	0	-1	5	2	1	2	2	0.0923177209
1645	1	-1	0	-5	0	0	2	2	2	0.0352092006
1650	1	0	1	-1006651	367208198	0	2	2	2	0.0345712637
1653	0	-1	1	-27	182	2	1	2	2	0.0920588921
1653	1	1	0	9	0	0	2	2	2	0.0581213972
1656	0	0	0	-1866	31025	0	4	2	2	0.0513417409
1659	1	1	0	-10	-17	0	2	2	2	0.0469716128
1662	1	1	0	-27	45	2	1	2	2	0.0995923260
1664	0	-1	0	-46	-106	0	1	2	2	0.0548161262
1664	0	1	0	-19039	-1017759	0	2	2	2	0.0624360461
1664	0	1	0	-76162	8064798	0	2	2	2	0.0612446085
1664	0	0	0	-4	16	2	1	2	2	0.1056572289
1670	1	0	0	-423481	128666745	0	3	2	2	0.0528017365
1672	0	0	0	-71	-230	0	2	2	2	0.0600530541
1674	1	-1	0	3	-87	0	3	2	2	0.0533626827
1674	1	-1	0	-9	9	2	1	2	2	0.0886154680
1680	0	-1	0	-656	2496	0	2	2	2	0.0392760981
1680	0	-1	0	-61	-164	0	2	2	2	0.0563865487
1682	1	1	0	-51318	-4555676	0	1	2	2	0.0713158399
1682	1	0	1	-2541	10430	0	3	2	2	0.0878850271
1683	1	-1	0	-83604	-9252301	0	2	2	2	0.0619125397

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1683	1	-1	0	-108	-405	0	2	2	2	0.0444656365
1688	0	1	0	-12	16	2	1	2	2	0.0917735629
1694	1	1	0	361	235	0	1	2	2	0.0421653831
1694	1	-1	1	-3532	-81265	0	2	2	2	0.0299110664
1696	0	0	0	-76	256	2	1	2	2	0.1023010248
1696	0	-1	0	15	1	2	1	2	2	0.0854137839
1701	1	-1	0	-420	-3223	0	1	2	2	0.0411526916
1701	0	0	1	-27	56	2	1	2	2	0.1109668081
1705	1	0	1	-964	14661	0	2	2	2	0.0546239721
1710	1	-1	0	84015	19909341	0	2	2	2	0.0441766692
1712	0	-1	0	0	16	2	1	2	2	0.0831205753
1717	0	-1	1	-4	4	2	1	2	2	0.1231217123
1725	0	-1	1	11667	7193	0	1	2	2	0.0655050558
1725	1	1	0	225	0	0	2	2	2	0.0583597253
1725	1	1	1	11412	300156	0	4	2	2	0.0968259191
1725	1	1	1	-888	-13344	0	2	2	2	0.0918112327
1728	0	0	0	-432	-4320	0	1	2	2	0.0686528133
1728	0	0	0	-108	-7344	0	1	2	2	0.0496752709
1732	0	1	0	-44	100	2	1	2	2	0.0909159410
1734	1	0	1	-53327	4460546	0	2	2	2	0.0458900679
1734	1	1	1	-1740	237561	0	1	2	2	0.0547960448
1738	1	1	0	-14	4	2	1	2	2	0.0963201925
1743	1	0	0	-2900274	1900841859	0	2	2	2	0.0543036192
1745	0	-1	1	-6	6	2	1	2	2	0.1205074178
1746	1	-1	0	-419922	104826964	0	2	2	2	0.0423922246
1746	1	-1	0	-24	44	2	2	2	2	0.0868613271
1748	0	-1	0	-90	361	2	1	2	2	0.0831693309
1752	0	-1	0	-20	36	2	2	2	2	0.0847609540
1755	0	0	1	-543	-5252	0	1	2	2	0.0620717172
1758	1	1	0	-2550	-684	0	1	2	2	0.0568321101
1763	1	0	1	-3	-3	0	1	1.99	2	0.0349570852
1764	0	0	0	-4116	-84035	0	2	2	2	0.0420454669
1770	1	1	1	-71	-271	0	1	2	2	0.0347098398
1776	0	-1	0	-39	18	0	2	2	2	0.0410997468
1776	0	1	0	-2917080	-1918643436	0	1	2	2	0.0533671208
1779	0	1	1	-97	337	0	3	2	2	0.0361688817
1785	1	1	0	77	-392	0	2	2	2	0.0574015679
1785	1	1	0	32	-77	0	2	2	2	0.0481280227
1785	1	1	0	-2	-9	0	2	2	2	0.0289008783
1785	0	1	1	-141	-889	0	3	2	2	0.0360284714
1786	1	0	1	5893	79486	0	1	2	2	0.0528212030
1790	1	0	1	-219	-714	0	3	2	2	0.0530838000
1793	0	1	1	6	6	2	1	2	2	0.1471470963
1800	0	0	0	-135	-1350	0	2	2	2	0.0379865850
1800	0	0	0	-675	60750	0	2	2	2	0.0333333333
1803	1	1	0	-9	0	0	2	2	2	0.0365883007
1805	0	-1	1	-101	-359	0	1	2	2	0.0356475948
1812	0	-1	0	31	438	0	2	2	2	0.0617137567

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1813	1	-1	0	-254	11479	0	2	2	2	0.0592712433
1815	1	0	0	-1636	15335	0	2	2	2	0.0381985429
1818	1	-1	0	-591	6381	0	3	2	2	0.0266211275
1818	1	-1	0	-810	-8748	0	1	2	2	0.0439207723
1826	1	0	1	-56	-294	0	3	2	2	0.0827075271
1830	1	1	0	-1392	-25344	0	1	2	2	0.0471263053
1832	0	-1	0	-27	64	2	1	2	2	0.0815027654
1833	1	1	0	248	2245	0	1	2	2	0.0590979150
1840	0	0	0	112	688	0	1	2	2	0.0438634694
1844	0	0	0	-7	-18	0	1	2	2	0.0366136657
1845	1	-1	0	-195	-1000	0	2	2	2	0.0502784600
1848	0	1	0	-3360	-90576	0	2	2	2	0.0446575612
1849	1	1	1	-71225	1841958	0	1	2	2	0.0883399311
1856	0	-1	0	-321	-2111	0	1	2	2	0.0380129758
1856	0	-1	0	-17	49	2	1	2	2	0.0811752365
1862	1	0	1	-75	242	2	3	2	2	0.1105832469
1862	1	1	0	-760	-8392	0	1	2	2	0.0629659114
1866	1	1	0	-1728	-24786	0	1	2	2	0.0517957866
1866	1	1	0	-249	-1755	0	2	2	2	0.0554693943
1870	1	-1	0	535	-1075	0	2	2	2	0.0524977645
1870	1	0	1	-19504	1046752	0	3	2	2	0.0480381045
1870	1	-1	0	-36835	-2711915	0	1	2	2	0.1201743344
1870	1	-1	0	-44	-112	0	2	2	2	0.0450180569
1872	0	0	0	-147	-718	0	1	2	2	0.0364069961
1872	0	0	0	-5862	162295	0	2	2	2	0.0583399562
1872	0	0	0	-1512	-23085	0	2	2	2	0.0709295448
1872	0	0	0	-2811	1197610	0	2	2	2	0.0580454429
1873	1	-1	1	-1	2	2	1	2	2	0.0938562655
1885	0	1	1	-411	2545	0	1	2	2	0.0277187017
1887	1	1	1	-17	20	2	1	2	2	0.1117821241
1888	0	-1	0	-2	4	2	1	2	2	0.0822431815
1890	1	-1	0	-225	9981	0	1	2	2	0.0325300024
1890	1	-1	0	21	-147	0	3	2	2	0.0325300024
1896	0	-1	0	-23504	-1938180	0	1	2	2	0.0712131620
1899	1	-1	1	-110	-404	0	2	2	2	0.0540259235
1900	0	1	0	-23033	1247188	0	2	2	2	0.0685398457
1901	1	1	0	-29	-74	0	1	2	2	0.0569575872
1907	1	-1	1	-46	130	2	1	2	2	0.0908134796
1909	0	0	1	-4	2	2	1	2	2	0.0811402610
1912	0	0	0	-163	-801	0	1	2	2	0.0277920808
1913	1	1	0	-202	1025	2	1	2	2	0.0765831784
1914	1	1	1	-625515	-107644839	0	2	2	2	0.0594588878
1917	1	-1	1	-41	110	2	1	2	2	0.0930637700
1918	1	0	1	-22	-24	2	2	2	2	0.1059641957
1920	0	1	0	-6	-6	0	2	2	2	0.0313278231
1920	0	-1	0	-2071	-36305	0	2	2	2	0.0603807364
1920	0	-1	0	-606	5850	0	2	2	2	0.0603807364
1922	1	1	0	-4	-4	2	1	2	2	0.0925567827

N	a1	a2	a3	a4	a6	r	t	C	FCP	r1
1932	0	-1	0	-253	7705	0	1	2	2	0.0468486219
1933	1	0	0	1	-2	2	1	2	2	0.1248744699
1935	1	-1	0	-69	8	0	2	2	2	0.0316098606
1935	0	0	1	16332	-3797127	0	1	2	2	0.0606703128
1935	0	0	1	-151023	-22942166	0	1	2	2	0.0607829749
1936	0	1	0	-117	-541	0	1	2	2	0.0349401258
1941	1	1	0	-2064	-36999	0	1	2	2	0.0706390989
1944	0	0	0	-486	-4131	0	1	2	2	0.0518258257
1952	0	1	0	-17	31	2	1	2	2	0.0898572515
1955	1	1	0	-4628	-123953	0	1	2	2	0.0390797988
1956	0	1	0	-45	-216	0	2	2	2	0.0403636605
1957	1	1	0	-522	4315	2	1	2	2	0.0757066417
1957	1	1	1	-8	-12	2	1	2	2	0.1015481229
1960	0	1	0	-11776	568224	0	1	2	2	0.0699239748
1960	0	-1	0	-5945	-174803	0	1	2	2	0.0434864134
1964	0	0	0	-16	25	2	1	2	2	0.1020355101
1967	1	-1	0	-8	-5	0	2	2	2	0 0449440339
1971	0	0	1	-2403	-45340	0	1	2	2	0.0902410566
1974	1	1	0	-2380	-46256	0	2	2	2	0.0525415229
1978	1	1	0	16	-12800	0	1	2	2	0.0325683324
1980	0	0	0	-408	-3107	0	2	2	2	0.0485101394
1986	1	1	0	-201	-1185	0	1	2	2	0.0672864722
1989	1	-1	0	-297	1944	0	2	2	2	0.0316189552
1989	1	-1	0	-6594	-204121	0	2	2	2	0 0644219041
1992	0	1	0	-744	-8064	0	2	2	2	0.0399590379
1995	0	-1	1	55	-739	0	1	2	2	0.0580151581
2006	1	0	1	30	-7260	0	3	2	2	0.0562229035
2006	1	1	0	-88	284	2	1	2	2	0.0874734796
2007	1	-1	1	-14	42	2	1	2	2	0.0981454137
2015	0	0	1	-127	552	2	1	2	2	0.1579063784
2016	0	0	0	-201	-880	0	4	2	2	0.0324228897
2021	0	0	1	-65	202	2	1	2	2	0 0843169978
2022	1	1	1	-15	-69	0	1	2	2	0.0529140223
2027	0	-1	1	-8	12	2	1	2	2	0.1066494041
2028	0	-1	0	-69	-495	0	1	2	2	0.0607612760
2031	0	1	1	-130	520	2	1	2	2	0.0952792617
2032	0	1	0	-16	-12	2	1	2	2	0.0859095402
2034	1	-1	0	-1332	10192	0	2	2	2	0 0344972251
2034	1	-1	0	-1728	-27216	0	2	2	2	0.0544275392
2035	1	-1	0	-2405	-44800	0	2	2	2	0.0470085376
2035	0	0	1	-365513	85503218	0	1	2	2	0.0643268215
2035	1	0	0	-100	375	2	2	2	2	0.1143976826
2037	1	1	0	35	-98	0	1	2	2	0.0486315914
2038	1	0	0	-10	36	2	1	2	2	0.0755991378
2043	1	-1	1	-10346	407616	0	4	2	2	0.0814006538
2045	1	-1	0	-10	-9	0	2	2	2	0.0470915305
2045	1	1	1	-10	12	2	1	2	2	0.0929713728
2050	1	-1	0	-34667	-2347259	0	2	2	2	0.0573100185

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2055	1	0	1	-89	161	0	1	1.99	2	0.0346264009
2056	0	1	0	-4	-3	2	1	2	2	0.0889416766
2057	1	-1	0	-83	-104	0	2	2	2	0.0587643792
2059	0	1	1	-36	72	2	1	2	2	0.1418548838
2064	0	-1	0	2544	-111168	0	1	2	2	0.0569460003
2064	0	1	0	-384	1716	0	2	2	2	0.0407209845
2070	1	-1	0	-3810	91476	0	6	2	2	0.0625812981
2071	1	-1	0	19	-32	0	1	2	2	0.0399073492
2072	0	0	0	-16882	-844275	0	2	2	2	0.0672965905
2080	0	0	0	-433	-3468	0	2	2	2	0.0484983751
2080	0	1	0	-86	280	2	2	2	2	0.0841892481
2080	0	0	0	-217	-1224	0	4	2	2	0.0422469313
2085	1	1	0	-12	99	0	2	2	2	0.0533566650
2086	1	0	1	-3172	-69534	0	2	2	2	0.1050331842
2088	0	0	0	189	-594	0	2	2	2	0.0548485271
2089	1	-1	0	-38	145	0	2	2	2	0.0526419180
2093	0	-1	1	-3575	74692	0	1	2	2	0.0557103122
2100	0	-1	0	167	-338	0	2	2	2	0.0471784618
2100	0	-1	0	-76833	-13607838	0	2	2	2	0.0311826127
2103	0	-1	1	-69	245	2	1	2	2	0.0870652233
2112	0	-1	0	-32065	-2199359	0	2	2	2	0.0787371119
2112	0	1	0	-5204	-116478	0	2	2	2	0.0362290219
2112	0	-1	0	-309	-2331	0	2	2	2	0.0661375195
2115	1	-1	0	-1080	-1142699	0	1	2	2	0.0555210999
2115	1	-1	1	-3308	-72394	0	2	2	2	0.0669319517
2117	0	1	1	-8	6	2	1	2	2	0.1386355171
2123	0	0	1	-1	2	2	1	2	2	0.0974522215
2124	0	0	0	-84	-299	0	1	2	2	0.0577869246
2128	0	0	0	4	-5	0	2	2	2	0.0503889428
2130	1	1	0	-8	12	2	2	2	2	0.0835045369
2130	1	0	1	-399	-3134	0	2	2	2	0.0389476768
2135	0	1	1	-1123066	468529056	0	1	2	2	0.0596070929
2139	1	0	0	-10829	432840	0	4	2	2	0.0562235127
2145	1	1	0	48	99	0	2	2	2	0.0380896230
2146	1	1	0	2	-76	2	1	2	2	0.0851126037
2150	1	1	0	3425	-122875	0	1	2.02	2	0.0437778353
2152	0	1	0	-17	19	2	1	2	2	0.0910381255
2154	1	1	0	-1610	-25548	0	1	2	2	0.0509992891
2157	1	1	1	-844	-9790	0	1	2.04	2	0.1036208662
2157	1	1	1	-59034	5500926	0	2	2	2	0.1039540714
2160	0	0	0	-243	-1998	0	1	2	2	0.0425045979
2166	1	1	0	-2895	-5787	0	2	2	2	0.0649159166
2166	1	1	1	31580	-2764459	0	1	2	2	0.0569095214
2172	0	-1	0	-18	-27	0	1	1.99	2	0.0356888974
2173	1	1	0	-131	526	2	1	2	2	0.0722056598
2175	1	1	1	-688	6656	2	4	2	2	0.0985360407
2178	1	-1	0	-7827	-255051	0	2	2	2	0.0261980920
2180	0	0	0	-22708	1317093	0	2	2	2	0.0546123428

N	a1	a2	a3	a4	a6	r	t	C	FCP	r1
2180	0	0	0	-28	-27	0	2	2	2	0.0479507833
2181	1	1	1	3	0	2	1	2	2	0.1127796980
2184	0	-1	0	-10312	-401876	0	1	2	2	0.0640595821
2184	0	-1	0	721	-30552	0	4	2	2	0.0510809581
2192	0	0	0	-45539	-3740446	0	1	2	2	0.0610026147
2196	0	0	0	-903	-10546	0	1	2	2	0.0549962470
2200	0	0	0	-126050	17225125	0	4	1.99	2	0.0495868100
2205	1	-1	0	-555	4976	0	2	2	2	0.0399674237
2209	1	1	1	2163	232460	0	1	2	2	0.0634756556
2215	0	0	1	-37	90	2	1	2	2	0.1578932558
2219	1	0	1	244	1341	0	2	2	2	0.0672020162
2222	1	0	0	-5853	171865	0	3	2	2	0.0328375818
2223	0	0	1	913227	-1559197458	0	1	2	2	0.0742756959
2224	0	0	0	-8	-9	0	1	2	2	0.0280908723
2224	0	1	0	-56	148	2	1	2	2	0.0822215568
2225	1	0	0	-38	67	2	2	2	2	0.1175231314
2229	1	1	0	79	-450	0	1	2	2	0.0564756993
2232	0	0	0	69	70	0	2	2	2	0.0287216399
2233	1	-1	1	584	6050	0	4	2	2	0.0860705330
2240	0	-1	0	-21	-179	0	1	2	2	0.0481684182
2240	0	-1	0	-15	-23	0	1	2	2	0.0365962527
2240	0	0	0	-143	1808	0	2	2.01	2	0.0310419043
2240	0	-1	0	-371	-4655	0	1	2	2	0.0622087053
2240	0	0	0	-1648	-26528	0	1	2	2	0.0939844959
2240	0	-1	0	-5	-35	0	1	2	2	0.0331732069
2246	1	-1	0	26	-588	0	1	2	2	0.0459576458
2251	0	0	1	1	2	2	1	2	2	0.1061665071
2253	1	1	1	-4	2	2	1	2	2	0.1090541905
2256	0	-1	0	-4577	-117651	0	1	2	2	0.0655313346
2257	0	1	1	-15	-20	2	1	2	2	0.0744775405
2259	0	0	1	42	-153	2	1	2	2	0.0752769223
2259	0	0	1	-39	112	2	1	2	2	0.1027849653
2262	1	1	1	221	-703	0	4	2	2	0.0272219457
2265	0	-1	1	-30	128	2	1	2	2	0.1011211532
2268	0	0	0	-1161	16389	0	1	2	2	0.0397365214
2271	0	1	1	-44	98	2	1	2	2	0.0832323150
2273	1	0	0	-42	-155	0	2	2	2	0.1024577568
2277	1	-1	0	-207	16744	0	2	2	2	0.0344574145
2280	0	1	0	24	0	0	2	2	2	0.0286264226
2282	1	0	1	-10	12	2	1	2	2	0.1119337986
2284	0	1	0	11	-9	2	1	2	2	0.0858714300
2286	1	-1	0	-168	-1216	0	2	2	2	0.0561172453
2295	0	0	1	-152178	22937979	0	1	2	2	0.0503413037
2295	0	0	1	48	-15	0	3	2	2	0.0538433203
2296	0	1	0	-112	-416	0	1	2	2	0.0298223304
2296	0	0	0	-671	6690	0	4	2.03	2	0.0213229301
2299	0	1	1	-3307	-86718	0	1	2	2	0.0386591794
2303	1	0	0	12053	508066	0	1	2	2	0.0648979250

N	a1	a2	a3	a4	a6	r	t	C	FCP	r1
2304	0	0	0	-210	-1168	0	2	2	2	0.0399133434
2312	0	1	0	-2408	-33920	0	2	2	2	0.0599930223
2318	1	1	1	255	-2849	0	5	2	2	0.0592615687
2320	0	0	0	-1123	14178	0	2	2	2	0.0325831212
2321	1	-1	0	-4	-3	0	1	2	2	0.0383342883
2329	1	0	1	-9	-1	0	2	1.99	2	0.0322481409
2330	1	-1	0	-520	-4800	0	1	2	2	0.0675600083
2330	1	1	0	2	8	2	1	2	2	0.0851914806
2332	0	-1	0	-68949	-6945599	0	1	2	2	0.0231555935
2336	0	0	0	-25	-48	0	2	2	2	0.0475936857
2338	1	0	1	-645	-6352	0	1	2	2	0.0541177422
2343	0	-1	1	-12	20	2	1	2	2	0.1306296379
2345	0	1	1	-50	354	2	1	2	2	0.1312709617
2350	1	1	0	-900	10000	2	1	2	2	0.0804501593
2350	1	0	1	-96951	-11627202	0	1	2	2	0.0399359780
2350	1	-1	0	-7	1	2	1	2	2	0.1185149635
2351	1	0	1	-5	-5	0	1	2	2	0.0410035970
2352	0	-1	0	-359	17130	0	2	2	2	0.0551197180
2355	1	1	0	587	2392	0	2	2	2	0.0649524534
2358	1	-1	0	-7749	-257963	0	1	1.99	2	0.0349522248
2358	1	-1	1	10948	-178793985	0	1	2	2	0.0291752588
2365	1	1	0	-2053	176882	0	1	2	2	0.0481071538
2366	1	-1	0	146407	14599469	0	2	2	2	0.0578234526
2366	1	0	1	-680	6762	2	3	2	2	0.1091685424
2368	0	0	0	-11	-20	0	2	2	2	0.0606420769
2369	1	0	1	-6	-13	0	2	2	2	0.0630985176
2370	1	1	1	58214	-43598041	0	2	1.99	2	0.0347730386
2384	0	0	0	13	50	2	1	2	2	0.0734249663
2387	1	1	0	-451	-3916	0	1	2	2	0.0644018762
2388	0	-1	0	-2	9	2	1	2	2	0.0793995969
2390	1	0	1	-68	208	0	3	2	2	0.0358430504
2393	1	-1	0	-7	-6	0	1	2	2	0.0433204853
2397	0	-1	1	-3652	89037	0	1	2	2	0.0377018805
2400	0	-1	0	-5658	-158688	0	4	2	2	0.0600746976
2403	1	-1	0	-258	-1531	0	1	2	2	0.0494220554
2405	0	-1	1	-16	22	2	1	2	2	0.1147598956
2406	1	0	1	-33	112	2	1	2	2	0.0750009049
2409	0	1	1	-32	212	2	1	2	2	0.0871267943
2413	1	-1	1	-4	-10	0	2	2	2	0.0466268791
2416	0	1	0	-3680	-87436	0	1	2	2	0.0428534656
2416	0	1	0	8	-300	0	2	2	2	0.0446381429
2418	1	0	1	-1	-76	0	1	2	2	0.0326254613
2420	0	0	0	-88	-363	0	2	2	2	0.0550918283
2422	1	0	1	-2250	40860	0	3	2	2	0.0301770598
2424	0	-1	0	-17	21	2	1	2	2	0.0789035206
2429	1	-1	1	-4	2	2	1	2	2	0.0947925075
2429	0	-1	1	-68	240	2	1	2	2	0.1020531585
2432	0	-1	0	-9	25	2	1	2	2	0.0778076896

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2433	0	1	1	-2	110	2	1	2	2	0.0878932657
2439	0	0	1	-21	0	2	1	2	2	0.0918481422
2440	0	0	0	78973	-15486946	0	1	2	2	0.0431659398
2445	0	-1	1	4	26	2	1	2	2	0.1194133682
2445	1	0	1	-9	7	0	2	1.99	2	0.0331841333
2446	1	0	1	-17	24	2	1	2	2	0 1036908334
2450	1	-1	0	-5252	140496	0	1	2	2	0.0426664171
2450	1	-1	0	2833	91741	0	2	2	2	0.0276387910
2450	1	0	1	-87001	-11622852	0	2	2	2	0.0809901400
2450	1	-1	0	-220117	-42920459	0	1	2	2	0.1136873551
2451	1	1	0	-15	-24	0	2	2	2	0.0465714037
2451	1	1	0	374055	33844626	0	1	2	2	0.0564795910
2451	0	-1	1	22	2312	2	1	2	2	0.1037036159
2454	1	1	0	-6	0	2	2	2	2	0.0900323184
2457	1	-1	0	-80421	-9586234	0	1	2	2	0.0561161792
2457	1	-1	1	-1136	-14660	0	1	2	2	0.0839323993
2458	1	-1	0	-56	176	2	1	2	2	0.0802683957
2458	1	0	1	-9	8	2	1	2	2	0.0982631508
2458	1	0	1	-185	-1572	0	1	2	2	0.0441300082
2458	1	0	0	-57	121	2	1	2	2	0.0721912857
2464	0	0	0	-5	-12	0	2	2	2	0.0275640903
2465	1	0	0	-51	136	2	2	2	2	0.1203877315
2466	1	-1	0	-36	108	2	1	2	2	0 0786208624
2470	1	-1	1	-228	51587	0	2	2	2	0.0246819009
2474	1	-1	1	-6	21	2	1	2	2	0 0785754990
2475	1	-1	0	-42	-559	0	1	2	2	0.0390228946
2475	1	-1	0	-1467	21816	0	2	2	2	0 0438676744
2475	0	0	1	-75	-594	0	1	2	2	0.0285415957
2475	0	0	1	-5250	-153594	0	1	2	2	0.0415945420
2480	0	1	0	-16	84	2	2	2	2	0.0835751358
2482	1	-1	0	-442	-3468	0	2	2	2	0.0283531222
2482	1	-1	0	-23	-35	2	2	2	2	0.0768544561
2482	1	0	1	-27	50	2	2	2	2	0.1038829132
2484	0	0	0	-708	-7251	0	1	2	2	0.0515945145
2490	1	1	0	-6628	88528	0	2	2	2	0.0583879324
2492	0	-1	0	-92	376	2	1	2	2	0.0757227981
2493	1	-1	1	4	20	2	1	2	2	0.0922217843
2496	0	-1	0	-13	-35	0	2	2	2	0.0346687623
2496	0	1	0	31	-129	0	2	2	2	0.0450594757
2496	0	-1	0	-1249	-354431	0	2	2	2	0.0726093909
2497	0	-1	1	-7459	-245522	0	1	2	2	0.0615221643
2499	1	1	0	-221	-4080	0	2	2	2	0.0622241001
2510	1	-1	0	-59	485	0	2	2	2	0.0497302156
2513	1	-1	1	-2571	-49174	0	4	2	2	0.0779638587
2515	1	1	0	-1433	-21488	0	1	2	2	0.0582212597
2517	1	0	1	-712	-7975	0	2	2	2	0.0407856182
2517	1	0	0	-12	9	2	1	2	2	0.0819496890
2520	0	0	0	-138	-2567	0	2	2	2	0.0398440944

N	a1	a2	a3	a4	a6	r	t	C	FCP	r1
2520	0	0	0	-145638	24214437	0	2	2	2	0.0315666571
2528	0	-1	0	-17	1	2	1	2	2	0.0757789843
2530	1	-1	0	-680	6976	0	2	2	2	0.0394972410
2534	1	-1	1	-312	2235	2	1	2	2	0.0819145356
2535	0	-1	1	5859	228386	0	1	2	2	0.0600979694
2537	0	0	1	-696086	-223533420	0	1	2	2	0.0731119251
2537	0	1	1	162	-708	2	1	2	2	0.1403322217
2537	1	-1	0	-58	-105	0	4	2	2	0.0611039094
2541	1	1	0	-389622	-93997647	0	1	2	2	0.0350931301
2541	1	1	0	-4116	-103341	0	2	2	2	0.0622979384
2541	1	1	1	3	12	2	1	2	2	0.1116054904
2541	0	-1	1	-180572	-26845765	0	1	1.99	2	0.0343391188
2541	0	1	1	-887	2822	0	3	2	2	0.0505947269
2544	0	-1	0	-32	96	2	1	2	2	0.0787279767
2544	0	-1	0	-968	-11280	0	1	2	2	0.0556983392
2548	0	0	0	-49	49	2	1	2	2	0.1044367006
2548	0	0	0	-196	1029	0	2	2	2	0.0465791275
2550	1	1	0	-27625	-1778825	0	1	2	2	0.0676769238
2550	1	0	1	-326	-1702	0	1	2	2	0.0348513351
2550	1	1	1	-3	-9	0	1	2	2	0.0370341664
2552	0	-1	0	-137	1069	2	1	2	2	0.0798721502
2554	1	-1	1	-24	27	2	1	2	2	0.0813088280
2555	1	-1	1	2	-28	0	2	2	2	0.0621176228
2563	0	1	1	17	11	0	3	2	2	0.0837238394
2563	1	0	0	-9	28	2	1	2	2	0.1263893095
2566	1	-1	1	-4	-3	0	1	2	2	0.0375285321
2570	1	0	1	-274	-2508	0	3	2	2	0.0858474431
2574	1	-1	0	-937023	-348885875	0	2	2	2	0.0604616272
2574	1	-1	0	-414	-3308	0	1	2	2	0.0296161213
2574	1	-1	0	-9	189	2	2	2	2	0.0858196926
2574	1	-1	1	-935879	-348245953	0	1	2	2	0.0226255946
2576	0	1	0	84	172	0	2	2	2	0.0284316836
2576	0	0	0	-131	-2686	0	2	2	2	0.0382865902
2576	0	1	0	-64	-204	2	2	2	2	0.0840888080
2583	1	-1	0	26469	-502362	0	1	2	2	0.0515290793
2583	1	-1	0	27	184	0	2	2	2	0.0361407726
2590	1	0	0	-6	-14	0	1	1.99	2	0.0354418593
2592	0	0	0	-27	-270	0	1	2	2	0.0525983420
2594	1	0	1	-1305	-33796	0	1	2	2	0.0276872220
2596	0	0	0	-16	45	0	2	1.99	2	0.0338369879
2597	1	0	1	-1251	-16075	0	1	2	2	0.0615633368
2598	1	1	0	-56	144	2	1	2	2	0.0880267568
2600	0	-1	0	-408	-3188	0	1	2	2	0.0639568921
2600	0	0	0	-875	-6250	0	2	2	2	0.0497671082
2601	1	-1	0	-207	-752	0	2	2	2	0.0463386959
2601	1	-1	0	-1788	-11989	0	2	2	2	0.0566786156
2601	0	0	1	51	72	2	1	2	2	0.1051265902
2604	0	-1	0	-21	-63	0	1	2	2	0.0418646185

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2610	1	-1	1	-518	-1519	0	2	2	2	0.0200138482
2611	0	-1	1	-414	3384	2	1	2	2	0.1228811081
2618	1	-1	1	-4699	702427	0	1	2	2	0.0285575567
2619	1	-1	1	-14	24	2	1	2	2	0.0951484206
2620	0	-1	0	19	25	2	1	2	2	0.0726940031
2623	1	0	1	-144	1175	2	1	2	2	0.0762189546
2624	0	1	0	-49	111	2	2	2	2	0.0854894553
2626	1	0	1	624	-130	0	3	2	2	0.0829979811
2627	1	1	0	-185	3436	0	1	2	2	0.0489087626
2628	0	0	0	-439968	-112325884	0	1	2	2	0.0446009318
2631	1	1	0	-18	-81	0	1	2	2	0.0518321248
2635	1	0	0	-901	-10370	0	1	2	2	0.0440299963
2640	0	-1	0	219	4500	0	2	2	2	0.0514928651
2646	1	-1	0	-43668	-3547440	0	1	2	2	0.0595534459
2646	1	-1	0	-156	-722	0	1	2	2	0.0618499315
2646	1	-1	0	579	-22429	0	3	2	2	0.0635914602
2646	1	-1	1	194398	-13576895	0	1	2	2	0.0374225954
2648	0	1	0	-7	6	2	1	2	2	0.0907364996
2650	1	1	1	-338	-23469	0	1	2	2	0.0325688872
2652	0	-1	0	-1009	9190	0	2	2	2	0.0353309355
2658	1	1	0	-16	16	2	1	2	2	0.0875101616
2661	1	1	0	10	-33	0	2	2	2	0.0584145048
2665	1	-1	0	-55	-144	0	2	2	2	0.0315476293
2666	1	0	1	-4	0	2	1	2	2	0.0952638257
2666	1	0	0	-387	2881	2	3	2	2	0.0704558042
2670	1	0	1	-985354	376392956	0	6	2	2	0.0473486470
2674	1	1	0	4	4	2	1	2	2	0.0847066166
2674	1	-1	0	-43	709	2	1	2	2	0.1246779878
2677	1	1	1	-4	0	2	1	2	2	0.1082916001
2678	1	0	1	-107	414	2	1	2	2	0.1056628734
2678	1	0	0	-35	1	2	1	2	2	0.0732568069
2679	0	-1	1	-132	332	2	1	2	2	0.1261494655
2680	0	0	0	-4028	-100348	0	1	1.49	2	0.0416535481
2682	1	-1	0	-45291	3721221	0	3	2	2	0.0563973157
2688	0	-1	0	-439	-3377	0	2	4	2	0.0431290975
2688	0	-1	0	-15	-9	2	2	2	2	0.0791015303
2691	1	-1	0	-176418	-28874961	0	2	2	2	0.0539772768
2695	1	-1	0	40	-85	0	2	2	2	0.0449163915
2700	0	0	0	0	3125	0	1	2	2	0.0447032026
2700	0	0	0	0	2500	0	3	2	2	0.0430892259
2701	1	-1	0	-7648	256059	0	2	2	2	0.0441017020
2704	0	0	0	2197	-171366	0	1	2	2	0.0564047670
2704	0	0	0	-676	6591	0	2	2	2	0.0549284911
2704	0	0	0	-28561	-1856465	0	1	2	2	0.0969780657
2710	1	1	0	-3	13	2	1	2	2	0.0796141982
2710	1	-1	0	-139	673	2	1	2	2	0.1133466529
2712	0	-1	0	2631	10507149	0	1	2	2	0.0679634660
2714	1	-1	0	-273838	55224324	0	2	2	2	0.0536121016

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2716	0	1	0	-82	-315	0	1	2	2	0.0474273543
2717	1	-1	1	-61	-124	0	4	2	2	0.0833530170
2718	1	-1	0	12	16	2	1	2	2	0.0769822289
2718	1	-1	0	-99	409	2	1	2	2	0.0839608524
2724	0	-1	0	-149	753	2	1	2	2	0.0755101209
2725	1	-1	1	-205	-1078	0	1	2	2	0.0683311145
2725	1	-1	1	-10	-8	2	2	2	2	0.0806980676
2726	1	-1	1	-300349	-63280763	0	1	2	2	0.0434978049
2728	0	0	0	-119	619	2	1	2	2	0.0702164723
2728	0	1	0	-32	61	2	1	2	2	0.0892398891
2730	1	1	0	-8127	273861	0	2	2	2	0.0339754770
2730	1	1	1	-46	-121	0	2	1.99	2	0.0233532109
2735	0	1	1	-6	6	2	1	2	2	0.1446515198
2736	0	0	0	-162	-945	0	2	2	2	0.0602736744
2736	0	0	0	-147	610	2	2	2	2	0.0715365684
2736	0	0	0	2832	-66256	0	1	2	2	0.0504800459
2736	0	0	0	-50691	-3947006	0	2	2	2	0.0337036570
2738	1	0	0	-47	121	2	1	2	2	0.0706916885
2739	1	1	0	-171	-936	0	2	2	2	0.0601764858
2739	1	1	0	-2379	38472	0	2	2	2	0.0385400005
2742	1	1	0	-11	9	2	2	2	2	0.0897977253
2745	1	-1	0	450	-2889	0	2	2	2	0.0424061604
2751	1	1	0	-401	-3264	0	2	2	2	0.0631163792
2757	0	1	1	-20	20	2	1	2	2	0.0945555425
2758	1	1	1	-48	-53	0	1	1.99	2	0.0223247527
2760	0	-1	0	64	636	0	2	2	2	0.0235037321
2763	1	-1	0	-18	-25	0	2	2	2	0.0481176193
2766	1	1	0	-9	9	2	1	2	2	0.0944501727
2768	0	0	0	-19	-14	2	1	2	2	0.1043630756
2768	0	-1	0	-256	1664	2	1	2	2	0.0705173714
2771	0	1	1	-737	10177	0	3	2	2	0.0648718483
2775	0	-1	1	-2083	-93432	0	1	2	2	0.0696119585
2781	0	0	1	-21	36	2	1	2	2	0.1032355279
2782	1	1	0	-28498	-1991116	0	1	2	2	0.0731610563
2785	0	1	1	-6	0	2	1	2	2	0.1425652400
2787	1	1	0	-361	86482	0	1	2	2	0.0437605121
2788	0	-1	0	-14	25	2	1	2	2	0.0736539552
2790	1	-1	0	-171789	30891653	0	1	2	2	0.0518861422
2790	1	-1	0	-954	-11340	0	2	2	2	0.0442567574
2790	1	-1	1	-19088	-1137773	0	1	2	2	0.0268445622
2790	1	-1	1	22	-219	0	2	2	2	0.0219087161
2792	0	-1	0	-49	149	2	1	2	2	0.0716579601
2793	1	1	1	6	6	2	2	2	2	0.1048054335
2797	0	1	1	-9	-14	2	1	2	2	0.0688576012
2800	0	0	0	25	-75	0	1	2	2	0.0363568458
2800	0	0	0	925	17250	0	2	2	2	0.0311729779
2800	0	0	0	-2000	34375	0	2	2	2	0.0284714608
2808	0	0	0	-675	5886	0	1	2	2	0.0356093703

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2808	0	0	0	-51	-146	0	1	2	2	0.0535783814
2808	0	0	0	-18171	941814	0	1	2	2	0.0512980870
2811	1	1	0	-16	-29	0	2	2	2	0.0481614056
2813	1	1	0	4	1	2	1	2	2	0.0693707857
2821	1	-1	0	-217	-1176	0	2	2	2	0.0280902966
2822	1	0	1	-706	7156	0	3	2	2	0.0511202213
2826	1	-1	0	123	-2763	0	3	2	2	0.0579003353
2826	1	-1	0	1314	-1012716	0	1	2	2	0.0399246723
2828	0	-1	0	27	-254	0	1	2	2	0.0436233338
2829	1	1	0	-1106	-14649	0	2	2	2	0.0648163298
2834	1	0	0	-607	5721	2	1	2	2	0.0703101135
2835	0	0	1	-48	129	0	3	2	2	0.0432408469
2836	0	0	0	-64	196	2	1	2	2	0.1043159325
2837	0	1	1	-4	-4	2	1	2	2	0.1465510685
2840	0	0	0	-26018	1615317	0	2	2	2	0.0417508127
2842	1	-1	0	-14807	-745571	0	2	2	2	0.0432300615
2848	0	0	0	-28	64	2	1	2	2	0.0994479560
2850	1	1	0	-36400	-2700500	0	2	2	2	0.0643822809
2850	1	1	1	91912	-64331719	0	4	2	2	0.0282675711
2859	1	1	1	-1	2	2	1	2	2	0.1060034316
2862	1	-1	0	-81	301	2	1	2	2	0.0756509728
2868	0	-1	0	-22	49	2	1	2	2	0.0752101596
2870	1	0	1	-39	86	2	2	2	2	0.0977811566
2871	1	-1	0	-9	-16	0	2	2	2	0.0448001794
2873	1	-1	0	-116	235	0	2	2	2	0.0356582798
2873	1	-1	0	-123824	16774499	0	2	2	2	0.0589144930
2874	1	0	1	-28	62	2	1	2	2	0.0724571406
2877	1	1	1	-7	-124	0	2	2	2	0.0543581948
2878	1	0	0	-327	2249	0	3	2	2	0.0304556315
2880	0	0	0	-3	-52	0	2	2	2	0.0381122151
2880	0	0	0	852	-29392	0	2	2	2	0.0489910353
2880	0	0	0	-8103	-280748	0	2	2	2	0.0466181574
2880	0	0	0	-108	-3888	0	2	2	2	0.0416666667
2882	1	0	0	-210	1156	2	1	2	2	0.0726358418
2890	1	0	1	716	-10284	0	3	2	2	0.0974216721
2893	1	-1	0	2	-9	0	2	2	2	0.0519905134
2898	1	-1	0	-5391	249885	0	2	2	2	0.0223843553
2898	1	-1	0	81864	-6070464	0	1	2	2	0.0706022650
2899	0	1	1	-1	2	2	1	2	2	0.0968935770
2900	0	1	0	-233	1288	2	2	2	2	0.0776746000
2904	0	-1	0	81	-372	0	2	2	2	0.0466194608
2904	0	-1	0	-920	-10404	0	2	2	2	0.0559919558
2904	0	1	0	81	-7614	0	4	2	2	0.0445025362
2905	0	1	1	-1461	-21989	0	1	2	2	0.0530927686
2912	0	0	0	-61	-180	0	4	2	2	0.0524509980
2913	1	0	0	8	11	2	1	2	2	0.0800798310
2918	1	0	0	-80	256	2	1	2	2	0.0713670154
2924	0	-1	0	-17	34	2	1	2	2	0.0735978720

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2925	1	-1	0	-5442	173591	0	2	2	2	0.0384707411
2925	1	-1	1	-24755	-1492878	0	2	2	2	0.0479038015
2925	0	0	1	-750	-7344	0	1	2	2	0.0558393560
2928	0	-1	0	-29	-36	0	2	2	2	0.0396663167
2928	0	1	0	-24	660	0	2	2	2	0.0314070874
2938	1	0	1	1221	-43002	0	1	2	2	0.0453042032
2938	1	0	1	19	-6	0	3	2	2	0.0828014971
2944	0	-1	0	-10	6	0	2	2	2	0.0367495173
2945	1	-1	0	10	-25	0	2	2	2	0.0370340705
2950	1	-1	0	-1367	-19299	0	1	2	2	0.0603918725
2953	1	0	0	-9	10	2	1	2	2	0.1248345433
2955	0	1	1	-86	266	2	1	2	2	0.0750489007
2961	1	-1	0	-558	5215	0	2	2	2	0.0464411339
2961	1	-1	0	2214	39361	0	1	2	2	0.0574574420
2961	1	-1	1	58	60	2	2	2	2	0.0988846800
2968	0	0	0	-866	9809	0	4	2	2	0.0540563007
2968	0	0	0	-244	-41676	0	1	2	2	0.0557180065
2970	1	-1	0	-2310	5300	0	1	2	2	0.0546440256
2970	1	-1	0	15	15	0	3	2	2	0.0585499418
2970	1	-1	0	-114	498	0	3	2	2	0.0271927830
2970	1	-1	0	-41370	2022196	0	1	2	2	0.0604670948
2970	1	-1	1	-83	217	0	1	2	2	0.0272197132
2972	0	0	0	-17977	-927735	0	1	2	2	0.0580765344
2979	1	-1	0	-45	-108	0	1	2	2	0.0276057063
2986	1	0	1	-15	20	2	1	2	2	0.1129877329
2986	1	0	0	-17	169	2	1	2	2	0.0700761034
2988	0	0	0	168	965	0	2	2	2	0.0421101703
2990	1	0	1	-19039	1009522	0	3	2	2	0.0428014310
2992	0	0	0	-20	-36	0	1	2	2	0.0429349745
2995	0	1	1	-6	-9	0	1	2	2	0.0429445375
2996	0	0	0	-52	145	2	1	2	2	0.1076957117
3003	0	-1	1	44	-726	0	1	2	2	0.0251612245
3003	1	1	0	-3465	117288	0	2	2	2	0.0361978828
3003	1	1	0	-91	136	0	2	2	2	0.0552772019
3003	0	-1	1	1882	-33706	0	1	2	2	0.0346529493
3004	0	1	0	6	1	2	1	2	2	0.0853568509
3010	1	0	1	-63234	6428532	0	1	2	2	0.0433676366
3016	0	0	0	-161203	-24911954	0	1	2	2	0.1001596305
3024	0	0	0	-108	-324	0	1	2	2	0.0181848250
3024	0	0	0	81	-54	0	1	2	2	0.0360640907
3024	0	0	0	-2259	-41326	0	1	2	2	0.0563024358
3024	0	0	0	-384	-2896	0	1	2	2	0.0441912537
3025	1	-1	0	2458	-37009	0	2	2	2	0.0255745460
3025	1	0	1	-751	-7977	0	1	2	2	0.0672077398
3025	0	1	1	-1008	-29606	0	1	2	2	0.0212624404
3026	1	-1	0	-34	84	2	2	2	2	0.0799174736
3032	0	1	0	4	16	2	1	2	2	0.0829259693
3034	1	0	1	79	-44	0	3	2	2	0.0485490590

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3035	1	-1	0	-365	-2594	0	1	2	2	0.0493280464
3036	0	-1	0	-166	-923	0	1	2	2	0.0599704730
3036	0	-1	0	175651	3875454	0	2	2	2	0.0647849862
3038	1	-1	0	5038	62292	0	2	2	2	0.0397196104
3038	1	1	1	-15	-29	0	1	2	2	0.0468906621
3038	1	0	0	-1569	-25691	0	2	2	2	0.0550250053
3040	0	0	0	-173	-872	0	2	2	2	0.0347537962
3042	1	-1	0	-29691	-41104283	0	2	2	2	0.0369755244
3044	0	1	0	-6	1	2	1	2	2	0.0824212927
3046	1	0	1	-6	-4	2	1	2	2	0.0876899314
3050	1	0	1	-126	-352	2	2	2	2	0.0835486571
3054	1	0	1	-68	182	2	1	2	2	0.0740108403
3058	1	-1	0	-53	-75	0	2	2	2	0.0366486847
3060	0	0	0	-11073	-448603	0	1	2	2	0.0486510497
3060	0	0	0	-252	-1539	0	2	2	2	0.0397021109
3073	1	-1	0	7	0	0	2	2	2	0.0468172113
3073	1	0	0	31	-110	2	1	2	2	0.1240033751
3075	0	-1	1	-4708	-125682	0	1	2	2	0.1094607725
3086	1	-1	0	-1	3	2	1	2	2	0.0792738256
3089	1	1	1	-59	-254	0	2	2	2	0.0603154832
3099	1	0	1	-23	-43	0	2	2	2	0.0480250049
3102	1	1	0	-227	1485	2	1	2	2	0.1004817586
3105	1	-1	0	-4335	-109450	0	1	2	2	0.0555221096
3108	0	-1	0	-14341	1529329	0	1	2	2	0.0504732258
3112	0	1	0	-17	-29	2	1	2	2	0.0858481249
3115	0	-1	1	104	451	0	1	2	2	0.0265392287
3115	1	-1	0	-3410	33175	0	2	2	2	0.0399408603
3115	1	-1	0	-5	-4	0	1	2	2	0.0373708816
3118	1	-1	0	-2698	56820	0	2	2	2	0.0622891392
3120	0	-1	0	-1061	21261	0	1	2	2	0.0435810552
3120	0	-1	0	-4616	-197904	0	2	2	2	0.0629788768
3134	1	1	0	-5	1	2	1	2	2	0.0776806539
3136	0	0	0	-140	-784	0	2	2	2	0.0334796432
3136	0	-1	0	-3201	-63671	0	1	2	2	0.0564467357
3136	0	-1	0	-65	11201	0	2	1.99	2	0.0203824664
3136	0	1	0	-1633	-51969	0	2	2	2	0.0564154339
3136	0	1	0	-9	55	2	2	2	2	0.0812014008
3136	0	1	0	-457	559	0	1	1.85	2	0.0426686490
3138	1	1	0	-237016	-41051744	0	1	2	2	0.0868435777
3144	0	-1	0	-128	-516	0	2	2	2	0.0548267970
3145	0	-1	1	-50	-42	2	1	2	2	0.0947125707
3145	0	1	1	-26235	-1634444	0	3	2	2	0.0278491412
3145	1	-1	1	-27937	-1769376	0	4	2	2	0.0655798768
3146	1	0	1	-7626	-126084	0	1	2	2	0.0371554994
3146	1	1	0	33878	-353932	0	1	2	2	0.0589182444
3146	1	1	0	1571	-227971	0	1	2	2	0.0500540384
3146	1	1	1	-4056	-101375	0	1	2	2	0.0255204504
3150	1	-1	0	-184182	-30378124	0	2	2	2	0.0369591973

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3150	1	-1	0	1008	-35584	0	1	2	2	0.0399457236
3150	1	-1	0	-111942	-14382284	0	2	2	2	0.0280361082
3150	1	-1	0	5508	11416	0	1	2	2	0.0416948275
3150	1	-1	0	1008	-10584	0	1	2	2	0.0244261933
3152	0	0	0	-80	-272	0	1	2	2	0.0260770600
3158	1	-1	0	-1202	-11308	0	1	2	2	0.0477489744
3159	1	-1	0	-15	224	0	1	2	2	0.0294461034
3168	0	0	0	72	-3024	0	1	2	2	0.0334185592
3168	0	0	0	-176421	28519940	0	4	2	2	0.0573390838
3168	0	0	0	-408	-3184	0	1	2	2	0.0462137114
3174	1	1	0	-243086	-46778700	0	1	2	2	0.0903394348
3176	0	1	0	-408	3040	2	1	2	2	0.0792980942
3177	1	-1	0	-63	-176	0	2	2	2	0.0528800511
3179	0	0	1	-83521	9291711	0	1	2	2	0.0586993392
3184	0	1	0	-104	-1484	0	2	2	2	0.0783241880
3185	1	-1	1	-3268	-71074	0	2	2	2	0.0714196396
3185	1	0	0	-1	6	2	1	2	2	0.1203853170
3186	1	-1	0	-9465	-352531	0	1	2	2	0.0582763920
3186	1	-1	0	129	-339	0	3	2	2	0.0767466427
3186	1	-1	1	-8696	314281	0	1	2	2	0.0299819248
3190	1	0	1	51	-64	0	3	2	2	0.0966024758
3192	0	-1	0	321	-1332	0	4	2	2	0.0586564982
3192	0	-1	0	-4359	-41940	0	2	2	2	0.0618580045
3192	0	-1	0	-932	11268	0	4	2	2	0.0321517660
3193	1	-1	1	-34	-72	0	2	2	2	0.0606628156
3199	1	-1	0	-152	763	0	2	2	2	0.0420294944
3200	0	-1	0	42	-338	0	1	2	2	0.0424939693
3200	0	0	0	-100	400	2	1	2	2	0.0935179855
3200	0	0	0	-325	-2250	0	2	2	2	0.0427181194
3201	1	1	0	-115	328	0	2	2	2	0.0516386072
3205	1	1	1	-15	-28	0	2	2	2	0.0315980709
3206	1	1	0	-9	1	2	1	2	2	0.0872202579
3210	1	1	0	-4558	-99788	0	4	2	2	0.0580211547
3213	0	0	1	-21006	-1828204	0	1	2	2	0.0698189098
3213	1	-1	0	-210	-1123	0	1	2	2	0.0445148048
3213	1	-1	0	-175140	28255329	0	1	2.03	2	0.0287549314
3213	1	-1	1	-40016	3349432	0	1	2	2	0.0831523007
3213	0	0	1	-3099	-66402	0	1	2	2	0.0380014870
3213	0	0	1	-19710	-1059237	0	3	2	2	0.0308124309
3214	1	-1	0	-137	-403	0	2	2	2	0.0461054711
3216	0	-1	0	-2312	-44304	0	1	2	2	0.0612520656
3218	1	-1	0	-76	-48	0	2	2	2	0.0448964790
3220	0	0	0	-13	37	2	1	2	2	0.0947731875
3223	1	1	0	-260	-1727	0	1	2	2	0.0447767541
3225	0	-1	1	45367	17564168	0	1	2	2	0.0472188591
3266	1	-1	0	-1009	-12089	0	1	6	6	0.0408189158
3230	1	0	1	16	-44	0	3	2	2	0.0564632571
3230	1	-1	1	-703	-169	0	4	2	2	0.0266723484

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3232	0	1	0	-134	-644	0	2	2	2	0.0717048957
3234	1	1	0	-22159540	-39589128368	0	2	2	2	0.0476771205
3234	1	1	0	-4869	-137619	0	1	2	2	0.0862781272
3235	1	-1	0	-50	-125	0	1	2	2	0.0507002763
3238	1	0	1	-309	-2112	0	1	2	2	0.0326763115
3243	1	1	1	-11432	-473704	0	4	2	2	0.0778117144
3243	1	1	0	-31	40	0	2	2	2	0.0426654220
3243	0	1	1	-223	1210	0	3	2	2	0.0431676282
3245	1	-1	0	-55	-24	0	2	2	2	0.0502294855
3248	0	0	0	-26	-5	0	2	2	2	0.0420366094
3248	0	1	0	315	179	0	1	2	2	0.0499669386
3248	0	1	0	-627912	191251060	0	2	2	2	0 0448789858
3248	0	1	0	-1632	-25996	0	1	2	2	0.0299749026
3252	0	-1	0	-1364	-18696	0	2	2	2	0.0710755318
3260	0	0	0	-13	-687	0	1	2	2	0.0507038098
3260	0	1	0	-21	55	2	1	2	2	0.0789977271
3261	1	0	0	-472	3851	2	1	2	2	0.0816701207
3262	1	1	0	54	-44	2	1	2	2	0.0844242551
3262	1	1	0	-102447	12576485	0	2	2	2	0.0534899672
3264	0	-1	0	-21	-51	0	1	2	2	0.0389225397
3264	0	-1	0	-209	1233	2	2	2	2	0.0734207392
3264	0	1	0	2043	-13149	0	1	2	2	0.0258016761
3264	0	-1	0	-6485	203469	0	1	2	2	0.0368845586
3264	0	-1	0	2043	13149	0	1	2	2	0.0660029687
3266	1	-1	0	-8507	167909	0	2	2	2	0.0583318082
3267	0	0	1	0	3660	0	3	2	2	0.0643020085
3278	1	0	1	-6	30	0	3	2	2	0.0458500843
3278	1	1	0	-311	1765	2	1	2	2	0.0889920168
3280	0	1	0	-80	100	2	2	2	2	0.0708308824
3280	0	0	0	-22187	1206234	0	2	2	2	0.0396397021
3282	1	1	0	-2086	-8300	0	2	2	2	0.0831730734
3283	1	-1	0	-5938	-52613	0	1	2	2	0.0393777311
3284	0	0	0	-31	70	2	1	2	2	0.0991227699
3286	1	-1	0	-28	-176	2	1	2	2	0.1273480957
3293	0	0	1	-8482	-300674	0	1	2	2	0.0478176991
3298	1	0	0	-29	49	2	2	2	2	0.0661580391
3300	0	-1	0	-7708	-286088	0	1	2	2	0.0519303447
3300	0	1	0	12	-12	0	1	2	2	0.0228236848
3303	1	-1	1	-59	182	2	1	2	2	0.0928418499
3306	1	0	1	-30	-488	0	3	2	2	0.0428868414
3311	1	1	0	-7	0	0	2	2	2	0.0387576070
3312	0	0	0	-216	1215	0	2	2	2	0.0388543670
3315	1	1	1	-26	38	2	2	2	2	0.1049650442
3318	1	1	0	-420877	-82442915	0	2	2	2	0.0966631911
3324	0	-1	0	-4	40	2	1	2	2	0.0729835639
3325	0	0	1	-2425	-45969	0	1	2	2	0.0441040224
3328	0	-1	0	-7	11	2	1	2	2	0.0777040804
3328	0	0	0	-118	496	2	1	2	2	0.0982249952

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3330	1	-1	0	-1170	-15404	0	1	2	2	0.0461682702
3330	1	-1	1	-47813	-4011883	0	2	2.02	2	0.0302557892
3331	0	0	1	1	-3	0	1	2	2	0.0355306003
3332	0	1	0	-213460	53246164	0	1	2	2	0.0509391662
3332	0	-1	0	572	-5704	0	1	2	2	0.0513294760
3333	0	-1	1	-221	1340	2	1	2	2	0.0856273166
3333	0	-1	1	-52	162	2	1	2	2	0.1296100875
3336	0	-1	0	-12	36	2	1	2	2	0.0765035018
3339	0	0	1	-279	1802	2	1	2	2	0.0952468457
3344	0	-1	0	-437	-3971	0	1	2	2	0.0416031452
3344	0	0	0	-91	394	2	1	2	2	0.1003097663
3354	1	1	1	-2347	-44743	0	1	2	2	0.0247726953
3363	1	1	0	-39	72	0	2	2	2	0.0392874016
3363	1	1	0	-76	139	0	2	2	2	0.0539078539
3363	1	0	1	-562627	153012761	0	2	2	2	0.0357595826
3365	0	1	1	-40	56	2	1	2	2	0.1324133985
3366	1	-1	0	-8136	-278208	0	2	2	2	0.0353140179
3370	1	-1	0	370	-10924	0	1	2	2	0.0598063731
3370	1	-1	1	-63	231	2	1	2	2	0.0717026313
3371	0	-1	1	-25	-41	0	1	2	2	0.0324225529
3380	0	-1	0	-5126	34501	0	1	2	2	0.0260007194
3380	0	0	0	-13	13	2	1	2	2	0.0978552661
3381	0	-1	1	-4720	147237	0	1	2	2	0.0426902710
3384	0	0	0	-84	164	2	1	2	2	0.0682505078
3387	1	1	0	-5	-12	0	1	2	2	0.0347431368
3388	0	1	0	-3549	76360	0	2	2	2	0.0809699802
3392	0	-1	0	-18113	-1185599	0	1	2	2	0.0614331160
3397	0	0	1	10	-22	2	1	2	2	0.0696178714
3400	0	-1	0	-13208	-617588	0	1	2	2	0.0601025874
3402	1	-1	0	-29580	-1950256	0	1	2	2	0.0499071253
3403	1	1	1	-28	48	2	1	2	2	0.0978930456
3404	0	-1	0	-93	361	2	1	2	2	0.0671670604
3405	1	1	0	-12	-21	0	2	2	2	0.0411755795
3408	0	-1	0	-1704	-26496	0	4	2	2	0.0559044757
3408	0	-1	0	-320	-3072	0	1	2	2	0.0372725132
3410	1	-1	1	-633	-5923	0	2	2	2	0.0310116169
3415	0	1	1	-25	156	0	3	2	2	0.0362722268
3416	0	-1	0	-1912	-31492	0	1	2	2	0.0259308333
3422	1	0	1	-14196	-652174	0	1	2	2	0.0868005214
3424	0	0	0	-1	4	2	1	2	2	0.1018970348
3425	1	-1	1	-130	622	2	1	2	2	0.0784501648
3442	1	1	0	-36	-100	0	2	2	2	0.0441589148
3442	1	1	1	-10	-9	2	1	2	2	0.0637314793
3442	1	-1	1	-1191	16095	2	1	2	2	0.0766482363
3443	0	-1	1	0	-3	0	1	1.99	2	0.0343533624
3448	0	-1	0	-52	164	2	1	2	2	0.0764348334
3450	1	1	0	-98125	-11871875	0	2	2	2	0.0481434458
3450	1	1	0	-25	25	2	1	2	2	0.0767834253

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3450	1	1	1	576862	-125893969	0	1	2	2	0.0361681322
3451	0	0	1	-61	-2373	0	1	2	2	0.0502394936
3454	1	1	0	-51	121	2	1	2	2	0.0885992404
3454	1	1	1	-94	-393	0	1	2	2	0.0359590922
3455	0	0	1	-602	5685	2	1	2	2	0.0667845403
3455	0	1	1	0	6	2	1	2	2	0.1338545259
3456	0	0	0	-84	304	2	1	2	2	0.0675355749
3458	1	-1	0	29605	-7635803	0	1	2	2	0.0596739158
3465	1	-1	0	-2385	-44240	0	2	2	2	0.0416226535
3465	1	-1	0	-5775	-167464	0	4	2	2	0.0456661265
3465	1	-1	0	-107730	13395375	0	4	2	2	0.0267400274
3465	1	-1	0	-99	328	0	2	1.99	2	0.0226510797
3465	0	0	1	74643	-7762118	0	1	1.99	2	0.0241508980
3468	0	-1	0	-1541	-35151	0	1	1.99	2	0.0517798481
3472	0	-1	0	-64	-1024	0	1	2.03	2	0.0280647704
3478	1	-1	0	-263	-1731	0	1	2	2	0.0621178060
3480	0	1	0	-1196	-16320	0	2	2	2	0.0282661977
3483	1	-1	1	-11	-8	2	1	2	2	0.0906478210
3489	0	-1	1	-5	17	2	1	2	2	0.0921175196
3489	0	-1	1	-48	146	2	1	2	2	0.1092693274
3489	0	-1	1	6	-16	2	1	2	2	0.1237297257
3492	0	0	0	-264	-1964	0	1	2	2	0.0375466727
3496	0	0	0	-1484	22004	2	1	2	2	0.0687825622
3496	0	0	0	5	-17	2	1	2	2	0.0896648686
3496	0	0	0	-146	-679	0	2	2	2	0.0515784056
3497	0	1	1	-26	42	2	1	2	2	0.1432657154
3505	0	1	1	-25	-46	2	1	2	2	0.0864375149
3506	1	-1	0	-31	-51	0	2	2	2	0.0364968777
3509	0	0	1	-11	-14	2	1	2	2	0.0932011609
3509	0	0	1	-4477	115464	2	1	2	2	0.1578658856
3510	1	-1	0	-195	1101	0	3	2	2	0.0386249929
3510	1	-1	0	-1095	-14275	0	1	2	2	0.0468931626
3514	1	0	1	-550	4912	0	3	2	2	0 0432927691
3515	0	0	1	-307	1950	2	1	2	2	0.1574619413
3520	0	0	0	-23	28	0	2	2	2	0.0291937104
3520	0	0	0	-20168	1102408	0	2	2	2	0.0244968559
3520	0	0	0	-92	-304	0	2	1.99	2	0.0231193172
3520	0	0	0	-268	-1008	0	4	2	2	0.0374245300
3520	0	0	0	-20168	-1102408	0	2	2	2	0.0570006071
3520	0	-1	0	-12001	2212001	0	1	2	2	0.0551267910
3520	0	-1	0	-16	30	0	2	1.99	2	0.0231383465
3520	0	1	0	-1056	-12950	0	2	2	2	0.0703618654
3520	0	1	0	-5665	-167585	0	1	2	2	0.0296170809
3525	0	-1	1	217	2093	2	1	2	2	0.0764924708
3525	0	-1	1	-18	38	2	1	2	2	0 1098286905
3525	1	0	1	-3576	-82577	0	2	2	2	0.0339010694
3528	0	0	0	-7203	302526	0	1	2	2	0.0336489816
3528	0	0	0	357	-5866	0	1	2	2	0.0354361094

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3528	0	0	0	-17787	-902090	0	2	2	2	0.0553696334
3531	1	0	1	-26	47	0	2	2	2	0.0289099865
3534	1	1	0	-146319	-21603735	0	2	2	2	0.0538599990
3536	0	0	0	-10	3	0	2	2	2	0.0265096036
3536	0	0	0	-1499	-21622	0	2	2	2	0.0270961167
3536	0	1	0	-144	532	2	2	2	2	0.0855099554
3542	1	0	1	-2692	53520	2	2	2	2	0.1010881722
3542	1	1	1	-886	-10425	0	1	2	2	0.0280661317
3550	1	0	1	-27626	1521148	0	1	2	2	0.0369817983
3550	1	0	1	299	-2952	0	1	2	2	0.0278154614
3550	1	1	0	-22825	-4183675	0	1	2	2	0.0720448653
3552	0	1	0	-4783018	-4027708300	0	2	2	2	0.0327047474
3555	1	-1	0	-5985	179716	0	2	2	2	0.0371363799
3555	1	-1	0	-1185	-15400	0	4	2	2	0.0517711937
3555	1	-1	1	-968	11832	2	1	2	2	0.0826803937
3555	1	-1	0	-3789	-88830	0	2	2	2	0.0439659814
3560	0	1	0	-36	64	2	2	2	2	0.0789792881
3561	0	1	1	197	-512	0	3	2	2	0.0399711256
3561	0	1	1	-24	56	2	1	2	2	0.0778972718
3562	1	0	1	6	20	2	1	2	2	0.1000277271
3564	0	0	0	-444	3601	0	3	2	2	0.0390864954
3565	1	1	0	-1783	28898	2	1	2	2	0.0625878550
3565	0	-1	1	4	12	2	1	2	2	0.1204326605
3568	0	-1	0	-24	-32	2	1	2	2	0.0708069510
3568	0	-1	0	-188	-932	0	1	2	2	0.0290420446
3570	1	1	0	-97727	11561109	0	2	2	2	0.0210736667
3570	1	1	0	-24857	905061	0	2	2	2	0.0289615656
3572	0	1	0	-244	-1548	0	2	2	2	0.0634109124
3573	1	-1	1	-14	22	2	1	2	2	0.0927729800
3575	0	0	1	-25	6	2	1	2	2	0.1605879440
3577	1	-1	0	-58	111	0	2	2	2	0.0486063520
3586	1	0	0	-232	576	2	1	2	2	0.0703559034
3588	0	-1	0	-5593	162454	0	2	1.99	2	0.0354985743
3590	1	0	1	-32404	2241426	0	3	2	2	0.0849608116
3590	1	-1	0	-419	-3195	0	2	2	2	0.0297630726
3595	0	1	1	4	0	2	1	2	2	0.1445981504
3600	0	0	0	-3375	168750	0	2	2	2	0.0347298274
3600	0	0	0	-375	-6250	0	2	2	2	0.0454902491
3600	0	0	0	-3450	77875	0	2	2	2	0.0343495944
3600	0	0	0	-52500	5537500	0	1	2	2	0.0491686890
3600	0	0	0	0	-125	0	2	2	2	0.0413891632
3600	0	0	0	-75	-2950	0	1	2	2	0.0370569481
3600	0	0	0	-3000	59375	0	2	2	2	0.0450936177
3604	0	-1	0	-2999485	-1998485527	0	1	2	2	0.0421371355
3608	0	0	0	-47	-1982	0	1	1.99	2	0.0355530595
3610	1	-1	0	-17215	-924019	0	1	1.99	2	0.0230226498
3610	1	0	1	597447	172089948	0	1	2	2	0.0349880655
3612	0	-1	0	-10508	410856	0	2	2	2	0.0477839494

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3614	1	-1	1	-588	5645	0	1	2	2	0.0300345515
3619	1	1	1	-497	-4478	0	1	2	2	0.0571451415
3622	1	1	0	-18339	-963571	0	1	2	2	0.0481358601
3623	1	1	0	-5	-8	0	1	2	2	0.0320856406
3630	1	1	0	-4872188	-3912956208	0	2	2	2	0.0801676194
3633	1	1	1	-7	2	2	1	2	2	0.1117120676
3634	1	-1	0	-220	1312	2	1	2	2	0.1216636661
3634	1	1	1	-267	-1223	2	1	2	2	0.0620151582
3640	0	-1	0	-840	-10388	0	1	2	2	0.0438422021
3648	0	-1	0	-97	-287	0	2	2	2	0.0210230419
3648	0	-1	0	-52	70	0	2	2	2	0.0411517284
3648	0	-1	0	-689	-6735	0	2	2	2	0.0516855755
3648	0	-1	0	-22529	1176993	0	2	2	2	0.0592393716
3648	0	1	0	-24	-54	0	2	2	2	0.0447716323
3650	1	-1	1	-23730	1412897	0	2	2	2	0.0193248750
3650	1	0	0	-638	-8108	0	1	2	2	0.0181192591
3654	1	-1	0	-37539243	119701158021	0	2	2	2	0.0635898761
3656	0	0	0	-787	-8498	0	1	2	2	0.0693407121
3657	1	0	1	-77	251	0	2	2	2	0.0471097016
3660	0	1	0	-181	-1000	0	2	2	2	0.0377299458
3661	0	1	1	-329	3393	2	1	2	2	0.1002534588
3661	0	1	1	2	8	2	1	2	2	0.1354845878
3663	1	-1	0	-612	5427	0	2	2	2	0.0410315720
3663	1	-1	1	-356	2126	2	4	2	2	0.0918160621
3664	0	-1	0	-12	16	2	1	2	2	0.0727053589
3664	0	0	0	-43	106	2	1	2	2	0.0994448413
3664	0	0	0	-76	255	0	2	2	2	0.0408827937
3664	0	-1	0	-32	64	2	1	2	2	0.0751655924
3664	0	0	0	-1013692	-392832257	0	1	2	2	0.0828115910
3666	1	1	0	-59	93	0	2	2	2	0.0241741639
3666	1	1	0	-13506	-609804	0	1	2	2	0.0844264316
3666	1	0	1	4952	863222	0	1	2	2	0.0478242228
3670	1	-1	0	-5405	-151675	0	1	2	2	0.0635899092
3672	0	0	0	-258	-1991	0	1	2	2	0.0380560879
3672	0	0	0	-39	106	2	1	2	2	0.0661891562
3672	0	0	0	-108	-1404	0	1	2	2	0.0328763069
3675	1	0	1	-22076	-1223827	0	2	0.36	2	0.0188599801
3675	1	1	0	-6150	-185625	0	4	2	2	0.0464946228
3680	0	0	0	-193	1008	0	4	2	2	0.0424923357
3680	0	-1	0	-29181	1928501	0	1	2	2	0.0238802922
3681	0	0	1	24	-5	2	1	2	2	0.0731959580
3681	0	0	1	-345	2470	2	1	2	2	0.0795541531
3682	1	-1	0	-2462	-44268	0	2	2	2	0.0500511155
3684	0	-1	0	-9	18	2	1	2	2	0.0745010160
3685	0	1	1	19504	3454311	0	1	2	2	0.0451170662
3686	1	0	0	-149	865	2	1	2	2	0.0656488789
3687	1	1	1	-12	0	2	1	2	2	0.1089315840
3690	1	-1	0	60	360	0	3	2	2	0.0395752516

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3690	1	-1	0	-44010	-3539084	0	2	2	2	0.0467096896
3690	1	-1	1	-2498	-56903	0	1	2	2	0.0270483367
3694	1	-1	0	-296	-1888	0	1	2	2	0.0519005537
3696	0	-1	0	-56	-441	0	1	2	2	0.0495180768
3696	0	1	0	-12	-21	0	1	2	2	0.0376873327
3696	0	-1	0	-17242	-875009	0	1	2	2	0.0708707401
3696	0	1	0	-119120	-15860076	0	2	2	2	0.0456710612
3700	0	-1	0	-4533	-44063	0	1	2	2	0.0283221876
3703	1	-1	1	-1951	32806	0	4	2	2	0.0870306677
3705	1	1	0	-54368	15750147	0	2	2	2	0.0630702896
3705	1	1	1	-3040	-63520	0	8	2.01	2	0.0447295170
3705	1	0	1	-159	271	0	2	2	2	0.0385594024
3706	1	1	0	0	4	2	1	2	2	0.0739739100
3708	0	0	0	-2343	-43666	0	1	2	2	0.0297304557
3710	1	-1	0	-49	193	2	1	2	2	0.1068438444
3712	0	0	0	2	4	2	1	2	2	0.0964537770
3712	0	-1	0	-845	-9227	0	1	1.99	2	0.0445704138
3712	0	-1	0	-11	19	2	1	2	2	0.0693947258
3712	0	1	0	-2242	40122	0	2	2	2	0.0256624874
3714	1	1	1	-50	191	2	1	2	2	0.0639333587
3717	1	-1	1	-11	2	2	2	2	2	0.0852661031
3718	1	-1	0	-22931	1340067	0	2	2	2	0.0442628886
3718	1	-1	0	-3821	-92507	0	1	2	2	0.0633038787
3718	1	0	1	334	-2364	0	3	2	2	0.0239755166
3718	1	0	1	-30	80	2	1	2	2	0.1130314466
3718	1	0	0	56527	-5249687	0	1	1.99	2	0.0352031843
3720	0	-1	0	-380	2772	0	4	2	2	0.0196146096
3720	0	-1	0	-256	-1940	0	1	2	2	0.0553669798
3726	1	-1	0	-36	168	0	3	2	2	0.0490511125
3728	0	-1	0	-368	-2624	0	1	2	2	0.0423904764
3729	0	-1	1	-16	-105	0	1	2	2	0.0340364162
3731	0	1	1	-112	992	2	1	2	2	0.1489741538
3735	1	-1	1	-1133	-12548	0	2	2	2	0.0308985644
3737	0	0	1	-8927	324638	2	1	2	2	0.0718916089
3742	1	0	0	-9	25	2	1	2	2	0.0654995851
3744	0	0	0	-26121	-1624444	0	2	2	2	0.0507880133
3745	1	-1	0	-250	1575	0	4	2	2	0.0455526919
3752	0	0	0	-1315	17838	0	2	2	2	0.0345610994
3752	0	0	0	-9586	-361247	0	1	2	2	0.0269780258
3752	0	-1	0	-12	4	2	1	2	2	0.0744717923
3758	1	-1	0	4	-4	2	1	2	2	0.0752770375
3758	1	0	1	-19	30	2	1	2	2	0.0910559687
3760	0	-1	0	-7076	-226340	0	1	2	2	0.0540795502
3762	1	-1	0	675	-52731	0	1	2	2	0.0442573032
3762	1	-1	0	-102771	-12847059	0	1	2	2	0.0429923768
3768	0	-1	0	-504	-4212	0	1	2	2	0.0659638244
3770	1	-1	1	-86193	-9718303	0	2	2	2	0.0170038502
3774	1	1	0	-68	-816	0	1	2	2	0.0358689262

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3774	1	1	0	227	1789	2	1	2	2	0.0845409772
3775	1	1	1	-588	-5344	0	2	2	2	0.0406684412
3776	0	-1	0	-37	101	2	1	2	2	0.0745874777
3776	0	-1	0	-1601	-24863	0	1	2	2	0.0598080194
3776	0	0	0	8	-8	2	1	2	2	0.0836720342
3780	0	0	0	-69303	-7035698	0	1	2	2	0.0313615584
3780	0	0	0	57	-2	0	3	2	2	0.0314157252
3782	1	-1	0	-131	613	2	1	2	2	0.0795242542
3784	0	0	0	-155	742	0	2	2	2	0.0267464012
3784	0	0	0	-631	6090	0	4	2	2	0.0451150505
3784	0	-1	0	199	-611	2	1	2	2	0.0682764357
3786	1	1	0	4	6	2	1	2	2	0.0844625769
3786	1	1	1	-205	1091	2	1	2	2	0.0622107746
3786	1	0	0	33150	-12705084	0	5	2	2	0.0305758284
3795	1	1	0	-117	-504	0	4	2	2	0.0356567981
3795	0	-1	1	1290	55118	0	1	2	2	0.0259610509
3795	1	0	1	-2784	56257	0	4	2	2	0.0399385211
3799	0	1	1	-4	-18	2	1	2	2	0.0722436032
3800	0	1	0	-508	1488	2	2	2	2	0.0766206193
3801	0	-1	1	-14	26	2	1	2	2	0.1220704905
3806	1	0	1	-270	-18	0	3	2	2	0.0429999634
3806	1	-1	0	-55	-101	2	1	2	2	0.1225585395
3806	1	-1	1	-1179	15819	2	1	2	2	0.0806077322
3815	1	-1	0	-490	3675	0	2	2	2	0 0399762817
3819	0	-1	1	-1	-42	2	1	2	2	0 0844088193
3819	1	1	0	-29	-72	0	2	2	2	0 0461583898
3822	1	1	0	-58741	-1282259	0	2	2	2	0.0758431788
3822	1	1	1	-344	2057	0	4	2	2	0.0326068903
3822	1	1	1	293	-1765	0	1	2	2	0.0343168146
3825	1	-1	0	-6792	-213759	0	2	2	2	0.0467347861
3825	1	-1	0	-3852	91831	0	2	2	2	0.0170327605
3826	1	-1	0	-7	13	2	1	2	2	0.1169411789
3829	0	0	1	4	7	2	1	2	2	0.0728939477
3829	1	0	0	7	4	2	1	2	2	0.1161120383
3834	1	-1	0	12	224	2	1	2	2	0.0729331714
3840	0	-1	0	-1791	12555	0	2	2	2	0.0537830880
3840	0	1	0	-45	-117	0	2	2	2	0.0220753774
3842	1	0	0	-659	6433	2	2	2	2	0.0653427841
3843	1	-1	0	-146601	100480986	0	1	2	2	0.0570912924
3843	0	0	1	-4035	-114800	0	1	2	2	0.0327886159
3843	0	0	1	-14565	-1867068	0	1	2	2	0.0480563966
3848	0	-1	0	-4089	102013	2	1	2	2	0.0725181248
3849	0	-1	1	220	-163	0	1	2	2	0.0356485719
3850	1	-1	0	-8092	-275184	0	4	2	2	0.0330842105
3850	1	-1	0	4633	220541	0	1	2	2	0.0405574266
3850	1	-1	0	-757	-4299	0	2	2	2	0.0395332043
3850	1	-1	0	-9742	-367584	0	2	2	2	0.0508716628
3850	1	0	0	-1838	-30458	0	2	2	2	0.0331428251

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3850	1	1	1	112	-219	0	1	2	2	0.0206587163
3852	0	0	0	-9	1	2	1	2	2	0.0661475721
3857	1	1	1	-4332	109570	2	1	2	2	0.1101193606
3858	1	1	0	3	45	2	1	2	2	0.0976702105
3864	0	-1	0	-30728	-2061972	0	2	2	2	0.0466915369
3864	0	-1	0	-392	-4116	0	1	2	2	0.0687468418
3870	1	-1	0	-12735	-556659	0	1	2	2	0.0653646758
3870	1	-1	1	142	127	0	1	2	2	0.0187201267
3870	1	-1	1	1082069572	9.04852758E+13	0	1	2	2	0.0287653789
3872	0	0	0	-121	0	0	4	2	2	0.0490448456
3872	0	1	0	1775	-34113	0	1	2	2	0.0484313729
3876	0	-1	0	-29316	8611992	0	1	2	2	0.0631798390
3879	0	0	1	-6	2	2	1	2	2	0.0735925432
3879	1	-1	1	-41	182	2	1	2	2	0.0937172107
3880	0	1	0	-65	163	2	1	2	2	0.0726724085
3883	0	1	1	1	3	2	1	2	2	0.1002323719
3885	1	0	1	741	-1193	0	1	2	2	0.0265495007
3885	1	0	0	-34965	2513592	0	8	2	2	0.0282419738
3886	1	1	0	-1368	18916	2	1	2	2	0.0715104893
3886	1	0	0	-24	64	2	1	2	2	0.0645973801
3888	0	0	0	-27	90	2	1	2	2	0.0685502512
3888	0	0	0	0	-144	0	1	2	2	0.0424312564
3894	1	1	0	-403	-3155	0	2	2	2	0.0255848231
3900	0	-1	0	-1628	134472	0	1	2	2	0.0275316282
3903	0	-1	1	-21774	1243955	0	1	2	2	0.0243707430
3904	0	0	0	-83	-344	0	1	2	2	0.0512720280
3906	1	-1	0	-32733	-2209019	0	2	2	2	0.0546007657
3906	1	-1	1	-97907	-11766765	0	2	2	2	0.0354280086
3913	1	-1	0	-419872	104788425	0	2	2	2	0.0408320049
3914	1	-1	0	-403	-3015	0	2	2	2	0.0216224403
3914	1	-1	0	-28	64	2	1	2	2	0.1281733252
3915	0	0	1	5382	11823	0	3	2	2	0.0621511322
3915	1	-1	0	0	-9	0	1	2	2	0.0324444020
3915	1	-1	1	-371738	-87144524	0	1	2	2	0.0787193471
3915	1	-1	0	-41304	3241343	0	1	2	2	0.0279750821
3915	1	-1	0	-2895144	-1894863475	0	1	2	2	0.0283977586
3920	0	0	0	-98	343	0	2	2	2	0.0400996661
3920	0	-1	0	10519	1298725	0	1	2	2	0.0538868450
3920	0	-1	0	1944	-2960	0	1	2	2	0.0343478726
3920	0	-1	0	-996	-11780	0	1	2	2	0.0572374230
3920	0	1	0	-65	118	0	2	2	2	0.0226872667
3920	0	1	0	-800	-327692	0	1	2	2	0.0506253441
3924	0	0	0	-21	101	2	1	2	2	0.0630934317
3926	1	1	0	-2	10	2	1	2	2	0.0965274755
3928	0	-1	0	1	4	2	1	2	2	0.0710343473
3933	0	0	1	-3	130	2	1	2	2	0.0871393852
3936	0	1	0	-2214	-40824	0	4	2	2	0.0336293685
3939	0	-1	1	-156	-760	0	1	1.99	2	0.0238729217

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3939	1	0	1	-247	1469	0	2	2.01	2	0.0331969465
3940	0	-1	0	-6	1	2	1	2	2	0.0699896204
3940	0	0	0	-757	7981	2	1	2	2	0.0859304310
3942	1	-1	0	-12	-48	0	1	2	2	0.0254221684
3948	0	-1	0	595	1641	0	1	2	2	0.0674976147
3952	0	0	0	-259	-510	0	4	2	2	0.0377222079
3952	0	0	0	16	-36	2	1	2	2	0.0657941518
3952	0	0	0	-979	11794	2	1	2.01	2	0.1076894706
3954	1	1	0	-40	-116	0	2	2	2	0.0217934676
3954	1	1	0	-24	36	2	1	2	2	0.0941722884
3954	1	1	1	-127	485	2	1	2	2	0.0599760406
3956	0	-1	0	22	1	2	1	2	2	0.0641717732
3959	0	0	1	-334	2349	2	1	2	2	0.1022528297
3960	0	0	0	-30738	-2073287	0	2	2	2	0.0516310105
3960	0	0	0	-1182	-15599	0	2	2	2	0.0213762776
3960	0	0	0	-603	6102	0	1	2	2	0.0275070410
3962	1	0	1	-302	6496	0	1	2	2	0.0334133275
3966	1	0	1	-84	-302	0	1	2	2	0.0460292754
3966	1	0	1	-75	250	2	1	2	2	0.0670821254
3967	1	0	0	2	3	2	1	2	2	0.1162727163
3969	1	-1	1	-4052	-94202	0	1	2	2	0.0460234133
3972	0	-1	0	-137	666	2	1	2	2	0.0742157190
3974	1	-1	1	-51	147	2	1	2	2	0.0730347881
3975	0	-1	1	-219583	39819693	0	1	2	2	0.0477536504
3975	0	-1	1	-1083	13943	2	1	2	2	0.0782716713
3975	0	1	1	-5533	-160781	0	1	2	2	0.0182845552
3978	1	-1	0	-10242	-362732	0	2	2	2	0.0327834445
3984	0	-1	0	-136	-1808	0	1	2	2	0.0268189588
3987	1	-1	0	-258	1655	0	2	2	2	0.0437121626
3987	1	-1	1	22	-142	2	1	2	2	0.0849992217
3987	1	-1	1	-752	8120	2	1	2	2	0.0991870499
3988	0	0	0	-16	4	2	1	2	2	0.1020016321
3990	1	1	0	-142	-716	0	1	2	2	0.0413881154
3990	1	0	1	-2945744	-1946235058	0	2	2	2	0.0304346712
3992	0	0	0	-86	-307	0	1	2	2	0.0285378878
3994	1	1	1	460	2421	2	1	2	2	0.0633061715
3994	1	-1	1	-21	45	2	1	2	2	0.0727052998
3997	0	0	1	4	56	2	1	2	2	0.0720324133

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219	0	-1	1	-6	8	1	1	3	3	0.0975441686
245	0	0	1	-7	12	1	1	3	3	0.1561336927
273	0	-1	1	-26	68	1	1	3	3	0.1041537331
331	1	0	0	-5	4	1	1	3	3	0.1004146572
338	1	-1	0	-454	5812	1	1	3	3	0.1048129811
385	1	0	0	0	7	1	2	3	3	0.1037722206
399	1	1	1	-13	-22	1	2	3	3	0.0707992325
423	0	0	1	-9	10	1	1	3	3	0.0907697734
425	1	0	0	-213	-1208	1	2	3	3	0.1105605628
429	1	1	1	2	2	1	2	3	3	0.0787880711
441	0	0	1	-21	40	1	1	3	3	0.0742071932
443	1	0	0	-3	-2	1	1	3	3	0.1122789932
458	1	-1	0	-19	37	1	1	3	3	0.1080695587
459	0	0	1	3	-4	1	1	3	3	0.1042286333
467	0	0	1	-4	3	1	1	3	3	0.0913041012
469	1	-1	1	-12	18	1	1	3	3	0.1316414450
471	1	1	1	1	2	1	1	3	3	0.0957428021
472	0	0	0	2	1	1	1	3	3	0.0784585025
482	1	0	1	-44	-150	1	1	3	3	0.0853879039
493	1	-1	1	-57	222	1	1	3	3	0.1323600190
507	1	1	1	-10	8	1	1	3	3	0.0719006933
507	1	1	1	81	-564	1	4	3	3	0.0933370008
525	1	1	1	-63	156	1	4	3	3	0.0857906451
530	1	-1	0	1226	30580	1	1	3	3	0.1082910936
550	1	0	1	-6	8	1	2	3	3	0.0691382404
551	0	1	1	-116	444	1	1	3	3	0.1424874911
560	0	0	0	32	-212	1	1	3	3	0.0855298786
575	0	1	1	-18	24	1	1	3	3	0.1375525365
585	0	0	1	-3	18	1	1	3	3	0.0768039559
598	1	-1	0	44	496	1	1	3	3	0.1272622070
603	0	0	1	-111	450	1	1	3	3	0.0904846854
605	1	-1	1	-12	36	1	1	3	3	0.1331783529
608	0	0	0	5	-2	1	1	3	3	0.0737396343
609	1	1	1	-784	8720	1	4	3	3	0.1008898061
615	1	1	1	-6	-6	1	2	3	3	0.0945043353
618	1	1	0	2	4	1	1	3	3	0.0533040130
620	0	0	0	8	4	1	1	3	3	0.0718911158
621	1	-1	1	-14	-16	1	1	3	3	0.0675137549
629	0	0	1	-40	48	1	1	3	3	0.1038786222
633	1	1	1	-17	-70	1	1	3	3	0.1063330191
639	1	-1	1	4	-34	1	2	3	3	0.0600646682
650	1	-1	0	-22	46	1	1	3	3	0.1133028229
650	1	0	1	-26	48	1	3	3	3	0.0795458046
657	1	-1	1	-11	10	1	2	3	3	0.0583802857
662	1	0	1	32	-210	1	1	3	3	0.0510427845
663	1	1	1	-539	4592	1	4	3	3	0.1030575614
665	1	1	1	64	258	1	1	3	3	0.0935866464
677	1	1	1	2	0	1	1	3	3	0.0818201502

N	a1	a2	a3	a4	a6	r	t	C	FCP	r1
689	1	0	0	-14	19	1	2	3	3	0.1227316131
690	1	1	0	172	-1968	1	2	3	3	0.0561475817
700	0	0	0	800	26500	1	1	3	3	0.0756205269
700	0	0	0	-40	100	1	1	3	3	0.0822983587
703	0	0	1	1	-8	1	1	3	3	0.0855873687
704	0	0	0	2	-14	1	1	3	3	0.0896790720
705	0	-1	1	-5781	175862	1	1	3	3	0.0578514073
705	1	1	1	-120	42282	1	1	3	3	0.0886095616
714	1	1	0	-21	45	1	2	3	3	0.0579546029
715	0	1	1	-5	6	1	3	3	3	0.0695081609
722	1	-1	0	-1	-11	1	1	3	3	0.0996295570
723	1	1	1	-4	-4	1	2	3	3	0.1033309573
728	0	1	0	-1	51	1	1	3	3	0.0434890857
730	1	-1	0	-4	-2	1	1	3	3	0.1060998643
747	1	-1	1	-56	-134	1	2	3	3	0.0765598067
754	1	0	1	-7	-6	1	2	3	3	0.0972476140
758	1	0	1	11	0	1	1	3	3	0.0977042065
759	1	1	1	-23	-628	1	2	3	3	0.0906466319
777	1	1	1	-14	26	1	4	3	3	0.1014692578
784	0	0	0	-343	2401	1	1	3	3	0.0900186557
786	1	1	0	-8	6	1	1	3	3	0.0542568275
800	0	1	0	-158	-812	1	2	3	3	0.0537032290
814	1	0	1	5	30	1	3	3	3	0.1063321117
815	0	1	1	15	-69	1	3	3	3	0.0703304106
817	0	1	1	-16649	821406	1	1	3	3	0.0941012379
825	0	-1	1	-23	53	1	1	3	3	0.0492365964
827	0	0	1	-10	12	1	1	3	3	0.1080054739
829	0	0	1	-4	-3	1	1	3	3	0.1170573531
832	0	0	0	-172	-1328	1	1	3	3	0.0688003785
847	0	0	1	242	-333	1	1	3	3	0.1117388332
849	1	1	1	5	-4	1	1	3	3	0.1137011966
850	1	-1	0	8	16	1	1	3	3	0.1152154680
861	1	0	0	-7	14	1	1	3	3	0.0456754439
862	1	-1	0	-70	244	1	1	3	3	0.1224254970
867	0	-1	1	193	-5023	1	1	3	3	0.0773599017
867	1	1	1	-23	20	1	2	3	3	0.0962556262
874	1	1	0	-38	76	1	1	3	3	0.0688273099
880	0	0	0	-67	226	1	1	3	3	0.0678298933
882	1	-1	0	-4566	119916	1	3	3	3	0.0456447772
886	1	-1	0	-14	24	1	1	3	3	0.0523577099
890	1	0	1	-9	-4	1	2	3	3	0.0981948376
891	1	-1	1	7	10	1	1	3	3	0.0742474150
894	1	1	0	-59	-201	1	1	3	3	0.0835740209
897	1	1	1	-19	-40	1	2	3	3	0.1036699867
897	1	0	0	0	-9	1	2	3	3	0.0565200551
906	1	1	0	3395	-211907	1	1	3	3	0.0495834321
910	1	0	1	-234	1352	1	6	3	3	0.0878198451
920	0	0	0	-187	991	1	1	3	3	0.0746742672

N	a1	a2	a3	a4	a6	r	t	C	FCP	r1
925	0	-1	1	-83	318	1	1	3	3	0.0561587108
930	1	1	0	-108	-432	1	2	3	3	0.0401009357
933	0	-1	1	-3	-1	1	1	3	3	0.0626496581
935	0	1	1	-1	-4	1	1	3	3	0.0893124373
939	0	-1	1	-321	-9817	1	1	3	3	0.0519629301
939	0	1	1	4	14	1	1	3	3	0.0580639173
944	0	1	0	-64	180	1	1	3	3	0.0604127635
966	1	1	0	334	5556	1	2	3	3	0.0760319625
966	1	1	0	18	0	1	2	3	3	0.0906707317
968	0	0	0	-484	-5324	1	1	3	3	0.1007580038
974	1	-1	1	51	117	1	1	3	3	0.0586445790
975	0	-1	1	-83	3818	1	1	3	3	0.0515288731
981	1	-1	1	-74	262	1	1	3	3	0.0817945905
987	1	0	0	1596	9783	1	2	3	3	0.0498344467
999	1	-1	1	-8	10	1	1	3	3	0.0672442482
1006	1	-1	1	-135	639	1	1	3	3	0.0378401654
1014	1	1	0	-3	-99	1	1	3	3	0.0652205553
1015	0	0	1	2	3	1	1	3	3	0.1118747702
1017	1	-1	1	1	2	1	1	3	3	0.0846323496
1025	1	0	0	-63	-8	1	2	3	3	0.1171572941
1026	1	-1	0	-51	141	1	3	3	3	0.0624390541
1027	0	1	1	-213	1128	1	3	3	3	0.0902840666
1045	1	0	0	-6	-5	1	2	3	3	0.1222165598
1048	0	1	0	-1024	-12960	1	1	3	3	0.0719760914
1051	0	1	1	-5	3	1	1	3	3	0.0798330561
1053	0	0	1	-27	-34	1	1	3	3	0.1029120719
1055	1	1	1	0	-8	1	1	3	3	0.0856038976
1056	0	-1	0	-10	16	1	2	3	3	0.0611168821
1062	1	-1	0	-211599	37407469	1	2	3	3	0.0683726150
1071	0	0	1	177	630	1	1	3	3	0.0572297316
1077	1	0	0	-5	6	1	1	3	3	0.0684403591
1078	1	-1	0	-30634	-2056076	1	1	3	3	0.1335157756
1078	1	0	1	-712	7494	1	2	3	3	0.1026373321
1078	1	-1	1	-6	-3	1	1	3	3	0.0574011707
1085	0	0	1	2	-147	1	1	3	3	0.1136583330
1085	1	0	0	-11	16	1	2	3	3	0.1190482477
1086	1	1	0	-138	-684	1	1	3	3	0.0540657501
1088	0	1	0	-33	-65	1	2	3	3	0.0395908983
1088	0	1	0	-4	6	1	2	3	3	0.0677907681
1089	1	-1	1	-23	168	1	1	3	3	0.0751507009
1089	0	0	1	33	-14	1	1	3	3	0.1102289239
1098	1	-1	0	-45	-891	1	1	3	3	0.0303282793
1099	1	-1	1	2	0	1	1	3	3	0.0647893516
1107	1	-1	1	4	2	1	1	3	3	0.0850102284
1110	1	1	0	-1423388	-615252528	1	2	3	3	0.0764976774
1111	0	0	1	-8704	313290	1	1	3	3	0.1201449619
1113	0	-1	1	-1	3	1	1	3	3	0.0747879601
1113	1	1	1	1	-4	1	2	3	3	0.1057863618

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1113	0	-1	1	49	-55	1	1	3	3	0.0687324870
1120	0	0	0	8	16	1	1	3	3	0.0704262766
1128	0	-1	0	-437784	142107228	1	2	3.01	3	0.0457840307
1131	1	1	1	12	12	1	2	3	3	0.0841034267
1132	0	1	0	-93	316	1	3	3	3	0.0510123214
1139	1	0	0	-80	151	1	2	3	3	0.1331908701
1145	1	0	0	-596	5551	1	2	3	3	0.1240550570
1147	0	-1	1	-26790	1696662	1	5	3	3	0.1302430127
1150	1	0	1	-951	-9202	1	3	3	3	0.0805722970
1150	1	-1	1	195	-7803	1	1	2.99	3	0.0489394856
1155	1	1	1	-11	-16	1	2	3	3	0.0983994905
1155	0	-1	1	-131	1916	1	1	3	3	0.0686660120
1157	0	1	1	-3	-3	1	1	3	3	0.0862016752
1160	0	1	0	-11	10	1	2	3	3	0.0629698527
1161	0	0	1	54	857	1	1	3	3	0.0516198707
1173	1	1	1	-20	26	1	1	3	3	0.1170244831
1183	0	1	1	-1239	16410	1	1	3	3	0.0492358486
1184	0	0	0	-232	1360	1	1	3	3	0.1095076818
1185	1	1	1	44	-172	1	2	3	3	0.1045261023
1185	1	0	0	-26	51	1	2	3	3	0.0502588233
1190	1	-1	1	12	-9	1	1	3	3	0.0473407601
1195	0	1	1	-30	54	1	1	3	3	0.1347578969
1210	1	-1	0	5	-5	1	1	3	3	0.1256223313
1210	1	1	0	1208	65696	1	1	3	3	0.0469782666
1211	0	0	1	-94	360	1	1	3	3	0.1194810391
1215	0	0	1	-18	98	1	1	3	3	0.0405720413
1215	1	-1	1	-47	-104	1	1	3	3	0.0405720413
1216	0	1	0	3	1	1	1	3	3	0.0823405168
1216	0	0	0	20	16	1	1	3	3	0.0845381473
1221	1	0	0	-68	-201	1	2	3	3	0.0380793104
1225	1	1	1	-8	6	1	1	3	3	0.0866876787
1232	0	1	0	56	-588	1	2	3	3	0.0740858955
1242	1	-1	0	-2148	-50860	1	1	3	3	0.0393498711
1248	1	0	1	472	22902	1	2	3	3	0.1144755158
1248	0	-1	0	-14	-12	1	2	3	3	0.0547683365
1251	1	-1	1	229	-1740	1	1	3	3	0.0802661327
1254	1	1	0	-1282	17140	1	2	3	3	0.0937591127
1264	0	1	0	16	-44	1	2	3	3	0.0759630051
1267	0	1	1	7	12	1	3	3	3	0.0861614399
1269	1	-1	1	-29	82	1	1	3	3	0.0927141756
1274	1	-1	0	-1087	-301043	1	1	3	3	0.1134880716
1275	0	-1	1	17	18	1	1	3	3	0.0653524151
1284	0	-1	0	-6	-3	1	1	3	3	0.0361037417
1288	0	0	0	53	-5	1	1	3	3	0.1095335154
1293	0	1	1	-6370	193540	1	5	3	3	0.0870209331
1295	0	-1	1	18965	-2171027	1	1	3	3	0.0555464497
1299	1	0	0	-10	11	1	2	3	3	0.0797994260
1300	0	1	0	-7033	224688	1	2	3	3	0.0598574591

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1304	0	1	0	7	-5	1	1	3	3	0.0389320682
1310	1	0	1	1	-78	1	1	3	3	0.0874956182
1311	0	-1	1	-1411	51723	1	1	3	3	0.0703201111
1312	0	1	0	-14	16	1	2	3	3	0.0758981151
1313	1	-1	0	2	1	1	1	3	3	0.0840299902
1315	0	0	1	-17	-220	1	1	3	3	0.0405506156
1320	0	-1	0	-11	36	1	2	3	3	0.0389249472
1323	0	0	1	-294	-1115	1	1	3	3	0.0672198424
1323	1	-1	1	1	4	1	1	3	3	0.0878574847
1323	0	0	1	-189	992	1	1	3	3	0.0977238577
1325	0	1	1	-13	14	1	1	3	3	0.0915126858
1326	1	1	0	9	21	1	2	3	3	0.0701090446
1328	0	-1	0	1	-2	1	1	3	3	0.0415516986
1330	1	1	0	2517	98557	1	1	3	3	0.0684130006
1330	1	0	1	-4	12	1	3	3	3	0.0889555626
1344	0	-1	0	-29	-51	1	2	3	3	0.0541559611
1344	0	-1	0	-5	21	1	2	3	3	0.0660663604
1349	0	0	1	-8	17	1	1	3	3	0.0453207613
1350	1	-1	0	-717	7541	1	3	3	3	0.0348200517
1357	1	0	0	-52	-149	1	1	3	3	0.0620372831
1358	1	0	1	3	-40	1	2	3	3	0.1051027026
1358	1	-1	1	-576	5475	1	1	3	3	0.0546221373
1360	0	1	0	-3540	79900	1	2	3	3	0.0271177012
1360	0	1	0	-136	564	1	2	3	3	0.0477045448
1360	0	0	0	-163	802	1	1	3	3	0.0947992697
1368	0	0	0	-162	945	1	2	3	3	0.0332508063
1369	1	-1	1	2	-2	1	1	3	3	0.0527540959
1370	1	-1	0	-9215	-338419	1	1	3	3	0.0400674529
1383	1	1	1	4	2	1	1	3	3	0.0930207371
1386	1	-1	0	-33	2429	1	2	3	3	0.0437054341
1392	0	-1	0	8	16	1	1	3	3	0.0647610100
1394	1	-1	0	-13	21	1	2	3	3	0.0472827339
1395	1	-1	1	-68	-498	1	2	3	3	0.0722143080
1400	0	1	0	-8	13	1	1	3	3	0.0442257565
1405	0	-1	1	-56	-144	1	1	3	3	0.1115562415
1406	1	1	0	-76	-304	1	1	3	3	0.0702359332
1406	1	-1	1	-1191	507615	1	1	3	3	0.0639025407
1410	1	1	0	-418773	-104507667	1	1	3	3	0.0582003173
1410	1	1	0	17	37	1	2	3	3	0.0775358578
1411	0	1	1	3	0	1	1	3	3	0.1011507749
1411	1	0	0	-28	-57	1	2	3	3	0.1173226142
1421	0	1	1	-457	3560	1	3	3	3	0.1055334271
1421	1	0	0	-1	622	1	1	3	3	0.0447174262
1421	0	-1	1	-114	-1674	1	1	3	3	0.1211888072
1424	0	1	0	-24	14	1	2	3	3	0.0826979612
1425	1	1	1	-38	-94	1	2	3	3	0.0822898955
1426	1	0	1	-18	-28	1	2	3	3	0.1157454454
1430	1	1	0	27	13	1	1	3	3	0.0687566192

N	a1	a2	a3	a4	a6	r	t	C	FCP	r1
1442	1	0	1	-17	36	1	2	3	3	0.0996902253
1443	1	0	0	-19	-16	1	2	3	3	0.0601621473
1444	0	1	0	-7701	258583	1	1	3	3	0.0766590000
1445	0	1	1	-3275	-57546	1	3	3	3	0.0718633660
1449	0	0	1	-867	11466	1	1	3	3	0.1097047392
1452	0	-1	0	4	24	1	1	3	3	0.0434914024
1455	0	-1	1	-501	4466	1	1	3	3	0.0693239748
1456	0	0	0	53	250	1	1	3	3	0.1076033602
1462	1	1	0	6	4	1	1	3	3	0.0872123815
1464	0	-1	0	-1159	19240	1	4	3	3	0.0490645091
1468	0	1	0	2	-3	1	1	3	3	0.0658439509
1470	1	1	0	-613	15373	1	1	3	3	0.0389048326
1475	1	0	0	112	-233	1	2	3	3	0.1113066753
1478	1	1	0	0	-2	1	1	3	3	0.0351893381
1478	1	0	1	-2586	-50818	1	1	3	3	0.0916100143
1479	0	-1	1	-6175	239664	1	1	3	3	0.0594936697
1479	0	-1	1	-17	35	1	1	3	3	0.0849839649
1479	0	1	1	-272	-7558	1	1	3	3	0.0711744854
1485	1	-1	1	-68	232	1	1	3	3	0.0793117525
1485	0	0	1	513	46190	1	1	3	3	0.0366987922
1488	0	-1	0	8	-89	1	1	3	3	0.0628363399
1495	1	0	0	-1101	13970	1	1	3	3	0.0422965437
1495	0	1	1	-585	6681	1	3	3	3	0.0838589557
1497	1	0	0	-502	21551	1	1	3	3	0.0720039085
1498	1	-1	1	-51	915	1	1	3	3	0.0619281794
1505	0	1	1	-91	551	1	3	3	3	0.0937216993
1510	1	-1	0	-490	4300	1	1	3	3	0.1201500990
1518	1	1	0	-28	46	1	1	3	3	0.0737467270
1520	0	1	0	5	0	1	2	3	3	0.0589949921
1520	0	1	0	-921	-10346	1	2	3	3	0.0750686203
1521	0	0	1	0	7140	1	3	3	3	0.0398368751
1534	1	1	0	206	1076	1	1	3	3	0.0540477628
1539	1	-1	1	-14	-18	1	1	3	3	0.0936541225
1547	1	0	0	-13	0	1	2	3	3	0.1161437013
1548	0	0	0	-39	254	1	1	3	3	0.0290876933
1554	1	0	1	167	-24388	1	2	3	3	0.0371403294
1566	1	-1	0	39	251	1	1	3	3	0.0505398696
1569	0	-1	1	-3	11	1	1	3	3	0.0642408061
1573	0	-1	1	-161	2925	1	1	3	3	0.0704241597
1573	1	1	1	-19	12	1	1	3	3	0.1011636412
1581	0	-1	1	-125	590	1	1	3	3	0.0584043392
1584	0	0	0	-27	10	1	2	3	3	0.0327172809
1585	1	-1	1	-33	-64	1	2	3	3	0.0813935489
1590	1	1	0	7	-3	1	1	3	3	0.0746369362
1592	0	1	0	4	1	1	1	3	3	0.0658782815
1595	1	0	0	5	0	1	2	3	3	0.1108951419
1599	1	1	1	-7	-10	1	1	3	3	0.1128247037
1600	0	1	0	-133	363	1	2	3	3	0.0643663292

N	a1	a2	a3	a4	a6	r	t	C	FCP	r1
1600	0	0	0	20	-80	1	1	3	3	0.0873669114
1600	0	0	0	500	10000	1	1	3	3	0.0874633295
1602	1	-1	0	54	756	1	1	3	3	0.0748288951
1610	1	-1	0	-890	-13644	1	2	3	3	0.0432805038
1611	0	0	1	-678	6795	1	1	2.99	3	0.0470428056
1611	1	-1	1	13	20	1	1	3	3	0.0948573579
1617	1	0	0	20	41	1	1	3	3	0.0753326033
1624	0	1	0	76	352	1	2	3	3	0.0740353360
1632	0	-1	0	3	21	1	1	3	3	0.0516874548
1632	0	-1	0	-221	3669	1	1	3	3	0.0406126628
1634	1	0	1	8	6	1	1	3	3	0.1005775523
1638	1	-1	0	-21	63	1	3	3	3	0.0548404252
1640	0	1	0	-55	-150	1	2	3	3	0.0473262442
1641	0	-1	1	-3	92	1	1	3	3	0.0727100929
1641	0	1	1	-24	38	1	1	3	3	0.0576549174
1645	0	1	1	-5	-9	1	1	3	3	0.0826246157
1650	1	1	0	250	-600	1	1	3	3	0.0604614412
1659	1	0	0	-104	-417	1	2	3	3	0.0417833266
1660	0	-1	0	-21	46	1	1	3	3	0.0569274276
1664	0	1	0	-34	66	1	2	3	3	0.0697335021
1664	0	-1	0	39	169	1	1	3	3	0.0424603888
1665	0	0	1	-48	-122	1	1	3	3	0.0602942458
1665	0	0	1	-12	765	1	1	3	3	0.0347669209
1666	1	1	0	-221	-1679	1	1	3	3	0.0775556667
1666	1	0	1	1542	4652	1	2	3	3	0.1160059456
1671	0	-1	1	-7	9	1	1	3	3	0.0519461116
1675	0	1	1	-333	2244	1	3	3	3	0.0840728643
1682	1	0	1	-47	-126	1	1	3	3	0.1116973663
1683	1	-1	1	-596	3862	1	2	3	3	0.0861086338
1683	0	0	1	96	-720	1	1	3	3	0.0643196464
1683	0	0	1	63	-34	1	1	3	3	0.1167687745
1688	0	1	0	-27	46	1	1	3	3	0.0893433518
1690	1	-1	0	-1130	-5004	1	2	3	3	0.0379921095
1690	1	0	1	-1694	28056	1	3	3	3	0.0956566233
1696	0	1	0	0	-8	1	1	3	3	0.0305680830
1701	1	-1	1	-11	16	1	1	3	3	0.0825827892
1704	0	-1	0	16	-36	1	2	3	3	0.0584708201
1710	1	-1	0	-555	1925	1	2	3	3	0.0483650833
1712	0	1	0	-432	3316	1	1	3	3	0.0847643690
1712	0	-1	0	32	-256	1	1	3	3	0.0370698134
1712	0	-1	0	-3080	-64784	1	1	3	3	0.0684969100
1713	1	0	0	1	18	1	1	3	3	0.0672819089
1714	1	-1	0	-17	-23	1	2	3	3	0.0392120738
1717	0	-1	1	-600	5832	1	5	3	3	0.1302828421
1722	1	1	0	-44	96	1	1	3	3	0.0877326161
1725	0	-1	1	-113	-427	1	1	3	3	0.0742207610
1725	1	1	1	-763	7706	1	1	3	3	0.0948237102
1731	0	1	1	1	2	1	1	3	3	0.0404093524

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1731	1	0	0	-9	0	1	2	3	3	0.0602886487
1734	1	1	0	-73845	7690221	1	2	3	3	0.0416284456
1735	1	-1	0	-25420	1566325	1	1	3	3	0.0856390969
1740	0	-1	0	-741	-7434	1	2	3	3	0.0314806607
1745	0	-1	1	-36	96	1	1	3	3	0.1169230752
1745	0	-1	1	-5	3	1	1	3	3	0.0327755878
1745	0	0	1	-22	-33	1	1	3	3	0.1058382777
1748	0	1	0	-157	1599	1	3	3	3	0.0878144084
1755	0	0	1	-438	3528	1	3	3	3	0.0560140310
1757	0	1	1	-19	26	1	1	3	3	0.1024362161
1758	1	1	0	-22	-50	1	1	3	3	0.0958883959
1760	0	1	0	-10	-12	1	2	3	3	0.0613903802
1760	0	1	0	-126	124	1	2	3	3	0.0412861412
1761	0	-1	1	1	-4	1	1	3	3	0.0800436464
1761	0	-1	1	-89	356	1	1	3	3	0.0880944060
1763	0	1	1	1	-2	1	1	3	3	0.0349432563
1770	1	1	0	-33	-2763	1	1	3	3	0.0625330581
1771	1	0	0	10	-29	1	2	3	3	0.1326578062
1771	1	1	1	-6	-8	1	1	3	3	0.0952484345
1772	0	-1	0	-29	73	1	1	3	3	0.0560055868
1785	0	-1	1	-35	131	1	1	3	3	0.0533230146
1790	1	1	0	-12	4	1	1	2.99	3	0.0491068580
1792	0	1	0	-19	-39	1	2	3	3	0.0739666802
1792	0	1	0	-35	49	1	2	3	3	0.0910154794
1793	0	0	1	-148	-750	1	1	3	3	0.1165719754
1798	1	0	0	-217	1209	1	3	3	3	0.0382172249
1804	0	1	0	3	-44	1	3	3	3	0.0882860625
1805	0	1	1	-36581	2679900	1	3	3	3	0.1016441990
1811	0	-1	1	3	0	1	1	3	3	0.0879329284
1813	0	-1	1	-163	-743	1	1	3	3	0.0652565170
1818	1	-1	0	-11826	1752916	1	1	3	3	0.0473369088
1825	1	-1	1	-30	-28	1	2	3	3	0.0692332555
1840	0	0	0	-73	-2453	1	1	3	3	0.0955490331
1845	0	0	1	-48	128	1	1	3	3	0.0575666323
1845	0	0	1	-432	-3463	1	1	3	3	0.0321382589
1848	0	-1	0	-12	21	1	1	3	3	0.0565410407
1849	0	0	1	-860	9707	1	1	3	3	0.0455332677
1850	1	-1	0	-242	1916	1	1	3	3	0.0370993716
1850	1	0	1	-476	9498	1	3	3	3	0.0956844050
1854	1	-1	0	-13356	597456	1	1	3	3	0.0682904706
1855	0	-1	1	-21	747	1	1	3	3	0.0788431344
1856	0	0	0	-19324	1033936	1	1	3	3	0.1087791756
1857	0	-1	1	3	2	1	1	3	3	0.0892722022
1864	0	-1	0	-8	28	1	1	2.9	3	0.0452327671
1870	1	1	0	-293	1837	1	1	3	3	0.0737699704
1870	1	-1	1	-87	2799	1	1	3	3	0.0410966880
1878	1	0	1	-43	-58	1	2	3	3	0.0385173836
1880	0	0	0	-883	-10082	1	1	3	3	0.0883467185

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1880	0	1	0	-105	475	1	1	3	3	0.0418002387
1880	0	-1	0	-16	-4	1	1	3	3	0.0459240795
1881	0	0	1	-12	36	1	1	3	3	0.0727261395
1885	0	-1	1	-2211	-39288	1	1	3	3	0.0748905904
1885	1	0	1	-44	-99	1	2	3	3	0.0643866156
1887	0	1	1	-750231	-251524663	1	1	3	3	0.0301082980
1888	0	0	0	-517	4528	1	1	3	3	0.0804865919
1891	1	1	1	-51832	-4563578	1	1	3	3	0.0534016191
1892	0	1	0	-198	1009	1	3	3	3	0.0592204597
1911	0	-1	1	229	-29800	1	1	3	3	0.0750663105
1911	1	1	1	20	146	1	1	3	3	0.1154916163
1917	0	0	1	-6	5	1	1	3	3	0.0640269138
1917	0	0	1	918	-32299	1	1	3	3	0.0697848369
1918	1	0	1	-143	642	1	2	3	3	0.1167344799
1922	1	0	1	-4345	64840	1	3	3	3	0.0310207526
1923	0	-1	1	-9	14	1	1	3	3	0.0895418238
1925	0	-1	1	-2233	41368	1	1	3	3	0.0725371149
1925	1	0	0	87	1192	1	2	3	3	0.1126769165
1925	1	0	0	57	952	1	2	3	3	0.1158171679
1925	0	1	1	-33	-6	1	3	3	3	0.0871776256
1930	1	-1	0	-79	-147	1	2	3	3	0.0320946425
1935	1	-1	1	-8	2	1	2	3	3	0.0835362285
1936	0	-1	0	1775	-24451	1	1	3	3	0.0441933775
1936	0	-1	0	323	-2671	1	1	3	3	0.0581024220
1936	0	1	0	-480	3892	1	1	3	3	0.0496226456
1940	0	1	0	-21	-41	1	1	3	3	0.0780803850
1949	0	1	1	-7	-10	1	1	3	3	0.1079908021
1950	1	1	0	-150	4500	1	2	3	3	0.0499956009
1953	0	0	1	-54	182	1	1	3	3	0.0728311426
1953	1	-1	1	-32	-30	1	2	3	3	0.0949574111
1956	0	-1	0	155	241	1	1	3	3	0.0665028941
1960	0	-1	0	1944	-204644	1	1	2.9	3	0.0461298166
1960	0	1	0	1944	-35456	1	2	3	3	0.0634153217
1968	0	-1	0	-144	-576	1	2	3	3	0.0672452005
1968	0	-1	0	-165	-819	1	1	3	3	0.0642105540
1971	0	0	1	-54	-153	1	1	3	3	0.0629969708
1971	0	0	1	27	20	1	1	3	3	0.0881457329
1975	1	0	1	-1001	-13977	1	2	3	3	0.0629897751
1975	0	-1	1	-83	693	1	1	3	3	0.0722591905
1977	1	1	0	-15	18	1	1	3	3	0.0275568543
1984	0	1	0	31	31	1	2	3	3	0.0780963340
1995	1	0	0	199	4080	1	2	3	3	0.0390022934
1998	1	-1	0	-6	-12	1	1	3	3	0.0648536246
2005	1	-1	1	-7	6	1	2	3	3	0.0306338618
2006	1	1	0	1003	-52883	1	1	3	3	0.0402768388
2006	1	-1	1	186	-1323	1	1	3	3	0.0730906850
2010	1	1	0	-281067	101322621	1	1	3	3	0.0515973136
2014	1	0	1	-20	180	1	1	3	3	0.1130239765

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2015	0	1	1	39	-105	1	3	3	3	0.1016836521
2019	1	0	0	-10	101	1	1	3	3	0.0644222586
2019	0	1	1	68	502	1	1	3	3	0.0838054528
2020	0	1	0	-25	0	1	2	3	3	0.0468837196
2025	0	0	1	-4050	-98719	1	1	3	3	0.0381296008
2025	0	0	1	-450	3656	1	1	3	3	0.0521982484
2037	1	1	1	-90	-354	1	2	3	3	0.1163605676
2040	0	-1	0	7644	-1273275	1	1	3	3	0.0481677796
2043	0	0	1	-3882	93096	1	1	3	3	0.0760567488
2046	1	1	0	-62	0	1	2	3	3	0.1019297128
2046	1	0	1	-172	746	1	2	3	3	0.0314633086
2055	1	1	1	-5900	388010	1	1	3	3	0.0826430468
2055	1	0	0	-26	45	1	1	3	3	0.0339824409
2056	0	0	0	-311	2111	1	1	3	3	0.0354040104
2064	0	-1	0	-112	496	1	1	3	3	0.0394048638
2065	0	0	1	8	-420	1	1	3	3	0.1047544637
2068	0	1	0	12	-188	1	3	3	3	0.0527254137
2070	1	-1	0	-9	-7	1	2	3	3	0.0323433731
2070	1	-1	0	-3780	-97200	1	2	3	3	0.0376732147
2071	1	1	1	3	2	1	1	3	3	0.0566712587
2074	1	0	1	-1317	-18496	1	2	3	3	0.0977775137
2077	0	-1	1	-3	0	1	1	3	3	0.0614917330
2079	0	0	1	-108	-385	1	1	3	3	0.0570592806
2090	1	-1	0	35	-75	1	2	3	3	0.0398433445
2090	1	0	1	-524	4566	1	6	3	3	0.1037368955
2093	0	-1	1	-5	9	1	1	3	3	0.0554436162
2093	0	-1	1	-42	120	1	1	3	3	0.1266031902
2093	0	1	1	-43687	3500082	1	3	3	3	0.0485071852
2093	0	1	1	-33	57	1	3	3	3	0.0876240296
2096	0	-1	0	-9	-11	1	1	3	3	0.0597524720
2103	0	-1	1	-214034	-38041660	1	1	3	3	0.1218079810
2110	1	1	0	13	-71	1	1	3	3	0.0296226916
2110	1	1	0	-12	16	1	1	3	3	0.0401943139
2112	0	-1	0	11	-11	1	2	3	3	0.0624087636
2112	0	-1	0	-49	145	1	2	3	3	0.0471391795
2115	1	-1	1	58	-34	1	1	3	3	0.0383842315
2121	0	-1	1	-1037	13205	1	1	3	3	0.0907880368
2121	0	-1	1	-35	50	1	1	3	3	0.0418546860
2126	1	-1	0	5	-3	1	1	3	3	0.0266139192
2130	1	1	0	67	573	1	2	3	3	0.0703289468
2135	0	1	1	-4891	130040	1	3	3	3	0.0944220618
2135	1	1	0	-423	-1442	1	1	3	3	0.0387640960
2135	1	0	0	-3955	95400	1	2	3	3	0.1087183007
2141	1	-1	0	-1	-2	1	1	3	3	0.0892691429
2142	1	-1	0	-19836	1106896	1	1	3	3	0.0665575882
2145	0	-1	1	10	-4	1	1	3	3	0.0910120826
2146	1	1	0	-14938	696596	1	1	3	3	0.0515140785
2148	0	-1	0	-117	-2511	1	1	3	3	0.0638472652

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2148	0	-1	0	3	-279	1	1	3	3	0.0698237687
2150	1	-1	1	-15	-33	1	1	3	3	0.0526648313
2150	1	-1	1	-303930	64568697	1	1	2.99	3	0.0436074672
2154	1	1	0	-12682	670420	1	1	3	3	0.0971005688
2157	0	-1	1	-16313	-796540	1	1	3	3	0.0597114056
2163	1	0	0	-95	-624	1	2	3	3	0.0798410051
2166	1	0	1	87	412	1	1	3	3	0.0596507998
2169	0	0	1	-30	72	1	1	3	3	0.0494389761
2170	1	0	1	11	12	1	2	3	3	0.0960430973
2175	0	-1	1	-283	1968	1	1	3	3	0.0708738026
2175	0	-1	1	-3833	101318	1	1	3	3	0.0588590801
2188	0	1	0	3	-17	1	1	3	3	0.0500738223
2189	0	1	1	-28027	1796670	1	3	3	3	0.0453166462
2190	1	1	0	-1133	-20913	1	1	3	3	0.0710966850
2200	0	1	0	292	-2912	1	2	3	3	0.0726159529
2202	1	0	1	-420	3262	1	3	3	3	0.0371887897
2204	0	0	0	17	-74	1	1	3	3	0.0848667527
2205	0	0	1	42	-212	1	1	3	3	0.0488403955
2205	0	0	1	-588	6088	1	1	3	3	0.0493560385
2208	0	-1	0	6	0	1	2	3	3	0.0620162986
2211	1	1	0	-105	-408	1	2	2.99	3	0.0230549905
2211	0	-1	1	-96152	-11445040	1	1	3	3	0.1306584519
2211	0	1	1	-27	182	1	3	3	3	0.0545373308
2219	0	1	1	-1	-3	1	1	3	3	0.0362619532
2221	0	-1	1	-11	18	1	1	3	3	0.0798762288
2223	0	0	1	-48	-675	1	1	3	3	0.0635232015
2226	1	1	0	-37243	2750941	1	1	3	3	0.0597994461
2230	1	-1	1	-27	-21	1	1	3	3	0.0508210308
2232	0	0	0	-3	-29	1	1	3	3	0.0288140302
2235	0	-1	1	-41	116	1	1	3	3	0.0531551913
2240	0	-1	0	9	-59	1	1	3	3	0.0365962527
2240	0	0	0	2	-2	1	1	3	3	0.0885514650
2242	1	0	0	22	4	1	1	3.01	3	0.0244983800
2254	1	-1	0	-499	5109	1	2	3	3	0.0756264723
2256	0	-1	0	-37	-71	1	1	3	3	0.0557031137
2259	0	0	1	-84	-630	1	1	3	3	0.0743893903
2261	0	1	1	-96339	10812429	1	1	3	3	0.0588767190
2261	0	1	1	-57	147	1	3	3	3	0.1048626143
2262	1	1	0	-67	205	1	2	3	3	0.1017879152
2262	1	1	0	5833	-1298445	1	1	3	3	0.0783657000
2262	1	0	1	25	2	1	1	3	3	0.0520161312
2265	1	1	1	145	-148	1	2	3	3	0.0879748862
2272	0	0	0	-91	334	1	1	3	3	0.0960915575
2286	1	-1	0	-189	-923	1	1	2.99	3	0.0336818927
2288	0	1	0	-1056	17908	1	1	3	3	0.0719759366
2289	0	-1	1	-180	992	1	1	3	3	0.1317544683
2295	0	0	1	-198	-1197	1	1	3	3	0.0578465621
2295	0	0	1	-78	279	1	3	3	3	0.0664076005

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2299	0	0	1	1331	-40263	1	1	3	3	0.0486036160
2300	0	-1	0	42	37	1	1	3	3	0.0460445426
2300	0	0	0	-1825	306625	1	1	3	3	0.0871263191
2300	0	1	0	-108	388	1	3	3	3	0.0602639209
2304	0	0	0	-66	200	1	2	3	3	0.0341058480
2304	0	0	0	18	0	1	2	3	3	0.0514266617
2307	0	-1	1	-87	-286	1	1	3	3	0.0484846625
2310	1	1	0	-6958	-224588	1	2	3	3	0.0636749903
2315	0	-1	1	-111	-1479	1	1	3	3	0.0763500005
2318	1	1	0	9	19	1	1	3	3	0.0727608819
2320	0	1	0	-11	4	1	2	3	3	0 0815546419
2322	1	-1	0	-42	-748	1	1	3	3	0.0433937192
2325	1	1	0	8425	1017750	1	1	3	3	0.0401932638
2325	0	-1	1	-83	68	1	1	3	3	0.0641701459
2325	1	1	1	-388	2906	1	1	3	3	0.0919856733
2325	0	1	1	-63478	2539234	1	1	3	3	0.0498486624
2328	0	-1	0	-104	60	1	2	3	3	0.0625775060
2330	1	1	0	-60707	-5831411	1	1	3	3	0.0411492769
2331	0	0	1	-1524	22900	1	1	3	3	0.0680523496
2331	1	-1	1	-47	910	1	2	3	3	0.0950084735
2337	0	-1	1	2872	38336	1	1	3	3	0.1026809449
2341	0	1	1	-6	-8	1	1	3	3	0.0647784273
2343	0	-1	1	-5	-1	1	1	3	3	0.0670052501
2343	0	-1	1	-450	2774	1	1	3	3	0.0984058128
2343	0	1	1	-107	-190	1	3	3	3	0.0525319708
2344	0	0	0	5	-26	1	1	3	3	0.0850643659
2345	0	0	1	-262	-1638	1	1	3	3	0.1048131304
2350	1	1	0	300	250	1	1	3	3	0.0724316090
2352	0	-1	0	-16	64	1	1	3	3	0.0431306586
2352	0	-1	0	-65	-804	1	2	3	3	0.0730289271
2352	0	-1	0	40	-2064	1	2	3	3	0.0719120512
2354	1	-1	0	-224	3072	1	1	3	3	0.0315864520
2354	1	0	1	-7	-54	1	1	3	3	0.1069745929
2355	1	1	0	-288	-2007	1	1	3	3	0.0340457395
2355	1	0	0	-21	36	1	1	3	3	0.0609449782
2358	1	-1	0	-737466	-82987084	1	1	3	3	0.0793977365
2358	1	-1	0	-639	6349	1	2	3	3	0.0847489918
2361	0	-1	1	5	-3	1	1	3	3	0.0934568782
2363	0	-1	1	-22	64	1	1	3	3	0.0315044291
2364	0	1	0	-45	-81	1	1	3	3	0.0262402281
2365	0	-1	1	-10	-2	1	1	3	3	0.0984068731
2368	0	-1	0	-13	23	1	1	3	3	0.0414843604
2368	0	-1	0	-3	1	1	1	2.99	3	0.0333236982
2368	0	0	0	-262	1630	1	1	3	3	0.1116487498
2373	0	-1	1	-7	12	1	1	3	3	0.0910233906
2373	0	1	1	-75201	-8748241	1	1	2.99	3	0.0346802790
2382	1	0	1	-250	1472	1	1	3	3	0.0323946497
2385	0	0	1	3	20	1	1	3	3	0.0651523891

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2392	0	-1	0	304	-1268	1	1	3	3	0.0504272436
2394	1	-1	0	-54	164	1	2	3	3	0.0655569385
2394	1	-1	0	27	405	1	2	3	3	0.0474051217
2397	0	1	1	-237	245	1	3	3	3	0.0520367722
2400	0	-1	0	-758	-7488	1	4	3	3	0.0483574064
2400	0	-1	0	2	-8	1	2	3	3	0.0453614128
2403	1	-1	1	-11882	-495530	1	1	3	3	0.0992129860
2408	0	0	0	-2351	51186	1	4	3	3	0.0327425124
2409	1	0	0	-185	-984	1	2	3	3	0.0630228038
2412	0	0	0	528	2765	1	2	3	3	0.0534730263
2413	1	-1	1	-10	14	1	1	3	3	0.0653152845
2415	1	1	1	-81	-282	1	2	3	3	0.0975675082
2415	0	-1	1	-98651	14756141	1	1	3	3	0.0721060276
2420	0	1	0	-161	-596	1	2	3	3	0.0765871104
2421	0	0	1	-18	20	1	1	3	3	0.0670097489
2421	0	0	1	-444	-3555	1	1	3	3	0.0659390347
2422	1	0	1	-69458	-7050636	1	1	3	3	0.0629122442
2425	0	0	1	-50	31	1	1	3	3	0.0363492136
2431	0	1	1	-55	140	1	1	3	3	0.1108019681
2432	0	-1	0	-489	4345	1	1	3	3	0.0551745924
2434	1	0	0	-68	16	1	2	3	3	0.0363837861
2436	0	-1	0	-89	354	1	2	3	3	0.0600399795
2439	0	0	1	-660	-5796	1	1	3	3	0.0468206601
2442	1	1	0	-476	-4164	1	2	3	3	0.0421662280
2442	1	1	0	-22786	1132276	1	2	3	3	0.0878799291
2443	0	1	1	39	292	1	1	3	3	0.0480126624
2448	0	0	0	4596	-46676	1	1	3	3	0.0395347756
2448	0	0	0	-24	284	1	1	3	3	0.0506793397
2450	1	-1	0	-107	-379	1	1	3	3	0.0290252428
2450	1	1	0	-25	575	1	1	3	3	0.0478514343
2451	1	0	0	-8	9	1	1	3	3	0.0493432427
2457	0	0	1	-4884	130980	1	3	3	3	0.0681599149
2464	0	-1	0	-77	-539	1	1	3	3	0.0716484770
2464	0	1	0	6	-8	1	2	3	3	0.0807223724
2470	1	1	0	-2	16	1	1	3	3	0.0575103590
2475	1	-1	1	-5	22	1	1	3	3	0.0656540735
2480	0	0	0	-5323	-149478	1	2	3	3	0.0240135402
2480	0	1	0	4	-20	1	2	3	3	0.0656492664
2480	0	0	0	-38452	2902204	1	1	3	3	0.0738532710
2480	0	1	0	-1056	13300	1	2	3	3	0.0692372399
2482	1	0	1	-56	174	1	3	3	3	0.0962421815
2483	0	0	1	-16	-25	1	1	3	3	0.0640182865
2484	0	0	0	528	-4300	1	1	3	3	0.0472057588
2484	0	0	0	-324	2241	1	3	3	3	0.0577538386
2485	0	-1	1	14	-104	1	1	3	3	0.1091656885
2485	0	-1	1	755	5848	1	1	3	3	0.0622923980
2485	1	0	1	67	-69	1	2	3	3	0.0447845356
2490	1	1	0	-18	-12	1	2	3	3	0.0788803740

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2495	1	0	0	-10	-3	1	1	3	3	0.1106954629
2496	0	-1	0	-29	45	1	2	3	3	0.0496170262
2496	0	-1	0	-2605	-47219	1	2	3	3	0.0739738960
2499	0	-1	1	33	335	1	1	3	3	0.0896809633
2499	1	1	0	-4	1	1	1	3	3	0.0606514303
2499	0	1	1	-65	200	1	1	3	3	0.0584256906
2502	1	-1	0	-9	-243	1	1	2.99	3	0.0217967685
2516	0	1	0	-209	1096	1	2	3	3	0.0834666292
2522	1	-1	1	-21687	1234665	1	1	3	3	0.0813443732
2525	1	-1	1	-255	1622	1	2	3	3	0.0681841421
2526	1	1	0	3	3	1	1	3	3	0.0359896334
2526	1	1	0	-3196	68176	1	1	3.04	3	0.0759856143
2528	0	-1	0	-97	401	1	1	3	3	0.0705815747
2530	1	1	0	-7	11	1	1	3	3	0.0579994388
2530	1	0	0	-176	-1280	1	3	3	3	0.0355470039
2530	1	0	0	-1331	1771561	1	3	3	3	0.0266365780
2534	1	-1	0	-113	541	1	1	3	3	0.0249049499
2535	1	1	0	-3	408	1	2	3	3	0.0397791201
2535	0	-1	1	-32166	2290862	1	1	3	3	0.1171925615
2535	0	-1	1	35	93	1	1	3	3	0.0636611580
2535	1	0	0	-101	480	1	2	3	3	0.0447599056
2535	0	1	1	-30	56	1	1	3	3	0.0460012003
2540	0	0	0	-232	1444	1	1	3	3	0.0708640266
2541	1	1	0	361	-14406	1	1	3	3	0.0587897842
2541	0	1	1	-7	-5	1	1	3	3	0.0545694340
2545	1	1	1	-41	84	1	1	3	3	0.1042328363
2548	0	1	0	572	-3900	1	3	3	3	0.0547494927
2548	0	-1	0	-86	337	1	1	3	3	0.0488312579
2550	1	1	0	-850	8500	1	2	3	3	0.0242927845
2555	0	0	1	2	-21	1	1	3	3	0.1141397660
2556	0	0	0	-72	-235	1	2	3	3	0.0396230971
2557	1	0	0	-5	-4	1	1	3	3	0.0807615934
2563	1	1	0	8	5	1	1	3	3	0.0618998433
2565	0	0	1	-18	-27	1	1	3	3	0.0444303323
2571	0	1	1	-1	-8	1	1	3	3	0.0330026354
2574	1	-1	0	0	22	1	1	3	3	0.0537391748
2574	1	-1	0	-20709	1157269	1	2	3	3	0.0729443099
2575	1	1	1	2	6	1	1	3	3	0.0949163451
2576	0	1	0	552	-23276	1	2	3	3	0.0640908673
2576	0	-1	0	6	43	1	1	3	3	0.0503879287
2581	1	1	1	99	592	1	1	3	3	0.0931652454
2584	0	1	0	1	-14	1	2	3	3	0.0781863601
2585	0	0	1	-122	520	1	1	3	3	0.0461970591
2586	1	1	1	-9	51	1	2	3	3	0.0218921488
2592	0	0	0	-27	270	1	1	3	3	0.0595292948
2595	1	1	0	-453	3528	1	2	3	3	0.0422678903
2600	0	1	0	-508	-4512	1	2	3	3	0.0351852572
2600	0	1	0	-8	-32	1	1	3	3	0.0688496826

N	a1	a2	a3	a4	a6	r	t	C	FCP	r1
2600	0	-1	0	-33	37	1	1	3	3	0.0355610975
2600	0	0	0	-100	340	1	1	3	3	0.0879964544
2601	1	-1	0	-3	-4	1	1	3	3	0.0318568065
2608	0	1	0	-40	-108	1	1	3	3	0.0579627210
2608	0	0	0	-32	-80	1	1	3	3	0.0621510260
2610	1	-1	0	-40320	691200	1	2	3	3	0.0433440758
2610	1	-1	0	-15840	-748544	1	2	3	3	0.0587149767
2611	0	-1	1	-15	27	1	1	3	3	0.0942445725
2619	0	0	1	6	-5	1	1	3	3	0.0762715233
2620	0	1	0	10	25	1	3	3	3	0.0664007934
2629	1	0	1	-4	3	1	1	3	3	0.0597132350
2630	1	-1	0	25	125	1	1	3	3	0.0303711958
2630	1	1	0	-628	-6832	1	1	3	3	0.0671408467
2635	1	1	0	-3	-2	1	1	3	3	0.0416299549
2635	1	0	0	5	12	1	1	3	3	0.1093561129
2640	0	-1	0	-371	2970	1	2	3	3	0.0516539232
2645	0	1	1	-15	-69	1	1	3	3	0.0903604847
2648	0	0	0	1	-14	1	1	3	3	0.0452809980
2651	1	-1	0	-21892	1252816	1	1	3	3	0.1167832508
2651	0	-1	1	3	-3	1	1	3	3	0.0925228383
2651	1	-1	1	-4	-8	1	1	3	3	0.0975206863
2655	0	0	1	-228	1321	1	1	3	3	0.0631067783
2655	0	0	1	-2052	35660	1	1	3	3	0.0349514173
2655	0	0	1	-48	54	1	1	3	3	0.0437435669
2656	0	0	0	-61	-344	1	1	3	3	0.1032782563
2658	1	1	1	-365	2531	1	1	3	3	0.0374231282
2660	0	0	0	10817	-32618	1	1	3	3	0.0930113952
2660	0	1	0	-5	28	1	2	3	3	0.0413046747
2664	0	0	0	-102	385	1	2	3	3	0.0534870128
2665	1	1	1	-136	558	1	1	3	3	0.1064439352
2674	1	1	1	-125	531	1	1	3	3	0.0390693108
2678	1	1	0	-3509	85549	1	1	3	3	0.0951173347
2680	0	-1	0	4	1	1	1	3	3	0.0522486593
2680	0	1	0	55	43	1	1	2.99	3	0.0477253258
2682	1	-1	0	-285	-1531	1	1	3	3	0.0347417521
2684	0	-1	0	-34	89	1	1	3	3	0.0541147838
2685	0	1	1	-136	46	1	1	2.87	3	0.0309899497
2688	0	-1	0	6	-6	1	2	3.01	3	0.0334076552
2694	1	1	0	33	45	1	1	3	3	0.0952918544
2694	1	1	1	1466	2627	1	1	3	3	0.0287851095
2695	1	-1	1	-1798	-39028	1	4	3	3	0.0670258068
2699	0	0	1	2	2	1	1	3	3	0.0642504029
2703	1	1	0	-1300	17509	1	1	3	3	0.0355657074
2703	1	0	0	-67	206	1	1	3	3	0.0763845027
2704	0	-1	0	-4	-1	1	1	3	3	0.0631288577
2706	1	1	0	-25	37	1	2	3	3	0.0662589646
2706	1	0	1	-7245	236872	1	3	3	3	0.0586710198
2706	1	0	1	-28	-58	1	2	3	3	0.0474643023

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2714	1	-1	0	-34628	2882896	1	1	3	3	0.0529130990
2717	0	1	1	-793	8336	1	3	3	3	0.0918881050
2720	0	1	0	-1926	31900	1	2	3	3	0.0759900050
2726	1	0	1	0	14	1	1	3	3	0.0328421821
2727	0	0	1	-162	1046	1	1	3	3	0.0768861893
2728	0	1	0	5528	70821	1	1	3	3	0.0952605774
2730	1	1	0	-22718	1179252	1	2	3	3	0.0672939476
2730	1	1	0	7	213	1	2	3	3	0.0420925100
2735	0	1	1	-1	5	1	1	3	3	0.0918470305
2738	1	0	1	-64372	6322098	1	3	3	3	0.0602259333
2739	1	1	0	-2382	-45585	1	2	3	3	0.0650126170
2740	0	1	0	-20	100	1	3	3	3	0.0380772978
2742	1	1	0	-760	-8384	1	2	3	3	0.0679658134
2745	1	-1	1	-518	-4404	1	2	3	3	0.0608871212
2746	1	0	0	-190	-444	1	1	3	3	0.0574329000
2748	0	-1	0	-330	2421	1	1	3	3	0.0672069365
2754	1	-1	0	-459	3909	1	1	3	3	0.0714459902
2758	1	1	0	-17	-35	1	1	3	3	0.0936589277
2763	0	0	1	-210	-1323	1	1	3.01	3	0.0472879824
2763	0	0	1	-72	236	1	1	3	3	0.0791137550
2765	0	1	1	-5871	-174939	1	1	3	3	0.0982470539
2765	0	1	1	-5	-6	1	1	3	3	0.0750945648
2770	1	0	0	-316	2136	1	3	3	3	0.0364726061
2772	0	0	0	648	-13095	1	2	3	3	0.0572870007
2772	0	0	0	-69	229	1	3	3	3	0.0242802105
2775	0	-1	1	-60133	-5863332	1	1	3	3	0.0723275590
2775	0	-1	1	-33	-232	1	1	3	3	0.0747633705
2778	1	0	1	2	2	1	1	3	3	0.0433903012
2779	0	0	1	1	-18	1	1	3	3	0.0976937784
2786	1	-1	1	-1059	13539	1	1	3	3	0.0682212822
2787	1	0	0	2	23	1	1	3	3	0.0409902386
2790	1	-1	0	-141090	-21224044	1	2	3	3	0.0264528761
2793	0	-1	1	-9	20	1	1	3	3	0.0836893175
2793	1	1	1	-21120	-1190064	1	2	3	3	0.1153790920
2795	1	1	0	-13758	-642413	1	1	3	3	0.0397619914
2799	0	0	1	-30	49	1	1	3	3	0.0502362932
2800	0	1	0	-208	-2037	1	1	3	3	0.0650987147
2800	0	-1	0	1792	-25088	1	1	3	3	0.0444698586
2800	0	0	0	-1000	-12500	1	1	3	3	0.0850874459
2805	0	1	1	-1871	31436	1	3	3	3	0.0267022935
2806	1	-1	0	-1041131	590570501	1	1	2.95	3	0 0387344743
2815	1	0	0	10	-25	1	1	2.99	3	0.0345294559
2817	1	-1	1	-50	128	1	2	3	3	0.0729957228
2825	1	0	1	-51	-127	1	2	3	3	0.0605571603
2826	1	-1	0	-42	170	1	1	3	3	0 0320862301
2829	1	1	0	-61	-200	1	2	3	3	0.0453253227
2829	1	1	1	-184	-904	1	4	3	3	0.1102628507
2830	1	0	1	4442	-54444	1	1	3	3	0.0826076891

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2830	1	0	0	49	505	1	1	3	3	0.0383931129
2844	0	0	0	-7167	-234970	1	1	3	3	0.0639876261
2849	1	-1	1	5	50	1	2	3	3	0.0382708960
2850	1	1	0	-250	2500	1	2	3	3	0.0709869237
2855	0	1	1	85	681	1	1	3	3	0.0875015625
2860	0	1	0	-1781	28375	1	3	3	3	0.0452094464
2865	0	-1	1	-11	17	1	1	3	3	0.0842742554
2868	0	-1	0	14	-23	1	1	3	3	0.0428278526
2869	0	1	1	-157	-705	1	3	3	3	0.0495796656
2869	0	-1	1	-1110	14580	1	5	3	3	0.0851108767
2874	1	1	1	-39889	3049775	1	1	3	3	0.0270676007
2880	0	0	0	-48	88	1	2	2.99	3	0.0312330374
2880	0	0	0	132	-272	1	2	3	3	0.0340354499
2881	0	1	1	11	-7	1	1	3	3	0.1061497709
2888	0	1	0	-120	-976	1	1	3	3	0.0317839838
2888	0	-1	0	-43440	6433996	1	1	3	3	0.0757942575
2890	1	-1	0	-20	-4	1	2	3	3	0.0402203754
2890	1	1	0	-728	31432	1	1	3	3	0.0746312163
2890	1	-1	0	-40225	4580221	1	1	3	3	0.1245974272
2891	1	1	0	-11	-20	1	1	3	3	0.0570746630
2894	1	-1	0	-26	-44	1	1	3	3	0.0683657524
2895	0	1	1	-1581	23681	1	3	3	3	0.0293927904
2904	0	-1	0	-111360	14293116	1	2	3	3	0.0826963855
2913	1	1	0	-144	-729	1	1	3	3	0.0603341145
2914	1	1	0	4	16	1	1	3	3	0.0799848684
2915	1	-1	1	-582	1556	1	2	3	3	0.0675723148
2919	1	1	0	144	81	1	1	3	3	0.0573408012
2922	1	1	1	-32	-385	1	1	3	3	0.0372382298
2925	0	0	1	-1050	13156	1	1	3	3	0.0315395990
2925	1	-1	1	-410	3422	1	1	3	3	0.0656877140
2925	0	0	1	-30	-819	1	1	3	3	0.0426825981
2928	0	-1	0	-72	-1296	1	1	3	3	0.0533421511
2930	1	-1	0	-25	45	1	2	3	3	0.0499073006
2934	1	-1	0	-27	-243	1	1	3	3	0.0235720023
2940	0	-1	0	-30641	-1998534	1	2	3	3	0.0461157307
2943	0	0	1	-21	-90	1	1	3	3	0.1033508977
2944	0	1	0	-10	-6	1	2	3	3	0.0923795378
2950	1	1	0	0	40	1	1	3	3	0.0556122265
2950	1	0	0	-138	892	1	3	3	3	0.0279770054
2952	0	0	0	-111	-430	1	2	3	3	0.0378924804
2960	0	1	0	0	148	1	1	3	3	0.0623709011
2960	0	-1	0	-181	425	1	1	3	3	0.0318357270
2960	0	1	0	200	1620	1	1	3	3	0.0473599310
2961	0	0	1	-6	7	1	1	3	3	0.0674664728
2961	0	0	1	-18597	-2718954	1	1	3	3	0.1104889653
2964	0	-1	0	-266477	-52857831	1	1	3	3	0.0733976068
2968	0	1	0	-15	-26	1	2	3	3	0.0917451566
2970	1	-1	0	-120	-704	1	1	3	3	0.0548418372

N	a1	a2	a3	a4	a6	r	t	C	FCP	r1
2970	1	-1	0	-9	-5	1	1	3	3	0.0366987922
2970	1	-1	0	-150	2600	1	3	3	3	0.0381081946
2975	0	1	1	-8	144	1	1	3	3	0.1376011423
2976	0	-1	0	8	4	1	1	3	3	0.0722215431
2976	0	-1	0	-2016	36612	1	1	3	3	0.0512386392
2979	1	-1	1	-56	-188	1	1	3	3	0.0834709932
2982	1	1	0	-791	10965	1	2	3	3	0.0684910517
2989	0	1	1	-65	375	1	1	3	3	0.1100839362
2989	1	1	1	-1373	18864	1	1	3	3	0.0898416107
2990	1	-1	0	10	116	1	2	3	3	0.0632039158
2991	1	1	0	-6544	253531	1	1	3	3	0.0510404544
2993	1	-1	0	-4	109	1	1	3	3	0.1006717920
3003	0	-1	1	-1	-15	1	1	3	3	0.0695272375
3006	1	-1	0	-6	26	1	1	3	3	0.0515534924
3015	0	0	1	-18	-61	1	1	3	3	0.0612950263
3018	1	1	0	-11	-3	1	1	3	3	0.0303363438
3024	0	0	0	-27	810	1	1	3	3	0.0412554322
3024	0	0	0	7053	93490	1	1	3	3	0.0519531624
3024	0	0	0	-24	44	1	1	3	3	0.0481125224
3026	1	-1	1	87	105	1	1	3	3	0.0465907749
3030	1	1	0	-253	-2147	1	1	3.03	3	0.0381894634
3030	1	1	0	-22	4	1	2	3	3	0.0351405050
3030	1	1	0	-29932	-2020784	1	1	3	3	0.0465679056
3036	0	-1	0	-93	-306	1	2	3	3	0.0410175926
3036	0	-1	0	-10205	-393414	1	2	3	3	0.0730915549
3036	0	1	0	-165	-396	1	2	3	3	0.0295637811
3038	1	-1	0	-352	1728	1	2	3	3	0.0304626474
3038	1	1	1	-197	-5685	1	1	3	3	0.0348199203
3040	0	0	0	-173	872	1	2	3	3	0.0374124620
3042	1	-1	0	-4848	-249040	1	2	3	3	0.0287246676
3045	1	1	1	29	104	1	4	3	3	0.0931757652
3045	1	0	0	-21	-24	1	2	3	3	0.0395883569
3047	0	-1	1	498	-11640	1	1	3	3	0.1252498205
3048	0	-1	0	-1336	-18356	1	1	3	3	0.0276088336
3048	0	-1	0	-81	309	1	1	3	3	0.0492374530
3050	1	0	0	2	12	1	1	3	3	0.0297133725
3052	0	1	0	28	4	1	1	3	3	0.0889298680
3060	0	0	0	-1533	-169607	1	1	3	3	0.0419173488
3066	1	1	0	-70	196	1	2	3	3	0.0567123716
3066	1	0	1	-113	452	1	1	3	3	0.0546919241
3074	1	-1	0	-35	149	1	1	3	3	0.0269455860
3075	0	-1	1	7	-7	1	1	3	3	0.0742748293
3080	0	0	0	51937	-2544862	1	4	3	3	0.0274850954
3080	0	1	0	44	0	1	2	3	3	0.0717230911
3084	0	-1	0	3	-6	1	1	3	3	0.0719843570
3088	0	0	0	-67	210	1	2	3	3	0.0576635189
3097	0	0	1	-59	-178	1	1	3	3	0.1084773676
3099	1	1	0	-20	27	1	2	3	3	0.0359756330

N	a1	a2	a3	a4	a6	r	t	C	FCP	r1
3102	1	0	1	7	2	1	1	3	3	0.0593919789
3102	1	0	1	82	272	1	2	3	3	0.0522170036
3102	1	1	1	-760	-11719	1	1	3	3	0.0249940725
3103	1	1	1	-1057	-13668	1	1	3	3	0.1077436512
3105	1	-1	1	-482	4214	1	1	3	3	0.0656453176
3105	1	-1	1	-83	352	1	1	3	3	0.0561451333
3109	0	-1	1	-7	-5	1	1	3	3	0.0952618890
3110	1	0	1	781	22542	1	1	3	3	0.1021913486
3120	0	-1	0	-2295	36450	1	2	3	3	0.0343868095
3120	0	-1	0	-96	-2304	1	2	3	3	0.0501170563
3122	1	-1	0	-1636	-25008	1	2	3.03	3	0.0204514519
3122	1	0	0	-294	2020	1	2	3	3	0.0478736818
3128	0	1	0	-3000	-64256	1	2	3	3	0.0985188578
3130	1	1	0	7	13	1	1	3	3	0.0291116830
3135	1	1	1	-31	68	1	2	3	3	0.1044440748
3136	0	-1	0	-457	-559	1	1	3	3	0.0676138633
3136	0	0	0	49	0	1	2	3	3	0.0327364674
3136	0	0	0	-7	0	1	2	3	3	0.0587314486
3136	0	1	0	-65	-11201	1	2	3	3	0.0927692413
3136	0	0	0	-28	-56	1	1	3	3	0.0906876474
3140	0	1	0	-27806	1775425	1	3	3	3	0.0739273934
3140	0	1	0	-2906	186049	1	1	3	3	0.0771519533
3146	1	-1	0	3910	-16076	1	1	3	3	0.0512137027
3150	1	-1	0	-12	-4	1	2	3	3	0.0266010270
3157	1	0	1	-1	-3	1	1	3	3	0.0626744421
3160	0	1	0	-1015	-12762	1	2	3	3	0.0564103194
3163	1	0	1	3	-1	1	1	3	3	0.0790161908
3165	0	1	1	-3285	55181	1	1	3	3	0.0272698893
3168	0	0	0	-81	-216	1	2	3	3	0.0528196698
3171	0	-1	1	-7	-9	1	1	3	3	0.0340825594
3175	0	-1	1	117	543	1	1	3	3	0.0657000720
3179	0	-1	1	3083	129940	1	1	3	3	0.0940789099
3185	1	-1	0	5	-50	1	1	3	3	0.0829770686
3186	1	-1	0	-11016	447808	1	1	3	3	0.0757159198
3186	1	-1	0	6	4	1	1	3	3	0.0724223056
3192	0	-1	0	-43	124	1	2	3	3	0.0188607440
3192	0	-1	0	-106435	-13329764	1	2	3	3	0.0765481382
3192	0	1	0	-35	-66	1	2	3.04	3	0.0202589739
3195	0	0	1	42	63	1	1	3	3	0.0553657534
3200	0	-1	0	7	-23	1	1	3.02	3	0.0306186218
3200	0	1	0	-1658	25438	1	2	3	3	0.0455900292
3200	0	1	0	17	-87	1	2	3	3	0.0750901294
3200	0	-1	0	167	2537	1	1	3.02	3	0.0306186218
3201	0	1	1	-67	205	1	1	3	3	0.0649057030
3201	1	0	0	-299	1920	1	2	3	3	0.0710548581
3205	1	-1	1	-8347	295594	1	4	3	3	0.0479577744
3206	1	1	0	-3636	82768	1	1	3	3	0.0257917445
3211	0	1	1	113	17	1	1	3	3	0.1050967557

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3213	0	0	1	-12	-14	1	1	3	3	0.0810501139
3213	0	0	1	4104	135236	1	1	3	3	0.0563319421
3213	1	-1	1	-1576262	-761317622	1	1	3	3	0.0443405314
3213	1	-1	0	-771	8486	1	1	3	3	0.0376363107
3214	1	1	0	-36	976	1	1	3	3	0.0392432079
3216	0	1	0	-12	-24	1	1	3.02	3	0.0305423611
3224	0	0	0	-92	340	1	1	3	3	0.0648134471
3224	0	1	0	-536	-4979	1	1	3	3	0.0740042779
3225	0	-1	1	417	-26557	1	1	3	3	0.0729331453
3225	1	0	0	-563	4992	1	2	3	3	0.0539533811
3229	1	1	1	-9	-14	1	1	3	3	0.1067509980
3231	1	-1	0	-60	-163	1	1	3.02	3	0.0305038854
3233	1	-1	1	-12796	-553916	1	1	2.99	3	0.0320118981
3235	0	0	1	-17	30	1	1	3	3	0.0550035278
3245	1	0	1	-314	-2163	1	2	3	3	0.0496860752
3245	1	0	0	-286	-1815	1	2	3	3	0.1200653816
3245	1	-1	0	11	-2	1	1	3	3	0.0740292593
3248	0	1	0	-35768	-2615564	1	2	3	3	0.0554372588
3248	0	-1	0	-232	-13456	1	1	3	3	0.0710469518
3249	0	0	1	2166	-1715	1	1	3	3	0.0753617037
3249	0	0	1	-7581	279504	1	1	3	3	0.0419460532
3251	0	-1	1	-37	100	1	1	3	3	0.0975801748
3254	1	1	0	-1051	-13411	1	1	3	3	0.0842671203
3258	1	-1	0	-6	-2	1	1	3	3	0.0461023461
3258	1	-1	0	-474	-3016	1	2	3	3	0.0663299384
3258	1	-1	0	54	-140	1	1	3	3	0.0254017112
3258	1	-1	0	-261	-1539	1	1	3	3	0.0679299655
3262	1	-1	0	-14	4	1	2	3	3	0.0792657634
3264	0	-1	0	3	-9	1	1	3	3	0.0761132752
3264	0	-1	0	-409	3289	1	4	3	3	0.0555712620
3267	1	-1	0	-6738	-233029	1	1	3.01	3	0.0315949373
3267	1	-1	1	-56	190	1	1	3	3	0.0830571438
3280	0	1	0	-336	2260	1	2	3	3	0.0786799661
3280	0	1	0	-40	-12	1	2	3	3	0.0546195136
3290	1	0	1	-274	1572	1	2	3	3	0.0964872436
3295	0	-1	1	14	-158	1	1	3	3	0.1120154381
3300	0	-1	0	-78908	-7829688	1	2	3	3	0.0328919750
3302	1	0	0	-2347	43569	1	1	2.99	3	0.0489652624
3306	1	1	1	-30	-9	1	2	3	3	0.0398111219
3308	0	-1	0	3	-23	1	1	3	3	0.0399201413
3312	0	0	0	-507	-4070	1	2	3	3	0.0620918124
3312	0	0	0	-2451	31570	1	4	3	3	0.0282830829
3313	1	0	1	-6	5	1	1	3	3	0.0648296484
3318	1	0	1	-228	-1118	1	2	3	3	0.0520006072
3325	1	-1	1	-355	-2478	1	2	3	3	0.0512552630
3328	0	-1	0	19	-11	1	1	3	3	0.0558541717
3330	1	-1	0	930	-4204	1	1	3	3	0.0554454213
3330	1	-1	0	-191925	-32248139	1	4	3	3	0.0434547426

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3336	0	-1	0	5	4	1	1	3	3	0.0427232648
3339	0	0	1	-12	-77	1	1	3	3	0.0381495705
3344	0	-1	0	-617	6181	1	1	3	3	0.0742003372
3345	0	-1	1	-21	227	1	1	3	3	0.0752650465
3345	0	-1	1	1184	-8328	1	1	3	3	0.1158822648
3348	0	0	0	-2052	-35775	1	1	3	3	0.0598254323
3348	0	0	0	-216	-3564	1	1	3	3	0.0493568522
3348	0	0	0	-12	-15	1	1	3	3	0.0637321634
3355	0	1	1	-11	30	1	3	3	3	0.1019360771
3355	0	0	1	-47	142	1	1	3	3	0.0506274356
3360	0	-1	0	-26	60	1	2	3	3	0.0485075437
3360	0	-1	0	-19845	-1069280	1	4	2.92	3	0.0172526684
3360	0	-1	0	-26	-24	1	4	3	3	0.0437383293
3363	0	-1	1	-151	-675	1	1	3	3	0.0786940686
3365	0	0	1	-8	8	1	1	3	3	0.0453466199
3366	1	-1	0	-1764	26944	1	2	3	3	0 0804049733
3366	1	-1	0	-108	-324	1	2	3	3	0.0539865395
3369	0	-1	1	1	14	1	1	3	3	0.0858853657
3378	1	1	0	-13	-35	1	1	3	3	0.0273127936
3378	1	0	1	60	-830	1	1	3	3	0.0364355243
3380	0	-1	0	-30	25	1	1	3	3	0.0476503676
3380	0	1	0	-225	820	1	2	3	3	0.0524932619
3381	0	-1	1	16007	-7794291	1	1	3	3	0.0632213348
3381	1	1	1	-36	90	1	1	3	3	0.0962604070
3381	1	0	0	-687	6894	1	1	3	3	0.0655551136
3385	0	0	1	-32	62	1	1	3	3	0.0550100124
3388	0	1	0	-29	-68	1	2	3	3	0.0758497849
3392	0	1	0	-1761	-29057	1	1	3	3	0.0779510096
3392	0	1	0	63	-449	1	1	3	3	0.0909937817
3393	0	0	1	-2889	63740	1	1	3	3	0.0994363179
3393	0	0	1	-48	135	1	1	3	3	0.0581509870
3400	0	1	0	-88508	-10164512	1	2	3	3	0.0684786602
3402	1	-1	0	-231	1421	1	3	3	3	0.0598365150
3403	0	-1	1	-5	7	1	1	3	3	0.0436450786
3404	0	0	0	-25	-59	1	1	3	3	0.0879649887
3405	0	-1	1	5	-12	1	1	3	3	0.0722084073
3410	1	0	1	-349	-1944	1	2	3	3	0.1039878281
3417	0	-1	1	-6	-22	1	1	3	3	0.1191700473
3417	0	-1	1	-6817	219372	1	1	3	3	0.0953496867
3421	0	-1	1	23	-35	1	1	3	3	0.0909698014
3422	1	0	1	-15	-22	1	1	3	3	0.0620410592
3423	0	1	1	-554	4946	1	1	3	3	0.0538043641
3429	0	0	1	-54	-871	1	1	3	3	0.0317936055
3429	0	0	1	-6	32	1	1	3	3	0.0724053131
3431	1	1	1	-62	162	1	1	3	3	0.1115416522
3435	0	1	1	-131536	18318016	1	1	3	3	0.0369677501
3440	0	0	0	-323	-2238	1	1	3	3	0.0238928762
3441	1	1	0	-2	-45	1	1	3	3	0.0619159743

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3444	0	-1	0	-12	-24	1	1	3	3	0.0674106030
3445	1	0	1	-359	-2643	1	2	3	3	0.0726047587
3445	1	0	0	-40	117	1	1	3	3	0.1108147092
3447	0	0	1	-84	265	1	1	3	3	0.0809123805
3451	0	-1	1	-379	2971	1	1	3	3	0.0865800366
3454	1	1	1	-779	8505	1	1	3	3	0.0262445957
3455	0	1	1	19	0	1	1	3	3	0.1032594090
3456	0	0	0	-189	-1026	1	1	3	3	0.0642538274
3458	1	0	0	-32	1024	1	3	3	3	0.0528946797
3465	1	-1	0	-75	266	1	2	3	3	0.0276408784
3465	0	0	1	4902	-68922	1	1	3	3	0.0581402643
3470	1	0	1	-14	16	1	1	3	3	0.0345601801
3471	1	1	0	-12	-117	1	1	3	3	0.0273847208
3474	1	-1	0	-72	112	1	2	3	3	0.0442672966
3474	1	-1	0	-468	3024	1	2	3	3	0.0472437527
3477	1	1	0	-1616	20355	1	4	3	3	0.0575660945
3479	1	0	1	-5	-3	1	1	3	3	0.0791487365
3480	0	-1	0	24	-15	1	1	2.99	3	0.0482359258
3483	0	0	1	-12	16	1	1	3	3	0.0823387728
3483	1	-1	0	-4065	-98758	1	1	3	3	0.0221881580
3486	1	1	0	-30376	1910080	1	2	3	3	0.0793554095
3497	0	-1	1	-187	1040	1	1	3	3	0.0403166475
3497	0	1	1	-57	-120	1	1	3	3	0.1032634661
3504	0	-1	0	343	-1419	1	1	3	3	0.0691379676
3504	0	-1	0	-15008	612096	1	2	3	3	0.0375888390
3504	0	-1	0	-120	-144	1	2	3	3	0.0743764479
3504	0	1	0	-1320	16884	1	2	3	3	0.0398599642
3510	1	-1	0	-13245	-559675	1	1	3	3	0.0478330959
3510	1	-1	0	-2010	-33100	1	1	3	3	0.0441467950
3513	1	1	0	0	-3	1	1	3	3	0.0491950087
3514	1	-1	1	-894	-4851	1	1	3	3	0.0688620221
3515	0	-1	1	-151	-434	1	1	3	3	0.0771795176
3519	0	0	1	-6	-3	1	1	3	3	0.0729220360
3520	0	0	0	-23	-28	1	2	3	3	0.0291937104
3520	0	1	0	-21	-5	1	2	3	3	0.0687111085
3520	0	-1	0	-65	577	1	1	3	3	0.0303294738
3520	0	1	0	-505	-1497	1	2	3	3	0.0445941293
3520	0	-1	0	-1	65	1	1	3	3	0.0616630115
3520	0	-1	0	639	24865	1	1	3	3	0.0607715544
3520	0	-1	0	-13025	576577	1	1	3	3	0.0428686102
3525	1	1	0	-900	10125	1	1	3	3	0.0397262067
3526	1	0	1	-4932	-133630	1	2	3	3	0.1026621614
3528	0	0	0	-111132	14261940	1	1	3	3	0.0558142038
3528	0	0	0	-1911	24010	1	4	2.99	3	0.0327653434
3528	0	0	0	-48951	4167450	1	2	3	3	0.0238095238
3528	0	0	0	-252	1540	1	1	3	3	0.0526645893
3531	0	1	1	3	-25	1	1	3	3	0.0561961829
3532	0	1	0	-13	-24	1	1	3	3	0.0638562195

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3535	0	-1	1	170	1066	1	1	3	3	0.0307850970
3536	0	0	0	-2747	32490	1	2	3	3	0.0499032867
3536	0	1	0	-872	9268	1	2	3	3	0.0407391390
3538	1	-1	0	-38	100	1	2	3	3	0.0723201933
3542	1	1	0	-12897	-568907	1	1	3	3	0.0415256830
3542	1	1	0	-49	101	1	1	3	3	0.0851191056
3545	1	0	1	-74	-249	1	2	3	3	0.0608866577
3547	0	1	1	3	3	1	1	3	3	0.0715947272
3549	0	1	1	48	1460	1	1	3	3	0.0692690615
3550	1	1	0	-200	1000	1	1	3	3	0.0241890212
3552	0	-1	0	-8	-12	1	1	3	3	0.0439722419
3553	0	-1	1	1	9	1	1	3	3	0.0889775080
3560	0	-1	0	24	-20	1	1	3	3	0.0551216485
3560	0	1	0	-31	-66	1	2	3	3	0.0584987157
3568	0	0	0	-415	-3254	1	1	3	3	0.0929509973
3569	1	0	1	-78	-1593	1	1	3	3	0.0220769006
3570	1	1	0	-40957	-3207491	1	2	3	3	0.0400597919
3574	1	1	1	-49	111	1	1	3	3	0.0408406662
3575	0	-1	1	-82083	9079068	1	1	3	3	0.0767532520
3582	1	-1	1	-47	135	1	1	3	3	0.0220626020
3591	0	0	1	-69	220	1	1	3	3	0.0947772256
3596	0	1	0	-62	961	1	3	3	3	0.0889824359
3600	0	0	0	1500	-2500	1	1	3	3	0.0261716739
3600	0	0	0	0	-10000	1	1	3.01	3	0.0326610571
3600	0	0	0	5325	459250	1	2	3	3	0.0331572423
3603	0	1	1	1	26	1	1	2.99	3	0.0323833319
3605	0	1	1	-71	-255	1	1	3	3	0.0979356627
3610	1	1	0	-10837	604229	1	1	3	3	0.0397502972
3612	0	-1	0	-43309	-465206	1	2	3	3	0.0579583963
3612	0	-1	0	-180	-504	1	2	3	3	0.0733115244
3615	1	1	0	-43	-128	1	2	3	3	0.0599920937
3616	0	1	0	-38	-104	1	2	3	3	0.0521325318
3618	1	-1	0	-3	-11	1	1	3	3	0.0495862725
3620	0	1	0	-981	11344	1	2	3	3	0.0714058067
3627	0	0	1	-120	-558	1	1	3	3	0.0520014923
3630	1	1	0	-124027	-1641251	1	4	3	3	0.0263128089
3630	1	1	0	-387	-2889	1	1	3	3	0.0469339705
3634	1	1	0	-194787	21903245	1	2	3	3	0.0300495225
3640	0	-1	0	-23416	1455116	1	1	3	3	0.0469130921
3640	0	0	0	-13523	605278	1	2	3	3	0.0189597762
3648	0	-1	0	-513	513	1	2	3	3	0.0456576267
3648	0	-1	0	-287	-1779	1	1	3	3	0.0451703918
3648	0	1	0	-287	1779	1	1	2.99	3	0.0340285892
3648	0	-1	0	-6113	185985	1	2	3.02	3	0.0424950003
3648	0	-1	0	-65	-159	1	2	3	3	0.0838037731
3650	1	1	0	-375	2125	1	1	3	3	0.0753586644
3650	1	0	1	674	-299952	1	3	3	3	0.0968974331
3654	1	-1	0	-65709	-6466631	1	2	3	3	0.0762656945

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3658	1	0	1	-26	-84	1	1	3	3	0.0979273953
3660	0	-1	0	-45	-18	1	2	3	3	0.0286175003
3664	0	-1	0	-77	-236	1	1	3	3	0.0736870361
3666	1	1	1	45	81	1	1	3	3	0.1222140
3667	1	0	0	-25	46	1	1	3	3	0.3641489
3670	1	1	0	-12	-14	1	1	3	3	0.0284568779
3672	0	0	0	-1063395	-422075394	1	1	2.99	3	0.0321011391
3672	0	0	0	-891	-10314	1	1	3	3	0.0412884204
3672	0	0	0	-54	189	1	1	3	3	0.0474305898
3675	0	-1	1	5717	-338157	1	1	3	3	0.0616860092
3675	0	-1	1	-2858	64868	1	1	3	3	0.0291432535
3675	1	1	0	-200	3375	1	1	3	3	0.0309031862
3675	1	1	1	-883	-10144	1	2	3	3	0.0850247451
3680	0	1	0	99	-94901	1	1	3	3	0.0548740655
3680	0	1	0	19	-5	1	1	3	3	0.0847510677
3684	0	1	0	-5	39	1	1	3	3	0.0471863030
3686	1	0	1	34	12	1	3	3	3	0.0393403952
3690	1	-1	0	-144	0	1	2	3	3	0.0355759116
3695	0	1	1	-55	209	1	3	3	3	0.0910868890
3696	0	-1	0	-12	-549	1	1	3	3	0.0694089540
3696	0	-1	0	-2079	-35802	1	2	3	3	0.034200639
3696	0	-1	0	-56800	5201616	1	2	3	3	0.0695644714
3698	1	1	1	-17	-33	1	1	3	3	0.0341161461
3699	0	0	1	-12	18	1	1	3	3	0.0468420185
3699	0	0	1	-108	-493	1	1	3	3	0.0644711175
3702	1	0	1	-380	2810	1	1	3	3	0.0418014798
3705	1	1	1	-1450	-4690	1	4	3	3	0.0877561351
3705	0	1	1	220	1256	1	1	3	3	0.0270103773
3706	1	0	1	-664790	-230129880	1	3	3	3	0.1158309260
3706	1	-1	0	-31	-59	1	1	3	3	0.1282439312
3706	1	1	1	-81	175	1	1	3	3	0.0232204690
3712	0	1	0	-8969	-329945	1	2	3	3	0.0894272082
3714	1	1	0	-19	37	1	1	2.99	3	0.0198669976
3717	1	-1	0	-54	-81	1	2	3	3	0.0518948056
3718	1	1	0	47317	627229	1	1	3	3	0.0805615124
3718	1	0	0	-1102	93924	1	1	3	3	0.0484834094
3720	0	-1	0	-616	5980	1	2	3	3	0 0477355434
3721	1	0	1	-7520	264447	1	1	3	3	0.0806739493
3722	1	-1	0	-646	6484	1	1	3	3	0.1076434926
3728	0	1	0	-88	276	1	2	3	3	0.0495958208
3730	1	1	0	817368	201875776	1	1	3	3	0.0308418037
3731	0	0	1	88	3164	1	1	3	3	0.0407339566
3731	0	0	1	-7192	234759	1	1	3	3	0.1042676848
3735	1	-1	0	-312255	67027576	1	2	3	3	0.0280999402
3735	1	-1	1	-983	12106	1	1	3	3	0 0602818120
3737	0	1	1	-557	4545	1	3	3	3	0.1099773284
3740	0	1	0	-261	1639	1	3	3	3	0 0729029267
3741	0	-1	1	-649	-5652	1	1	3	3	0.0419970712

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3744	0	0	0	-3	-106	1	1	3	3	0.0248364306
3744	0	0	0	-1836	30240	1	2	3	3	0.0308010362
3746	1	0	0	-178	900	1	1	3	3	0.0298571963
3746	1	0	0	180	-1904	1	1	3	3	0.0664160473
3752	0	-1	0	-7	-4	1	1	3	3	0.0654743616
3752	0	0	0	-1258	-10379	1	1	3	3	0.0937309763
3757	1	0	1	-17202	866831	1	2	3	3	0.0771634858
3757	1	-1	1	-211747	37495370	1	2	3	3	0.0955080273
3757	1	0	0	-74	235	1	2	3	3	0.1247334504
3759	0	1	1	-11767	492217	1	1	3	3	0.0519379173
3760	0	-1	0	-696	-6800	1	1	3	3	0.0331601537
3760	0	-1	0	-576	-5120	1	1	3	3	0.0670848528
3760	0	1	0	-45	103	1	1	3	3	0.0578137397
3762	1	-1	0	-186	1026	1	3	3	3	0.0784385850
3762	1	-1	0	-33	-55	1	2	3	3	0.0314027920
3774	1	0	1	-684	7210	1	1	3	3	0.0447866066
3774	1	1	1	4063	78815	1	1	3	3	0.0438499243
3775	0	0	1	50	-94	1	1	3	3	0.0596278634
3775	1	1	1	37	156	1	1	3	3	0.0880665664
3775	0	-1	1	-8	168	1	1	3	3	0.1091135338
3776	0	1	0	31	127	1	1	3	3	0.0751061640
3776	0	1	0	3551	-108993	1	1	3	3	0.0870713980
3776	0	-1	0	15	-47	1	1	3	3	0.0245024991
3778	1	0	1	1	-6	1	1	3.04	3	0.0242950794
3780	0	0	0	2727	49653	1	1	3	3	0.0230021853
3782	1	0	1	-992	12016	1	3	3	3	0.0426010877
3784	0	1	0	-8	-11	1	1	3	3	0.0693086164
3785	1	0	1	-79	261	1	2	3	3	0.0571677196
3790	1	0	1	387	2288	1	3	3	3	0.0683341768
3795	0	-1	1	985	-20494	1	1	3	3	0.0742995939
3797	0	0	1	-71	230	1	1	3	3	0.1027328782
3800	0	-1	0	-208	-1588	1	1	3	3	0.0518770955
3801	1	1	0	-612	-21465	1	1	3	3	0.0710050428
3801	1	1	1	-48	108	1	1	3	3	0.0890594776
3801	0	1	1	-5	5	1	1	3	3	0.0633540213
3802	1	0	1	-27	38	1	1	3	3	0.0189883002
3802	1	0	0	-1617	-24791	1	1	3	3	0.0437066407
3806	1	1	0	-17	13	1	1	3	3	0.0485654109
3806	1	-1	1	-57	177	1	1	3	3	0.0456178924
3808	0	1	0	-278	-1880	1	2	3	3	0.0453718517
3811	0	1	1	-79	-436	1	3	3	3	0.0763184592
3813	0	-1	1	-621739	173752536	1	1	3	3	0.0911532903
3814	1	-1	0	-62	148	1	1	3	3	0.0538783013
3819	1	1	1	-44	-124	1	2	3	3	0.1074239478
3822	1	1	0	26533	894237	1	1	3	3	0.0265960069
3822	1	0	1	-63677	-6133480	1	4	3	3	0.0332327896
3825	1	-1	1	-61130	5832622	1	2	3	3	0.0728410731
3825	0	0	1	3750	-80469	1	1	3	3	0.0295813657

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3825	1	-1	1	-155	-278	1	2	3	3	0.0731496572
3825	0	0	1	150	-644	1	1	3	3	0.0482688259
3825	1	-1	1	-96305	11382572	1	2	3	3	0.0767798483
3827	0	-1	1	-94	-344	1	1	3	3	0.1231803356
3834	1	-1	0	-44700	-3626416	1	1	3	3	0.0549711355
3834	1	-1	0	-12396	-1140144	1	3	3	3	0.0607757709
3840	0	-1	0	-11	15	1	2	3	3	0.0530444057
3840	0	-1	0	-221	645	1	2	3	3	0.0426956282
3840	0	-1	0	-11	-9	1	2	3	3	0.0587354010
3843	1	-1	1	31	114	1	1	3	3	0.0928091196
3843	0	0	1	-12	31	1	1	3	3	0.0754525649
3845	1	-1	1	-18	32	1	2	3	3	0.0813135729
3846	1	0	1	-55395	-5022818	1	1	3	3	0.0462020141
3849	0	1	1	-3	-7	1	1	3	3	0.0373962286
3849	0	1	1	28	-406	1	1	3	3	0.0215622307
3850	1	1	0	-515720	142338880	1	1	3	3	0.0598894550
3851	0	-1	1	-92	372	1	1	3	3	0 1279072793
3852	0	0	0	24	29	1	1	3	3	0.0478358192
3853	0	0	1	-4	-1	1	1	3	3	0.0411998938
3854	1	0	1	-131	222	1	2	3	3	0.0957182118
3856	0	1	0	16	4	1	1	3	3	0.0458063626
3857	1	-1	0	-364	-2663	1	1	3	3	0 0728231402
3861	1	-1	0	0	9	1	1	2.84	3	0 0190231265
3867	1	1	1	39	120	1	1	3	3	0.0999909414
3870	1	-1	0	-75	261	1	2	3	3	0.0358410400
3870	1	-1	0	-6969	175725	1	6	3	3	0.0329251583
3870	1	-1	0	-1719	-24867	1	2	3	3	0.0392064673
3872	0	-1	0	323	13301	1	1	3	3	0.0795092598
3879	0	0	1	-660	-6525	1	1	3	3	0.0606442778
3879	1	-1	0	0	27	1	1	3	3	0.0341682381
3882	1	1	0	-274	-1850	1	2	3	3	0.0461644820
3885	1	1	0	42	87	1	2	3	3	0 0403428641
3885	0	-1	1	-15	38	1	1	3	3	0.0473754251
3886	1	0	0	-366	2692	1	1	3	3	0.0513960094
3887	1	0	1	503	-31263	1	1	3	3	0.0384596275
3888	0	0	0	9	6	1	1	3	3	0 0472632608
3888	0	0	0	-99	354	1	1	3	3	0.0558896324
3891	1	0	0	-2214	-38637	1	4	3	3	0 0351632255
3892	0	1	0	-85	-281	1	1	3	3	0 0443528956
3892	0	1	0	-68	196	1	1	3	3	0.0545217699
3894	1	1	0	-84	264	1	1	3	3	0.0848878707
3894	1	0	1	-63	82	1	2	3	3	0 0496962262
3897	1	-1	0	-2268	37179	1	2	3	3	0.0350900519
3899	1	1	1	3	22	1	1	3	3	0.1096875097
3902	1	0	1	40	-90	1	1	3	3	0.1115909717
3904	0	1	0	-129	-641	1	1	3	3	0.0296596663
3906	1	-1	0	-378	2916	1	2	3	3	0.0579685128
3910	1	-1	0	-298325	62823125	1	1	3	3	0 0635240652

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3910	1	0	1	67	-691944	1	3	3	3	0.0392472094
3910	1	1	0	-1822	29204	1	1	3	3	0.0383776116
3914	1	1	0	-191	709	1	1	3	3	0.0883820840
3915	1	-1	1	-353	-2294	1	1	3	3	0.0759707823
3920	0	-1	0	-16	176	1	1	3	3	0.0508451091
3920	0	1	0	-240	-1100	1	2	3	3	0.0389844362
3920	0	-1	0	19	1	1	1	3	3	0.0502628831
3920	0	1	0	264	2260	1	1	3	3	0.0696872415
3922	1	0	1	42	104	1	1	3	3	0.0863167885
3924	0	0	0	-183	-1154	1	1	3	3	0.0389919141
3926	1	0	1	-1136	16030	1	3	3	3	0.0374840399
3927	1	1	0	26	-251	1	1	3	3	0.0614812328
3931	0	1	1	1	-3	1	1	3	3	0.0953029012
3933	0	0	1	168	-2876	1	1	3	3	0 0552880499
3940	0	1	0	-861	9439	1	1	3	3	0.0530245045
3945	0	1	1	-11	-34	1	1	3	3	0.0290955211
3947	0	-1	1	-3	-3	1	1	3	3	0.0705131366
3950	1	1	0	-686575	-219422875	1	1	3	3	0.0303708474
3950	1	0	1	-226	1098	1	2	3	3	0.0804551121
3955	1	0	1	-3958	1657143	1	1	3	3	0 0539713670
3955	1	0	1	-18	-37	1	1	3	3	0 0272294724
3956	0	-1	0	6010	446341	1	1	3	3	0.0849238597
3957	1	1	0	-21	-36	1	1	3	3	0.0428626897
3960	0	0	0	-903	-1798	1	4	3	3	0.0432087449
3960	0	0	0	-498	4277	1	2	3	3	0 0256146584
3961	1	0	1	-35	75	1	1	3	3	0.0795406473
3965	1	-1	1	-22	36	1	2	3	3	0.0519259873
3971	0	-1	1	-9867	-437910	1	1	3	3	0.0966613749
3974	1	1	0	-1025	-13067	1	1	3	3	0.0421601820
3974	1	1	0	-20	-44	1	1	3	3	0.0278035136
3975	0	-1	1	-3	8	1	1	3	3	0.0732276371
3975	1	0	0	-213	792	1	4	3	3	0 0534456095
3975	0	1	1	-4931333	-4216615381	1	1	3	3	0.0310215693
3975	0	1	1	-8783	315044	1	1	3	3	0.0389800791
3976	0	1	0	-168	-896	1	2	3	3	0.0455345850
3978	1	-1	0	-1304559	-204348371	1	2	3	3	0.0849149068
3983	1	0	1	-10	-9	1	2	3	3	0.0416675505
3984	0	-1	0	-72	240	1	2	3	3	0.0232684052
3984	0	-1	0	-12	-36	1	1	3	3	0 0709268113
3990	1	1	0	-458	-3552	1	4	3	3	0.0625587749
3990	1	1	0	1188	-11664	1	1	3	3	0.0365541677
3995	0	0	1	88	-1535	1	1	3	3	0.0365505575
3997	1	0	1	-1	21	1	1	3	3	0.0508323488
3998	1	-1	0	4	16	1	1	3	3	0.0802177454
3999	1	0	0	-2	-51	1	1	3	3	0.0648765291

N	a1	a2	a3	a4	a6	r	t	C	FCP	r1	r2
1246	1	1	0	-27113	-1732859	0	1	4	4	0.0307559797	0.0562184645
1269	0	0	1	-4725	-125012	0	1	4	4	0.0404959483	0.0703169596
1456	0	0	0	-355	-56222	0	1	4	4	0.0402323565	0.0812020993
1482	1	1	0	11856	1138176	0	1	4	4	0.0487424325	0.0565891655
1785	1	1	1	-181	-2206	0	2	4	4	0.0363420257	0.0916653144
1802	1	0	1	135	92	0	3	4	4	0.0551877692	0.0979443436
1827	1	-1	1	-86	-300	0	2	4	4	0.0488029972	0.0647346351
1833	1	1	1	-188403	31397538	0	1	4	4	0.0547557231	0.0833481630
1925	1	0	0	-2013	-36608	0	2	4	4	0.0510781164	0.1123991724
1934	1	0	1	-23	-198	0	2	4	4	0.0344502879	0.1098761405
1947	1	1	1	-44	-100	0	4	4	4	0.0291900493	0.1035000073
1995	1	1	1	-6696	208104	0	4	4	4	0.0488506881	0.0909989724
2023	1	-1	1	-12	0	2	1	4	4	0.0325438620	0.1459789780
2051	1	-1	1	-9	12	2	1	4	4	0.0311666353	0.1443239316
2075	1	-1	1	-2730	-54228	0	1	4	4	0.0489504588	0.1354166650
2089	1	-1	1	-39	102	2	1	4	4	0.0321200085	0.1447070762
2090	1	0	1	-1579	24006	0	6	4	4	0.0477200893	0.0802001083
2200	0	0	0	-1675	-28250	0	1	4	4	0.0343278601	0.0833437988
2275	1	0	0	-6013	-178608	0	2	4	4	0.0410578244	0.1153963843
2283	1	1	1	-24	-60	0	1	4	4	0.0679577296	0.0884803865
2299	0	0	1	11	30	2	1	4	4	0.0342213625	0.1667113768
2374	1	-1	0	-778	-8204	0	1	4	4	0.0545087777	0.1229813736
2409	0	-1	1	-152241	-23188750	0	1	4	4	0.0386399853	0.0612869246
2450	1	0	1	-9826	313548	0	3	4	4	0.0396332243	0.0718781732
2451	0	-1	1	-80732	-31445308	0	1	4	4	0.0505344328	0.1268049811
2455	1	-1	1	-3	6	2	1	4	4	0.0275881638	0.1403841571
2499	1	1	1	-26461	1390472	0	1	4	4	0.0249520018	0.0958014264
2555	0	-1	1	-4436	-112254	0	1	4	4	0.0530916018	0.1075461018
2636	0	1	0	-772	8004	0	3	4	4	0.0447726342	0.0624010866
2645	0	1	1	-8111	772041	0	1	4	4	0.0456576160	0.0872753251

N	a1	a2	a3	a4	a6	r	t	C	FCP	r1	r2
2665	1	0	0	-242451	-45969944	0	2	4	4	0.0445534339	0.1174629846
2699	0	0	1	-88	-318	0	1	4	4	0.0415095933	0.1081024230
2720	0	0	0	-5443	155242	0	1	4	4	0.0562967070	0.0798914650
2726	1	0	1	-290	1812	0	3	4	4	0.0394449485	0.1063530381
2800	0	0	0	-71875	-8018750	0	1	4	4	0.0560412355	0.0787151676
2805	1	1	1	-251	848	0	4	4	4	0.0433162744	0.0948775702
2810	1	0	1	-4129	104856	0	3	4	4	0.0385993149	0.0951304741
2829	0	-1	1	-52371	4630493	0	1	4	4	0.0373235822	0.0651198215
2842	1	0	1	-104102	20470776	0	2	4	4	0.0376922415	0.1021507632
2843	1	-1	1	3	0	2	1	4.02	4	0.0316222601	0.1463999943
2845	1	0	0	-296	-1985	0	2	4	4	0.0408587248	0.1197720244
2870	1	0	1	-100509	12256196	0	6	4	4	0.0465083356	0.0843551724
2890	1	-1	0	-2944	-60830	0	1	4	4	0.0492632148	0.1077455003
2937	0	-1	1	-6194	-185596	0	1	4	4	0.0419090039	0.1232539675
2950	1	-1	0	-742	-26084	0	1	4	4	0.0643373423	0.1075668675
2960	0	0	0	-219448	-39364772	0	1	4	4	0.0450489239	0.0801604770
2975	0	1	1	10842	-1176906	0	1	4	4	0.0555022798	0.1373512881
3025	1	0	0	-63	-758	0	1	4	4	0.0490827336	0.1107732331
3075	0	-1	1	1967	-30657	0	1	4	4	0 0320549965	0.0600754380
3150	1	1	0	-251	1245	0	2	4	4	0.0472252165	0.0654420436
3171	1	1	1	-49	-58	0	2	4	4	0.0483628647	0.1006440507
3200	0	0	0	-2500	-50000	0	1	4.02	4	0.0306186218	0.0918558654
3213	1	-1	1	79	-458	0	1	4	4	0.0487097369	0 0777046383
3225	1	1	1	-813	-6094	0	2	4	4	0.0577256629	0.0785619483
3228	0	-1	0	-9717	-356031	0	1	4	4	0.0244332946	0.0586337993
3255	1	1	1	-5781	-170622	0	2	4	4	0 0295498082	0.0975589601
3266	1	-1	0	15134	73876	0	1	4	4	0 0324681610	0.1282425386
3315	0	-1	1	-651	10541	0	1	4	4	0 0450216436	0.0581695331
3349	0	1	1	-443	-1527	0	3	3.99	4	0 0314472892	0 0902154598
3392	0	1	0	-69	-245	0	2	4	4	0.0297652069	0 0758474194

N	a1	a2	a3	a4	a6	r	t	C	FCP	r1	r2
3419	1	0	0	-7	6	2	1	4	4	0.0233108023	0.1299714242
3454	1	-1	0	11	-11	2	1	4.01	4	0.0234725613	0.1341566933
3475	1	0	0	-88	-333	0	1	4	4	0.0420476025	0.1180461912
3479	1	0	0	-393	1504	0	2	4	4	0.0408810249	0.1143055019
3479	1	-1	1	-27	60	2	1	4	4	0.0301650014	0.1463810457
3505	0	1	1	-1395	-2976	0	3	4	4	0.0449009550	0.0803154952
3520	0	0	0	-268	-1808	0	1	4	4	0.0499840685	0.0858453505
3550	1	0	1	-86	-312	0	1	4	4	0.0421670967	0.0859364390
3551	0	1	1	-543	4890	0	3	4	4	0.0442846423	0.0809666493
3570	1	1	0	470267	1.635E+09	0	2	4	4	0.0242044129	0.0641223557
3630	1	1	0	-4963	-55667	0	1	4	4	0.0194033424	0.0750656402
3648	0	-1	0	-369	-2511	0	2	4	4	0.0370218049	0.0371541122
3651	1	1	1	-137	-718	0	1	4	4	0.0373084214	0.1096960346
3654	1	-1	0	-6363	188325	0	2	4	4	0.0223442011	0.0532367270
3669	1	1	1	-151174	-22527100	0	1	4	4	0.0314391729	0.1097343706
3670	1	-1	0	-2860	-58160	0	1	4	4	0.0435317534	0.1199418701
3696	0	-1	0	-22	-41	0	1	4	4	0.0367806179	0.0507367826
3738	1	1	0	-91	-539	0	1	4	4	0.0339389503	0.0753295614
3758	1	0	1	-132	-286	0	2	4	4	0.0417704892	0.1016702765
3765	1	1	1	2214	1608	0	1	4	4	0.0590926183	0.0852038883
3774	1	1	0	18562	-5346696	0	1	4	4	0.0346554929	0.0697216877
3779	0	0	1	2	-3	2	1	4	4	0.0189021396	0.1156916936
3807	1	-1	1	-2	-80	0	1	4	4	0.0508478735	0.0862709142
3822	1	1	0	661	-61851	0	1	4	4	0.0367539898	0.0834506523
3835	1	0	0	124674	45215431	0	1	4	4	0.0375598174	0.1209510164
3885	1	1	1	-7006	221378	0	4	4	4	0.0459198260	0.0969168322
3885	0	-1	1	-8141	567386	0	1	4	4	0.0402234082	0.0651784841
3886	1	0	1	-240	-10210	0	1	3.99	4	0.0317674730	0.1125822915
3895	0	0	1	2192	-23676	0	1	4	4	0.0395733416	0.1124446582
3906	1	-1	0	-36	-432	0	1	4	4	0.0219230559	0.0529388657

N	a1	a2	a3	a4	a6	r	t	C	FCP	r1	r2
3915	1	-1	1	-321683	70287356	0	1	4	4	0.0449557217	0.0700237284
3920	0	0	0	-20188	1137388	0	1	4	4	0.0503333993	0.0881772027
3920	0	0	0	-103243	-12768518	0	1	4	4	0.0352497268	0.0899441355
3927	1	1	1	-221018	39901430	0	2	4	4	0.0519425805	0.0849060410
3954	1	1	0	2476741	-436548099	0	1	4	4	0.0401096427	0.0815168667

N	a1	a2	a3	a4	a6	r	t	C	FCP	r1	r2
985	0	1	1	-20	24	1	1	5	5	0.0688798940	0.1275982220
1175	0	1	1	92	344	1	1	5	5	0.0653683937	0.1340556971
1265	0	1	1	0	-6	1	1	5	5	0.0920387914	0.1214400769
1330	1	-1	0	-19	133	1	1	5	5	0.0292671537	0.1055566828
1550	1	0	1	-1651	-26802	1	2	5	5	0.0356822546	0.0680531816
1562	1	-1	0	-1951	-32651	1	1	5	5	0.0426071226	0.0986815267
1585	1	0	0	-7015	225642	1	1	5	5	0.0396958759	0.1039723025
1605	0	-1	1	-6	-4	1	1	5	5	0.0651550903	0.1038035649
1695	0	-1	1	4	2	1	1	5	5	0.0707220841	0.1028509471
1829	1	-1	1	9	-6	1	1	5	5	0.0301089894	0.1239595594
1833	0	-1	1	-3216	71210	1	1	5.02	5	0.0431866467	0.1119640062
1869	0	-1	1	. 6	-4	1	1	5	5	0.0266894196	0.1215949742
1939	1	0	0	-97	-378	1	1	5	5	0.0505424355	0.0974900230
1973	0	1	1	-8	-12	1	1	5	5	0.0612031987	0.1362882272
2150	1	-1	0	83	-59	1	1	5	5	0.0502393140	0.1125497797
2295	0	0	1	27	128	1	1	5	5	0.0331441039	0.0724618339
2355	1	1	1	20735	-449470	1	1	5	5	0.0346489485	0.0802736129
2366	1	1	0	-16	-34	1	1	5	5	0.0312936801	0.0639053849
2450	1	-1	0	-161317	24978841	1	1	5	5	0.0363778418	0.1131614588
2450	1	-1	0	18758	-1.8E+07	1	1	5	5	0.0401003833	0.1129820587
2541	0	-1	1	-1492	20712	1	1	5	5	0.0221518945	0.1258279781
2545	1	-1	1	3	-6	1	1	5.02	5	0.0597953816	0.1280224238
2611	0	0	1	-55	150	1	1	5	5	0.0610680282	0.1587457018
2665	1	0	0	-136	591	1	2	5	5	0.0258531759	0.1177219664
2678	1	0	1	-31246	2123232	1	3	5	5	0.0305909409	0.0798043994
2679	0	-1	1	-1256	17558	1	1	5	5	0.0711036578	0.1026952837
2690	1	-1	0	-25	55	1	1	5	5	0.0519925286	0.1167536124
2763	0	0	1	15	4	1	1	5	5	0.0343124681	0.0513802896
2793	0	-1	1	964	12830	1	1	5	5	0.0513306448	0.1090129905
2828	0	0	0	-160	-779	1	1	5	5	0.0511564030	0.0684988607

N	a1	a2	a3	a4	a6	r	t	C	FCP	r1	r2
2845	0	0	1	-97	-180	1	1	5	5	0.0588545441	0.1569955707
2870	1	0	1	-70344	7175126	1	6	5	5	0.0278467356	0.0876353992
2877	1	1	1	-28	44	1	2	5	5	0.0399546558	0.0862137326
2905	0	-1	1	744	-2424	1	1	5	5	0.0427469683	0.1072896171
2907	1	-1	1	-86	20	1	2	5	5	0.0439635686	0.0608469329
2930	1	-1	0	26	-332	1	1	5	5	0.0818183928	0.0913383438
2959	0	0	1	-1642	25614	1	1	4.99	5	0.0312335529	0.0989957925
2970	1	-1	0	-495	4365	1	1	5	5	0.0339897541	0.0366987922
3045	1	1	1	-11	8	1	2	5	5	0.0437105806	0.0909241574
3075	0	-1	1	-87083	9920318	1	1	5	5	0.0255030685	0.0481055340
3103	1	1	1	-73	210	1	1	5	5	0.0254729674	0.0740718188
3138	1	1	0	-25	-59	1	1	5	5	0.0258519822	0.0661684651
3146	1	-1	0	-325	-3371	1	1	5	5	0.0292064739	0.1213539002
3185	1	-1	1	-246357	47126706	1	1	5	5	0.0484415688	0.1308154929
3205	1	-1	1	-142	-614	1	1	4.99	5	0.0218448712	0.0538345141
3248	0	0	0	-40	124	1	1	5	5	0.0418395977	0.0733026429
3320	0	0	0	-178	-1427	1	1	5	5	0.0539590870	0.0754876656
3325	0	0	1	365	-2394	1	1	5	5	0.0604620231	0.1594703934
3325	1	1	1	-13	6	1	1	5	5	0.0413481198	0.0782997476
3349	0	0	1	-79	270	1	1	5	5	0.0581516052	0.1651495025
3381	0	-1	1	-1143	15476	1	1	5	5	0.0253875435	0.0550752599
3469	1	0	0	-26	49	1	1	5	5	0 0529675054	0.1144636915
3525	1	1	1	-9188	335156	1	4	5	5	0.0602679012	0.0744694449
3542	1	-1	0	-502	-46988	1	1	5	5	0 0570682696	0.1104270707
3553	0	-1	1	-74002	7773160	1	1	5	5	0.0405838208	0.1251426044
3585	0	-1	1	74	-3384	1	1	5	5	0.0540307555	0.1089360034
3665	1	1	1	-16	18	1	1	5	5	0.0630122530	0.0752157434
3674	1	0	1	16	30	1	1	5	5	0.0412106086	0 0868320264
3675	1	1	1	-393	-9654	1	1	5	5	0.0543938963	0.0787580868
3715	0	1	1	10	-6	1	1	5	5	0.0733184098	0.1289204585

N	a1	a2	a3	a4	a6	r	t	C	FCP	r1	r2
3755	0	0	1	23	60	1	1	5	5	0.0593905315	0.1573970809
3760	0	0	0	-103	-398	1	1	5	5	0.0453851511	0.0795172291
3775	0	0	1	-175	906	1	1	5	5	0.0600580484	0.1587635769
3776	0	0	0	-2068	-36224	1	1	5.01	5	0.0567076688	0.0753175890
3785	1	-1	1	-12	24	1	1	5	5	0.0607493284	0.1279695959
3822	1	1	0	24	36	1	1	5	5	0.0342269748	0.0657823867
3843	1	-1	1	-26	56	1	2	5	5	0.0382356020	0.0702740031
3887	1	0	0	3	-14	1	1	4.99	5	0.0208818281	0.1271022267
3898	1	-1	0	-7	-5	1	1	5	5	0.0585873396	0.1122001548
3920	0	0	0	-5488	268912	1	1	5	5	0.0191554755	0.0905959862
3927	1	1	1	-781	-8728	1	1	5	5	0.0407342338	0.0916635169
3965	1	0	0	-4481	-67664	1	2	5	5	0.0450502605	0 1147647613
3969	1	-1	1	-83	298	1	1	5	5	0.0188613364	0.0651480481
3990	1	1	0	-8743	-318353	1	1	4.77	5	0.0273594684	0.0554630194

N	a1	a2	a3	a4	a6	r	t	C	FCP	r1	r2	r3
2890	1	-1	0	-349744	88784128	0	1	6	6	0.030586	0.063350	0.096854
3050	1	-1	0	-470992	-124707584	0	1	5.91	6	0.024086	0.054333	0.096854
3705	0	-1	1	-4766	-2105614	0	1	6	6	0.029636	0.044077	0.111680
3886	1	0	1	1536	8270	0	1	6	6	0.030700	0.044471	0.077828

D Curves with apparent multiple zeroes

Certain curves in the catalogue appear to display multiple zeroes at the proposed FCP. If the multiplicity is even these points are not true FCPs since there is no sign change. The following pages list these apparent multiple zeroes in the following format.

$$N, a_1, a_2, a_3, a_4, a_6, r, t, C, Z$$

An example being

$$1344, 0, -1, 0, -84, -270, 1, 2, 3, 3$$

- N is the conductor.
- a_1, a_2, a_3, a_4, a_6 are the Weierstrass coefficients of the minimal curve.
- r is the rank of the curve.
- t is the size of the torsion sub-group.
- C is twice the numerical value of the contour integral computed to 3 significant digits.
- Z is the rounded integer value of C and is the multiplicity of the zero for this curve.

All the apparent multiple zeroes are located at the point of involution. $iN^{-1/2}$.

N	a1	a2	a3	a4	a6	r	t	C	Z
384	0	-1	0	-35	-69	0	2	2	2
400	0	1	0	-83	88	0	2	2	2
400	0	0	0	5	10	1	1	3	3
448	0	1	0	-33	-161	0	2	2	2
480	0	-1	0	-226	1360	0	4	2	2
576	0	0	0	-27	0	0	2	2	2
864	0	0	0	-216	-1296	0	1	2	2
960	0	-1	0	-1	-95	0	2	2	2
960	0	-1	0	95	1057	0	2	2	2
1080	0	0	0	-183	-993	0	1	2	2
1080	0	0	0	297	-4077	0	1	2	2
1120	0	-1	0	-301	-1915	0	1	2	2
1152	0	0	0	-81	270	0	2	2	2
1200	0	-1	0	-333	-2088	1	2	3	3
1344	0	-1	0	-84	-270	1	2	3	3
1360	0	0	0	-143	-658	0	2	2	2
1512	0	0	0	837	26406	0	1	2	2
1584	0	0	0	-696	8215	1	2	3	3
1600	0	-1	0	-33	97	1	1	3	3
1600	0	-1	0	-193	-1183	0	1	2	2
1680	0	-1	0	-36	96	1	2	2 92	3
1728	0	0	0	-204	1136	1	1	2 91	3
1728	0	0	0	-204	-1136	1	1	2 91	3
1728	0	0	0	0	-32	0	1	1 91	2
1728	0	0	0	-108	-1296	0	1	1 91	2
1872	0	0	0	9	-10	1	2	3	3
1920	0	-1	0	-11	-45	0	2	2	2
1920	0	-1	0	-306	2106	1	2	3	3
2160	0	0	0	117	6458	1	1	3	3
2160	0	0	0	-123	-822	0	1	2	2
2304	0	0	0	54	0	0	2	2	2
2304	0	0	0	-6	0	1	2	3	3
2352	0	1	0	18408	-1172844	0	1	2	2
2400	0	-1	0	1667	42037	0	1	2	2
2520	0	0	0	162	513	1	2	3	3
2592	0	0	0	-108	-864	0	1	2	2
2688	0	-1	0	-439	-3377	0	2	4	4
2880	0	0	0	-183	952	1	2	3	3
3024	0	0	0	-1188	-7236	1	1	3	3
3024	0	0	0	-132	268	0	1	2	2
3168	0	0	0	-11961	503496	0	2	2	2
3168	0	0	0	-405	-3132	1	2	3	3
3240	0	0	0	-3	-98	1	1	2.92	3
3360	0	-1	0	-20266	1114216	1	4	2 92	3
3360	0	1	0	-4326	-90576	0	4	1 92	2
3600	0	0	0	-13500	607500	0	1	2	2
3600	0	0	0	-540	4860	1	1	2.9	3
3888	0	0	0	0	3	1	1	4 98	5
3888	0	0	0	0	-9	0	1	2	2

2688 also has a normal FCP at .0431290975