PROOF OF THE CONTINUED FRACTION CONJECTURE FOR $(a, b) = (z^6 + z^4 + z^3, z + 1)$

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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 $(a, b) = (z^6 + z^4 + z^3, z + 1)$.

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 $(a,b)=(z^6+z^4+z^3,z+1)$, 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 $\mathrm{CF}(a,b)$,

$$\begin{aligned}
p_0(z)&=z^{21}+z^{20}+z^{19}+z^{16}+z^{12}+z^{11}+z^{10}+z^9+z^8+z^4+z^3+1,\\
p_1(z)&=z^{27}+z^{26}+z^{22}+z^{18}+z^{17}+z^{16}+z^{15}+z^{14}+z^{13}+z^8+z^4+z^3,\\
p_2(z)&=z^{28}+z^{26}+z^{20}+z^{18}+z^{14}+z^{10}+z^8+z^6,\\
p_3(z)&=z^{27}+z^{26}+z^{22}+z^{18}+z^{17}+z^{16}+z^{15}+z^{14}+z^{13}+z^8+z^4+z^3,\\
p_4(z)&=z^{26}+z^{21}+z^{20}+z^{19}+z^{18}+z^{14}+z^{12}+z^{11}+z^9+z^6+z^3,
\end{aligned}$$

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

$$\begin{aligned}
p_0(z)&=z^{24}+z^{21}+z^{20}+z^{19}+z^{11}+z^{10}+z^9+z^8+z^3,\\
p_1(z)&=z^{27}+z^{26}+z^{22}+z^{18}+z^{17}+z^{16}+z^{15}+z^{14}+z^{13}+z^8+z^4+z^3,\\
p_2(z)&=z^{28}+z^{26}+z^{20}+z^{18}+z^{14}+z^{10}+z^8+z^6,\\
p_3(z)&=z^{27}+z^{26}+z^{22}+z^{18}+z^{17}+z^{16}+z^{15}+z^{14}+z^{13}+z^8+z^4+z^3,\\
p_4(z)&=z^{26}+z^{24}+z^{21}+z^{20}+z^{19}+z^{18}+z^{16}+z^{14}+z^{11}+z^9+z^6+z^4+z^3\\
&\quad+1.
\end{aligned}$$

2. Proof

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

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

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. ∎

Define

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

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

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

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

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

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

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 $u = 2^{2k}$,

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

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

$$
\begin{aligned}
0 &= x^{6u} T[u:2u] + x^{3u} T[4u:5u] + x^u T[6u:7u] + T[7u:8u],\\
0 &= x^{8u} T[:u] + x^{7u} T[u:2u] + x^{6u} T[2u:3u] + x^{4u} T[4u:5u]
\end{aligned}
$$

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

which can be rewritten as

$$0 = T[[1w]_2] + T[[100w]_2] + T[[110w]_2] + T[[111w]_2], \tag{2.7}$$

$$\begin{aligned}0 &= T[[w]_2] + T[[1w]_2] + T[[10w]_2] + T[[100w]_2] + T[[101w]_2]\\ &\quad + T[[110w]_2] + T[[1000w]_2],\end{aligned} \tag{2.8}$$

$$0 = T[[10w]_2] + T[[11w]_2] + T[[100w]_2] + T[[101w]_2] + T[[1001w]_2], \tag{2.9}$$

$$0 = T[[11w]_2] + T[[100w]_2] + T[[101w]_2] + T[[110w]_2] + T[[1010w]_2], \tag{2.10}$$

$$0 = T[[1w]_2] + T[[101w]_2] + T[[1011w]_2], \tag{2.11}$$

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

$$0 = T[[11w]_2] + T[[100w]_2] + T[[110w]_2] + T[[1101w]_2], \tag{2.13}$$

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

$$0 = T[[1w]_2] + T[[100w]_2] + T[[110w]_2] + T[[111w]_2], \tag{2.14}$$

$$\begin{aligned}0 &= T[[w]_2] + T[[1w]_2] + T[[10w]_2] + T[[100w]_2] + T[[101w]_2]\\ &\quad + T[[110w]_2] + T[[1000w]_2],\end{aligned} \tag{2.15}$$

$$0 = T[[10w]_2] + T[[11w]_2] + T[[100w]_2] + T[[101w]_2] + T[[1001w]_2], \tag{2.16}$$

$$0 = T[[11w]_2] + T[[100w]_2] + T[[101w]_2] + T[[110w]_2] + T[[1010w]_2], \tag{2.17}$$

$$0 = T[[1w]_2] + T[[101w]_2] + T[[1011w]_2], \tag{2.18}$$

$$0 = T[[w]_2] + T[[10w]_2] + T[[110w]_2] + T[[1100w]_2], \tag{2.19}$$

$$0 = T[[11w]_2] + T[[100w]_2] + T[[110w]_2] + T[[1101w]_2], \tag{2.20}$$

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

First we calculate an 2-automaton that generates T from its minimal polynomial and its first terms. This automaton has 5115 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

$$0 = \tau(A(s,1)) + \tau(A(s,100)) + \tau(A(s,110)) + \tau(A(s,111)), \tag{2.21}$$

$$\begin{aligned}0 &= \tau(A(s,\epsilon)) + \tau(A(s,1)) + \tau(A(s,10)) + \tau(A(s,100))\\ &\quad + \tau(A(s,101)) + \tau(A(s,110)) + \tau(A(s,1000)),\end{aligned} \tag{2.22}$$

$$0 = \tau(A(s,10)) + \tau(A(s,11)) + \tau(A(s,100)) + \tau(A(s,101))$$

$$+\tau(A(s,1001)), \tag{2.23}$$

$$\begin{aligned}0 &= \tau(A(s,11))+\tau(A(s,100))+\tau(A(s,101))+\tau(A(s,110))\\ &\quad+\tau(A(s,1010)),\end{aligned} \tag{2.24}$$

$$0 = \tau(A(s,1))+\tau(A(s,101))+\tau(A(s,1011)), \tag{2.25}$$

$$0 = \tau(A(s,\epsilon))+\tau(A(s,10))+\tau(A(s,110))+\tau(A(s,1100)), \tag{2.26}$$

$$0 = \tau(A(s,11))+\tau(A(s,100))+\tau(A(s,110))+\tau(A(s,1101)), \tag{2.27}$$

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

$$0 = \tau(A(s,1))+\tau(A(s,100))+\tau(A(s,110))+\tau(A(s,111)), \tag{2.28}$$

$$\begin{aligned}0 &= \tau(A(s,\epsilon))+\tau(A(s,1))+\tau(A(s,10))+\tau(A(s,100))\\ &\quad+\tau(A(s,101))+\tau(A(s,110))+\tau(A(s,1000)),\end{aligned} \tag{2.29}$$

$$\begin{aligned}0 &= \tau(A(s,10))+\tau(A(s,11))+\tau(A(s,100))+\tau(A(s,101))\\ &\quad+\tau(A(s,1001)),\end{aligned} \tag{2.30}$$

$$\begin{aligned}0 &= \tau(A(s,11))+\tau(A(s,100))+\tau(A(s,101))+\tau(A(s,110))\\ &\quad+\tau(A(s,1010)),\end{aligned} \tag{2.31}$$

$$0 = \tau(A(s,1))+\tau(A(s,101))+\tau(A(s,1011)), \tag{2.32}$$

$$0 = \tau(A(s,\epsilon))+\tau(A(s,10))+\tau(A(s,110))+\tau(A(s,1100)), \tag{2.33}$$

$$0 = \tau(A(s,11))+\tau(A(s,100))+\tau(A(s,110))+\tau(A(s,1101)), \tag{2.34}$$

for $s = A(i, 0^{2k})$. We find that $(A(i,0^{26}), E_{26}) = (A(i,0^{20}), E_{20})$, so that we only have to verify that identities (2.21) through (2.34) hold for $2 \le k \le 13$, which turns out to be true. □

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 $u = 2^{2k-1}$,*

$$\begin{aligned}M_{2k} &= M^e[:7u] + x^u M^e[:6u] + x^{3u} M^e[:4u] + x^{6u} M^e[:u] + x^{7u} R^e,\\ W_{2k} &= W^e[:7u] + x^u W^e[:6u] + x^{3u} W^e[:4u] + x^{6u} W^e[:u] + x^{7u} R^e.\end{aligned}$$

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

$$\begin{aligned}M_{2k+1} &= M^o[:7u] + x^u M^o[:6u] + x^{3u} M^o[:4u] + x^{6u} M^o[:u] + x^{7u} R^o,\\ W_{2k+1} &= W^o[:7u] + x^u W^o[:6u] + x^{3u} W^o[:4u] + x^{6u} W^o[:u] + x^{7u} R^o.\end{aligned}$$

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

$$\begin{aligned}M_{2k} \wedge W_{2k} &\Rightarrow M_{2k+1} \wedge W_{2k+1},\\ M_{2k+1} \wedge W_{2k+1} &\Rightarrow M_{2k+2} \wedge W_{2k+2}.\end{aligned}$$

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

$$W_{2k}M_{2k} = \big(W^e[:7v] + x^v W^e[:6v] + x^{3v} W^e[:4v] + x^{6v} W^e[:v] + x^{7u} R^e\big) \times \big($$

$$M^e[:7v] + x^v M^e[:6v] + x^{3v} M^e[:4v] + x^{6v} M^e[:v] + x^{7u} R^e\big); \tag{2.35}$$

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

$$W^e[:14v]M^e[:14v] + x^{2v}W^e[:12v]M^e[:12v] + x^{6v}W^e[:8v]M^e[:8v] \\ + x^{12v}W^e[:2v]M^e[:2v].$$

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. □

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

$$\begin{aligned} q_0(x) &= x^{28} + x^{25} + x^{24} + x^{20} + x^{19} + x^{18} + x^{17} + x^{16} + x^{12} + x^9 + x^8 + x^7, \\ q_1(x) &= x^{25} + x^{24} + x^{20} + x^{15} + x^{14} + x^{13} + x^{12} + x^{11} + x^{10} + x^6 + x^2 + x, \end{aligned}$$

$$q_2(x) = x^{22} + x^{20} + x^{18} + x^{14} + x^{10} + x^8 + x^2 + 1,$$
$$q_3(x) = x^{25} + x^{24} + x^{20} + x^{15} + x^{14} + x^{13} + x^{12} + x^{11} + x^{10} + x^6 + x^2 + x,$$
$$q_4(x) = x^{25} + x^{22} + x^{19} + x^{17} + x^{16} + x^{14} + x^{10} + x^9 + x^8 + x^7 + x^2.$$

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

$$\begin{aligned}
p_0(x) = {} & x^{132} + x^{130} + x^{122} + x^{120} + x^{116} + x^{112} + x^{108} + x^{106} + x^{104} + x^{98} \\
& + x^{92} + x^{86} + x^{84} + x^{82} + x^{80} + x^{70} + x^{66} + x^{64} + x^{60} + x^{50} + x^{48} \\
& + x^{42} + x^{24} + x^{22} + x^{18} + x^{16} + x^{12}, \\
p_3(x) = {} & x^{124} + x^{118} + x^{112} + x^{110} + x^{108} + x^{104} + x^{102} + x^{100} + x^{98} + x^{96} \\
& + x^{86} + x^{82} + x^{76} + x^{64} + x^{58} + x^{50} + x^{48} + x^{44} + x^{42} + x^{32} + x^{26} \\
& + x^{24} + x^{16} + x^{14} + x^{10} + x^8, \\
p_6(x) = {} & x^{124} + x^{120} + x^{110} + x^{106} + x^{104} + x^{102} + x^{100} + x^{98} + x^{94} + x^{90} \\
& + x^{88} + x^{80} + x^{76} + x^{68} + x^{62} + x^{58} + x^{56} + x^{46} + x^{44} + x^{42} + x^{40} \\
& + x^{32} + x^{30} + x^{28} + x^{26} + x^{24} + x^{22} + x^{20} + x^{18} + x^{16} + x^{14} + x^{12} \\
& + x^{10} + x^8 + x^6 + x^4 + x^2 + 1, \\
p_9(x) = {} & x^{126} + x^{124} + x^{118} + x^{112} + x^{110} + x^{106} + x^{104} + x^{102} + x^{98} + x^{94} \\
& + x^{92} + x^{90} + x^{88} + x^{80} + x^{78} + x^{74} + x^{68} + x^{66} + x^{64} + x^{58} + x^{56} \\
& + x^{54} + x^{52} + x^{44} + x^{40} + x^{36} + x^{34} + x^{30} + x^{26} + x^{20} + x^{14} + x^{12} \\
& + x^{10} + x^8 + x^6 + x^2, \\
p_{12}(x) = {} & x^{126} + x^{124} + x^{120} + x^{118} + x^{116} + x^{112} + x^{110} + x^{108} + x^{104} + x^{102} \\
& + x^{100} + x^{96} + x^{62} + x^{60} + x^{56} + x^{54} + x^{52} + x^{48} + x^{46} + x^{44} + x^{40} \\
& + x^{38} + x^{36} + x^{32} + x^{14} + x^{12} + x^8 + x^6 + x^4 + 1,
\end{aligned}$$

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

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

$$p_0(x) = x^{147} + x^{145} + x^{144} + x^{141} + x^{139} + x^{137} + x^{134} + x^{133} + x^{132} + x^{131}$$

$$
\begin{aligned}
&+ x^{129} + x^{127} + x^{125} + x^{124} + x^{121} + x^{118} + x^{116} + x^{115} + x^{114}\\
&+ x^{112} + x^{108} + x^{104} + x^{101} + x^{98} + x^{97} + x^{93} + x^{91} + x^{88} + x^{86}\\
&+ x^{84} + x^{83} + x^{82} + x^{81} + x^{80} + x^{78} + x^{76} + x^{75} + x^{74} + x^{70} + x^{68}\\
&+ x^{67} + x^{66} + x^{64} + x^{63} + x^{62} + x^{59} + x^{57} + x^{55} + x^{53} + x^{49} + x^{47}\\
&+ x^{44} + x^{42} + x^{41} + x^{38} + x^{35} + x^{32} + x^{31} + x^{27},\\
p_3(x) = {}& x^{141} + x^{140} + x^{139} + x^{134} + x^{133} + x^{132} + x^{131} + x^{130} + x^{128} + x^{123}\\
&+ x^{120} + x^{119} + x^{118} + x^{117} + x^{116} + x^{114} + x^{113} + x^{112} + x^{110}\\
&+ x^{109} + x^{108} + x^{106} + x^{103} + x^{102} + x^{98} + x^{97} + x^{95} + x^{94} + x^{93}\\
&+ x^{92} + x^{91} + x^{90} + x^{89} + x^{87} + x^{85} + x^{84} + x^{83} + x^{81} + x^{80} + x^{79}\\
&+ x^{78} + x^{77} + x^{76} + x^{74} + x^{73} + x^{72} + x^{70} + x^{69} + x^{68} + x^{66} + x^{63}\\
&+ x^{62} + x^{61} + x^{60} + x^{59} + x^{58} + x^{57} + x^{55} + x^{49} + x^{48} + x^{47} + x^{45}\\
&+ x^{44} + x^{41} + x^{37} + x^{36} + x^{35} + x^{30} + x^{29} + x^{28} + x^{27} + x^{26} + x^{24}\\
&+ x^{21} + x^{20} + x^{16} + x^{15} + x^{13} + x^{12} + x^{9},\\
p_6(x) = {}& x^{138} + x^{135} + x^{134} + x^{133} + x^{132} + x^{131} + x^{130} + x^{129} + x^{127} + x^{126}\\
&+ x^{124} + x^{121} + x^{119} + x^{118} + x^{112} + x^{109} + x^{107} + x^{106} + x^{102}\\
&+ x^{100} + x^{99} + x^{96} + x^{95} + x^{94} + x^{92} + x^{89} + x^{87} + x^{86} + x^{84} + x^{81}\\
&+ x^{79} + x^{75} + x^{73} + x^{70} + x^{69} + x^{68} + x^{66} + x^{63} + x^{62} + x^{61} + x^{60}\\
&+ x^{59} + x^{57} + x^{56} + x^{52} + x^{50} + x^{49} + x^{45} + x^{44} + x^{43} + x^{42} + x^{41}\\
&+ x^{39} + x^{36} + x^{35} + x^{34} + x^{32} + x^{30} + x^{29} + x^{25} + x^{24} + x^{23} + x^{22}\\
&+ x^{21} + x^{19} + x^{16} + x^{15} + x^{14} + x^{12} + x^{9} + x^{7} + x^{6},\\
p_9(x) = {}& x^{135} + x^{134} + x^{132} + x^{131} + x^{128} + x^{126} + x^{125} + x^{123} + x^{117} + x^{116}\\
&+ x^{114} + x^{113} + x^{111} + x^{103} + x^{102} + x^{101} + x^{96} + x^{95} + x^{94} + x^{91}\\
&+ x^{90} + x^{87} + x^{85} + x^{84} + x^{82} + x^{80} + x^{79} + x^{78} + x^{76} + x^{75} + x^{74}\\
&+ x^{72} + x^{71} + x^{70} + x^{69} + x^{67} + x^{61} + x^{60} + x^{58} + x^{57} + x^{54} + x^{53}\\
&+ x^{51} + x^{50} + x^{47} + x^{45} + x^{44} + x^{43} + x^{41} + x^{40} + x^{39} + x^{38} + x^{37}\\
&+ x^{36} + x^{35} + x^{33} + x^{27} + x^{26} + x^{24} + x^{22} + x^{21} + x^{20} + x^{18} + x^{15}\\
&+ x^{14} + x^{13} + x^{12} + x^{11} + x^{10} + x^{8} + x^{7} + x^{6} + x^{5} + x^{3},\\
p_{12}(x) = {}& x^{132} + x^{130} + x^{129} + x^{128} + x^{124} + x^{122} + x^{121} + x^{118} + x^{117} + x^{116}\\
&+ x^{108} + x^{106} + x^{105} + x^{102} + x^{101} + x^{98} + x^{97} + x^{96} + x^{68} + x^{66}\\
&+ x^{65} + x^{64} + x^{60} + x^{58} + x^{57} + x^{54} + x^{53} + x^{52} + x^{44} + x^{42} + x^{41}\\
&+ x^{38} + x^{37} + x^{34} + x^{33} + x^{32} + x^{20} + x^{18} + x^{17} + x^{16} + x^{12} + x^{10}\\
&+ x^{9} + x^{6} + x^{5} + x^{2} + x + 1,
\end{aligned}
$$

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

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

$$p_0(x) = x^{147} + x^{145} + x^{144} + x^{141} + x^{139} + x^{137} + x^{134} + x^{133} + x^{132} + x^{131}$$

$$
\begin{aligned}
&+ x^{129} + x^{127} + x^{125} + x^{124} + x^{121} + x^{118} + x^{116} + x^{115} + x^{114}\\
&+ x^{112} + x^{108} + x^{104} + x^{101} + x^{98} + x^{97} + x^{93} + x^{91} + x^{88} + x^{86}\\
&+ x^{84} + x^{83} + x^{82} + x^{81} + x^{80} + x^{78} + x^{76} + x^{75} + x^{74} + x^{70} + x^{68}\\
&+ x^{67} + x^{66} + x^{64} + x^{63} + x^{62} + x^{59} + x^{57} + x^{55} + x^{53} + x^{49} + x^{47}\\
&+ x^{44} + x^{42} + x^{41} + x^{38} + x^{35} + x^{32} + x^{31} + x^{27},\\
p_3(x) &= x^{141} + x^{140} + x^{139} + x^{134} + x^{133} + x^{132} + x^{131} + x^{130} + x^{128} + x^{123}\\
&+ x^{120} + x^{119} + x^{118} + x^{117} + x^{116} + x^{114} + x^{113} + x^{112} + x^{110}\\
&+ x^{109} + x^{108} + x^{106} + x^{103} + x^{102} + x^{98} + x^{97} + x^{95} + x^{94} + x^{93}\\
&+ x^{92} + x^{91} + x^{90} + x^{89} + x^{87} + x^{85} + x^{84} + x^{83} + x^{81} + x^{80} + x^{79}\\
&+ x^{78} + x^{77} + x^{76} + x^{74} + x^{73} + x^{72} + x^{70} + x^{69} + x^{68} + x^{66} + x^{63}\\
&+ x^{62} + x^{61} + x^{60} + x^{59} + x^{58} + x^{57} + x^{55} + x^{49} + x^{48} + x^{47} + x^{45}\\
&+ x^{44} + x^{41} + x^{37} + x^{36} + x^{35} + x^{30} + x^{29} + x^{28} + x^{27} + x^{26} + x^{24}\\
&+ x^{21} + x^{20} + x^{16} + x^{15} + x^{13} + x^{12} + x^{9},\\
p_6(x) &= x^{138} + x^{135} + x^{134} + x^{133} + x^{132} + x^{131} + x^{130} + x^{129} + x^{127} + x^{126}\\
&+ x^{124} + x^{121} + x^{119} + x^{118} + x^{112} + x^{109} + x^{107} + x^{106} + x^{102}\\
&+ x^{100} + x^{99} + x^{96} + x^{95} + x^{94} + x^{92} + x^{89} + x^{87} + x^{86} + x^{84} + x^{81}\\
&+ x^{79} + x^{75} + x^{73} + x^{70} + x^{69} + x^{68} + x^{66} + x^{63} + x^{62} + x^{61} + x^{60}\\
&+ x^{59} + x^{57} + x^{56} + x^{52} + x^{50} + x^{49} + x^{45} + x^{44} + x^{43} + x^{42} + x^{41}\\
&+ x^{39} + x^{36} + x^{35} + x^{34} + x^{32} + x^{30} + x^{29} + x^{25} + x^{24} + x^{23} + x^{22}\\
&+ x^{21} + x^{19} + x^{16} + x^{15} + x^{14} + x^{12} + x^{9} + x^{7} + x^{6},\\
p_9(x) &= x^{135} + x^{134} + x^{132} + x^{131} + x^{128} + x^{126} + x^{125} + x^{123} + x^{117} + x^{116}\\
&+ x^{114} + x^{113} + x^{111} + x^{103} + x^{102} + x^{101} + x^{96} + x^{95} + x^{94} + x^{91}\\
&+ x^{90} + x^{87} + x^{85} + x^{84} + x^{82} + x^{80} + x^{79} + x^{78} + x^{76} + x^{75} + x^{74}\\
&+ x^{72} + x^{71} + x^{70} + x^{69} + x^{67} + x^{61} + x^{60} + x^{58} + x^{57} + x^{54} + x^{53}\\
&+ x^{51} + x^{50} + x^{47} + x^{45} + x^{44} + x^{43} + x^{41} + x^{40} + x^{39} + x^{38} + x^{37}\\
&+ x^{36} + x^{35} + x^{33} + x^{27} + x^{26} + x^{24} + x^{22} + x^{21} + x^{20} + x^{18} + x^{15}\\
&+ x^{14} + x^{13} + x^{12} + x^{11} + x^{10} + x^{8} + x^{7} + x^{6} + x^{5} + x^{3},\\
p_{12}(x) &= x^{132} + x^{130} + x^{129} + x^{128} + x^{124} + x^{122} + x^{121} + x^{118} + x^{117} + x^{116}\\
&+ x^{108} + x^{106} + x^{105} + x^{102} + x^{101} + x^{98} + x^{97} + x^{96} + x^{68} + x^{66}\\
&+ x^{65} + x^{64} + x^{60} + x^{58} + x^{57} + x^{54} + x^{53} + x^{52} + x^{44} + x^{42} + x^{41}\\
&+ x^{38} + x^{37} + x^{34} + x^{33} + x^{32} + x^{20} + x^{18} + x^{17} + x^{16} + x^{12} + x^{10}\\
&+ x^{9} + x^{6} + x^{5} + x^{2} + x + 1,
\end{aligned}
$$

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

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

$$p_0(x) = x^{162} + x^{160} + x^{156} + x^{154} + x^{150} + x^{146} + x^{142} + x^{138} + x^{126} + x^{122}$$

$$
\begin{aligned}
&+ x^{112} + x^{110} + x^{108} + x^{104} + x^{102} + x^{98} + x^{86} + x^{84} + x^{78} + x^{76}\\
&+ x^{74} + x^{72} + x^{70} + x^{66} + x^{58} + x^{56} + x^{48} + x^{46} + x^{42},\\
p_3(x) &= x^{144} + x^{136} + x^{134} + x^{132} + x^{130} + x^{124} + x^{120} + x^{114} + x^{102} + x^{98}\\
&+ x^{96} + x^{90} + x^{78} + x^{74} + x^{66} + x^{64} + x^{60} + x^{58} + x^{56} + x^{50} + x^{46}\\
&+ x^{40} + x^{36} + x^{34} + x^{32} + x^{20} + x^{8} + x^{6},\\
p_6(x) &= x^{144} + x^{138} + x^{134} + x^{130} + x^{128} + x^{124} + x^{120} + x^{116} + x^{114} + x^{112}\\
&+ x^{110} + x^{108} + x^{106} + x^{102} + x^{98} + x^{96} + x^{94} + x^{92} + x^{90} + x^{88}\\
&+ x^{86} + x^{84} + x^{78} + x^{76} + x^{68} + x^{62} + x^{60} + x^{56} + x^{52} + x^{50} + x^{48}\\
&+ x^{46} + x^{44} + x^{42} + x^{40} + x^{36} + x^{32} + x^{30} + x^{20} + x^{12} + x^{6} + 1,\\
p_9(x) &= x^{138} + x^{136} + x^{132} + x^{130} + x^{126} + x^{124} + x^{122} + x^{120} + x^{118} + x^{108}\\
&+ x^{104} + x^{102} + x^{96} + x^{94} + x^{92} + x^{88} + x^{84} + x^{82} + x^{80} + x^{78} + x^{68}\\
&+ x^{66} + x^{64} + x^{62} + x^{58} + x^{54} + x^{52} + x^{50} + x^{38} + x^{34} + x^{32} + x^{30}\\
&+ x^{28} + x^{26} + x^{24} + x^{22} + x^{14} + x^{12} + x^{4} + x^{2},\\
p_{12}(x) &= x^{138} + x^{136} + x^{130} + x^{128} + x^{122} + x^{120} + x^{98} + x^{96} + x^{74} + x^{72}\\
&+ x^{66} + x^{64} + x^{58} + x^{56} + x^{34} + x^{32} + x^{26} + x^{24} + x^{18} + x^{16} + x^{2} + 1,
\end{aligned}
$$

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

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

$$
\begin{aligned}
p_0(x) &= x^{162} + x^{160} + x^{156} + x^{154} + x^{148} + x^{144} + x^{142} + x^{138} + x^{134} + x^{130}\\
&+ x^{124} + x^{122} + x^{120} + x^{118} + x^{112} + x^{106} + x^{104} + x^{100} + x^{96} + x^{94}\\
&+ x^{92} + x^{84} + x^{78} + x^{74} + x^{66} + x^{62} + x^{58} + x^{52} + x^{50} + x^{48} + x^{44}\\
&+ x^{42} + x^{40} + x^{38} + x^{36} + x^{30} + x^{22} + x^{18} + x^{16} + x^{14} + x^{12},\\
p_3(x) &= x^{144} + x^{136} + x^{134} + x^{130} + x^{128} + x^{124} + x^{122} + x^{120} + x^{116} + x^{114}\\
&+ x^{112} + x^{110} + x^{108} + x^{102} + x^{98} + x^{94} + x^{90} + x^{88} + x^{84} + x^{80}\\
&+ x^{78} + x^{72} + x^{70} + x^{64} + x^{60} + x^{52} + x^{46} + x^{40} + x^{38} + x^{36} + x^{34}\\
&+ x^{32} + x^{30} + x^{26} + x^{24} + x^{20} + x^{18} + x^{16} + x^{10} + x^{8},\\
p_6(x) &= x^{144} + x^{138} + x^{134} + x^{132} + x^{130} + x^{126} + x^{118} + x^{116} + x^{112} + x^{104}\\
&+ x^{100} + x^{98} + x^{92} + x^{90} + x^{84} + x^{80} + x^{78} + x^{76} + x^{74} + x^{72} + x^{70}\\
&+ x^{68} + x^{66} + x^{62} + x^{60} + x^{58} + x^{54} + x^{52} + x^{48} + x^{42} + x^{40} + x^{38}\\
&+ x^{36} + x^{34} + x^{30} + x^{28} + x^{26} + x^{24} + x^{22} + x^{18} + x^{16} + x^{12} + x^{8}\\
&+ x^{6} + x^{4} + 1,\\
p_9(x) &= x^{138} + x^{136} + x^{132} + x^{130} + x^{126} + x^{124} + x^{122} + x^{120} + x^{118} + x^{108}\\
&+ x^{104} + x^{102} + x^{96} + x^{94} + x^{92} + x^{88} + x^{84} + x^{82} + x^{80} + x^{78} + x^{68}\\
&+ x^{66} + x^{64} + x^{62} + x^{58} + x^{54} + x^{52} + x^{50} + x^{38} + x^{34} + x^{32} + x^{30}\\
&+ x^{28} + x^{26} + x^{24} + x^{22} + x^{14} + x^{12} + x^{4} + x^{2},\\
p_{12}(x) &= x^{138} + x^{136} + x^{130} + x^{128} + x^{122} + x^{120} + x^{98} + x^{96} + x^{74} + x^{72}
\end{aligned}
$$

$$+ x^{66} + x^{64} + x^{58} + x^{56} + x^{34} + x^{32} + x^{26} + x^{24} + x^{18} + x^{16} + x^2 + 1,$$

and the initial terms are [1, 0, 0, 0, 1, 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^{145} + x^{141} + x^{139} + x^{138} + x^{135} + x^{132} + x^{128} + x^{126} + x^{124} \\
& + x^{123} + x^{122} + x^{120} + x^{119} + x^{116} + x^{112} + x^{111} + x^{110} + x^{106} \\
& + x^{104} + x^{102} + x^{100} + x^{99} + x^{97} + x^{96} + x^{94} + x^{93} + x^{91} + x^{89} + x^{88} \\
& + x^{87} + x^{86} + x^{85} + x^{84} + x^{82} + x^{80} + x^{79} + x^{77} + x^{75} + x^{66} + x^{65} \\
& + x^{64} + x^{63} + x^{62} + x^{60} + x^{59} + x^{57} + x^{53} + x^{51} + x^{45} + x^{44} + x^{43} \\
& + x^{40} + x^{39} + x^{38} + x^{37} + x^{33} + x^{31} + x^{30} + x^{27} + x^{26} + x^{25} + x^{23} \\
& + x^{19} + x^{18}, \\
p_3(x) = {} & x^{141} + x^{140} + x^{139} + x^{134} + x^{133} + x^{132} + x^{131} + x^{130} + x^{128} + x^{123} \\
& + x^{120} + x^{119} + x^{118} + x^{117} + x^{116} + x^{114} + x^{113} + x^{112} + x^{110} \\
& + x^{109} + x^{108} + x^{106} + x^{103} + x^{102} + x^{98} + x^{97} + x^{95} + x^{94} + x^{93} \\
& + x^{92} + x^{91} + x^{90} + x^{89} + x^{87} + x^{85} + x^{84} + x^{83} + x^{81} + x^{80} + x^{79} \\
& + x^{78} + x^{77} + x^{76} + x^{74} + x^{73} + x^{72} + x^{70} + x^{69} + x^{68} + x^{66} + x^{63} \\
& + x^{62} + x^{61} + x^{60} + x^{59} + x^{58} + x^{57} + x^{55} + x^{49} + x^{48} + x^{47} + x^{45} \\
& + x^{44} + x^{41} + x^{37} + x^{36} + x^{35} + x^{30} + x^{29} + x^{28} + x^{27} + x^{26} + x^{24} \\
& + x^{21} + x^{20} + x^{16} + x^{15} + x^{13} + x^{12} + x^{9}, \\
p_6(x) = {} & x^{138} + x^{135} + x^{134} + x^{133} + x^{132} + x^{131} + x^{130} + x^{129} + x^{127} + x^{126} \\
& + x^{124} + x^{121} + x^{119} + x^{118} + x^{112} + x^{109} + x^{107} + x^{106} + x^{102} \\
& + x^{100} + x^{99} + x^{96} + x^{95} + x^{94} + x^{92} + x^{89} + x^{87} + x^{86} + x^{84} + x^{81} \\
& + x^{79} + x^{75} + x^{73} + x^{70} + x^{69} + x^{68} + x^{66} + x^{63} + x^{62} + x^{61} + x^{60} \\
& + x^{59} + x^{57} + x^{56} + x^{52} + x^{50} + x^{49} + x^{45} + x^{44} + x^{43} + x^{42} + x^{41} \\
& + x^{39} + x^{36} + x^{35} + x^{34} + x^{32} + x^{30} + x^{29} + x^{25} + x^{24} + x^{23} + x^{22} \\
& + x^{21} + x^{19} + x^{16} + x^{15} + x^{14} + x^{12} + x^{9} + x^{7} + x^{6}, \\
p_9(x) = {} & x^{135} + x^{134} + x^{132} + x^{131} + x^{128} + x^{126} + x^{125} + x^{123} + x^{117} + x^{116} \\
& + x^{114} + x^{113} + x^{111} + x^{103} + x^{102} + x^{101} + x^{96} + x^{95} + x^{94} + x^{91} \\
& + x^{90} + x^{87} + x^{85} + x^{84} + x^{82} + x^{80} + x^{79} + x^{78} + x^{76} + x^{75} + x^{74} \\
& + x^{72} + x^{71} + x^{70} + x^{69} + x^{67} + x^{61} + x^{60} + x^{58} + x^{57} + x^{54} + x^{53} \\
& + x^{51} + x^{50} + x^{47} + x^{45} + x^{44} + x^{43} + x^{41} + x^{40} + x^{39} + x^{38} + x^{37} \\
& + x^{36} + x^{35} + x^{33} + x^{27} + x^{26} + x^{24} + x^{22} + x^{21} + x^{20} + x^{18} + x^{15} \\
& + x^{14} + x^{13} + x^{12} + x^{11} + x^{10} + x^{8} + x^{7} + x^{6} + x^{5} + x^{3}, \\
p_{12}(x) = {} & x^{132} + x^{130} + x^{129} + x^{128} + x^{124} + x^{122} + x^{121} + x^{118} + x^{117} + x^{116} \\
& + x^{108} + x^{106} + x^{105} + x^{102} + x^{101} + x^{98} + x^{97} + x^{96} + x^{68} + x^{66} \\
& + x^{65} + x^{64} + x^{60} + x^{58} + x^{57} + x^{54} + x^{53} + x^{52} + x^{44} + x^{42} + x^{41}
\end{aligned}$$

$$+ x^{38} + x^{37} + x^{34} + x^{33} + x^{32} + x^{20} + x^{18} + x^{17} + x^{16} + x^{12} + x^{10}$$
$$+ x^{9} + x^{6} + x^{5} + x^{2} + x + 1,$$

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

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

$$\begin{aligned}
p_0(x) &= x^{147} + x^{145} + x^{141} + x^{139} + x^{138} + x^{135} + x^{132} + x^{128} + x^{126} + x^{124} \\
&+ x^{123} + x^{122} + x^{120} + x^{119} + x^{116} + x^{112} + x^{111} + x^{110} + x^{106} \\
&+ x^{104} + x^{102} + x^{100} + x^{99} + x^{97} + x^{96} + x^{94} + x^{93} + x^{91} + x^{89} + x^{88} \\
&+ x^{87} + x^{86} + x^{85} + x^{84} + x^{82} + x^{80} + x^{79} + x^{77} + x^{75} + x^{66} + x^{65} \\
&+ x^{64} + x^{63} + x^{62} + x^{60} + x^{59} + x^{57} + x^{53} + x^{51} + x^{45} + x^{44} + x^{43} \\
&+ x^{40} + x^{39} + x^{38} + x^{37} + x^{33} + x^{31} + x^{30} + x^{27} + x^{26} + x^{25} + x^{23} \\
&+ x^{19} + x^{18}, \\
p_3(x) &= x^{141} + x^{140} + x^{139} + x^{134} + x^{133} + x^{132} + x^{131} + x^{130} + x^{128} + x^{123} \\
&+ x^{120} + x^{119} + x^{118} + x^{117} + x^{116} + x^{114} + x^{113} + x^{112} + x^{110} \\
&+ x^{109} + x^{108} + x^{106} + x^{103} + x^{102} + x^{98} + x^{97} + x^{95} + x^{94} + x^{93} \\
&+ x^{92} + x^{91} + x^{90} + x^{89} + x^{87} + x^{85} + x^{84} + x^{83} + x^{81} + x^{80} + x^{79} \\
&+ x^{78} + x^{77} + x^{76} + x^{74} + x^{73} + x^{72} + x^{70} + x^{69} + x^{68} + x^{66} + x^{63} \\
&+ x^{62} + x^{61} + x^{60} + x^{59} + x^{58} + x^{57} + x^{55} + x^{49} + x^{48} + x^{47} + x^{45} \\
&+ x^{44} + x^{41} + x^{37} + x^{36} + x^{35} + x^{30} + x^{29} + x^{28} + x^{27} + x^{26} + x^{24} \\
&+ x^{21} + x^{20} + x^{16} + x^{15} + x^{13} + x^{12} + x^{9}, \\
p_6(x) &= x^{138} + x^{135} + x^{134} + x^{133} + x^{132} + x^{131} + x^{130} + x^{129} + x^{127} + x^{126} \\
&+ x^{124} + x^{121} + x^{119} + x^{118} + x^{112} + x^{109} + x^{107} + x^{106} + x^{102} \\
&+ x^{100} + x^{99} + x^{96} + x^{95} + x^{94} + x^{92} + x^{89} + x^{87} + x^{86} + x^{84} + x^{81} \\
&+ x^{79} + x^{75} + x^{73} + x^{70} + x^{69} + x^{68} + x^{66} + x^{63} + x^{62} + x^{61} + x^{60} \\
&+ x^{59} + x^{57} + x^{56} + x^{52} + x^{50} + x^{49} + x^{45} + x^{44} + x^{43} + x^{42} + x^{41} \\
&+ x^{39} + x^{36} + x^{35} + x^{34} + x^{32} + x^{30} + x^{29} + x^{25} + x^{24} + x^{23} + x^{22} \\
&+ x^{21} + x^{19} + x^{16} + x^{15} + x^{14} + x^{12} + x^{9} + x^{7} + x^{6}, \\
p_9(x) &= x^{135} + x^{134} + x^{132} + x^{131} + x^{128} + x^{126} + x^{125} + x^{123} + x^{117} + x^{116} \\
&+ x^{114} + x^{113} + x^{111} + x^{103} + x^{102} + x^{101} + x^{96} + x^{95} + x^{94} + x^{91} \\
&+ x^{90} + x^{87} + x^{85} + x^{84} + x^{82} + x^{80} + x^{79} + x^{78} + x^{76} + x^{75} + x^{74} \\
&+ x^{72} + x^{71} + x^{70} + x^{69} + x^{67} + x^{61} + x^{60} + x^{58} + x^{57} + x^{54} + x^{53} \\
&+ x^{51} + x^{50} + x^{47} + x^{45} + x^{44} + x^{43} + x^{41} + x^{40} + x^{39} + x^{38} + x^{37} \\
&+ x^{36} + x^{35} + x^{33} + x^{27} + x^{26} + x^{24} + x^{22} + x^{21} + x^{20} + x^{18} + x^{15} \\
&+ x^{14} + x^{13} + x^{12} + x^{11} + x^{10} + x^{8} + x^{7} + x^{6} + x^{5} + x^{3}, \\
p_{12}(x) &= x^{132} + x^{130} + x^{129} + x^{128} + x^{124} + x^{122} + x^{121} + x^{118} + x^{117} + x^{116} \\
&+ x^{108} + x^{106} + x^{105} + x^{102} + x^{101} + x^{98} + x^{97} + x^{96} + x^{68} + x^{66}
\end{aligned}$$

$$+ x^{65} + x^{64} + x^{60} + x^{58} + x^{57} + x^{54} + x^{53} + x^{52} + x^{44} + x^{42} + x^{41} + x^{38} + x^{37} + x^{34} + x^{33} + x^{32} + x^{20} + x^{18} + x^{17} + x^{16} + x^{12} + x^{10} + x^{9} + x^{6} + x^{5} + x^{2} + x + 1,$$

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

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

$$\begin{aligned}
p_0(x) &= x^{132} + x^{130} + x^{126} + x^{124} + x^{118} + x^{110} + x^{106} + x^{104} + x^{102} + x^{100} \\
&\quad + x^{88} + x^{84} + x^{76} + x^{68} + x^{66} + x^{64} + x^{56} + x^{52} + x^{50} + x^{36} + x^{32} \\
&\quad + x^{28} + x^{24}, \\
p_3(x) &= x^{124} + x^{120} + x^{118} + x^{116} + x^{114} + x^{108} + x^{104} + x^{100} + x^{96} + x^{94} \\
&\quad + x^{92} + x^{88} + x^{86} + x^{84} + x^{80} + x^{74} + x^{70} + x^{68} + x^{66} + x^{64} + x^{58} \\
&\quad + x^{56} + x^{52} + x^{48} + x^{46} + x^{44} + x^{38} + x^{36} + x^{22} + x^{20} + x^{18} + x^{16} \\
&\quad + x^{14} + x^{6}, \\
p_6(x) &= x^{124} + x^{116} + x^{110} + x^{104} + x^{102} + x^{100} + x^{96} + x^{94} + x^{90} + x^{88} \\
&\quad + x^{86} + x^{82} + x^{80} + x^{72} + x^{66} + x^{64} + x^{62} + x^{58} + x^{52} + x^{48} + x^{46} \\
&\quad + x^{44} + x^{32} + x^{24} + x^{22} + x^{20} + x^{18} + x^{16} + x^{12} + x^{10} + x^{2} + 1, \\
p_9(x) &= x^{126} + x^{124} + x^{118} + x^{112} + x^{110} + x^{106} + x^{104} + x^{102} + x^{98} + x^{94} \\
&\quad + x^{92} + x^{90} + x^{88} + x^{80} + x^{78} + x^{74} + x^{68} + x^{66} + x^{64} + x^{58} + x^{56} \\
&\quad + x^{54} + x^{52} + x^{44} + x^{40} + x^{36} + x^{34} + x^{30} + x^{26} + x^{20} + x^{14} + x^{12} \\
&\quad + x^{10} + x^{8} + x^{6} + x^{2}, \\
p_{12}(x) &= x^{126} + x^{124} + x^{120} + x^{118} + x^{116} + x^{112} + x^{110} + x^{108} + x^{104} + x^{102} \\
&\quad + x^{100} + x^{96} + x^{62} + x^{60} + x^{56} + x^{54} + x^{52} + x^{48} + x^{46} + x^{44} + x^{40} \\
&\quad + x^{38} + x^{36} + x^{32} + x^{14} + x^{12} + x^{8} + x^{6} + x^{4} + 1,
\end{aligned}$$

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

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

$$\begin{aligned}
p_0(x) &= x^{147} + x^{145} + x^{144} + x^{139} + x^{136} + x^{134} + x^{133} + x^{130} + x^{126} + x^{125} \\
&\quad + x^{124} + x^{123} + x^{120} + x^{119} + x^{118} + x^{116} + x^{114} + x^{113} + x^{112} \\
&\quad + x^{110} + x^{108} + x^{105} + x^{103} + x^{102} + x^{100} + x^{98} + x^{97} + x^{96} + x^{92} \\
&\quad + x^{89} + x^{88} + x^{84} + x^{77} + x^{76} + x^{74} + x^{73} + x^{71} + x^{68} + x^{65} + x^{63} \\
&\quad + x^{61} + x^{60} + x^{59} + x^{57} + x^{56} + x^{55} + x^{54} + x^{51} + x^{50} + x^{48} + x^{45} \\
&\quad + x^{44} + x^{43} + x^{41} + x^{39} + x^{37} + x^{36} + x^{32} + x^{30} + x^{27} + x^{26} + x^{25} \\
&\quad + x^{22} + x^{20} + x^{19} + x^{18} + x^{15} + x^{13} + x^{12}, \\
p_3(x) &= x^{144} + x^{142} + x^{139} + x^{136} + x^{135} + x^{134} + x^{132} + x^{131} + x^{130} + x^{126} \\
&\quad + x^{125} + x^{123} + x^{122} + x^{120} + x^{118} + x^{115} + x^{114} + x^{109} + x^{107} \\
&\quad + x^{103} + x^{102} + x^{100} + x^{99} + x^{96} + x^{95} + x^{94} + x^{92} + x^{91} + x^{90} + x^{89} \\
&\quad + x^{88} + x^{87} + x^{86} + x^{84} + x^{82} + x^{81} + x^{76} + x^{72} + x^{68} + x^{65} + x^{64}
\end{aligned}$$

$$
\begin{aligned}
&+ x^{63} + x^{61} + x^{60} + x^{59} + x^{58} + x^{50} + x^{49} + x^{45} + x^{44} + x^{42} + x^{39}\\
&+ x^{35} + x^{34} + x^{27} + x^{25} + x^{24} + x^{22} + x^{20} + x^{18} + x^{15} + x^{13} + x^{12}\\
&+ x^{11} + x^{9} + x^{8},\\
p_6(x) &= x^{144} + x^{142} + x^{139} + x^{136} + x^{135} + x^{134} + x^{132} + x^{131} + x^{130} + x^{129}\\
&+ x^{127} + x^{125} + x^{123} + x^{122} + x^{121} + x^{120} + x^{117} + x^{116} + x^{113}\\
&+ x^{107} + x^{106} + x^{105} + x^{104} + x^{101} + x^{97} + x^{96} + x^{95} + x^{94} + x^{93}\\
&+ x^{92} + x^{91} + x^{90} + x^{86} + x^{85} + x^{83} + x^{80} + x^{78} + x^{76} + x^{74} + x^{71}\\
&+ x^{70} + x^{69} + x^{67} + x^{66} + x^{63} + x^{62} + x^{60} + x^{57} + x^{55} + x^{51} + x^{48}\\
&+ x^{45} + x^{44} + x^{42} + x^{40} + x^{39} + x^{38} + x^{35} + x^{33} + x^{32} + x^{30} + x^{29}\\
&+ x^{28} + x^{27} + x^{25} + x^{24} + x^{23} + x^{21} + x^{17} + x^{14} + x^{12} + x^{11} + x^{10}\\
&+ x^{8} + x^{7} + x^{6} + x^{4} + x^{2} + x + 1,\\
p_9(x) &= x^{144} + x^{142} + x^{141} + x^{138} + x^{137} + x^{136} + x^{132} + x^{130} + x^{129} + x^{128}\\
&+ x^{124} + x^{122} + x^{121} + x^{118} + x^{117} + x^{114} + x^{113} + x^{110} + x^{109}\\
&+ x^{108} + x^{104} + x^{102} + x^{101} + x^{100} + x^{80} + x^{78} + x^{77} + x^{74} + x^{73}\\
&+ x^{72} + x^{68} + x^{66} + x^{65} + x^{64} + x^{60} + x^{58} + x^{57} + x^{54} + x^{53} + x^{50}\\
&+ x^{49} + x^{46} + x^{45} + x^{44} + x^{40} + x^{38} + x^{37} + x^{36} + x^{32} + x^{30} + x^{29}\\
&+ x^{26} + x^{25} + x^{24} + x^{20} + x^{18} + x^{17} + x^{14} + x^{13} + x^{12} + x^{8} + x^{6} + x^{5}\\
&+ x^{4},\\
p_{12}(x) &= x^{144} + x^{142} + x^{141} + x^{138} + x^{137} + x^{136} + x^{116} + x^{114} + x^{113} + x^{110}\\
&+ x^{109} + x^{106} + x^{105} + x^{104} + x^{100} + x^{98} + x^{97} + x^{96} + x^{80} + x^{78}\\
&+ x^{77} + x^{74} + x^{73} + x^{72} + x^{52} + x^{50} + x^{49} + x^{46} + x^{45} + x^{42} + x^{41}\\
&+ x^{40} + x^{36} + x^{34} + x^{33} + x^{30} + x^{29} + x^{26} + x^{25} + x^{24} + x^{16} + x^{14}\\
&+ x^{13} + x^{10} + x^{9} + x^{8} + x^{4} + x^{2} + x + 1,
\end{aligned}
$$

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

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

$$
\begin{aligned}
p_0(x) &= x^{164} + x^{160} + x^{156} + x^{155} + x^{153} + x^{152} + x^{150} + x^{149} + x^{148} + x^{147}\\
&+ x^{145} + x^{144} + x^{142} + x^{141} + x^{138} + x^{136} + x^{135} + x^{134} + x^{132}\\
&+ x^{131} + x^{127} + x^{126} + x^{125} + x^{124} + x^{121} + x^{120} + x^{115} + x^{113}\\
&+ x^{112} + x^{111} + x^{108} + x^{105} + x^{100} + x^{99} + x^{96} + x^{93} + x^{92} + x^{90}\\
&+ x^{89} + x^{88} + x^{86} + x^{85} + x^{84} + x^{83} + x^{82} + x^{80} + x^{79} + x^{71} + x^{70}\\
&+ x^{68} + x^{67} + x^{66} + x^{64} + x^{61} + x^{60} + x^{59} + x^{58} + x^{56} + x^{54} + x^{48}\\
&+ x^{46} + x^{43} + x^{42} + x^{40} + x^{38} + x^{37} + x^{36} + x^{34} + x^{33} + x^{29} + x^{28}\\
&+ x^{27},\\
p_3(x) &= x^{143} + x^{142} + x^{141} + x^{140} + x^{139} + x^{136} + x^{135} + x^{133} + x^{132} + x^{130}\\
&+ x^{129} + x^{128} + x^{125} + x^{123} + x^{121} + x^{116} + x^{111} + x^{108} + x^{107}
\end{aligned}
$$

$$
\begin{aligned}
&+ x^{106} + x^{104} + x^{103} + x^{102} + x^{97} + x^{96} + x^{93} + x^{92} + x^{91} + x^{89} \\
&+ x^{86} + x^{85} + x^{84} + x^{82} + x^{76} + x^{71} + x^{68} + x^{67} + x^{66} + x^{64} + x^{61} \\
&+ x^{60} + x^{59} + x^{57} + x^{55} + x^{51} + x^{50} + x^{48} + x^{46} + x^{44} + x^{43} + x^{42} \\
&+ x^{41} + x^{39} + x^{38} + x^{37} + x^{36} + x^{35} + x^{32} + x^{31} + x^{29} + x^{28} + x^{26} \\
&+ x^{25} + x^{24} + x^{23} + x^{22} + x^{20} + x^{17} + x^{16} + x^{14} + x^{12} + x^{11} + x^{10} \\
&+ x^{9}, \\
p_6(x) &= x^{146} + x^{144} + x^{136} + x^{116} + x^{114} + x^{110} + x^{108} + x^{106} + x^{102} + x^{100} \\
&+ x^{96} + x^{92} + x^{90} + x^{86} + x^{84} + x^{82} + x^{80} + x^{78} + x^{76} + x^{68} + x^{66} \\
&+ x^{64} + x^{62} + x^{58} + x^{56} + x^{54} + x^{44} + x^{38} + x^{24} + x^{16} + x^{8} + x^{6}, \\
p_9(x) &= x^{149} + x^{148} + x^{145} + x^{143} + x^{142} + x^{141} + x^{138} + x^{136} + x^{135} + x^{133} \\
&+ x^{131} + x^{130} + x^{128} + x^{127} + x^{126} + x^{125} + x^{123} + x^{122} + x^{119} \\
&+ x^{114} + x^{113} + x^{112} + x^{107} + x^{104} + x^{100} + x^{99} + x^{85} + x^{84} + x^{81} \\
&+ x^{79} + x^{78} + x^{77} + x^{74} + x^{72} + x^{71} + x^{69} + x^{67} + x^{66} + x^{64} + x^{63} \\
&+ x^{62} + x^{61} + x^{59} + x^{58} + x^{55} + x^{50} + x^{49} + x^{48} + x^{43} + x^{40} + x^{37} \\
&+ x^{35} + x^{33} + x^{31} + x^{30} + x^{29} + x^{26} + x^{24} + x^{23} + x^{20} + x^{19} + x^{18} \\
&+ x^{17} + x^{16} + x^{11} + x^{8} + x^{4} + x^{3}, \\
p_{12}(x) &= x^{152} + x^{144} + x^{140} + x^{136} + x^{124} + x^{96} + x^{88} + x^{80} + x^{76} + x^{72} + x^{60} \\
&+ x^{40} + x^{28} + x^{16} + 1,
\end{aligned}
$$

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

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

$$
\begin{aligned}
p_0(x) &= x^{138} + x^{135} + x^{134} + x^{133} + x^{132} + x^{128} + x^{123} + x^{119} + x^{118} + x^{116} \\
&+ x^{115} + x^{112} + x^{111} + x^{110} + x^{105} + x^{103} + x^{98} + x^{95} + x^{93} + x^{92} \\
&+ x^{90} + x^{88} + x^{87} + x^{85} + x^{84} + x^{81} + x^{80} + x^{79} + x^{77} + x^{76} + x^{75} \\
&+ x^{74} + x^{72} + x^{70} + x^{67} + x^{64} + x^{61} + x^{59} + x^{58} + x^{56} + x^{54} + x^{53} \\
&+ x^{52} + x^{51} + x^{49} + x^{46} + x^{38} + x^{36} + x^{34} + x^{33} + x^{31} + x^{29} + x^{27} \\
&+ x^{25} + x^{22} + x^{21} + x^{18}, \\
p_3(x) &= x^{135} + x^{134} + x^{133} + x^{132} + x^{131} + x^{128} + x^{127} + x^{125} + x^{124} + x^{123} \\
&+ x^{118} + x^{114} + x^{113} + x^{112} + x^{110} + x^{104} + x^{103} + x^{102} + x^{101} \\
&+ x^{100} + x^{99} + x^{98} + x^{97} + x^{96} + x^{95} + x^{94} + x^{93} + x^{92} + x^{91} + x^{90} \\
&+ x^{89} + x^{88} + x^{82} + x^{81} + x^{78} + x^{74} + x^{73} + x^{72} + x^{70} + x^{64} + x^{63} \\
&+ x^{62} + x^{61} + x^{60} + x^{59} + x^{58} + x^{57} + x^{56} + x^{50} + x^{49} + x^{47} + x^{45} \\
&+ x^{44} + x^{43} + x^{42} + x^{41} + x^{31} + x^{30} + x^{29} + x^{28} + x^{27} + x^{24} + x^{23} \\
&+ x^{21} + x^{20} + x^{19} + x^{15} + x^{13} + x^{12} + x^{11} + x^{10} + x^{9}, \\
p_6(x) &= x^{138} + x^{136} + x^{128} + x^{126} + x^{124} + x^{122} + x^{120} + x^{118} + x^{112} + x^{110} \\
&+ x^{108} + x^{106} + x^{102} + x^{94} + x^{92} + x^{90} + x^{88} + x^{86} + x^{84} + x^{82} + x^{80}
\end{aligned}
$$

$$
\begin{aligned}
&+x^{76}+x^{74}+x^{68}+x^{66}+x^{64}+x^{58}+x^{56}+x^{52}+x^{46}+x^{40}+x^{34}\\
&+x^{32}+x^{26}+x^{20}+x^{14}+x^{12}+x^{10}+x^{8}+x^{6},\\
p_9(x) &= x^{141}+x^{140}+x^{137}+x^{135}+x^{134}+x^{133}+x^{130}+x^{129}+x^{127}+x^{125}\\
&+x^{124}+x^{121}+x^{118}+x^{117}+x^{116}+x^{115}+x^{114}+x^{113}+x^{111}\\
&+x^{103}+x^{100}+x^{99}+x^{77}+x^{76}+x^{73}+x^{71}+x^{70}+x^{69}+x^{66}+x^{65}\\
&+x^{63}+x^{61}+x^{60}+x^{57}+x^{54}+x^{53}+x^{52}+x^{51}+x^{50}+x^{49}+x^{47}\\
&+x^{39}+x^{36}+x^{35}+x^{29}+x^{28}+x^{25}+x^{23}+x^{22}+x^{21}+x^{18}+x^{17}\\
&+x^{15}+x^{7}+x^{4}+x^{3},\\
p_{12}(x) &= x^{144}+x^{136}+x^{116}+x^{104}+x^{100}+x^{96}+x^{80}+x^{72}+x^{52}+x^{40}+x^{36}\\
&+x^{24}+x^{16}+x^{8}+x^{4}+1,
\end{aligned}
$$

and the initial terms are [0, 1, 1, 0, 0, 1, 1, 0, 0, 0, 0, 0, 0, 1, 1, 0].
For $\phi(M^o,1,1)$:

$$
\begin{aligned}
p_0(x) &= x^{147}+x^{145}+x^{139}+x^{137}+x^{135}+x^{132}+x^{130}+x^{129}+x^{127}+x^{126}\\
&+x^{124}+x^{121}+x^{120}+x^{118}+x^{116}+x^{113}+x^{109}+x^{108}+x^{106}\\
&+x^{104}+x^{102}+x^{101}+x^{99}+x^{98}+x^{96}+x^{95}+x^{93}+x^{90}+x^{89}+x^{88}\\
&+x^{87}+x^{85}+x^{84}+x^{80}+x^{79}+x^{76}+x^{75}+x^{74}+x^{73}+x^{67}+x^{65}\\
&+x^{63}+x^{62}+x^{60}+x^{59}+x^{58}+x^{57}+x^{56}+x^{53}+x^{52}+x^{51}+x^{50}\\
&+x^{44}+x^{43}+x^{38}+x^{36}+x^{33},\\
p_3(x) &= x^{144}+x^{142}+x^{139}+x^{138}+x^{136}+x^{133}+x^{132}+x^{130}+x^{128}+x^{127}\\
&+x^{126}+x^{125}+x^{121}+x^{119}+x^{118}+x^{117}+x^{115}+x^{113}+x^{110}\\
&+x^{107}+x^{106}+x^{105}+x^{103}+x^{102}+x^{101}+x^{100}+x^{98}+x^{95}+x^{94}\\
&+x^{93}+x^{92}+x^{90}+x^{89}+x^{84}+x^{81}+x^{79}+x^{77}+x^{76}+x^{74}+x^{73}\\
&+x^{72}+x^{70}+x^{69}+x^{68}+x^{66}+x^{64}+x^{63}+x^{60}+x^{58}+x^{56}+x^{55}\\
&+x^{54}+x^{50}+x^{49}+x^{46}+x^{45}+x^{44}+x^{43}+x^{42}+x^{41}+x^{40}+x^{39}\\
&+x^{35}+x^{31}+x^{30}+x^{29}+x^{25}+x^{23}+x^{22}+x^{20}+x^{19}+x^{18}+x^{17}\\
&+x^{16}+x^{15}+x^{14}+x^{13}+x^{12},\\
p_6(x) &= x^{144}+x^{142}+x^{139}+x^{138}+x^{136}+x^{133}+x^{132}+x^{130}+x^{129}+x^{128}\\
&+x^{126}+x^{125}+x^{123}+x^{121}+x^{119}+x^{118}+x^{117}+x^{114}+x^{112}\\
&+x^{110}+x^{108}+x^{105}+x^{100}+x^{99}+x^{98}+x^{94}+x^{92}+x^{91}+x^{90}\\
&+x^{89}+x^{87}+x^{85}+x^{83}+x^{82}+x^{79}+x^{78}+x^{75}+x^{72}+x^{71}+x^{67}\\
&+x^{66}+x^{65}+x^{62}+x^{59}+x^{58}+x^{57}+x^{55}+x^{51}+x^{48}+x^{46}+x^{45}\\
&+x^{43}+x^{42}+x^{38}+x^{30}+x^{29}+x^{28}+x^{27}+x^{26}+x^{25}+x^{21}+x^{20}\\
&+x^{19}+x^{17}+x^{15}+x^{14}+x^{13}+x^{11}+x^{8}+x^{6}+x^{5}+x^{2}+x+1,\\
p_9(x) &= x^{144}+x^{142}+x^{141}+x^{138}+x^{137}+x^{136}+x^{132}+x^{130}+x^{129}+x^{128}\\
&+x^{124}+x^{122}+x^{121}+x^{118}+x^{117}+x^{114}+x^{113}+x^{110}+x^{109}
\end{aligned}
$$

$$
\begin{aligned}
&+ x^{108} + x^{104} + x^{102} + x^{101} + x^{100} + x^{80} + x^{78} + x^{77} + x^{74} + x^{73}\\
&+ x^{72} + x^{68} + x^{66} + x^{65} + x^{64} + x^{60} + x^{58} + x^{57} + x^{54} + x^{53} + x^{50}\\
&+ x^{49} + x^{46} + x^{45} + x^{44} + x^{40} + x^{38} + x^{37} + x^{36} + x^{32} + x^{30} + x^{29}\\
&+ x^{26} + x^{25} + x^{24} + x^{20} + x^{18} + x^{17} + x^{14} + x^{13} + x^{12} + x^{8} + x^{6} + x^{5}\\
&+ x^{4},\\
p_{12}(x) &= x^{144} + x^{142} + x^{141} + x^{138} + x^{137} + x^{136} + x^{116} + x^{114} + x^{113} + x^{110}\\
&+ x^{109} + x^{106} + x^{105} + x^{104} + x^{100} + x^{98} + x^{97} + x^{96} + x^{80} + x^{78}\\
&+ x^{77} + x^{74} + x^{73} + x^{72} + x^{52} + x^{50} + x^{49} + x^{46} + x^{45} + x^{42} + x^{41}\\
&+ x^{40} + x^{36} + x^{34} + x^{33} + x^{30} + x^{29} + x^{26} + x^{25} + x^{24} + x^{16} + x^{14}\\
&+ x^{13} + x^{10} + x^{9} + x^{8} + x^{4} + x^{2} + x + 1,
\end{aligned}
$$

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

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

$$
\begin{aligned}
p_0(x) &= x^{147} + x^{145} + x^{144} + x^{139} + x^{136} + x^{134} + x^{133} + x^{130} + x^{126} + x^{125}\\
&+ x^{124} + x^{123} + x^{120} + x^{119} + x^{118} + x^{116} + x^{114} + x^{113} + x^{112}\\
&+ x^{110} + x^{108} + x^{105} + x^{103} + x^{102} + x^{100} + x^{98} + x^{97} + x^{96} + x^{92}\\
&+ x^{89} + x^{88} + x^{84} + x^{77} + x^{76} + x^{74} + x^{73} + x^{71} + x^{68} + x^{65} + x^{63}\\
&+ x^{61} + x^{60} + x^{59} + x^{57} + x^{56} + x^{55} + x^{54} + x^{51} + x^{50} + x^{48} + x^{45}\\
&+ x^{44} + x^{43} + x^{41} + x^{39} + x^{37} + x^{36} + x^{32} + x^{30} + x^{27} + x^{26} + x^{25}\\
&+ x^{22} + x^{20} + x^{19} + x^{18} + x^{15} + x^{13} + x^{12},\\
p_3(x) &= x^{144} + x^{142} + x^{139} + x^{136} + x^{135} + x^{134} + x^{132} + x^{131} + x^{130} + x^{126}\\
&+ x^{125} + x^{123} + x^{122} + x^{120} + x^{118} + x^{115} + x^{114} + x^{109} + x^{107}\\
&+ x^{103} + x^{102} + x^{100} + x^{99} + x^{96} + x^{95} + x^{94} + x^{92} + x^{91} + x^{90} + x^{89}\\
&+ x^{88} + x^{87} + x^{86} + x^{84} + x^{82} + x^{81} + x^{76} + x^{72} + x^{68} + x^{65} + x^{64}\\
&+ x^{63} + x^{61} + x^{60} + x^{59} + x^{58} + x^{50} + x^{49} + x^{45} + x^{44} + x^{42} + x^{39}\\
&+ x^{35} + x^{34} + x^{27} + x^{25} + x^{24} + x^{22} + x^{20} + x^{18} + x^{15} + x^{13} + x^{12}\\
&+ x^{11} + x^{9} + x^{8},\\
p_6(x) &= x^{144} + x^{142} + x^{139} + x^{136} + x^{135} + x^{134} + x^{132} + x^{131} + x^{130} + x^{129}\\
&+ x^{127} + x^{125} + x^{123} + x^{122} + x^{121} + x^{120} + x^{117} + x^{116} + x^{113}\\
&+ x^{107} + x^{106} + x^{105} + x^{104} + x^{101} + x^{97} + x^{96} + x^{95} + x^{94} + x^{93}\\
&+ x^{92} + x^{91} + x^{90} + x^{86} + x^{85} + x^{83} + x^{80} + x^{78} + x^{76} + x^{74} + x^{71}\\
&+ x^{70} + x^{69} + x^{67} + x^{66} + x^{63} + x^{62} + x^{60} + x^{57} + x^{55} + x^{51} + x^{48}\\
&+ x^{45} + x^{44} + x^{42} + x^{40} + x^{39} + x^{38} + x^{35} + x^{33} + x^{32} + x^{30} + x^{29}\\
&+ x^{28} + x^{27} + x^{25} + x^{24} + x^{23} + x^{21} + x^{17} + x^{14} + x^{12} + x^{11} + x^{10}\\
&+ x^{8} + x^{7} + x^{6} + x^{4} + x^{2} + x + 1,\\
p_9(x) &= x^{144} + x^{142} + x^{141} + x^{138} + x^{137} + x^{136} + x^{132} + x^{130} + x^{129} + x^{128}
\end{aligned}
$$

$$
\begin{aligned}
&+ x^{124} + x^{122} + x^{121} + x^{118} + x^{117} + x^{114} + x^{113} + x^{110} + x^{109}\\
&+ x^{108} + x^{104} + x^{102} + x^{101} + x^{100} + x^{80} + x^{78} + x^{77} + x^{74} + x^{73}\\
&+ x^{72} + x^{68} + x^{66} + x^{65} + x^{64} + x^{60} + x^{58} + x^{57} + x^{54} + x^{53} + x^{50}\\
&+ x^{49} + x^{46} + x^{45} + x^{44} + x^{40} + x^{38} + x^{37} + x^{36} + x^{32} + x^{30} + x^{29}\\
&+ x^{26} + x^{25} + x^{24} + x^{20} + x^{18} + x^{17} + x^{14} + x^{13} + x^{12} + x^{8} + x^{6} + x^{5}\\
&+ x^{4},\\
p_{12}(x) &= x^{144} + x^{142} + x^{141} + x^{138} + x^{137} + x^{136} + x^{116} + x^{114} + x^{113} + x^{110}\\
&+ x^{109} + x^{106} + x^{105} + x^{104} + x^{100} + x^{98} + x^{97} + x^{96} + x^{80} + x^{78}\\
&+ x^{77} + x^{74} + x^{73} + x^{72} + x^{52} + x^{50} + x^{49} + x^{46} + x^{45} + x^{42} + x^{41}\\
&+ x^{40} + x^{36} + x^{34} + x^{33} + x^{30} + x^{29} + x^{26} + x^{25} + x^{24} + x^{16} + x^{14}\\
&+ x^{13} + x^{10} + x^{9} + x^{8} + x^{4} + x^{2} + x + 1,
\end{aligned}
$$

and the initial terms are [1, 0, 1, 0, 1, 0, 1, 1, 1, 1, 0, 1, 1, 1, 0, 1].
For $\phi(W^o, 0, 1)$:

$$
\begin{aligned}
p_0(x) &= x^{138} + x^{135} + x^{134} + x^{133} + x^{132} + x^{128} + x^{123} + x^{119} + x^{118} + x^{116}\\
&+ x^{115} + x^{112} + x^{111} + x^{110} + x^{105} + x^{103} + x^{98} + x^{95} + x^{93} + x^{92}\\
&+ x^{90} + x^{88} + x^{87} + x^{85} + x^{84} + x^{81} + x^{80} + x^{79} + x^{77} + x^{76} + x^{75}\\
&+ x^{74} + x^{72} + x^{70} + x^{67} + x^{64} + x^{61} + x^{59} + x^{58} + x^{56} + x^{54} + x^{53}\\
&+ x^{52} + x^{51} + x^{49} + x^{46} + x^{38} + x^{36} + x^{34} + x^{33} + x^{31} + x^{29} + x^{27}\\
&+ x^{25} + x^{22} + x^{21} + x^{18},\\
p_3(x) &= x^{135} + x^{134} + x^{133} + x^{132} + x^{131} + x^{128} + x^{127} + x^{125} + x^{124} + x^{123}\\
&+ x^{118} + x^{114} + x^{113} + x^{112} + x^{110} + x^{104} + x^{103} + x^{102} + x^{101}\\
&+ x^{100} + x^{99} + x^{98} + x^{97} + x^{96} + x^{95} + x^{94} + x^{93} + x^{92} + x^{91} + x^{90}\\
&+ x^{89} + x^{88} + x^{82} + x^{81} + x^{78} + x^{74} + x^{73} + x^{72} + x^{70} + x^{64} + x^{63}\\
&+ x^{62} + x^{61} + x^{60} + x^{59} + x^{58} + x^{57} + x^{56} + x^{50} + x^{49} + x^{47} + x^{45}\\
&+ x^{44} + x^{43} + x^{42} + x^{41} + x^{31} + x^{30} + x^{29} + x^{28} + x^{27} + x^{24} + x^{23}\\
&+ x^{21} + x^{20} + x^{19} + x^{15} + x^{13} + x^{12} + x^{11} + x^{10} + x^{9},\\
p_6(x) &= x^{138} + x^{136} + x^{128} + x^{126} + x^{124} + x^{122} + x^{120} + x^{118} + x^{112} + x^{110}\\
&+ x^{108} + x^{106} + x^{102} + x^{94} + x^{92} + x^{90} + x^{88} + x^{86} + x^{84} + x^{82} + x^{80}\\
&+ x^{76} + x^{74} + x^{68} + x^{66} + x^{64} + x^{58} + x^{56} + x^{52} + x^{46} + x^{40} + x^{34}\\
&+ x^{32} + x^{26} + x^{20} + x^{14} + x^{12} + x^{10} + x^{8} + x^{6},\\
p_9(x) &= x^{141} + x^{140} + x^{137} + x^{135} + x^{134} + x^{133} + x^{130} + x^{129} + x^{127} + x^{125}\\
&+ x^{124} + x^{121} + x^{118} + x^{117} + x^{116} + x^{115} + x^{114} + x^{113} + x^{111}\\
&+ x^{103} + x^{100} + x^{99} + x^{77} + x^{76} + x^{73} + x^{71} + x^{70} + x^{69} + x^{66} + x^{65}\\
&+ x^{63} + x^{61} + x^{60} + x^{57} + x^{54} + x^{53} + x^{52} + x^{51} + x^{50} + x^{49} + x^{47}\\
&+ x^{39} + x^{36} + x^{35} + x^{29} + x^{28} + x^{25} + x^{23} + x^{22} + x^{21} + x^{18} + x^{17}
\end{aligned}
$$

$$
\begin{aligned}
&+ x^{15} + x^7 + x^4 + x^3,\\
p_{12}(x) &= x^{144} + x^{136} + x^{116} + x^{104} + x^{100} + x^{96} + x^{80} + x^{72} + x^{52} + x^{40} + x^{36}\\
&+ x^{24} + x^{16} + x^8 + x^4 + 1,
\end{aligned}
$$

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

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

$$
\begin{aligned}
p_0(x) &= x^{164} + x^{160} + x^{156} + x^{155} + x^{153} + x^{152} + x^{150} + x^{149} + x^{148} + x^{147}\\
&+ x^{145} + x^{144} + x^{142} + x^{141} + x^{138} + x^{136} + x^{135} + x^{134} + x^{132}\\
&+ x^{131} + x^{127} + x^{126} + x^{125} + x^{124} + x^{121} + x^{120} + x^{115} + x^{113}\\
&+ x^{112} + x^{111} + x^{108} + x^{105} + x^{100} + x^{99} + x^{96} + x^{93} + x^{92} + x^{90}\\
&+ x^{89} + x^{88} + x^{86} + x^{85} + x^{84} + x^{83} + x^{82} + x^{80} + x^{79} + x^{71} + x^{70}\\
&+ x^{68} + x^{67} + x^{66} + x^{64} + x^{61} + x^{60} + x^{59} + x^{58} + x^{56} + x^{54} + x^{48}\\
&+ x^{46} + x^{43} + x^{42} + x^{40} + x^{38} + x^{37} + x^{36} + x^{34} + x^{33} + x^{29} + x^{28}\\
&+ x^{27},\\
p_3(x) &= x^{143} + x^{142} + x^{141} + x^{140} + x^{139} + x^{136} + x^{135} + x^{133} + x^{132} + x^{130}\\
&+ x^{129} + x^{128} + x^{125} + x^{123} + x^{121} + x^{116} + x^{111} + x^{108} + x^{107}\\
&+ x^{106} + x^{104} + x^{103} + x^{102} + x^{97} + x^{96} + x^{93} + x^{92} + x^{91} + x^{89}\\
&+ x^{86} + x^{85} + x^{84} + x^{82} + x^{76} + x^{71} + x^{68} + x^{67} + x^{66} + x^{64} + x^{61}\\
&+ x^{60} + x^{59} + x^{57} + x^{55} + x^{51} + x^{50} + x^{48} + x^{46} + x^{44} + x^{43} + x^{42}\\
&+ x^{41} + x^{39} + x^{38} + x^{37} + x^{36} + x^{35} + x^{32} + x^{31} + x^{29} + x^{28} + x^{26}\\
&+ x^{25} + x^{24} + x^{23} + x^{22} + x^{20} + x^{17} + x^{16} + x^{14} + x^{12} + x^{11} + x^{10}\\
&+ x^{9},\\
p_6(x) &= x^{146} + x^{144} + x^{136} + x^{116} + x^{114} + x^{110} + x^{108} + x^{106} + x^{102} + x^{100}\\
&+ x^{96} + x^{92} + x^{90} + x^{86} + x^{84} + x^{82} + x^{80} + x^{78} + x^{76} + x^{68} + x^{66}\\
&+ x^{64} + x^{62} + x^{58} + x^{56} + x^{54} + x^{44} + x^{38} + x^{24} + x^{16} + x^8 + x^6,\\
p_9(x) &= x^{149} + x^{148} + x^{145} + x^{143} + x^{142} + x^{141} + x^{138} + x^{136} + x^{135} + x^{133}\\
&+ x^{131} + x^{130} + x^{128} + x^{127} + x^{126} + x^{125} + x^{123} + x^{122} + x^{119}\\
&+ x^{114} + x^{113} + x^{112} + x^{107} + x^{104} + x^{100} + x^{99} + x^{85} + x^{84} + x^{81}\\
&+ x^{79} + x^{78} + x^{77} + x^{74} + x^{72} + x^{71} + x^{69} + x^{67} + x^{66} + x^{64} + x^{63}\\
&+ x^{62} + x^{61} + x^{59} + x^{58} + x^{55} + x^{50} + x^{49} + x^{48} + x^{43} + x^{40} + x^{37}\\
&+ x^{35} + x^{33} + x^{31} + x^{30} + x^{29} + x^{26} + x^{24} + x^{23} + x^{20} + x^{19} + x^{18}\\
&+ x^{17} + x^{16} + x^{11} + x^8 + x^4 + x^3,\\
p_{12}(x) &= x^{152} + x^{144} + x^{140} + x^{136} + x^{124} + x^{96} + x^{88} + x^{80} + x^{76} + x^{72} + x^{60}\\
&+ x^{40} + x^{28} + x^{16} + 1,
\end{aligned}
$$

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

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

$$\begin{aligned}
p_0(x) &= x^{147} + x^{145} + x^{139} + x^{137} + x^{135} + x^{132} + x^{130} + x^{129} + x^{127} + x^{126} \\
&\quad + x^{124} + x^{121} + x^{120} + x^{118} + x^{116} + x^{113} + x^{109} + x^{108} + x^{106} \\
&\quad + x^{104} + x^{102} + x^{101} + x^{99} + x^{98} + x^{96} + x^{95} + x^{93} + x^{90} + x^{89} + x^{88} \\
&\quad + x^{87} + x^{85} + x^{84} + x^{80} + x^{79} + x^{76} + x^{75} + x^{74} + x^{73} + x^{67} + x^{65} \\
&\quad + x^{63} + x^{62} + x^{60} + x^{59} + x^{58} + x^{57} + x^{56} + x^{53} + x^{52} + x^{51} + x^{50} \\
&\quad + x^{44} + x^{43} + x^{38} + x^{36} + x^{33}, \\
p_3(x) &= x^{144} + x^{142} + x^{139} + x^{138} + x^{136} + x^{133} + x^{132} + x^{130} + x^{128} + x^{127} \\
&\quad + x^{126} + x^{125} + x^{121} + x^{119} + x^{118} + x^{117} + x^{115} + x^{113} + x^{110} \\
&\quad + x^{107} + x^{106} + x^{105} + x^{103} + x^{102} + x^{101} + x^{100} + x^{98} + x^{95} + x^{94} \\
&\quad + x^{93} + x^{92} + x^{90} + x^{89} + x^{84} + x^{81} + x^{79} + x^{77} + x^{76} + x^{74} + x^{73} \\
&\quad + x^{72} + x^{70} + x^{69} + x^{68} + x^{66} + x^{64} + x^{63} + x^{60} + x^{58} + x^{56} + x^{55} \\
&\quad + x^{54} + x^{50} + x^{49} + x^{46} + x^{45} + x^{44} + x^{43} + x^{42} + x^{41} + x^{40} + x^{39} \\
&\quad + x^{35} + x^{31} + x^{30} + x^{29} + x^{25} + x^{23} + x^{22} + x^{20} + x^{19} + x^{18} + x^{17} \\
&\quad + x^{16} + x^{15} + x^{14} + x^{13} + x^{12}, \\
p_6(x) &= x^{144} + x^{142} + x^{139} + x^{138} + x^{136} + x^{133} + x^{132} + x^{130} + x^{129} + x^{128} \\
&\quad + x^{126} + x^{125} + x^{123} + x^{121} + x^{119} + x^{118} + x^{117} + x^{114} + x^{112} \\
&\quad + x^{110} + x^{108} + x^{105} + x^{100} + x^{99} + x^{98} + x^{94} + x^{92} + x^{91} + x^{90} \\
&\quad + x^{89} + x^{87} + x^{85} + x^{83} + x^{82} + x^{79} + x^{78} + x^{75} + x^{72} + x^{71} + x^{67} \\
&\quad + x^{66} + x^{65} + x^{62} + x^{59} + x^{58} + x^{57} + x^{55} + x^{51} + x^{48} + x^{46} + x^{45} \\
&\quad + x^{43} + x^{42} + x^{38} + x^{30} + x^{29} + x^{28} + x^{27} + x^{26} + x^{25} + x^{21} + x^{20} \\
&\quad + x^{19} + x^{17} + x^{15} + x^{14} + x^{13} + x^{11} + x^{8} + x^{6} + x^{5} + x^{2} + x + 1, \\
p_9(x) &= x^{144} + x^{142} + x^{141} + x^{138} + x^{137} + x^{136} + x^{132} + x^{130} + x^{129} + x^{128} \\
&\quad + x^{124} + x^{122} + x^{121} + x^{118} + x^{117} + x^{114} + x^{113} + x^{110} + x^{109} \\
&\quad + x^{108} + x^{104} + x^{102} + x^{101} + x^{100} + x^{80} + x^{78} + x^{77} + x^{74} + x^{73} \\
&\quad + x^{72} + x^{68} + x^{66} + x^{65} + x^{64} + x^{60} + x^{58} + x^{57} + x^{54} + x^{53} + x^{50} \\
&\quad + x^{49} + x^{46} + x^{45} + x^{44} + x^{40} + x^{38} + x^{37} + x^{36} + x^{32} + x^{30} + x^{29} \\
&\quad + x^{26} + x^{25} + x^{24} + x^{20} + x^{18} + x^{17} + x^{14} + x^{13} + x^{12} + x^{8} + x^{6} + x^{5} \\
&\quad + x^{4}, \\
p_{12}(x) &= x^{144} + x^{142} + x^{141} + x^{138} + x^{137} + x^{136} + x^{116} + x^{114} + x^{113} + x^{110} \\
&\quad + x^{109} + x^{106} + x^{105} + x^{104} + x^{100} + x^{98} + x^{97} + x^{96} + x^{80} + x^{78} \\
&\quad + x^{77} + x^{74} + x^{73} + x^{72} + x^{52} + x^{50} + x^{49} + x^{46} + x^{45} + x^{42} + x^{41} \\
&\quad + x^{40} + x^{36} + x^{34} + x^{33} + x^{30} + x^{29} + x^{26} + x^{25} + x^{24} + x^{16} + x^{14} \\
&\quad + x^{13} + x^{10} + x^{9} + x^{8} + x^{4} + x^{2} + x + 1,
\end{aligned}$$

and the initial terms are [0, 0, 0, 0, 0, 0, 0, 1, 1, 1, 0, 1, 0, 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]	1279	[1885, 1927]	2558	[2091, 3665]	3837	[3359, 3446]
1	[3, 4]	1280	[2087, 2088]	2559	[3657, 664]	3838	[4485, 1477]
2	[5, 6]	1281	[2089, 2018]	2560	[3666, 3667]	3839	[4486, 4145]
3	[7, 8]	1282	[2081, 229]	2561	[2283, 3521]	3840	[4487, 3039]
4	[9, 10]	1283	[2090, 1698]	2562	[2155, 2255]	3841	[2835, 4488]
5	[11, 12]	1284	[1830, 214]	2563	[3668, 198]	3842	[4489, 2947]
6	[13, 14]	1285	[2091, 2092]	2564	[3669, 1728]	3843	[2635, 4490]
7	[15, 16]	1286	[1950, 1981]	2565	[1867, 1673]	3844	[314, 3472]
8	[17, 18]	1287	[2093, 1734]	2566	[2184, 1889]	3845	[1254, 1030]
9	[19, 20]	1288	[2094, 756]	2567	[2083, 2094]	3846	[4491, 4227]
10	[21, 22]	1289	[1998, 1809]	2568	[3605, 2133]	3847	[4492, 1536]
11	[23, 24]	1290	[1713, 2095]	2569	[3670, 538]	3848	[4493, 3453]
12	[25, 26]	1291	[2096, 718]	2570	[1950, 721]	3849	[4494, 3138]
13	[27, 28]	1292	[1890, 635]	2571	[767, 3614]	3850	[4495, 4496]
14	[29, 30]	1293	[2097, 1848]	2572	[2147, 625]	3851	[1451, 4497]
15	[31, 32]	1294	[2098, 2099]	2573	[3671, 3672]	3852	[4498, 4499]
16	[33, 34]	1295	[794, 2100]	2574	[3673, 3674]	3853	[2442, 4500]
17	[35, 36]	1296	[539, 1861]	2575	[3675, 1688]	3854	[4501, 4502]
18	[37, 38]	1297	[2101, 545]	2576	[3676, 776]	3855	[3322, 3164]
19	[39, 40]	1298	[2102, 1871]	2577	[1921, 872]	3856	[4503, 4371]
20	[41, 42]	1299	[2103, 2104]	2578	[3677, 506]	3857	[4504, 2593]
21	[43, 44]	1300	[1687, 502]	2579	[1723, 1933]	3858	[3239, 2577]
22	[45, 46]	1301	[2105, 1893]	2580	[646, 1938]	3859	[4505, 1476]
23	[47, 48]	1302	[2106, 2107]	2581	[3606, 833]	3860	[1130, 2808]
24	[49, 50]	1303	[1921, 834]	2582	[3678, 2305]	3861	[4506, 4507]
25	[51, 52]	1304	[1734, 170]	2583	[3679, 3680]	3862	[3194, 4508]
26	[53, 54]	1305	[1809, 697]	2584	[3681, 3682]	3863	[4509, 4510]
27	[55, 56]	1306	[718, 2108]	2585	[3683, 3528]	3864	[4511, 4394]
28	[57, 58]	1307	[171, 2020]	2586	[3684, 3561]	3865	[4512, 1453]
29	[59, 60]	1308	[568, 1918]	2587	[3685, 505]	3866	[4513, 1031]
30	[61, 62]	1309	[2109, 189]	2588	[3686, 1893]	3867	[4514, 4117]
31	[63, 64]	1310	[1847, 2110]	2589	[3687, 2191]	3868	[2931, 4515]
32	[65, 66]	1311	[2111, 1901]	2590	[3688, 3558]	3869	[4516, 2414]
33	[67, 68]	1312	[2112, 2113]	2591	[3608, 3689]	3870	[4517, 4288]
34	[69, 70]	1313	[1683, 2114]	2592	[2165, 2150]	3871	[1572, 2691]
35	[71, 72]	1314	[2115, 2116]	2593	[3690, 691]	3872	[4518, 4519]
36	[73, 74]	1315	[1882, 2117]	2594	[2016, 758]	3873	[4520, 458]
37	[75, 76]	1316	[1873, 1687]	2595	[3691, 497]	3874	[4521, 2682]
38	[77, 78]	1317	[2118, 1962]	2596	[490, 494]	3875	[2511, 114]
39	[79, 80]	1318	[2119, 2120]	2597	[3692, 1805]	3876	[4522, 952]

40	[81, 82]	1319	[2121, 2122]	2598	[3693, 3694]	3877	[4523, 2697]
41	[83, 84]	1320	[2123, 1663]	2599	[3695, 3696]	3878	[4524, 4525]
42	[85, 86]	1321	[2124, 2125]	2600	[3697, 2176]	3879	[2895, 301]
43	[87, 88]	1322	[801, 1770]	2601	[509, 2209]	3880	[4526, 4527]
44	[89, 90]	1323	[586, 2126]	2602	[3698, 3699]	3881	[3219, 4528]
45	[91, 92]	1324	[2127, 601]	2603	[3700, 858]	3882	[4529, 3116]
46	[93, 94]	1325	[2047, 554]	2604	[1915, 1797]	3883	[4530, 314]
47	[95, 96]	1326	[2128, 223]	2605	[3701, 3702]	3884	[2861, 2708]
48	[97, 98]	1327	[2129, 2130]	2606	[53, 1739]	3885	[4531, 4532]
49	[99, 100]	1328	[2131, 2132]	2607	[3522, 1959]	3886	[4533, 4534]
50	[101, 102]	1329	[648, 173]	2608	[1987, 203]	3887	[4535, 4536]
51	[103, 104]	1330	[1942, 2133]	2609	[607, 148]	3888	[3279, 3483]
52	[105, 106]	1331	[2033, 1792]	2610	[1872, 237]	3889	[2553, 918]
53	[107, 108]	1332	[2035, 839]	2611	[3703, 1628]	3890	[4537, 4538]
54	[109, 110]	1333	[2134, 645]	2612	[3704, 630]	3891	[4539, 3120]
55	[111, 112]	1334	[226, 1606]	2613	[3705, 1583]	3892	[2560, 4540]
56	[113, 114]	1335	[2135, 1847]	2614	[3706, 2]	3893	[2421, 4201]
57	[115, 116]	1336	[821, 715]	2615	[3707, 782]	3894	[1569, 4374]
58	[117, 118]	1337	[692, 2136]	2616	[3579, 2228]	3895	[4541, 4375]
59	[119, 120]	1338	[2017, 2137]	2617	[550, 2005]	3896	[4542, 2703]
60	[121, 122]	1339	[1681, 2138]	2618	[1822, 3708]	3897	[4543, 2524]
61	[123, 124]	1340	[1742, 1590]	2619	[3709, 2126]	3898	[1528, 397]
62	[125, 126]	1341	[2139, 654]	2620	[3710, 1619]	3899	[4288, 4544]
63	[127, 128]	1342	[1788, 2140]	2621	[3711, 2004]	3900	[4545, 413]
64	[129, 130]	1343	[2141, 633]	2622	[1889, 750]	3901	[4231, 4546]
65	[131, 132]	1344	[2142, 2143]	2623	[2140, 755]	3902	[4547, 3040]
66	[133, 134]	1345	[2144, 540]	2624	[3712, 573]	3903	[292, 3391]
67	[135, 136]	1346	[2145, 497]	2625	[3713, 638]	3904	[2727, 4548]
68	[137, 138]	1347	[2146, 701]	2626	[1596, 3714]	3905	[4549, 4550]
69	[139, 140]	1348	[2147, 837]	2627	[3660, 218]	3906	[3376, 1542]
70	[141, 142]	1349	[2148, 2149]	2628	[3715, 3716]	3907	[949, 3407]
71	[143, 144]	1350	[2020, 2150]	2629	[665, 1980]	3908	[2523, 4551]
72	[145, 146]	1351	[2151, 597]	2630	[1823, 1940]	3909	[4552, 4553]
73	[147, 148]	1352	[2152, 2153]	2631	[3717, 3718]	3910	[4554, 4555]
74	[149, 150]	1353	[566, 2154]	2632	[552, 714]	3911	[4556, 2654]
75	[151, 152]	1354	[1616, 1937]	2633	[638, 2342]	3912	[4557, 3198]
76	[153, 154]	1355	[1819, 2084]	2634	[1637, 3582]	3913	[4558, 2888]
77	[155, 156]	1356	[2155, 2015]	2635	[1843, 636]	3914	[4559, 4560]
78	[157, 158]	1357	[38, 568]	2636	[3719, 3553]	3915	[1043, 4561]
79	[159, 160]	1358	[2156, 2157]	2637	[3720, 548]	3916	[4562, 4563]
80	[161, 162]	1359	[834, 791]	2638	[3721, 844]	3917	[3366, 4564]
81	[163, 164]	1360	[850, 2158]	2639	[3722, 2237]	3918	[4565, 3378]
82	[165, 156]	1361	[2159, 227]	2640	[3723, 2112]	3919	[4566, 2673]
83	[166, 167]	1362	[2160, 2161]	2641	[168, 2239]	3920	[2704, 2627]

84	[168, 169]	1363	[2162, 2163]	2642	[3724, 1638]	3921	[2594, 4567]
85	[170, 171]	1364	[2164, 62]	2643	[2263, 3725]	3922	[3213, 3114]
86	[172, 173]	1365	[2019, 2165]	2644	[3726, 1661]	3923	[459, 4568]
87	[174, 175]	1366	[2059, 1880]	2645	[2350, 3727]	3924	[4569, 3159]
88	[176, 177]	1367	[1729, 2166]	2646	[3728, 3667]	3925	[4570, 4571]
89	[178, 179]	1368	[2167, 713]	2647	[3729, 3730]	3926	[4572, 885]
90	[180, 181]	1369	[2168, 2169]	2648	[3731, 3732]	3927	[1140, 3441]
91	[182, 183]	1370	[1731, 533]	2649	[3733, 558]	3928	[4573, 929]
92	[184, 185]	1371	[721, 1694]	2650	[873, 574]	3929	[4574, 4575]
93	[186, 187]	1372	[868, 1593]	2651	[832, 3607]	3930	[4576, 3278]
94	[188, 189]	1373	[1723, 1978]	2652	[3734, 3735]	3931	[4577, 4578]
95	[190, 191]	1374	[1667, 2170]	2653	[3736, 3737]	3932	[4579, 4580]
96	[192, 193]	1375	[2171, 2172]	2654	[3738, 1863]	3933	[4581, 1537]
97	[194, 195]	1376	[2033, 569]	2655	[2024, 2259]	3934	[4582, 479]
98	[196, 153]	1377	[2173, 2174]	2656	[1975, 3739]	3935	[4583, 3442]
99	[197, 198]	1378	[2175, 2176]	2657	[3740, 1695]	3936	[4204, 4584]
100	[199, 200]	1379	[2089, 2137]	2658	[3741, 2122]	3937	[4585, 4586]
101	[201, 202]	1380	[2177, 46]	2659	[1743, 1748]	3938	[4519, 2797]
102	[203, 204]	1381	[2178, 2179]	2660	[1618, 3716]	3939	[4587, 4576]
103	[205, 206]	1382	[764, 1622]	2661	[3742, 1882]	3940	[4428, 2587]
104	[207, 208]	1383	[2180, 2028]	2662	[2022, 3623]	3941	[1479, 4588]
105	[209, 210]	1384	[1801, 1590]	2663	[3743, 779]	3942	[4589, 4561]
106	[211, 212]	1385	[2181, 1771]	2664	[3744, 811]	3943	[4590, 2887]
107	[213, 214]	1386	[631, 2182]	2665	[3574, 1696]	3944	[4591, 4278]
108	[215, 216]	1387	[2115, 36]	2666	[3745, 1758]	3945	[4592, 4593]
109	[217, 218]	1388	[783, 2183]	2667	[3726, 3746]	3946	[2771, 4594]
110	[219, 212]	1389	[2184, 206]	2668	[595, 3747]	3947	[4229, 2967]
111	[220, 221]	1390	[816, 1896]	2669	[1744, 3748]	3948	[4595, 4596]
112	[222, 223]	1391	[2185, 652]	2670	[683, 771]	3949	[3424, 4597]
113	[224, 225]	1392	[788, 838]	2671	[3749, 3750]	3950	[1110, 4598]
114	[226, 227]	1393	[2186, 2187]	2672	[61, 538]	3951	[917, 3135]
115	[152, 228]	1394	[2188, 1598]	2673	[2072, 3751]	3952	[2807, 2521]
116	[229, 230]	1395	[2189, 1852]	2674	[1706, 2053]	3953	[4271, 321]
117	[231, 174]	1396	[2190, 2016]	2675	[694, 3752]	3954	[4599, 4600]
118	[232, 233]	1397	[1663, 2107]	2676	[871, 3753]	3955	[4601, 940]
119	[234, 235]	1398	[1939, 1824]	2677	[520, 2174]	3956	[1578, 4299]
120	[236, 237]	1399	[573, 874]	2678	[3754, 1766]	3957	[4602, 4093]
121	[238, 239]	1400	[2191, 2192]	2679	[3588, 3755]	3958	[4603, 4604]
122	[240, 241]	1401	[717, 2193]	2680	[1727, 615]	3959	[4605, 4606]
123	[242, 243]	1402	[1976, 14]	2681	[807, 239]	3960	[2740, 4607]
124	[244, 245]	1403	[2194, 2195]	2682	[3756, 3757]	3961	[1433, 1243]
125	[246, 247]	1404	[2196, 2197]	2683	[747, 1892]	3962	[4608, 1551]
126	[248, 249]	1405	[2198, 1820]	2684	[3758, 2190]	3963	[3180, 1156]
127	[250, 251]	1406	[2199, 1628]	2685	[3759, 3760]	3964	[1120, 4609]

128	[252, 253]	1407	[2200, 597]	2686	[2215, 3761]	3965	[4610, 4611]
129	[254, 255]	1408	[1966, 183]	2687	[2206, 581]	3966	[4612, 2618]
130	[256, 252]	1409	[2201, 1588]	2688	[594, 569]	3967	[4120, 2836]
131	[257, 63]	1410	[2202, 207]	2689	[3762, 685]	3968	[1229, 4613]
132	[258, 259]	1411	[2203, 754]	2690	[664, 2114]	3969	[4614, 4380]
133	[66, 260]	1412	[672, 1699]	2691	[156, 3763]	3970	[3342, 4615]
134	[261, 262]	1413	[1883, 2088]	2692	[2039, 3764]	3971	[1219, 4616]
135	[263, 264]	1414	[2204, 2205]	2693	[522, 2132]	3972	[2599, 4617]
136	[265, 266]	1415	[2206, 2207]	2694	[3765, 3766]	3973	[4618, 4619]
137	[267, 268]	1416	[172, 1887]	2695	[59, 2122]	3974	[4322, 1100]
138	[269, 270]	1417	[143, 2208]	2696	[3550, 1636]	3975	[4561, 363]
139	[271, 272]	1418	[52, 2209]	2697	[3767, 2258]	3976	[4620, 4621]
140	[273, 274]	1419	[2210, 2211]	2698	[1792, 570]	3977	[4622, 1144]
141	[275, 276]	1420	[188, 1813]	2699	[1820, 669]	3978	[420, 2865]
142	[277, 278]	1421	[2212, 2213]	2700	[648, 1887]	3979	[4623, 927]
143	[279, 280]	1422	[2214, 1889]	2701	[2008, 673]	3980	[2647, 4608]
144	[281, 282]	1423	[2215, 2216]	2702	[1977, 215]	3981	[4624, 2587]
145	[283, 284]	1424	[2217, 1967]	2703	[751, 3768]	3982	[4625, 3450]
146	[285, 286]	1425	[1846, 2218]	2704	[1847, 3769]	3983	[4626, 457]
147	[287, 288]	1426	[702, 2219]	2705	[3770, 567]	3984	[2872, 2959]
148	[289, 290]	1427	[2220, 2221]	2706	[3771, 3766]	3985	[3490, 3154]
149	[291, 292]	1428	[2222, 2223]	2707	[2292, 3772]	3986	[4627, 4628]
150	[293, 294]	1429	[2224, 172]	2708	[1803, 2108]	3987	[4629, 3274]
151	[295, 296]	1430	[2225, 241]	2709	[2165, 3773]	3988	[4630, 4631]
152	[297, 298]	1431	[2226, 2155]	2710	[1631, 2078]	3989	[4632, 2352]
153	[299, 300]	1432	[2227, 1812]	2711	[224, 3774]	3990	[391, 4633]
154	[301, 302]	1433	[2228, 574]	2712	[3775, 2347]	3991	[4634, 4635]
155	[303, 304]	1434	[1856, 2229]	2713	[517, 2112]	3992	[3293, 4392]
156	[305, 306]	1435	[535, 2191]	2714	[3776, 3777]	3993	[2850, 3437]
157	[307, 308]	1436	[2230, 1978]	2715	[3778, 3779]	3994	[4636, 4637]
158	[309, 310]	1437	[2231, 826]	2716	[3780, 569]	3995	[4638, 4639]
159	[311, 312]	1438	[2232, 1896]	2717	[3781, 1941]	3996	[3070, 3043]
160	[313, 314]	1439	[2233, 813]	2718	[1658, 1761]	3997	[4640, 4641]
161	[315, 316]	1440	[2234, 2235]	2719	[9, 3567]	3998	[4642, 4643]
162	[317, 318]	1441	[1686, 2049]	2720	[1962, 1781]	3999	[469, 3113]
163	[319, 320]	1442	[765, 2236]	2721	[187, 1945]	4000	[2696, 4644]
164	[321, 322]	1443	[2237, 1959]	2722	[3782, 1716]	4001	[4161, 3455]
165	[323, 324]	1444	[2238, 2239]	2723	[1719, 1787]	4002	[4645, 4646]
166	[325, 326]	1445	[2240, 1709]	2724	[866, 3526]	4003	[4647, 3324]
167	[327, 328]	1446	[2005, 2039]	2725	[1596, 2340]	4004	[4648, 254]
168	[298, 329]	1447	[2241, 1804]	2726	[3745, 2040]	4005	[4649, 4236]
169	[330, 331]	1448	[2041, 2242]	2727	[223, 2342]	4006	[4650, 2928]
170	[332, 333]	1449	[183, 2243]	2728	[2261, 3762]	4007	[4651, 126]
171	[334, 335]	1450	[2244, 2245]	2729	[3783, 797]	4008	[4652, 3014]

172	[336, 337]	1451	[836, 516]	2730	[1899, 1706]	4009	[1034, 4653]
173	[338, 339]	1452	[2246, 1955]	2731	[3784, 562]	4010	[2649, 4654]
174	[340, 341]	1453	[803, 2138]	2732	[696, 3785]	4011	[4655, 4656]
175	[342, 343]	1454	[2106, 2247]	2733	[3564, 3786]	4012	[4657, 3471]
176	[344, 345]	1455	[503, 702]	2734	[3787, 2242]	4013	[4114, 3333]
177	[346, 347]	1456	[2248, 2183]	2735	[1656, 729]	4014	[4658, 1033]
178	[348, 349]	1457	[2249, 827]	2736	[3736, 245]	4015	[4359, 885]
179	[350, 351]	1458	[1871, 2250]	2737	[1639, 871]	4016	[4594, 4577]
180	[352, 353]	1459	[2251, 2243]	2738	[2326, 3788]	4017	[2984, 3337]
181	[354, 355]	1460	[730, 1768]	2739	[3789, 1652]	4018	[3007, 4659]
182	[356, 357]	1461	[2252, 1756]	2740	[247, 3790]	4019	[2782, 3433]
183	[358, 359]	1462	[2253, 1695]	2741	[3559, 1901]	4020	[2672, 435]
184	[360, 361]	1463	[2254, 2255]	2742	[3791, 3792]	4021	[4218, 3093]
185	[362, 363]	1464	[1825, 2029]	2743	[640, 2051]	4022	[4131, 4660]
186	[364, 365]	1465	[2256, 1799]	2744	[3793, 768]	4023	[4661, 2702]
187	[366, 367]	1466	[2257, 2258]	2745	[631, 3794]	4024	[4662, 1454]
188	[368, 369]	1467	[2259, 2120]	2746	[813, 687]	4025	[4663, 4664]
189	[370, 371]	1468	[2260, 596]	2747	[776, 1788]	4026	[4665, 2978]
190	[372, 373]	1469	[2261, 684]	2748	[3795, 2218]	4027	[4666, 1387]
191	[374, 375]	1470	[2144, 1861]	2749	[1692, 1943]	4028	[4667, 4668]
192	[376, 377]	1471	[2262, 1843]	2750	[3547, 2037]	4029	[1366, 3057]
193	[378, 379]	1472	[2263, 2264]	2751	[2257, 3796]	4030	[4669, 3104]
194	[380, 381]	1473	[2265, 1945]	2752	[2269, 1807]	4031	[414, 2962]
195	[382, 383]	1474	[2266, 167]	2753	[3686, 3621]	4032	[2988, 2660]
196	[384, 385]	1475	[2267, 2179]	2754	[3797, 2117]	4033	[4670, 4671]
197	[386, 387]	1476	[863, 2]	2755	[3798, 523]	4034	[4672, 401]
198	[388, 389]	1477	[2268, 656]	2756	[1815, 3653]	4035	[4673, 4674]
199	[390, 391]	1478	[2269, 1754]	2757	[3674, 675]	4036	[4675, 4660]
200	[392, 393]	1479	[2270, 1717]	2758	[3799, 589]	4037	[4676, 1287]
201	[394, 395]	1480	[2271, 2272]	2759	[647, 172]	4038	[4677, 4678]
202	[396, 397]	1481	[1759, 2191]	2760	[3800, 3801]	4039	[4679, 4680]
203	[398, 399]	1482	[2273, 789]	2761	[2122, 3802]	4040	[4681, 4682]
204	[400, 401]	1483	[1663, 2247]	2762	[2025, 1686]	4041	[4683, 4684]
205	[402, 403]	1484	[2274, 639]	2763	[1597, 549]	4042	[3139, 4685]
206	[404, 405]	1485	[1635, 2143]	2764	[1856, 3508]	4043	[4686, 4687]
207	[406, 407]	1486	[2275, 505]	2765	[1971, 733]	4044	[282, 4276]
208	[331, 408]	1487	[822, 2276]	2766	[3803, 3661]	4045	[4688, 1420]
209	[409, 410]	1488	[2277, 1943]	2767	[3804, 1746]	4046	[4689, 4690]
210	[411, 412]	1489	[2278, 2237]	2768	[1648, 2309]	4047	[4691, 3347]
211	[413, 414]	1490	[2279, 2280]	2769	[3613, 768]	4048	[2455, 2486]
212	[415, 416]	1491	[1734, 1611]	2770	[1620, 828]	4049	[4692, 4693]
213	[417, 418]	1492	[2281, 556]	2771	[206, 750]	4050	[3027, 1021]
214	[419, 420]	1493	[632, 1857]	2772	[3518, 2174]	4051	[4694, 2843]
215	[421, 422]	1494	[141, 2282]	2773	[2204, 3805]	4052	[3301, 3491]

216	[423, 424]	1495	[2283, 2284]	2774	[3742, 3806]	4053	[2857, 4695]
217	[425, 426]	1496	[2285, 2286]	2775	[3807, 2218]	4054	[4696, 4697]
218	[427, 428]	1497	[2167, 552]	2776	[3808, 3809]	4055	[3234, 4698]
219	[429, 430]	1498	[1959, 1713]	2777	[3662, 1903]	4056	[4261, 4699]
220	[431, 432]	1499	[2287, 550]	2778	[3674, 2176]	4057	[1282, 926]
221	[433, 434]	1500	[2288, 165]	2779	[147, 204]	4058	[4700, 3188]
222	[435, 436]	1501	[2289, 162]	2780	[2252, 2246]	4059	[4701, 4153]
223	[437, 438]	1502	[2290, 1824]	2781	[3810, 500]	4060	[2794, 4702]
224	[439, 440]	1503	[2291, 58]	2782	[3811, 3812]	4061	[4703, 1497]
225	[441, 261]	1504	[2292, 2099]	2783	[3813, 3814]	4062	[923, 1425]
226	[442, 443]	1505	[2293, 2294]	2784	[157, 3815]	4063	[4704, 1146]
227	[444, 445]	1506	[2295, 2296]	2785	[238, 710]	4064	[4705, 2870]
228	[296, 446]	1507	[862, 235]	2786	[2085, 2195]	4065	[4706, 4707]
229	[447, 448]	1508	[1942, 2297]	2787	[3816, 1954]	4066	[1522, 4447]
230	[449, 450]	1509	[686, 516]	2788	[3817, 776]	4067	[3460, 3226]
231	[451, 342]	1510	[2298, 2209]	2789	[178, 3517]	4068	[4708, 1192]
232	[452, 453]	1511	[2299, 1832]	2790	[3701, 2324]	4069	[4709, 4710]
233	[454, 455]	1512	[1762, 2285]	2791	[3818, 52]	4070	[4711, 1052]
234	[456, 457]	1513	[2037, 1604]	2792	[2112, 3819]	4071	[1399, 2784]
235	[458, 459]	1514	[839, 2286]	2793	[563, 3820]	4072	[4712, 4642]
236	[460, 461]	1515	[2300, 2301]	2794	[1951, 3821]	4073	[4713, 909]
237	[462, 463]	1516	[1980, 2302]	2795	[1886, 500]	4074	[1280, 4393]
238	[464, 465]	1517	[2303, 1865]	2796	[594, 1792]	4075	[4714, 4715]
239	[466, 467]	1518	[2168, 605]	2797	[1739, 3702]	4076	[4716, 4671]
240	[468, 469]	1519	[720, 1981]	2798	[742, 1738]	4077	[4458, 4670]
241	[470, 471]	1520	[1744, 1749]	2799	[3822, 3714]	4078	[4717, 1402]
242	[472, 473]	1521	[2304, 2305]	2800	[3823, 3755]	4079	[2532, 4718]
243	[474, 475]	1522	[1721, 2241]	2801	[2090, 1851]	4080	[2548, 2530]
244	[476, 477]	1523	[874, 2046]	2802	[3824, 1771]	4081	[4719, 2466]
245	[478, 479]	1524	[668, 2306]	2803	[3825, 3527]	4082	[4720, 4721]
246	[480, 481]	1525	[577, 2062]	2804	[3826, 1819]	4083	[4722, 1300]
247	[482, 483]	1526	[1769, 802]	2805	[3827, 158]	4084	[3123, 4507]
248	[484, 485]	1527	[2307, 735]	2806	[3828, 3829]	4085	[3396, 1339]
249	[486, 487]	1528	[2308, 2309]	2807	[3830, 1696]	4086	[4723, 4289]
250	[488, 31]	1529	[2063, 585]	2808	[1917, 136]	4087	[4724, 1427]
251	[489, 490]	1530	[2310, 561]	2809	[1924, 247]	4088	[1263, 4725]
252	[491, 133]	1531	[161, 2311]	2810	[1999, 697]	4089	[1571, 2811]
253	[492, 128]	1532	[2262, 2024]	2811	[774, 3768]	4090	[499, 1732]
254	[493, 32]	1533	[2312, 195]	2812	[1857, 3831]	4091	[866, 3825]
255	[494, 129]	1534	[723, 1894]	2813	[614, 1728]	4092	[625, 3914]
256	[130, 492]	1535	[2308, 1649]	2814	[705, 591]	4093	[1710, 1880]
257	[495, 129]	1536	[2313, 2029]	2815	[3832, 1649]	4094	[1668, 3546]
258	[493, 496]	1537	[2314, 2315]	2816	[3551, 3833]	4095	[1854, 1953]
259	[497, 133]	1538	[128, 1580]	2817	[3525, 868]	4096	[776, 745]

260	[132, 31]	1539	[2316, 185]	2818	[3834, 3553]	4097	[651, 2236]
261	[498, 494]	1540	[2317, 187]	2819	[3835, 2248]	4098	[3593, 1986]
262	[490, 495]	1541	[2318, 2319]	2820	[2101, 42]	4099	[3627, 2070]
263	[499, 500]	1542	[2320, 2086]	2821	[3836, 41]	4100	[3797, 4726]
264	[501, 502]	1543	[247, 236]	2822	[3837, 3802]	4101	[1855, 2154]
265	[503, 504]	1544	[182, 1967]	2823	[3738, 2079]	4102	[4727, 31]
266	[505, 506]	1545	[2321, 2276]	2824	[3838, 1584]	4103	[4728, 3983]
267	[507, 508]	1546	[2128, 638]	2825	[3839, 3840]	4104	[2212, 1775]
268	[509, 510]	1547	[2322, 517]	2826	[3637, 3641]	4105	[3973, 2032]
269	[511, 512]	1548	[2323, 2324]	2827	[1703, 2228]	4106	[4060, 654]
270	[513, 514]	1549	[507, 2325]	2828	[2034, 1762]	4107	[4729, 1845]
271	[515, 516]	1550	[1834, 2080]	2829	[708, 650]	4108	[4730, 3554]
272	[517, 518]	1551	[2326, 2245]	2830	[537, 62]	4109	[1874, 1935]
273	[519, 520]	1552	[1791, 569]	2831	[796, 2187]	4110	[3643, 1812]
274	[521, 145]	1553	[1992, 1970]	2832	[3841, 1691]	4111	[4731, 3521]
275	[522, 523]	1554	[2327, 840]	2833	[2166, 818]	4112	[4732, 1826]
276	[524, 525]	1555	[2328, 2329]	2834	[3842, 839]	4113	[4037, 2149]
277	[526, 527]	1556	[2330, 2331]	2835	[1733, 1610]	4114	[1822, 1667]
278	[528, 529]	1557	[134, 131]	2836	[2094, 3843]	4115	[611, 3950]
279	[530, 160]	1558	[865, 488]	2837	[1977, 541]	4116	[237, 572]
280	[531, 532]	1559	[650, 2332]	2838	[3540, 1706]	4117	[4088, 3725]
281	[533, 534]	1560	[845, 2333]	2839	[3633, 1730]	4118	[2159, 1606]
282	[535, 536]	1561	[2334, 1628]	2840	[2337, 2250]	4119	[4733, 4054]
283	[537, 538]	1562	[2335, 2336]	2841	[3844, 507]	4120	[1887, 4017]
284	[539, 540]	1563	[2337, 2338]	2842	[3596, 1826]	4121	[3590, 2163]
285	[541, 542]	1564	[2339, 39]	2843	[2014, 163]	4122	[4734, 2263]
286	[543, 544]	1565	[1683, 843]	2844	[164, 1954]	4123	[219, 3981]
287	[41, 545]	1566	[1709, 2340]	2845	[3845, 621]	4124	[3762, 4057]
288	[546, 54]	1567	[50, 2341]	2846	[3666, 2017]	4125	[4735, 243]
289	[547, 548]	1568	[2274, 2342]	2847	[3846, 32]	4126	[4736, 493]
290	[549, 550]	1569	[2164, 538]	2848	[3847, 3565]	4127	[3861, 2193]
291	[551, 552]	1570	[240, 2343]	2849	[2178, 3848]	4128	[3759, 138]
292	[553, 554]	1571	[2141, 1857]	2850	[2076, 1914]	4129	[4737, 4738]
293	[555, 556]	1572	[875, 2344]	2851	[1613, 532]	4130	[2173, 741]
294	[557, 558]	1573	[1713, 2345]	2852	[709, 239]	4131	[3513, 2208]
295	[559, 560]	1574	[1756, 1751]	2853	[1788, 2083]	4132	[3650, 1687]
296	[561, 562]	1575	[2346, 2347]	2854	[1617, 2138]	4133	[4739, 1917]
297	[563, 564]	1576	[2348, 2161]	2855	[1745, 3833]	4134	[1594, 1981]
298	[565, 167]	1577	[2349, 1920]	2856	[180, 1722]	4135	[4740, 2017]
299	[566, 567]	1578	[2350, 2294]	2857	[2218, 3769]	4136	[1994, 3969]
300	[249, 568]	1579	[2351, 880]	2858	[3616, 1700]	4137	[3887, 2325]
301	[569, 570]	1580	[2352, 887]	2859	[3849, 2207]	4138	[137, 3760]
302	[571, 572]	1581	[2353, 2354]	2860	[2096, 1803]	4139	[3806, 2117]
303	[573, 574]	1582	[2355, 2353]	2861	[3850, 2282]	4140	[2079, 1835]

304	[575, 576]	1583	[2356, 257]	2862	[3678, 3515]	4141	[2002, 4086]
305	[577, 578]	1584	[892, 258]	2863	[3851, 1799]	4142	[2290, 1940]
306	[190, 579]	1585	[2357, 2358]	2864	[3852, 793]	4143	[4741, 4738]
307	[580, 581]	1586	[1586, 1586]	2865	[544, 3739]	4144	[4742, 1833]
308	[582, 583]	1587	[2359, 2360]	2866	[1875, 1990]	4145	[4056, 3812]
309	[584, 585]	1588	[2361, 2362]	2867	[3659, 228]	4146	[2104, 1680]
310	[586, 587]	1589	[2363, 2364]	2868	[3545, 3561]	4147	[4743, 3821]
311	[588, 589]	1590	[2365, 1234]	2869	[2280, 3853]	4148	[4730, 1856]
312	[590, 591]	1591	[445, 2366]	2870	[838, 1782]	4149	[3704, 2074]
313	[592, 170]	1592	[2367, 2368]	2871	[3854, 3829]	4150	[3553, 1829]
314	[593, 594]	1593	[2369, 2370]	2872	[1779, 3732]	4151	[4744, 1903]
315	[595, 160]	1594	[2371, 2372]	2873	[2318, 1673]	4152	[521, 3648]
316	[596, 597]	1595	[2373, 2374]	2874	[2225, 2343]	4153	[3827, 3815]
317	[598, 599]	1596	[2375, 2376]	2875	[850, 1772]	4154	[55, 2004]
318	[600, 601]	1597	[2377, 2378]	2876	[3788, 3592]	4155	[4745, 4738]
319	[602, 603]	1598	[2379, 2380]	2877	[3855, 3605]	4156	[526, 2237]
320	[604, 605]	1599	[963, 2381]	2878	[3856, 543]	4157	[2266, 829]
321	[606, 607]	1600	[965, 2382]	2879	[3514, 2305]	4158	[4746, 3848]
322	[608, 609]	1601	[2383, 897]	2880	[1677, 1838]	4159	[244, 3737]
323	[610, 611]	1602	[2384, 2385]	2881	[1699, 3617]	4160	[707, 649]
324	[612, 613]	1603	[2386, 2387]	2882	[3857, 1722]	4161	[585, 560]
325	[614, 615]	1604	[2388, 2389]	2883	[2031, 689]	4162	[4747, 131]
326	[616, 617]	1605	[2390, 2391]	2884	[708, 3858]	4163	[4748, 572]
327	[618, 533]	1606	[2392, 1242]	2885	[54, 3702]	4164	[4035, 525]
328	[619, 535]	1607	[2393, 1531]	2886	[1870, 3777]	4165	[3894, 1869]
329	[620, 621]	1608	[2394, 2395]	2887	[3859, 1852]	4166	[742, 3969]
330	[622, 623]	1609	[2396, 2397]	2888	[1876, 2034]	4167	[4022, 1593]
331	[624, 625]	1610	[2398, 2399]	2889	[1752, 625]	4168	[3519, 2094]
332	[626, 627]	1611	[2400, 2401]	2890	[1902, 2325]	4169	[3568, 2014]
333	[628, 629]	1612	[2402, 2403]	2891	[3825, 3860]	4170	[4749, 1580]
334	[606, 203]	1613	[2404, 2405]	2892	[3861, 1711]	4171	[3781, 1652]
335	[630, 631]	1614	[2406, 2407]	2893	[3862, 36]	4172	[853, 1671]
336	[632, 633]	1615	[2408, 2409]	2894	[3863, 3864]	4173	[2220, 782]
337	[634, 635]	1616	[2410, 2411]	2895	[612, 3865]	4174	[2336, 3642]
338	[636, 637]	1617	[2412, 2413]	2896	[3866, 38]	4175	[4750, 1712]
339	[638, 639]	1618	[2414, 1125]	2897	[2099, 196]	4176	[561, 4751]
340	[640, 641]	1619	[2415, 1182]	2898	[3867, 871]	4177	[4752, 3769]
341	[642, 643]	1620	[2416, 2417]	2899	[153, 3868]	4178	[601, 512]
342	[502, 644]	1621	[2418, 2419]	2900	[1849, 1719]	4179	[2109, 1813]
343	[645, 646]	1622	[2420, 2421]	2901	[3615, 3730]	4180	[1837, 1678]
344	[647, 648]	1623	[2422, 2423]	2902	[3668, 3869]	4181	[2053, 1848]
345	[649, 650]	1624	[2424, 2425]	2903	[3870, 784]	4182	[235, 3763]
346	[651, 652]	1625	[2426, 2427]	2904	[2022, 1614]	4183	[4049, 594]
347	[653, 654]	1626	[2428, 2429]	2905	[874, 3871]	4184	[1767, 731]

348	[655, 656]	1627	[2430, 2431]	2906	[3872, 3812]	4185	[3938, 4040]
349	[657, 658]	1628	[2432, 2433]	2907	[3578, 815]	4186	[1736, 1657]
350	[659, 660]	1629	[2434, 1142]	2908	[3873, 862]	4187	[3859, 3578]
351	[661, 662]	1630	[2435, 2436]	2909	[1936, 1599]	4188	[4753, 748]
352	[663, 664]	1631	[2437, 2438]	2910	[3708, 2170]	4189	[4754, 3602]
353	[665, 666]	1632	[2439, 2440]	2911	[1879, 180]	4190	[4045, 2312]
354	[667, 501]	1633	[2441, 2442]	2912	[3874, 1776]	4191	[1630, 203]
355	[668, 669]	1634	[2443, 2444]	2913	[208, 777]	4192	[3945, 1769]
356	[670, 671]	1635	[2445, 2446]	2914	[3875, 757]	4193	[4072, 2082]
357	[672, 673]	1636	[2447, 2448]	2915	[2217, 183]	4194	[1730, 512]
358	[674, 675]	1637	[2449, 2450]	2916	[1724, 494]	4195	[502, 1601]
359	[676, 174]	1638	[120, 2451]	2917	[3876, 3877]	4196	[38, 1719]
360	[677, 678]	1639	[2452, 2453]	2918	[830, 1708]	4197	[1589, 3624]
361	[679, 559]	1640	[2454, 2455]	2919	[1675, 2226]	4198	[4727, 493]
362	[680, 681]	1641	[2456, 2457]	2920	[1854, 1819]	4199	[682, 1590]
363	[642, 623]	1642	[2458, 2459]	2921	[745, 2083]	4200	[518, 2113]
364	[682, 683]	1643	[2460, 2461]	2922	[3878, 2068]	4201	[1667, 4755]
365	[684, 685]	1644	[2462, 2463]	2923	[2024, 636]	4202	[604, 2169]
366	[686, 687]	1645	[2464, 2465]	2924	[2011, 2155]	4203	[4756, 510]
367	[688, 689]	1646	[2466, 2467]	2925	[3875, 2016]	4204	[1815, 3960]
368	[690, 691]	1647	[2468, 2469]	2926	[3646, 3677]	4205	[35, 2116]
369	[692, 221]	1648	[2470, 2471]	2927	[501, 2057]	4206	[3800, 3877]
370	[693, 152]	1649	[2472, 2473]	2928	[1712, 1960]	4207	[1585, 1585]
371	[694, 695]	1650	[2474, 2475]	2929	[779, 3636]	4208	[1853, 1952]
372	[696, 697]	1651	[2476, 2477]	2930	[1718, 1668]	4209	[3798, 2132]
373	[192, 698]	1652	[2478, 2479]	2931	[2191, 3879]	4210	[737, 3577]
374	[699, 700]	1653	[2480, 2481]	2932	[2166, 1971]	4211	[3548, 3865]
375	[701, 702]	1654	[2482, 2483]	2933	[3526, 3860]	4212	[2000, 3967]
376	[703, 704]	1655	[2484, 2485]	2934	[3880, 576]	4213	[2246, 1751]
377	[705, 706]	1656	[2486, 2443]	2935	[3605, 2297]	4214	[1895, 817]
378	[707, 708]	1657	[16, 889]	2936	[3881, 3882]	4215	[4757, 3905]
379	[709, 710]	1658	[2487, 1176]	2937	[1808, 1999]	4216	[4758, 2262]
380	[711, 712]	1659	[2488, 2489]	2938	[3883, 762]	4217	[3842, 2285]
381	[713, 714]	1660	[2490, 429]	2939	[3826, 1953]	4218	[4759, 1731]
382	[199, 715]	1661	[2491, 1216]	2940	[3880, 1693]	4219	[1967, 4760]
383	[187, 716]	1662	[2492, 2493]	2941	[1789, 1974]	4220	[4761, 2172]
384	[650, 717]	1663	[2494, 2495]	2942	[3869, 564]	4221	[4014, 2033]
385	[718, 719]	1664	[2496, 2497]	2943	[750, 3884]	4222	[3612, 757]
386	[720, 721]	1665	[477, 2498]	2944	[2020, 3773]	4223	[4762, 3981]
387	[230, 722]	1666	[2499, 2500]	2945	[2265, 716]	4224	[4069, 1691]
388	[723, 724]	1667	[2501, 2502]	2946	[528, 3821]	4225	[734, 1911]
389	[725, 641]	1668	[2503, 2504]	2947	[1981, 2253]	4226	[1840, 4763]
390	[726, 666]	1669	[2505, 2506]	2948	[3885, 3587]	4227	[494, 2268]
391	[727, 728]	1670	[2507, 484]	2949	[715, 699]	4228	[4764, 221]

392	[555, 729]	1671	[2508, 2509]	2950	[3886, 1832]	4229	[4765, 1717]
393	[730, 731]	1672	[2510, 2511]	2951	[3844, 3887]	4230	[4067, 1777]
394	[732, 733]	1673	[2512, 2513]	2952	[3888, 750]	4231	[1696, 3750]
395	[734, 735]	1674	[2514, 2515]	2953	[3816, 2201]	4232	[4752, 2110]
396	[736, 737]	1675	[2516, 2517]	2954	[3712, 2228]	4233	[530, 3747]
397	[738, 739]	1676	[112, 2518]	2955	[3889, 2179]	4234	[3824, 850]
398	[740, 741]	1677	[2519, 267]	2956	[590, 706]	4235	[780, 3868]
399	[232, 742]	1678	[2520, 2521]	2957	[3604, 1942]	4236	[626, 1924]
400	[743, 590]	1679	[2522, 2523]	2958	[3625, 876]	4237	[237, 869]
401	[744, 745]	1680	[2524, 2525]	2959	[1591, 772]	4238	[3802, 3510]
402	[746, 190]	1681	[2526, 2527]	2960	[3732, 579]	4239	[4766, 241]
403	[747, 748]	1682	[2528, 2529]	2961	[3689, 1983]	4240	[4767, 2197]
404	[749, 750]	1683	[2530, 1523]	2962	[681, 2341]	4241	[4768, 2016]
405	[751, 752]	1684	[2531, 2532]	2963	[630, 2075]	4242	[2114, 844]
406	[753, 754]	1685	[2533, 2534]	2964	[785, 1629]	4243	[4769, 1682]
407	[755, 756]	1686	[2535, 2536]	2965	[3890, 185]	4244	[2123, 2106]
408	[757, 758]	1687	[2537, 2383]	2966	[3677, 2211]	4245	[4770, 2311]
409	[759, 760]	1688	[1518, 2538]	2967	[3733, 3891]	4246	[4771, 2009]
410	[761, 762]	1689	[2539, 2540]	2968	[1717, 1770]	4247	[1625, 2009]
411	[763, 745]	1690	[2541, 2542]	2969	[3892, 2168]	4248	[4772, 3609]
412	[764, 543]	1691	[2543, 2544]	2970	[1975, 3893]	4249	[4735, 589]
413	[765, 652]	1692	[2545, 1357]	2971	[2304, 3515]	4250	[4773, 4774]
414	[766, 630]	1693	[2546, 96]	2972	[214, 2037]	4251	[3856, 1622]
415	[767, 768]	1694	[2547, 2548]	2973	[3894, 3594]	4252	[2045, 1916]
416	[769, 691]	1695	[2549, 1409]	2974	[54, 2324]	4253	[2203, 1731]
417	[770, 556]	1696	[2550, 2551]	2975	[3538, 2055]	4254	[4775, 1609]
418	[771, 772]	1697	[2552, 2553]	2976	[2288, 862]	4255	[2146, 503]
419	[773, 544]	1698	[2554, 2555]	2977	[3895, 3896]	4256	[769, 1877]
420	[774, 752]	1699	[2556, 2557]	2978	[496, 491]	4257	[3836, 3954]
421	[775, 776]	1700	[2558, 891]	2979	[622, 643]	4258	[4038, 1962]
422	[777, 629]	1701	[2559, 2560]	2980	[2334, 2202]	4259	[2202, 1629]
423	[778, 779]	1702	[2561, 2562]	2981	[3897, 2104]	4260	[4756, 2209]
424	[196, 780]	1703	[2563, 1042]	2982	[3898, 2325]	4261	[2087, 1833]
425	[781, 782]	1704	[2564, 2565]	2983	[3899, 1815]	4262	[4033, 824]
426	[783, 784]	1705	[2566, 1108]	2984	[3557, 3900]	4263	[1968, 173]
427	[785, 207]	1706	[2567, 2568]	2985	[1796, 1916]	4264	[520, 741]
428	[786, 648]	1707	[2569, 2570]	2986	[3901, 3680]	4265	[3754, 3914]
429	[787, 641]	1708	[2571, 2572]	2987	[3902, 3612]	4266	[2180, 4776]
430	[788, 789]	1709	[2573, 2574]	2988	[3684, 210]	4267	[4777, 1655]
431	[790, 791]	1710	[2575, 2576]	2989	[1599, 1990]	4268	[3599, 3760]
432	[792, 793]	1711	[2577, 2578]	2990	[1682, 664]	4269	[1609, 4008]
433	[794, 795]	1712	[2579, 2580]	2991	[1748, 3748]	4270	[4778, 3727]
434	[796, 797]	1713	[951, 1435]	2992	[156, 3580]	4271	[1705, 608]
435	[735, 798]	1714	[1157, 2581]	2993	[1820, 2306]	4272	[3907, 603]

436	[799, 800]	1715	[2582, 2583]	2994	[1771, 2158]	4273	[4779, 1867]
437	[801, 802]	1716	[2584, 1248]	2995	[3903, 1812]	4274	[4780, 529]
438	[803, 804]	1717	[2585, 2586]	2996	[3904, 3905]	4275	[4781, 831]
439	[805, 806]	1718	[2587, 265]	2997	[3906, 2065]	4276	[534, 1599]
440	[807, 710]	1719	[76, 115]	2998	[1862, 2079]	4277	[4782, 1585]
441	[808, 809]	1720	[2588, 1111]	2999	[603, 541]	4278	[653, 4061]
442	[810, 811]	1721	[2589, 2590]	3000	[3907, 1977]	4279	[541, 216]
443	[812, 813]	1722	[2591, 2592]	3001	[1735, 8]	4280	[4764, 2136]
444	[814, 815]	1723	[2593, 2594]	3002	[2298, 510]	4281	[4055, 3621]
445	[816, 817]	1724	[2595, 2596]	3003	[3908, 3513]	4282	[4783, 2241]
446	[560, 818]	1725	[2597, 439]	3004	[2323, 3702]	4283	[2035, 2285]
447	[819, 820]	1726	[2598, 2599]	3005	[3552, 1876]	4284	[1913, 1721]
448	[821, 200]	1727	[2600, 2601]	3006	[222, 638]	4285	[4777, 202]
449	[822, 823]	1728	[2602, 2603]	3007	[758, 2001]	4286	[179, 3774]
450	[666, 824]	1729	[1067, 2604]	3008	[3909, 829]	4287	[3857, 181]
451	[825, 645]	1730	[2605, 2606]	3009	[1911, 2065]	4288	[1908, 543]
452	[213, 826]	1731	[2607, 2608]	3010	[3910, 3911]	4289	[725, 2051]
453	[827, 828]	1732	[929, 2609]	3011	[3541, 552]	4290	[551, 713]
454	[166, 829]	1733	[2610, 2611]	3012	[3817, 744]	4291	[4784, 3882]
455	[830, 831]	1734	[2612, 334]	3013	[3912, 1586]	4292	[3995, 836]
456	[165, 235]	1735	[2613, 2614]	3014	[656, 127]	4293	[3955, 695]
457	[832, 833]	1736	[2615, 2616]	3015	[3913, 1711]	4294	[2256, 4785]
458	[834, 835]	1737	[2586, 1004]	3016	[3521, 1620]	4295	[2188, 549]
459	[836, 687]	1738	[2617, 2618]	3017	[837, 3914]	4296	[3569, 2248]
460	[624, 837]	1739	[2619, 2620]	3018	[3915, 564]	4297	[674, 2176]
461	[838, 747]	1740	[2621, 2622]	3019	[3788, 2072]	4298	[4786, 3518]
462	[839, 840]	1741	[1507, 2623]	3020	[3916, 1659]	4299	[1920, 597]
463	[549, 841]	1742	[2624, 1398]	3021	[3917, 3918]	4300	[4787, 1838]
464	[842, 187]	1743	[2625, 74]	3022	[2349, 596]	4301	[3959, 4068]
465	[843, 844]	1744	[2457, 2626]	3023	[3562, 1965]	4302	[1983, 3892]
466	[749, 845]	1745	[2627, 1532]	3024	[1865, 1589]	4303	[4788, 3727]
467	[13, 846]	1746	[2628, 2629]	3025	[2275, 3677]	4304	[2124, 4047]
468	[847, 848]	1747	[2431, 2630]	3026	[3919, 1771]	4305	[4789, 1877]
469	[849, 850]	1748	[2631, 2632]	3027	[1906, 1642]	4306	[3675, 2039]
470	[851, 852]	1749	[74, 2633]	3028	[766, 2074]	4307	[3671, 175]
471	[853, 854]	1750	[1020, 974]	3029	[3920, 579]	4308	[3778, 1815]
472	[177, 175]	1751	[2634, 2635]	3030	[3655, 523]	4309	[3533, 820]
473	[145, 855]	1752	[2636, 2637]	3031	[645, 1937]	4310	[858, 2280]
474	[856, 714]	1753	[2638, 2639]	3032	[1978, 3921]	4311	[4790, 2205]
475	[857, 858]	1754	[2640, 2641]	3033	[3922, 3619]	4312	[676, 177]
476	[859, 860]	1755	[2642, 2643]	3034	[3923, 3924]	4313	[4791, 1603]
477	[861, 862]	1756	[2644, 2645]	3035	[3787, 2042]	4314	[3873, 165]
478	[863, 864]	1757	[2646, 2647]	3036	[3925, 190]	4315	[1609, 2223]
479	[865, 132]	1758	[2648, 2649]	3037	[3870, 2183]	4316	[2007, 1610]

480	[793, 866]	1759	[2650, 2651]	3038	[2065, 1692]	4317	[2163, 838]
481	[867, 868]	1760	[2652, 1439]	3039	[3850, 142]	4318	[1721, 611]
482	[775, 744]	1761	[2653, 1277]	3040	[3858, 2332]	4319	[3903, 1888]
483	[571, 869]	1762	[2654, 2655]	3041	[3926, 488]	4320	[4792, 12]
484	[870, 871]	1763	[1179, 2656]	3042	[239, 718]	4321	[1932, 789]
485	[872, 791]	1764	[2657, 2658]	3043	[861, 165]	4322	[3690, 1877]
486	[873, 874]	1765	[2659, 2660]	3044	[3927, 666]	4323	[4793, 2014]
487	[875, 876]	1766	[2661, 2662]	3045	[1933, 3921]	4324	[3691, 491]
488	[877, 878]	1767	[2663, 2664]	3046	[754, 533]	4325	[4794, 2255]
489	[251, 879]	1768	[2665, 2666]	3047	[3928, 1886]	4326	[4795, 2342]
490	[880, 881]	1769	[2667, 2668]	3048	[2093, 1610]	4327	[1633, 2152]
491	[64, 882]	1770	[2669, 2670]	3049	[3837, 1638]	4328	[4796, 3674]
492	[883, 884]	1771	[2671, 2672]	3050	[1844, 1645]	4329	[3908, 1817]
493	[885, 886]	1772	[2673, 2674]	3051	[1706, 609]	4330	[580, 2207]
494	[887, 888]	1773	[2675, 2676]	3052	[3929, 1905]	4331	[4797, 3924]
495	[889, 256]	1774	[2677, 2519]	3053	[3892, 604]	4332	[4758, 1842]
496	[878, 890]	1775	[2678, 2679]	3054	[633, 1858]	4333	[3818, 509]
497	[891, 892]	1776	[2680, 2681]	3055	[3898, 508]	4334	[1608, 2222]
498	[893, 894]	1777	[2682, 883]	3056	[3930, 3674]	4335	[603, 215]
499	[895, 896]	1778	[2683, 2684]	3057	[743, 705]	4336	[4021, 1592]
500	[897, 898]	1779	[1340, 1051]	3058	[1880, 181]	4337	[4006, 1933]
501	[899, 900]	1780	[2685, 1187]	3059	[3931, 868]	4338	[3912, 1585]
502	[901, 902]	1781	[2686, 877]	3060	[3521, 827]	4339	[4748, 869]
503	[903, 904]	1782	[2687, 2688]	3061	[1929, 2332]	4340	[4798, 3672]
504	[905, 456]	1783	[2689, 2690]	3062	[3932, 3634]	4341	[1623, 1903]
505	[906, 907]	1784	[2691, 2692]	3063	[3649, 683]	4342	[702, 4799]
506	[908, 909]	1785	[2693, 2694]	3064	[171, 2165]	4343	[4800, 2116]
507	[910, 911]	1786	[2695, 2696]	3065	[536, 3879]	4344	[2222, 4008]
508	[912, 913]	1787	[2697, 2698]	3066	[1864, 671]	4345	[553, 2048]
509	[914, 915]	1788	[1406, 2699]	3067	[3933, 8]	4346	[4765, 1769]
510	[916, 917]	1789	[2509, 2700]	3068	[3934, 127]	4347	[4801, 1756]
511	[918, 919]	1790	[2701, 2702]	3069	[3935, 605]	4348	[2099, 1935]
512	[920, 921]	1791	[1048, 2703]	3070	[3936, 3567]	4349	[4802, 2138]
513	[922, 923]	1792	[1079, 2704]	3071	[3937, 2161]	4350	[3772, 1935]
514	[924, 925]	1793	[2705, 2706]	3072	[856, 1790]	4351	[1707, 831]
515	[926, 927]	1794	[2707, 279]	3073	[870, 1640]	4352	[4740, 3667]
516	[928, 929]	1795	[2708, 2709]	3074	[2075, 2182]	4353	[4803, 3868]
517	[930, 931]	1796	[2710, 2476]	3075	[3938, 760]	4354	[3758, 3612]
518	[932, 933]	1797	[2711, 2712]	3076	[3939, 1781]	4355	[3723, 518]
519	[934, 935]	1798	[1151, 2713]	3077	[3940, 3623]	4356	[4064, 1599]
520	[936, 937]	1799	[2714, 2715]	3078	[3941, 1854]	4357	[4804, 1977]
521	[938, 939]	1800	[2716, 2365]	3079	[3687, 536]	4358	[2145, 491]
522	[940, 941]	1801	[2717, 2718]	3080	[2156, 3942]	4359	[4058, 3537]
523	[942, 943]	1802	[2719, 2720]	3081	[2013, 2300]	4360	[4805, 2154]

524	[944, 945]	1803	[465, 2721]	3082	[3943, 2068]	4361	[1944, 716]
525	[946, 947]	1804	[2722, 2723]	3083	[2074, 631]	4362	[4001, 541]
526	[948, 949]	1805	[2724, 2725]	3084	[184, 3944]	4363	[1881, 3806]
527	[950, 951]	1806	[2726, 2727]	3085	[3621, 1894]	4364	[2097, 3598]
528	[952, 953]	1807	[2728, 2729]	3086	[1628, 207]	4365	[4806, 1920]
529	[954, 955]	1808	[2730, 2731]	3087	[3945, 1717]	4366	[3952, 3998]
530	[956, 957]	1809	[2732, 2393]	3088	[45, 49]	4367	[4807, 701]
531	[958, 959]	1810	[2733, 1557]	3089	[3610, 3860]	4368	[3920, 191]
532	[960, 961]	1811	[2734, 2735]	3090	[3946, 1842]	4369	[1802, 2126]
533	[962, 963]	1812	[2736, 1570]	3091	[3947, 3948]	4370	[3585, 1709]
534	[964, 965]	1813	[2737, 2738]	3092	[3791, 3911]	4371	[818, 1972]
535	[966, 967]	1814	[2739, 2740]	3093	[1866, 1672]	4372	[3946, 2262]
536	[968, 969]	1815	[2741, 2742]	3094	[1731, 1653]	4373	[3999, 799]
537	[970, 971]	1816	[328, 281]	3095	[812, 836]	4374	[4781, 1708]
538	[972, 973]	1817	[2743, 2744]	3096	[780, 154]	4375	[4808, 2221]
539	[974, 975]	1818	[86, 1466]	3097	[3734, 712]	4376	[4731, 2284]
540	[976, 977]	1819	[2745, 2746]	3098	[3949, 1632]	4377	[3720, 616]
541	[978, 979]	1820	[422, 2747]	3099	[3767, 3796]	4378	[633, 3831]
542	[318, 980]	1821	[2748, 2749]	3100	[2241, 3950]	4379	[4809, 2343]
543	[981, 982]	1822	[2750, 2751]	3101	[790, 835]	4380	[1914, 611]
544	[983, 984]	1823	[2752, 2753]	3102	[3951, 3632]	4381	[3512, 628]
545	[985, 986]	1824	[2754, 2755]	3103	[3952, 230]	4382	[4749, 489]
546	[987, 988]	1825	[2756, 2757]	3104	[2065, 1789]	4383	[33, 4810]
547	[989, 990]	1826	[2758, 2759]	3105	[3953, 2301]	4384	[3897, 1679]
548	[991, 992]	1827	[2760, 2596]	3106	[2030, 645]	4385	[4753, 1892]
549	[993, 994]	1828	[2761, 2762]	3107	[198, 3820]	4386	[4811, 735]
550	[995, 996]	1829	[2763, 2764]	3108	[3658, 2004]	4387	[690, 1877]
551	[997, 998]	1830	[2753, 2765]	3109	[1652, 1942]	4388	[621, 3825]
552	[999, 1000]	1831	[2766, 2767]	3110	[3954, 545]	4389	[1828, 2034]
553	[1001, 1002]	1832	[2768, 2769]	3111	[174, 3672]	4390	[1755, 2246]
554	[1003, 1004]	1833	[2770, 2771]	3112	[3698, 3524]	4391	[4812, 1662]
555	[1005, 1006]	1834	[2772, 2773]	3113	[3955, 3752]	4392	[1957, 4050]
556	[1007, 1008]	1835	[2774, 2360]	3114	[1912, 3575]	4393	[2175, 675]
557	[1009, 1010]	1836	[2775, 2776]	3115	[2198, 668]	4394	[3899, 3779]
558	[1011, 1012]	1837	[2777, 2778]	3116	[3956, 1965]	4395	[3731, 190]
559	[1013, 1014]	1838	[2779, 2726]	3117	[207, 3512]	4396	[4813, 1934]
560	[1015, 1016]	1839	[2780, 1467]	3118	[2332, 2193]	4397	[139, 4814]
561	[1017, 1018]	1840	[2781, 2782]	3119	[542, 1820]	4398	[634, 1891]
562	[1019, 1020]	1841	[2783, 2784]	3120	[1996, 2130]	4399	[1615, 1917]
563	[1021, 1022]	1842	[2785, 2786]	3121	[1809, 3785]	4400	[4815, 3511]
564	[1023, 1024]	1843	[2787, 1158]	3122	[3957, 627]	4401	[4812, 150]
565	[1025, 1026]	1844	[2788, 2789]	3123	[3958, 3959]	4402	[4816, 3918]
566	[1027, 1028]	1845	[2790, 2791]	3124	[3652, 3960]	4403	[691, 44]
567	[1029, 1030]	1846	[1088, 2792]	3125	[1624, 1885]	4404	[3667, 2018]

568	[1031, 1032]	1847	[2793, 2794]	3126	[677, 772]	4405	[2130, 1957]
569	[1033, 1034]	1848	[1107, 2795]	3127	[3961, 1742]	4406	[4817, 41]
570	[1035, 1036]	1849	[2796, 2697]	3128	[3962, 699]	4407	[3930, 2175]
571	[483, 1037]	1850	[2797, 2798]	3129	[3963, 2024]	4408	[4766, 2343]
572	[1038, 1039]	1851	[2799, 2800]	3130	[795, 3964]	4409	[4818, 140]
573	[1040, 1041]	1852	[2801, 2371]	3131	[3965, 1807]	4410	[3681, 3602]
574	[1042, 1043]	1853	[2802, 2803]	3132	[3667, 2137]	4411	[4784, 2235]
575	[1044, 1045]	1854	[2804, 2805]	3133	[3823, 3589]	4412	[1836, 1748]
576	[1046, 1047]	1855	[2806, 2807]	3134	[3869, 3820]	4413	[2134, 1616]
577	[122, 1048]	1856	[2808, 2809]	3135	[1621, 3554]	4414	[3775, 2296]
578	[1049, 1050]	1857	[1202, 2810]	3136	[544, 3893]	4415	[721, 2253]
579	[1051, 1052]	1858	[2811, 2812]	3137	[206, 845]	4416	[183, 4760]
580	[1053, 1054]	1859	[2813, 2814]	3138	[770, 729]	4417	[847, 2078]
581	[1055, 1056]	1860	[2815, 2514]	3139	[3510, 578]	4418	[3992, 871]
582	[969, 1057]	1861	[2816, 2817]	3140	[3966, 3967]	4419	[4819, 1952]
583	[1058, 1059]	1862	[2818, 2819]	3141	[3968, 1705]	4420	[4780, 3821]
584	[1060, 1061]	1863	[2820, 2821]	3142	[3947, 1957]	4421	[4000, 169]
585	[1062, 1063]	1864	[1237, 2363]	3143	[1737, 3969]	4422	[159, 3747]
586	[1064, 1065]	1865	[2822, 2823]	3144	[3970, 52]	4423	[4048, 4047]
587	[1066, 1067]	1866	[2824, 2825]	3145	[3553, 2034]	4424	[4820, 1999]
588	[1068, 1069]	1867	[2826, 2827]	3146	[3971, 2079]	4425	[2259, 637]
589	[1070, 1071]	1868	[278, 1296]	3147	[3854, 1644]	4426	[1946, 854]
590	[1072, 1073]	1869	[2828, 1329]	3148	[3807, 1847]	4427	[4821, 3918]
591	[1074, 1075]	1870	[379, 2829]	3149	[597, 872]	4428	[3682, 503]
592	[1076, 1077]	1871	[2830, 2831]	3150	[1819, 3972]	4429	[711, 3735]
593	[1078, 1079]	1872	[2832, 2833]	3151	[810, 3718]	4430	[1691, 3699]
594	[1080, 1035]	1873	[2834, 2835]	3152	[151, 1632]	4431	[4816, 4822]
595	[1081, 1082]	1874	[992, 1415]	3153	[1780, 1963]	4432	[2253, 1784]
596	[1083, 1084]	1875	[2836, 2837]	3154	[1670, 854]	4433	[2098, 3772]
597	[1085, 1086]	1876	[2838, 2839]	3155	[3973, 689]	4434	[186, 1944]
598	[1087, 1088]	1877	[2840, 2841]	3156	[738, 1986]	4435	[3663, 3809]
599	[1089, 1090]	1878	[2842, 2843]	3157	[1702, 3974]	4436	[4801, 2246]
600	[1091, 1092]	1879	[2844, 1255]	3158	[1941, 3605]	4437	[4762, 212]
601	[1093, 1094]	1880	[2845, 2846]	3159	[2010, 1623]	4438	[2273, 838]
602	[1095, 1096]	1881	[2847, 2848]	3160	[3975, 3960]	4439	[4823, 700]
603	[1097, 423]	1882	[2849, 2850]	3161	[3976, 2306]	4440	[1800, 1742]
604	[1098, 1099]	1883	[1505, 2851]	3162	[3640, 3638]	4441	[4824, 1838]
605	[1100, 1101]	1884	[2852, 2853]	3163	[3693, 3924]	4442	[4018, 554]
606	[1102, 1103]	1885	[2854, 2855]	3164	[1969, 1993]	4443	[4825, 2250]
607	[1104, 1105]	1886	[1235, 2856]	3165	[3977, 628]	4444	[3935, 2169]
608	[1106, 1107]	1887	[1426, 2857]	3166	[2149, 649]	4445	[4077, 760]
609	[1108, 1109]	1888	[2858, 2859]	3167	[1603, 3978]	4446	[1991, 4826]
610	[1109, 1110]	1889	[2860, 2861]	3168	[755, 3843]	4447	[1793, 3696]
611	[1111, 1112]	1890	[2862, 2863]	3169	[3782, 3979]	4448	[8, 1657]

612	[1113, 1114]	1891	[2864, 1226]	3170	[3980, 2347]	4449	[3657, 1683]
613	[1115, 1116]	1892	[2865, 2866]	3171	[710, 718]	4450	[3709, 587]
614	[1117, 1118]	1893	[2867, 2868]	3172	[3866, 249]	4451	[3804, 3833]
615	[1119, 1120]	1894	[2869, 2870]	3173	[3965, 1754]	4452	[3799, 243]
616	[1121, 1122]	1895	[2871, 2872]	3174	[1877, 44]	4453	[4768, 757]
617	[1123, 1124]	1896	[2873, 2874]	3175	[211, 3981]	4454	[4827, 1691]
618	[1125, 964]	1897	[2875, 2876]	3176	[1829, 2035]	4455	[3919, 850]
619	[1126, 968]	1898	[2877, 2567]	3177	[2026, 1582]	4456	[2244, 3788]
620	[1127, 1128]	1899	[2878, 2879]	3178	[3982, 3983]	4457	[4828, 1934]
621	[1129, 1130]	1900	[2880, 2881]	3179	[3629, 3760]	4458	[3954, 42]
622	[1131, 1132]	1901	[2882, 987]	3180	[3984, 1952]	4459	[4815, 1646]
623	[1133, 1134]	1902	[2883, 2485]	3181	[3985, 1683]	4460	[4829, 191]
624	[1135, 1136]	1903	[2884, 1233]	3182	[3717, 811]	4461	[715, 4823]
625	[1137, 1138]	1904	[2885, 2886]	3183	[3555, 3699]	4462	[51, 509]
626	[1139, 1140]	1905	[2887, 2888]	3184	[3621, 724]	4463	[1898, 1705]
627	[1141, 460]	1906	[2889, 111]	3185	[3728, 2017]	4464	[3560, 2020]
628	[1142, 1143]	1907	[2890, 2677]	3186	[2280, 2153]	4465	[1632, 2050]
629	[1144, 1145]	1908	[443, 2891]	3187	[757, 2000]	4466	[3953, 163]
630	[1146, 1147]	1909	[2892, 2893]	3188	[1850, 1698]	4467	[1871, 2338]
631	[1148, 1149]	1910	[2894, 2895]	3189	[3959, 1777]	4468	[4081, 1845]
632	[286, 70]	1911	[2896, 2545]	3190	[3986, 3987]	4469	[4830, 2074]
633	[1150, 1151]	1912	[2897, 97]	3191	[1967, 2243]	4470	[3784, 4751]
634	[1152, 1153]	1913	[2898, 2899]	3192	[556, 1634]	4471	[1914, 2241]
635	[1154, 1155]	1914	[2900, 2722]	3193	[3639, 1667]	4472	[3770, 2154]
636	[1156, 1157]	1915	[2901, 2902]	3194	[3777, 2250]	4473	[4831, 525]
637	[1158, 1159]	1916	[2903, 1353]	3195	[3635, 2049]	4474	[4754, 3682]
638	[1160, 1161]	1917	[2407, 2904]	3196	[2322, 514]	4475	[680, 50]
639	[1162, 1163]	1918	[487, 2905]	3197	[2314, 3988]	4476	[3793, 3614]
640	[1164, 1165]	1919	[2906, 2907]	3198	[1583, 1584]	4477	[735, 2065]
641	[1166, 1167]	1920	[2908, 1506]	3199	[3989, 1579]	4478	[2100, 4010]
642	[367, 1168]	1921	[2909, 2910]	3200	[3990, 1896]	4479	[3708, 4755]
643	[1169, 964]	1922	[2911, 2912]	3201	[1688, 3764]	4480	[4832, 3641]
644	[1170, 1171]	1923	[2913, 1316]	3202	[644, 1886]	4481	[2248, 784]
645	[1172, 1173]	1924	[2914, 2915]	3203	[3991, 2141]	4482	[2238, 169]
646	[1174, 1175]	1925	[2916, 2917]	3204	[3849, 581]	4483	[3846, 496]
647	[1176, 1177]	1926	[1485, 2918]	3205	[3992, 1640]	4484	[4833, 3631]
648	[1178, 1179]	1927	[2919, 2920]	3206	[688, 2032]	4485	[4834, 2268]
649	[1180, 1181]	1928	[2759, 2921]	3207	[3632, 630]	4486	[4034, 3843]
650	[1182, 1183]	1929	[2922, 2923]	3208	[3910, 3792]	4487	[2330, 2197]
651	[1184, 1185]	1930	[2924, 2561]	3209	[592, 1611]	4488	[4779, 1672]
652	[1186, 1187]	1931	[2925, 2926]	3210	[3993, 2166]	4489	[4835, 3677]
653	[30, 1188]	1932	[2397, 1353]	3211	[50, 2052]	4490	[203, 148]
654	[1189, 1190]	1933	[355, 2927]	3212	[726, 1980]	4491	[4836, 489]
655	[1191, 1192]	1934	[2928, 2929]	3213	[3994, 2042]	4492	[2327, 2286]

656	[1193, 1194]	1935	[2930, 2931]	3214	[3995, 813]	4493	[43, 1878]
657	[1195, 1025]	1936	[1368, 2932]	3215	[3700, 1633]	4494	[1778, 3987]
658	[1196, 1197]	1937	[2933, 1266]	3216	[3994, 2242]	4495	[3922, 2172]
659	[1198, 87]	1938	[2934, 2935]	3217	[3996, 3601]	4496	[4837, 583]
660	[1199, 1200]	1939	[2936, 2937]	3218	[3997, 3621]	4497	[2245, 3592]
661	[1201, 1202]	1940	[2938, 1156]	3219	[771, 678]	4498	[4838, 718]
662	[1203, 1204]	1941	[2939, 2940]	3220	[3998, 1806]	4499	[3974, 604]
663	[955, 1205]	1942	[2941, 2942]	3221	[3999, 1637]	4500	[3575, 3750]
664	[1206, 1207]	1943	[2943, 2944]	3222	[4000, 2239]	4501	[4839, 2219]
665	[1208, 1209]	1944	[2945, 2946]	3223	[547, 616]	4502	[4840, 2099]
666	[1210, 1211]	1945	[1520, 2947]	3224	[2300, 163]	4503	[746, 3732]
667	[1212, 1213]	1946	[2948, 75]	3225	[4001, 215]	4504	[3612, 2016]
668	[1214, 1215]	1947	[1305, 2949]	3226	[661, 2141]	4505	[4841, 2268]
669	[1216, 1217]	1948	[2950, 2951]	3227	[4002, 2126]	4506	[4842, 1600]
670	[1218, 1219]	1949	[2952, 2953]	3228	[3556, 3708]	4507	[627, 3509]
671	[1220, 1221]	1950	[2954, 2547]	3229	[3529, 3942]	4508	[1832, 2088]
672	[1222, 1223]	1951	[2955, 2956]	3230	[4003, 704]	4509	[4843, 2158]
673	[1224, 1225]	1952	[2957, 2958]	3231	[1867, 2319]	4510	[3589, 799]
674	[1226, 1227]	1953	[2959, 2960]	3232	[3940, 1614]	4511	[4817, 3954]
675	[1228, 1229]	1954	[1524, 2961]	3233	[37, 249]	4512	[584, 559]
676	[1230, 1231]	1955	[2962, 2963]	3234	[2190, 757]	4513	[2281, 729]
677	[1232, 1233]	1956	[2964, 440]	3235	[4004, 495]	4514	[2064, 798]
678	[1234, 1235]	1957	[2965, 2966]	3236	[4005, 2022]	4515	[1668, 136]
679	[1236, 1237]	1958	[2967, 2968]	3237	[4006, 1978]	4516	[3749, 48]
680	[1054, 1238]	1959	[2969, 2970]	3238	[2200, 1921]	4517	[4844, 1728]
681	[1239, 1240]	1960	[2971, 2972]	3239	[3685, 3677]	4518	[4032, 545]
682	[1241, 1242]	1961	[2973, 2974]	3240	[1843, 2259]	4519	[233, 3969]
683	[1243, 1244]	1962	[2975, 2976]	3241	[1845, 3511]	4520	[4845, 836]
684	[1245, 1246]	1963	[2977, 2978]	3242	[3986, 728]	4521	[4841, 129]
685	[371, 1247]	1964	[2902, 2941]	3243	[1592, 2043]	4522	[4023, 2150]
686	[339, 1248]	1965	[2979, 2593]	3244	[3808, 3664]	4523	[3863, 3680]
687	[1249, 1250]	1966	[2980, 2981]	3245	[1660, 3746]	4524	[2021, 3543]
688	[1251, 1252]	1967	[2982, 2983]	3246	[4007, 4008]	4525	[3516, 179]
689	[1253, 1254]	1968	[343, 2984]	3247	[3634, 649]	4526	[3916, 1761]
690	[1255, 89]	1969	[2985, 2986]	3248	[2194, 2086]	4527	[4846, 1948]
691	[1256, 1257]	1970	[2987, 2988]	3249	[4009, 140]	4528	[4847, 620]
692	[1258, 1259]	1971	[2604, 1236]	3250	[1949, 3571]	4529	[4734, 4088]
693	[1260, 1261]	1972	[2812, 2989]	3251	[795, 4010]	4530	[4848, 1851]
694	[1262, 1263]	1973	[2990, 2991]	3252	[3802, 577]	4531	[4803, 154]
695	[1264, 1265]	1974	[2992, 2993]	3253	[4011, 2070]	4532	[4849, 1842]
696	[1266, 279]	1975	[1386, 2994]	3254	[2135, 2218]	4533	[4850, 573]
697	[1267, 1268]	1976	[2995, 2996]	3255	[1642, 1748]	4534	[841, 2005]
698	[1269, 1270]	1977	[2997, 2998]	3256	[4012, 54]	4535	[4788, 2294]
699	[1271, 1272]	1978	[2795, 2999]	3257	[3970, 509]	4536	[4770, 162]

700	[1273, 1274]	1979	[3000, 3001]	3258	[4013, 173]	4537	[4851, 2182]
701	[1275, 1276]	1980	[3002, 3003]	3259	[2038, 1688]	4538	[4847, 793]
702	[1277, 1278]	1981	[2953, 2549]	3260	[4014, 594]	4539	[2071, 1809]
703	[1279, 1280]	1982	[3004, 472]	3261	[3889, 3848]	4540	[664, 843]
704	[1281, 1282]	1983	[3005, 1098]	3262	[548, 4015]	4541	[4852, 1689]
705	[1283, 1284]	1984	[3006, 3007]	3263	[3543, 1614]	4542	[11, 4853]
706	[1285, 893]	1985	[3008, 3009]	3264	[2226, 2012]	4543	[3926, 132]
707	[1286, 1182]	1986	[3010, 3011]	3265	[4016, 1931]	4544	[181, 1723]
708	[1287, 1288]	1987	[3012, 400]	3266	[2118, 3939]	4545	[4063, 766]
709	[1289, 1290]	1988	[3013, 3014]	3267	[627, 247]	4546	[1758, 2100]
710	[1291, 1292]	1989	[3015, 3016]	3268	[1686, 3636]	4547	[4854, 1975]
711	[1293, 1294]	1990	[1313, 3017]	3269	[3695, 1794]	4548	[2040, 2100]
712	[1295, 1296]	1991	[3018, 3019]	3270	[173, 4017]	4549	[4855, 233]
713	[1297, 1298]	1992	[3020, 3021]	3271	[4018, 2048]	4550	[2102, 3777]
714	[1299, 1300]	1993	[3022, 315]	3272	[4019, 617]	4551	[3509, 236]
715	[1301, 1273]	1994	[1453, 3023]	3273	[2293, 3727]	4552	[4003, 806]
716	[1302, 1303]	1995	[1092, 3024]	3274	[4020, 3911]	4553	[1627, 3737]
717	[1288, 1304]	1996	[3025, 2965]	3275	[862, 156]	4554	[4856, 3661]
718	[1290, 1305]	1997	[3026, 3027]	3276	[1612, 193]	4555	[1801, 683]
719	[1292, 1306]	1998	[3028, 1267]	3277	[4020, 3792]	4556	[2186, 797]
720	[412, 1056]	1999	[3029, 958]	3278	[550, 2038]	4557	[4736, 31]
721	[1307, 1308]	2000	[3030, 3031]	3279	[1759, 536]	4558	[3913, 2193]
722	[1309, 1310]	2001	[1374, 3032]	3280	[4021, 868]	4559	[3835, 783]
723	[306, 1311]	2002	[3033, 3034]	3281	[1831, 855]	4560	[2284, 1620]
724	[1312, 1313]	2003	[3035, 3036]	3282	[3779, 3960]	4561	[3573, 652]
725	[1314, 1315]	2004	[3037, 3030]	3283	[4022, 2043]	4562	[2321, 823]
726	[1316, 1317]	2005	[961, 3038]	3284	[4023, 3773]	4563	[849, 1771]
727	[1318, 1319]	2006	[3039, 2943]	3285	[60, 3802]	4564	[2082, 230]
728	[1320, 1321]	2007	[3040, 2400]	3286	[2285, 840]	4565	[4796, 2175]
729	[1322, 1323]	2008	[3041, 2558]	3287	[3895, 3840]	4566	[4857, 1706]
730	[1324, 1325]	2009	[2853, 3042]	3288	[1580, 498]	4567	[691, 1878]
731	[1326, 1327]	2010	[3043, 81]	3289	[4024, 1769]	4568	[731, 737]
732	[1328, 1329]	2011	[3044, 1455]	3290	[1961, 2029]	4569	[4858, 1817]
733	[1330, 1214]	2012	[3045, 3046]	3291	[8, 852]	4570	[3571, 721]
734	[1331, 1332]	2013	[3047, 3048]	3292	[4025, 160]	4571	[518, 3819]
735	[1333, 1334]	2014	[3049, 3050]	3293	[559, 2166]	4572	[4859, 1584]
736	[1335, 1336]	2015	[3051, 3052]	3294	[3715, 1619]	4573	[4860, 607]
737	[1337, 1338]	2016	[3053, 3054]	3295	[2230, 1933]	4574	[4744, 40]
738	[1339, 1340]	2017	[3055, 3056]	3296	[3719, 1876]	4575	[4861, 742]
739	[1341, 321]	2018	[3057, 3058]	3297	[4026, 865]	4576	[619, 1759]
740	[96, 1321]	2019	[3059, 1024]	3298	[4027, 2315]	4577	[670, 1865]
741	[1342, 1343]	2020	[2866, 3060]	3299	[2224, 648]	4578	[4775, 2222]
742	[1344, 1345]	2021	[3061, 3062]	3300	[2320, 2195]	4579	[4030, 604]
743	[1346, 1074]	2022	[3063, 2408]	3301	[820, 1661]	4580	[4862, 549]

744	[1347, 1348]	2023	[1500, 2755]	3302	[574, 3871]	4581	[3989, 128]
745	[1349, 1350]	2024	[3064, 3065]	3303	[1863, 1835]	4582	[4834, 129]
746	[1351, 1352]	2025	[3066, 3067]	3304	[4007, 2223]	4583	[4863, 756]
747	[1353, 1354]	2026	[3068, 2525]	3305	[3589, 1637]	4584	[1817, 144]
748	[1355, 1356]	2027	[3069, 3070]	3306	[4028, 507]	4585	[4864, 3528]
749	[1357, 1358]	2028	[3071, 2934]	3307	[4029, 2017]	4586	[3664, 561]
750	[1359, 1360]	2029	[3072, 2675]	3308	[4030, 2168]	4587	[4039, 760]
751	[1361, 1362]	2030	[3073, 3074]	3309	[1886, 1732]	4588	[818, 733]
752	[1363, 1364]	2031	[3075, 3076]	3310	[1610, 170]	4589	[3852, 620]
753	[1365, 1366]	2032	[3077, 3078]	3311	[3845, 866]	4590	[3834, 1876]
754	[1367, 1368]	2033	[3079, 3080]	3312	[2240, 1596]	4591	[3591, 2072]
755	[1369, 1370]	2034	[3081, 1514]	3313	[216, 668]	4592	[2151, 1921]
756	[1371, 1372]	2035	[3082, 3083]	3314	[3676, 744]	4593	[737, 3620]
757	[1373, 1374]	2036	[3084, 1385]	3315	[2301, 164]	4594	[828, 3554]
758	[1375, 1376]	2037	[2765, 3085]	3316	[217, 3661]	4595	[2069, 3628]
759	[1377, 1378]	2038	[994, 2539]	3317	[3956, 1685]	4596	[1863, 2080]
760	[1379, 1380]	2039	[2944, 3086]	3318	[3828, 1644]	4597	[3592, 2073]
761	[1381, 1382]	2040	[3087, 3088]	3319	[4031, 1756]	4598	[845, 3884]
762	[1383, 254]	2041	[3089, 3090]	3320	[3534, 591]	4599	[2142, 1636]
763	[1384, 977]	2042	[3091, 3092]	3321	[1722, 2230]	4600	[3783, 2187]
764	[1385, 1386]	2043	[3093, 3094]	3322	[214, 1603]	4601	[3971, 1863]
765	[1387, 1388]	2044	[3095, 3096]	3323	[1702, 3892]	4602	[4739, 1668]
766	[1389, 1390]	2045	[3097, 3098]	3324	[3648, 146]	4603	[4026, 131]
767	[1391, 1392]	2046	[3099, 3100]	3325	[3651, 3600]	4604	[4865, 3761]
768	[1393, 1077]	2047	[3101, 3102]	3326	[3689, 1702]	4605	[1907, 806]
769	[1394, 1395]	2048	[3103, 3023]	3327	[4032, 42]	4606	[1720, 1914]
770	[1396, 1397]	2049	[3067, 896]	3328	[1739, 2324]	4607	[1652, 3605]
771	[1398, 1399]	2050	[1261, 3104]	3329	[4033, 2302]	4608	[3949, 152]
772	[1400, 1401]	2051	[3105, 3106]	3330	[2181, 850]	4609	[813, 516]
773	[1343, 1402]	2052	[100, 3107]	3331	[4034, 756]	4610	[4866, 2095]
774	[1403, 1404]	2053	[3108, 3109]	3332	[4035, 4036]	4611	[4769, 3657]
775	[1405, 1406]	2054	[3110, 3111]	3333	[1715, 3979]	4612	[4867, 1916]
776	[1407, 1408]	2055	[3112, 3113]	3334	[4037, 3634]	4613	[208, 628]
777	[1409, 1410]	2056	[316, 2572]	3335	[4038, 3939]	4614	[1629, 3512]
778	[1411, 1412]	2057	[1213, 2384]	3336	[3572, 2158]	4615	[841, 2038]
779	[1413, 1414]	2058	[3114, 2501]	3337	[646, 3530]	4616	[1925, 705]
780	[1415, 1416]	2059	[3115, 354]	3338	[3777, 2338]	4617	[2037, 3978]
781	[1417, 1418]	2060	[310, 3116]	3339	[3779, 3653]	4618	[4832, 3638]
782	[1419, 1420]	2061	[1122, 3117]	3340	[3822, 2340]	4619	[3806, 4726]
783	[1421, 1422]	2062	[2723, 3118]	3341	[4039, 4040]	4620	[1587, 3609]
784	[1423, 1193]	2063	[1329, 1015]	3342	[1651, 1941]	4621	[754, 1653]
785	[1392, 1424]	2064	[428, 2509]	3343	[808, 1726]	4622	[4868, 552]
786	[1425, 1426]	2065	[3119, 2992]	3344	[4041, 3575]	4623	[2162, 788]
787	[1427, 1428]	2066	[3120, 3121]	3345	[758, 3967]	4624	[2289, 2311]

788	[1429, 1430]	2067	[3122, 3123]	3346	[4042, 823]	4625	[2254, 2015]
789	[1431, 1355]	2068	[3124, 3125]	3347	[3943, 3929]	4626	[4869, 4870]
790	[1432, 1433]	2069	[3126, 3127]	3348	[220, 2136]	4627	[4839, 4799]
791	[1086, 1434]	2070	[3128, 2851]	3349	[610, 2241]	4628	[2260, 1920]
792	[1435, 1436]	2071	[3129, 3130]	3350	[3555, 3524]	4629	[3962, 4823]
793	[1437, 1438]	2072	[3131, 3132]	3351	[621, 3526]	4630	[4773, 1948]
794	[1439, 1120]	2073	[3133, 3134]	3352	[4043, 1632]	4631	[3688, 3900]
795	[1440, 1441]	2074	[3135, 3136]	3353	[2075, 3794]	4632	[4871, 498]
796	[1442, 1443]	2075	[1390, 3137]	3354	[3881, 2235]	4633	[3830, 3575]
797	[1444, 1445]	2076	[3138, 3139]	3355	[3721, 1795]	4634	[3597, 3869]
798	[1446, 1447]	2077	[3140, 3141]	3356	[4044, 3571]	4635	[504, 4799]
799	[1448, 1449]	2078	[3142, 280]	3357	[4045, 194]	4636	[732, 1972]
800	[1450, 1451]	2079	[3143, 3144]	3358	[246, 3509]	4637	[4872, 3602]
801	[1452, 1453]	2080	[2819, 3145]	3359	[3984, 1854]	4638	[4830, 630]
802	[1454, 1455]	2081	[3146, 3147]	3360	[1821, 3639]	4639	[3948, 1958]
803	[68, 1456]	2082	[3148, 1309]	3361	[2003, 56]	4640	[1747, 866]
804	[1457, 452]	2083	[1408, 3149]	3362	[4046, 210]	4641	[3998, 722]
805	[1418, 1458]	2084	[2805, 3150]	3363	[3645, 4047]	4642	[2077, 848]
806	[1459, 1460]	2085	[3151, 3152]	3364	[4005, 3543]	4643	[3929, 4084]
807	[1461, 1462]	2086	[3153, 3154]	3365	[3958, 1776]	4644	[2122, 1638]
808	[1463, 1464]	2087	[3155, 3156]	3366	[871, 3528]	4645	[781, 2221]
809	[1465, 1466]	2088	[3157, 3158]	3367	[2310, 3784]	4646	[1882, 4726]
810	[1467, 1468]	2089	[268, 3159]	3368	[4048, 2125]	4647	[3697, 675]
811	[1469, 1470]	2090	[3160, 287]	3369	[3634, 708]	4648	[4004, 494]
812	[1471, 1472]	2091	[3161, 3162]	3370	[2127, 1730]	4649	[3790, 237]
813	[1473, 1474]	2092	[3163, 3164]	3371	[2234, 3882]	4650	[4873, 779]
814	[1475, 344]	2093	[3165, 332]	3372	[197, 3869]	4651	[4874, 3641]
815	[1476, 1477]	2094	[1350, 3166]	3373	[3683, 3753]	4652	[4728, 4875]
816	[1478, 1479]	2095	[3167, 3168]	3374	[1640, 3753]	4653	[189, 684]
817	[1480, 1415]	2096	[1481, 3169]	3375	[659, 3812]	4654	[3732, 191]
818	[1014, 1481]	2097	[3170, 3042]	3376	[4049, 2033]	4655	[4851, 3794]
819	[1482, 1483]	2098	[3171, 384]	3377	[1625, 1927]	4656	[4876, 3632]
820	[1484, 1485]	2099	[3172, 299]	3378	[2299, 2087]	4657	[4877, 3639]
821	[1486, 1487]	2100	[3173, 3174]	3379	[1899, 608]	4658	[4878, 223]
822	[1488, 1489]	2101	[438, 3175]	3380	[3948, 4050]	4659	[2278, 527]
823	[1490, 1227]	2102	[1073, 3176]	3381	[543, 1975]	4660	[3673, 2175]
824	[1209, 1491]	2103	[3177, 3178]	3382	[4051, 629]	4661	[4879, 1689]
825	[1492, 1174]	2104	[3179, 3180]	3383	[666, 2302]	4662	[4807, 503]
826	[1493, 1494]	2105	[3181, 1312]	3384	[4052, 1634]	4663	[4746, 2179]
827	[1495, 1496]	2106	[3182, 3183]	3385	[189, 3762]	4664	[1672, 2319]
828	[1497, 1498]	2107	[2493, 3184]	3386	[2346, 2296]	4665	[4880, 488]
829	[1499, 1500]	2108	[3169, 1400]	3387	[4053, 4054]	4666	[135, 3546]
830	[1047, 1384]	2109	[3185, 2948]	3388	[3656, 1682]	4667	[4881, 249]
831	[1501, 1170]	2110	[3186, 3187]	3389	[710, 1803]	4668	[1589, 2226]

832	[1502, 1503]	2111	[3188, 3189]	3390	[3639, 3708]	4669	[4882, 1730]
833	[1504, 1505]	2112	[3190, 3191]	3391	[4055, 1893]	4670	[3887, 508]
834	[1506, 1507]	2113	[1380, 3192]	3392	[3991, 662]	4671	[4786, 520]
835	[1508, 462]	2114	[3154, 3193]	3393	[3618, 2172]	4672	[4883, 840]
836	[1509, 1442]	2115	[72, 3194]	3394	[3890, 3944]	4673	[4884, 1751]
837	[1510, 1511]	2116	[3195, 3196]	3395	[1980, 824]	4674	[3891, 194]
838	[1512, 1513]	2117	[3197, 3198]	3396	[1999, 3785]	4675	[3776, 1871]
839	[1514, 1515]	2118	[3199, 2686]	3397	[4056, 660]	4676	[2140, 2094]
840	[1303, 1516]	2119	[3200, 3158]	3398	[673, 3617]	4677	[3705, 133]
841	[1517, 1518]	2120	[2905, 3201]	3399	[177, 3672]	4678	[4885, 3757]
842	[1519, 1520]	2121	[1376, 3202]	3400	[52, 510]	4679	[4742, 2088]
843	[1521, 1522]	2122	[3203, 3204]	3401	[3961, 1801]	4680	[2205, 1869]
844	[1523, 1524]	2123	[3205, 475]	3402	[3571, 1981]	4681	[2251, 4760]
845	[1525, 1526]	2124	[3206, 3207]	3403	[684, 4057]	4682	[557, 3891]
846	[1527, 1528]	2125	[3208, 2515]	3404	[2328, 2055]	4683	[3993, 560]
847	[485, 1529]	2126	[3209, 2424]	3405	[4058, 4059]	4684	[3592, 3751]
848	[1530, 1531]	2127	[2611, 920]	3406	[820, 3746]	4685	[3951, 766]
849	[1532, 1533]	2128	[3210, 3211]	3407	[1930, 3689]	4686	[3581, 196]
850	[1534, 1535]	2129	[3212, 3213]	3408	[736, 3576]	4687	[2100, 3964]
851	[1536, 1167]	2130	[3214, 3215]	3409	[4060, 4061]	4688	[4079, 198]
852	[1537, 1538]	2131	[3216, 2780]	3410	[4062, 1761]	4689	[3549, 2055]
853	[1539, 1540]	2132	[3217, 1148]	3411	[3858, 717]	4690	[3939, 1963]
854	[1541, 1542]	2133	[3164, 3167]	3412	[1643, 3829]	4691	[2139, 4061]
855	[1543, 1433]	2134	[3218, 3219]	3413	[607, 204]	4692	[1973, 820]
856	[1069, 118]	2135	[959, 3220]	3414	[3985, 664]	4693	[2114, 1795]
857	[1544, 1545]	2136	[3221, 3222]	3415	[4063, 3632]	4694	[4051, 1805]
858	[1546, 1547]	2137	[3223, 3224]	3416	[4064, 1875]	4695	[150, 1663]
859	[1548, 1549]	2138	[3225, 3226]	3417	[3906, 798]	4696	[4886, 3648]
860	[1550, 1551]	2139	[3227, 1471]	3418	[1922, 1645]	4697	[3595, 3954]
861	[1028, 305]	2140	[2817, 1371]	3419	[1880, 1722]	4698	[4823, 1773]
862	[1552, 1553]	2141	[3228, 3229]	3420	[2068, 1905]	4699	[3513, 144]
863	[1554, 1555]	2142	[3230, 3231]	3421	[3772, 196]	4700	[1989, 1600]
864	[1556, 1110]	2143	[3232, 3233]	3422	[2270, 1769]	4701	[3937, 4887]
865	[1557, 1558]	2144	[2645, 3234]	3423	[4065, 2051]	4702	[793, 621]
866	[1559, 1560]	2145	[3235, 2356]	3424	[2237, 1712]	4703	[598, 532]
867	[1561, 1562]	2146	[440, 2489]	3425	[727, 3987]	4704	[4888, 1937]
868	[1563, 1564]	2147	[3236, 2661]	3426	[4031, 2246]	4705	[4889, 1709]
869	[1565, 1566]	2148	[3237, 1180]	3427	[2218, 2110]	4706	[1982, 3567]
870	[1443, 1567]	2149	[3238, 3239]	3428	[3809, 3784]	4707	[1826, 762]
871	[1568, 1569]	2150	[3240, 3241]	3429	[4066, 1719]	4708	[3630, 4890]
872	[1570, 1571]	2151	[2681, 2859]	3430	[3669, 615]	4709	[4016, 3689]
873	[82, 1572]	2152	[3242, 3243]	3431	[1627, 245]	4710	[4891, 244]
874	[1573, 1574]	2153	[3244, 3245]	3432	[2249, 1620]	4711	[4892, 1967]
875	[1575, 1576]	2154	[3246, 2630]	3433	[2214, 206]	4712	[2067, 3929]

876	[1577, 1578]	2155	[2517, 3247]	3434	[4042, 2276]	4713	[4893, 2306]
877	[1579, 1580]	2156	[3248, 3249]	3435	[3603, 187]	4714	[4894, 2110]
878	[1581, 1582]	2157	[3250, 1022]	3436	[4067, 4068]	4715	[229, 3998]
879	[31, 496]	2158	[3251, 3252]	3437	[2232, 817]	4716	[4790, 3805]
880	[131, 488]	2159	[3253, 3254]	3438	[1953, 3972]	4717	[4895, 3905]
881	[1579, 489]	2160	[984, 3255]	3439	[2023, 1843]	4718	[2152, 3853]
882	[128, 489]	2161	[3256, 3257]	3440	[4069, 3555]	4719	[4862, 1598]
883	[129, 656]	2162	[3258, 3259]	3441	[2103, 1679]	4720	[3740, 1784]
884	[1583, 134]	2163	[3260, 2687]	3442	[1931, 1702]	4721	[4896, 788]
885	[491, 1583]	2164	[3261, 3262]	3443	[4070, 2201]	4722	[4863, 3843]
886	[1584, 865]	2165	[2401, 3263]	3444	[2316, 3944]	4723	[2307, 1911]
887	[498, 495]	2166	[3264, 1330]	3445	[3883, 1827]	4724	[3976, 669]
888	[1585, 1586]	2167	[3265, 3266]	3446	[2295, 2347]	4725	[2068, 4084]
889	[32, 491]	2168	[3118, 3267]	3447	[601, 1995]	4726	[4383, 2357]
890	[1580, 490]	2169	[446, 3268]	3448	[4071, 874]	4727	[4897, 65]
891	[488, 493]	2170	[3269, 3270]	3449	[3624, 2012]	4728	[4898, 4899]
892	[32, 497]	2171	[3271, 3006]	3450	[2054, 2329]	4729	[4169, 4900]
893	[1581, 1581]	2172	[3272, 2971]	3451	[3517, 3774]	4730	[4901, 4091]
894	[496, 497]	2173	[3273, 3274]	3452	[618, 1653]	4731	[4902, 4903]
895	[1587, 1588]	2174	[2498, 3275]	3453	[4072, 229]	4732	[4904, 4905]
896	[671, 1589]	2175	[3276, 3277]	3454	[1985, 739]	4733	[1247, 4906]
897	[1590, 1591]	2176	[3278, 3279]	3455	[3523, 3929]	4734	[4907, 2800]
898	[1592, 1593]	2177	[3280, 1239]	3456	[1764, 3730]	4735	[4584, 4908]
899	[1594, 721]	2178	[3281, 3282]	3457	[1709, 3714]	4736	[4909, 2513]
900	[1595, 1596]	2179	[3283, 1019]	3458	[3805, 3594]	4737	[4910, 4911]
901	[1597, 1598]	2180	[3284, 2564]	3459	[4073, 2229]	4738	[4912, 919]
902	[1599, 1600]	2181	[3285, 3251]	3460	[4074, 1775]	4739	[4913, 2674]
903	[1601, 1602]	2182	[3150, 3286]	3461	[4075, 4076]	4740	[4914, 3223]
904	[1603, 1604]	2183	[3287, 3288]	3462	[1960, 2345]	4741	[1574, 4915]
905	[1605, 1606]	2184	[3289, 1525]	3463	[4044, 1950]	4742	[373, 4245]
906	[1607, 144]	2185	[3290, 3291]	3464	[4077, 4040]	4743	[4916, 4917]
907	[176, 174]	2186	[3292, 3293]	3465	[3756, 4078]	4744	[2440, 4476]
908	[1608, 1609]	2187	[3294, 481]	3466	[3531, 3587]	4745	[2968, 4918]
909	[1610, 1611]	2188	[3295, 3296]	3467	[4079, 3869]	4746	[4919, 4920]
910	[1612, 698]	2189	[3297, 3298]	3468	[3966, 2001]	4747	[4921, 877]
911	[1613, 599]	2190	[3299, 3300]	3469	[4080, 3657]	4748	[4922, 2370]
912	[1614, 1615]	2191	[2506, 3301]	3470	[4081, 1645]	4749	[4923, 893]
913	[1616, 646]	2192	[2651, 3302]	3471	[533, 1936]	4750	[1284, 2971]
914	[1617, 804]	2193	[1268, 3303]	3472	[170, 3560]	4751	[4456, 2875]
915	[1618, 1619]	2194	[92, 3073]	3473	[3743, 1686]	4752	[4500, 1528]
916	[1620, 1621]	2195	[3304, 1205]	3474	[4082, 3735]	4753	[4924, 4318]
917	[1622, 544]	2196	[3134, 3305]	3475	[4083, 3773]	4754	[4607, 4925]
918	[1623, 40]	2197	[3306, 2773]	3476	[233, 1738]	4755	[4153, 1508]
919	[1624, 1625]	2198	[3307, 1216]	3477	[1904, 4084]	4756	[927, 2641]

920	[1626, 1627]	2199	[3308, 2636]	3478	[4085, 1894]	4757	[1175, 4926]
921	[1628, 1629]	2200	[3226, 1570]	3479	[1758, 795]	4758	[4927, 3064]
922	[1630, 607]	2201	[3309, 3310]	3480	[231, 177]	4759	[4928, 2480]
923	[1631, 848]	2202	[3311, 3312]	3481	[3647, 145]	4760	[4929, 4621]
924	[693, 1632]	2203	[3313, 3314]	3482	[1931, 1983]	4761	[4930, 4931]
925	[857, 1633]	2204	[3106, 3315]	3483	[1785, 4086]	4762	[4932, 4504]
926	[729, 1634]	2205	[3316, 3317]	3484	[536, 2192]	4763	[4933, 1572]
927	[1635, 1636]	2206	[3318, 3319]	3485	[644, 1602]	4764	[1177, 4934]
928	[1637, 800]	2207	[3320, 2372]	3486	[3520, 2284]	4765	[4935, 2669]
929	[1638, 577]	2208	[3321, 3322]	3487	[3535, 490]	4766	[4936, 4937]
930	[1639, 1640]	2209	[3323, 303]	3488	[4087, 1841]	4767	[1360, 4938]
931	[1641, 1642]	2210	[3324, 2951]	3489	[3707, 2221]	4768	[2473, 3030]
932	[1643, 1644]	2211	[3325, 3326]	3490	[2058, 3639]	4769	[3275, 4902]
933	[1645, 1646]	2212	[3327, 3328]	3491	[3803, 218]	4770	[1161, 295]
934	[1647, 239]	2213	[3329, 3244]	3492	[3710, 3716]	4771	[4157, 1470]
935	[1611, 171]	2214	[3330, 1359]	3493	[163, 3816]	4772	[4939, 3145]
936	[1648, 1649]	2215	[3331, 956]	3494	[3941, 1952]	4773	[4940, 4941]
937	[1650, 643]	2216	[3332, 3333]	3495	[2057, 1601]	4774	[4942, 4943]
938	[1651, 1652]	2217	[3334, 3335]	3496	[3543, 3623]	4775	[4944, 3343]
939	[1653, 534]	2218	[3336, 2883]	3497	[1756, 1955]	4776	[4945, 2581]
940	[1654, 1655]	2219	[3337, 1369]	3498	[4088, 2264]	4777	[2469, 4946]
941	[1656, 556]	2220	[3338, 3339]	3499	[3996, 3642]	4778	[4947, 4948]
942	[851, 1657]	2221	[3340, 382]	3500	[3902, 2190]	4779	[4949, 2512]
943	[1658, 1659]	2222	[3341, 3342]	3501	[4082, 712]	4780	[4950, 4951]
944	[1660, 1661]	2223	[3343, 2352]	3502	[4019, 4015]	4781	[2551, 2897]
945	[1662, 1663]	2224	[3344, 3345]	3503	[1997, 1957]	4782	[4952, 2357]
946	[1664, 1625]	2225	[3346, 1078]	3504	[4089, 1857]	4783	[3042, 6]
947	[1665, 520]	2226	[3347, 3051]	3505	[703, 806]	4784	[4953, 4954]
948	[1666, 1667]	2227	[3348, 1289]	3506	[616, 4015]	4785	[4955, 88]
949	[1615, 1668]	2228	[3349, 3099]	3507	[4090, 3326]	4786	[3078, 4956]
950	[1669, 535]	2229	[2419, 3350]	3508	[4091, 4092]	4787	[4957, 4958]
951	[1670, 1671]	2230	[2846, 3351]	3509	[4093, 4094]	4788	[4959, 4960]
952	[242, 589]	2231	[3352, 3353]	3510	[3446, 4095]	4789	[2576, 4961]
953	[1672, 1673]	2232	[3354, 2625]	3511	[2789, 4096]	4790	[4962, 2828]
954	[1674, 1675]	2233	[1188, 928]	3512	[3312, 2724]	4791	[3031, 2388]
955	[1676, 535]	2234	[3355, 3356]	3513	[4097, 4098]	4792	[2942, 4963]
956	[1677, 1678]	2235	[3357, 2767]	3514	[4099, 3330]	4793	[4499, 319]
957	[1679, 1680]	2236	[3358, 3359]	3515	[4100, 4101]	4794	[4964, 4096]
958	[1681, 804]	2237	[3360, 3361]	3516	[4102, 4103]	4795	[2387, 315]
959	[1682, 1683]	2238	[3362, 2990]	3517	[4104, 107]	4796	[4965, 4966]
960	[1684, 1685]	2239	[3363, 1424]	3518	[4105, 4106]	4797	[4361, 4967]
961	[778, 1686]	2240	[3364, 3365]	3519	[4107, 2963]	4798	[1311, 3368]
962	[667, 1687]	2241	[2899, 3366]	3520	[4108, 2416]	4799	[904, 4968]
963	[1688, 1689]	2242	[3367, 3368]	3521	[4109, 2418]	4800	[4969, 2772]

964	[1690, 1691]	2243	[3335, 3369]	3522	[1270, 4110]	4801	[4970, 2634]
965	[798, 1692]	2244	[3370, 3371]	3523	[4111, 4112]	4802	[4971, 4972]
966	[155, 235]	2245	[3372, 3133]	3524	[2542, 264]	4803	[4973, 282]
967	[575, 1693]	2246	[3373, 2766]	3525	[4113, 2369]	4804	[4974, 421]
968	[1694, 1695]	2247	[475, 3374]	3526	[1030, 4114]	4805	[1010, 4975]
969	[1696, 48]	2248	[3375, 3376]	3527	[4115, 4116]	4806	[1354, 4464]
970	[1697, 1698]	2249	[1168, 1497]	3528	[4117, 1038]	4807	[351, 1277]
971	[1699, 1700]	2250	[2829, 3171]	3529	[4118, 4119]	4808	[473, 1279]
972	[1701, 1702]	2251	[3377, 3378]	3530	[1173, 4120]	4809	[3474, 4692]
973	[1703, 573]	2252	[3379, 3380]	3531	[2477, 4121]	4810	[4976, 2811]
974	[1704, 193]	2253	[1056, 3381]	3532	[4122, 4123]	4811	[4471, 1446]
975	[1705, 1706]	2254	[3382, 2467]	3533	[329, 4124]	4812	[4977, 3182]
976	[1707, 1708]	2255	[1455, 3383]	3534	[4125, 1270]	4813	[4978, 2662]
977	[1595, 1709]	2256	[3384, 3385]	3535	[4126, 1538]	4814	[4979, 4980]
978	[1710, 180]	2257	[3386, 3387]	3536	[4127, 4128]	4815	[3339, 274]
979	[717, 1711]	2258	[3388, 1311]	3537	[4129, 2500]	4816	[4981, 4982]
980	[1712, 1713]	2259	[2786, 3389]	3538	[4130, 4131]	4817	[4983, 4984]
981	[1714, 646]	2260	[3390, 2909]	3539	[3152, 2933]	4818	[3192, 4985]
982	[1715, 1716]	2261	[3391, 1460]	3540	[2616, 471]	4819	[4986, 2745]
983	[1591, 678]	2262	[3392, 3393]	3541	[4132, 1299]	4820	[4987, 4988]
984	[1717, 802]	2263	[3394, 3395]	3542	[4133, 2406]	4821	[3245, 4989]
985	[1614, 1718]	2264	[1265, 3396]	3543	[4134, 4135]	4822	[4990, 4991]
986	[249, 1719]	2265	[1032, 1364]	3544	[4136, 4137]	4823	[1487, 4992]
987	[1720, 1721]	2266	[3397, 3398]	3545	[4138, 4139]	4824	[3328, 2885]
988	[1722, 1723]	2267	[3399, 3400]	3546	[2674, 4140]	4825	[1323, 4123]
989	[1724, 495]	2268	[881, 250]	3547	[2618, 4141]	4826	[4993, 4994]
990	[1725, 1726]	2269	[3353, 3401]	3548	[4142, 4143]	4827	[4995, 4334]
991	[1727, 1728]	2270	[3402, 3403]	3549	[4144, 3110]	4828	[4996, 4560]
992	[786, 172]	2271	[3404, 328]	3550	[4145, 4146]	4829	[4465, 1505]
993	[1729, 560]	2272	[3405, 2355]	3551	[4147, 3285]	4830	[2448, 943]
994	[600, 1730]	2273	[126, 2712]	3552	[4148, 2763]	4831	[2676, 4997]
995	[753, 1731]	2274	[3406, 2988]	3553	[4149, 3082]	4832	[4998, 4467]
996	[1602, 1732]	2275	[3407, 3325]	3554	[2417, 4150]	4833	[4999, 3075]
997	[1733, 1734]	2276	[3408, 3409]	3555	[4151, 4152]	4834	[5000, 3288]
998	[1735, 1736]	2277	[3410, 1229]	3556	[1149, 4153]	4835	[1096, 5001]
999	[1737, 1738]	2278	[1233, 3411]	3557	[4154, 4155]	4836	[5002, 1075]
1000	[546, 1739]	2279	[2391, 3244]	3558	[4156, 4157]	4837	[3184, 5003]
1001	[1740, 578]	2280	[3412, 3413]	3559	[4158, 4159]	4838	[4196, 4631]
1002	[1741, 1742]	2281	[3414, 2689]	3560	[1077, 3240]	4839	[5004, 917]
1003	[1743, 1744]	2282	[3415, 3206]	3561	[4160, 344]	4840	[3137, 5005]
1004	[1745, 1746]	2283	[3416, 356]	3562	[1008, 4161]	4841	[5006, 1193]
1005	[1747, 621]	2284	[3417, 3418]	3563	[4162, 2351]	4842	[5007, 3496]
1006	[1748, 1749]	2285	[302, 3419]	3564	[4163, 3505]	4843	[2994, 1155]
1007	[1750, 1751]	2286	[3083, 3420]	3565	[4164, 4141]	4844	[4920, 2756]

1008	[1704, 698]	2287	[3421, 1090]	3566	[4165, 4166]	4845	[5008, 1249]
1009	[1752, 837]	2288	[3422, 2683]	3567	[4167, 2967]	4846	[4654, 5009]
1010	[1753, 1754]	2289	[3423, 3424]	3568	[4168, 4169]	4847	[986, 1129]
1011	[1755, 1756]	2290	[3425, 3426]	3569	[4170, 3287]	4848	[4680, 3399]
1012	[1757, 1758]	2291	[3427, 3428]	3570	[300, 1307]	4849	[3389, 2787]
1013	[1669, 1759]	2292	[3429, 3295]	3571	[4171, 4172]	4850	[5010, 4432]
1014	[1760, 1761]	2293	[3430, 3431]	3572	[3107, 1226]	4851	[5011, 2499]
1015	[1762, 839]	2294	[3432, 3433]	3573	[4173, 4174]	4852	[5012, 3224]
1016	[173, 1763]	2295	[3434, 3435]	3574	[4175, 4176]	4853	[5013, 2886]
1017	[1764, 1765]	2296	[3436, 3437]	3575	[4177, 3273]	4854	[3381, 4398]
1018	[837, 1766]	2297	[2940, 3438]	3576	[1325, 4178]	4855	[5014, 5015]
1019	[1767, 1768]	2298	[1474, 2729]	3577	[4179, 3406]	4856	[5016, 5017]
1020	[1769, 1770]	2299	[3433, 2770]	3578	[4180, 1230]	4857	[1167, 3108]
1021	[1771, 1772]	2300	[3439, 3440]	3579	[3435, 4181]	4858	[5018, 3321]
1022	[565, 829]	2301	[3048, 3309]	3580	[457, 4182]	4859	[5019, 1557]
1023	[699, 1773]	2302	[3441, 3442]	3581	[4183, 2874]	4860	[4580, 289]
1024	[597, 834]	2303	[3443, 2516]	3582	[4184, 95]	4861	[4606, 4614]
1025	[1774, 1775]	2304	[3444, 1335]	3583	[3374, 1578]	4862	[5020, 995]
1026	[1776, 1777]	2305	[3445, 3446]	3584	[4185, 4186]	4863	[5021, 290]
1027	[1778, 728]	2306	[980, 3447]	3585	[2378, 4187]	4864	[383, 3206]
1028	[1779, 190]	2307	[3448, 3449]	3586	[4188, 4189]	4865	[5022, 5023]
1029	[1780, 1781]	2308	[3450, 3451]	3587	[4190, 3492]	4866	[5024, 986]
1030	[1760, 1659]	2309	[3452, 938]	3588	[4191, 3253]	4867	[1545, 3205]
1031	[1782, 748]	2310	[3036, 3453]	3589	[4192, 4193]	4868	[4357, 2701]
1032	[729, 1783]	2311	[3454, 3455]	3590	[2920, 1431]	4869	[5025, 5026]
1033	[1694, 1784]	2312	[3456, 3457]	3591	[3426, 270]	4870	[5027, 5028]
1034	[223, 639]	2313	[1118, 3458]	3592	[3371, 4194]	4871	[5029, 889]
1035	[1785, 1786]	2314	[3459, 3460]	3593	[2868, 3421]	4872	[4095, 1275]
1036	[568, 1787]	2315	[3461, 3169]	3594	[4195, 4196]	4873	[5030, 4258]
1037	[744, 1788]	2316	[3462, 3463]	3595	[1225, 4197]	4874	[1549, 5031]
1038	[798, 1789]	2317	[1132, 1302]	3596	[4198, 1383]	4875	[5032, 304]
1039	[713, 1790]	2318	[3464, 2473]	3597	[4199, 4200]	4876	[1278, 2844]
1040	[1791, 1792]	2319	[3465, 65]	3598	[4201, 4202]	4877	[5033, 4342]
1041	[1793, 1794]	2320	[3466, 3467]	3599	[4203, 4204]	4878	[5034, 1162]
1042	[843, 1795]	2321	[3468, 3469]	3600	[4205, 3494]	4879	[5035, 3058]
1043	[198, 564]	2322	[3470, 932]	3601	[4206, 4207]	4880	[5036, 1124]
1044	[1796, 1797]	2323	[2946, 434]	3602	[4208, 4209]	4881	[5037, 5038]
1045	[1798, 1799]	2324	[3471, 3390]	3603	[2475, 4210]	4882	[5039, 5040]
1046	[1800, 1801]	2325	[3472, 2796]	3604	[1416, 4211]	4883	[5041, 921]
1047	[1802, 587]	2326	[3473, 3474]	3605	[4212, 4213]	4884	[4213, 310]
1048	[239, 1803]	2327	[3475, 3024]	3606	[4214, 4215]	4885	[5042, 4517]
1049	[611, 1804]	2328	[3476, 3476]	3607	[4216, 2627]	4886	[5043, 285]
1050	[628, 1805]	2329	[3477, 1450]	3608	[4217, 4218]	4887	[5044, 4257]
1051	[230, 1806]	2330	[3478, 3479]	3609	[1052, 4219]	4888	[3158, 2934]

1052	[1590, 771]	2331	[3480, 3481]	3610	[4220, 343]	4889	[3296, 5045]
1053	[1753, 1807]	2332	[3201, 3482]	3611	[3193, 1373]	4890	[5046, 3483]
1054	[1808, 1809]	2333	[3483, 3484]	3612	[4221, 1375]	4891	[5047, 5048]
1055	[814, 1810]	2334	[3485, 3486]	3613	[2668, 4222]	4892	[4903, 4929]
1056	[1811, 1812]	2335	[3487, 3488]	3614	[4223, 4224]	4893	[5049, 3369]
1057	[1813, 684]	2336	[3489, 3490]	3615	[2803, 4225]	4894	[1112, 30]
1058	[1814, 1815]	2337	[3491, 3492]	3616	[2893, 2448]	4895	[5050, 5051]
1059	[1816, 1817]	2338	[3493, 2499]	3617	[4226, 4227]	4896	[3109, 3313]
1060	[1818, 1819]	2339	[3494, 3495]	3618	[4228, 4229]	4897	[5052, 133]
1061	[216, 1820]	2340	[3365, 3496]	3619	[4230, 4110]	4898	[3692, 629]
1062	[1821, 1822]	2341	[1200, 3497]	3620	[2666, 4231]	4899	[2267, 3848]
1063	[1823, 1824]	2342	[3498, 1144]	3621	[4232, 4233]	4900	[2189, 3578]
1064	[1825, 860]	2343	[3499, 3108]	3622	[4234, 4235]	4901	[5053, 625]
1065	[1826, 1827]	2344	[3500, 3491]	3623	[4236, 4237]	4902	[3624, 2155]
1066	[1828, 1829]	2345	[2580, 3045]	3624	[2823, 4238]	4903	[4759, 754]
1067	[1830, 826]	2346	[3501, 2563]	3625	[4239, 4240]	4904	[655, 130]
1068	[1831, 146]	2347	[3502, 2604]	3626	[4241, 2491]	4905	[5054, 3665]
1069	[1832, 1833]	2348	[3497, 3503]	3627	[4242, 4243]	4906	[695, 4088]
1070	[1834, 1835]	2349	[3504, 1085]	3628	[4244, 4245]	4907	[2317, 1944]
1071	[1641, 1836]	2350	[3505, 3506]	3629	[4246, 4247]	4908	[3518, 741]
1072	[1837, 1838]	2351	[127, 1579]	3630	[4248, 4249]	4909	[1988, 1579]
1073	[1839, 662]	2352	[1586, 1585]	3631	[4250, 1358]	4910	[5055, 1661]
1074	[1840, 1841]	2353	[134, 865]	3632	[4251, 4252]	4911	[3752, 2263]
1075	[497, 1583]	2354	[2268, 130]	3633	[4253, 4254]	4912	[5056, 1623]
1076	[1842, 1843]	2355	[495, 2268]	3634	[4255, 4256]	4913	[5057, 2079]
1077	[1844, 1845]	2356	[130, 127]	3635	[4166, 4257]	4914	[4793, 2300]
1078	[1846, 1847]	2357	[489, 498]	3636	[4258, 4259]	4915	[200, 699]
1079	[609, 1848]	2358	[656, 492]	3637	[4260, 4261]	4916	[1697, 1851]
1080	[1849, 568]	2359	[3507, 3508]	3638	[4262, 4179]	4917	[1679, 2272]
1081	[1850, 1851]	2360	[1924, 3509]	3639	[4263, 3269]	4918	[3891, 2312]
1082	[1852, 1810]	2361	[1638, 3510]	3640	[2757, 4264]	4919	[4825, 2338]
1083	[1853, 1854]	2362	[1645, 3511]	3641	[4265, 1336]	4920	[1885, 2009]
1084	[1855, 567]	2363	[2199, 2202]	3642	[4266, 2356]	4921	[5058, 1581]
1085	[1621, 1856]	2364	[2039, 1689]	3643	[4267, 1461]	4922	[5059, 2169]
1086	[1857, 1858]	2365	[3512, 777]	3644	[4268, 4269]	4923	[5060, 496]
1087	[1859, 1636]	2366	[1622, 1975]	3645	[4270, 4271]	4924	[5061, 854]
1088	[620, 866]	2367	[2060, 855]	3646	[4272, 4273]	4925	[3790, 571]
1089	[1860, 1861]	2368	[1816, 3513]	3647	[2827, 1543]	4926	[1633, 2280]
1090	[1862, 1863]	2369	[1626, 244]	3648	[4274, 4275]	4927	[5062, 536]
1091	[1864, 1865]	2370	[2149, 708]	3649	[1382, 445]	4928	[4070, 1954]
1092	[1866, 1867]	2371	[2044, 1889]	3650	[4276, 901]	4929	[3933, 1736]
1093	[1868, 1869]	2372	[3514, 3515]	3651	[4277, 4206]	4930	[1654, 202]
1094	[1870, 1871]	2373	[1923, 627]	3652	[389, 4278]	4931	[3925, 3732]
1095	[1872, 571]	2374	[3516, 3517]	3653	[4279, 2622]	4932	[5063, 1901]

1096	[1873, 501]	2375	[1607, 2208]	3654	[18, 4195]	4933	[4869, 58]
1097	[1874, 196]	2376	[1665, 3518]	3655	[4280, 4281]	4934	[3968, 1899]
1098	[1875, 1600]	2377	[3519, 755]	3656	[4282, 4283]	4935	[1742, 683]
1099	[1876, 1829]	2378	[3520, 3521]	3657	[4284, 1521]	4936	[3729, 1765]
1100	[789, 747]	2379	[3522, 1712]	3658	[4285, 1126]	4937	[2233, 836]
1101	[1877, 1878]	2380	[3523, 2068]	3659	[1274, 2696]	4938	[1768, 737]
1102	[1879, 1880]	2381	[1687, 2057]	3660	[1464, 4286]	4939	[5064, 136]
1103	[1881, 1882]	2382	[1691, 3524]	3661	[4287, 4288]	4940	[5065, 2050]
1104	[1883, 1833]	2383	[3525, 1592]	3662	[4289, 2463]	4941	[150, 2106]
1105	[1884, 1885]	2384	[2012, 2255]	3663	[4290, 4291]	4942	[1814, 3779]
1106	[1601, 1886]	2385	[2014, 2301]	3664	[4292, 4293]	4943	[2061, 2087]
1107	[1887, 1763]	2386	[3526, 3527]	3665	[4294, 4211]	4944	[4782, 1586]
1108	[1811, 1888]	2387	[1640, 3528]	3666	[4295, 4296]	4945	[4737, 5066]
1109	[1889, 845]	2388	[3529, 2157]	3667	[4297, 4298]	4946	[3741, 60]
1110	[1890, 1891]	2389	[1937, 3530]	3668	[4299, 1023]	4947	[3544, 1775]
1111	[1782, 1892]	2390	[3531, 3532]	3669	[3400, 3377]	4948	[673, 1700]
1112	[1893, 1894]	2391	[3533, 1660]	3670	[4300, 4301]	4949	[3563, 492]
1113	[1895, 1896]	2392	[3534, 706]	3671	[4233, 3092]	4950	[4787, 1678]
1114	[1897, 12]	2393	[2111, 1956]	3672	[1231, 1331]	4951	[1852, 815]
1115	[1898, 1899]	2394	[3535, 498]	3673	[1187, 4302]	4952	[5067, 656]
1116	[1900, 1901]	2395	[3536, 3537]	3674	[4303, 4304]	4953	[4866, 2345]
1117	[1902, 508]	2396	[3538, 2329]	3675	[4305, 2690]	4954	[5068, 1705]
1118	[39, 1903]	2397	[3539, 1616]	3676	[4306, 3122]	4955	[1664, 1885]
1119	[1904, 1905]	2398	[3540, 608]	3677	[4307, 4308]	4956	[3623, 1718]
1120	[1906, 1836]	2399	[3541, 713]	3678	[2664, 4309]	4957	[3975, 3653]
1121	[1907, 704]	2400	[3542, 3543]	3679	[3085, 4310]	4958	[3805, 1869]
1122	[1908, 1622]	2401	[2332, 1711]	3680	[4311, 4312]	4959	[3872, 660]
1123	[1909, 1910]	2402	[3544, 2213]	3681	[4313, 903]	4960	[1776, 4068]
1124	[1582, 1581]	2403	[2104, 2272]	3682	[4314, 905]	4961	[3874, 3959]
1125	[1911, 798]	2404	[3545, 210]	3683	[2746, 278]	4962	[5069, 648]
1126	[1912, 1696]	2405	[1842, 2024]	3684	[3162, 4315]	4963	[514, 2112]
1127	[1913, 1914]	2406	[3542, 2022]	3685	[4316, 908]	4964	[4794, 2015]
1128	[1915, 1916]	2407	[1917, 3546]	3686	[4317, 2869]	4965	[5070, 1914]
1129	[1718, 1917]	2408	[1979, 666]	3687	[4318, 1197]	4966	[827, 1621]
1130	[1719, 1918]	2409	[683, 1591]	3688	[4319, 4320]	4967	[3755, 1637]
1131	[1919, 698]	2410	[3547, 1603]	3689	[4321, 4322]	4968	[1602, 500]
1132	[1920, 1921]	2411	[3548, 613]	3690	[4323, 2842]	4969	[4798, 175]
1133	[1860, 540]	2412	[3549, 2329]	3691	[4324, 4207]	4970	[3963, 1843]
1134	[1922, 1845]	2413	[1736, 852]	3692	[4325, 90]	4971	[759, 4040]
1135	[1923, 1924]	2414	[3550, 2143]	3693	[4326, 4327]	4972	[3517, 225]
1136	[1925, 590]	2415	[3551, 1746]	3694	[4328, 4329]	4973	[5071, 3515]
1137	[1926, 1927]	2416	[3552, 3553]	3695	[4330, 4331]	4974	[3977, 777]
1138	[1928, 507]	2417	[3554, 3508]	3696	[4332, 2404]	4975	[3713, 223]
1139	[1929, 717]	2418	[1690, 3555]	3697	[1535, 3409]	4976	[4895, 5072]

1140	[1930, 1931]	2419	[1935, 780]	3698	[3458, 4333]	4977	[4827, 3555]
1141	[1932, 838]	2420	[3556, 1667]	3699	[4334, 4335]	4978	[3507, 2229]
1142	[1933, 1934]	2421	[3557, 3558]	3700	[4336, 3242]	4979	[5056, 39]
1143	[671, 1675]	2422	[3559, 1956]	3701	[1364, 3222]	4980	[3654, 3805]
1144	[1935, 153]	2423	[531, 599]	3702	[988, 4318]	4981	[5073, 802]
1145	[552, 1790]	2424	[1839, 2141]	3703	[4337, 2434]	4982	[1997, 3948]
1146	[1936, 1875]	2425	[1611, 3560]	3704	[2557, 1148]	4983	[5074, 594]
1147	[1937, 1938]	2426	[209, 3561]	3705	[4338, 15]	4984	[745, 2140]
1148	[1939, 1940]	2427	[3562, 1685]	3706	[4339, 3261]	4985	[46, 681]
1149	[1941, 1942]	2428	[3563, 127]	3707	[4340, 4341]	4986	[4845, 813]
1150	[1789, 1943]	2429	[3564, 3565]	3708	[4342, 944]	4987	[3724, 3802]
1151	[1944, 1945]	2430	[3566, 3567]	3709	[4343, 4344]	4988	[2312, 2066]
1152	[1946, 1671]	2431	[1676, 1759]	3710	[1022, 3402]	4989	[3664, 3784]
1153	[1947, 1948]	2432	[663, 1683]	3711	[4345, 4346]	4990	[4858, 3513]
1154	[1949, 1950]	2433	[867, 1592]	3712	[4347, 1573]	4991	[1928, 3887]
1155	[1951, 529]	2434	[2303, 671]	3713	[4348, 3498]	4992	[505, 2211]
1156	[1605, 227]	2435	[3568, 2300]	3714	[4187, 3016]	4993	[3886, 2087]
1157	[1952, 1953]	2436	[3569, 783]	3715	[4349, 4350]	4994	[2339, 1623]
1158	[1803, 719]	2437	[2277, 1974]	3716	[4351, 4352]	4995	[4804, 603]
1159	[1954, 1588]	2438	[3570, 3571]	3717	[4353, 4354]	4996	[5064, 3546]
1160	[1750, 1955]	2439	[3572, 1772]	3718	[4355, 2918]	4997	[3752, 4088]
1161	[1900, 1956]	2440	[3573, 2236]	3719	[4356, 4357]	4998	[4771, 1927]
1162	[1957, 1958]	2441	[3574, 3575]	3720	[4358, 4359]	4999	[4813, 3921]
1163	[1959, 1960]	2442	[149, 1662]	3721	[4360, 2796]	5000	[4880, 132]
1164	[1961, 860]	2443	[3576, 3577]	3722	[2366, 2969]	5001	[4891, 1627]
1165	[1962, 1963]	2444	[789, 1782]	3723	[941, 1380]	5002	[4836, 1580]
1166	[1674, 1589]	2445	[1774, 2213]	3724	[2976, 4101]	5003	[49, 681]
1167	[1964, 1652]	2446	[3578, 1810]	3725	[2800, 4361]	5004	[5075, 1824]
1168	[527, 1959]	2447	[2056, 502]	3726	[2721, 413]	5005	[3974, 2168]
1169	[1684, 1965]	2448	[3579, 573]	3727	[4362, 4183]	5006	[5058, 1582]
1170	[1966, 1967]	2449	[201, 1655]	3728	[3314, 4363]	5007	[4842, 1990]
1171	[701, 504]	2450	[1845, 1646]	3729	[4364, 4365]	5008	[4857, 608]
1172	[1968, 1887]	2451	[235, 3580]	3730	[4366, 3175]	5009	[558, 2312]
1173	[1969, 1970]	2452	[3581, 1935]	3731	[4367, 374]	5010	[4820, 1809]
1174	[1971, 1972]	2453	[799, 3582]	3732	[4368, 4369]	5011	[5076, 2195]
1175	[556, 1783]	2454	[3583, 1783]	3733	[4370, 3456]	5012	[5077, 572]
1176	[1973, 1660]	2455	[3584, 1649]	3734	[4371, 4372]	5013	[4886, 145]
1177	[1692, 1974]	2456	[3585, 1596]	3735	[4373, 4374]	5014	[5078, 1759]
1178	[773, 1975]	2457	[3586, 3587]	3736	[4375, 3078]	5015	[1983, 3974]
1179	[1976, 846]	2458	[819, 1660]	3737	[2429, 2351]	5016	[4800, 36]
1180	[602, 1977]	2459	[3588, 3589]	3738	[4376, 4377]	5017	[2336, 3601]
1181	[1978, 1934]	2460	[2119, 637]	3739	[1402, 4378]	5018	[5079, 214]
1182	[1979, 1980]	2461	[3590, 788]	3740	[4379, 3275]	5019	[4747, 865]
1183	[1981, 1694]	2462	[3591, 3592]	3741	[4380, 4381]	5020	[3928, 1602]

1184	[1982, 10]	2463	[3593, 739]	3742	[4382, 4383]	5021	[5077, 869]
1185	[179, 225]	2464	[1868, 3594]	3743	[3062, 4384]	5022	[4852, 3764]
1186	[1701, 1983]	2465	[3595, 41]	3744	[4385, 4386]	5023	[4874, 3638]
1187	[1984, 1822]	2466	[3596, 761]	3745	[4387, 3173]	5024	[5080, 2207]
1188	[60, 1638]	2467	[1598, 550]	3746	[4124, 4388]	5025	[5081, 3785]
1189	[1985, 1986]	2468	[3597, 198]	3747	[4389, 1241]	5026	[1836, 1744]
1190	[1987, 607]	2469	[2053, 3598]	3748	[2776, 3427]	5027	[4028, 3887]
1191	[1988, 128]	2470	[3599, 138]	3749	[2810, 1047]	5028	[1884, 1625]
1192	[1584, 131]	2471	[3600, 3601]	3750	[4176, 2928]	5029	[5067, 130]
1193	[133, 1584]	2472	[2287, 841]	3751	[270, 1452]	5030	[3703, 2202]
1194	[1582, 1582]	2473	[3539, 645]	3752	[4390, 4391]	5031	[3648, 855]
1195	[1989, 1990]	2474	[3584, 2309]	3753	[4392, 2833]	5032	[3813, 4054]
1196	[1991, 583]	2475	[3602, 503]	3754	[4393, 4394]	5033	[3626, 1660]
1197	[1992, 1993]	2476	[3603, 1944]	3755	[4395, 4184]	5034	[4750, 1959]
1198	[1994, 1738]	2477	[504, 2219]	3756	[4396, 2719]	5035	[4883, 2286]
1199	[511, 1995]	2478	[3604, 3605]	3757	[4397, 4398]	5036	[3934, 492]
1200	[1996, 1997]	2479	[3606, 3607]	3758	[913, 4399]	5037	[3997, 1893]
1201	[1998, 1999]	2480	[3608, 1931]	3759	[2778, 19]	5038	[3510, 2062]
1202	[2000, 2001]	2481	[1954, 3609]	3760	[4400, 4401]	5039	[3932, 2149]
1203	[1714, 1937]	2482	[3610, 3527]	3761	[4402, 2984]	5040	[2335, 3600]
1204	[2002, 1786]	2483	[3611, 3612]	3762	[369, 4403]	5041	[5059, 605]
1205	[2003, 2004]	2484	[2279, 2152]	3763	[324, 4115]	5042	[4772, 1588]
1206	[2005, 1688]	2485	[3613, 3614]	3764	[2444, 4404]	5043	[5082, 543]
1207	[1792, 2006]	2486	[2163, 789]	3765	[3121, 4405]	5044	[4855, 742]
1208	[2007, 1734]	2487	[3615, 1765]	3766	[4406, 4407]	5045	[4732, 761]
1209	[2008, 1699]	2488	[3616, 3617]	3767	[4408, 4409]	5046	[4075, 3766]
1210	[1926, 2009]	2489	[3618, 3619]	3768	[4410, 2474]	5047	[3838, 134]
1211	[2010, 39]	2490	[3583, 1634]	3769	[2792, 4091]	5048	[5083, 4810]
1212	[2011, 2012]	2491	[3576, 3620]	3770	[4411, 3422]	5049	[4828, 3921]
1213	[2013, 2014]	2492	[2105, 3621]	3771	[2960, 4412]	5050	[5084, 716]
1214	[2012, 2015]	2493	[2177, 49]	3772	[4413, 4414]	5051	[731, 3576]
1215	[1598, 841]	2494	[3586, 3532]	3773	[4415, 4416]	5052	[5085, 261]
1216	[2016, 2000]	2495	[625, 1766]	3774	[4103, 15]	5053	[3486, 4559]
1217	[2017, 2018]	2496	[3622, 862]	3775	[4417, 4418]	5054	[5086, 5087]
1218	[2019, 2020]	2497	[3623, 1615]	3776	[4419, 3493]	5055	[4609, 4157]
1219	[2021, 2022]	2498	[1675, 3624]	3777	[4420, 4421]	5056	[5088, 2884]
1220	[2023, 2024]	2499	[1952, 1819]	3778	[1422, 4279]	5057	[5089, 2774]
1221	[2025, 779]	2500	[3625, 2344]	3779	[4422, 4423]	5058	[5090, 2355]
1222	[2026, 1581]	2501	[636, 2120]	3780	[2622, 3039]	5059	[5091, 1491]
1223	[2027, 2028]	2502	[3575, 48]	3781	[4424, 4425]	5060	[5092, 891]
1224	[859, 2029]	2503	[3554, 2229]	3782	[4426, 4427]	5061	[5093, 4688]
1225	[2030, 1616]	2504	[2284, 827]	3783	[1248, 4428]	5062	[2688, 2895]
1226	[2031, 2032]	2505	[3626, 820]	3784	[4429, 4430]	5063	[5094, 5095]
1227	[1650, 623]	2506	[609, 3598]	3785	[3130, 2923]	5064	[5096, 4335]

1228	[1629, 208]	2507	[3627, 3628]	3786	[4431, 2388]	5065	[2502, 4289]
1229	[826, 1603]	2508	[2271, 1680]	3787	[4432, 4433]	5066	[5097, 5098]
1230	[593, 2033]	2509	[2171, 3619]	3788	[4434, 4435]	5067	[5099, 883]
1231	[2034, 2035]	2510	[3629, 138]	3789	[4436, 4212]	5068	[2700, 1106]
1232	[2036, 1606]	2511	[248, 38]	3790	[1445, 1565]	5069	[5100, 338]
1233	[662, 633]	2512	[3630, 3631]	3791	[1155, 1286]	5070	[5101, 5102]
1234	[569, 2006]	2513	[492, 1579]	3792	[4437, 2762]	5071	[5103, 3095]
1235	[777, 1805]	2514	[3632, 2074]	3793	[1116, 2730]	5072	[5104, 288]
1236	[826, 2037]	2515	[3633, 601]	3794	[3136, 2503]	5073	[1526, 1116]
1237	[2038, 2039]	2516	[2148, 3634]	3795	[4438, 4439]	5074	[5105, 3462]
1238	[1757, 2040]	2517	[2201, 3609]	3796	[4440, 1339]	5075	[3147, 417]
1239	[2041, 2042]	2518	[1960, 2095]	3797	[4441, 1067]	5076	[5106, 4907]
1240	[868, 2043]	2519	[2205, 3594]	3798	[4442, 1201]	5077	[5107, 3094]
1241	[2044, 206]	2520	[3635, 3636]	3799	[4443, 3338]	5078	[5108, 4242]
1242	[2045, 1797]	2521	[2129, 1997]	3800	[4444, 4445]	5079	[5109, 2386]
1243	[236, 571]	2522	[3637, 3638]	3801	[4446, 4447]	5080	[4291, 2588]
1244	[574, 2046]	2523	[1984, 3639]	3802	[4381, 1049]	5081	[1310, 2404]
1245	[2047, 2048]	2524	[1909, 658]	3803	[4, 4448]	5082	[5110, 983]
1246	[779, 2049]	2525	[132, 493]	3804	[4369, 4449]	5083	[5111, 5112]
1247	[152, 2050]	2526	[3640, 3641]	3805	[4450, 4451]	5084	[2633, 2474]
1248	[787, 2051]	2527	[3600, 3642]	3806	[4452, 2852]	5085	[4871, 490]
1249	[681, 2052]	2528	[2231, 214]	3807	[4453, 3186]	5086	[3810, 1732]
1250	[608, 2053]	2529	[3643, 1888]	3808	[4454, 4429]	5087	[4824, 1678]
1251	[2054, 2055]	2530	[542, 668]	3809	[4455, 4456]	5088	[5113, 662]
1252	[761, 1827]	2531	[3644, 689]	3810	[4457, 4259]	5089	[3957, 1924]
1253	[2056, 2057]	2532	[3602, 701]	3811	[4264, 4458]	5090	[4859, 134]
1254	[2058, 1822]	2533	[3645, 2125]	3812	[4459, 1238]	5091	[4879, 3764]
1255	[2059, 180]	2534	[3646, 505]	3813	[4460, 4461]	5092	[5060, 32]
1256	[2060, 146]	2535	[740, 2174]	3814	[4462, 4333]	5093	[3744, 3718]
1257	[2061, 1832]	2536	[3647, 3648]	3815	[4463, 974]	5094	[588, 243]
1258	[1740, 2062]	2537	[3649, 1590]	3816	[3050, 2361]	5095	[548, 617]
1259	[2063, 559]	2538	[1865, 1675]	3817	[4464, 1349]	5096	[4893, 669]
1260	[2064, 2065]	2539	[560, 1971]	3818	[973, 3323]	5097	[519, 3518]
1261	[194, 2066]	2540	[1730, 1995]	3819	[925, 4465]	5098	[4861, 233]
1262	[2067, 2068]	2541	[3650, 501]	3820	[387, 4415]	5099	[5052, 1583]
1263	[2069, 2070]	2542	[3651, 2336]	3821	[4466, 3043]	5100	[4878, 638]
1264	[2071, 1999]	2543	[3652, 3653]	3822	[4467, 1059]	5101	[4043, 152]
1265	[513, 517]	2544	[3654, 2205]	3823	[4468, 2449]	5102	[872, 835]
1266	[1632, 228]	2545	[3655, 2132]	3824	[4469, 4470]	5103	[3885, 3532]
1267	[2072, 2073]	2546	[3656, 3657]	3825	[1128, 4471]	5104	[4012, 1739]
1268	[2074, 2075]	2547	[3658, 56]	3826	[2972, 2599]	5105	[4041, 1696]
1269	[763, 1788]	2548	[2228, 874]	3827	[4472, 4473]	5106	[4011, 3628]
1270	[2076, 1721]	2549	[750, 2333]	3828	[3096, 4474]	5107	[4083, 2150]
1271	[2077, 2078]	2550	[3659, 2050]	3829	[4475, 4476]	5108	[3795, 1847]

1272	[2079, 2080]	2551	[3660, 3661]	3830	[4477, 4478]	5109	[3867, 1640]
1273	[2081, 2082]	2552	[3662, 40]	3831	[3229, 4479]	5110	[4024, 1717]
1274	[1893, 724]	2553	[1817, 2208]	3832	[4480, 4481]	5111	[4073, 3508]
1275	[2083, 755]	2554	[2210, 506]	3833	[4482, 2560]	5112	[4848, 1698]
1276	[1953, 2084]	2555	[3663, 3664]	3834	[1332, 3081]	5113	[5114, 1150]
1277	[2085, 2086]	2556	[3566, 10]	3835	[4483, 4484]	5114	[842, 1944]
1278	[662, 1857]	2557	[1964, 1941]	3836	[3233, 985]		

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	853	1	1706	1	2559	0	3412	1	4265	1
1	0	854	1	1707	1	2560	1	3413	1	4266	0
2	1	855	0	1708	1	2561	1	3414	0	4267	0
3	0	856	0	1709	0	2562	1	3415	0	4268	0
4	1	857	1	1710	1	2563	0	3416	1	4269	1
5	1	858	1	1711	1	2564	1	3417	1	4270	1
6	0	859	0	1712	0	2565	0	3418	1	4271	0
7	0	860	1	1713	0	2566	0	3419	0	4272	1
8	0	861	0	1714	1	2567	1	3420	0	4273	0
9	1	862	1	1715	1	2568	1	3421	1	4274	1
10	1	863	1	1716	0	2569	1	3422	1	4275	0
11	1	864	0	1717	1	2570	0	3423	0	4276	0
12	1	865	1	1718	0	2571	1	3424	1	4277	0
13	0	866	1	1719	0	2572	0	3425	1	4278	0
14	0	867	1	1720	0	2573	0	3426	0	4279	1
15	0	868	1	1721	1	2574	1	3427	1	4280	1
16	0	869	0	1722	1	2575	1	3428	0	4281	1
17	0	870	1	1723	0	2576	1	3429	1	4282	1
18	0	871	1	1724	1	2577	1	3430	1	4283	0
19	1	872	1	1725	1	2578	0	3431	1	4284	0
20	0	873	0	1726	0	2579	0	3432	0	4285	0
21	1	874	0	1727	1	2580	0	3433	0	4286	1
22	1	875	0	1728	1	2581	0	3434	0	4287	0
23	1	876	0	1729	0	2582	1	3435	1	4288	1
24	0	877	0	1730	1	2583	1	3436	1	4289	0
25	1	878	1	1731	1	2584	0	3437	1	4290	1
26	1	879	0	1732	1	2585	1	3438	0	4291	0
27	0	880	0	1733	1	2586	0	3439	1	4292	1
28	0	881	0	1734	0	2587	0	3440	1	4293	1
29	0	882	1	1735	1	2588	0	3441	1	4294	1
30	0	883	1	1736	1	2589	1	3442	1	4295	1
31	0	884	0	1737	0	2590	1	3443	0	4296	0
32	0	885	1	1738	1	2591	1	3444	1	4297	0
33	0	886	0	1739	1	2592	1	3445	0	4298	1

34	1	887	1	1740	1	2593	0	3446	0	4299	0
35	0	888	1	1741	1	2594	1	3447	0	4300	1
36	0	889	0	1742	0	2595	1	3448	1	4301	0
37	0	890	0	1743	0	2596	0	3449	1	4302	0
38	1	891	0	1744	1	2597	1	3450	1	4303	0
39	1	892	0	1745	0	2598	0	3451	0	4304	1
40	1	893	1	1746	1	2599	1	3452	0	4305	1
41	0	894	1	1747	1	2600	1	3453	0	4306	1
42	1	895	0	1748	0	2601	0	3454	1	4307	0
43	1	896	1	1749	1	2602	1	3455	1	4308	0
44	1	897	0	1750	0	2603	0	3456	0	4309	0
45	1	898	0	1751	0	2604	0	3457	0	4310	1
46	1	899	1	1752	1	2605	1	3458	1	4311	0
47	1	900	1	1753	1	2606	1	3459	1	4312	0
48	1	901	1	1754	0	2607	1	3460	1	4313	0
49	0	902	1	1755	1	2608	0	3461	0	4314	0
50	0	903	0	1756	0	2609	1	3462	1	4315	1
51	1	904	1	1757	1	2610	1	3463	1	4316	0
52	1	905	1	1758	0	2611	0	3464	1	4317	0
53	1	906	1	1759	0	2612	0	3465	0	4318	1
54	0	907	1	1760	1	2613	1	3466	1	4319	1
55	0	908	1	1761	0	2614	0	3467	1	4320	0
56	1	909	1	1762	1	2615	1	3468	1	4321	0
57	0	910	1	1763	1	2616	1	3469	0	4322	0
58	0	911	1	1764	0	2617	1	3470	0	4323	0
59	0	912	0	1765	0	2618	1	3471	0	4324	1
60	0	913	1	1766	0	2619	1	3472	1	4325	1
61	0	914	0	1767	1	2620	0	3473	1	4326	0
62	1	915	1	1768	0	2621	1	3474	0	4327	0
63	0	916	0	1769	0	2622	0	3475	1	4328	1
64	1	917	0	1770	1	2623	0	3476	0	4329	1
65	0	918	0	1771	0	2624	0	3477	0	4330	1
66	1	919	1	1772	0	2625	0	3478	0	4331	1
67	0	920	0	1773	0	2626	1	3479	0	4332	0
68	1	921	1	1774	0	2627	0	3480	0	4333	0
69	1	922	1	1775	1	2628	1	3481	0	4334	1
70	1	923	0	1776	1	2629	0	3482	1	4335	0
71	0	924	0	1777	0	2630	0	3483	1	4336	0
72	0	925	1	1778	0	2631	0	3484	0	4337	0
73	0	926	1	1779	0	2632	0	3485	1	4338	1
74	1	927	0	1780	0	2633	0	3486	0	4339	0
75	0	928	0	1781	0	2634	0	3487	1	4340	1
76	0	929	1	1782	1	2635	0	3488	0	4341	0
77	1	930	1	1783	1	2636	1	3489	1	4342	0

78	1	931	0	1784	1	2637	0	3490	0	4343	1
79	1	932	1	1785	1	2638	1	3491	1	4344	0
80	1	933	0	1786	0	2639	0	3492	0	4345	1
81	1	934	1	1787	1	2640	0	3493	1	4346	0
82	0	935	0	1788	1	2641	0	3494	1	4347	0
83	0	936	0	1789	0	2642	1	3495	0	4348	0
84	0	937	0	1790	0	2643	1	3496	1	4349	1
85	1	938	1	1791	1	2644	0	3497	0	4350	1
86	1	939	1	1792	1	2645	0	3498	0	4351	1
87	1	940	1	1793	0	2646	1	3499	0	4352	0
88	1	941	0	1794	1	2647	1	3500	1	4353	0
89	1	942	1	1795	1	2648	0	3501	0	4354	1
90	1	943	0	1796	0	2649	0	3502	0	4355	0
91	1	944	0	1797	1	2650	0	3503	0	4356	1
92	0	945	0	1798	1	2651	1	3504	0	4357	0
93	1	946	1	1799	0	2652	1	3505	0	4358	0
94	0	947	0	1800	0	2653	0	3506	0	4359	0
95	1	948	1	1801	1	2654	1	3507	0	4360	1
96	0	949	1	1802	1	2655	1	3508	1	4361	1
97	1	950	0	1803	1	2656	1	3509	1	4362	1
98	1	951	0	1804	0	2657	0	3510	0	4363	1
99	0	952	0	1805	1	2658	0	3511	1	4364	1
100	1	953	1	1806	0	2659	0	3512	0	4365	1
101	0	954	1	1807	1	2660	1	3513	0	4366	1
102	0	955	1	1808	1	2661	0	3514	0	4367	0
103	1	956	0	1809	1	2662	0	3515	1	4368	0
104	1	957	0	1810	0	2663	1	3516	0	4369	1
105	1	958	0	1811	1	2664	1	3517	0	4370	0
106	0	959	1	1812	0	2665	0	3518	1	4371	1
107	1	960	0	1813	1	2666	0	3519	1	4372	1
108	0	961	1	1814	0	2667	0	3520	0	4373	1
109	0	962	0	1815	0	2668	1	3521	0	4374	0
110	1	963	1	1816	0	2669	1	3522	1	4375	0
111	0	964	0	1817	1	2670	1	3523	1	4376	1
112	1	965	1	1818	1	2671	0	3524	0	4377	0
113	1	966	1	1819	1	2672	0	3525	0	4378	0
114	0	967	0	1820	1	2673	0	3526	1	4379	0
115	0	968	0	1821	1	2674	1	3527	1	4380	0
116	1	969	0	1822	1	2675	0	3528	0	4381	0
117	0	970	0	1823	0	2676	1	3529	1	4382	0
118	1	971	1	1824	1	2677	0	3530	0	4383	0
119	0	972	0	1825	0	2678	1	3531	1	4384	0
120	1	973	0	1826	0	2679	1	3532	0	4385	1
121	0	974	1	1827	1	2680	1	3533	0	4386	0

122	1	975	0	1828	1	2681	1	3534	1	4387	0
123	0	976	1	1829	1	2682	0	3535	1	4388	0
124	0	977	1	1830	0	2683	0	3536	1	4389	1
125	1	978	1	1831	1	2684	1	3537	1	4390	1
126	1	979	0	1832	0	2685	0	3538	1	4391	0
127	0	980	0	1833	0	2686	0	3539	0	4392	1
128	1	981	1	1834	1	2687	1	3540	1	4393	1
129	1	982	1	1835	0	2688	0	3541	0	4394	1
130	0	983	0	1836	0	2689	1	3542	0	4395	0
131	0	984	1	1837	0	2690	1	3543	1	4396	0
132	1	985	0	1838	0	2691	1	3544	1	4397	1
133	1	986	0	1839	1	2692	0	3545	1	4398	0
134	1	987	0	1840	1	2693	1	3546	1	4399	1
135	0	988	1	1841	1	2694	1	3547	1	4400	1
136	0	989	1	1842	0	2695	0	3548	1	4401	0
137	1	990	1	1843	0	2696	1	3549	0	4402	0
138	0	991	1	1844	0	2697	1	3550	1	4403	0
139	1	992	0	1845	1	2698	1	3551	0	4404	0
140	1	993	0	1846	0	2699	1	3552	0	4405	1
141	1	994	0	1847	0	2700	0	3553	0	4406	1
142	1	995	1	1848	0	2701	0	3554	1	4407	0
143	0	996	0	1849	0	2702	1	3555	1	4408	1
144	0	997	1	1850	1	2703	1	3556	0	4409	0
145	0	998	1	1851	0	2704	0	3557	0	4410	0
146	1	999	0	1852	1	2705	0	3558	1	4411	0
147	0	1000	0	1853	1	2706	0	3559	0	4412	0
148	1	1001	1	1854	0	2707	1	3560	0	4413	1
149	1	1002	1	1855	1	2708	1	3561	0	4414	1
150	1	1003	0	1856	0	2709	1	3562	1	4415	1
151	0	1004	0	1857	1	2710	0	3563	0	4416	0
152	0	1005	1	1858	0	2711	1	3564	0	4417	1
153	0	1006	0	1859	0	2712	1	3565	1	4418	0
154	0	1007	0	1860	1	2713	1	3566	1	4419	0
155	1	1008	1	1861	0	2714	0	3567	0	4420	1
156	1	1009	1	1862	0	2715	0	3568	1	4421	1
157	1	1010	1	1863	1	2716	0	3569	0	4422	1
158	1	1011	1	1864	0	2717	1	3570	0	4423	0
159	1	1012	1	1865	0	2718	0	3571	1	4424	1
160	0	1013	0	1866	1	2719	1	3572	1	4425	0
161	1	1014	1	1867	0	2720	1	3573	1	4426	0
162	0	1015	1	1868	0	2721	0	3574	0	4427	0
163	1	1016	1	1869	0	2722	0	3575	1	4428	0
164	1	1017	0	1870	0	2723	0	3576	0	4429	1
165	0	1018	1	1871	0	2724	1	3577	1	4430	0

166	0	1019	1	1872	1	2725	1	3578	0	4431	0
167	0	1020	0	1873	1	2726	0	3579	1	4432	1
168	0	1021	0	1874	0	2727	1	3580	1	4433	0
169	0	1022	0	1875	0	2728	1	3581	1	4434	1
170	1	1023	1	1876	1	2729	1	3582	1	4435	1
171	1	1024	0	1877	1	2730	1	3583	0	4436	0
172	1	1025	0	1878	0	2731	1	3584	0	4437	1
173	1	1026	1	1879	1	2732	1	3585	0	4438	1
174	1	1027	0	1880	0	2733	0	3586	1	4439	0
175	1	1028	0	1881	1	2734	1	3587	1	4440	0
176	1	1029	0	1882	1	2735	0	3588	1	4441	1
177	0	1030	1	1883	1	2736	0	3589	1	4442	0
178	1	1031	1	1884	0	2737	1	3590	0	4443	0
179	1	1032	1	1885	0	2738	1	3591	0	4444	1
180	1	1033	0	1886	1	2739	0	3592	1	4445	1
181	0	1034	1	1887	0	2740	0	3593	1	4446	1
182	1	1035	1	1888	1	2741	0	3594	1	4447	0
183	0	1036	1	1889	0	2742	1	3595	1	4448	0
184	0	1037	1	1890	1	2743	1	3596	0	4449	0
185	1	1038	1	1891	1	2744	0	3597	1	4450	1
186	1	1039	1	1892	0	2745	1	3598	1	4451	1
187	0	1040	1	1893	0	2746	1	3599	0	4452	0
188	0	1041	0	1894	1	2747	0	3600	0	4453	0
189	0	1042	1	1895	0	2748	1	3601	1	4454	0
190	1	1043	1	1896	1	2749	1	3602	1	4455	0
191	1	1044	0	1897	1	2750	1	3603	1	4456	0
192	0	1045	1	1898	0	2751	0	3604	1	4457	1
193	0	1046	0	1899	1	2752	0	3605	1	4458	1
194	1	1047	1	1900	0	2753	0	3606	0	4459	1
195	1	1048	1	1901	0	2754	1	3607	0	4460	1
196	1	1049	1	1902	0	2755	0	3608	1	4461	0
197	0	1050	0	1903	0	2756	0	3609	0	4462	1
198	1	1051	0	1904	0	2757	0	3610	1	4463	0
199	1	1052	0	1905	0	2758	0	3611	0	4464	0
200	1	1053	1	1906	1	2759	1	3612	0	4465	1
201	0	1054	1	1907	0	2760	1	3613	1	4466	0
202	1	1055	0	1908	1	2761	1	3614	1	4467	0
203	0	1056	1	1909	1	2762	0	3615	0	4468	0
204	0	1057	1	1910	0	2763	1	3616	1	4469	1
205	1	1058	0	1911	0	2764	0	3617	1	4470	1
206	1	1059	0	1912	0	2765	0	3618	1	4471	0
207	1	1060	1	1913	0	2766	1	3619	1	4472	0
208	1	1061	1	1914	0	2767	1	3620	0	4473	1
209	1	1062	1	1915	0	2768	0	3621	1	4474	1

210	1	1063	0	1916	0	2769	1	3622	1	4475	1
211	0	1064	0	1917	0	2770	0	3623	1	4476	0
212	1	1065	0	1918	0	2771	1	3624	1	4477	1
213	1	1066	1	1919	0	2772	1	3625	1	4478	0
214	0	1067	0	1920	0	2773	1	3626	0	4479	0
215	0	1068	1	1921	1	2774	0	3627	0	4480	1
216	1	1069	0	1922	1	2775	0	3628	0	4481	1
217	0	1070	1	1923	1	2776	0	3629	1	4482	0
218	1	1071	0	1924	1	2777	0	3630	1	4483	1
219	1	1072	0	1925	1	2778	0	3631	1	4484	0
220	0	1073	1	1926	0	2779	0	3632	1	4485	1
221	0	1074	1	1927	0	2780	1	3633	1	4486	0
222	1	1075	0	1928	1	2781	1	3634	1	4487	0
223	1	1076	0	1929	1	2782	0	3635	1	4488	0
224	1	1077	0	1930	0	2783	1	3636	1	4489	1
225	0	1078	0	1931	1	2784	1	3637	0	4490	0
226	0	1079	1	1932	0	2785	0	3638	0	4491	1
227	0	1080	0	1933	0	2786	0	3639	0	4492	1
228	0	1081	1	1934	0	2787	0	3640	0	4493	1
229	1	1082	1	1935	0	2788	0	3641	1	4494	0
230	0	1083	1	1936	1	2789	1	3642	0	4495	0
231	0	1084	1	1937	1	2790	1	3643	0	4496	1
232	1	1085	0	1938	1	2791	0	3644	0	4497	0
233	0	1086	1	1939	1	2792	0	3645	1	4498	1
234	0	1087	0	1940	0	2793	0	3646	1	4499	0
235	0	1088	0	1941	0	2794	1	3647	0	4500	1
236	1	1089	1	1942	0	2795	1	3648	1	4501	0
237	1	1090	0	1943	0	2796	0	3649	0	4502	1
238	0	1091	0	1944	1	2797	1	3650	0	4503	1
239	1	1092	1	1945	1	2798	1	3651	0	4504	0
240	1	1093	0	1946	0	2799	0	3652	0	4505	0
241	1	1094	0	1947	1	2800	0	3653	1	4506	1
242	0	1095	1	1948	1	2801	1	3654	0	4507	0
243	0	1096	1	1949	0	2802	1	3655	1	4508	0
244	0	1097	0	1950	0	2803	0	3656	1	4509	0
245	1	1098	0	1951	1	2804	0	3657	0	4510	1
246	1	1099	1	1952	1	2805	0	3658	0	4511	1
247	0	1100	0	1953	0	2806	1	3659	0	4512	1
248	1	1101	1	1954	0	2807	1	3660	0	4513	0
249	0	1102	1	1955	1	2808	0	3661	0	4514	0
250	0	1103	1	1956	1	2809	1	3662	0	4515	1
251	1	1104	1	1957	1	2810	0	3663	1	4516	0
252	1	1105	0	1958	0	2811	0	3664	1	4517	0
253	1	1106	0	1959	1	2812	1	3665	1	4518	0

254	1	1107	0	1960	1	2813	0	3666	1	4519	0
255	1	1108	1	1961	1	2814	1	3667	0	4520	0
256	0	1109	0	1962	1	2815	1	3668	0	4521	0
257	0	1110	1	1963	1	2816	0	3669	1	4522	0
258	1	1111	1	1964	0	2817	0	3670	1	4523	0
259	0	1112	0	1965	0	2818	0	3671	0	4524	1
260	1	1113	0	1966	1	2819	1	3672	0	4525	0
261	1	1114	1	1967	1	2820	1	3673	1	4526	1
262	0	1115	0	1968	0	2821	0	3674	0	4527	0
263	0	1116	0	1969	0	2822	0	3675	1	4528	0
264	1	1117	0	1970	1	2823	1	3676	1	4529	0
265	0	1118	1	1971	0	2824	1	3677	0	4530	0
266	1	1119	0	1972	1	2825	0	3678	1	4531	0
267	1	1120	1	1973	1	2826	0	3679	1	4532	0
268	0	1121	0	1974	1	2827	0	3680	0	4533	1
269	0	1122	1	1975	1	2828	0	3681	0	4534	0
270	1	1123	1	1976	1	2829	0	3682	0	4535	0
271	1	1124	0	1977	1	2830	0	3683	1	4536	0
272	1	1125	0	1978	1	2831	0	3684	0	4537	1
273	1	1126	0	1979	1	2832	1	3685	0	4538	0
274	1	1127	0	1980	1	2833	0	3686	0	4539	0
275	1	1128	0	1981	0	2834	1	3687	1	4540	1
276	0	1129	0	1982	0	2835	1	3688	1	4541	1
277	1	1130	0	1983	0	2836	0	3689	0	4542	1
278	0	1131	0	1984	1	2837	1	3690	0	4543	0
279	0	1132	0	1985	1	2838	1	3691	1	4544	0
280	0	1133	1	1986	1	2839	1	3692	1	4545	0
281	0	1134	1	1987	0	2840	1	3693	0	4546	0
282	1	1135	1	1988	1	2841	0	3694	1	4547	1
283	0	1136	1	1989	0	2842	0	3695	1	4548	1
284	1	1137	0	1990	0	2843	0	3696	0	4549	1
285	1	1138	1	1991	1	2844	1	3697	1	4550	1
286	1	1139	1	1992	1	2845	0	3698	1	4551	1
287	0	1140	0	1993	0	2846	1	3699	1	4552	1
288	0	1141	0	1994	1	2847	1	3700	0	4553	1
289	1	1142	0	1995	1	2848	1	3701	1	4554	1
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291	1	1144	0	1997	0	2850	1	3703	0	4556	0
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293	1	1146	1	1999	0	2852	0	3705	1	4558	0
294	1	1147	1	2000	1	2853	1	3706	0	4559	1
295	0	1148	1	2001	1	2854	0	3707	1	4560	1
296	0	1149	0	2002	0	2855	0	3708	0	4561	1
297	0	1150	0	2003	1	2856	1	3709	1	4562	1

298	0	1151	1	2004	0	2857	1	3710	0	4563	1
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301	0	1154	0	2007	0	2860	0	3713	0	4566	0
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304	0	1157	1	2010	0	2863	0	3716	1	4569	0
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306	1	1159	0	2012	0	2865	0	3718	0	4571	1
307	1	1160	0	2013	0	2866	0	3719	1	4572	0
308	0	1161	0	2014	0	2867	0	3720	0	4573	0
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310	0	1163	1	2016	1	2869	1	3722	0	4575	0
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313	0	1166	1	2019	1	2872	0	3725	0	4578	0
314	0	1167	0	2020	0	2873	1	3726	0	4579	1
315	1	1168	0	2021	1	2874	0	3727	1	4580	0
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322	0	1175	0	2028	0	2881	1	3734	1	4587	0
323	0	1176	1	2029	0	2882	0	3735	1	4588	1
324	0	1177	1	2030	1	2883	0	3736	0	4589	1
325	0	1178	0	2031	0	2884	0	3737	0	4590	0
326	0	1179	1	2032	0	2885	0	3738	1	4591	0
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328	0	1181	1	2034	0	2887	0	3740	0	4593	1
329	0	1182	1	2035	0	2888	1	3741	0	4594	1
330	0	1183	0	2036	0	2889	1	3742	0	4595	0
331	1	1184	0	2037	0	2890	0	3743	1	4596	1
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334	1	1187	1	2040	1	2893	1	3746	1	4599	1
335	1	1188	0	2041	1	2894	0	3747	1	4600	1
336	1	1189	1	2042	0	2895	0	3748	0	4601	1
337	0	1190	0	2043	1	2896	0	3749	0	4602	0
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339	0	1192	0	2045	1	2898	0	3751	1	4604	1
340	1	1193	1	2046	1	2899	0	3752	1	4605	0
341	1	1194	0	2047	0	2900	0	3753	1	4606	0

342	1	1195	0	2048	1	2901	0	3754	1	4607	1
343	0	1196	1	2049	0	2902	0	3755	0	4608	1
344	1	1197	1	2050	1	2903	0	3756	0	4609	1
345	1	1198	1	2051	0	2904	0	3757	1	4610	0
346	0	1199	0	2052	1	2905	0	3758	1	4611	1
347	0	1200	0	2053	0	2906	0	3759	0	4612	1
348	1	1201	0	2054	1	2907	0	3760	1	4613	1
349	0	1202	1	2055	1	2908	0	3761	0	4614	0
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352	1	1205	1	2058	0	2911	1	3764	0	4617	0
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354	0	1207	1	2060	0	2913	1	3766	1	4619	0
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356	1	1209	0	2062	0	2915	0	3768	0	4621	0
357	1	1210	0	2063	0	2916	1	3769	0	4622	0
358	0	1211	0	2064	0	2917	0	3770	0	4623	1
359	0	1212	0	2065	0	2918	1	3771	0	4624	0
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361	1	1214	0	2067	0	2920	0	3773	1	4626	0
362	1	1215	1	2068	0	2921	0	3774	1	4627	0
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366	0	1219	1	2072	0	2925	1	3778	0	4631	1
367	1	1220	1	2073	0	2926	1	3779	1	4632	0
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369	1	1222	1	2075	0	2928	0	3781	1	4634	1
370	0	1223	1	2076	1	2929	1	3782	0	4635	1
371	0	1224	0	2077	1	2930	0	3783	1	4636	0
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374	1	1227	0	2080	1	2933	1	3786	0	4639	0
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382	1	1235	1	2088	1	2941	0	3794	0	4647	1
383	0	1236	1	2089	0	2942	0	3795	1	4648	0
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387	0	1240	1	2093	0	2946	0	3799	0	4652	1
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396	1	1249	1	2102	1	2955	1	3808	0	4661	0
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403	0	1256	0	2109	1	2962	1	3815	0	4668	1
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407	1	1260	0	2113	0	2966	0	3819	1	4672	0
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409	1	1262	0	2115	0	2968	1	3821	0	4674	0
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413	0	1266	1	2119	1	2972	0	3825	0	4678	1
414	0	1267	0	2120	0	2973	1	3826	0	4679	0
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417	1	1270	1	2123	0	2976	1	3829	1	4682	1
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422	1	1275	1	2128	1	2981	0	3834	0	4687	0
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428	0	1281	0	2134	1	2987	1	3840	0	4693	0
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430	1	1283	1	2136	1	2989	1	3842	1	4695	1
431	0	1284	0	2137	1	2990	1	3843	0	4696	0
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438	1	1291	0	2144	0	2997	1	3850	0	4703	0
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441	0	1294	0	2147	0	3000	1	3853	1	4706	0
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444	0	1297	1	2150	0	3003	1	3856	1	4709	1
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446	1	1299	1	2152	0	3005	0	3858	0	4711	0
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449	0	1302	0	2155	1	3008	1	3861	1	4714	0
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457	1	1310	0	2163	0	3016	0	3869	0	4722	1
458	0	1311	1	2164	1	3017	1	3870	0	4723	1
459	0	1312	0	2165	1	3018	1	3871	0	4724	0
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465	1	1318	1	2171	0	3024	0	3877	0	4730	0
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488	0	1341	0	2194	0	3047	0	3900	0	4753	1
489	1	1342	1	2195	1	3048	0	3901	0	4754	1
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516	0	1369	1	2222	0	3075	0	3928	0	4781	0
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529	1	1382	0	2235	1	3088	1	3941	1	4794	1
530	0	1383	0	2236	1	3089	1	3942	1	4795	0
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532	0	1385	0	2238	0	3091	0	3944	0	4797	1
533	0	1386	1	2239	1	3092	1	3945	1	4798	1
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535	1	1388	0	2241	0	3094	1	3947	0	4800	1
536	0	1389	0	2242	1	3095	1	3948	0	4801	0
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538	0	1391	1	2244	0	3097	1	3950	1	4803	0
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541	1	1394	1	2247	1	3100	0	3953	0	4806	1
542	0	1395	1	2248	1	3101	0	3954	1	4807	0
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550	1	1403	0	2256	1	3109	1	3962	1	4815	1
551	1	1404	0	2257	0	3110	1	3963	0	4816	0
552	0	1405	0	2258	1	3111	1	3964	1	4817	1
553	1	1406	1	2259	0	3112	1	3965	0	4818	0
554	0	1407	0	2260	0	3113	1	3966	1	4819	0
555	1	1408	1	2261	1	3114	0	3967	0	4820	1
556	0	1409	1	2262	1	3115	0	3968	1	4821	0
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560	1	1413	1	2266	1	3119	0	3972	1	4825	0
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563	0	1416	1	2269	0	3122	0	3975	1	4828	1
564	1	1417	0	2270	1	3123	1	3976	0	4829	1
565	0	1418	1	2271	0	3124	0	3977	0	4830	1
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596	1	1449	0	2302	1	3155	1	4008	1	4861	0
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608	0	1461	1	2314	1	3167	1	4020	0	4873	0
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620	0	1473	1	2326	1	3179	1	4032	0	4885	1
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696	1	1549	1	2402	1	3255	1	4108	0	4961	0
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718	0	1571	0	2424	1	3277	0	4130	1	4983	1
719	1	1572	0	2425	0	3278	1	4131	0	4984	0
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721	1	1574	0	2427	1	3280	0	4133	0	4986	0
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727	1	1580	0	2433	1	3286	0	4139	0	4992	1
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787	1	1640	0	2493	0	3346	0	4199	1	5052	0
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796	0	1649	1	2502	1	3355	1	4208	1	5061	1
797	0	1650	0	2503	1	3356	1	4209	0	5062	0
798	1	1651	1	2504	1	3357	1	4210	1	5063	1
799	1	1652	1	2505	0	3358	1	4211	1	5064	1
800	0	1653	1	2506	1	3359	0	4212	1	5065	1
801	1	1654	1	2507	0	3360	1	4213	1	5066	1
802	0	1655	0	2508	0	3361	1	4214	0	5067	0
803	1	1656	0	2509	0	3362	0	4215	0	5068	0
804	0	1657	0	2510	1	3363	1	4216	0	5069	0
805	1	1658	0	2511	1	3364	0	4217	1	5070	1
806	1	1659	1	2512	1	3365	1	4218	0	5071	0
807	1	1660	0	2513	1	3366	1	4219	1	5072	0
808	0	1661	0	2514	1	3367	1	4220	1	5073	0
809	1	1662	0	2515	1	3368	0	4221	0	5074	1
810	0	1663	1	2516	0	3369	1	4222	0	5075	0
811	1	1664	1	2517	1	3370	0	4223	1	5076	1
812	1	1665	0	2518	1	3371	1	4224	1	5077	1
813	1	1666	1	2519	0	3372	0	4225	1	5078	1
814	0	1667	1	2520	1	3373	1	4226	1	5079	0
815	1	1668	1	2521	1	3374	0	4227	1	5080	0
816	0	1669	0	2522	0	3375	1	4228	1	5081	0
817	0	1670	0	2523	1	3376	1	4229	0	5082	0
818	1	1671	0	2524	1	3377	1	4230	1	5083	1
819	1	1672	1	2525	1	3378	0	4231	0	5084	0
820	1	1673	1	2526	0	3379	1	4232	1	5085	0
821	0	1674	1	2527	0	3380	0	4233	0	5086	1
822	0	1675	0	2528	1	3381	1	4234	1	5087	1
823	0	1676	1	2529	0	3382	0	4235	1	5088	0
824	0	1677	0	2530	0	3383	0	4236	1	5089	0
825	0	1678	1	2531	0	3384	1	4237	1	5090	0

826	1	1679	0	2532	1	3385	0	4238	0	5091	0
827	1	1680	1	2533	1	3386	0	4239	1	5092	0
828	1	1681	0	2534	1	3387	1	4240	1	5093	1
829	1	1682	1	2535	0	3388	1	4241	0	5094	1
830	1	1683	0	2536	0	3389	0	4242	0	5095	1
831	0	1684	0	2537	0	3390	0	4243	1	5096	1
832	1	1685	1	2538	0	3391	1	4244	0	5097	1
833	1	1686	0	2539	1	3392	1	4245	0	5098	0
834	0	1687	0	2540	1	3393	1	4246	1	5099	0
835	0	1688	1	2541	0	3394	1	4247	1	5100	0
836	0	1689	1	2542	0	3395	1	4248	1	5101	1
837	1	1690	0	2543	0	3396	0	4249	1	5102	1
838	1	1691	0	2544	0	3397	1	4250	1	5103	0
839	1	1692	1	2545	1	3398	0	4251	1	5104	0
840	1	1693	1	2546	1	3399	0	4252	1	5105	1
841	0	1694	0	2547	0	3400	1	4253	1	5106	1
842	0	1695	0	2548	0	3401	0	4254	0	5107	1
843	1	1696	0	2549	0	3402	1	4255	1	5108	1
844	0	1697	0	2550	0	3403	0	4256	1	5109	0
845	1	1698	1	2551	0	3404	0	4257	0	5110	0
846	1	1699	1	2552	0	3405	0	4258	1	5111	1
847	1	1700	0	2553	1	3406	1	4259	0	5112	0
848	1	1701	0	2554	1	3407	0	4260	0	5113	0
849	1	1702	1	2555	1	3408	1	4261	1	5114	0
850	1	1703	0	2556	1	3409	1	4262	0		
851	1	1704	1	2557	0	3410	0	4263	0		
852	1	1705	0	2558	0	3411	0	4264	0		

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