PROOF OF THE CONTINUED FRACTION CONJECTURE FOR $(a,b) = (z^4+z^2+1, z^3+z+1)$

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Abstract. The continued fraction conjecture claims that the continued fraction defined by the (a,b)-Thue-Morse sequence is algebraic over $\mathbb{F}_2(x)$ for all pairs of distinct elements (a,b) in $\mathbb{F}_2[x]\setminus\mathbb{F}_2$. In this paper we prove the conjecture for $(a,b) = (z^4+z^2+1, z^3+z+1)$.

1. Introduction

Let $\mathbb{F}_2$ be the finite field of cardinality 2. Given a sequence of polynomials $\mathbf{a} = (a_0(z), a_1(z), a_2(z), \ldots)$ of elements from $\mathbb{F}_2[z]\setminus\mathbb{F}_2$, we define the infinite continued fraction

$$\mathrm{CF}(\mathbf{a}(z)) = \cfrac{1}{a_0(z) + \cfrac{1}{a_1(z) + \cfrac{1}{a_2(z) + \cfrac{1}{\ddots}}}} \tag{1.1}$$

as the limit of the finite continued fractions

$$\mathrm{CF}_n(\mathbf{a}(z)) = \cfrac{1}{a_0(z) + \cfrac{1}{a_1(z) + \cfrac{1}{\ddots + \cfrac{1}{a_n(z)}}}} \in \mathbb{F}_2((1/z)). \tag{1.2}$$

Conversely, each power series in $\mathbb{F}_2[[1/z]]$ without constant term

$$c_{-1}z^{-1} + c_{-2}z^{-2} + c_{-3}z^{-3} + \cdots \tag{1.3}$$

admits a continued fraction expansion of form (1.1).

Let a and b be two distinct elements from $\mathbb{F}_2[z]\setminus\mathbb{F}_2$. We consider the continued fraction (1.1) associated with the (a,b)-Thue-Morse sequence

$$\mathbf{t} = (t_0(z), t_1(z), t_2(z), \ldots) = (a, b, b, a, b, a, a, b, \ldots)$$

that we shall denote

$$\mathrm{CF}(a,b) := \mathrm{CF}(\mathbf{t}). \tag{1.4}$$

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Theorem 1.1. *When* $(a,b)=(z^4+z^2+1,z^3+z+1)$*, the two power series* $\mathrm{CF}(a,b)$ *and* $\mathrm{CF}(b,a)$ *are algebraic over* $\mathbb{F}_2(z)$*, with minimal polynomials of the form*

$$p_4(z)y^4+p_3(z)y^3+p_2(z)y^2+p_1(z)y+p_0(z)=0$$

where, for $\mathrm{CF}(a,b)$*,*

$$\begin{aligned}
p_0(z)&=z^{21}+z^{18}+z^{16}+z^{15}+z^{13}+z^{12}+z^{10}+z^6+z^4+z+1,\\
p_1(z)&=z^{25}+z^{24}+z^{23}+z^{21}+z^{19}+z^{18}+z^{16}+z^{13}+z^5+z^4+z^3+z,\\
p_2(z)&=z^{28}+z^{22}+z^{20}+z^{18}+z^{16}+z^{14}+z^{10}+z^6+z^4+z^2+1,\\
p_3(z)&=z^{25}+z^{24}+z^{23}+z^{21}+z^{19}+z^{18}+z^{16}+z^{13}+z^5+z^4+z^3+z,\\
p_4(z)&=z^{22}+z^{21}+z^{20}+z^{15}+z^{14}+z^{13}+z^2+z+1,
\end{aligned}$$

and for $\mathrm{CF}(b,a)$*,*

$$\begin{aligned}
p_0(z)&=z^{21}+z^{18}+z^{15}+z^{13}+z^{10}+z^8+z^6+z+1,\\
p_1(z)&=z^{25}+z^{24}+z^{23}+z^{21}+z^{19}+z^{18}+z^{16}+z^{13}+z^5+z^4+z^3+z,\\
p_2(z)&=z^{28}+z^{22}+z^{20}+z^{18}+z^{16}+z^{14}+z^{10}+z^6+z^4+z^2+1,\\
p_3(z)&=z^{25}+z^{24}+z^{23}+z^{21}+z^{19}+z^{18}+z^{16}+z^{13}+z^5+z^4+z^3+z,\\
p_4(z)&=z^{22}+z^{21}+z^{20}+z^{16}+z^{15}+z^{14}+z^{13}+z^{12}+z^8+z^4+z^2+z+1.
\end{aligned}$$

2. Proof

Define the sequences of polynomials $(P_n(z))_{n\geq 0}$ and $(Q_n(z))_{n\geq 0}$ by

$$\begin{pmatrix}P_n(z) & Q_n(z)\\ P_{n-1}(z) & Q_{n-1}(z)\end{pmatrix}:=\begin{pmatrix}t_n(z) & 1\\ 1 & 0\end{pmatrix}\begin{pmatrix}t_{n-1}(z) & 1\\ 1 & 0\end{pmatrix}\cdots\begin{pmatrix}t_0(z) & 1\\ 1 & 0\end{pmatrix}\begin{pmatrix}0 & 1\\ 1 & 0\end{pmatrix}.$$

By the basic properties of continued fractions, we have

$$\mathrm{CF}_n(a,b)=\frac{P_n(z)}{Q_n(z)}\in\mathbb{F}_2((1/z)). \tag{2.1}$$

As formula (2.1) is not efficient for calculating $\mathrm{CF}_n(a,b)$, a fast method is to be derived and described as follows. Define

$$\begin{aligned}
M_n(x)&=x^{\deg(t_{2^n-1})}\begin{pmatrix}t_{2^n-1}(1/x) & 1\\ 1 & 0\end{pmatrix}\times x^{\deg(t_{2^n-2})}\begin{pmatrix}t_{2^n-2}(1/x) & 1\\ 1 & 0\end{pmatrix}\times\\
&\qquad\cdots\times x^{\deg(t_0)}\begin{pmatrix}t_0(1/x) & 1\\ 1 & 0\end{pmatrix},\\
W_n(x)&=x^{\deg(\bar t_{2^n-1})}\begin{pmatrix}\bar t_{2^n-1}(1/x) & 1\\ 1 & 0\end{pmatrix}\times x^{\deg(\bar t_{2^n-2})}\begin{pmatrix}\bar t_{2^n-2}(1/x) & 1\\ 1 & 0\end{pmatrix}\times\\
&\qquad\cdots\times x^{\deg(\bar t_0)}\begin{pmatrix}\bar t_0(1/x) & 1\\ 1 & 0\end{pmatrix},
\end{aligned}$$

where $\bar{\mathbf{t}}$ is the (b,a)-Thue-Morse sequence. By the properties of the Thue-Morse sequence, we have for $n\geq 0$

$$\begin{aligned}
M_{n+1}(x)&=W_n(x)\cdot M_n(x),\\
W_{n+1}(x)&=M_n(x)\cdot W_n(x).
\end{aligned}$$

Let $x := 1/z$. For each non-zero polynomial $P(z)$, define $\tilde{P}(x)$ to be $P(1/x)$. Then,

$$\mathrm{CF}_n(a,b) = \frac{P_n(z)}{Q_n(z)} = \frac{\tilde{P}_n(x)}{\tilde{Q}_n(x)} \in \mathbb{F}_2((x)) = \mathbb{F}_2((1/z)).$$

Comparing the definition of $M_n(x)$ with the definition of $P_n(x)$ and $Q_n(x)$, we see that

$$M_n(x)_{0,1} = x^{d_n}\tilde{P}_{2^n-1}(x),$$
$$M_n(x)_{0,0} = x^{d_n}\tilde{Q}_{2^n-1}(x),$$

for some positive integer d_n. Hence,

$$\mathrm{CF}_{2^{2n}-1}(a,b) = \frac{\tilde{P}_{2^{2n}-1}(x)}{\tilde{Q}_{2^{2n}-1}(x)} = \frac{M_{2n}(x)_{0,1}}{M_{2n}(x)_{0,0}}. \tag{2.2}$$

Therefore, by the convergence theorem of continued fraction, the algebraicity of $\mathrm{CF}(a,b)$ will be established if it is shown that both $M_{2n}(x)_{0,1}$ and $M_{2n}(x)_{0,0}$ converge to algebraic series in $\mathbb{F}_2[[x]]$.

Actually, we will prove that for all $0 \le i,j \le 1$ the four sequences $(M_{2n}(x)_{i,j})_n$, $(M_{2n+1}(x)_{i,j})_n$, $(W_{2n}(x)_{i,j})_n$, and $(W_{2n+1}(x)_{i,j})_n$ converge to algebraic series in $\mathbb{F}_2[[x]]$. For this purpose, we define four 2×2 matrices M^e, M^o, W^e, W^o as follows: For each $T \in \{M^e, M^o, W^e, W^o\}$ and $0 \le i,j \le 1$, $T_{i,j}$ is defined to be the unique solution in $\mathbb{F}_2[[x]]$ of the polynomial $\phi(T,i,j)$ under certain initial conditions; the polynomials $\phi(T,i,j)$ and initial conditions are given in Section 3. We will prove that these four matrices, whose components are algebraic by definition, are the limits of $(M_{2n}(x))_n$, $(M_{2n+1}(x))_n$, $(W_{2n}(x))_n$, and $(W_{2n+1}(x))_n$.

Let us explain how the polynomials $\phi(T,i,j)$ and initial conditions are found, and why the solutions exist and are unique. For $0 \le i,j \le 1$, the the coefficients of the polynomial $\phi(M^e,i,j)$ (resp. $\phi(M^o,i,j)$, $\phi(W^e,i,j)$, and $\phi(W^o,i,j)$) are the Padé-Hermite approximants of type

$$(175, 175, 175, 175, 175)$$

of the vector

$$(1, T^3, T^6, T^9, T^{12}),$$

where $T = M_{12,i,j}$ (resp. $M_{11,i,j}$, $W_{12,i,j}$, and $W_{11,i,j}$), found by the Derksen algorithm. We take the first 8 terms of $M_{12,i,j}$ (resp. $M_{11,i,j}$, $W_{12,i,j}$, and $W_{11,i,j}$) as initial conditions for $\phi(M^e,i,j)$ (resp. $\phi(M^o,i,j)$, $\phi(W^e,i,j)$, and $\phi(W^o,i,j)$). The following fact will be used to ensure that the solution exists and is unique: let $P(x,y) \in \mathbb{F}_2[x,y]$ and for each series $f(x) = \sum_{n=0}^{\infty} a_n x^n \in \mathbb{F}_2[[x]]$ denote the partial sum $\sum_{j=0}^{n-1} a_j x^j$ by $f_n(x)$ for $n \ge 0$. If for some $n \ge 0$ and $a_0, a_1, \ldots, a_{n-1} \in \mathbb{F}_2$ $P(x, \sum_{j=0}^{n-1} a_j x^j) = O(x^n)$ and $Q(x,y) := P(x, \sum_{j=0}^{n-1} a_j x^j + x^n y)$ can be written as $x^m \sum_{j=0}^{\infty} q_j(x) y^j$ where $q_j(x)$ are polynomials for $j \ge 0$, $q_1(0) = 1$, and $q_j(0) = 0$ for $j > 1$, then there exists a unique solution $f(x) \in \mathbb{F}_2[[x]]$ of $P(x, f(x)) = 0$ that satisfies the initial condition $f_n(x) = \sum_{j=0}^{n-1} a_j x^j$.

We state two lemmas concerning the four matrices M^e, M^o, W^e, W^o. The first one is about relations between them; the second, about the structure of the each matrix.

Lemma 2.1. *We have*

$$M^e = W^o \cdot M^o, \tag{2.3}$$

$$M^o = W^e \cdot M^e, \tag{2.4}$$

$$W^e = M^o \cdot W^o, \tag{2.5}$$

$$W^o = M^e \cdot W^e. \tag{2.6}$$

Proof. We give the proof of the identity

$$M^e_{0,0} = W^o_{0,0} M^o_{0,0} + W^o_{0,1} M^o_{1,0},$$

the proofs of the others being similar.

First, we compute the minimal polynomials of $W^o_{0,0} M^o_{0,0}$ and $W^o_{0,1} M^o_{1,0}$. We know that

$$P(x,y) = \mathrm{Res}_z \left(\phi(W^o,0,0)(x,z),\ z^{12} \cdot \phi(M^o,0,0)(x,y/z) \right)$$

is an annihilating polynomial of $W^o_{0,0} M^o_{0,0}$. We use Padé-Hermite approximation to find a candidate for the minimal polynomial of $W^o_{0,0} M^o_{0,0}$, that will be called $\phi_0(x,y)$. To prove that $\phi_0(x,y)$ is indeed the minimal polynomial, it suffices to prove that it is an irreducible factor of $P(x,y)$ of multiplicity m and that $Q(x,y) := P(x,y)/\phi_0(x,y)^m$ is not an annihilating polynomial of $W^o_{0,0} M^o_{0,0}$. We verify the first point directly. For the second point, we truncate $W^o_{0,0} M^o_{0,0}$ to order 630 and substitute it for y in $Q(x,y)$. We get a series of valuation less than 630, which proves that $Q(x,y)$ is not an annihilating polynomial of $W^o_{0,0} M^o_{0,0}$. We find the minimal polynomial $\phi_1(x,y)$ of $W^o_{0,1} M^o_{1,0}$ in a similar way.

Now we prove that $\phi(M^e,0,0)$ is the minimal polynomial of $W^o_{0,0} M^o_{0,0} + W^o_{0,1} M^o_{1,0}$. We know that

$$S(x,y) = \mathrm{Res}_z \left(\phi_0(x,z),\ \phi_1(x,y+z) \right)$$

is an annihilating of $W^o_{0,0} M^o_{0,0} + W^o_{0,1} M^o_{1,0}$. We verify that $\phi(M^e,0,0)$ is an irreducible factor of $S(x,y)$ of multiplicity μ, and that $Q(x,y) := S(x,y)/\phi(M^e,0,0)^\mu$ is not an annihilating polynomial of $W^o_{0,0} M^o_{0,0} + W^o_{0,1} M^o_{1,0}$. To see the last point, we truncate $W^o_{0,0} M^o_{0,0} + W^o_{0,1} M^o_{1,0}$ to order 770 and substitute it for y in $Q(x,y)$. We get a series of valuation less than 770, and therefore $Q(x,y)$ is not an annihilating polynomial of $W^o_{0,0} M^o_{0,0} + W^o_{0,1} M^o_{1,0}$.

Finally, the first 16 terms of $M^e_{0,0}$ and $W^o_{0,0} M^o_{0,0} + W^o_{0,1} M^o_{1,0}$ coincide. As these first terms determine a unique solution of $\phi(M^e,0,0)$, we know that the two series are one and the same. $\square$

Define

$$R^e = \begin{pmatrix} 1 & 1 \\ 1 & 0 \end{pmatrix} \qquad \text{and} \qquad R^o = \begin{pmatrix} 0 & 1 \\ 1 & 1 \end{pmatrix}.$$

Lemma 2.2. *For all integers $k \geq 2$ and $u = 2^{2k-1}$, the following identities hold.*

$$\begin{aligned} M^e[:14u] = {} & M^e[:7u] + x^{3u} M^e[:4u] + x^{5u} M^e[:2u] + x^{3u} M^e[:7u] + x^{6u} M^e[:4u] \\ & + x^{8u} M^e[:2u] + x^{5u} M^e[:7u] + x^{8u} M^e[:4u] + x^{10u} M^e[:2u] \\ & + x^{6u} M^e[:7u] + x^{9u} M^e[:4u] + x^{11u} M^e[:2u] + x^{7u} M^e[:7u] \\ & + x^{10u} M^e[:4u] + x^{8u} M^e[:6u] + (x^{7u} + x^{10u} + x^{12u} + x^{13u}) R^e, \\ W^e[:14u] = {} & W^e[:7u] + x^{3u} W^e[:4u] + x^{5u} W^e[:2u] + x^{3u} W^e[:7u] + x^{6u} W^e[:4u] \\ & + x^{8u} W^e[:2u] + x^{5u} W^e[:7u] + x^{8u} W^e[:4u] + x^{10u} W^e[:2u] \end{aligned}$$

$$+ x^{6u}W^e[:7u] + x^{9u}W^e[:4u] + x^{11u}W^e[:2u] + x^{7u}W^e[:7u]$$
$$+ x^{10u}W^e[:4u] + x^{8u}W^e[:6u] + (x^{7u} + x^{10u} + x^{12u} + x^{13u})R^e.$$

For all integers $k \geq 2$ and $u = 2^{2k}$, the following identities hold.

$$\begin{aligned} M^o[:14u] &= M^o[:7u] + x^{3u}M^o[:4u] + x^{5u}M^o[:2u] + x^{3u}M^o[:7u] + x^{6u}M^o[:4u] \\ &+ x^{8u}M^o[:2u] + x^{5u}M^o[:7u] + x^{8u}M^o[:4u] + x^{10u}M^o[:2u] \\ &+ x^{6u}M^o[:7u] + x^{9u}M^o[:4u] + x^{11u}M^o[:2u] + x^{7u}M^o[:7u] \\ &+ x^{10u}M^o[:4u] + x^{8u}M^o[:6u] + (x^{7u} + x^{10u} + x^{12u} + x^{13u})R^o, \\ W^o[:14u] &= W^o[:7u] + x^{3u}W^o[:4u] + x^{5u}W^o[:2u] + x^{3u}W^o[:7u] + x^{6u}W^o[:4u] \\ &+ x^{8u}W^o[:2u] + x^{5u}W^o[:7u] + x^{8u}W^o[:4u] + x^{10u}W^o[:2u] \\ &+ x^{6u}W^o[:7u] + x^{9u}W^o[:4u] + x^{11u}W^o[:2u] + x^{7u}W^o[:7u] \\ &+ x^{10u}W^o[:4u] + x^{8u}W^o[:6u] + (x^{7u} + x^{10u} + x^{12u} + x^{13u})R^o. \end{aligned}$$

Proof. To prove Lemma 2.2 we first construct an automaton for each sequence concerned, and then transform the conditions on infinitely many k's into finitely many conditions on the states of the automaton. In the following, we will prove that for $T = M^o_{0,0}$, for all integer $k \geq 2$ and $u = 2^{2k}$,

$$\begin{aligned} T[:14u] &= T[:7u] + x^{3u}T[:4u] + x^{5u}T[:2u] + x^{3u}T[:7u] + x^{6u}T[:4u] + x^{8u}T[:2u] \\ &+ x^{5u}T[:7u] + x^{8u}T[:4u] + x^{10u}T[:2u] + x^{6u}T[:7u] + x^{9u}T[:4u] \\ &+ x^{11u}T[:2u] + x^{7u}T[:7u] + x^{10u}T[:4u] + x^{8u}T[:6u] \\ &+ (x^{7u} + x^{10u} + x^{12u} + x^{13u}). \end{aligned}$$

The proof of the other 15 cases are similar. We break down the above identity into 7 parts:

$$\begin{aligned} x^7u &= x^{7u}T[:u] + x^{5u}T[2u:3u] + x^{3u}T[4u:5u] + T[7u:8u], \\ 0 &= x^{8u}T[:u] + x^{7u}T[u:2u] + x^{5u}T[3u:4u] + x^{3u}T[5u:6u] \\ &\quad + T[8u:9u], \\ 0 &= x^{9u}T[:u] + x^{8u}T[u:2u] + x^{7u}T[2u:3u] + x^{5u}T[4u:5u] \\ &\quad + x^{3u}T[6u:7u] + T[9u:10u], \\ x^10u &= x^{9u}T[u:2u] + x^{7u}T[3u:4u] + x^{6u}T[4u:5u] + x^{5u}T[5u:6u] \\ &\quad + T[10u:11u], \\ 0 &= x^{11u}T[:u] + x^{9u}T[2u:3u] + x^{7u}T[4u:5u] + x^{6u}T[5u:6u] \\ &\quad + x^{5u}T[6u:7u] + T[11u:12u], \\ x^12u &= x^{11u}T[u:2u] + x^{10u}T[2u:3u] + x^{9u}T[3u:4u] + x^{8u}T[4u:5u] \\ &\quad + x^{7u}T[5u:6u] + x^{6u}T[6u:7u] + T[12u:13u], \\ x^13u &= x^{10u}T[3u:4u] + x^{8u}T[5u:6u] + x^{7u}T[6u:7u] + T[13u:14u], \end{aligned}$$

which can be rewritten as

$$0 = T[[w]_2] + T[[10w]_2] + T[[100w]_2] + T[[111w]_2], \tag{2.7}$$

$$0 = T[[w]_2] + T[[1w]_2] + T[[11w]_2] + T[[101w]_2] + T[[1000w]_2], \tag{2.8}$$

$$0 = T[[w]_2] + T[[1w]_2] + T[[10w]_2] + T[[100w]_2] + T[[110w]_2] + T[[1001w]_2], \tag{2.9}$$

$$0 = T[[1w]_2] + T[[11w]_2] + T[[100w]_2] + T[[101w]_2] + T[[1010w]_2], \tag{2.10}$$

$$0 = T[[w]_2] + T[[10w]_2] + T[[100w]_2] + T[[101w]_2] + T[[110w]_2] + T[[1011w]_2], \tag{2.11}$$

$$0 = T[[1w]_2] + T[[10w]_2] + T[[11w]_2] + T[[100w]_2] + T[[101w]_2] + T[[110w]_2] + T[[1100w]_2], \tag{2.12}$$

$$0 = T[[11w]_2] + T[[101w]_2] + T[[110w]_2] + T[[1101w]_2], \tag{2.13}$$

for all binary word w of length $2k$ and $w \neq 0^{2k}$, and

$$1 = T[[w]_2] + T[[10w]_2] + T[[100w]_2] + T[[111w]_2], \tag{2.14}$$

$$0 = T[[w]_2] + T[[1w]_2] + T[[11w]_2] + T[[101w]_2] + T[[1000w]_2], \tag{2.15}$$

$$0 = T[[w]_2] + T[[1w]_2] + T[[10w]_2] + T[[100w]_2] + T[[110w]_2] + T[[1001w]_2], \tag{2.16}$$

$$1 = T[[1w]_2] + T[[11w]_2] + T[[100w]_2] + T[[101w]_2] + T[[1010w]_2], \tag{2.17}$$

$$0 = T[[w]_2] + T[[10w]_2] + T[[100w]_2] + T[[101w]_2] + T[[110w]_2] + T[[1011w]_2], \tag{2.18}$$

$$1 = T[[1w]_2] + T[[10w]_2] + T[[11w]_2] + T[[100w]_2] + T[[101w]_2] + T[[110w]_2] + T[[1100w]_2], \tag{2.19}$$

$$1 = T[[11w]_2] + T[[101w]_2] + T[[110w]_2] + T[[1101w]_2], \tag{2.20}$$

for $w = 0^{2k}$.

First we calculate an 2-automaton that generates T from its minimal polynomial and its first terms. This automaton has 4065 states; its transition function and output function can be found in the annex. Let $A(s, w)$ denote the state reached after reading w from right to left starting from the state s, and τ the output function. Define

$$E_{2k} = \{A(i, w) : |w| = 2k, w \neq 0^{2k}\}.$$

Identities (2.7) through (2.20) can be written as

$$0 = \tau(A(s,\epsilon)) + \tau(A(s,10)) + \tau(A(s,100)) + \tau(A(s,111)), \tag{2.21}$$

$$0 = \tau(A(s,\epsilon)) + \tau(A(s,1)) + \tau(A(s,11)) + \tau(A(s,101)) + \tau(A(s,1000)), \tag{2.22}$$

$$0 = \tau(A(s,\epsilon)) + \tau(A(s,1)) + \tau(A(s,10)) + \tau(A(s,100)) + \tau(A(s,110)) + \tau(A(s,1001)), \tag{2.23}$$

$$0 = \tau(A(s,1)) + \tau(A(s,11)) + \tau(A(s,100)) + \tau(A(s,101)) + \tau(A(s,1010)), \tag{2.24}$$

$$0 = \tau(A(s,\epsilon)) + \tau(A(s,10)) + \tau(A(s,100)) + \tau(A(s,101)) + \tau(A(s,110)) + \tau(A(s,1011)), \tag{2.25}$$

$$0 = \tau(A(s,1)) + \tau(A(s,10)) + \tau(A(s,11)) + \tau(A(s,100)) + \tau(A(s,101)) + \tau(A(s,110)) + \tau(A(s,1100)), \tag{2.26}$$

$$0=\tau(A(s,11))+\tau(A(s,101))+\tau(A(s,110))+\tau(A(s,1101)), \tag{2.27}$$

for all $s \in E_{2k}$, and

$$1=\tau(A(s,\epsilon))+\tau(A(s,10))+\tau(A(s,100))+\tau(A(s,111)), \tag{2.28}$$

$$\begin{aligned}0=\;&\tau(A(s,\epsilon))+\tau(A(s,1))+\tau(A(s,11))+\tau(A(s,101))\\&+\tau(A(s,1000)),\end{aligned} \tag{2.29}$$

$$\begin{aligned}0=\;&\tau(A(s,\epsilon))+\tau(A(s,1))+\tau(A(s,10))+\tau(A(s,100))\\&+\tau(A(s,110))+\tau(A(s,1001)),\end{aligned} \tag{2.30}$$

$$\begin{aligned}1=\;&\tau(A(s,1))+\tau(A(s,11))+\tau(A(s,100))+\tau(A(s,101))\\&+\tau(A(s,1010)),\end{aligned} \tag{2.31}$$

$$\begin{aligned}0=\;&\tau(A(s,\epsilon))+\tau(A(s,10))+\tau(A(s,100))+\tau(A(s,101))\\&+\tau(A(s,110))+\tau(A(s,1011)),\end{aligned} \tag{2.32}$$

$$\begin{aligned}1=\;&\tau(A(s,1))+\tau(A(s,10))+\tau(A(s,11))+\tau(A(s,100))\\&+\tau(A(s,101))+\tau(A(s,110))+\tau(A(s,1100)),\end{aligned} \tag{2.33}$$

$$1=\tau(A(s,11))+\tau(A(s,101))+\tau(A(s,110))+\tau(A(s,1101)), \tag{2.34}$$

for $s=A(i,0^{2k})$. We find that $(A(i,0^{44}),E_{44})=(A(i,0^{16}),E_{16})$, so that we only have to verify that identities (2.21) through (2.34) hold for $2\le k\le 22$, which turns out to be true. $\square$

In the following lemma, we express M_{2k}, M_{2k+1}, W_{2k}, and W_{2k+1} in terms of M^e, M^o, W^e, and W^o.

Lemma 2.3. *For all integer $k\ge 2$, and $u=2^{2k-1}$,*

$$M_{2k}=M^e[:7u]+x^{3u}M^e[:4u]+x^{5u}M^e[:2u]+x^{7u}R^e,$$
$$W_{2k}=W^e[:7u]+x^{3u}W^e[:4u]+x^{5u}W^e[:2u]+x^{7u}R^e.$$

For all integer $k\ge 2$, and $u=2^{2k}$,

$$M_{2k+1}=M^o[:7u]+x^{3u}M^o[:4u]+x^{5u}M^o[:2u]+x^{7u}R^o,$$
$$W_{2k+1}=W^o[:7u]+x^{3u}W^o[:4u]+x^{5u}W^o[:2u]+x^{7u}R^o.$$

Proof. We call the four identities in Lemma 2.3 also by the name M_{2k}, W_{2k}, M_{2k+1}, and W_{2k+1}. For $n=2$, the identities can be verified directly. For $n\ge 2$, we claim that

$$M_{2k}\wedge W_{2k}\Rightarrow M_{2k+1}\wedge W_{2k+1},$$
$$M_{2k+1}\wedge W_{2k+1}\Rightarrow M_{2k+2}\wedge W_{2k+2}.$$

We give the proof of

$$M_{2k}\wedge W_{2k}\Rightarrow M_{2k+1},$$

the other ones being similar. Set $u=2^{2k}$ and $v=2^{2k-1}$. By definition and induction hypothesis, the left side of identity M_{2k+1} is equal to

$$\begin{aligned}W_{2k}M_{2k}=\;&\big(W^e[:7v]+x^{3v}W^e[:4v]+x^{5v}W^e[:2v]+x^{7u}R^e\big)\times\big(M^e[:7v]\\&+x^{3v}M^e[:4v]+x^{5v}M^e[:2v]+x^{7u}R^e\big);\end{aligned} \tag{2.35}$$

Call this expression lhs. Note that both sides of identity M_{2k+1} have the same term of highest degree $x^{14v}R^o$. Therefore we only need to prove that their difference is

$O(x^{14v})$. Using Lemma 2.1 it can be seen that the right side of identity M_{2k+1} is congruent, modulo x^{14v}, to

$$W^e[:14v]M^e[:14v] + x^{6v}W^e[:8v]M^e[:8v] + x^{10v}W^e[:4v]M^e[:4v].$$

For all $n \le 14$, replace the occurrences of $W^e[:n \cdot v]$ and $M^e[:n \cdot v]$ in the above expression by the reduction modulo $x^{n \cdot v}$ of the right side of the corresponding identity in Lemma 2.2 and get a new expression, which we call rhs. Define

$$\begin{aligned} X &:= x^v, \\ a_n &:= W^e[n \cdot v : (n+1) \cdot v]/X^n, \\ b_n &:= M^e[n \cdot v : (n+1) \cdot v]/X^n, \\ c &:= R^e. \end{aligned}$$

Using the notation introduced above, we can represent the expressions lhs (2.35) and rhs as polynomials in $\mathbb{F}_2[a_1, ..., a_{14}, b_1, ..., b_{14}, c][X]$. Note that it is not a problem that a_j commutes with b_k while W^e does not commute with M^e, because in the expressions concerned, the products of W^e-terms and M^e-terms are always in the same order. We let the computer do the simplification and check that the difference between these two polynomials is indeed $O(X^{14})$, which completes the proof. $\square$

Proof of Theorem 1.1. We prove the theorem for $\mathrm{CF}(a, b)$; for $\mathrm{CF}(b, a)$, the proof is similar. By Lemma 2.3, we have For all $0 \le j, k \le 1$,

$$\begin{aligned} \lim_{n\to\infty} M_{2n,j,k} &= M^e_{j,k}, \\ \lim_{n\to\infty} M_{2n+1,j,k} &= M^o_{j,k}, \\ \lim_{n\to\infty} W_{2n,j,k} &= W^e_{j,k}, \\ \lim_{n\to\infty} W_{2n+1,j,k} &= W^o_{j,k}. \end{aligned}$$

Let $z = 1/x$. By the convergence theorem and identity (2.2),

$$\mathrm{CF}(a, b) = \frac{M^e_{0,1}(x)}{M^e_{0,0}(x)}.$$

By definition, $\phi(M^e, 0, 1)$ and $\phi(M^e, 0, 0)$ are minimal polynomials of $M^e_{0,1}$ and $M^e_{0,0}$. Therefore

$$P(x, y) = \mathrm{Res}_t\left(\phi(M^e, 0, 1)(x, t), y^{12}\phi(M^e, 0, 1)(x, t/y)\right)$$

is an annihilating polynomial of $f(x) = M^e_{0,1}/M^e_{0,0}$.

Define

$$Q(x, y) = q_4(x)y^4 + q_3(x)y^3 + q_2(x)y^2 + q_1(x)y + q_0(x),$$

where

$$\begin{aligned} q_0(x) &= x^{28} + x^{27} + x^{24} + x^{22} + x^{18} + x^{16} + x^{15} + x^{13} + x^{12} + x^{10} + x^7, \\ q_1(x) &= x^{27} + x^{25} + x^{24} + x^{23} + x^{15} + x^{12} + x^{10} + x^9 + x^7 + x^5 + x^4 + x^3, \\ q_2(x) &= x^{28} + x^{26} + x^{24} + x^{22} + x^{18} + x^{14} + x^{12} + x^{10} + x^8 + x^6 + 1, \\ q_3(x) &= x^{27} + x^{25} + x^{24} + x^{23} + x^{15} + x^{12} + x^{10} + x^9 + x^7 + x^5 + x^4 + x^3, \\ q_4(x) &= x^{28} + x^{27} + x^{26} + x^{15} + x^{14} + x^{13} + x^8 + x^7 + x^6. \end{aligned}$$

The polynomial $Q(x,y)$ is the candidate for the minimal polynomial of $f(x)$ found by Padé-Hermite approximation. To prove that it is indeed the minimal polynomial of $f(x)$, we only need to prove that it is an irreducible factor of $P(x,y)$ of multiplicity m and $R(x,y) := P(x,y)/Q(x,y)^m$ is not an annihilating polynomial of $f(x)$. We verify the first point directly. For the second point, we find that when we truncate $f(x)$ to order 216, and substitute it for y in $R(z,y)$, we get a series with valuation smaller than 216, which proves that $R(z,y)$ is not an annihilating polynomial of $f(x)$. Finally, $z^{12}Q(1/z,y)$ is the minimal polynomial of $\mathrm{CF}(a,b) = f(1/z)$. □

3. Annexe

All 16 polynomials are of the form

$$p_0(x) + p_3(x)y^3 + p_6(x)y^6 + p_9(x)y^9 + p_{12}(x)y^{12}.$$

The coefficients $p_j(x)$ and the 16 initial terms to determine the solutions uniquely are given below.

For $\phi(M^e, 0, 0)$:

$$\begin{aligned}
p_0(x) &= x^{144} + x^{142} + x^{140} + x^{136} + x^{134} + x^{132} + x^{120} + x^{114} + x^{112} + x^{106}\\
&\quad + x^{104} + x^{102} + x^{100} + x^{94} + x^{84} + x^{78} + x^{76} + x^{70} + x^{66} + x^{58} + x^{54}\\
&\quad + x^{52} + x^{50} + x^{48} + x^{46} + x^{44} + x^{40} + x^{38} + x^{36},\\
p_3(x) &= x^{142} + x^{140} + x^{138} + x^{136} + x^{134} + x^{132} + x^{130} + x^{124} + x^{122} + x^{116}\\
&\quad + x^{110} + x^{106} + x^{104} + x^{102} + x^{100} + x^{96} + x^{92} + x^{90} + x^{88} + x^{84}\\
&\quad + x^{82} + x^{80} + x^{78} + x^{72} + x^{70} + x^{66} + x^{60} + x^{58} + x^{54} + x^{48} + x^{46}\\
&\quad + x^{42} + x^{40} + x^{38} + x^{36} + x^{30} + x^{28} + x^{24} + x^{22} + x^{20},\\
p_6(x) &= x^{142} + x^{138} + x^{130} + x^{126} + x^{124} + x^{114} + x^{110} + x^{108} + x^{106} + x^{104}\\
&\quad + x^{98} + x^{96} + x^{90} + x^{82} + x^{80} + x^{78} + x^{76} + x^{74} + x^{72} + x^{68} + x^{66}\\
&\quad + x^{56} + x^{54} + x^{52} + x^{50} + x^{48} + x^{46} + x^{44} + x^{42} + x^{40} + x^{36} + x^{34}\\
&\quad + x^{32} + x^{28} + x^{18} + x^{6} + x^{4} + 1,\\
p_9(x) &= x^{142} + x^{140} + x^{136} + x^{132} + x^{120} + x^{116} + x^{114} + x^{110} + x^{108} + x^{100}\\
&\quad + x^{96} + x^{94} + x^{92} + x^{90} + x^{88} + x^{86} + x^{82} + x^{80} + x^{78} + x^{74} + x^{72}\\
&\quad + x^{70} + x^{68} + x^{62} + x^{60} + x^{56} + x^{50} + x^{48} + x^{46} + x^{44} + x^{40} + x^{38}\\
&\quad + x^{36} + x^{30} + x^{28} + x^{26} + x^{22} + x^{18} + x^{16} + x^{14} + x^{8} + x^{6},\\
p_{12}(x) &= x^{144} + x^{140} + x^{132} + x^{128} + x^{120} + x^{116} + x^{112} + x^{96} + x^{92} + x^{84}\\
&\quad + x^{80} + x^{72} + x^{68} + x^{64} + x^{32} + x^{28} + x^{20} + x^{16} + x^{8} + x^{4} + 1,
\end{aligned}$$

and the initial terms are [1, 0, 0, 0, 0, 0, 1, 0, 0, 0, 1, 0, 0, 0, 0, 0].

For $\phi(M^e, 0, 1)$:

$$\begin{aligned}
p_0(x) &= x^{147} + x^{146} + x^{145} + x^{144} + x^{137} + x^{133} + x^{129} + x^{128} + x^{127} + x^{124}\\
&\quad + x^{123} + x^{115} + x^{112} + x^{109} + x^{106} + x^{103} + x^{102} + x^{99} + x^{98} + x^{97}\\
&\quad + x^{95} + x^{94} + x^{93} + x^{88} + x^{87} + x^{86} + x^{85} + x^{82} + x^{75} + x^{72} + x^{66}\\
&\quad + x^{65} + x^{64} + x^{63} + x^{59} + x^{58} + x^{56} + x^{54} + x^{53} + x^{52} + x^{51} + x^{47}
\end{aligned}$$

$$
\begin{aligned}
&+ x^{45} + x^{44} + x^{42} + x^{40} + x^{39},\\
p_3(x) &= x^{138} + x^{137} + x^{128} + x^{127} + x^{126} + x^{125} + x^{124} + x^{123} + x^{120} + x^{119}\\
&+ x^{118} + x^{117} + x^{116} + x^{115} + x^{112} + x^{111} + x^{102} + x^{101} + x^{100}\\
&+ x^{99} + x^{98} + x^{97} + x^{96} + x^{95} + x^{88} + x^{87} + x^{86} + x^{85} + x^{84} + x^{83}\\
&+ x^{82} + x^{81} + x^{80} + x^{79} + x^{74} + x^{73} + x^{72} + x^{71} + x^{66} + x^{65} + x^{64}\\
&+ x^{63} + x^{58} + x^{57} + x^{56} + x^{55} + x^{48} + x^{47} + x^{42} + x^{41} + x^{38} + x^{37}\\
&+ x^{36} + x^{35} + x^{34} + x^{33} + x^{30} + x^{29} + x^{28} + x^{27},\\
p_6(x) &= x^{141} + x^{140} + x^{139} + x^{137} + x^{135} + x^{132} + x^{131} + x^{130} + x^{129} + x^{127}\\
&+ x^{124} + x^{117} + x^{116} + x^{114} + x^{113} + x^{112} + x^{111} + x^{109} + x^{107}\\
&+ x^{104} + x^{103} + x^{102} + x^{100} + x^{97} + x^{96} + x^{95} + x^{93} + x^{90} + x^{87}\\
&+ x^{86} + x^{84} + x^{83} + x^{82} + x^{80} + x^{79} + x^{78} + x^{77} + x^{75} + x^{72} + x^{69}\\
&+ x^{68} + x^{67} + x^{64} + x^{63} + x^{62} + x^{60} + x^{59} + x^{58} + x^{56} + x^{49} + x^{48}\\
&+ x^{46} + x^{41} + x^{40} + x^{39} + x^{37} + x^{35} + x^{32} + x^{31} + x^{30} + x^{28} + x^{21}\\
&+ x^{20} + x^{18},\\
p_9(x) &= x^{144} + x^{143} + x^{140} + x^{139} + x^{138} + x^{137} + x^{134} + x^{133} + x^{130} + x^{129}\\
&+ x^{128} + x^{127} + x^{126} + x^{125} + x^{122} + x^{121} + x^{120} + x^{119} + x^{116}\\
&+ x^{115} + x^{112} + x^{111} + x^{110} + x^{109} + x^{104} + x^{103} + x^{102} + x^{101}\\
&+ x^{96} + x^{95} + x^{92} + x^{91} + x^{88} + x^{87} + x^{86} + x^{85} + x^{84} + x^{83} + x^{80}\\
&+ x^{79} + x^{70} + x^{69} + x^{68} + x^{67} + x^{66} + x^{65} + x^{64} + x^{63} + x^{62} + x^{61}\\
&+ x^{58} + x^{57} + x^{54} + x^{53} + x^{50} + x^{49} + x^{40} + x^{39} + x^{36} + x^{35} + x^{34}\\
&+ x^{33} + x^{32} + x^{31} + x^{30} + x^{29} + x^{24} + x^{23} + x^{22} + x^{21} + x^{10} + x^{9},\\
p_{12}(x) &= x^{147} + x^{146} + x^{145} + x^{142} + x^{141} + x^{140} + x^{138} + x^{137} + x^{136} + x^{135}\\
&+ x^{132} + x^{131} + x^{130} + x^{129} + x^{127} + x^{124} + x^{119} + x^{118} + x^{117}\\
&+ x^{115} + x^{112} + x^{99} + x^{98} + x^{97} + x^{94} + x^{93} + x^{92} + x^{90} + x^{89} + x^{88}\\
&+ x^{87} + x^{84} + x^{83} + x^{82} + x^{81} + x^{79} + x^{76} + x^{71} + x^{70} + x^{69} + x^{67}\\
&+ x^{64} + x^{35} + x^{34} + x^{33} + x^{30} + x^{29} + x^{28} + x^{26} + x^{25} + x^{24} + x^{23}\\
&+ x^{20} + x^{19} + x^{18} + x^{17} + x^{15} + x^{12} + x^{7} + x^{6} + x^{5} + x^{3} + 1,
\end{aligned}
$$

and the initial terms are [0, 0, 0, 0, 1, 0, 1, 0, 0, 0, 0, 1, 0, 1, 0, 0].

For $\phi(M^e, 1, 0)$:

$$
\begin{aligned}
p_0(x) &= x^{147} + x^{146} + x^{145} + x^{144} + x^{137} + x^{133} + x^{129} + x^{128} + x^{127} + x^{124}\\
&+ x^{123} + x^{115} + x^{112} + x^{109} + x^{106} + x^{103} + x^{102} + x^{99} + x^{98} + x^{97}\\
&+ x^{95} + x^{94} + x^{93} + x^{88} + x^{87} + x^{86} + x^{85} + x^{82} + x^{75} + x^{72} + x^{66}\\
&+ x^{65} + x^{64} + x^{63} + x^{59} + x^{58} + x^{56} + x^{54} + x^{53} + x^{52} + x^{51} + x^{47}\\
&+ x^{45} + x^{44} + x^{42} + x^{40} + x^{39},\\
p_3(x) &= x^{138} + x^{137} + x^{128} + x^{127} + x^{126} + x^{125} + x^{124} + x^{123} + x^{120} + x^{119}
\end{aligned}
$$

$$
\begin{aligned}
&+ x^{118} + x^{117} + x^{116} + x^{115} + x^{112} + x^{111} + x^{102} + x^{101} + x^{100}\\
&+ x^{99} + x^{98} + x^{97} + x^{96} + x^{95} + x^{88} + x^{87} + x^{86} + x^{85} + x^{84} + x^{83}\\
&+ x^{82} + x^{81} + x^{80} + x^{79} + x^{74} + x^{73} + x^{72} + x^{71} + x^{66} + x^{65} + x^{64}\\
&+ x^{63} + x^{58} + x^{57} + x^{56} + x^{55} + x^{48} + x^{47} + x^{42} + x^{41} + x^{38} + x^{37}\\
&+ x^{36} + x^{35} + x^{34} + x^{33} + x^{30} + x^{29} + x^{28} + x^{27},\\
p_6(x) &= x^{141} + x^{140} + x^{139} + x^{137} + x^{135} + x^{132} + x^{131} + x^{130} + x^{129} + x^{127}\\
&+ x^{124} + x^{117} + x^{116} + x^{114} + x^{113} + x^{112} + x^{111} + x^{109} + x^{107}\\
&+ x^{104} + x^{103} + x^{102} + x^{100} + x^{97} + x^{96} + x^{95} + x^{93} + x^{90} + x^{87}\\
&+ x^{86} + x^{84} + x^{83} + x^{82} + x^{80} + x^{79} + x^{78} + x^{77} + x^{75} + x^{72} + x^{69}\\
&+ x^{68} + x^{67} + x^{64} + x^{63} + x^{62} + x^{60} + x^{59} + x^{58} + x^{56} + x^{49} + x^{48}\\
&+ x^{46} + x^{41} + x^{40} + x^{39} + x^{37} + x^{35} + x^{32} + x^{31} + x^{30} + x^{28} + x^{21}\\
&+ x^{20} + x^{18},\\
p_9(x) &= x^{144} + x^{143} + x^{140} + x^{139} + x^{138} + x^{137} + x^{134} + x^{133} + x^{130} + x^{129}\\
&+ x^{128} + x^{127} + x^{126} + x^{125} + x^{122} + x^{121} + x^{120} + x^{119} + x^{116}\\
&+ x^{115} + x^{112} + x^{111} + x^{110} + x^{109} + x^{104} + x^{103} + x^{102} + x^{101}\\
&+ x^{96} + x^{95} + x^{92} + x^{91} + x^{88} + x^{87} + x^{86} + x^{85} + x^{84} + x^{83} + x^{80}\\
&+ x^{79} + x^{70} + x^{69} + x^{68} + x^{67} + x^{66} + x^{65} + x^{64} + x^{63} + x^{62} + x^{61}\\
&+ x^{58} + x^{57} + x^{54} + x^{53} + x^{50} + x^{49} + x^{40} + x^{39} + x^{36} + x^{35} + x^{34}\\
&+ x^{33} + x^{32} + x^{31} + x^{30} + x^{29} + x^{24} + x^{23} + x^{22} + x^{21} + x^{10} + x^{9},\\
p_{12}(x) &= x^{147} + x^{146} + x^{145} + x^{142} + x^{141} + x^{140} + x^{138} + x^{137} + x^{136} + x^{135}\\
&+ x^{132} + x^{131} + x^{130} + x^{129} + x^{127} + x^{124} + x^{119} + x^{118} + x^{117}\\
&+ x^{115} + x^{112} + x^{99} + x^{98} + x^{97} + x^{94} + x^{93} + x^{92} + x^{90} + x^{89} + x^{88}\\
&+ x^{87} + x^{84} + x^{83} + x^{82} + x^{81} + x^{79} + x^{76} + x^{71} + x^{70} + x^{69} + x^{67}\\
&+ x^{64} + x^{35} + x^{34} + x^{33} + x^{30} + x^{29} + x^{28} + x^{26} + x^{25} + x^{24} + x^{23}\\
&+ x^{20} + x^{19} + x^{18} + x^{17} + x^{15} + x^{12} + x^{7} + x^{6} + x^{5} + x^{3} + 1,
\end{aligned}
$$

and the initial terms are [0, 0, 0, 0, 1, 0, 1, 0, 0, 0, 0, 1, 0, 1, 0, 0].

For $\phi(M^e, 1, 1)$:

$$
\begin{aligned}
p_0(x) &= x^{150} + x^{144} + x^{138} + x^{132} + x^{130} + x^{128} + x^{122} + x^{116} + x^{114} + x^{104}\\
&+ x^{102} + x^{100} + x^{94} + x^{90} + x^{84} + x^{82} + x^{80} + x^{78} + x^{74} + x^{70} + x^{64}\\
&+ x^{62} + x^{58} + x^{56} + x^{54} + x^{46} + x^{42},\\
p_3(x) &= x^{148} + x^{140} + x^{138} + x^{130} + x^{128} + x^{122} + x^{120} + x^{116} + x^{112} + x^{104}\\
&+ x^{102} + x^{96} + x^{94} + x^{92} + x^{88} + x^{86} + x^{82} + x^{78} + x^{76} + x^{74} + x^{72}\\
&+ x^{70} + x^{68} + x^{64} + x^{62} + x^{60} + x^{56} + x^{46} + x^{44} + x^{42} + x^{38} + x^{34}\\
&+ x^{30} + x^{28} + x^{26} + x^{18},\\
p_6(x) &= x^{148} + x^{142} + x^{140} + x^{128} + x^{124} + x^{122} + x^{120} + x^{118} + x^{114} + x^{106}
\end{aligned}
$$

$$
\begin{aligned}
&+ x^{102} + x^{96} + x^{92} + x^{90} + x^{84} + x^{82} + x^{80} + x^{78} + x^{72} + x^{68} + x^{66}\\
&+ x^{62} + x^{58} + x^{56} + x^{48} + x^{46} + x^{42} + x^{40} + x^{32} + x^{30} + x^{18} + x^{8}\\
&+ x^{4} + 1,\\
p_9(x) &= x^{148} + x^{138} + x^{136} + x^{134} + x^{130} + x^{128} + x^{126} + x^{122} + x^{120} + x^{116}\\
&+ x^{112} + x^{108} + x^{106} + x^{104} + x^{92} + x^{88} + x^{86} + x^{84} + x^{82} + x^{80}\\
&+ x^{78} + x^{76} + x^{74} + x^{72} + x^{68} + x^{64} + x^{62} + x^{60} + x^{58} + x^{52} + x^{50}\\
&+ x^{48} + x^{42} + x^{38} + x^{36} + x^{34} + x^{32} + x^{22} + x^{18} + x^{16} + x^{14} + x^{12}\\
&+ x^{8} + x^{6},\\
p_{12}(x) &= x^{150} + x^{148} + x^{144} + x^{134} + x^{132} + x^{128} + x^{118} + x^{116} + x^{112} + x^{102}\\
&+ x^{100} + x^{96} + x^{86} + x^{84} + x^{80} + x^{70} + x^{68} + x^{64} + x^{38} + x^{36} + x^{32}\\
&+ x^{22} + x^{20} + x^{16} + x^{6} + x^{4} + 1,
\end{aligned}
$$

and the initial terms are [0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 1, 0, 1, 0].

For $\phi(W^e, 0, 0)$:

$$
\begin{aligned}
p_0(x) &= x^{150} + x^{146} + x^{138} + x^{136} + x^{126} + x^{120} + x^{118} + x^{114} + x^{112} + x^{110}\\
&+ x^{108} + x^{106} + x^{102} + x^{100} + x^{88} + x^{86} + x^{82} + x^{80} + x^{78} + x^{74}\\
&+ x^{72} + x^{66} + x^{64} + x^{58} + x^{56} + x^{48} + x^{44} + x^{42} + x^{40} + x^{38} + x^{36},\\
p_3(x) &= x^{148} + x^{144} + x^{142} + x^{140} + x^{138} + x^{130} + x^{126} + x^{124} + x^{118} + x^{116}\\
&+ x^{112} + x^{100} + x^{98} + x^{92} + x^{82} + x^{80} + x^{72} + x^{70} + x^{66} + x^{64} + x^{62}\\
&+ x^{60} + x^{54} + x^{52} + x^{50} + x^{46} + x^{44} + x^{42} + x^{40} + x^{34} + x^{30} + x^{28}\\
&+ x^{26} + x^{24} + x^{22} + x^{20},\\
p_6(x) &= x^{148} + x^{146} + x^{138} + x^{136} + x^{134} + x^{128} + x^{126} + x^{122} + x^{120} + x^{118}\\
&+ x^{114} + x^{112} + x^{102} + x^{100} + x^{98} + x^{96} + x^{94} + x^{92} + x^{90} + x^{88}\\
&+ x^{78} + x^{76} + x^{72} + x^{70} + x^{64} + x^{60} + x^{58} + x^{56} + x^{54} + x^{52} + x^{50}\\
&+ x^{48} + x^{44} + x^{42} + x^{40} + x^{36} + x^{30} + x^{26} + x^{20} + x^{18} + x^{12} + x^{8}\\
&+ x^{4} + 1,\\
p_9(x) &= x^{148} + x^{138} + x^{136} + x^{134} + x^{130} + x^{128} + x^{126} + x^{122} + x^{120} + x^{116}\\
&+ x^{112} + x^{108} + x^{106} + x^{104} + x^{92} + x^{88} + x^{86} + x^{84} + x^{82} + x^{80}\\
&+ x^{78} + x^{76} + x^{74} + x^{72} + x^{68} + x^{64} + x^{62} + x^{60} + x^{58} + x^{52} + x^{50}\\
&+ x^{48} + x^{42} + x^{38} + x^{36} + x^{34} + x^{32} + x^{22} + x^{18} + x^{16} + x^{14} + x^{12}\\
&+ x^{8} + x^{6},\\
p_{12}(x) &= x^{150} + x^{148} + x^{144} + x^{134} + x^{132} + x^{128} + x^{118} + x^{116} + x^{112} + x^{102}\\
&+ x^{100} + x^{96} + x^{86} + x^{84} + x^{80} + x^{70} + x^{68} + x^{64} + x^{38} + x^{36} + x^{32}\\
&+ x^{22} + x^{20} + x^{16} + x^{6} + x^{4} + 1,
\end{aligned}
$$

and the initial terms are [1, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 1, 0].

For $\phi(W^e, 0, 1)$:

$$
\begin{aligned}
p_0(x) = {} & x^{147} + x^{146} + x^{145} + x^{144} + x^{141} + x^{140} + x^{139} + x^{137} + x^{136} + x^{133} \\
& + x^{132} + x^{130} + x^{129} + x^{128} + x^{124} + x^{123} + x^{122} + x^{118} + x^{117} \\
& + x^{116} + x^{115} + x^{114} + x^{112} + x^{111} + x^{110} + x^{108} + x^{106} + x^{104} \\
& + x^{101} + x^{99} + x^{98} + x^{97} + x^{96} + x^{95} + x^{93} + x^{91} + x^{89} + x^{88} + x^{86} \\
& + x^{85} + x^{81} + x^{80} + x^{79} + x^{78} + x^{73} + x^{71} + x^{66} + x^{64} + x^{63} + x^{62} \\
& + x^{60} + x^{55} + x^{54} + x^{53} + x^{52} + x^{51} + x^{50} + x^{45} + x^{42} + x^{40} + x^{39}, \\
p_3(x) = {} & x^{138} + x^{137} + x^{128} + x^{127} + x^{126} + x^{125} + x^{124} + x^{123} + x^{120} + x^{119} \\
& + x^{118} + x^{117} + x^{116} + x^{115} + x^{112} + x^{111} + x^{102} + x^{101} + x^{100} \\
& + x^{99} + x^{98} + x^{97} + x^{96} + x^{95} + x^{88} + x^{87} + x^{86} + x^{85} + x^{84} + x^{83} \\
& + x^{82} + x^{81} + x^{80} + x^{79} + x^{74} + x^{73} + x^{72} + x^{71} + x^{66} + x^{65} + x^{64} \\
& + x^{63} + x^{58} + x^{57} + x^{56} + x^{55} + x^{48} + x^{47} + x^{42} + x^{41} + x^{38} + x^{37} \\
& + x^{36} + x^{35} + x^{34} + x^{33} + x^{30} + x^{29} + x^{28} + x^{27}, \\
p_6(x) = {} & x^{141} + x^{140} + x^{139} + x^{137} + x^{135} + x^{132} + x^{131} + x^{130} + x^{129} + x^{127} \\
& + x^{124} + x^{117} + x^{116} + x^{114} + x^{113} + x^{112} + x^{111} + x^{109} + x^{107} \\
& + x^{104} + x^{103} + x^{102} + x^{100} + x^{97} + x^{96} + x^{95} + x^{93} + x^{90} + x^{87} \\
& + x^{86} + x^{84} + x^{83} + x^{82} + x^{80} + x^{79} + x^{78} + x^{77} + x^{75} + x^{72} + x^{69} \\
& + x^{68} + x^{67} + x^{64} + x^{63} + x^{62} + x^{60} + x^{59} + x^{58} + x^{56} + x^{49} + x^{48} \\
& + x^{46} + x^{41} + x^{40} + x^{39} + x^{37} + x^{35} + x^{32} + x^{31} + x^{30} + x^{28} + x^{21} \\
& + x^{20} + x^{18}, \\
p_9(x) = {} & x^{144} + x^{143} + x^{140} + x^{139} + x^{138} + x^{137} + x^{134} + x^{133} + x^{130} + x^{129} \\
& + x^{128} + x^{127} + x^{126} + x^{125} + x^{122} + x^{121} + x^{120} + x^{119} + x^{116} \\
& + x^{115} + x^{112} + x^{111} + x^{110} + x^{109} + x^{104} + x^{103} + x^{102} + x^{101} \\
& + x^{96} + x^{95} + x^{92} + x^{91} + x^{88} + x^{87} + x^{86} + x^{85} + x^{84} + x^{83} + x^{80} \\
& + x^{79} + x^{70} + x^{69} + x^{68} + x^{67} + x^{66} + x^{65} + x^{64} + x^{63} + x^{62} + x^{61} \\
& + x^{58} + x^{57} + x^{54} + x^{53} + x^{50} + x^{49} + x^{40} + x^{39} + x^{36} + x^{35} + x^{34} \\
& + x^{33} + x^{32} + x^{31} + x^{30} + x^{29} + x^{24} + x^{23} + x^{22} + x^{21} + x^{10} + x^{9}, \\
p_{12}(x) = {} & x^{147} + x^{146} + x^{145} + x^{142} + x^{141} + x^{140} + x^{138} + x^{137} + x^{136} + x^{135} \\
& + x^{132} + x^{131} + x^{130} + x^{129} + x^{127} + x^{124} + x^{119} + x^{118} + x^{117} \\
& + x^{115} + x^{112} + x^{99} + x^{98} + x^{97} + x^{94} + x^{93} + x^{92} + x^{90} + x^{89} + x^{88} \\
& + x^{87} + x^{84} + x^{83} + x^{82} + x^{81} + x^{79} + x^{76} + x^{71} + x^{70} + x^{69} + x^{67} \\
& + x^{64} + x^{35} + x^{34} + x^{33} + x^{30} + x^{29} + x^{28} + x^{26} + x^{25} + x^{24} + x^{23} \\
& + x^{20} + x^{19} + x^{18} + x^{17} + x^{15} + x^{12} + x^{7} + x^{6} + x^{5} + x^{3} + 1,
\end{aligned}
$$

and the initial terms are [0, 0, 0, 1, 0, 1, 1, 1, 0, 0, 0, 1, 0, 0, 1, 1].

For $\phi(W^e, 1, 0)$:

$$
\begin{aligned}
p_0(x) &= x^{147} + x^{146} + x^{145} + x^{144} + x^{141} + x^{140} + x^{139} + x^{137} + x^{136} + x^{133} \\
&\quad + x^{132} + x^{130} + x^{129} + x^{128} + x^{124} + x^{123} + x^{122} + x^{118} + x^{117} \\
&\quad + x^{116} + x^{115} + x^{114} + x^{112} + x^{111} + x^{110} + x^{108} + x^{106} + x^{104} \\
&\quad + x^{101} + x^{99} + x^{98} + x^{97} + x^{96} + x^{95} + x^{93} + x^{91} + x^{89} + x^{88} + x^{86} \\
&\quad + x^{85} + x^{81} + x^{80} + x^{79} + x^{78} + x^{73} + x^{71} + x^{66} + x^{64} + x^{63} + x^{62} \\
&\quad + x^{60} + x^{55} + x^{54} + x^{53} + x^{52} + x^{51} + x^{50} + x^{45} + x^{42} + x^{40} + x^{39}, \\
p_3(x) &= x^{138} + x^{137} + x^{128} + x^{127} + x^{126} + x^{125} + x^{124} + x^{123} + x^{120} + x^{119} \\
&\quad + x^{118} + x^{117} + x^{116} + x^{115} + x^{112} + x^{111} + x^{102} + x^{101} + x^{100} \\
&\quad + x^{99} + x^{98} + x^{97} + x^{96} + x^{95} + x^{88} + x^{87} + x^{86} + x^{85} + x^{84} + x^{83} \\
&\quad + x^{82} + x^{81} + x^{80} + x^{79} + x^{74} + x^{73} + x^{72} + x^{71} + x^{66} + x^{65} + x^{64} \\
&\quad + x^{63} + x^{58} + x^{57} + x^{56} + x^{55} + x^{48} + x^{47} + x^{42} + x^{41} + x^{38} + x^{37} \\
&\quad + x^{36} + x^{35} + x^{34} + x^{33} + x^{30} + x^{29} + x^{28} + x^{27}, \\
p_6(x) &= x^{141} + x^{140} + x^{139} + x^{137} + x^{135} + x^{132} + x^{131} + x^{130} + x^{129} + x^{127} \\
&\quad + x^{124} + x^{117} + x^{116} + x^{114} + x^{113} + x^{112} + x^{111} + x^{109} + x^{107} \\
&\quad + x^{104} + x^{103} + x^{102} + x^{100} + x^{97} + x^{96} + x^{95} + x^{93} + x^{90} + x^{87} \\
&\quad + x^{86} + x^{84} + x^{83} + x^{82} + x^{80} + x^{79} + x^{78} + x^{77} + x^{75} + x^{72} + x^{69} \\
&\quad + x^{68} + x^{67} + x^{64} + x^{63} + x^{62} + x^{60} + x^{59} + x^{58} + x^{56} + x^{49} + x^{48} \\
&\quad + x^{46} + x^{41} + x^{40} + x^{39} + x^{37} + x^{35} + x^{32} + x^{31} + x^{30} + x^{28} + x^{21} \\
&\quad + x^{20} + x^{18}, \\
p_9(x) &= x^{144} + x^{143} + x^{140} + x^{139} + x^{138} + x^{137} + x^{134} + x^{133} + x^{130} + x^{129} \\
&\quad + x^{128} + x^{127} + x^{126} + x^{125} + x^{122} + x^{121} + x^{120} + x^{119} + x^{116} \\
&\quad + x^{115} + x^{112} + x^{111} + x^{110} + x^{109} + x^{104} + x^{103} + x^{102} + x^{101} \\
&\quad + x^{96} + x^{95} + x^{92} + x^{91} + x^{88} + x^{87} + x^{86} + x^{85} + x^{84} + x^{83} + x^{80} \\
&\quad + x^{79} + x^{70} + x^{69} + x^{68} + x^{67} + x^{66} + x^{65} + x^{64} + x^{63} + x^{62} + x^{61} \\
&\quad + x^{58} + x^{57} + x^{54} + x^{53} + x^{50} + x^{49} + x^{40} + x^{39} + x^{36} + x^{35} + x^{34} \\
&\quad + x^{33} + x^{32} + x^{31} + x^{30} + x^{29} + x^{24} + x^{23} + x^{22} + x^{21} + x^{10} + x^{9}, \\
p_{12}(x) &= x^{147} + x^{146} + x^{145} + x^{142} + x^{141} + x^{140} + x^{138} + x^{137} + x^{136} + x^{135} \\
&\quad + x^{132} + x^{131} + x^{130} + x^{129} + x^{127} + x^{124} + x^{119} + x^{118} + x^{117} \\
&\quad + x^{115} + x^{112} + x^{99} + x^{98} + x^{97} + x^{94} + x^{93} + x^{92} + x^{90} + x^{89} + x^{88} \\
&\quad + x^{87} + x^{84} + x^{83} + x^{82} + x^{81} + x^{79} + x^{76} + x^{71} + x^{70} + x^{69} + x^{67} \\
&\quad + x^{64} + x^{35} + x^{34} + x^{33} + x^{30} + x^{29} + x^{28} + x^{26} + x^{25} + x^{24} + x^{23} \\
&\quad + x^{20} + x^{19} + x^{18} + x^{17} + x^{15} + x^{12} + x^{7} + x^{6} + x^{5} + x^{3} + 1,
\end{aligned}
$$

and the initial terms are [0, 0, 0, 1, 0, 1, 1, 1, 0, 0, 0, 1, 0, 0, 1, 1].

For $\phi(W^e, 1, 1)$:

$$\begin{aligned}
p_0(x) &= x^{144} + x^{142} + x^{130} + x^{126} + x^{124} + x^{114} + x^{100} + x^{98} + x^{94} + x^{92}\\
&\quad + x^{88} + x^{82} + x^{80} + x^{76} + x^{74} + x^{72} + x^{70} + x^{64} + x^{60} + x^{56} + x^{52}\\
&\quad + x^{50} + x^{48} + x^{46} + x^{42},\\
p_3(x) &= x^{142} + x^{140} + x^{136} + x^{124} + x^{118} + x^{108} + x^{106} + x^{104} + x^{98} + x^{96}\\
&\quad + x^{92} + x^{88} + x^{86} + x^{82} + x^{80} + x^{76} + x^{72} + x^{68} + x^{60} + x^{52} + x^{48}\\
&\quad + x^{44} + x^{42} + x^{40} + x^{24} + x^{18},\\
p_6(x) &= x^{142} + x^{140} + x^{136} + x^{134} + x^{128} + x^{126} + x^{122} + x^{118} + x^{114} + x^{112}\\
&\quad + x^{108} + x^{106} + x^{104} + x^{102} + x^{96} + x^{88} + x^{86} + x^{84} + x^{82} + x^{80}\\
&\quad + x^{74} + x^{70} + x^{64} + x^{60} + x^{58} + x^{56} + x^{52} + x^{50} + x^{44} + x^{42} + x^{40}\\
&\quad + x^{38} + x^{34} + x^{30} + x^{28} + x^{22} + x^{12} + x^{6} + x^{4} + 1,\\
p_9(x) &= x^{142} + x^{140} + x^{136} + x^{132} + x^{120} + x^{116} + x^{114} + x^{110} + x^{108} + x^{100}\\
&\quad + x^{96} + x^{94} + x^{92} + x^{90} + x^{88} + x^{86} + x^{82} + x^{80} + x^{78} + x^{74} + x^{72}\\
&\quad + x^{70} + x^{68} + x^{62} + x^{60} + x^{56} + x^{50} + x^{48} + x^{46} + x^{44} + x^{40} + x^{38}\\
&\quad + x^{36} + x^{30} + x^{28} + x^{26} + x^{22} + x^{18} + x^{16} + x^{14} + x^{8} + x^{6},\\
p_{12}(x) &= x^{144} + x^{140} + x^{132} + x^{128} + x^{120} + x^{116} + x^{112} + x^{96} + x^{92} + x^{84}\\
&\quad + x^{80} + x^{72} + x^{68} + x^{64} + x^{32} + x^{28} + x^{20} + x^{16} + x^{8} + x^{4} + 1,
\end{aligned}$$

and the initial terms are [0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 1, 0, 1, 0, 0, 0].

For $\phi(M^o, 0, 0)$:

$$\begin{aligned}
p_0(x) &= x^{147} + x^{146} + x^{144} + x^{142} + x^{141} + x^{140} + x^{139} + x^{138} + x^{137} + x^{129}\\
&\quad + x^{128} + x^{125} + x^{123} + x^{122} + x^{121} + x^{118} + x^{117} + x^{116} + x^{115}\\
&\quad + x^{110} + x^{108} + x^{106} + x^{105} + x^{104} + x^{101} + x^{100} + x^{98} + x^{97} + x^{96}\\
&\quad + x^{94} + x^{91} + x^{90} + x^{89} + x^{87} + x^{86} + x^{84} + x^{82} + x^{80} + x^{79} + x^{78}\\
&\quad + x^{76} + x^{75} + x^{74} + x^{72} + x^{70} + x^{69} + x^{68} + x^{65} + x^{64} + x^{61} + x^{57}\\
&\quad + x^{56} + x^{52} + x^{51} + x^{47} + x^{45} + x^{43} + x^{42} + x^{39} + x^{38} + x^{36},\\
p_3(x) &= x^{143} + x^{142} + x^{140} + x^{139} + x^{137} + x^{134} + x^{131} + x^{130} + x^{127} + x^{125}\\
&\quad + x^{124} + x^{123} + x^{119} + x^{115} + x^{114} + x^{111} + x^{110} + x^{108} + x^{105}\\
&\quad + x^{104} + x^{100} + x^{99} + x^{95} + x^{94} + x^{92} + x^{91} + x^{90} + x^{87} + x^{83} + x^{79}\\
&\quad + x^{78} + x^{77} + x^{75} + x^{74} + x^{69} + x^{68} + x^{65} + x^{63} + x^{60} + x^{59} + x^{57}\\
&\quad + x^{56} + x^{55} + x^{52} + x^{51} + x^{50} + x^{49} + x^{48} + x^{47} + x^{45} + x^{39} + x^{35}\\
&\quad + x^{33} + x^{31} + x^{30} + x^{27} + x^{26} + x^{24},\\
p_6(x) &= x^{145} + x^{144} + x^{139} + x^{136} + x^{135} + x^{134} + x^{129} + x^{128} + x^{125} + x^{124}\\
&\quad + x^{122} + x^{121} + x^{118} + x^{116} + x^{112} + x^{111} + x^{109} + x^{107} + x^{102}\\
&\quad + x^{99} + x^{98} + x^{97} + x^{95} + x^{94} + x^{93} + x^{90} + x^{89} + x^{87} + x^{84} + x^{82}\\
&\quad + x^{81} + x^{80} + x^{78} + x^{74} + x^{73} + x^{72} + x^{71} + x^{70} + x^{67} + x^{62} + x^{58}
\end{aligned}$$

$$
\begin{aligned}
&+ x^{55} + x^{52} + x^{50} + x^{45} + x^{44} + x^{43} + x^{41} + x^{40} + x^{38} + x^{36} + x^{34}\\
&+ x^{31} + x^{30} + x^{29} + x^{28} + x^{26} + x^{24} + x^{23} + x^{22} + x^{21} + x^{20} + x^{19}\\
&+ x^{18} + x^{17} + x^{16} + x^{14} + x^{7} + x^{6} + x^{5} + x^{3} + 1,\\
p_9(x) &= x^{143} + x^{142} + x^{141} + x^{138} + x^{137} + x^{136} + x^{134} + x^{133} + x^{132} + x^{130}\\
&+ x^{129} + x^{128} + x^{127} + x^{124} + x^{95} + x^{94} + x^{93} + x^{90} + x^{89} + x^{88}\\
&+ x^{86} + x^{85} + x^{84} + x^{82} + x^{81} + x^{80} + x^{79} + x^{76} + x^{31} + x^{30} + x^{29}\\
&+ x^{26} + x^{25} + x^{24} + x^{22} + x^{21} + x^{20} + x^{18} + x^{17} + x^{16} + x^{15} + x^{12},\\
p_{12}(x) &= x^{147} + x^{146} + x^{145} + x^{143} + x^{140} + x^{135} + x^{134} + x^{133} + x^{131} + x^{128}\\
&+ x^{119} + x^{118} + x^{117} + x^{115} + x^{112} + x^{99} + x^{98} + x^{97} + x^{95} + x^{92}\\
&+ x^{87} + x^{86} + x^{85} + x^{83} + x^{80} + x^{71} + x^{70} + x^{69} + x^{67} + x^{64} + x^{35}\\
&+ x^{34} + x^{33} + x^{31} + x^{28} + x^{23} + x^{22} + x^{21} + x^{19} + x^{16} + x^{7} + x^{6} + x^{5}\\
&+ x^{3} + 1,
\end{aligned}
$$

and the initial terms are [1, 0, 0, 0, 0, 0, 1, 1, 1, 0, 0, 0, 1, 1, 1, 1].

For $\phi(M^o, 0, 1)$:

$$
\begin{aligned}
p_0(x) &= x^{156} + x^{153} + x^{152} + x^{150} + x^{146} + x^{145} + x^{144} + x^{143} + x^{142} + x^{141}\\
&+ x^{140} + x^{136} + x^{135} + x^{134} + x^{131} + x^{130} + x^{127} + x^{125} + x^{120}\\
&+ x^{118} + x^{117} + x^{116} + x^{115} + x^{112} + x^{111} + x^{109} + x^{108} + x^{106}\\
&+ x^{103} + x^{96} + x^{94} + x^{93} + x^{91} + x^{90} + x^{88} + x^{85} + x^{79} + x^{76} + x^{75}\\
&+ x^{74} + x^{73} + x^{67} + x^{66} + x^{65} + x^{64} + x^{62} + x^{60} + x^{56} + x^{55} + x^{54}\\
&+ x^{52} + x^{46} + x^{43} + x^{40} + x^{39},\\
p_3(x) &= x^{147} + x^{144} + x^{143} + x^{142} + x^{141} + x^{140} + x^{138} + x^{135} + x^{134} + x^{133}\\
&+ x^{131} + x^{128} + x^{126} + x^{123} + x^{122} + x^{119} + x^{118} + x^{117} + x^{111}\\
&+ x^{109} + x^{108} + x^{107} + x^{99} + x^{96} + x^{95} + x^{94} + x^{93} + x^{92} + x^{91} + x^{90}\\
&+ x^{88} + x^{84} + x^{83} + x^{82} + x^{80} + x^{79} + x^{77} + x^{74} + x^{72} + x^{71} + x^{69}\\
&+ x^{66} + x^{64} + x^{63} + x^{61} + x^{59} + x^{58} + x^{54} + x^{52} + x^{48} + x^{46} + x^{43}\\
&+ x^{42} + x^{39} + x^{38} + x^{37} + x^{31} + x^{29} + x^{28} + x^{27},\\
p_6(x) &= x^{150} + x^{144} + x^{140} + x^{138} + x^{126} + x^{122} + x^{120} + x^{114} + x^{112} + x^{104}\\
&+ x^{102} + x^{100} + x^{98} + x^{96} + x^{94} + x^{92} + x^{90} + x^{88} + x^{84} + x^{82} + x^{78}\\
&+ x^{74} + x^{72} + x^{64} + x^{60} + x^{52} + x^{50} + x^{48} + x^{46} + x^{44} + x^{40} + x^{34}\\
&+ x^{32} + x^{24} + x^{20} + x^{18},\\
p_9(x) &= x^{153} + x^{150} + x^{149} + x^{148} + x^{146} + x^{145} + x^{129} + x^{126} + x^{125} + x^{124}\\
&+ x^{122} + x^{121} + x^{105} + x^{102} + x^{101} + x^{100} + x^{98} + x^{97} + x^{81} + x^{78}\\
&+ x^{77} + x^{76} + x^{74} + x^{73} + x^{41} + x^{38} + x^{37} + x^{36} + x^{34} + x^{33} + x^{17}\\
&+ x^{14} + x^{13} + x^{12} + x^{10} + x^{9},\\
p_{12}(x) &= x^{156} + x^{148} + x^{144} + x^{140} + x^{136} + x^{120} + x^{112} + x^{108} + x^{100} + x^{96}
\end{aligned}
$$

$$+ x^{92} + x^{88} + x^{72} + x^{64} + x^{44} + x^{36} + x^{32} + x^{28} + x^{24} + x^{8} + 1,$$

and the initial terms are [0, 0, 0, 0, 1, 0, 1, 0, 0, 0, 0, 0, 1, 0, 0, 0].

For $\phi(M^o, 1, 0)$:

$$\begin{aligned}
p_0(x) &= x^{152} + x^{149} + x^{145} + x^{144} + x^{140} + x^{139} + x^{137} + x^{135} + x^{131} + x^{130} \\
&\quad + x^{129} + x^{127} + x^{126} + x^{125} + x^{123} + x^{121} + x^{120} + x^{119} + x^{118} \\
&\quad + x^{114} + x^{108} + x^{107} + x^{104} + x^{100} + x^{98} + x^{97} + x^{95} + x^{93} + x^{92} \\
&\quad + x^{91} + x^{84} + x^{83} + x^{82} + x^{79} + x^{78} + x^{77} + x^{75} + x^{73} + x^{71} + x^{69} \\
&\quad + x^{66} + x^{61} + x^{60} + x^{57} + x^{55} + x^{52} + x^{50} + x^{49} + x^{46} + x^{44} + x^{43} \\
&\quad + x^{40} + x^{39}, \\
p_3(x) &= x^{143} + x^{140} + x^{138} + x^{137} + x^{133} + x^{130} + x^{128} + x^{125} + x^{124} + x^{123} \\
&\quad + x^{121} + x^{118} + x^{117} + x^{116} + x^{114} + x^{111} + x^{110} + x^{109} + x^{107} \\
&\quad + x^{104} + x^{102} + x^{98} + x^{96} + x^{95} + x^{89} + x^{87} + x^{86} + x^{85} + x^{81} + x^{78} \\
&\quad + x^{76} + x^{75} + x^{73} + x^{70} + x^{68} + x^{67} + x^{65} + x^{62} + x^{60} + x^{59} + x^{57} \\
&\quad + x^{55} + x^{54} + x^{51} + x^{50} + x^{46} + x^{45} + x^{44} + x^{43} + x^{42} + x^{41} + x^{40} \\
&\quad + x^{38} + x^{37} + x^{31} + x^{29} + x^{28} + x^{27}, \\
p_6(x) &= x^{146} + x^{142} + x^{140} + x^{138} + x^{134} + x^{130} + x^{128} + x^{120} + x^{118} + x^{116} \\
&\quad + x^{112} + x^{110} + x^{94} + x^{88} + x^{84} + x^{78} + x^{76} + x^{74} + x^{70} + x^{66} + x^{64} \\
&\quad + x^{62} + x^{58} + x^{52} + x^{48} + x^{42} + x^{40} + x^{38} + x^{30} + x^{24} + x^{20} + x^{18}, \\
p_9(x) &= x^{149} + x^{146} + x^{144} + x^{141} + x^{140} + x^{136} + x^{134} + x^{133} + x^{129} + x^{126} \\
&\quad + x^{125} + x^{124} + x^{122} + x^{121} + x^{101} + x^{98} + x^{96} + x^{93} + x^{92} + x^{88} \\
&\quad + x^{86} + x^{85} + x^{81} + x^{78} + x^{77} + x^{76} + x^{74} + x^{73} + x^{37} + x^{34} + x^{32} \\
&\quad + x^{29} + x^{28} + x^{24} + x^{22} + x^{21} + x^{17} + x^{14} + x^{13} + x^{12} + x^{10} + x^{9}, \\
p_{12}(x) &= x^{152} + x^{148} + x^{136} + x^{128} + x^{124} + x^{120} + x^{112} + x^{104} + x^{100} + x^{88} \\
&\quad + x^{80} + x^{76} + x^{72} + x^{64} + x^{40} + x^{36} + x^{24} + x^{16} + x^{12} + x^{8} + 1,
\end{aligned}$$

and the initial terms are [0, 0, 0, 1, 0, 1, 1, 1, 0, 1, 1, 0, 0, 0, 0, 0].

For $\phi(M^o, 1, 1)$:

$$\begin{aligned}
p_0(x) &= x^{147} + x^{146} + x^{144} + x^{143} + x^{141} + x^{133} + x^{132} + x^{129} + x^{128} + x^{126} \\
&\quad + x^{125} + x^{124} + x^{123} + x^{121} + x^{119} + x^{115} + x^{113} + x^{110} + x^{108} \\
&\quad + x^{107} + x^{104} + x^{101} + x^{99} + x^{98} + x^{97} + x^{96} + x^{95} + x^{94} + x^{93} + x^{91} \\
&\quad + x^{90} + x^{89} + x^{87} + x^{86} + x^{85} + x^{84} + x^{83} + x^{82} + x^{80} + x^{79} + x^{74} \\
&\quad + x^{73} + x^{71} + x^{70} + x^{69} + x^{68} + x^{67} + x^{66} + x^{63} + x^{61} + x^{57} + x^{56} \\
&\quad + x^{55} + x^{54} + x^{49} + x^{45} + x^{42}, \\
p_3(x) &= x^{143} + x^{142} + x^{140} + x^{138} + x^{137} + x^{136} + x^{135} + x^{133} + x^{130} + x^{128} \\
&\quad + x^{127} + x^{121} + x^{116} + x^{115} + x^{114} + x^{105} + x^{104} + x^{103} + x^{102} \\
&\quad + x^{101} + x^{100} + x^{99} + x^{98} + x^{97} + x^{96} + x^{94} + x^{91} + x^{90} + x^{89} + x^{88}
\end{aligned}$$

$$
\begin{aligned}
&+ x^{84} + x^{82} + x^{80} + x^{79} + x^{78} + x^{76} + x^{75} + x^{66} + x^{65} + x^{63} + x^{61}\\
&+ x^{59} + x^{58} + x^{57} + x^{56} + x^{55} + x^{53} + x^{50} + x^{49} + x^{46} + x^{45} + x^{44}\\
&+ x^{43} + x^{42} + x^{40} + x^{39} + x^{34} + x^{30} + x^{29} + x^{26},\\
p_6(x) &= x^{145} + x^{144} + x^{143} + x^{142} + x^{140} + x^{139} + x^{137} + x^{135} + x^{133} + x^{132}\\
&+ x^{130} + x^{126} + x^{120} + x^{116} + x^{115} + x^{114} + x^{113} + x^{112} + x^{107}\\
&+ x^{106} + x^{105} + x^{104} + x^{103} + x^{102} + x^{101} + x^{99} + x^{97} + x^{93} + x^{92}\\
&+ x^{91} + x^{89} + x^{88} + x^{86} + x^{83} + x^{81} + x^{79} + x^{77} + x^{70} + x^{69} + x^{67}\\
&+ x^{66} + x^{65} + x^{64} + x^{58} + x^{57} + x^{56} + x^{50} + x^{49} + x^{48} + x^{46} + x^{45}\\
&+ x^{44} + x^{43} + x^{36} + x^{34} + x^{29} + x^{27} + x^{25} + x^{24} + x^{23} + x^{21} + x^{20}\\
&+ x^{19} + x^{18} + x^{15} + x^{14} + x^{12} + x^{7} + x^{6} + x^{5} + x^{3} + 1,\\
p_9(x) &= x^{143} + x^{142} + x^{141} + x^{138} + x^{137} + x^{136} + x^{134} + x^{133} + x^{132} + x^{130}\\
&+ x^{129} + x^{128} + x^{127} + x^{124} + x^{95} + x^{94} + x^{93} + x^{90} + x^{89} + x^{88}\\
&+ x^{86} + x^{85} + x^{84} + x^{82} + x^{81} + x^{80} + x^{79} + x^{76} + x^{31} + x^{30} + x^{29}\\
&+ x^{26} + x^{25} + x^{24} + x^{22} + x^{21} + x^{20} + x^{18} + x^{17} + x^{16} + x^{15} + x^{12},\\
p_{12}(x) &= x^{147} + x^{146} + x^{145} + x^{143} + x^{140} + x^{135} + x^{134} + x^{133} + x^{131} + x^{128}\\
&+ x^{119} + x^{118} + x^{117} + x^{115} + x^{112} + x^{99} + x^{98} + x^{97} + x^{95} + x^{92}\\
&+ x^{87} + x^{86} + x^{85} + x^{83} + x^{80} + x^{71} + x^{70} + x^{69} + x^{67} + x^{64} + x^{35}\\
&+ x^{34} + x^{33} + x^{31} + x^{28} + x^{23} + x^{22} + x^{21} + x^{19} + x^{16} + x^{7} + x^{6} + x^{5}\\
&+ x^{3} + 1,
\end{aligned}
$$

and the initial terms are [0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 1, 0, 1, 1, 0, 1].

For $\phi(W^o, 0, 0)$:

$$
\begin{aligned}
p_0(x) &= x^{147} + x^{146} + x^{144} + x^{142} + x^{141} + x^{140} + x^{139} + x^{138} + x^{137} + x^{129}\\
&+ x^{128} + x^{125} + x^{123} + x^{122} + x^{121} + x^{118} + x^{117} + x^{116} + x^{115}\\
&+ x^{110} + x^{108} + x^{106} + x^{105} + x^{104} + x^{101} + x^{100} + x^{98} + x^{97} + x^{96}\\
&+ x^{94} + x^{91} + x^{90} + x^{89} + x^{87} + x^{86} + x^{84} + x^{82} + x^{80} + x^{79} + x^{78}\\
&+ x^{76} + x^{75} + x^{74} + x^{72} + x^{70} + x^{69} + x^{68} + x^{65} + x^{64} + x^{61} + x^{57}\\
&+ x^{56} + x^{52} + x^{51} + x^{47} + x^{45} + x^{43} + x^{42} + x^{39} + x^{38} + x^{36},\\
p_3(x) &= x^{143} + x^{142} + x^{140} + x^{139} + x^{137} + x^{134} + x^{131} + x^{130} + x^{127} + x^{125}\\
&+ x^{124} + x^{123} + x^{119} + x^{115} + x^{114} + x^{111} + x^{110} + x^{108} + x^{105}\\
&+ x^{104} + x^{100} + x^{99} + x^{95} + x^{94} + x^{92} + x^{91} + x^{90} + x^{87} + x^{83} + x^{79}\\
&+ x^{78} + x^{77} + x^{75} + x^{74} + x^{69} + x^{68} + x^{65} + x^{63} + x^{60} + x^{59} + x^{57}\\
&+ x^{56} + x^{55} + x^{52} + x^{51} + x^{50} + x^{49} + x^{48} + x^{47} + x^{45} + x^{39} + x^{35}\\
&+ x^{33} + x^{31} + x^{30} + x^{27} + x^{26} + x^{24},\\
p_6(x) &= x^{145} + x^{144} + x^{139} + x^{136} + x^{135} + x^{134} + x^{129} + x^{128} + x^{125} + x^{124}\\
&+ x^{122} + x^{121} + x^{118} + x^{116} + x^{112} + x^{111} + x^{109} + x^{107} + x^{102}
\end{aligned}
$$

$$
\begin{aligned}
&+ x^{99} + x^{98} + x^{97} + x^{95} + x^{94} + x^{93} + x^{90} + x^{89} + x^{87} + x^{84} + x^{82} \\
&+ x^{81} + x^{80} + x^{78} + x^{74} + x^{73} + x^{72} + x^{71} + x^{70} + x^{67} + x^{62} + x^{58} \\
&+ x^{55} + x^{52} + x^{50} + x^{45} + x^{44} + x^{43} + x^{41} + x^{40} + x^{38} + x^{36} + x^{34} \\
&+ x^{31} + x^{30} + x^{29} + x^{28} + x^{26} + x^{24} + x^{23} + x^{22} + x^{21} + x^{20} + x^{19} \\
&+ x^{18} + x^{17} + x^{16} + x^{14} + x^{7} + x^{6} + x^{5} + x^{3} + 1, \\
p_9(x) = {}& x^{143} + x^{142} + x^{141} + x^{138} + x^{137} + x^{136} + x^{134} + x^{133} + x^{132} + x^{130} \\
&+ x^{129} + x^{128} + x^{127} + x^{124} + x^{95} + x^{94} + x^{93} + x^{90} + x^{89} + x^{88} \\
&+ x^{86} + x^{85} + x^{84} + x^{82} + x^{81} + x^{80} + x^{79} + x^{76} + x^{31} + x^{30} + x^{29} \\
&+ x^{26} + x^{25} + x^{24} + x^{22} + x^{21} + x^{20} + x^{18} + x^{17} + x^{16} + x^{15} + x^{12}, \\
p_{12}(x) = {}& x^{147} + x^{146} + x^{145} + x^{143} + x^{140} + x^{135} + x^{134} + x^{133} + x^{131} + x^{128} \\
&+ x^{119} + x^{118} + x^{117} + x^{115} + x^{112} + x^{99} + x^{98} + x^{97} + x^{95} + x^{92} \\
&+ x^{87} + x^{86} + x^{85} + x^{83} + x^{80} + x^{71} + x^{70} + x^{69} + x^{67} + x^{64} + x^{35} \\
&+ x^{34} + x^{33} + x^{31} + x^{28} + x^{23} + x^{22} + x^{21} + x^{19} + x^{16} + x^{7} + x^{6} + x^{5} \\
&+ x^{3} + 1,
\end{aligned}
$$

and the initial terms are [1, 0, 0, 0, 0, 0, 1, 1, 1, 0, 0, 0, 1, 1, 1, 1].

For $\phi(W^o, 0, 1)$:

$$
\begin{aligned}
p_0(x) = {}& x^{152} + x^{149} + x^{145} + x^{144} + x^{140} + x^{139} + x^{137} + x^{135} + x^{131} + x^{130} \\
&+ x^{129} + x^{127} + x^{126} + x^{125} + x^{123} + x^{121} + x^{120} + x^{119} + x^{118} \\
&+ x^{114} + x^{108} + x^{107} + x^{104} + x^{100} + x^{98} + x^{97} + x^{95} + x^{93} + x^{92} \\
&+ x^{91} + x^{84} + x^{83} + x^{82} + x^{79} + x^{78} + x^{77} + x^{75} + x^{73} + x^{71} + x^{69} \\
&+ x^{66} + x^{61} + x^{60} + x^{57} + x^{55} + x^{52} + x^{50} + x^{49} + x^{46} + x^{44} + x^{43} \\
&+ x^{40} + x^{39}, \\
p_3(x) = {}& x^{143} + x^{140} + x^{138} + x^{137} + x^{133} + x^{130} + x^{128} + x^{125} + x^{124} + x^{123} \\
&+ x^{121} + x^{118} + x^{117} + x^{116} + x^{114} + x^{111} + x^{110} + x^{109} + x^{107} \\
&+ x^{104} + x^{102} + x^{98} + x^{96} + x^{95} + x^{89} + x^{87} + x^{86} + x^{85} + x^{81} + x^{78} \\
&+ x^{76} + x^{75} + x^{73} + x^{70} + x^{68} + x^{67} + x^{65} + x^{62} + x^{60} + x^{59} + x^{57} \\
&+ x^{55} + x^{54} + x^{51} + x^{50} + x^{46} + x^{45} + x^{44} + x^{43} + x^{42} + x^{41} + x^{40} \\
&+ x^{38} + x^{37} + x^{31} + x^{29} + x^{28} + x^{27}, \\
p_6(x) = {}& x^{146} + x^{142} + x^{140} + x^{138} + x^{134} + x^{130} + x^{128} + x^{120} + x^{118} + x^{116} \\
&+ x^{112} + x^{110} + x^{94} + x^{88} + x^{84} + x^{78} + x^{76} + x^{74} + x^{70} + x^{66} + x^{64} \\
&+ x^{62} + x^{58} + x^{52} + x^{48} + x^{42} + x^{40} + x^{38} + x^{30} + x^{24} + x^{20} + x^{18}, \\
p_9(x) = {}& x^{149} + x^{146} + x^{144} + x^{141} + x^{140} + x^{136} + x^{134} + x^{133} + x^{129} + x^{126} \\
&+ x^{125} + x^{124} + x^{122} + x^{121} + x^{101} + x^{98} + x^{96} + x^{93} + x^{92} + x^{88} \\
&+ x^{86} + x^{85} + x^{81} + x^{78} + x^{77} + x^{76} + x^{74} + x^{73} + x^{37} + x^{34} + x^{32} \\
&+ x^{29} + x^{28} + x^{24} + x^{22} + x^{21} + x^{17} + x^{14} + x^{13} + x^{12} + x^{10} + x^{9},
\end{aligned}
$$

$$\begin{aligned}p_{12}(x) &= x^{152} + x^{148} + x^{136} + x^{128} + x^{124} + x^{120} + x^{112} + x^{104} + x^{100} + x^{88}\\ &\quad + x^{80} + x^{76} + x^{72} + x^{64} + x^{40} + x^{36} + x^{24} + x^{16} + x^{12} + x^{8} + 1,\end{aligned}$$

and the initial terms are [0, 0, 0, 1, 0, 1, 1, 1, 0, 1, 1, 0, 0, 0, 0, 0].

For $\phi(W^o, 1, 0)$:

$$\begin{aligned}p_0(x) &= x^{156} + x^{153} + x^{152} + x^{150} + x^{146} + x^{145} + x^{144} + x^{143} + x^{142} + x^{141}\\ &\quad + x^{140} + x^{136} + x^{135} + x^{134} + x^{131} + x^{130} + x^{127} + x^{125} + x^{120}\\ &\quad + x^{118} + x^{117} + x^{116} + x^{115} + x^{112} + x^{111} + x^{109} + x^{108} + x^{106}\\ &\quad + x^{103} + x^{96} + x^{94} + x^{93} + x^{91} + x^{90} + x^{88} + x^{85} + x^{79} + x^{76} + x^{75}\\ &\quad + x^{74} + x^{73} + x^{67} + x^{66} + x^{65} + x^{64} + x^{62} + x^{60} + x^{56} + x^{55} + x^{54}\\ &\quad + x^{52} + x^{46} + x^{43} + x^{40} + x^{39},\\ p_3(x) &= x^{147} + x^{144} + x^{143} + x^{142} + x^{141} + x^{140} + x^{138} + x^{135} + x^{134} + x^{133}\\ &\quad + x^{131} + x^{128} + x^{126} + x^{123} + x^{122} + x^{119} + x^{118} + x^{117} + x^{111}\\ &\quad + x^{109} + x^{108} + x^{107} + x^{99} + x^{96} + x^{95} + x^{94} + x^{93} + x^{92} + x^{91} + x^{90}\\ &\quad + x^{88} + x^{84} + x^{83} + x^{82} + x^{80} + x^{79} + x^{77} + x^{74} + x^{72} + x^{71} + x^{69}\\ &\quad + x^{66} + x^{64} + x^{63} + x^{61} + x^{59} + x^{58} + x^{54} + x^{52} + x^{48} + x^{46} + x^{43}\\ &\quad + x^{42} + x^{39} + x^{38} + x^{37} + x^{31} + x^{29} + x^{28} + x^{27},\\ p_6(x) &= x^{150} + x^{144} + x^{140} + x^{138} + x^{126} + x^{122} + x^{120} + x^{114} + x^{112} + x^{104}\\ &\quad + x^{102} + x^{100} + x^{98} + x^{96} + x^{94} + x^{92} + x^{90} + x^{88} + x^{84} + x^{82} + x^{78}\\ &\quad + x^{74} + x^{72} + x^{64} + x^{60} + x^{52} + x^{50} + x^{48} + x^{46} + x^{44} + x^{40} + x^{34}\\ &\quad + x^{32} + x^{24} + x^{20} + x^{18},\\ p_9(x) &= x^{153} + x^{150} + x^{149} + x^{148} + x^{146} + x^{145} + x^{129} + x^{126} + x^{125} + x^{124}\\ &\quad + x^{122} + x^{121} + x^{105} + x^{102} + x^{101} + x^{100} + x^{98} + x^{97} + x^{81} + x^{78}\\ &\quad + x^{77} + x^{76} + x^{74} + x^{73} + x^{41} + x^{38} + x^{37} + x^{36} + x^{34} + x^{33} + x^{17}\\ &\quad + x^{14} + x^{13} + x^{12} + x^{10} + x^{9},\\ p_{12}(x) &= x^{156} + x^{148} + x^{144} + x^{140} + x^{136} + x^{120} + x^{112} + x^{108} + x^{100} + x^{96}\\ &\quad + x^{92} + x^{88} + x^{72} + x^{64} + x^{44} + x^{36} + x^{32} + x^{28} + x^{24} + x^{8} + 1,\end{aligned}$$

and the initial terms are [0, 0, 0, 0, 1, 0, 1, 0, 0, 0, 0, 0, 1, 0, 0, 0].

For $\phi(W^o, 1, 1)$:

$$\begin{aligned}p_0(x) &= x^{147} + x^{146} + x^{144} + x^{143} + x^{141} + x^{133} + x^{132} + x^{129} + x^{128} + x^{126}\\ &\quad + x^{125} + x^{124} + x^{123} + x^{121} + x^{119} + x^{115} + x^{113} + x^{110} + x^{108}\\ &\quad + x^{107} + x^{104} + x^{101} + x^{99} + x^{98} + x^{97} + x^{96} + x^{95} + x^{94} + x^{93} + x^{91}\\ &\quad + x^{90} + x^{89} + x^{87} + x^{86} + x^{85} + x^{84} + x^{83} + x^{82} + x^{80} + x^{79} + x^{74}\\ &\quad + x^{73} + x^{71} + x^{70} + x^{69} + x^{68} + x^{67} + x^{66} + x^{63} + x^{61} + x^{57} + x^{56}\\ &\quad + x^{55} + x^{54} + x^{49} + x^{45} + x^{42},\\ p_3(x) &= x^{143} + x^{142} + x^{140} + x^{138} + x^{137} + x^{136} + x^{135} + x^{133} + x^{130} + x^{128}\end{aligned}$$

$$
\begin{aligned}
&+ x^{127} + x^{121} + x^{116} + x^{115} + x^{114} + x^{105} + x^{104} + x^{103} + x^{102} \\
&+ x^{101} + x^{100} + x^{99} + x^{98} + x^{97} + x^{96} + x^{94} + x^{91} + x^{90} + x^{89} + x^{88} \\
&+ x^{84} + x^{82} + x^{80} + x^{79} + x^{78} + x^{76} + x^{75} + x^{66} + x^{65} + x^{63} + x^{61} \\
&+ x^{59} + x^{58} + x^{57} + x^{56} + x^{55} + x^{53} + x^{50} + x^{49} + x^{46} + x^{45} + x^{44} \\
&+ x^{43} + x^{42} + x^{40} + x^{39} + x^{34} + x^{30} + x^{29} + x^{26}, \\
p_6(x) &= x^{145} + x^{144} + x^{143} + x^{142} + x^{140} + x^{139} + x^{137} + x^{135} + x^{133} + x^{132} \\
&+ x^{130} + x^{126} + x^{120} + x^{116} + x^{115} + x^{114} + x^{113} + x^{112} + x^{107} \\
&+ x^{106} + x^{105} + x^{104} + x^{103} + x^{102} + x^{101} + x^{99} + x^{97} + x^{93} + x^{92} \\
&+ x^{91} + x^{89} + x^{88} + x^{86} + x^{83} + x^{81} + x^{79} + x^{77} + x^{70} + x^{69} + x^{67} \\
&+ x^{66} + x^{65} + x^{64} + x^{58} + x^{57} + x^{56} + x^{50} + x^{49} + x^{48} + x^{46} + x^{45} \\
&+ x^{44} + x^{43} + x^{36} + x^{34} + x^{29} + x^{27} + x^{25} + x^{24} + x^{23} + x^{21} + x^{20} \\
&+ x^{19} + x^{18} + x^{15} + x^{14} + x^{12} + x^{7} + x^{6} + x^{5} + x^{3} + 1, \\
p_9(x) &= x^{143} + x^{142} + x^{141} + x^{138} + x^{137} + x^{136} + x^{134} + x^{133} + x^{132} + x^{130} \\
&+ x^{129} + x^{128} + x^{127} + x^{124} + x^{95} + x^{94} + x^{93} + x^{90} + x^{89} + x^{88} \\
&+ x^{86} + x^{85} + x^{84} + x^{82} + x^{81} + x^{80} + x^{79} + x^{76} + x^{31} + x^{30} + x^{29} \\
&+ x^{26} + x^{25} + x^{24} + x^{22} + x^{21} + x^{20} + x^{18} + x^{17} + x^{16} + x^{15} + x^{12}, \\
p_{12}(x) &= x^{147} + x^{146} + x^{145} + x^{143} + x^{140} + x^{135} + x^{134} + x^{133} + x^{131} + x^{128} \\
&+ x^{119} + x^{118} + x^{117} + x^{115} + x^{112} + x^{99} + x^{98} + x^{97} + x^{95} + x^{92} \\
&+ x^{87} + x^{86} + x^{85} + x^{83} + x^{80} + x^{71} + x^{70} + x^{69} + x^{67} + x^{64} + x^{35} \\
&+ x^{34} + x^{33} + x^{31} + x^{28} + x^{23} + x^{22} + x^{21} + x^{19} + x^{16} + x^{7} + x^{6} + x^{5} \\
&+ x^{3} + 1,
\end{aligned}
$$

and the initial terms are [0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 1, 0, 1, 1, 0, 1].

Below is the transition function and output function of an 2-automaton that generates $T = M^o_{0,0}$:

Transition function $(n, j) \mapsto \delta(n, j)$ $(\Lambda(n) := [\delta(n, 0), \delta(n, 1)])$:

n	$\Lambda(n)$	n	$\Lambda(n)$	n	$\Lambda(n)$	n	$\Lambda(n)$
0	[1, 2]	1017	[1682, 1796]	2034	[2960, 95]	3051	[1819, 1811]
1	[3, 4]	1018	[1797, 1651]	2035	[989, 413]	3052	[2033, 2096]
2	[5, 6]	1019	[1798, 1799]	2036	[2961, 2815]	3053	[3582, 1964]
3	[7, 8]	1020	[1800, 519]	2037	[2834, 2962]	3054	[219, 2107]
4	[9, 10]	1021	[745, 1801]	2038	[96, 2963]	3055	[2219, 3372]
5	[11, 12]	1022	[1675, 1802]	2039	[2964, 2965]	3056	[2091, 695]
6	[13, 14]	1023	[548, 1803]	2040	[2690, 2966]	3057	[1654, 2022]
7	[15, 16]	1024	[1641, 1804]	2041	[2967, 2968]	3058	[2171, 612]
8	[17, 18]	1025	[168, 1805]	2042	[2969, 2970]	3059	[2208, 1683]
9	[19, 20]	1026	[1806, 1807]	2043	[2971, 2972]	3060	[700, 221]
10	[21, 22]	1027	[802, 1808]	2044	[2973, 2974]	3061	[185, 3570]
11	[23, 24]	1028	[1809, 1810]	2045	[2975, 1087]	3062	[651, 3509]

12	[25, 26]	1029	[1811, 1652]	2046	[2814, 2893]	3063	[1755, 1622]
13	[27, 28]	1030	[211, 218]	2047	[2358, 2395]	3064	[10, 2142]
14	[29, 30]	1031	[1812, 705]	2048	[2976, 2977]	3065	[2088, 829]
15	[31, 32]	1032	[1682, 1791]	2049	[2978, 2979]	3066	[57, 1719]
16	[33, 34]	1033	[1813, 1814]	2050	[1273, 2980]	3067	[3467, 2051]
17	[35, 36]	1034	[1815, 1816]	2051	[2981, 1179]	3068	[2271, 1671]
18	[37, 38]	1035	[1817, 1676]	2052	[2650, 2982]	3069	[826, 854]
19	[39, 40]	1036	[511, 649]	2053	[2983, 2415]	3070	[699, 3464]
20	[41, 42]	1037	[766, 667]	2054	[2984, 1549]	3071	[1737, 3351]
21	[43, 44]	1038	[1818, 1819]	2055	[2985, 2986]	3072	[3593, 3448]
22	[45, 46]	1039	[1742, 1820]	2056	[2506, 2987]	3073	[2164, 2032]
23	[47, 48]	1040	[768, 1821]	2057	[983, 2988]	3074	[1721, 2072]
24	[49, 50]	1041	[680, 53]	2058	[2989, 2547]	3075	[3385, 545]
25	[51, 52]	1042	[1822, 707]	2059	[2990, 2991]	3076	[731, 736]
26	[53, 54]	1043	[150, 1823]	2060	[2370, 2992]	3077	[3419, 712]
27	[55, 56]	1044	[1824, 1825]	2061	[2993, 1321]	3078	[2080, 2275]
28	[57, 58]	1045	[721, 192]	2062	[2994, 2995]	3079	[3573, 705]
29	[59, 60]	1046	[1826, 564]	2063	[2996, 2748]	3080	[2189, 3602]
30	[61, 62]	1047	[213, 1827]	2064	[2997, 2998]	3081	[3603, 788]
31	[63, 64]	1048	[754, 1714]	2065	[2999, 2644]	3082	[3604, 3524]
32	[65, 66]	1049	[1828, 1829]	2066	[342, 3000]	3083	[3605, 2262]
33	[67, 68]	1050	[1830, 1831]	2067	[3001, 3002]	3084	[1650, 186]
34	[69, 70]	1051	[1832, 1716]	2068	[3003, 3004]	3085	[3480, 558]
35	[71, 72]	1052	[1833, 1793]	2069	[3005, 3006]	3086	[1645, 3421]
36	[73, 74]	1053	[776, 1701]	2070	[2453, 3007]	3087	[547, 728]
37	[75, 76]	1054	[824, 165]	2071	[3008, 3009]	3088	[150, 3534]
38	[77, 78]	1055	[1834, 1831]	2072	[3010, 3011]	3089	[2189, 2189]
39	[79, 80]	1056	[1835, 1836]	2073	[3012, 3013]	3090	[3606, 1790]
40	[81, 82]	1057	[671, 797]	2074	[3014, 2437]	3091	[684, 3607]
41	[83, 84]	1058	[1837, 1838]	2075	[2991, 3015]	3092	[1704, 650]
42	[85, 86]	1059	[1839, 14]	2076	[3016, 3017]	3093	[1836, 2065]
43	[87, 88]	1060	[509, 1840]	2077	[3018, 3019]	3094	[1628, 213]
44	[89, 90]	1061	[1841, 1842]	2078	[3020, 3021]	3095	[1828, 588]
45	[91, 92]	1062	[500, 1674]	2079	[3022, 2454]	3096	[3409, 3608]
46	[93, 94]	1063	[1843, 526]	2080	[3023, 3024]	3097	[1634, 2074]
47	[95, 96]	1064	[187, 809]	2081	[3025, 3026]	3098	[1661, 691]
48	[97, 98]	1065	[1844, 1845]	2082	[3027, 3028]	3099	[1940, 2127]
49	[99, 100]	1066	[1846, 1770]	2083	[1105, 3029]	3100	[2278, 3416]
50	[101, 102]	1067	[1847, 1848]	2084	[3030, 3031]	3101	[494, 3430]
51	[103, 104]	1068	[844, 1849]	2085	[3032, 3033]	3102	[2010, 3512]
52	[105, 106]	1069	[1850, 236]	2086	[3034, 3035]	3103	[205, 3609]
53	[107, 108]	1070	[1851, 1757]	2087	[3036, 1270]	3104	[141, 3473]
54	[109, 110]	1071	[1852, 1853]	2088	[1525, 3037]	3105	[1668, 855]
55	[111, 112]	1072	[232, 1854]	2089	[3038, 1422]	3106	[1837, 611]

56	[113, 114]	1073	[1855, 517]	2090	[66, 3039]	3107	[3610, 11]
57	[115, 116]	1074	[1856, 1857]	2091	[3040, 3041]	3108	[1989, 1884]
58	[117, 118]	1075	[1834, 1858]	2092	[3042, 3043]	3109	[1819, 131]
59	[119, 120]	1076	[1859, 1860]	2093	[2914, 3044]	3110	[1864, 1908]
60	[121, 122]	1077	[1861, 1862]	2094	[3045, 3046]	3111	[170, 166]
61	[123, 124]	1078	[1863, 843]	2095	[3047, 1562]	3112	[2006, 3513]
62	[125, 126]	1079	[1864, 143]	2096	[3048, 3049]	3113	[3353, 3539]
63	[127, 128]	1080	[1865, 1821]	2097	[3050, 3051]	3114	[3572, 3595]
64	[129, 130]	1081	[652, 1705]	2098	[1193, 3052]	3115	[148, 3611]
65	[131, 132]	1082	[640, 1866]	2099	[3053, 3054]	3116	[3450, 3542]
66	[133, 134]	1083	[1867, 1868]	2100	[3055, 3056]	3117	[3421, 796]
67	[135, 136]	1084	[547, 1869]	2101	[1359, 3057]	3118	[3562, 1992]
68	[137, 138]	1085	[539, 1870]	2102	[2304, 1019]	3119	[597, 3404]
69	[139, 140]	1086	[1871, 1872]	2103	[3058, 1127]	3120	[707, 857]
70	[141, 142]	1087	[1873, 1831]	2104	[3059, 3060]	3121	[725, 825]
71	[143, 144]	1088	[1751, 751]	2105	[1259, 3061]	3122	[1876, 619]
72	[145, 146]	1089	[1874, 549]	2106	[2955, 3022]	3123	[3612, 3611]
73	[147, 148]	1090	[820, 658]	2107	[3062, 3063]	3124	[2184, 2168]
74	[149, 150]	1091	[510, 1875]	2108	[3064, 3065]	3125	[2260, 3538]
75	[151, 152]	1092	[1876, 491]	2109	[272, 3066]	3126	[3354, 1687]
76	[153, 154]	1093	[1804, 1834]	2110	[3067, 3068]	3127	[157, 585]
77	[155, 156]	1094	[160, 736]	2111	[452, 3069]	3128	[1693, 1679]
78	[157, 158]	1095	[1877, 853]	2112	[3070, 3071]	3129	[3408, 800]
79	[159, 160]	1096	[1878, 602]	2113	[3072, 3073]	3130	[3613, 1929]
80	[161, 162]	1097	[655, 1879]	2114	[3074, 3075]	3131	[1668, 2066]
81	[163, 164]	1098	[1880, 758]	2115	[3009, 3076]	3132	[3516, 2226]
82	[165, 166]	1099	[811, 1881]	2116	[1183, 3077]	3133	[663, 3460]
83	[167, 168]	1100	[1882, 46]	2117	[3078, 3079]	3134	[205, 2239]
84	[169, 170]	1101	[165, 1883]	2118	[3080, 3081]	3135	[3614, 2039]
85	[171, 172]	1102	[1884, 785]	2119	[3082, 3083]	3136	[3615, 1624]
86	[173, 174]	1103	[564, 190]	2120	[3084, 3005]	3137	[782, 197]
87	[175, 176]	1104	[1885, 1886]	2121	[3085, 3086]	3138	[3519, 3616]
88	[177, 178]	1105	[565, 1887]	2122	[3087, 3088]	3139	[2235, 744]
89	[179, 180]	1106	[33, 1888]	2123	[3089, 2804]	3140	[3385, 1755]
90	[181, 182]	1107	[1889, 805]	2124	[3090, 3091]	3141	[3421, 46]
91	[183, 184]	1108	[1863, 1890]	2125	[3092, 2913]	3142	[615, 781]
92	[185, 186]	1109	[1807, 700]	2126	[3093, 3094]	3143	[3617, 803]
93	[187, 188]	1110	[841, 1891]	2127	[3095, 473]	3144	[831, 1862]
94	[189, 190]	1111	[494, 1815]	2128	[1253, 307]	3145	[1700, 2290]
95	[191, 192]	1112	[570, 1892]	2129	[3096, 3097]	3146	[2234, 1797]
96	[193, 194]	1113	[1893, 748]	2130	[3098, 3099]	3147	[3459, 2201]
97	[195, 196]	1114	[1894, 883]	2131	[3100, 2722]	3148	[3618, 3609]
98	[197, 198]	1115	[1895, 1896]	2132	[481, 3101]	3149	[1789, 1713]
99	[199, 200]	1116	[510, 1897]	2133	[3102, 3103]	3150	[1642, 1919]

100	[201, 202]	1117	[727, 1898]	2134	[3104, 3105]	3151	[1847, 3427]
101	[203, 204]	1118	[1899, 192]	2135	[3106, 3107]	3152	[2219, 3441]
102	[205, 206]	1119	[1873, 1858]	2136	[2360, 3108]	3153	[2004, 542]
103	[207, 208]	1120	[41, 1900]	2137	[3109, 3110]	3154	[2252, 2221]
104	[209, 210]	1121	[1901, 868]	2138	[3111, 3112]	3155	[2183, 1974]
105	[211, 212]	1122	[1902, 1903]	2139	[3113, 285]	3156	[2181, 1942]
106	[213, 214]	1123	[1904, 206]	2140	[3114, 3115]	3157	[1973, 719]
107	[215, 198]	1124	[1678, 1905]	2141	[3116, 3117]	3158	[3618, 2239]
108	[216, 217]	1125	[749, 1633]	2142	[3118, 2371]	3159	[1689, 1933]
109	[218, 219]	1126	[1906, 551]	2143	[1213, 3119]	3160	[182, 3497]
110	[220, 221]	1127	[1907, 1908]	2144	[3044, 3120]	3161	[3365, 3496]
111	[222, 223]	1128	[1705, 1909]	2145	[3121, 3122]	3162	[3507, 2282]
112	[224, 225]	1129	[1663, 1702]	2146	[3123, 3124]	3163	[3615, 509]
113	[226, 227]	1130	[1910, 576]	2147	[3125, 3126]	3164	[1774, 3619]
114	[228, 229]	1131	[1911, 8]	2148	[3127, 2791]	3165	[1732, 2021]
115	[9, 230]	1132	[1912, 1913]	2149	[3128, 3129]	3166	[581, 130]
116	[231, 232]	1133	[1914, 1915]	2150	[2723, 2889]	3167	[3389, 3482]
117	[233, 234]	1134	[1916, 1681]	2151	[3130, 3131]	3168	[234, 3572]
118	[235, 236]	1135	[1917, 583]	2152	[3132, 3133]	3169	[1664, 2227]
119	[237, 238]	1136	[867, 1918]	2153	[3134, 3135]	3170	[590, 1986]
120	[239, 240]	1137	[133, 1853]	2154	[2607, 403]	3171	[160, 2141]
121	[241, 242]	1138	[1878, 234]	2155	[3136, 3137]	3172	[732, 538]
122	[243, 244]	1139	[1919, 1920]	2156	[3138, 3139]	3173	[1654, 3497]
123	[245, 246]	1140	[811, 1921]	2157	[3140, 263]	3174	[1903, 1860]
124	[247, 246]	1141	[1922, 1921]	2158	[312, 2479]	3175	[3396, 3620]
125	[129, 248]	1142	[1923, 1735]	2159	[3141, 2976]	3176	[3374, 1837]
126	[249, 250]	1143	[1880, 584]	2160	[3142, 2716]	3177	[3603, 3353]
127	[251, 252]	1144	[1924, 1925]	2161	[3143, 1560]	3178	[3539, 848]
128	[253, 254]	1145	[1926, 1927]	2162	[1593, 3144]	3179	[3369, 3621]
129	[255, 256]	1146	[1928, 1929]	2163	[940, 3145]	3180	[3605, 3604]
130	[257, 258]	1147	[1930, 1931]	2164	[3146, 3147]	3181	[789, 3530]
131	[259, 260]	1148	[1932, 1933]	2165	[3148, 3149]	3182	[3604, 3603]
132	[261, 262]	1149	[1934, 1935]	2166	[3150, 3151]	3183	[3353, 3549]
133	[263, 264]	1150	[1936, 818]	2167	[3152, 3153]	3184	[1886, 3621]
134	[265, 266]	1151	[1937, 1938]	2168	[2402, 3154]	3185	[628, 556]
135	[267, 268]	1152	[1939, 767]	2169	[3155, 1615]	3186	[1738, 3355]
136	[269, 270]	1153	[1940, 1941]	2170	[3151, 3156]	3187	[3563, 1888]
137	[271, 272]	1154	[1942, 1943]	2171	[2474, 3157]	3188	[850, 1949]
138	[273, 274]	1155	[1944, 1945]	2172	[3158, 1303]	3189	[181, 2153]
139	[275, 276]	1156	[810, 1946]	2173	[2493, 1579]	3190	[2038, 1896]
140	[277, 278]	1157	[1947, 551]	2174	[3159, 3160]	3191	[2015, 3373]
141	[279, 280]	1158	[1948, 1949]	2175	[3161, 3162]	3192	[1923, 3393]
142	[281, 282]	1159	[1785, 154]	2176	[3163, 1059]	3193	[3375, 3434]
143	[283, 284]	1160	[1950, 1761]	2177	[3164, 3165]	3194	[3576, 561]

144	[285, 286]	1161	[1951, 213]	2178	[3166, 3167]	3195	[3617, 1808]
145	[287, 288]	1162	[1952, 1953]	2179	[3168, 3169]	3196	[858, 599]
146	[289, 290]	1163	[625, 1954]	2180	[3170, 3171]	3197	[3408, 807]
147	[291, 292]	1164	[1942, 1955]	2181	[3172, 2816]	3198	[2121, 1854]
148	[293, 294]	1165	[1956, 1957]	2182	[2387, 3173]	3199	[1662, 1962]
149	[295, 296]	1166	[1958, 250]	2183	[328, 960]	3200	[3495, 167]
150	[297, 298]	1167	[1643, 1920]	2184	[3174, 3175]	3201	[3622, 3485]
151	[299, 300]	1168	[518, 175]	2185	[2398, 3176]	3202	[3591, 491]
152	[301, 302]	1169	[1959, 1960]	2186	[2966, 1323]	3203	[1895, 2180]
153	[303, 304]	1170	[1843, 719]	2187	[3177, 3178]	3204	[216, 3391]
154	[305, 306]	1171	[739, 830]	2188	[3179, 3180]	3205	[3623, 2018]
155	[307, 308]	1172	[43, 1961]	2189	[3181, 3182]	3206	[609, 781]
156	[309, 310]	1173	[1962, 1963]	2190	[3183, 3184]	3207	[3572, 1965]
157	[311, 312]	1174	[1667, 1964]	2191	[2306, 3185]	3208	[3429, 683]
158	[313, 314]	1175	[603, 1965]	2192	[1296, 1184]	3209	[174, 2066]
159	[315, 316]	1176	[605, 1966]	2193	[969, 3186]	3210	[2079, 533]
160	[317, 318]	1177	[539, 641]	2194	[2322, 3187]	3211	[607, 2057]
161	[319, 320]	1178	[724, 133]	2195	[3188, 3189]	3212	[1836, 230]
162	[321, 322]	1179	[1967, 843]	2196	[2749, 2399]	3213	[3369, 2262]
163	[323, 324]	1180	[1968, 1785]	2197	[3190, 3191]	3214	[139, 2005]
164	[325, 326]	1181	[1969, 1970]	2198	[1242, 3192]	3215	[2156, 3624]
165	[327, 328]	1182	[1971, 791]	2199	[3193, 3194]	3216	[883, 230]
166	[329, 330]	1183	[1972, 555]	2200	[425, 459]	3217	[42, 732]
167	[331, 332]	1184	[1973, 1974]	2201	[3195, 3196]	3218	[543, 1919]
168	[252, 333]	1185	[1776, 1975]	2202	[3197, 3198]	3219	[3604, 3625]
169	[334, 329]	1186	[1976, 1908]	2203	[3199, 3200]	3220	[3418, 637]
170	[335, 336]	1187	[155, 1977]	2204	[3201, 3202]	3221	[2289, 599]
171	[337, 338]	1188	[1978, 501]	2205	[3203, 3204]	3222	[1785, 3540]
172	[339, 340]	1189	[1979, 572]	2206	[3205, 3206]	3223	[3626, 1968]
173	[341, 342]	1190	[1980, 1877]	2207	[3207, 3208]	3224	[2204, 1848]
174	[343, 344]	1191	[1771, 1752]	2208	[3209, 3210]	3225	[1698, 3583]
175	[345, 346]	1192	[1981, 1730]	2209	[3211, 3212]	3226	[513, 1758]
176	[347, 348]	1193	[1982, 224]	2210	[3213, 2422]	3227	[3388, 3627]
177	[349, 350]	1194	[1983, 1984]	2211	[1591, 3214]	3228	[803, 1912]
178	[351, 352]	1195	[1985, 1986]	2212	[3215, 3216]	3229	[3610, 1681]
179	[353, 354]	1196	[797, 1987]	2213	[3217, 3218]	3230	[2214, 2081]
180	[355, 356]	1197	[1988, 642]	2214	[1507, 2516]	3231	[2176, 1891]
181	[357, 358]	1198	[1989, 672]	2215	[3219, 3220]	3232	[1797, 744]
182	[359, 360]	1199	[1990, 539]	2216	[3221, 3222]	3233	[879, 1825]
183	[314, 361]	1200	[1991, 1992]	2217	[3223, 3224]	3234	[2270, 1819]
184	[362, 363]	1201	[1993, 1994]	2218	[3225, 3226]	3235	[833, 618]
185	[364, 365]	1202	[1901, 1918]	2219	[3227, 3228]	3236	[3536, 2085]
186	[366, 367]	1203	[1995, 1996]	2220	[3229, 2530]	3237	[1867, 164]
187	[368, 369]	1204	[1997, 1925]	2221	[3230, 3231]	3238	[3590, 2108]

188	[370, 371]	1205	[183, 1918]	2222	[3147, 3232]	3239	[3599, 2133]
189	[372, 373]	1206	[55, 1998]	2223	[3233, 3234]	3240	[827, 3627]
190	[374, 375]	1207	[1645, 45]	2224	[3235, 3236]	3241	[3354, 3395]
191	[376, 377]	1208	[1937, 1960]	2225	[3237, 3238]	3242	[3553, 3502]
192	[378, 379]	1209	[1999, 2000]	2226	[3239, 3240]	3243	[2055, 3474]
193	[380, 381]	1210	[173, 2001]	2227	[3241, 2386]	3244	[1951, 734]
194	[382, 383]	1211	[2002, 2003]	2228	[3242, 3243]	3245	[3364, 184]
195	[262, 384]	1212	[2004, 597]	2229	[3244, 3245]	3246	[1979, 3570]
196	[385, 386]	1213	[1726, 2005]	2230	[3246, 3247]	3247	[1990, 3384]
197	[387, 388]	1214	[2006, 2007]	2231	[260, 432]	3248	[2200, 1954]
198	[389, 390]	1215	[1670, 2008]	2232	[3248, 3249]	3249	[1689, 2150]
199	[391, 392]	1216	[2009, 547]	2233	[3250, 1203]	3250	[201, 2269]
200	[393, 394]	1217	[2010, 143]	2234	[3251, 1363]	3251	[1668, 1662]
201	[395, 396]	1218	[578, 1717]	2235	[3252, 2345]	3252	[3491, 1851]
202	[397, 398]	1219	[2011, 2012]	2236	[3253, 978]	3253	[3628, 3490]
203	[399, 400]	1220	[756, 1640]	2237	[3254, 3255]	3254	[3629, 3479]
204	[401, 402]	1221	[2013, 1811]	2238	[3256, 3257]	3255	[3394, 1739]
205	[403, 404]	1222	[2014, 2015]	2239	[3258, 3259]	3256	[525, 3402]
206	[405, 406]	1223	[2016, 1884]	2240	[3260, 3261]	3257	[3557, 3520]
207	[407, 408]	1224	[676, 1796]	2241	[3262, 3263]	3258	[1975, 2036]
208	[409, 410]	1225	[2017, 2018]	2242	[2519, 1456]	3259	[3576, 2176]
209	[411, 412]	1226	[850, 2019]	2243	[3264, 3265]	3260	[3447, 520]
210	[413, 414]	1227	[2020, 2021]	2244	[3266, 3267]	3261	[2142, 1858]
211	[415, 416]	1228	[551, 2022]	2245	[3268, 3269]	3262	[1657, 582]
212	[417, 418]	1229	[2023, 223]	2246	[3270, 3271]	3263	[829, 3436]
213	[419, 420]	1230	[2024, 2025]	2247	[3272, 3273]	3264	[3563, 34]
214	[421, 275]	1231	[2026, 2027]	2248	[3274, 3275]	3265	[808, 1970]
215	[422, 423]	1232	[815, 2028]	2249	[3276, 3277]	3266	[3605, 3621]
216	[424, 425]	1233	[177, 767]	2250	[3278, 3279]	3267	[2029, 36]
217	[426, 427]	1234	[2029, 2030]	2251	[3280, 3281]	3268	[3630, 1725]
218	[428, 429]	1235	[627, 2020]	2252	[3282, 3283]	3269	[3631, 716]
219	[430, 431]	1236	[2031, 2032]	2253	[2962, 3284]	3270	[2038, 2003]
220	[432, 433]	1237	[2033, 791]	2254	[3285, 3286]	3271	[1856, 3568]
221	[434, 435]	1238	[12, 677]	2255	[3287, 71]	3272	[1830, 777]
222	[436, 437]	1239	[1928, 2034]	2256	[3288, 3289]	3273	[1692, 3632]
223	[268, 438]	1240	[2035, 209]	2257	[3290, 3291]	3274	[1928, 3620]
224	[439, 440]	1241	[657, 2036]	2258	[1271, 3292]	3275	[3386, 3373]
225	[441, 376]	1242	[877, 2037]	2259	[2590, 3293]	3276	[861, 194]
226	[30, 442]	1243	[48, 2038]	2260	[3294, 3177]	3277	[3425, 864]
227	[443, 444]	1244	[2039, 2040]	2261	[1446, 3295]	3278	[47, 3405]
228	[445, 446]	1245	[2041, 1640]	2262	[3296, 3297]	3279	[2259, 595]
229	[447, 448]	1246	[657, 2042]	2263	[3298, 3299]	3280	[536, 2243]
230	[449, 450]	1247	[1818, 2013]	2264	[3083, 3296]	3281	[1646, 2233]
231	[451, 452]	1248	[2043, 663]	2265	[350, 3300]	3282	[3511, 2296]

232	[453, 454]	1249	[737, 539]	2266	[3301, 3302]	3283	[3614, 585]
233	[455, 456]	1250	[219, 1986]	2267	[3303, 2466]	3284	[152, 504]
234	[457, 458]	1251	[600, 2044]	2268	[3304, 1291]	3285	[3428, 2266]
235	[459, 460]	1252	[2045, 591]	2269	[3305, 1188]	3286	[3633, 1683]
236	[461, 462]	1253	[2046, 2047]	2270	[3306, 3307]	3287	[148, 613]
237	[463, 464]	1254	[230, 1834]	2271	[3308, 3309]	3288	[3634, 1795]
238	[465, 466]	1255	[2048, 209]	2272	[3310, 3311]	3289	[1880, 534]
239	[467, 468]	1256	[13, 2049]	2273	[3049, 3312]	3290	[1909, 659]
240	[469, 470]	1257	[1748, 1867]	2274	[3313, 1065]	3291	[802, 588]
241	[471, 472]	1258	[1776, 657]	2275	[3314, 3315]	3292	[1770, 1684]
242	[473, 474]	1259	[2050, 2051]	2276	[1068, 3316]	3293	[2169, 884]
243	[475, 476]	1260	[510, 784]	2277	[3317, 3318]	3294	[3589, 3539]
244	[477, 478]	1261	[1831, 2052]	2278	[3319, 2833]	3295	[2119, 2261]
245	[479, 480]	1262	[2053, 1691]	2279	[3320, 927]	3296	[3524, 2118]
246	[76, 481]	1263	[2054, 2055]	2280	[3321, 1397]	3297	[2262, 3625]
247	[482, 483]	1264	[1865, 1782]	2281	[3322, 3323]	3298	[2118, 789]
248	[484, 485]	1265	[2056, 1707]	2282	[3324, 99]	3299	[3440, 2189]
249	[486, 487]	1266	[602, 647]	2283	[3325, 3326]	3300	[245, 2143]
250	[488, 489]	1267	[736, 606]	2284	[3327, 3328]	3301	[1850, 3556]
251	[490, 491]	1268	[640, 2057]	2285	[3329, 3330]	3302	[228, 3559]
252	[492, 493]	1269	[2058, 2059]	2286	[3331, 3332]	3303	[3635, 174]
253	[494, 150]	1270	[2060, 40]	2287	[3333, 3334]	3304	[2076, 1794]
254	[495, 156]	1271	[1859, 1743]	2288	[3335, 3336]	3305	[3577, 2219]
255	[496, 497]	1272	[777, 730]	2289	[996, 321]	3306	[724, 1852]
256	[498, 499]	1273	[1871, 2061]	2290	[1261, 3337]	3307	[3577, 1975]
257	[500, 501]	1274	[782, 1855]	2291	[3338, 271]	3308	[3479, 2097]
258	[502, 503]	1275	[186, 2062]	2292	[3339, 3340]	3309	[2149, 3478]
259	[504, 242]	1276	[2063, 2064]	2293	[354, 3341]	3310	[32, 2185]
260	[505, 506]	1277	[1641, 2065]	2294	[3342, 3343]	3311	[1680, 1801]
261	[507, 508]	1278	[2066, 1962]	2295	[3344, 2639]	3312	[2028, 1629]
262	[509, 510]	1279	[196, 1704]	2296	[3345, 3346]	3313	[630, 2232]
263	[511, 512]	1280	[1642, 51]	2297	[3347, 3348]	3314	[2194, 3612]
264	[513, 514]	1281	[2048, 2067]	2298	[3349, 1751]	3315	[633, 623]
265	[515, 516]	1282	[226, 2068]	2299	[1999, 2172]	3316	[3516, 1941]
266	[197, 517]	1283	[1629, 214]	2300	[3350, 2181]	3317	[617, 2272]
267	[518, 519]	1284	[2039, 2069]	2301	[1771, 3351]	3318	[817, 3407]
268	[520, 521]	1285	[2070, 829]	2302	[1889, 2199]	3319	[211, 2099]
269	[522, 523]	1286	[2071, 2072]	2303	[2227, 1869]	3320	[562, 533]
270	[524, 525]	1287	[2073, 2074]	2304	[3351, 3352]	3321	[2140, 3387]
271	[526, 527]	1288	[1980, 231]	2305	[2263, 3353]	3322	[858, 172]
272	[528, 529]	1289	[195, 793]	2306	[3354, 3355]	3323	[3416, 813]
273	[530, 531]	1290	[2009, 1665]	2307	[2087, 692]	3324	[603, 3595]
274	[33, 532]	1291	[1888, 2075]	2308	[1638, 1810]	3325	[215, 2209]
275	[533, 534]	1292	[1844, 765]	2309	[1697, 3356]	3326	[1992, 3499]

276	[53, 535]	1293	[2076, 2077]	2310	[1684, 3357]	3327	[722, 2173]
277	[536, 537]	1294	[2078, 692]	2311	[3358, 834]	3328	[178, 2265]
278	[538, 539]	1295	[620, 140]	2312	[3359, 175]	3329	[3625, 2118]
279	[540, 541]	1296	[1787, 1776]	2313	[2214, 573]	3330	[2200, 3564]
280	[542, 543]	1297	[738, 829]	2314	[1865, 769]	3331	[1963, 1703]
281	[544, 545]	1298	[2079, 583]	2315	[3360, 2280]	3332	[1914, 2123]
282	[546, 547]	1299	[1762, 737]	2316	[648, 512]	3333	[830, 775]
283	[520, 221]	1300	[2080, 851]	2317	[574, 3361]	3334	[886, 1650]
284	[548, 549]	1301	[186, 2081]	2318	[516, 47]	3335	[732, 1990]
285	[550, 180]	1302	[819, 2082]	2319	[783, 3362]	3336	[826, 697]
286	[551, 552]	1303	[1974, 2083]	2320	[199, 2203]	3337	[1836, 10]
287	[553, 554]	1304	[2084, 2085]	2321	[12, 3363]	3338	[3583, 3525]
288	[555, 556]	1305	[772, 845]	2322	[1941, 241]	3339	[717, 3540]
289	[557, 558]	1306	[2054, 710]	2323	[814, 699]	3340	[1925, 1877]
290	[559, 560]	1307	[1800, 499]	2324	[3364, 868]	3341	[2234, 2013]
291	[561, 562]	1308	[12, 1796]	2325	[61, 146]	3342	[1912, 1666]
292	[563, 564]	1309	[1904, 2086]	2326	[163, 1868]	3343	[3626, 716]
293	[565, 566]	1310	[2087, 694]	2327	[2267, 1855]	3344	[642, 3437]
294	[567, 568]	1311	[543, 51]	2328	[544, 2015]	3345	[1652, 3607]
295	[569, 222]	1312	[2050, 770]	2329	[744, 684]	3346	[3574, 3561]
296	[570, 571]	1313	[616, 782]	2330	[686, 2071]	3347	[1622, 858]
297	[572, 573]	1314	[2088, 2089]	2331	[3365, 3366]	3348	[3375, 2297]
298	[574, 575]	1315	[866, 2090]	2332	[588, 2105]	3349	[3636, 305]
299	[576, 577]	1316	[2091, 2092]	2333	[563, 189]	3350	[3637, 1487]
300	[562, 578]	1317	[1946, 2093]	2334	[1822, 1980]	3351	[3638, 3639]
301	[579, 580]	1318	[2094, 1659]	2335	[2113, 3367]	3352	[2490, 3640]
302	[581, 582]	1319	[153, 1786]	2336	[143, 3368]	3353	[3641, 3642]
303	[583, 584]	1320	[141, 2095]	2337	[2264, 3369]	3354	[326, 921]
304	[585, 586]	1321	[790, 2096]	2338	[2274, 1949]	3355	[3643, 3644]
305	[587, 588]	1322	[38, 2097]	2339	[3370, 3371]	3356	[2674, 3645]
306	[589, 590]	1323	[1792, 865]	2340	[1975, 3372]	3357	[64, 3646]
307	[591, 592]	1324	[2098, 1695]	2341	[3373, 858]	3358	[3647, 3648]
308	[593, 594]	1325	[661, 1954]	2342	[579, 3374]	3359	[3649, 3650]
309	[132, 595]	1326	[37, 245]	2343	[32, 3375]	3360	[3651, 3652]
310	[596, 597]	1327	[1829, 1912]	2344	[577, 1721]	3361	[3653, 3654]
311	[11, 598]	1328	[2099, 1712]	2345	[226, 2025]	3362	[3103, 3655]
312	[134, 197]	1329	[544, 1755]	2346	[504, 2046]	3363	[3200, 3656]
313	[599, 162]	1330	[2043, 2100]	2347	[3376, 3377]	3364	[3657, 1201]
314	[600, 601]	1331	[874, 523]	2348	[836, 1694]	3365	[1150, 3658]
315	[602, 603]	1332	[189, 2101]	2349	[2087, 2286]	3366	[3659, 3660]
316	[604, 605]	1333	[2102, 2103]	2350	[572, 3378]	3367	[74, 3661]
317	[606, 607]	1334	[2104, 247]	2351	[1941, 1660]	3368	[2870, 3662]
318	[608, 609]	1335	[1951, 1749]	2352	[761, 675]	3369	[3663, 3664]
319	[610, 611]	1336	[2105, 1666]	2353	[2017, 575]	3370	[3665, 3666]

320	[612, 613]	1337	[1960, 2106]	2354	[1900, 732]	3371	[3667, 907]
321	[219, 614]	1338	[1712, 2107]	2355	[774, 3379]	3372	[2489, 3668]
322	[615, 616]	1339	[653, 821]	2356	[1765, 2043]	3373	[3028, 339]
323	[617, 618]	1340	[659, 1895]	2357	[865, 3357]	3374	[3669, 325]
324	[619, 620]	1341	[546, 727]	2358	[3380, 589]	3375	[2542, 937]
325	[621, 622]	1342	[2108, 1726]	2359	[2293, 656]	3376	[3670, 3671]
326	[623, 624]	1343	[659, 2038]	2360	[209, 1882]	3377	[3672, 252]
327	[625, 626]	1344	[2109, 2110]	2361	[169, 165]	3378	[2342, 3322]
328	[627, 628]	1345	[128, 1763]	2362	[3381, 9]	3379	[2888, 3673]
329	[629, 630]	1346	[230, 1873]	2363	[1985, 3382]	3380	[3674, 3675]
330	[631, 632]	1347	[232, 2111]	2364	[1925, 231]	3381	[3676, 2999]
331	[633, 634]	1348	[2112, 2113]	2365	[1685, 2184]	3382	[3677, 3678]
332	[635, 636]	1349	[1837, 1868]	2366	[2033, 3383]	3383	[3679, 3680]
333	[491, 139]	1350	[1991, 2114]	2367	[567, 2252]	3384	[3681, 3682]
334	[597, 631]	1351	[1722, 2115]	2368	[2112, 1938]	3385	[3683, 3684]
335	[550, 637]	1352	[823, 1979]	2369	[538, 3384]	3386	[3685, 3686]
336	[569, 136]	1353	[762, 1630]	2370	[3385, 3386]	3387	[3687, 3688]
337	[638, 639]	1354	[2116, 564]	2371	[1895, 3387]	3388	[2877, 3689]
338	[640, 641]	1355	[1788, 1694]	2372	[1992, 2218]	3389	[3690, 3691]
339	[642, 643]	1356	[2117, 1759]	2373	[1932, 2150]	3390	[3692, 1214]
340	[644, 645]	1357	[564, 2101]	2374	[1953, 2221]	3391	[3693, 3694]
341	[646, 647]	1358	[2118, 2119]	2375	[3388, 2110]	3392	[1088, 334]
342	[648, 649]	1359	[1981, 1633]	2376	[3389, 594]	3393	[3695, 3696]
343	[650, 651]	1360	[2120, 2039]	2377	[653, 47]	3394	[2655, 3697]
344	[652, 653]	1361	[2066, 1663]	2378	[865, 3375]	3395	[3698, 3699]
345	[654, 167]	1362	[1706, 537]	2379	[3390, 3391]	3396	[3700, 3701]
346	[655, 656]	1363	[1877, 2121]	2380	[176, 1975]	3397	[3702, 3703]
347	[176, 657]	1364	[1662, 2060]	2381	[2236, 2229]	3398	[3704, 3313]
348	[658, 659]	1365	[2122, 2123]	2382	[182, 552]	3399	[3705, 3706]
349	[660, 245]	1366	[2124, 2125]	2383	[1953, 3392]	3400	[1580, 3055]
350	[661, 662]	1367	[231, 853]	2384	[2276, 828]	3401	[3707, 3708]
351	[663, 664]	1368	[243, 1848]	2385	[1734, 3393]	3402	[3026, 1009]
352	[665, 666]	1369	[2126, 2127]	2386	[1906, 1654]	3403	[1603, 2653]
353	[667, 668]	1370	[2128, 1743]	2387	[3394, 3395]	3404	[2912, 3709]
354	[669, 670]	1371	[2129, 2130]	2388	[2214, 2062]	3405	[3710, 3711]
355	[671, 672]	1372	[2131, 1922]	2389	[3396, 3397]	3406	[3712, 3230]
356	[673, 674]	1373	[145, 62]	2390	[826, 2111]	3407	[3713, 3714]
357	[596, 675]	1374	[2132, 8]	2391	[3359, 519]	3408	[3715, 3716]
358	[676, 677]	1375	[633, 189]	2392	[3398, 3399]	3409	[3717, 3718]
359	[678, 679]	1376	[1623, 2133]	2393	[3380, 218]	3410	[3719, 3720]
360	[680, 681]	1377	[2071, 651]	2394	[856, 1697]	3411	[3721, 3722]
361	[682, 683]	1378	[2134, 2135]	2395	[3357, 3400]	3412	[3723, 1139]
362	[131, 684]	1379	[2127, 241]	2396	[3401, 3402]	3413	[3724, 2392]
363	[492, 685]	1380	[2136, 2114]	2397	[3403, 3374]	3414	[955, 2944]

364	[686, 687]	1381	[2137, 1699]	2398	[1809, 2224]	3415	[3725, 65]
365	[688, 689]	1382	[1750, 1756]	2399	[3404, 51]	3416	[3668, 3726]
366	[690, 691]	1383	[2138, 2139]	2400	[658, 3405]	3417	[3727, 449]
367	[692, 693]	1384	[659, 2140]	2401	[3406, 2252]	3418	[3728, 2656]
368	[694, 695]	1385	[1903, 1820]	2402	[1738, 1687]	3419	[1103, 3729]
369	[696, 541]	1386	[665, 2082]	2403	[2184, 720]	3420	[3730, 3731]
370	[232, 697]	1387	[42, 2141]	2404	[1936, 3407]	3421	[2598, 3732]
371	[698, 699]	1388	[45, 796]	2405	[546, 1665]	3422	[3002, 1034]
372	[700, 701]	1389	[1861, 832]	2406	[1826, 634]	3423	[3733, 3734]
373	[702, 703]	1390	[2065, 2142]	2407	[1718, 815]	3424	[3139, 3733]
374	[704, 566]	1391	[533, 758]	2408	[663, 1927]	3425	[3735, 3736]
375	[705, 706]	1392	[247, 2143]	2409	[2238, 206]	3426	[2586, 3737]
376	[707, 708]	1393	[553, 2144]	2410	[3408, 3409]	3427	[3738, 3739]
377	[709, 710]	1394	[207, 508]	2411	[3410, 2210]	3428	[3740, 3741]
378	[711, 712]	1395	[1775, 2145]	2412	[1841, 3411]	3429	[3742, 2755]
379	[713, 714]	1396	[2001, 1769]	2413	[1769, 2060]	3430	[3743, 3744]
380	[201, 715]	1397	[2146, 2147]	2414	[1710, 580]	3431	[3745, 1161]
381	[716, 717]	1398	[2148, 771]	2415	[734, 3412]	3432	[3746, 3747]
382	[718, 156]	1399	[1891, 578]	2416	[3413, 3414]	3433	[3748, 3749]
383	[719, 720]	1400	[1967, 1890]	2417	[2212, 2225]	3434	[3750, 3751]
384	[721, 722]	1401	[2149, 1637]	2418	[213, 3412]	3435	[2564, 3752]
385	[134, 215]	1402	[748, 2150]	2419	[3415, 1833]	3436	[122, 3753]
386	[723, 724]	1403	[507, 208]	2420	[3416, 1943]	3437	[3754, 3755]
387	[725, 726]	1404	[2151, 757]	2421	[548, 3417]	3438	[16, 3756]
388	[727, 728]	1405	[2152, 2153]	2422	[3418, 1892]	3439	[3757, 3758]
389	[729, 730]	1406	[2102, 1887]	2423	[568, 2253]	3440	[3440, 3440]
390	[731, 732]	1407	[2154, 2155]	2424	[2193, 710]	3441	[348, 3759]
391	[733, 694]	1408	[2156, 2157]	2425	[155, 1794]	3442	[3760, 3761]
392	[734, 735]	1409	[585, 2158]	2426	[709, 204]	3443	[3762, 3763]
393	[736, 737]	1410	[2134, 2159]	2427	[3419, 3420]	3444	[3701, 3745]
394	[738, 739]	1411	[2121, 854]	2428	[1631, 2149]	3445	[3764, 2808]
395	[740, 741]	1412	[2160, 2161]	2429	[3421, 3422]	3446	[3765, 3766]
396	[742, 743]	1413	[708, 2121]	2430	[547, 3423]	3447	[3767, 3768]
397	[744, 132]	1414	[2162, 715]	2431	[1853, 197]	3448	[3769, 3770]
398	[745, 746]	1415	[658, 2163]	2432	[168, 2228]	3449	[1300, 3771]
399	[747, 748]	1416	[738, 1988]	2433	[644, 3367]	3450	[1221, 3772]
400	[749, 750]	1417	[2116, 623]	2434	[9, 2065]	3451	[1334, 3773]
401	[717, 751]	1418	[1930, 2096]	2435	[3424, 547]	3452	[3774, 3775]
402	[752, 753]	1419	[2164, 2165]	2436	[48, 2002]	3453	[3776, 3777]
403	[754, 755]	1420	[1673, 2166]	2437	[3425, 240]	3454	[2471, 3778]
404	[756, 757]	1421	[2043, 1926]	2438	[3426, 3427]	3455	[3318, 3779]
405	[583, 758]	1422	[635, 2167]	2439	[243, 2279]	3456	[3780, 3285]
406	[518, 499]	1423	[719, 2168]	2440	[3428, 1799]	3457	[967, 3781]
407	[759, 760]	1424	[2169, 2170]	2441	[616, 2267]	3458	[1476, 3782]

408	[761, 542]	1425	[2171, 531]	2442	[2219, 2042]	3459	[3348, 3096]
409	[762, 763]	1426	[822, 2172]	2443	[598, 1791]	3460	[3783, 3272]
410	[764, 765]	1427	[192, 2173]	2444	[3429, 1902]	3461	[3784, 1341]
411	[766, 767]	1428	[599, 795]	2445	[629, 3430]	3462	[3247, 3050]
412	[768, 769]	1429	[615, 1852]	2446	[768, 2130]	3463	[3785, 1352]
413	[59, 770]	1430	[2174, 2175]	2447	[2170, 1805]	3464	[1463, 3786]
414	[771, 663]	1431	[1672, 2176]	2448	[2117, 3431]	3465	[3787, 2926]
415	[772, 773]	1432	[492, 1890]	2449	[3384, 641]	3466	[3788, 3789]
416	[774, 775]	1433	[2177, 2178]	2450	[702, 3432]	3467	[3041, 1467]
417	[776, 724]	1434	[2170, 885]	2451	[1984, 3380]	3468	[3790, 3791]
418	[777, 778]	1435	[2179, 609]	2452	[3356, 1897]	3469	[3792, 3793]
419	[779, 780]	1436	[2002, 2180]	2453	[3433, 2278]	3470	[3794, 3795]
420	[537, 513]	1437	[842, 685]	2454	[3373, 171]	3471	[3796, 3797]
421	[781, 782]	1438	[2181, 812]	2455	[1919, 52]	3472	[3798, 3799]
422	[783, 784]	1439	[1678, 2182]	2456	[516, 821]	3473	[3800, 2539]
423	[605, 785]	1440	[2183, 2184]	2457	[873, 690]	3474	[3694, 3801]
424	[773, 786]	1441	[1651, 132]	2458	[688, 537]	3475	[3802, 3803]
425	[634, 787]	1442	[1684, 2185]	2459	[2185, 3434]	3476	[3804, 3805]
426	[788, 789]	1443	[1686, 1739]	2460	[877, 3435]	3477	[3806, 3807]
427	[790, 791]	1444	[136, 2186]	2461	[2014, 545]	3478	[3273, 3808]
428	[792, 793]	1445	[788, 2119]	2462	[161, 2283]	3479	[3809, 3810]
429	[794, 795]	1446	[1885, 2187]	2463	[3436, 3437]	3480	[1035, 3811]
430	[210, 796]	1447	[1886, 2188]	2464	[2117, 3438]	3481	[3812, 3813]
431	[797, 798]	1448	[2189, 2190]	2465	[512, 786]	3482	[3814, 3223]
432	[242, 799]	1449	[674, 2191]	2466	[1700, 3439]	3483	[3815, 3816]
433	[800, 801]	1450	[669, 1849]	2467	[174, 1662]	3484	[3817, 2491]
434	[802, 803]	1451	[2192, 2113]	2468	[3440, 2190]	3485	[3818, 3819]
435	[606, 640]	1452	[2193, 2055]	2469	[1981, 138]	3486	[993, 2567]
436	[804, 805]	1453	[1851, 822]	2470	[2241, 3441]	3487	[1286, 3820]
437	[806, 807]	1454	[2194, 612]	2471	[3401, 3442]	3488	[3821, 3822]
438	[519, 176]	1455	[212, 1985]	2472	[1853, 1723]	3489	[3823, 1449]
439	[808, 809]	1456	[884, 1764]	2473	[1734, 229]	3490	[3824, 1226]
440	[810, 811]	1457	[2195, 2196]	2474	[58, 1628]	3491	[3122, 1504]
441	[812, 813]	1458	[794, 2197]	2475	[3443, 1705]	3492	[3825, 3826]
442	[814, 815]	1459	[653, 658]	2476	[3444, 2117]	3493	[3827, 3828]
443	[816, 202]	1460	[2198, 2199]	2477	[169, 1699]	3494	[1541, 3829]
444	[817, 818]	1461	[1908, 144]	2478	[835, 1772]	3495	[361, 1613]
445	[819, 666]	1462	[2200, 662]	2479	[598, 677]	3496	[3830, 3233]
446	[820, 821]	1463	[1684, 866]	2480	[815, 1951]	3497	[2762, 3831]
447	[822, 514]	1464	[1661, 2047]	2481	[1969, 188]	3498	[3832, 3833]
448	[823, 185]	1465	[2002, 1896]	2482	[524, 3413]	3499	[2476, 2447]
449	[824, 170]	1466	[1926, 2201]	2483	[700, 2155]	3500	[2484, 3834]
450	[647, 825]	1467	[2202, 2203]	2484	[2251, 543]	3501	[3828, 3835]
451	[708, 826]	1468	[2204, 244]	2485	[3445, 142]	3502	[3836, 3837]

452	[821, 48]	1469	[673, 1772]	2486	[3386, 505]	3503	[3838, 3839]
453	[827, 828]	1470	[808, 870]	2487	[2105, 1913]	3504	[3840, 1081]
454	[829, 830]	1471	[2205, 2069]	2488	[3446, 3447]	3505	[3841, 3842]
455	[831, 832]	1472	[2206, 2207]	2489	[2141, 538]	3506	[3843, 3844]
456	[833, 834]	1473	[578, 534]	2490	[2102, 3448]	3507	[3845, 3846]
457	[835, 674]	1474	[2208, 1792]	2491	[204, 3449]	3508	[3263, 3847]
458	[836, 837]	1475	[2203, 1682]	2492	[3450, 2195]	3509	[3848, 3849]
459	[838, 839]	1476	[687, 651]	2493	[3451, 1678]	3510	[3187, 1565]
460	[840, 841]	1477	[197, 2209]	2494	[1672, 841]	3511	[2568, 3850]
461	[842, 843]	1478	[2146, 2210]	2495	[520, 701]	3512	[3851, 3852]
462	[844, 670]	1479	[681, 2211]	2496	[2198, 2167]	3513	[1576, 3853]
463	[845, 846]	1480	[2212, 2027]	2497	[157, 2205]	3514	[3854, 3855]
464	[710, 847]	1481	[2046, 799]	2498	[681, 2247]	3515	[3856, 3857]
465	[848, 849]	1482	[2213, 1819]	2499	[506, 794]	3516	[3858, 3859]
466	[850, 851]	1483	[185, 2214]	2500	[2094, 2027]	3517	[3860, 3861]
467	[852, 525]	1484	[1873, 777]	2501	[675, 631]	3518	[3862, 3863]
468	[853, 854]	1485	[729, 778]	2502	[1754, 3386]	3519	[3864, 3865]
469	[855, 39]	1486	[1625, 2215]	2503	[2132, 44]	3520	[3866, 3867]
470	[856, 509]	1487	[2121, 2111]	2504	[498, 175]	3521	[3868, 3869]
471	[857, 853]	1488	[1946, 2216]	2505	[1967, 685]	3522	[3870, 3871]
472	[505, 858]	1489	[2217, 646]	2506	[3452, 3453]	3523	[2769, 3872]
473	[859, 860]	1490	[650, 1722]	2507	[2098, 178]	3524	[3178, 3873]
474	[588, 861]	1491	[1984, 2218]	2508	[3454, 523]	3525	[1509, 471]
475	[862, 863]	1492	[176, 2219]	2509	[3455, 3456]	3526	[3874, 3875]
476	[239, 864]	1493	[2220, 128]	2510	[3374, 163]	3527	[3876, 3877]
477	[865, 866]	1494	[568, 2221]	2511	[612, 3457]	3528	[3878, 3879]
478	[867, 868]	1495	[1632, 2222]	2512	[1975, 2042]	3529	[3880, 3229]
479	[869, 870]	1496	[2223, 2224]	2513	[3409, 3458]	3530	[3881, 3882]
480	[871, 872]	1497	[540, 2159]	2514	[3459, 3460]	3531	[1423, 3883]
481	[152, 873]	1498	[1658, 2225]	2515	[1813, 3461]	3532	[80, 3884]
482	[874, 875]	1499	[2226, 873]	2516	[800, 3462]	3533	[3885, 3886]
483	[876, 877]	1500	[506, 599]	2517	[2206, 3463]	3534	[2687, 3887]
484	[878, 746]	1501	[1894, 1641]	2518	[1767, 884]	3535	[3888, 3760]
485	[879, 880]	1502	[2009, 2227]	2519	[1899, 2195]	3536	[3889, 3890]
486	[881, 882]	1503	[884, 2228]	2520	[2142, 777]	3537	[2861, 3891]
487	[883, 10]	1504	[816, 2229]	2521	[2140, 2180]	3538	[3892, 3893]
488	[884, 885]	1505	[619, 1726]	2522	[196, 577]	3539	[3894, 3895]
489	[886, 887]	1506	[2230, 800]	2523	[11, 676]	3540	[1314, 1274]
490	[888, 275]	1507	[1652, 2231]	2524	[2055, 847]	3541	[3896, 2701]
491	[889, 890]	1508	[2161, 857]	2525	[835, 1752]	3542	[3897, 2869]
492	[891, 892]	1509	[2098, 667]	2526	[2041, 2287]	3543	[1046, 3898]
493	[893, 894]	1510	[869, 809]	2527	[58, 3464]	3544	[3899, 3900]
494	[895, 896]	1511	[1815, 2232]	2528	[723, 609]	3545	[3901, 3902]
495	[897, 898]	1512	[2223, 2233]	2529	[1959, 2113]	3546	[2938, 3903]

496	[899, 900]	1513	[50, 725]	2530	[500, 3377]	3547	[3904, 3905]
497	[901, 902]	1514	[2234, 2235]	2531	[1681, 598]	3548	[3906, 3907]
498	[903, 904]	1515	[2236, 715]	2532	[2238, 2086]	3549	[3908, 1553]
499	[905, 906]	1516	[2174, 760]	2533	[3465, 2011]	3550	[3909, 109]
500	[907, 908]	1517	[2237, 630]	2534	[3466, 3411]	3551	[2488, 3910]
501	[909, 910]	1518	[2238, 2239]	2535	[3467, 60]	3552	[2811, 3911]
502	[911, 912]	1519	[1979, 2214]	2536	[177, 1695]	3553	[3912, 3913]
503	[913, 914]	1520	[2240, 1713]	2537	[3468, 3469]	3554	[3914, 2768]
504	[915, 916]	1521	[2241, 2036]	2538	[3470, 2251]	3555	[3648, 1420]
505	[917, 918]	1522	[2242, 506]	2539	[2132, 1961]	3556	[3915, 2611]
506	[919, 920]	1523	[688, 2243]	2540	[1840, 1875]	3557	[3916, 3917]
507	[921, 922]	1524	[2058, 2244]	2541	[1623, 1697]	3558	[3918, 3919]
508	[923, 924]	1525	[2124, 2108]	2542	[557, 3471]	3559	[3920, 2444]
509	[925, 926]	1526	[1877, 826]	2543	[3472, 2023]	3560	[3921, 1524]
510	[927, 928]	1527	[2245, 60]	2544	[711, 3420]	3561	[3922, 3923]
511	[929, 930]	1528	[661, 626]	2545	[220, 521]	3562	[3924, 3225]
512	[931, 932]	1529	[2246, 2247]	2546	[1956, 3473]	3563	[3925, 3926]
513	[933, 934]	1530	[2248, 2249]	2547	[710, 3474]	3564	[3927, 2704]
514	[935, 936]	1531	[690, 2250]	2548	[2084, 3475]	3565	[3644, 3928]
515	[937, 938]	1532	[596, 2251]	2549	[3454, 3476]	3566	[68, 3929]
516	[939, 940]	1533	[2252, 2253]	2550	[871, 2246]	3567	[3930, 3931]
517	[941, 942]	1534	[748, 554]	2551	[752, 3477]	3568	[3932, 3933]
518	[943, 347]	1535	[2254, 236]	2552	[609, 133]	3569	[3934, 3935]
519	[944, 945]	1536	[2026, 2225]	2553	[10, 1834]	3570	[3069, 1244]
520	[946, 947]	1537	[793, 686]	2554	[2032, 1636]	3571	[3936, 3116]
521	[948, 949]	1538	[1628, 1749]	2555	[2165, 3478]	3572	[3224, 3937]
522	[950, 951]	1539	[1710, 1748]	2556	[3479, 2143]	3573	[3938, 3339]
523	[952, 953]	1540	[2255, 2044]	2557	[3480, 3471]	3574	[3939, 1029]
524	[954, 955]	1541	[2256, 2257]	2558	[3481, 2074]	3575	[3940, 3941]
525	[956, 957]	1542	[631, 1643]	2559	[3371, 2216]	3576	[3942, 3943]
526	[958, 959]	1543	[1978, 2166]	2560	[593, 3482]	3577	[3312, 3944]
527	[960, 961]	1544	[555, 2021]	2561	[734, 1827]	3578	[2332, 3945]
528	[962, 963]	1545	[1774, 2258]	2562	[698, 815]	3579	[3946, 3947]
529	[964, 965]	1546	[704, 1887]	2563	[2181, 1692]	3580	[2809, 3948]
530	[966, 967]	1547	[1972, 1732]	2564	[1663, 1963]	3581	[3949, 1013]
531	[968, 969]	1548	[1651, 2259]	2565	[40, 3483]	3582	[3950, 3951]
532	[970, 971]	1549	[179, 637]	2566	[3484, 3485]	3583	[3952, 2864]
533	[972, 973]	1550	[2020, 1733]	2567	[632, 3486]	3584	[3953, 966]
534	[974, 975]	1551	[2119, 2260]	2568	[2011, 3487]	3585	[3954, 3674]
535	[976, 977]	1552	[2261, 849]	2569	[3403, 580]	3586	[377, 3955]
536	[978, 979]	1553	[2262, 2263]	2570	[606, 3384]	3587	[3956, 2759]
537	[980, 981]	1554	[2264, 1886]	2571	[2217, 50]	3588	[3957, 3958]
538	[982, 983]	1555	[1695, 2265]	2572	[1768, 3488]	3589	[3959, 1551]
539	[984, 985]	1556	[1798, 2266]	2573	[2073, 2294]	3590	[3960, 3961]

540	[986, 987]	1557	[43, 2117]	2574	[683, 1903]	3591	[3962, 2459]
541	[988, 989]	1558	[1902, 1742]	2575	[2072, 2115]	3592	[3963, 2483]
542	[990, 991]	1559	[2267, 215]	2576	[3489, 3490]	3593	[3964, 3965]
543	[992, 993]	1560	[581, 248]	2577	[3491, 689]	3594	[3966, 1348]
544	[994, 917]	1561	[583, 1717]	2578	[1834, 729]	3595	[1187, 2876]
545	[995, 996]	1562	[530, 612]	2579	[587, 1829]	3596	[3680, 3967]
546	[997, 998]	1563	[45, 2268]	2580	[1746, 508]	3597	[3968, 3969]
547	[999, 1000]	1564	[816, 2269]	2581	[3464, 734]	3598	[3970, 3971]
548	[1001, 1002]	1565	[241, 2046]	2582	[2141, 606]	3599	[3334, 3972]
549	[1003, 1004]	1566	[230, 2142]	2583	[853, 1854]	3600	[3973, 3248]
550	[1005, 1006]	1567	[1777, 653]	2584	[3415, 1683]	3601	[3974, 3975]
551	[1007, 1008]	1568	[1779, 2178]	2585	[590, 614]	3602	[3976, 3183]
552	[1009, 1010]	1569	[2270, 1797]	2586	[3492, 3493]	3603	[3977, 1447]
553	[1011, 1012]	1570	[867, 184]	2587	[3494, 1645]	3604	[3978, 3080]
554	[1013, 1014]	1571	[2271, 2008]	2588	[506, 161]	3605	[3979, 3980]
555	[1015, 1016]	1572	[833, 2272]	2589	[3495, 2169]	3606	[3981, 3982]
556	[1017, 1018]	1573	[743, 2154]	2590	[235, 3496]	3607	[2344, 3983]
557	[1019, 1020]	1574	[649, 2273]	2591	[2153, 3497]	3608	[2588, 3914]
558	[1021, 1022]	1575	[789, 2260]	2592	[182, 2022]	3609	[3984, 3985]
559	[1023, 1024]	1576	[2274, 2275]	2593	[1746, 1707]	3610	[3986, 1098]
560	[1025, 1026]	1577	[2141, 1990]	2594	[3498, 1716]	3611	[2730, 3987]
561	[1027, 1028]	1578	[49, 602]	2595	[2114, 3499]	3612	[3988, 3989]
562	[1029, 1030]	1579	[1736, 2219]	2596	[873, 2046]	3613	[3990, 87]
563	[1031, 374]	1580	[10, 1830]	2597	[873, 1661]	3614	[3991, 3992]
564	[1032, 1033]	1581	[2276, 2277]	2598	[2162, 202]	3615	[3202, 2658]
565	[1034, 1035]	1582	[537, 1999]	2599	[1809, 2233]	3616	[3993, 1077]
566	[1036, 1037]	1583	[2256, 2278]	2600	[1832, 2207]	3617	[3269, 380]
567	[1038, 1039]	1584	[1736, 2241]	2601	[638, 576]	3618	[947, 3994]
568	[1040, 1041]	1585	[1847, 2279]	2602	[3500, 845]	3619	[1275, 3070]
569	[1042, 441]	1586	[2280, 2281]	2603	[163, 611]	3620	[3995, 1502]
570	[1043, 1044]	1587	[2248, 2282]	2604	[2129, 1821]	3621	[3893, 1445]
571	[1045, 1046]	1588	[684, 1708]	2605	[1752, 3501]	3622	[3996, 2403]
572	[1047, 1048]	1589	[1940, 2226]	2606	[1789, 754]	3623	[3997, 1508]
573	[1049, 1050]	1590	[2125, 139]	2607	[853, 697]	3624	[3998, 3999]
574	[1051, 1052]	1591	[2267, 1723]	2608	[1762, 606]	3625	[3980, 3082]
575	[1053, 1054]	1592	[794, 2283]	2609	[3451, 532]	3626	[4000, 2512]
576	[1055, 1056]	1593	[2284, 2285]	2610	[1753, 3502]	3627	[4001, 2537]
577	[1057, 1058]	1594	[577, 687]	2611	[2177, 1780]	3628	[4002, 2797]
578	[1059, 1060]	1595	[2286, 693]	2612	[151, 2226]	3629	[4003, 4004]
579	[1061, 1062]	1596	[756, 2287]	2613	[2050, 3503]	3630	[4005, 3728]
580	[1063, 1064]	1597	[1919, 2288]	2614	[1917, 1880]	3631	[4006, 1315]
581	[1065, 1066]	1598	[1924, 707]	2615	[3380, 2099]	3632	[4007, 3878]
582	[1067, 1068]	1599	[887, 572]	2616	[498, 1787]	3633	[4008, 2581]
583	[1069, 1070]	1600	[2289, 172]	2617	[2151, 560]	3634	[4009, 4010]

584	[1071, 1072]	1601	[1722, 2290]	2618	[1991, 3504]	3635	[2510, 2361]
585	[1073, 1074]	1602	[2291, 2059]	2619	[530, 148]	3636	[4011, 589]
586	[1075, 1076]	1603	[1916, 11]	2620	[2128, 3505]	3637	[4012, 1946]
587	[1077, 1078]	1604	[2032, 2222]	2621	[819, 2064]	3638	[1692, 813]
588	[1079, 1080]	1605	[1741, 2292]	2622	[222, 225]	3639	[702, 3585]
589	[1081, 1082]	1606	[2293, 14]	2623	[2020, 556]	3640	[38, 246]
590	[1083, 1084]	1607	[1775, 2294]	2624	[2149, 1636]	3641	[849, 3369]
591	[1085, 1086]	1608	[249, 2295]	2625	[1755, 505]	3642	[2261, 3538]
592	[1087, 1088]	1609	[1719, 2028]	2626	[3494, 3506]	3643	[2112, 644]
593	[1089, 1090]	1610	[792, 196]	2627	[779, 130]	3644	[673, 3351]
594	[1091, 1092]	1611	[1830, 729]	2628	[2259, 2231]	3645	[683, 1742]
595	[1093, 946]	1612	[1910, 196]	2629	[2213, 1797]	3646	[128, 168]
596	[1094, 1095]	1613	[878, 1801]	2630	[1900, 1762]	3647	[4013, 4014]
597	[1096, 1097]	1614	[683, 2128]	2631	[551, 1655]	3648	[2148, 2043]
598	[1098, 1099]	1615	[1788, 2296]	2632	[1741, 706]	3649	[639, 3546]
599	[1100, 1101]	1616	[1974, 527]	2633	[224, 1731]	3650	[231, 826]
600	[1102, 1103]	1617	[680, 2246]	2634	[859, 2068]	3651	[864, 3459]
601	[1104, 1105]	1618	[866, 2297]	2635	[3507, 2249]	3652	[218, 1985]
602	[1106, 1107]	1619	[1852, 134]	2636	[1688, 1932]	3653	[652, 820]
603	[1108, 1109]	1620	[2048, 1645]	2637	[2242, 2289]	3654	[3500, 649]
604	[1110, 1111]	1621	[2298, 976]	2638	[1749, 3412]	3655	[3512, 2007]
605	[1112, 1113]	1622	[1223, 2299]	2639	[1806, 743]	3656	[1962, 40]
606	[1114, 1115]	1623	[2300, 1437]	2640	[709, 1934]	3657	[4015, 2215]
607	[1116, 1117]	1624	[2301, 2302]	2641	[522, 875]	3658	[3470, 597]
608	[973, 1118]	1625	[2303, 2304]	2642	[3508, 1641]	3659	[1680, 1630]
609	[1119, 1120]	1626	[2305, 2306]	2643	[1722, 3509]	3660	[502, 3515]
610	[1121, 1122]	1627	[2307, 366]	2644	[1840, 3362]	3661	[857, 2121]
611	[1123, 1124]	1628	[116, 1346]	2645	[148, 3510]	3662	[3518, 2292]
612	[1125, 1126]	1629	[2308, 2309]	2646	[1813, 1745]	3663	[2188, 3625]
613	[1127, 451]	1630	[2310, 2311]	2647	[545, 1622]	3664	[3524, 3589]
614	[1082, 1128]	1631	[2312, 2313]	2648	[2088, 739]	3665	[200, 12]
615	[1129, 1130]	1632	[2314, 2315]	2649	[1839, 2049]	3666	[1663, 1750]
616	[1131, 1132]	1633	[2316, 1440]	2650	[1855, 1724]	3667	[607, 1866]
617	[1133, 1134]	1634	[2317, 2318]	2651	[218, 590]	3668	[2259, 3607]
618	[1135, 1136]	1635	[2319, 2320]	2652	[515, 820]	3669	[1826, 623]
619	[1137, 1138]	1636	[2321, 291]	2653	[3467, 3503]	3670	[4016, 3587]
620	[1139, 1140]	1637	[110, 2322]	2654	[3511, 837]	3671	[2053, 2181]
621	[1141, 1142]	1638	[1304, 2323]	2655	[3512, 3513]	3672	[2028, 1749]
622	[1143, 1144]	1639	[2324, 2325]	2656	[3514, 3515]	3673	[667, 3552]
623	[1145, 1146]	1640	[2326, 2300]	2657	[3516, 152]	3674	[147, 3612]
624	[1147, 1148]	1641	[2327, 2328]	2658	[3426, 2279]	3675	[1912, 4017]
625	[1149, 1150]	1642	[2329, 2330]	2659	[491, 1720]	3676	[2133, 1840]
626	[1151, 1152]	1643	[2331, 2332]	2660	[810, 1922]	3677	[1963, 3532]
627	[1153, 1154]	1644	[892, 91]	2661	[1652, 1708]	3678	[2114, 3380]

628	[1155, 1156]	1645	[2333, 93]	2662	[577, 2071]	3679	[2016, 605]
629	[1157, 1158]	1646	[72, 2334]	2663	[3517, 1774]	3680	[1939, 178]
630	[1159, 1160]	1647	[2335, 2336]	2664	[2080, 2019]	3681	[861, 4017]
631	[1161, 105]	1648	[2337, 2338]	2665	[3518, 2258]	3682	[512, 2273]
632	[1097, 315]	1649	[2339, 2340]	2666	[2153, 1655]	3683	[580, 1867]
633	[1162, 1163]	1650	[2341, 2342]	2667	[235, 3366]	3684	[2171, 3612]
634	[1164, 1165]	1651	[2343, 2344]	2668	[3519, 3520]	3685	[2060, 1750]
635	[1099, 1166]	1652	[2345, 1453]	2669	[3386, 2242]	3686	[1835, 9]
636	[1167, 1168]	1653	[2346, 2347]	2670	[1793, 866]	3687	[172, 2283]
637	[1169, 1170]	1654	[2348, 2349]	2671	[3521, 1872]	3688	[9, 1804]
638	[1171, 1172]	1655	[2350, 997]	2672	[2202, 200]	3689	[1997, 707]
639	[1173, 1174]	1656	[1154, 2351]	2673	[857, 232]	3690	[1956, 2095]
640	[1175, 1176]	1657	[1571, 2352]	2674	[3376, 1674]	3691	[3504, 3499]
641	[1177, 1178]	1658	[2353, 2354]	2675	[655, 2049]	3692	[3542, 2196]
642	[1179, 1180]	1659	[2355, 2356]	2676	[3522, 541]	3693	[849, 3605]
643	[1181, 1149]	1660	[2357, 2358]	2677	[1800, 1787]	3694	[3531, 626]
644	[1182, 1183]	1661	[2359, 2360]	2678	[1907, 2006]	3695	[647, 726]
645	[1184, 1185]	1662	[2361, 81]	2679	[522, 3476]	3696	[3433, 2257]
646	[1186, 1187]	1663	[2362, 2363]	2680	[774, 3437]	3697	[838, 3469]
647	[1188, 1189]	1664	[2364, 2365]	2681	[3499, 218]	3698	[604, 1884]
648	[1190, 1191]	1665	[2366, 2367]	2682	[632, 2288]	3699	[1843, 1974]
649	[1192, 1193]	1666	[1470, 1005]	2683	[8, 3523]	3700	[2206, 3579]
650	[1194, 1195]	1667	[1345, 2368]	2684	[612, 3510]	3701	[1719, 1951]
651	[1058, 1196]	1668	[2369, 2370]	2685	[767, 668]	3702	[3635, 1668]
652	[1197, 1198]	1669	[2371, 2372]	2686	[2188, 3524]	3703	[147, 531]
653	[1199, 1200]	1670	[2373, 2374]	2687	[2029, 712]	3704	[797, 1966]
654	[1201, 1202]	1671	[2375, 2376]	2688	[170, 3525]	3705	[3602, 3602]
655	[1203, 1204]	1672	[2377, 2378]	2689	[233, 602]	3706	[550, 571]
656	[1205, 1206]	1673	[2379, 455]	2690	[1962, 1702]	3707	[161, 795]
657	[906, 1207]	1674	[2380, 2381]	2691	[3526, 2205]	3708	[3492, 238]
658	[1208, 1209]	1675	[2382, 2383]	2692	[2185, 3400]	3709	[3373, 2289]
659	[1210, 1211]	1676	[2384, 2385]	2693	[781, 2267]	3710	[3443, 820]
660	[1212, 1213]	1677	[2386, 2387]	2694	[1828, 1808]	3711	[1702, 3483]
661	[1214, 1215]	1678	[2388, 2389]	2695	[1993, 3447]	3712	[840, 2176]
662	[1216, 1217]	1679	[2390, 2391]	2696	[3527, 1732]	3713	[827, 2277]
663	[1218, 1219]	1680	[2392, 1061]	2697	[1930, 3383]	3714	[1658, 3529]
664	[470, 976]	1681	[2393, 2394]	2698	[1784, 3528]	3715	[1968, 717]
665	[1220, 1221]	1682	[2395, 2396]	2699	[2094, 3529]	3716	[212, 590]
666	[1222, 1223]	1683	[2397, 2398]	2700	[2114, 211]	3717	[172, 2197]
667	[1224, 1225]	1684	[2399, 2400]	2701	[2236, 2269]	3718	[3398, 4014]
668	[1226, 1227]	1685	[2401, 2402]	2702	[1691, 3416]	3719	[605, 798]
669	[1228, 1229]	1686	[2403, 2404]	2703	[3430, 1823]	3720	[204, 1935]
670	[1230, 1231]	1687	[2405, 2406]	2704	[2193, 1934]	3721	[1804, 1873]
671	[1232, 1233]	1688	[2407, 2408]	2705	[1858, 1669]	3722	[1878, 646]

672	[1234, 1235]	1689	[2409, 2410]	2706	[1705, 47]	3723	[3546, 2071]
673	[1236, 1237]	1690	[2411, 2412]	2707	[1960, 645]	3724	[1985, 2107]
674	[1238, 1239]	1691	[2413, 2414]	2708	[532, 2075]	3725	[1701, 133]
675	[1240, 103]	1692	[2415, 1479]	2709	[2119, 3530]	3726	[591, 3528]
676	[1241, 1242]	1693	[2416, 2417]	2710	[3531, 662]	3727	[1667, 174]
677	[24, 1243]	1694	[2418, 2419]	2711	[40, 3532]	3728	[34, 1905]
678	[1244, 1245]	1695	[2420, 2421]	2712	[2026, 1659]	3729	[3575, 56]
679	[1246, 1247]	1696	[2422, 2423]	2713	[678, 3533]	3730	[3444, 44]
680	[1248, 1249]	1697	[2424, 2425]	2714	[3430, 3534]	3731	[1907, 3512]
681	[1250, 1251]	1698	[1052, 2426]	2715	[3535, 3401]	3732	[743, 220]
682	[1252, 1253]	1699	[2427, 2428]	2716	[1793, 2185]	3733	[1677, 532]
683	[1254, 1255]	1700	[2429, 2430]	2717	[781, 1853]	3734	[744, 1652]
684	[1256, 1257]	1701	[2431, 265]	2718	[742, 1807]	3735	[876, 3560]
685	[1258, 1259]	1702	[2432, 2433]	2719	[2162, 2229]	3736	[1629, 1827]
686	[384, 1260]	1703	[2363, 2434]	2720	[3536, 3475]	3737	[3631, 1968]
687	[1056, 1261]	1704	[2435, 2429]	2721	[3537, 2068]	3738	[1660, 690]
688	[1262, 933]	1705	[2436, 1210]	2722	[3405, 2002]	3739	[2245, 3503]
689	[1263, 1264]	1706	[2437, 2438]	2723	[3416, 1955]	3740	[628, 1733]
690	[1265, 1266]	1707	[2439, 2440]	2724	[716, 153]	3741	[553, 1933]
691	[1267, 1241]	1708	[2441, 2442]	2725	[1948, 2019]	3742	[524, 2280]
692	[1268, 1269]	1709	[306, 2443]	2726	[3530, 3538]	3743	[1720, 2005]
693	[1270, 1271]	1710	[2444, 1121]	2727	[3539, 3530]	3744	[752, 3624]
694	[1272, 1273]	1711	[2445, 2446]	2728	[2260, 2264]	3745	[203, 2055]
695	[1274, 1275]	1712	[2447, 2448]	2729	[2137, 165]	3746	[173, 1964]
696	[1276, 1277]	1713	[2449, 891]	2730	[2054, 204]	3747	[191, 2195]
697	[1278, 1047]	1714	[435, 1017]	2731	[1751, 3540]	3748	[2078, 2286]
698	[1279, 1280]	1715	[2450, 2451]	2732	[1728, 3432]	3749	[51, 1920]
699	[1281, 1282]	1716	[2452, 2453]	2733	[1795, 801]	3750	[1704, 687]
700	[1283, 1284]	1717	[2454, 2455]	2734	[2041, 560]	3751	[242, 691]
701	[1285, 1286]	1718	[2456, 2457]	2735	[1811, 2259]	3752	[1692, 1943]
702	[1287, 1288]	1719	[2458, 419]	2736	[3364, 3541]	3753	[1807, 520]
703	[1289, 1290]	1720	[2459, 2460]	2737	[3424, 2227]	3754	[1944, 3476]
704	[1291, 1292]	1721	[2461, 2462]	2738	[3451, 1888]	3755	[1772, 2191]
705	[1293, 1294]	1722	[2463, 2464]	2739	[3470, 542]	3756	[32, 3357]
706	[1295, 1296]	1723	[264, 2465]	2740	[572, 2062]	3757	[1750, 3483]
707	[1297, 453]	1724	[2466, 2467]	2741	[2243, 1757]	3758	[174, 1769]
708	[1298, 1299]	1725	[2468, 2469]	2742	[721, 3542]	3759	[657, 3441]
709	[294, 1300]	1726	[2470, 2471]	2743	[3356, 1875]	3760	[737, 607]
710	[1301, 1302]	1727	[1138, 2472]	2744	[170, 3543]	3761	[2154, 521]
711	[1303, 1304]	1728	[2473, 2474]	2745	[2001, 2066]	3762	[3506, 210]
712	[1305, 1306]	1729	[2475, 2476]	2746	[1781, 769]	3763	[772, 512]
713	[1307, 1308]	1730	[2477, 2478]	2747	[623, 787]	3764	[3389, 2282]
714	[1309, 1310]	1731	[2479, 2480]	2748	[675, 3404]	3765	[4018, 1784]
715	[1311, 1312]	1732	[2481, 2482]	2749	[1864, 3512]	3766	[1643, 3486]

716	[1313, 1314]	1733	[2483, 2484]	2750	[2071, 1722]	3767	[821, 3405]
717	[1315, 1316]	1734	[2485, 2486]	2751	[3544, 3545]	3768	[1644, 2067]
718	[1317, 1318]	1735	[2487, 2488]	2752	[1627, 1979]	3769	[1911, 1961]
719	[1319, 1320]	1736	[1548, 2489]	2753	[3546, 1721]	3770	[149, 630]
720	[1321, 1322]	1737	[18, 2490]	2754	[579, 1748]	3771	[568, 4019]
721	[1323, 1324]	1738	[2491, 407]	2755	[684, 595]	3772	[629, 150]
722	[1325, 1326]	1739	[2492, 2493]	2756	[2280, 3414]	3773	[1948, 2275]
723	[1327, 1131]	1740	[2494, 2495]	2757	[872, 54]	3774	[705, 2292]
724	[1328, 1329]	1741	[2496, 2497]	2758	[3547, 229]	3775	[714, 4019]
725	[398, 1330]	1742	[1072, 2498]	2759	[1971, 3383]	3776	[2109, 3627]
726	[1331, 1332]	1743	[1523, 2499]	2760	[705, 2258]	3777	[249, 3616]
727	[1333, 1334]	1744	[2500, 2501]	2761	[57, 699]	3778	[3547, 3559]
728	[1217, 1335]	1745	[2502, 2503]	2762	[2128, 1860]	3779	[840, 3561]
729	[1336, 1337]	1746	[410, 2504]	2763	[704, 2103]	3780	[1863, 493]
730	[1338, 1339]	1747	[2505, 2506]	2764	[598, 3363]	3781	[1736, 657]
731	[1340, 1114]	1748	[2507, 2508]	2765	[665, 3548]	3782	[1682, 3363]
732	[1341, 1116]	1749	[2509, 2510]	2766	[642, 3379]	3783	[3551, 1748]
733	[1342, 1343]	1750	[1563, 2511]	2767	[2067, 3421]	3784	[3578, 160]
734	[1344, 1345]	1751	[2512, 2513]	2768	[2176, 1917]	3785	[193, 4017]
735	[1346, 1347]	1752	[2514, 2515]	2769	[1976, 2006]	3786	[1762, 1990]
736	[1348, 1349]	1753	[2516, 2517]	2770	[771, 3459]	3787	[240, 1926]
737	[1350, 1351]	1754	[2518, 2519]	2771	[1934, 3449]	3788	[4020, 872]
738	[1352, 1353]	1755	[2520, 919]	2772	[1699, 1883]	3789	[690, 799]
739	[1354, 1355]	1756	[2521, 2522]	2773	[34, 2182]	3790	[224, 2186]
740	[1356, 1357]	1757	[1136, 2523]	2774	[3549, 848]	3791	[2153, 552]
741	[1358, 1359]	1758	[1264, 2524]	2775	[565, 3448]	3792	[2056, 1747]
742	[1360, 1283]	1759	[2525, 2329]	2776	[3550, 53]	3793	[3522, 2135]
743	[1361, 1362]	1760	[2526, 2527]	2777	[1769, 1962]	3794	[609, 616]
744	[1363, 1364]	1761	[2528, 2529]	2778	[3464, 213]	3795	[504, 1661]
745	[1365, 1366]	1762	[316, 1175]	2779	[2024, 227]	3796	[1978, 3377]
746	[1367, 1368]	1763	[2530, 2531]	2780	[2089, 642]	3797	[764, 1845]
747	[1369, 1370]	1764	[2532, 1555]	2781	[1909, 2163]	3798	[2270, 2235]
748	[1371, 1372]	1765	[2533, 1218]	2782	[1720, 140]	3799	[717, 1786]
749	[1332, 1373]	1766	[2534, 2535]	2783	[1700, 3509]	3800	[41, 731]
750	[1374, 1375]	1767	[2536, 2532]	2784	[2138, 3545]	3801	[2165, 1637]
751	[1376, 1377]	1768	[2537, 2538]	2785	[1950, 3417]	3802	[1839, 656]
752	[1378, 1379]	1769	[2539, 2540]	2786	[1701, 1852]	3803	[2151, 2287]
753	[1380, 1381]	1770	[2541, 2542]	2787	[1964, 855]	3804	[2241, 3372]
754	[1382, 1383]	1771	[2543, 2544]	2788	[3464, 1629]	3805	[2126, 1941]
755	[1384, 1385]	1772	[2545, 2546]	2789	[3551, 1711]	3806	[3381, 883]
756	[1386, 1387]	1773	[2547, 2548]	2790	[859, 227]	3807	[2192, 1960]
757	[1388, 1389]	1774	[2549, 2550]	2791	[1643, 2288]	3808	[2251, 1642]
758	[1390, 1391]	1775	[2551, 2552]	2792	[2163, 2002]	3809	[1889, 636]
759	[1392, 1393]	1776	[904, 2553]	2793	[3507, 3482]	3810	[2078, 2091]

760	[1394, 1395]	1777	[1582, 1208]	2794	[2161, 708]	3811	[3633, 1833]
761	[1396, 992]	1778	[1237, 2554]	2795	[1910, 639]	3812	[4021, 3571]
762	[1397, 1398]	1779	[2555, 2556]	2796	[3444, 8]	3813	[1984, 211]
763	[1399, 1400]	1780	[2557, 2558]	2797	[767, 3552]	3814	[1757, 2000]
764	[1401, 1402]	1781	[2559, 2560]	2798	[1899, 3542]	3815	[1723, 517]
765	[1403, 1404]	1782	[2561, 2562]	2799	[2010, 2006]	3816	[2001, 855]
766	[1405, 1406]	1783	[2563, 2564]	2800	[3553, 622]	3817	[44, 3438]
767	[1407, 1408]	1784	[2565, 2566]	2801	[3360, 3401]	3818	[2187, 2188]
768	[1409, 1410]	1785	[2567, 2568]	2802	[1859, 1820]	3819	[1971, 1931]
769	[1411, 1412]	1786	[2569, 2570]	2803	[574, 882]	3820	[3570, 2081]
770	[1413, 1414]	1787	[2571, 2572]	2804	[35, 3420]	3821	[2204, 3427]
771	[1415, 1416]	1788	[1316, 2573]	2805	[245, 3554]	3822	[3452, 497]
772	[1018, 1417]	1789	[2574, 1384]	2806	[2023, 225]	3823	[8, 3431]
773	[1418, 1419]	1790	[2575, 2576]	2807	[714, 2253]	3824	[3524, 788]
774	[1420, 1421]	1791	[2577, 2578]	2808	[2127, 1660]	3825	[2195, 3586]
775	[1422, 1423]	1792	[2579, 2580]	2809	[563, 634]	3826	[526, 2083]
776	[1424, 1425]	1793	[2581, 2582]	2810	[137, 750]	3827	[1886, 3604]
777	[1426, 1427]	1794	[2583, 2584]	2811	[711, 2030]	3828	[1773, 750]
778	[1428, 1429]	1795	[2585, 2586]	2812	[3504, 3380]	3829	[762, 746]
779	[1430, 1431]	1796	[2587, 2588]	2813	[3555, 2089]	3830	[3376, 2166]
780	[1432, 1433]	1797	[2589, 2590]	2814	[2254, 3556]	3831	[699, 1628]
781	[1425, 1434]	1798	[2591, 2592]	2815	[1661, 2250]	3832	[4022, 2157]
782	[1435, 1436]	1799	[2593, 2594]	2816	[1644, 3506]	3833	[516, 1909]
783	[1437, 1438]	1800	[2595, 2596]	2817	[538, 607]	3834	[1677, 34]
784	[926, 1439]	1801	[2597, 2598]	2818	[3557, 2295]	3835	[2252, 3392]
785	[1440, 1441]	1802	[2599, 2600]	2819	[2185, 2297]	3836	[51, 3486]
786	[930, 1442]	1803	[2601, 2602]	2820	[1818, 2235]	3837	[1718, 58]
787	[1443, 1444]	1804	[2602, 2603]	2821	[1702, 3532]	3838	[2079, 1880]
788	[1445, 1446]	1805	[2604, 2605]	2822	[3489, 3558]	3839	[3358, 2272]
789	[1447, 1448]	1806	[2606, 2607]	2823	[3415, 1770]	3840	[737, 640]
790	[1449, 1450]	1807	[2608, 434]	2824	[3500, 773]	3841	[2220, 1767]
791	[1451, 1452]	1808	[2609, 2610]	2825	[1923, 3559]	3842	[48, 2140]
792	[1453, 1454]	1809	[2611, 2612]	2826	[1891, 533]	3843	[1973, 2184]
793	[1455, 1194]	1810	[2613, 27]	2827	[1924, 1980]	3844	[621, 3533]
794	[1456, 1457]	1811	[2614, 2615]	2828	[3459, 664]	3845	[4023, 3548]
795	[1458, 1459]	1812	[2616, 1295]	2829	[621, 3502]	3846	[1701, 616]
796	[1460, 1461]	1813	[2617, 1110]	2830	[1783, 3560]	3847	[3424, 727]
797	[1462, 895]	1814	[2618, 2619]	2831	[191, 722]	3848	[2072, 2290]
798	[1375, 1463]	1815	[2620, 2621]	2832	[2237, 1815]	3849	[576, 3546]
799	[916, 1464]	1816	[296, 2622]	2833	[1706, 1851]	3850	[696, 2135]
800	[1465, 475]	1817	[2623, 2624]	2834	[2099, 1985]	3851	[812, 3632]
801	[1243, 1466]	1818	[2625, 259]	2835	[3557, 250]	3852	[2156, 3477]
802	[1467, 1468]	1819	[2626, 2627]	2836	[3561, 2079]	3853	[222, 1731]
803	[1469, 1470]	1820	[1255, 1075]	2837	[3562, 1984]	3854	[1732, 1656]

804	[1471, 1472]	1821	[2628, 2629]	2838	[3450, 722]	3855	[247, 2097]
805	[1473, 1474]	1822	[2630, 1298]	2839	[1744, 1814]	3856	[1768, 3456]
806	[1475, 1476]	1823	[1158, 2631]	2840	[793, 3546]	3857	[540, 3598]
807	[1477, 1478]	1824	[2632, 2633]	2841	[3563, 1678]	3858	[820, 1909]
808	[1479, 1480]	1825	[2634, 2635]	2842	[3394, 3355]	3859	[1811, 684]
809	[1481, 1482]	1826	[2636, 1147]	2843	[1982, 2023]	3860	[2213, 2013]
810	[1483, 1484]	1827	[2637, 2638]	2844	[3531, 3564]	3861	[812, 1955]
811	[1485, 1486]	1828	[2639, 1572]	2845	[713, 1953]	3862	[187, 1970]
812	[1487, 1488]	1829	[2640, 2641]	2846	[2136, 3504]	3863	[876, 591]
813	[1489, 1490]	1830	[2642, 2643]	2847	[1831, 730]	3864	[1728, 703]
814	[1491, 1492]	1831	[2644, 2645]	2848	[830, 3379]	3865	[1964, 1769]
815	[1493, 1344]	1832	[2646, 2647]	2849	[2195, 3565]	3866	[1882, 3422]
816	[108, 1262]	1833	[2648, 2649]	2850	[3405, 2038]	3867	[3350, 1691]
817	[1494, 1495]	1834	[2328, 2650]	2851	[792, 639]	3868	[1961, 3523]
818	[1496, 1497]	1835	[1207, 21]	2852	[1888, 3566]	3869	[630, 1816]
819	[1498, 1499]	1836	[2651, 2652]	2853	[3567, 3568]	3870	[3396, 2034]
820	[1500, 1501]	1837	[2653, 5]	2854	[682, 1902]	3871	[639, 577]
821	[1502, 1503]	1838	[2654, 2655]	2855	[505, 2289]	3872	[1917, 578]
822	[1504, 1505]	1839	[2656, 2657]	2856	[1766, 2169]	3873	[3353, 789]
823	[1506, 1507]	1840	[2658, 2659]	2857	[1790, 2012]	3874	[1691, 1942]
824	[1508, 1509]	1841	[2660, 2661]	2858	[2073, 2145]	3875	[687, 2072]
825	[1510, 1511]	1842	[2662, 1376]	2859	[1749, 214]	3876	[698, 1719]
826	[1512, 1513]	1843	[2663, 2664]	2860	[2160, 1980]	3877	[153, 751]
827	[258, 1514]	1844	[2665, 2666]	2861	[1824, 880]	3878	[1853, 215]
828	[1515, 1516]	1845	[2667, 2668]	2862	[1846, 1833]	3879	[220, 2155]
829	[1517, 1518]	1846	[2669, 2670]	2863	[1726, 3569]	3880	[210, 2268]
830	[1353, 1519]	1847	[2671, 2672]	2864	[1893, 553]	3881	[2190, 2190]
831	[1520, 1521]	1848	[2673, 2674]	2865	[179, 1892]	3882	[1885, 3369]
832	[1522, 1523]	1849	[2675, 2676]	2866	[3570, 3378]	3883	[759, 2175]
833	[1524, 1525]	1850	[1022, 2677]	2867	[1744, 3571]	3884	[160, 1762]
834	[1526, 1527]	1851	[2678, 2679]	2868	[50, 3572]	3885	[3357, 2090]
835	[90, 1528]	1852	[1381, 2680]	2869	[3573, 3518]	3886	[2126, 152]
836	[1529, 1530]	1853	[1130, 941]	2870	[625, 3564]	3887	[3518, 3619]
837	[1531, 1532]	1854	[2681, 2682]	2871	[242, 2047]	3888	[1994, 2154]
838	[1533, 1534]	1855	[1132, 2683]	2872	[3574, 841]	3889	[748, 2144]
839	[1535, 1536]	1856	[2684, 2685]	2873	[2065, 1830]	3890	[2023, 2186]
840	[1537, 1538]	1857	[2686, 2687]	2874	[856, 1624]	3891	[151, 2127]
841	[1539, 972]	1858	[450, 2688]	2875	[2254, 3366]	3892	[3625, 788]
842	[1540, 1541]	1859	[975, 1317]	2876	[1908, 3368]	3893	[2260, 1885]
843	[1542, 1543]	1860	[2689, 2690]	2877	[3575, 1998]	3894	[2263, 3589]
844	[1544, 1545]	1861	[2691, 2692]	2878	[3576, 3561]	3895	[788, 3539]
845	[1546, 1547]	1862	[2693, 2694]	2879	[620, 1727]	3896	[3404, 632]
846	[1417, 1548]	1863	[1383, 2695]	2880	[1624, 3356]	3897	[3418, 571]
847	[1549, 1550]	1864	[2696, 2697]	2881	[1937, 644]	3898	[1776, 2241]

848	[1551, 1552]	1865	[2698, 2699]	2882	[2163, 2140]	3899	[1665, 1898]
849	[1553, 1554]	1866	[1351, 2700]	2883	[159, 731]	3900	[634, 624]
850	[1555, 1556]	1867	[2701, 2702]	2884	[773, 846]	3901	[3538, 2187]
851	[1557, 16]	1868	[2446, 2703]	2885	[724, 781]	3902	[1686, 3395]
852	[1558, 1559]	1869	[2704, 2614]	2886	[2028, 734]	3903	[603, 726]
853	[1560, 994]	1870	[2705, 2706]	2887	[1939, 667]	3904	[4024, 3397]
854	[1299, 1561]	1871	[2707, 2708]	2888	[495, 2077]	3905	[3504, 2218]
855	[1562, 1563]	1872	[2709, 2710]	2889	[519, 3577]	3906	[1835, 1641]
856	[476, 1564]	1873	[20, 2711]	2890	[203, 1934]	3907	[2137, 3583]
857	[1565, 1566]	1874	[2712, 1190]	2891	[3578, 1900]	3908	[848, 2264]
858	[1567, 1458]	1875	[2713, 2714]	2892	[1855, 2209]	3909	[1807, 220]
859	[1568, 1569]	1876	[2715, 2470]	2893	[2089, 774]	3910	[878, 763]
860	[1570, 1571]	1877	[2716, 2717]	2894	[858, 794]	3911	[2165, 2222]
861	[1572, 1573]	1878	[2718, 1108]	2895	[3360, 3413]	3912	[3560, 3435]
862	[1574, 1043]	1879	[2719, 2720]	2896	[578, 584]	3913	[1958, 3616]
863	[1575, 1576]	1880	[2721, 1424]	2897	[3499, 589]	3914	[1903, 3505]
864	[1577, 1578]	1881	[2722, 2723]	2898	[714, 3392]	3915	[3426, 244]
865	[1579, 1580]	1882	[2311, 2724]	2899	[3479, 3554]	3916	[4025, 753]
866	[1581, 1582]	1883	[1170, 915]	2900	[3455, 3488]	3917	[1900, 736]
867	[1074, 1583]	1884	[2725, 295]	2901	[1832, 3463]	3918	[3621, 2263]
868	[1584, 1585]	1885	[2726, 2727]	2902	[2015, 1622]	3919	[1773, 1730]
869	[1586, 1587]	1886	[1552, 2728]	2903	[131, 2259]	3920	[1840, 784]
870	[1588, 1589]	1887	[2729, 2730]	2904	[13, 1879]	3921	[1858, 2052]
871	[1590, 1591]	1888	[2731, 2732]	2905	[3498, 3579]	3922	[2070, 1988]
872	[1592, 1593]	1889	[2733, 2734]	2906	[1902, 1859]	3923	[557, 3456]
873	[300, 1594]	1890	[2735, 2736]	2907	[1752, 3352]	3924	[689, 513]
874	[1595, 1596]	1891	[1538, 974]	2908	[2289, 161]	3925	[4026, 2149]
875	[1597, 1598]	1892	[2737, 2738]	2909	[1960, 3580]	3926	[570, 180]
876	[1599, 1600]	1893	[2739, 2740]	2910	[196, 686]	3927	[1989, 797]
877	[1601, 1133]	1894	[2741, 2742]	2911	[545, 3373]	3928	[241, 690]
878	[1602, 1603]	1895	[2743, 2744]	2912	[3577, 2241]	3929	[136, 223]
879	[1604, 1605]	1896	[1211, 2745]	2913	[1766, 128]	3930	[672, 1987]
880	[1606, 1607]	1897	[2746, 2747]	2914	[650, 1700]	3931	[674, 1778]
881	[1608, 1609]	1898	[998, 2343]	2915	[2100, 2201]	3932	[3603, 3589]
882	[1610, 1057]	1899	[2748, 2749]	2916	[2017, 3361]	3933	[3593, 566]
883	[1611, 1612]	1900	[2750, 1350]	2917	[3419, 36]	3934	[2035, 2067]
884	[1613, 1614]	1901	[2751, 2752]	2918	[1689, 554]	3935	[2099, 219]
885	[1615, 1616]	1902	[2753, 2754]	2919	[1646, 1810]	3936	[1894, 9]
886	[1617, 1618]	1903	[2755, 2756]	2920	[3481, 1635]	3937	[1968, 1751]
887	[1619, 1620]	1904	[2757, 2758]	2921	[542, 1642]	3938	[2160, 1925]
888	[1621, 53]	1905	[2759, 2760]	2922	[2116, 189]	3939	[1992, 211]
889	[1622, 171]	1906	[2761, 2762]	2923	[3581, 1689]	3940	[1953, 4019]
890	[1623, 1624]	1907	[379, 2763]	2924	[1831, 1669]	3941	[1741, 3619]
891	[1625, 1626]	1908	[2764, 2765]	2925	[1647, 741]	3942	[883, 1804]

892	[1627, 185]	1909	[1198, 2766]	2926	[171, 794]	3943	[562, 1880]
893	[1628, 1629]	1910	[2767, 2435]	2927	[1926, 664]	3944	[133, 2267]
894	[745, 1630]	1911	[2768, 2769]	2928	[49, 646]	3945	[648, 845]
895	[1631, 1632]	1912	[2736, 2770]	2929	[2109, 2277]	3946	[1999, 1758]
896	[137, 1633]	1913	[2641, 2771]	2930	[1911, 2117]	3947	[3446, 1994]
897	[158, 586]	1914	[2772, 2773]	2931	[782, 1723]	3948	[1660, 242]
898	[1634, 1635]	1915	[2774, 2775]	2932	[1983, 3504]	3949	[3633, 1792]
899	[1632, 1636]	1916	[2776, 25]	2933	[2226, 504]	3950	[1808, 861]
900	[1632, 1637]	1917	[1185, 2777]	2934	[1976, 143]	3951	[604, 797]
901	[1638, 1639]	1918	[2778, 323]	2935	[2248, 594]	3952	[2274, 851]
902	[559, 1640]	1919	[2779, 2780]	2936	[175, 3577]	3953	[2212, 3529]
903	[1641, 10]	1920	[2781, 303]	2937	[3582, 2001]	3954	[608, 724]
904	[1642, 1643]	1921	[278, 2782]	2938	[1959, 1938]	3955	[708, 232]
905	[1644, 1645]	1922	[2783, 2784]	2939	[824, 3583]	3956	[2262, 3603]
906	[1646, 1639]	1923	[2785, 2786]	2940	[2183, 526]	3957	[1715, 2207]
907	[1647, 1648]	1924	[2787, 2788]	2941	[635, 2199]	3958	[2235, 1651]
908	[1649, 1650]	1925	[2789, 2790]	2942	[2240, 754]	3959	[3549, 2261]
909	[1651, 1652]	1926	[2791, 1409]	2943	[561, 2079]	3960	[3614, 158]
910	[617, 1653]	1927	[1416, 2792]	2944	[1720, 1727]	3961	[2046, 2250]
911	[1654, 1655]	1928	[2793, 2794]	2945	[718, 1977]	3962	[1783, 877]
912	[555, 1656]	1929	[2795, 2796]	2946	[2240, 2011]	3963	[761, 2251]
913	[1657, 780]	1930	[2797, 1568]	2947	[1822, 2161]	3964	[178, 1696]
914	[1658, 1659]	1931	[2798, 2799]	2948	[1690, 834]	3965	[496, 3453]
915	[1660, 1661]	1932	[2800, 2801]	2949	[3584, 3585]	3966	[1711, 1837]
916	[1662, 1663]	1933	[2408, 1232]	2950	[793, 1704]	3967	[1891, 583]
917	[1664, 1665]	1934	[2802, 2803]	2951	[2170, 2228]	3968	[559, 757]
918	[193, 1666]	1935	[2804, 2805]	2952	[821, 2163]	3969	[1683, 32]
919	[1667, 1668]	1936	[2806, 2807]	2953	[528, 1996]	3970	[3436, 643]
920	[777, 1669]	1937	[2808, 2809]	2954	[1698, 170]	3971	[3466, 1842]
921	[1670, 1671]	1938	[2810, 2636]	2955	[766, 1695]	3972	[1690, 618]
922	[1672, 561]	1939	[1419, 2811]	2956	[3574, 561]	3973	[2261, 2264]
923	[1673, 1674]	1940	[2812, 2357]	2957	[1753, 3533]	3974	[228, 3393]
924	[1675, 1676]	1941	[2813, 2814]	2958	[2131, 3371]	3975	[2013, 131]
925	[1677, 1678]	1942	[2815, 1586]	2959	[3514, 503]	3976	[3538, 1886]
926	[836, 1679]	1943	[2816, 2817]	2960	[2179, 615]	3977	[3602, 2189]
927	[1680, 763]	1944	[276, 2818]	2961	[2218, 2099]	3978	[3621, 3603]
928	[1681, 1682]	1945	[2819, 2820]	2962	[139, 3569]	3979	[2187, 3604]
929	[1683, 1684]	1946	[2821, 2822]	2963	[192, 3586]	3980	[2264, 3605]
930	[1685, 526]	1947	[2823, 2350]	2964	[1712, 3382]	3981	[491, 620]
931	[1686, 1687]	1948	[2605, 255]	2965	[2284, 3587]	3982	[2060, 1702]
932	[1688, 1689]	1949	[2824, 2525]	2966	[2100, 3460]	3983	[3375, 2090]
933	[1690, 1653]	1950	[2825, 929]	2967	[3588, 1957]	3984	[866, 3400]
934	[1691, 1692]	1951	[2826, 421]	2968	[639, 686]	3985	[2004, 675]
935	[1693, 1694]	1952	[2827, 2828]	2969	[855, 2060]	3986	[2131, 811]

936	[1695, 1696]	1953	[2829, 2830]	2970	[3357, 3434]	3987	[3404, 1643]
937	[1697, 783]	1954	[2831, 2832]	2971	[2218, 212]	3988	[790, 1931]
938	[1698, 1699]	1955	[2833, 2834]	2972	[3495, 1767]	3989	[2104, 3479]
939	[687, 1700]	1956	[2835, 2836]	2973	[3589, 3549]	3990	[3522, 2159]
940	[608, 1701]	1957	[2837, 2838]	2974	[35, 2030]	3991	[3411, 153]
941	[1702, 1703]	1958	[2839, 2840]	2975	[1842, 1751]	3992	[1990, 640]
942	[576, 1704]	1959	[2836, 2841]	2976	[3590, 2125]	3993	[610, 1838]
943	[1705, 658]	1960	[2842, 2843]	2977	[1673, 501]	3994	[1715, 3579]
944	[1706, 689]	1961	[2844, 2845]	2978	[3358, 1653]	3995	[515, 653]
945	[207, 1707]	1962	[2846, 2847]	2979	[1995, 529]	3996	[644, 2106]
946	[132, 1708]	1963	[2848, 2849]	2980	[3591, 619]	3997	[696, 3598]
947	[692, 1709]	1964	[2850, 2851]	2981	[1793, 3375]	3998	[159, 1900]
948	[1710, 1711]	1965	[1107, 2852]	2982	[2015, 505]	3999	[2016, 672]
949	[589, 1712]	1966	[1111, 2826]	2983	[871, 681]	4000	[806, 3409]
950	[1713, 1714]	1967	[2853, 2854]	2984	[3592, 2020]	4001	[1901, 3541]
951	[1715, 1716]	1968	[2855, 2856]	2985	[620, 3569]	4002	[1938, 3580]
952	[533, 1717]	1969	[2857, 2858]	2986	[1950, 1803]	4003	[814, 58]
953	[1718, 1719]	1970	[2859, 2860]	2987	[1846, 1792]	4004	[1942, 3632]
954	[619, 1720]	1971	[1439, 2861]	2988	[1755, 2242]	4005	[192, 3565]
955	[1721, 1722]	1972	[2862, 2863]	2989	[727, 3423]	4006	[4027, 2091]
956	[1723, 1724]	1973	[2864, 2865]	2990	[3530, 1885]	4007	[654, 2169]
957	[862, 1725]	1974	[2866, 2867]	2991	[3593, 2103]	4008	[731, 2141]
958	[1726, 1727]	1975	[2572, 2868]	2992	[3384, 2057]	4009	[2257, 812]
959	[1728, 1729]	1976	[2869, 2870]	2993	[2190, 3440]	4010	[134, 1855]
960	[749, 1730]	1977	[2871, 2872]	2994	[3555, 739]	4011	[4028, 1083]
961	[628, 1656]	1978	[2822, 2718]	2995	[39, 1963]	4012	[4029, 3221]
962	[136, 1731]	1979	[2873, 1049]	2996	[3481, 2294]	4013	[4030, 3023]
963	[1732, 1733]	1980	[2874, 2875]	2997	[3594, 42]	4014	[4031, 1443]
964	[779, 582]	1981	[2876, 2877]	2998	[511, 773]	4015	[4032, 3964]
965	[1734, 1735]	1982	[2878, 2879]	2999	[2194, 148]	4016	[4033, 4034]
966	[499, 1736]	1983	[2880, 2881]	3000	[647, 3595]	4017	[4035, 353]
967	[1737, 674]	1984	[2882, 2883]	3001	[149, 1815]	4018	[4036, 4037]
968	[1738, 1739]	1985	[416, 2884]	3002	[3454, 1945]	4019	[1039, 3109]
969	[1740, 1741]	1986	[418, 2885]	3003	[2245, 770]	4020	[4038, 4039]
970	[1742, 1743]	1987	[1233, 2886]	3004	[3468, 839]	4021	[4040, 2933]
971	[1744, 1745]	1988	[2887, 2888]	3005	[212, 1712]	4022	[4041, 4042]
972	[1746, 1747]	1989	[2889, 2890]	3006	[186, 3378]	4023	[4043, 4044]
973	[1748, 610]	1990	[2891, 2892]	3007	[183, 3541]	4024	[4045, 4046]
974	[686, 650]	1991	[2893, 415]	3008	[3594, 731]	4025	[4047, 2921]
975	[1749, 735]	1992	[2894, 428]	3009	[3384, 1870]	4026	[4048, 4049]
976	[39, 1750]	1993	[2895, 2896]	3010	[1763, 885]	4027	[4050, 3042]
977	[1751, 154]	1994	[2897, 948]	3011	[773, 3596]	4028	[4051, 547]
978	[1649, 887]	1995	[2898, 2899]	3012	[3597, 1729]	4029	[716, 1785]
979	[842, 493]	1996	[2900, 2901]	3013	[545, 2242]	4030	[531, 3457]

980	[1737, 1752]	1997	[2902, 2903]	3014	[513, 2172]	4031	[3539, 2261]
981	[1753, 679]	1998	[2904, 2905]	3015	[1932, 2144]	4032	[165, 3543]
982	[1754, 1755]	1999	[1527, 2906]	3016	[807, 3458]	4033	[512, 3596]
983	[40, 1756]	2000	[981, 2907]	3017	[2134, 3598]	4034	[3351, 3501]
984	[1757, 1758]	2001	[2908, 79]	3018	[1629, 735]	4035	[804, 636]
985	[8, 1759]	2002	[1209, 2909]	3019	[3359, 1787]	4036	[1681, 676]
986	[1760, 1761]	2003	[98, 2910]	3020	[743, 700]	4037	[3405, 1895]
987	[42, 1762]	2004	[2911, 2912]	3021	[171, 161]	4038	[1862, 2128]
988	[1763, 1764]	2005	[2913, 2914]	3022	[631, 1919]	4039	[1721, 1700]
989	[1765, 771]	2006	[2915, 2916]	3023	[532, 3566]	4040	[1634, 2145]
990	[1766, 1767]	2007	[2917, 2918]	3024	[1817, 1802]	4041	[3498, 3463]
991	[1768, 558]	2008	[2919, 2920]	3025	[3599, 1697]	4042	[3561, 562]
992	[543, 632]	2009	[2921, 2922]	3026	[2163, 1895]	4043	[3547, 1735]
993	[1769, 39]	2010	[2923, 2917]	3027	[1983, 1992]	4044	[841, 1917]
994	[803, 193]	2011	[2924, 2925]	3028	[2192, 644]	4045	[1958, 3520]
995	[589, 219]	2012	[2926, 2927]	3029	[2032, 3478]	4046	[1833, 865]
996	[723, 615]	2013	[2928, 2929]	3030	[38, 3554]	4047	[593, 2249]
997	[1770, 32]	2014	[1513, 2930]	3031	[1774, 706]	4048	[1997, 2161]
998	[1771, 1772]	2015	[2931, 2932]	3032	[3537, 860]	4049	[1742, 3505]
999	[1773, 138]	2016	[2933, 2934]	3033	[3519, 2295]	4050	[771, 2100]
1000	[1740, 1774]	2017	[2935, 2936]	3034	[632, 52]	4051	[4052, 2704]
1001	[1775, 1635]	2018	[2937, 2938]	3035	[2208, 1770]	4052	[4053, 1917]
1002	[499, 1776]	2019	[2939, 2940]	3036	[832, 1859]	4053	[4054, 2721]
1003	[1777, 516]	2020	[2941, 2942]	3037	[59, 2051]	4054	[4055, 2169]
1004	[671, 605]	2021	[2927, 2943]	3038	[1685, 719]	4055	[4056, 3151]
1005	[1772, 1778]	2022	[2944, 2364]	3039	[132, 2231]	4056	[4057, 2181]
1006	[1779, 1780]	2023	[2945, 2946]	3040	[651, 3439]	4057	[4058, 2815]
1007	[1781, 1782]	2024	[2720, 2947]	3041	[3484, 3600]	4058	[4059, 2280]
1008	[1783, 1784]	2025	[2948, 1430]	3042	[2142, 729]	4059	[4060, 3322]
1009	[1785, 1786]	2026	[2949, 2950]	3043	[2100, 1927]	4060	[4061, 3416]
1010	[1787, 1736]	2027	[2951, 2534]	3044	[2154, 701]	4061	[4062, 1489]
1011	[1788, 837]	2028	[2457, 2952]	3045	[3601, 3461]	4062	[4063, 650]
1012	[1789, 1790]	2029	[2524, 2953]	3046	[1964, 1662]	4063	[4064, 2463]
1013	[676, 1791]	2030	[2954, 2955]	3047	[3508, 1836]	4064	[7, 2117]
1014	[1792, 1793]	2031	[2956, 2321]	3048	[1664, 727]		
1015	[495, 1794]	2032	[2957, 2958]	3049	[2237, 3430]		
1016	[806, 1795]	2033	[2714, 2959]	3050	[3570, 573]		

Output function $n \mapsto \tau(n)$:

n	$\tau(n)$	n	$\tau(n)$	n	$\tau(n)$	n	$\tau(n)$	n	$\tau(n)$	n	$\tau(n)$
0	0	678	1	1356	1	2034	1	2712	0	3390	0
1	0	679	0	1357	1	2035	0	2713	1	3391	1
2	0	680	1	1358	1	2036	1	2714	1	3392	1
3	0	681	1	1359	0	2037	1	2715	0	3393	0

4	0	682	0	1360	0	2038	1	2716	1	3394	1
5	0	683	0	1361	1	2039	1	2717	1	3395	0
6	1	684	1	1362	1	2040	1	2718	0	3396	0
7	0	685	1	1363	1	2041	1	2719	1	3397	0
8	0	686	1	1364	0	2042	0	2720	1	3398	0
9	0	687	0	1365	1	2043	1	2721	0	3399	0
10	1	688	0	1366	1	2044	0	2722	1	3400	1
11	0	689	0	1367	0	2045	0	2723	1	3401	1
12	1	690	1	1368	0	2046	0	2724	0	3402	1
13	1	691	1	1369	1	2047	1	2725	0	3403	0
14	1	692	1	1370	0	2048	1	2726	1	3404	1
15	0	693	1	1371	1	2049	0	2727	1	3405	1
16	0	694	0	1372	0	2050	1	2728	0	3406	0
17	0	695	1	1373	0	2051	1	2729	1	3407	1
18	0	696	0	1374	1	2052	0	2730	0	3408	1
19	0	697	1	1375	1	2053	0	2731	1	3409	1
20	1	698	1	1376	0	2054	0	2732	0	3410	1
21	1	699	1	1377	0	2055	1	2733	0	3411	1
22	0	700	1	1378	1	2056	1	2734	1	3412	1
23	0	701	1	1379	0	2057	1	2735	1	3413	0
24	1	702	1	1380	1	2058	0	2736	0	3414	1
25	1	703	0	1381	1	2059	1	2737	0	3415	0
26	0	704	1	1382	0	2060	1	2738	1	3416	1
27	1	705	1	1383	1	2061	1	2739	1	3417	1
28	0	706	1	1384	0	2062	0	2740	1	3418	0
29	1	707	0	1385	1	2063	0	2741	1	3419	1
30	0	708	0	1386	0	2064	0	2742	1	3420	0
31	0	709	0	1387	1	2065	0	2743	1	3421	1
32	0	710	1	1388	0	2066	1	2744	1	3422	1
33	0	711	0	1389	1	2067	0	2745	0	3423	0
34	0	712	0	1390	0	2068	0	2746	0	3424	0
35	0	713	1	1391	0	2069	0	2747	0	3425	1
36	1	714	0	1392	1	2070	1	2748	0	3426	1
37	0	715	0	1393	0	2071	0	2749	1	3427	0
38	1	716	0	1394	1	2072	1	2750	0	3428	0
39	0	717	0	1395	1	2073	1	2751	1	3429	0
40	1	718	0	1396	0	2074	1	2752	0	3430	1
41	1	719	1	1397	1	2075	1	2753	1	3431	1
42	1	720	1	1398	0	2076	1	2754	1	3432	0
43	1	721	1	1399	0	2077	1	2755	1	3433	1
44	0	722	1	1400	1	2078	1	2756	0	3434	0
45	0	723	0	1401	0	2079	0	2757	0	3435	0
46	0	724	1	1402	1	2080	1	2758	1	3436	0
47	0	725	1	1403	0	2081	1	2759	0	3437	0

48	0	726	1	1404	0	2082	1	2760	1	3438	0
49	1	727	0	1405	1	2083	0	2761	0	3439	0
50	1	728	0	1406	0	2084	1	2762	0	3440	0
51	1	729	1	1407	0	2085	0	2763	1	3441	0
52	0	730	1	1408	0	2086	0	2764	0	3442	0
53	0	731	0	1409	0	2087	0	2765	0	3443	1
54	1	732	0	1410	1	2088	1	2766	1	3444	0
55	1	733	1	1411	1	2089	0	2767	0	3445	0
56	0	734	0	1412	0	2090	0	2768	0	3446	1
57	0	735	0	1413	0	2091	0	2769	0	3447	1
58	1	736	1	1414	1	2092	0	2770	0	3448	0
59	1	737	0	1415	0	2093	1	2771	0	3449	1
60	1	738	0	1416	0	2094	1	2772	1	3450	1
61	0	739	1	1417	1	2095	1	2773	0	3451	1
62	1	740	1	1418	0	2096	1	2774	0	3452	1
63	0	741	1	1419	0	2097	0	2775	0	3453	0
64	1	742	0	1420	0	2098	1	2776	0	3454	1
65	0	743	1	1421	1	2099	1	2777	1	3455	0
66	0	744	1	1422	1	2100	1	2778	1	3456	1
67	0	745	1	1423	1	2101	0	2779	1	3457	0
68	0	746	0	1424	0	2102	0	2780	0	3458	0
69	0	747	1	1425	1	2103	1	2781	1	3459	0
70	1	748	1	1426	0	2104	1	2782	1	3460	1
71	0	749	1	1427	0	2105	1	2783	1	3461	1
72	0	750	1	1428	0	2106	1	2784	1	3462	1
73	1	751	0	1429	0	2107	0	2785	0	3463	1
74	0	752	1	1430	1	2108	1	2786	0	3464	1
75	0	753	1	1431	1	2109	0	2787	1	3465	0
76	1	754	0	1432	0	2110	0	2788	1	3466	1
77	1	755	0	1433	1	2111	1	2789	1	3467	0
78	0	756	0	1434	1	2112	1	2790	1	3468	1
79	0	757	0	1435	1	2113	1	2791	0	3469	1
80	1	758	0	1436	0	2114	1	2792	1	3470	1
81	1	759	1	1437	0	2115	0	2793	1	3471	0
82	0	760	1	1438	0	2116	1	2794	0	3472	1
83	1	761	0	1439	0	2117	1	2795	0	3473	1
84	0	762	1	1440	0	2118	1	2796	0	3474	1
85	1	763	0	1441	0	2119	0	2797	0	3475	1
86	0	764	0	1442	1	2120	0	2798	0	3476	0
87	1	765	0	1443	1	2121	1	2799	0	3477	0
88	0	766	1	1444	0	2122	1	2800	0	3478	0
89	0	767	0	1445	0	2123	1	2801	1	3479	0
90	1	768	0	1446	1	2124	1	2802	0	3480	1
91	0	769	1	1447	1	2125	0	2803	0	3481	0

92	1	770	0	1448	1	2126	1	2804	0	3482	1
93	0	771	0	1449	1	2127	0	2805	0	3483	1
94	1	772	0	1450	0	2128	0	2806	0	3484	0
95	0	773	0	1451	0	2129	1	2807	0	3485	0
96	1	774	0	1452	1	2130	0	2808	0	3486	1
97	0	775	1	1453	1	2131	0	2809	0	3487	0
98	1	776	0	1454	0	2132	1	2810	0	3488	0
99	1	777	0	1455	0	2133	0	2811	0	3489	0
100	1	778	0	1456	0	2134	1	2812	0	3490	1
101	1	779	1	1457	1	2135	0	2813	0	3491	0
102	0	780	0	1458	0	2136	1	2814	0	3492	1
103	1	781	1	1459	1	2137	1	2815	0	3493	1
104	1	782	1	1460	0	2138	1	2816	0	3494	1
105	0	783	0	1461	0	2139	1	2817	0	3495	0
106	1	784	1	1462	0	2140	0	2818	0	3496	1
107	0	785	0	1463	1	2141	1	2819	1	3497	0
108	0	786	0	1464	0	2142	0	2820	0	3498	1
109	1	787	1	1465	0	2143	0	2821	0	3499	0
110	1	788	0	1466	0	2144	0	2822	0	3500	1
111	1	789	1	1467	1	2145	1	2823	0	3501	1
112	1	790	1	1468	0	2146	1	2824	1	3502	1
113	0	791	0	1469	0	2147	0	2825	0	3503	0
114	1	792	1	1470	1	2148	0	2826	0	3504	0
115	0	793	0	1471	1	2149	0	2827	1	3505	0
116	0	794	0	1472	0	2150	1	2828	0	3506	1
117	1	795	0	1473	1	2151	0	2829	1	3507	1
118	1	796	0	1474	1	2152	1	2830	0	3508	1
119	1	797	0	1475	0	2153	0	2831	0	3509	1
120	1	798	1	1476	0	2154	0	2832	1	3510	1
121	1	799	0	1477	1	2155	0	2833	1	3511	1
122	0	800	0	1478	1	2156	0	2834	1	3512	1
123	0	801	0	1479	1	2157	1	2835	0	3513	0
124	1	802	1	1480	0	2158	1	2836	1	3514	1
125	1	803	0	1481	0	2159	1	2837	0	3515	1
126	1	804	1	1482	1	2160	0	2838	1	3516	1
127	0	805	1	1483	1	2161	0	2839	1	3517	1
128	1	806	0	1484	1	2162	1	2840	0	3518	0
129	1	807	1	1485	1	2163	1	2841	1	3519	0
130	1	808	1	1486	0	2164	0	2842	1	3520	0
131	0	809	0	1487	1	2165	1	2843	1	3521	1
132	0	810	1	1488	0	2166	1	2844	1	3522	0
133	0	811	1	1489	0	2167	1	2845	1	3523	0
134	1	812	1	1490	1	2168	0	2846	1	3524	1
135	0	813	0	1491	1	2169	0	2847	1	3525	1

136	0	814	1	1492	0	2170	1	2848	1	3526	1
137	0	815	0	1493	0	2171	1	2849	1	3527	1
138	0	816	0	1494	0	2172	1	2850	1	3528	0
139	0	817	0	1495	1	2173	1	2851	1	3529	1
140	1	818	0	1496	0	2174	1	2852	1	3530	1
141	1	819	1	1497	1	2175	0	2853	1	3531	1
142	0	820	1	1498	1	2176	0	2854	0	3532	1
143	0	821	1	1499	1	2177	1	2855	1	3533	1
144	1	822	0	1500	1	2178	0	2856	1	3534	1
145	0	823	0	1501	1	2179	1	2857	1	3535	0
146	0	824	0	1502	1	2180	0	2858	1	3536	1
147	1	825	0	1503	0	2181	0	2859	0	3537	0
148	0	826	0	1504	0	2182	1	2860	0	3538	0
149	0	827	1	1505	0	2183	0	2861	0	3539	1
150	1	828	0	1506	0	2184	1	2862	1	3540	1
151	0	829	1	1507	0	2185	1	2863	0	3541	1
152	1	830	1	1508	0	2186	1	2864	1	3542	0
153	1	831	1	1509	1	2187	0	2865	0	3543	0
154	1	832	0	1510	0	2188	1	2866	0	3544	1
155	1	833	0	1511	0	2189	1	2867	1	3545	0
156	0	834	1	1512	0	2190	1	2868	1	3546	1
157	0	835	1	1513	1	2191	0	2869	0	3547	1
158	0	836	1	1514	0	2192	0	2870	0	3548	0
159	0	837	1	1515	0	2193	1	2871	1	3549	0
160	1	838	1	1516	1	2194	0	2872	0	3550	0
161	1	839	0	1517	1	2195	1	2873	0	3551	1
162	1	840	0	1518	1	2196	1	2874	1	3552	0
163	1	841	0	1519	0	2197	1	2875	0	3553	0
164	1	842	0	1520	1	2198	0	2876	0	3554	1
165	0	843	0	1521	0	2199	0	2877	1	3555	0
166	0	844	0	1522	0	2200	0	2878	1	3556	1
167	1	845	1	1523	0	2201	0	2879	1	3557	0
168	0	846	1	1524	0	2202	1	2880	1	3558	0
169	0	847	0	1525	1	2203	0	2881	0	3559	1
170	1	848	0	1526	1	2204	0	2882	1	3560	0
171	1	849	1	1527	0	2205	1	2883	0	3561	1
172	1	850	1	1528	1	2206	0	2884	0	3562	0
173	0	851	1	1529	1	2207	0	2885	1	3563	1
174	1	852	1	1530	1	2208	1	2886	1	3564	1
175	1	853	0	1531	1	2209	0	2887	0	3565	0
176	0	854	0	1532	1	2210	1	2888	0	3566	0
177	0	855	0	1533	1	2211	0	2889	1	3567	1
178	1	856	1	1534	1	2212	0	2890	1	3568	0
179	0	857	1	1535	0	2213	1	2891	1	3569	0

180	0	858	0	1536	0	2214	0	2892	0	3570	0
181	1	859	1	1537	0	2215	0	2893	0	3571	1
182	1	860	1	1538	0	2216	0	2894	0	3572	0
183	0	861	0	1539	0	2217	0	2895	1	3573	0
184	0	862	0	1540	0	2218	1	2896	1	3574	0
185	1	863	1	1541	1	2219	1	2897	0	3575	1
186	1	864	1	1542	0	2220	0	2898	0	3576	1
187	0	865	0	1543	0	2221	0	2899	0	3577	1
188	1	866	0	1544	0	2222	0	2900	0	3578	1
189	1	867	1	1545	1	2223	0	2901	0	3579	0
190	1	868	0	1546	1	2224	0	2902	1	3580	0
191	0	869	0	1547	1	2225	0	2903	0	3581	0
192	0	870	1	1548	0	2226	1	2904	1	3582	1
193	1	871	0	1549	0	2227	0	2905	1	3583	0
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195	0	873	1	1551	0	2229	0	2907	0	3585	1
196	1	874	1	1552	1	2230	0	2908	0	3586	0
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198	1	876	1	1554	0	2232	0	2910	1	3588	1
199	1	877	0	1555	1	2233	1	2911	0	3589	0
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204	0	882	1	1560	0	2238	1	2916	1	3594	0
205	0	883	1	1561	1	2239	1	2917	1	3595	1
206	1	884	0	1562	0	2240	1	2918	1	3596	0
207	1	885	0	1563	0	2241	0	2919	0	3597	1
208	1	886	1	1564	0	2242	0	2920	0	3598	0
209	1	887	1	1565	1	2243	1	2921	1	3599	1
210	1	888	0	1566	0	2244	0	2922	1	3600	1
211	0	889	1	1567	0	2245	0	2923	0	3601	1
212	0	890	0	1568	1	2246	1	2924	1	3602	0
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217	0	895	1	1573	1	2251	1	2929	0	3607	0
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219	1	897	0	1575	1	2253	0	2931	1	3609	0
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227	0	905	0	1583	1	2261	1	2939	0	3617	0
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471	1	1149	0	1827	0	2505	1	3183	1	3861	1
472	1	1150	0	1828	0	2506	1	3184	1	3862	0
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474	1	1152	0	1830	1	2508	1	3186	0	3864	0
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476	1	1154	0	1832	0	2510	0	3188	1	3866	0
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479	0	1157	0	1835	0	2513	1	3191	1	3869	0
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481	1	1159	0	1837	0	2515	0	3193	0	3871	1
482	1	1160	0	1838	1	2516	0	3194	1	3872	1
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484	0	1162	1	1840	1	2518	0	3196	0	3874	1
485	0	1163	0	1841	1	2519	0	3197	1	3875	0
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487	1	1165	0	1843	1	2521	0	3199	0	3877	1

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