A Method of Determining Divisibility with Any Natural Number

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Abstract: The paper deals with the problem of determining the divisibility criteria for any natural number. An algorithm is thus developed by which any natural number is associated with a vector for multiplying the digits of the given number and finally testing the divisibility by a considerably smaller number.

Keywords: number; divisibility;

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1. Introduction

The problem of the divisibility of natural numbers is of great importance either for pure arithmetic or for applied theories such as cryptography.

Within the elementary courses of arithmetic, divisibility criteria are taught, such as those with 2,3,4,5,7,8,9,10,11,13,25,100,1000 etc. The problem with these criteria (very simple and easy to apply) is that they do not treat the phenomenon uniformly.

Thus, if at the criteria with 2, 5 or 10 (due to the decimal decomposition of the number) the problem is reduced to the investigation of its last digit, at those with 3 or with 9 it implies the sum of the digits. At the criteria of 7,11 or 13 the problem is already complicated.

However, there is, of course, the problem of determining divisibility criteria for other natural numbers (not necessarily prime numbers) which, especially in the case of very large numbers, can lead to infernal calculations.

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2. Determination Algorithm

Let N=$\overline{a_n a_{n-1} \dots a_1 a_0}$. We have N=$a_n 10^n + a_{n-1}10^{n-1} + \cdots + a_1 10 + a_0$.

Let also $p \in \mathbf{N}^*$ and $10^{p-1}<k<10^p$, $k \in \mathbf{N}^*$.

We will define, in the following, a recurring string $(c_n)_{n\geq p}$ through:

$c_p = k\left(1 + \left[\frac{10^p}{k}\right]\right) - 10^p$ where [a] represents the whole part of $a \in \mathbf{R}$.

How $\frac{10^p}{k} - 1 < \left[\frac{10^p}{k}\right] \leq \frac{10^p}{k}$ follows: $k\left(1 + \frac{10^p}{k} - 1\right) - 10^p < c_p \leq k\left(1 + \frac{10^p}{k}\right) - 10^p \Leftrightarrow 0 < c_p \leq k.$

Denoting with M_k an arbitrary multiple of k, we have: $10^p = M_k - c_p$.

We define it now, by recurrence:

$c_n = k\left(1 + \left[\frac{10c_{n-1}}{k}\right]\right) - 10c_{n-1}$, n>p

As above, how $\frac{10c_{n-1}}{k} - 1 < \left[\frac{10c_{n-1}}{k}\right] \leq \frac{10c_{n-1}}{k}$ we obtain:

$k\left(1 + \frac{10c_{n-1}}{k} - 1\right) - 10c_{n-1} < c_n \leq k\left(1 + \frac{10c_{n-1}}{k}\right) - 10c_{n-1} \Leftrightarrow 0 < c_n \leq k$

Because $c_n = M_k - 10c_{n-1}$ results for n=p+1: $c_{p+1} = M_k - 10c_p = M_k + 10^{p+1}$ or other: $10^{p+1} = M_k + c_{p+1}$.

Let P(n): $10^n = M_k + (-1)^{n-p+1}c_n$, n≥p.

Since P(p) is true, suppose that P(n) is true. We have $c_{n+1} = M_k - 10c_n = M_k - 10(-1)^{n-p+1}(10^n + M_k) = M_k + (-1)^{n-p+2}10^{n+1}$ therefore P(n+1) is true. Thus, $10^n = M_k + (-1)^{n-p+1}c_n$ ∀n≥p.

Let's define the string now (d_n), n≥p such that: $d_n = \left(c_n - \frac{k}{2}\right) - \frac{k}{2} sgn\left(c_n - \frac{k}{2}\right)$.

The definition shows:

- $c_n < \frac{k}{2} \Rightarrow d_n = c_n > 0$
- $c_n \geq \frac{k}{2} \Rightarrow d_n = c_n - k \leq 0$

Thus $d_n \in \left\{-\left[\frac{k}{2}\right], \dots, \left[\frac{k}{2}\right]\right\}$.

From the above relationships, we have:

- $d_n > 0 \Rightarrow c_n = d_n$
- $d_n \leq 0 \Rightarrow c_n = d_n + k$

In both cases, $c_n=d_n+M_k$.

On the other hand, how $c_n\in\{1,...,k\}$ $\forall n\geq p$ it follows that the string (c_n) is periodic.

So let's consider $c_q=c_r \Rightarrow d_q=\left(c_q-\frac{k}{2}\right)-\frac{k}{2}sgn\left(c_q-\frac{k}{2}\right)=\left(c_r-\frac{k}{2}\right)-\frac{k}{2}sgn\left(c_r-\frac{k}{2}\right)=d_r$ so the string (d_n) is also periodic.

If $c_q=k-c_r \Rightarrow d_q=\left(c_q-\frac{k}{2}\right)-\frac{k}{2}sgn\left(c_q-\frac{k}{2}\right)=\left(k-c_r-\frac{k}{2}\right)-\frac{k}{2}sgn\left(k-c_r-\frac{k}{2}\right)=\left(\frac{k}{2}-c_r\right)-\frac{k}{2}sgn\left(\frac{k}{2}-c_r\right)=-d_r$.

Definition

We define the direct divisibility vector as $v_{dir}(k)=(d_p,...,d_r;d_{r+1},...,d_s)$ if $d_{s+1}=d_{r+1}$ and the inverse divisibility vector as $v_{inv}(k)=(d_p,...,d_r;d_{r+1},...,d_s)$ if $d_{s+1}=-d_{r+1}$.

Let $\gamma=s-r$ be the length of the periodic string.

In the case of the direct vector, we have: $d_m=d_{m-\gamma\left[\frac{m-r-1}{\gamma}\right]}$, $m\geq r+1$, and in the case of the inverse: $d_m=(-1)^{\left[\frac{m-r-1}{\gamma}\right]}d_{m-\gamma\left[\frac{m-r-1}{\gamma}\right]}$, $m\geq r+1$.

So we have:

$N=\sum_{i=p}^{n}a_i10^i+\overline{a_{p-1}\dots a_0}=\sum_{i=p}^{n}a_i\left(M_k+(-1)^{i-p+1}c_i\right)+\overline{a_{p-1}\dots a_0}=$

$M_k+\sum_{i=p}^{n}(-1)^{i-p+1}a_id_i+\overline{a_{p-1}\dots a_0}=M_k+\sum_{i=p}^{r}(-1)^{i-p+1}a_id_i+\sum_{i=r+1}^{n}(-1)^{i-p+1}a_id_i+\overline{a_{p-1}\dots a_0}$.

We will add $a_{n+1}=0,...,a_u=0$ such that $u-r=M_\gamma$. We will assume, in order not to introduce additional notations, that n satisfies this condition.

If the vector is direct:

$N=M_k+\sum_{i=p}^{r}(-1)^{i-p+1}a_id_i+$

$(-1)^p\sum_{j=1}^{\frac{n-r}{\gamma}}\sum_{h=r+1}^{s}(-1)^{(j-1)\gamma+h+1}a_{(j-1)\gamma+h}d_h+\overline{a_{p-1}\dots a_0}$.

If the vector is inverse:

$N=M_k+\sum_{i=p}^{r}(-1)^{i-p+1}a_id_i+$

$(-1)^p\sum_{j=1}^{\frac{n-r}{\gamma}}(-1)^{j+1}\sum_{h=r+1}^{s}(-1)^{(j-1)\gamma+h+1}a_{(j-1)\gamma+h}d_h+\overline{a_{p-1}\dots a_0}$.

Thus:

- Calculate first (if appropriate): $\alpha_0=\sum_{i=p}^{r}(-1)^{i-p+1}a_i d_i=-a_p d_p + a_{p+1}d_{p+1} - \cdots + (-1)^{r-p+1}a_r d_r$
- It is then calculated:

$\alpha_1=(-1)^{r-p}(a_{r+1}d_{r+1} - a_{r+2}d_{r+2} + \cdots + (-1)^{s-r+1}a_s d_s)$

$\alpha_2=(-1)^{r+\gamma-p}(a_{s+1}d_{r+1} - a_{s+2}d_{r+2} + \cdots + (-1)^{s-r+1}a_{2s-r}d_s)$

$\alpha_3=(-1)^{r+2\gamma-p}(a_{2s-r+1}d_{r+1} - a_{s+2}d_{r+2} + \cdots + (-1)^{s-r+1}a_{2s-r}d_s)$

Finally:

- $N=M_k + \alpha_0 + (-1)^p\left(\alpha_1 + \alpha_2 + \cdots + \alpha_{\frac{n-r}{\gamma}}\right) + \overline{a_{p-1}\ldots a_0}$ – for the direct vector
- $N=M_k + \alpha_0 + (-1)^p\left(\alpha_1 - \alpha_2 + \cdots + (-1)^{\frac{n-r}{\gamma}+1}\alpha_{\frac{n-r}{\gamma}}\right) + \overline{a_{p-1}\ldots a_0}$ – for the inverse vector.

3 Application

Let k=37. We will consider p=2.

We have: $c_2 = 37\left(1+\left[\frac{100}{37}\right]\right) - 100=11 \Rightarrow d_2=11$

$c_3 = 37\left(1+\left[\frac{110}{37}\right]\right) - 110=1 \Rightarrow d_3=1$

$c_4 = 37\left(1+\left[\frac{10}{37}\right]\right) - 10=27 \Rightarrow d_4=-10$

$c_5 = 37\left(1+\left[\frac{270}{37}\right]\right) - 270=26 \Rightarrow d_5=-11$

$c_6 = 37\left(1+\left[\frac{260}{37}\right]\right) - 260=36 \Rightarrow d_6=-1$

$c_7 = 37\left(1+\left[\frac{360}{37}\right]\right) - 360=10 \Rightarrow d_7=10$

$c_8 = 37\left(1+\left[\frac{100}{37}\right]\right) - 100=11 \Rightarrow d_8=11$

It is therefore observed that the string (c_n) is periodic (confirming, by the way, the theory), and the string (d_n) is inversely periodic, that is: $d_5=-d_2$. Thus: $\gamma=5-2=3$, $r=1$, $s=4$.

From the above, it follows that the periodicity vector is inverse and has the expression: $v_{inv}(37)=(0;11,1,-10)$

Thus:

$$N=M_k+\sum_{j=1}^{\overline{\frac{n-1}{3}}}(-1)^{j+1}\sum_{h=2}^{4}(-1)^{3(j-1)+h+1}a_{3(j-1)+h}d_h+\overline{a_1a_0}=$$

$$M_k+\sum_{j=1}^{\overline{\frac{n-1}{3}}}(-1)^{j+1}\sum_{h=2}^{4}(-1)^{j+h}a_{3(j-1)+h}d_h+\overline{a_1a_0}=$$

$$M_k-\sum_{j=1}^{\overline{\frac{n-1}{3}}}\sum_{h=2}^{4}(-1)^{h}a_{3(j-1)+h}d_h+\overline{a_1a_0}=$$

$$M_k-\sum_{j=1}^{\overline{\frac{n-1}{3}}}\left(a_{3(j-1)+2}d_2-a_{3(j-1)+3}d_3+a_{3(j-1)+4}d_4\right)+\overline{a_1a_0}=$$

$$M_k-\sum_{j=1}^{\overline{\frac{n-1}{3}}}\left(11a_{3(j-1)+2}-a_{3(j-1)+3}-10a_{3(j-1)+4}\right)+\overline{a_1a_0}=$$

$$M_k-(11a_2-a_3-10a_4)-(11a_5-a_6-10a_7)-\cdots$$
$$-(11a_{n-2}-a_{n-1}-10a_n)+\overline{a_1a_0}$$

Specifically, either, for example: N=94931877133.

We have N=M_k-(11·1-7-10·7)-(11·8-1-10·3)-(11·9-4-10·9)+33=M_k+66-57-5+33=M_k+37 so N is divided by 37.

4 Some Divisibility Criteria

- **The criterion with 11**

p=2, $v_{dir}(11)=(0;-1)$ deci r=1,s=2,γ=s-r=1 $\Rightarrow$ $\alpha_1=-a_2d_2=a_2$, $\alpha_2=a_3d_2=-a_3$, $\alpha_3=-a_4d_2=a_4$ etc. from where: $N=M_{11}+(a_2-a_3+\cdots+(-1)^n a_n)+\overline{a_1a_0}$

Consider, for example: N=19487171.

We have: $N=M_{11}+(1-7+8-4+9-1)+71=M_{11}+6+71=M_{11}+77$ so $11\,|\,N$

- **The criterion with 13**

p=2, $v_{dir}(13)=(0;4,-1,-3)$ deci r=1,s=4,γ=3 $\Rightarrow$ $\alpha_1=-(a_2d_2-a_3d_3+a_4d_4)=-(4a_2+a_3-3a_4)$, $\alpha_2=(4a_5+a_6-3a_7)$, $\alpha_3=-(4a_8+a_9-3a_{10})$ etc.

from where: $N=M_{13}-(4a_2+a_3-3a_4)+(4a_5+a_6-3a_7)-(4a_8+a_9-3a_{10})+\cdots+\overline{a_1a_0}$

Consider, for example: N= 62748517.

We have: $N=M_{13}-(4\cdot5+8-3\cdot4)+(4\cdot7+2-3\cdot6)+17=M_{13}$-16+12+17=$M_{13}$+13 so $13\,|\,N$

- **The criterion with 17**

p=2, $v_{inv}(17)=(0;2,-3,-4,6,8,5,1,7)$ deci r=1,s=9,γ=8 $\Rightarrow$ $\alpha_1=-(a_2d_2-a_3d_3+a_4d_4-a_5d_5+a_6d_6-a_7d_7+a_8d_8-a_9d_9)=-(2a_2+3a_3-4a_4-6a_5+8a_6-5a_7+a_8-7a_9)$, $\alpha_2=-(2a_{10}+3a_{11}-4a_{12}-6a_{13}+8a_{14}-5a_{15}+a_{16}-7a_{17})$ etc. from where:

$N=M_{17}-(2a_2+3a_3-4a_4-6a_5+8a_6-5a_7+a_8-7a_9)+(2a_{10}+3a_{11}-4a_{12}-6a_{13}+8a_{14}-5a_{15}+a_{16}-7a_{17})-\cdots+\overline{a_1a_0}$

Consider, for example: N=410338673.

We have: $N=M_{17}-(2\cdot 6+3\cdot 8-4\cdot 3-6\cdot 3+8\cdot 0-5\cdot 1+4)+73=M_{17}-5+73=M_{17}+68$ so $17\vert N$.

- **The criterion with 9091**

p=4, $v_{dir}(9091)=(0;-909,-1,10,-100,1000)$ deci r=3,s=8,γ=5 $\Rightarrow$

$\alpha_1=-(a_4d_4-a_5d_5+a_6d_6-a_7d_7+a_8d_8)=-(-909a_4+a_5+10a_6+100a_7+1000a_8)=$

$(909a_4-a_5-10a_6-100a_7-1000a_8)$, $\alpha_2=-(909a_9-a_{10}-10a_{11}-100a_{12}-1000a_{13})$ etc.

from where: $N=M_{9091}+(909a_4-a_5-10a_6-100a_7-1000a_8)-(909a_9-a_{10}-10a_{11}-100a_{12}-1000a_{13})+\cdots+\overline{a_3a_2a_1a_0}$

Consider, for example: N= 513194040376632914213151873 1.

We have: $N=M_{9091}+(909\cdot 1-5-10\cdot 1-100\cdot 3-1000\cdot 1)-(909\cdot 2-4-10\cdot 1-100\cdot 9-1000\cdot 2)+(909\cdot 3-6-10\cdot 6-100\cdot 7-1000\cdot 3)-(909\cdot 0-4-10\cdot 0-100\cdot 4-1000\cdot 9)+(909\cdot 1-3-10\cdot 1-100\cdot 5-1000\cdot 0)+8731=M_{9091}-406+1096-1039+9404+396+8731=M_{9091}+18182$ so $9091\vert N$.

5 References

Ioan C.A. (2019). *Mathematics. Revised edition*. Galati: Zigotto Publishing House.

Annex

Divisibility criteria with prime numbers between 11 and 999

The divisibility criterion with 11

p=2, r=1, s=2, □=1, v_{dir}=□0;−1□

The divisibility criterion with 13

p=2, r=1, s=4, □=3, v_{dir}=□0;4,−1,−3□

The divisibility criterion with 17

p=2, r=1, s=9, □=8, v_{inv}=□0;2,−3,−4,6,8,5,1,7□

The divisibility criterion with 19

p=2, r=1, s=10, □=9, v_{dir}=□0;−5,−7,−6,3,8,−4,2,−1,−9□

The divisibility criterion with 23

p=2, r=1, s=12, □=11, v_{dir}=□0;−8,11,5,−4,−6,−9,−2,−3,7,−1,10□

The divisibility criterion with 29

p=2, r=1, s=15, □=14, v_{inv}=□0;−13,14,5,8,7,−12,4,−11,−6,2,9,−3,1,−10□

The divisibility criterion with 31

p=2, r=1, s=16, □=15, v_{inv}=□0;−7,8,13,−6,−2,−11,−14,−15,−5,−12,−4,9,3,1,−10□

The divisibility criterion with 37

p=2, r=1, s=4, □=3, v_{inv}=□0;11,1,−10□

The divisibility criterion with 41

p=2, r=1, s=6, □=5, v_{inv}=□0;−18,16,4,1,−10□

The divisibility criterion with 43

p=2, r=1, s=22, □=21,

v_{inv}=□0;−14,11,19,−18,8,6,−17,−2,20,15,−21,−5,7,16,12,9,−4,−3,−13,1,−10□

The divisibility criterion with 47

p=2, r=1, s=24, □=23,

v_{dir}=□0;−6,13,11,−16,19,−2,20,−12,−21,22,15,−9,−4,−7,23,5,−3,−17,−18,−8,−14,−1,10□

The divisibility criterion with 53

p=2, r=1, s=14, □=13, v_{inv}=□0;6,−7,17,−11,4,13,−24,−25,−15,−9,−16,1,−10□

The divisibility criterion with 59

p=2, r=1, s=30, □=29,

v_{dir}=□0;18,−3,−29,−5,−9,−28,−15,−27,−25,14,−22,−16,−17,−7,11,8,−21,−26,24,−4,−19,13,−12

,2,−20,23,6,−1,10□

The divisibility criterion with 61

p=2, r=1, s=31, □=30,

v_{inv}=□0;22,24,4,21,−27,26,−16,−23,−14,18,3,−30,−5,−11,−12,−2,20,−17,−13,8,−19,7,−9,29,

15,−28,−25,6,1,−10□

The divisibility criterion with 67

p=2, r=1, s=34, □=33,

v_{inv}=□0;−33,−5,−17,−31,−25,−18,−21,9,−23,29,−22,19,11,24,28,−12,−14,6,7,−3,30,−32,−15,16,−26,−8,13,4,27,−2,20,1,−10□

The divisibility criterion with 71

p=2, r=1, s=36, □=35,

v_{inv}=□0;−29,6,11,32,35,5,21,3,−30,16,−18,−33,−25,−34,−15,8,−9,19,23,−17,28,4,31,−26,−24,27,14,2,−20,−13,−12,−22,7,1,−10□

The divisibility criterion with 73

p=2, r=1, s=5, □=4, v_{inv}=□0;−27,−22,1,−10□

The divisibility criterion with 79

p=2, r=1, s=14, □=13, v_{inv}=□0;−21,−27,33,−14,−18,22,17,−12,−38,−15,−8,1,−10□

The divisibility criterion with 83

p=2, r=1, s=42, □=41,

v_{inv}=□0;−17,4,−40,−15,−16,−6,−23,−19,24,9,−7,−13,−36,28,−31,−22,−29,41,5,33,2,−20,34,−8,−3,30,32,12,−37,38,35,−18,14,26,−11,27,−21,−39,−25,1,−10□

The divisibility criterion with 89

p=2, r=1, s=23, □=22,

v_{inv}=□0;−11,21,−32,−36,4,−40,44,5,39,−34,−16,−18,2,−20,22,−42,−25,−17,−8,−9,1,−10□

The divisibility criterion with 97

p=2, r=1, s=49, □=48,

v_{inv}=□0;−3,30,−9,−7,−27,−21,16,34,48,5,47,15,44,45,35,38,8,17,24,−46,−25,−41,22,−26,−31,19,4,−40,12,−23,36,28,11,−13,33,−39,2,−20,6,37,18,14,−43,42,−32,29,1,−10□

The divisibility criterion with 101

p=3, r=1, s=3, □=2, v_{inv}=□0;10,1□

The divisibility criterion with 103

p=3, r=1, s=18, □=17, v_{dir}=□0;30,9,13,−27,−39,−22,14,−37,−42,8,23,−24,34,−31,1,−10,−3□

The divisibility criterion with 107

p=3, r=1, s=54, □=53,

v_{inv}=□0;−37,49,45,−22,6,47,−42,−8,−27,−51,−25,36,−39,−38,−48,52,15,−43,2,−20,−14,33,−9,−17,−44,12,−13,23,−16,53,5,−50,−35,29,31,11,−3,30,21,4,−40,−28,−41,−18,−34,19,24,−26,46,−32,−1,10,7□

The divisibility criterion with 109

p=3, r=1, s=55, □=54,

v_{inv}=□0;−19,−28,−47,34,−13,21,8,29,37,−43,−6,−49,54,5,−50,−45,14,−31,−17,−48,44,−4,40,

36,−33,3,−30,−27,52,25,−32,−7,−39,−46,24,−22,2,−20,−18,−38,53,15,−41,−26,42,16,−51,−35,23,−12,11,−1,10,9□

The divisibility criterion with 113

p=3, r=1, s=57, □=56,

v_{inv}=□0;17,56,5,−50,48,−28,54,25,−24,14,−27,44,12,−7,−43,−22,−6,−53,−35,11,3,−30,−39,51,55,15,−37,31,29,49,−38,41,42,32,19,36,−21,−16,47,−18,−46,8,33,9,23,−4,40,52,45,2,−20,−26,34,−1,10,13□

The divisibility criterion with 127

p=3, r=1, s=22, □=21,

v_{dir}=□0;16,−33,−51,2,−20,−54,32,61,25,4,−40,19,−63,−5,50,8,47,38,1,−10,−27□

The divisibility criterion with 131

p=3, r=1, s=66, □=65,

v_{dir}= 0;48,44,−47,−54,16,−29,28,−18,49,34,53,−6,60,55,−26,−2,20,62,35,43,−37,−23,−32,58,−56,36,33,63,25,12,11,21,52,4,−40,7,61,45,−57,46,64,15,−19,59,65,5,−50,−24,−22,−42,27,−8,−51,−14,9,41,−17,39,3,−30,38,13,1,−10,−31

The divisibility criterion with 137

p=3, r=1, s=5, =4, v_{inv}= 0;−41,−1,10,37

The divisibility criterion with 139

p=3, r=1, s=24, =23,

v_{dir}= 0;−27,−8,−59,34,−62,64,55,6,−60,44,−23,−48,63,65,45,−33,52,36,57,−14,1,−10,−39

The divisibility criterion with 149

p=3, r=1, s=75, =74,

v_{inv}= 0;43,17,−21,61,−14,−9,−59,−6,60,−4,40,47,−23,−68,−65,54,56,36,−62,24,58,16,−11,−39,−57,−26,−38,−67,74,5,−50,53,66,−64,44,7,−70,−45,3,−30,2,−20,51,−63,34,−42,−27,−28,−18,31,−12,−29,−8,−69,−55,−46,13,19,−41,−37,72,25,48,−33,32,−22,71,35,−52,73,15,−1,10,49

The divisibility criterion with 151

p=3, r=1, s=76, =75,

v_{inv}= 0;57,34,−38,−73,−25,−52,67,−66,56,44,13,21,−59,−14,−11,−41,−43,−23,−72,−35,48,−27,−32,18,−29,−12,−31,8,71,45,3,−30,−2,20,−49,37,−68,−75,−5,50,−47,17,−19,39,63,−26,−42,−33,28,22,−69,−65,46,−7,70,55,54,64,−36,58,24,62,−16,9,61,−6,60,4,−40,−53,−74,−15,−1,10,

51

The divisibility criterion with 157

p=3, r=1, s=40, =39,

v_{dir}= 0;−58,−48,9,67,−42,−51,39,−76,−25,−64,12,37,−56,−68,52,−49,19,−33,16,−3,30,14,17,

−13,−27,−44,−31,−4,40,71,75,35,−36,46,11,47,1,−10,−57

The divisibility criterion with 163

p=3, r=1, s=82, =81,

v_{inv}= 0;−22,57,−81,−5,50,−11,−53,41,79,25,76,55,−61,−42,−69,38,−54,51,−21,47,19,−27,−56,71,−58,−72,68,−28,−46,−29,−36,34,−14,−23,67,−18,17,−7,70,−48,−9,−73,78,35,−24,77,45,39,−64,−12,−43,−59,−62,−32,−6,60,52,−31,−16,−3,30,26,66,−8,80,15,13,33,−4,40,−74,−75,−65,−2,20,−37,44,49,−1,10,63

The divisibility criterion with 167

p=3, r=1, s=84, □=83,

v_{dir}=□0;2,−20,33,4,−40,66,8,−80,−35,16,7,−70,32,14,27,64,28,54,−39,56,−59,−78,−55,49,11,57,−69,22,−53,29,44,61,58,−79,−45,−51,9,77,65,18,−13,−37,36,−26,−74,72,−52,19,−23,63,38,−46,−41,76,75,−82,−15,−17,3,−30,−34,6,−60,−68,12,47,31,24,−73,62,48,21,−43,−71,42,81,25,−83,−5,50,1,−10,−67□

The divisibility criterion with 173

p=3, r=1, s=44, □=43,

v_{inv}=□0;38,−34,−6,60,−81,−55,31,36,−14,−33,−16,−13,−43,84,25,−77,78,85,15,23,−57,51,9,83,35,−4,40,−54,21,−37,24,−67,−22,47,49,29,56,−41,64,52,−1,10,73□

The divisibility criterion with 179

p=3, r=1, s=90, □=89,

v_{dir}=□0;74,−24,61,−73,14,39,−32,−38,22,−41,52,17,9,89,5,−50,−37,12,59,−53,−7,70,16,19,−11,−69,−26,81,85,45,87,25,−71,−6,60,−63,−86,−35,−8,80,−84,−55,13,49,47,67,46,77,−54,3,−30,−58,43,−72,4,−40,42,−62,83,65,66,56,−23,51,27,88,15,29,68,36,−2,20,−21,31,48,57,−33,−28,−78,64,76,−44,82,75,−34,−18,1,−10,−79□

The divisibility criterion with 181

p=3, r=1, s=91, □=90,

v_{inv}=□0;86,45,−88,−25,69,34,22,−39,28,82,85,55,−7,70,24,−59,47,73,−6,60,−57,27,−89,−15,−31,−52,−23,49,53,13,51,33,32,42,−58,37,−8,80,−76,36,2,−20,19,−9,90,5,−50,−43,68,44,−78,56,−17,−11,−71,−14,−41,48,63,−87,−35,−12,−61,67,54,3,−30,−62,77,−46,−83,−75,26,−79,66,64,84,65,74,−16,−21,29,72,4,−40,38,−18,−1,10,81□

The divisibility criterion with 191

p=3, r=1, s=96, □=95,

v_{inv}=□0;−45,68,84,−76,−4,40,−18,−11,−81,46,−78,16,31,72,44,−58,7,−70,−64,67,94,15,41,−28,89,65,−77,6,−60,27,−79,26,−69,−74,−24,49,83,−66,87,85,−86,−95,−5,50,73,34,42,−38,−2,20,−9,90,55,23,−39,8,−80,36,22,−29,−92,−35,−32,−62,47,−88,−75,−14,−51,−63,57,3,−30,−82,56,13,61,−37,−12,−71,−54,−33,−52,−53,−43,48,93,25,−59,17,21,−19,−1,10,91□

The divisibility criterion with 193

p=3, r=1, s=97, □=96,

v_{inv}=□0;−35,−36,−26,67,−91,−55,−29,−96,−5,50,79,−18,−13,−63,51,69,82,−48,94,25,−57,−9,90,65,−71,−62,41,−24,47,−84,68,92,45,−64,61,−31,−76,−12,−73,−42,3

4,46,−74,−32,−66,81,−38,−6,60,−21,17,23,−37,−16,−33,−56,−19,−3,30,86,−88,−85,78,−8,80,−28,87,95,15,43,−44,54,39,−4,40,−14,−53,−49,−89,−75,−22,27,−77,−2,20,−7,70,72,52,59,−11,−83,58,−1,10,93□

The divisibility criterion with 197

p=3, r=1, s=50, □=49,

v_{dir}=□0;−15,−47,76,28,−83,42,−26,63,−39,−4,40,−6,60,−9,90,85,−62,29,−93,−55,−41,16,37,24,−43,36,34,54,51,81,−22,23,−33,−64,49,−96,−25,53,61,−19,−7,70,88,−92,−65,59,1,−10,−97□

The divisibility criterion with 199

p=3, r=1, s=100, □=99,

v_{inv}=□0;−5,50,97,25,−51,−87,74,56,37,28,−81,14,59,7,−70,−96,−35,−48,82,−24,41,−12,−79,−6,60,−3,30,98,15,49,−92,−75,−46,62,−23,31,88,−84,44,−42,22,−21,11,89,−94,−55,−47,72,76,36,38,18,19,9,−90,−95,−45,52,77,26,−61,13,69,−93,−65,53,67,−73,−66,63,−33,−68,83,−34,−58,−17,−29,91,85,−54,−57,−27,71,86,−64,43,−32,−78,−16,−39,−8,80,−4,40,−2,20,−1,10,99□

The divisibility criterion with 211

p=3, r=1, s=16, □=15,
v_{dir}=□0;55,83,14,71,−77,−74,−104,−15,−61,−23,19,21,1,−10,100□

The divisibility criterion with 223

p=3, r=1, s=112, □=111,

v_{dir}=□0;−108,−35,−96,68,−11,110,15,73,−61,−59,−79,−102,−95,58,89,2,−20,−23,7,−70,31,−87,−22,−3,30,−77,101,105,65,19,33,−107,−45,4,−40,−46,14,83,62,49,−44,−6,60,69,−21,−13,−93,38,66,9,−90,8,−80,−92,28,−57,−99,98,−88,−12,−103,−85,−42,−26,37,76,−91,18,43,16,63,39,56,109,25,−27,47,−24,17,53,−84,−52,74,−71,41,36,86,32,−97,78,−111,−5,50,−54,94,−48,34,106,55,−104,−75,81,82,72,−51,64,29,−67,1,−10,100□

The divisibility criterion with 227

p=3, r=1, s=114, □=113,

v_{inv}=□0;−92,12,107,65,31,−83,−78,99,−82,−88,−28,53,−76,79,−109,−45,−4,40,54,−86,−48,26,−33,103,105,85,58,101,−102,112,15,77,−89,−18,−47,16,67,11,−110,−35,−104,−95,42,34,−113,−5,50,−46,6,−60,−81,−98,72,−39,−64,−41,−44,−14,−87,−38,−74,59,91,−2,20,27,−43,−24,13,97,−62,−61,−71,29,−63,−51,56,−106,−75,69,−9,90,8,−80,−108,−55,96,−52,66,21,17,57,111,25,−23,3,−30,73,−49,36,94,−32,93,−22,−7,70,−19,−37,−84,−68,−1,10,−100□

The divisibility criterion with 229

p=3, r=1, s=115, □=114,

v_{inv}=□0;−84,−76,73,−43,−28,51,−52,62,67,17,59,97,−54,82,96,−44,−18,−49,32,−91,−6,60,87,46,−2,20,29,−61,−77,83,86,56,−102,104,105,95,−34,111,35,108,65,37,88,36,98,−64,−47,12,109,55,−92,4,−40,−58,−107,−75,63,57,−112,−25,21,19,39,68,7,−70,13,99,−74,53,−72,33,−101,94,−24,11,−110,−45,−8,80,−113,−15,−79,103,−114,−5,50,−42,−38,−78,93,−14,−89,−26,31,−81,−106,−85,−66,−27,41,48,−22,−9,90,16,69,−3,30,−71,23,−1,10,−100□

The divisibility criterion with 233

p=3, r=1, s=117, □=116,v_{inv}=□0;−68,−19,−43,−36,−106,−105,−115,−15,−83,−102,88,52,−54,74,−41,−56,94,−8,80,−101,

78,−81,111,55,−84,−92,−12,−113,−35,−116,−5,50,−34,107,95,−18,−53,64,59,109,75,−51,44,26,−27,37,96,−28,47,−4,40,66,39,76,−61,−89,−42,−46,−6,60,99,−58,114,25,−17,−63,−69,−9,90,32,−87,−62,−79,91,22,13,103,−98,48,−14,−93,−2,20,33,−97,38,86,72,−21,−23,−3,30,−67,−29,57,−104,108,85,82,112,45,16,73,−31,77,−71,11,−110,−65,−49,24,−7,70,−1,10,−100□

The divisibility criterion with 239

p=3, r=1, s=8, □=7, v_{inv}=□0;−44,−38,−98,24,−1,10,−100□

The divisibility criterion with 241

p=3, r=1, s=16, □=15, v_{dir}=□0;−36,119,15,91,54,−58,98,−16,−81,87,94,24,1,−10,100□

The divisibility criterion with 251

p=3, r=1, s=26, □=25,

v_{dir}=□0;4,−40,−102,16,91,94,64,113,125,5,−50,−2,20,51,−8,80,−47,−32,69,63,123,25,1,−10,

100□

The divisibility criterion with 257

p=3, r=1, s=129, □=128,

v_{inv}=□0;28,−23,−27,13,127,15,107,−42,−94,−88,109,−62,106,−32,63,−116,−125,−35,93,98,48,34,−83,59,−76,−11,110,−72,−51,−4,40,114,−112,92,108,−52,6,−60,86,−89,119,95,78,−9,90,128,5,−50,−14,−117,−115,122,65,121,75,21,47,44,74,31,−53,16,97,58,−66,−111,82,−49,−24,−17,−87,99,38,−123,−55,36,−103,2,−20,−57,56,−46,−54,26,−3,30,−43,−84,69,81,−39,−124,−45,

−64,126,25,7,−70,−71,−61,96,68,91,118,105,−22,−37,113,−102,−8,80,−29,33,−73,−41,−104,12,−120,−85,79,−19,−67,−101,−18,−77,−1,10,−100□

The divisibility criterion with 263

p=3, r=1, s=132, □=131,

v_{dir}=□0;52,6,−60,74,49,36,−97,−82,31,−47,−56,34,−77,−19,−73,−59,64,−114,88,−91,121,105,2,−20,−63,104,12,−120,−115,98,72,69,99,62,−94,−112,68,109,−38,117,−118,128,35,−87,81,−21,−53,4,−40,−126,−55,24,23,33,−67,−119,−125,−65,124,75,39,−127,−45,−76,−29,27,−7,70,89,−101,−42,−106,8,−80,11,−110,48,46,66,129,25,13,−130,−15,−113,78,9,−90,111,−58,54,−14,−123,−85,61,−84,51,16,103,22,43,96,92,−131,−5,50,26,3,−30,37,−107,18,83,−41,−116,108,−28,17,93,122,95,102,32,−57,44,86,−71,−79,1,−10,100□

The divisibility criterion with 269

p=3, r=1, s=135, □=134,

v_{inv}=□0;76,47,68,127,75,57,−32,51,28,−11,110,−24,−29,21,59,−52,−18,−89,83,−23,−39,121,−134,−5,50,38,−111,34,−71,−97,−106,−16,−109,14,129,55,−12,120,−124,−105,−26,−9,90,−93,123,115,−74,−67,132,25,19,79,17,99,86,−53,−8,80,7,−70,−107,−6,60,−62,82,−13,130,45,88,−73,−77,−37,101,66,−122,−125,−95,−126,−85,43,108,−4,40,−131,−35,81,−3,30,−31,41,128,65,−112,44,98,96,116,−84,33,−61,72,87,−63,92,−113,54,−2,20,69,117,−94,133,15,119,−114,64,−102,−56,22,49,48,58,−42,−118,104,36,−91,103,46,78,27,−1,10,−100□

The divisibility criterion with 271

p=3, r=1, s=6, □=5, v_{inv}=□0;84,−27,−1,10,−100□

The divisibility criterion with 277

p=3, r=1, s=70, γ=69,

v_{inv}=(0;108,28,−3,30,−23,−47,−84,9,−90,69,−136,−25,−27,−7,70,131,75,81,21,67,−116,52,34,−63,76,71,121,−102,−88,49,64,−86,29,−13,130,85,−19,−87,39,−113,22,57,−16,−117,62,−66,106,48,74,91,−79,−41,133,55,4,−40,123,−122,112,−12,120,−92,89,−59,36,−83,−1,10,−100)

The divisibility criterion with 281

p=3, r=1, s=15, γ=14, v_{inv}=(0;124,−116,36,−79,−53,−32,39,−109,−34,59,−28,−1,10,−100)

The divisibility criterion with 283

p=3, r=1, s=142, γ=141,

v_{inv}=(0;132,95,−101,−122,88,−31,27,13,−130,−115,18,103,102,112,12,−120,68,−114,8,−80,−49,−76,−89,41,−127,138,35,−67,104,92,−71,−139,−25,−33,47,96,−111,−22,−63,64,−74,−109,−42,137,45,116,−28,−3,30,−17,−113,−2,20,83,19,93,−81,−39,107,62,−54,−26,−23,−53,−36,77,79,59,−24,−43,−136,−55,−16,−123,98,−131,−105,−82,−29,7,−70,134,75,99,−141,−5,50,66,−94,91,−61,44,126,−128,−135,−65,84,9,−90,51,56,6,−60,34,−57,4,−40,117,−38,97,−121,78,69,−124,108,52,46,106,72,129,125,−118,48,86,−11,110,32,−37,87,−21,−73,−119,58,−14,140,15,133,85,−1,10,−100)

The divisibility criterion with 293

p=3, r=1, s=74, γ=73,

v_{dir}=(0;−121,38,−87,−9,90,−21,−83,−49,−96,81,69,−104,−132,−145,−15,−143,−35,57,16,133,135,115,22,73,−144,−25,−43,137,95,−71,124,−68,94,−61,24,53,56,26,33,−37,77,109,82,59,−4,40,−107,−102,141,55,36,−67,84,39,−97,91,−31,17,123,−58,−6,60,−14,140,65,−64,54,46,126,−88,1,−10,100)

The divisibility criterion with 307

p=3, r=1, s=154, γ=153,

v_{inv}=(0;−79,−131,82,101,−89,−31,3,−30,−7,70,−86,−61,−4,40,−93,9,−90,−21,−97,49,124,−12,120,28,27,37,−63,16,147,65,−36,53,84,81,111,118,48,134,−112,−108,−148,−55,−64,26,47,144,95,−29,−17,−137,142,115,78,141,125,−22,−87,−51,−104,119,38,−73,116,68,−66,46,−153,−5,50,114,88,41,−103,109,138,−152,−15,150,35,−43,123,−2,20,107,−149,−45,143,105,−129,62,−6,60,14,−140,−135,122,8,−80,−121,−18,−127,42,−113,−98,59,24,67,−56,−54,−74,126,−32,13,−130,72,−106,139,145,85,71,−96,39,−83,−91,−11,110,128,−52,−94,19,117,58,34,−33,23,77,151,25,57,44,−133,102,−99,69,−76,146,75,−136,132,−92,−1,10,−100)

The divisibility criterion with 311

p=3, r=1, s=156, γ=155,

v_{inv}=(0;−67,48,142,135,−106,127,−26,−51,−112,−124,−4,40,−89,−43,119,54,82,113,114,104,−107,137,−126,16,151,45,−139,146,95,−17,−141,−145,−105,117,74,−118,−64,18,131,−66,38,−69,68,−58,−42,109,154,15,−150,−55,−72,98,−47,−152,−35,39,−79,−143,−125,6,−60,−22,−91,−23,−81,−123,−14,140,155,5,−50,−122,−24,−71,88,53,92,13,−130,56,62,2,−20,−111,−134,96,−27,−41,99,−57,−52,−102,87,63,−8,80,133,−86,−73,108,−147,−85,−83,−103,97,−37,59,32,−9,90,33,−19,−121,−34,29,21,101,−77,148,75,−128,36,−49,−132,76,−138,136,−116,−84,−93,−3,30,11,−110,−144,−115,−94,7,−70,78,153,25,61,12,−120,−44,129,−46,149,65,−28,−31,−1,10,−100)

The divisibility criterion with 313

p=3, r=1, s=157, γ=156,

v_{inv}=(0;−61,−16,−153,−35,37,−57,−56,−66,34,−27,−43,117,82,119,62,6,−60,−26,−53,−96,21,103,−91,−29,−23,−83,−109,151,55,76,−134,88,59,36,−47,−156,−5,50,126,−8,80,139,−138,128,−28,−33,17,143,135,−98,41,−97,31,3,−30,−13,130,−48,−146,−105,111,142,145,115,102,−81,−129,38,−67,44,−127,18,133,−78,154,25,63,−4,40,−87,−69,64,−14,140,−148,−85,−89,−49,−136,108,−141,−155,−15,150,65,−24,−73,104,−101,71,−84,−99,51,116,92,19,123,22,93,9,−90,−39,77,−144,−125,−2,20,113,122,32,−7,70,−74,114,112,132,−68,54,86,79,149,75,−124,−12,120,52,106,−121,−42,107,−131,58,46,−147,−95,11,−110,−152,−45,137,−118,−72,94,−1,10,−100)

The divisibility criterion with 317

p=3, r=1, s=80, γ=79,

v_{inv}=(0;−49,−144,−145,−135,82,131,−42,103,−79,156,25,67,−36,43,−113,−138,112,148,105,−99,39,−73,96,−9,90,51,124,28,37,−53,−104,89,61,24,77,−136,92,31,7,−70,66,−26,−57,−64,6,−60,−34,23,87,81,141,−142,152,65,−16,−157,−15,150,85,101,−59,−44,123,38,−63,−4,40,−83,−121,−58,−54,−94,−11,110,−149,−95,−1,10,−100)

The divisibility criterion with 331

p=3, r=1, s=56, γ=55,

v_{dir}=(0;−7,70,−38,49,−159,−65,−12,120,124,84,153,125,74,−78,118,144,−116,−164,−15,150,155,105,−57,−92,−73,68,−18,−151,−145,126,64,22,111,−117,−154,−115,157,85,143,−106,67,−8,80,−138,56,102,−27,−61,−52,−142,96,33,1,−10,100)

The divisibility criterion with 337

p=3, r=1, s=169, γ=168,

v_{inv}=(0;11,−110,89,121,138,−32,−17,−167,−15,150,−152,−165,−35,13,−130,−48,143,−82,146,−112,109,−79,116,−149,142,−72,46,−123,−118,−168,−5,50,−163,−55,−124,−108,69,−16,160,85,161,75,−76,86,151,−162,−65,−24,−97,−41,73,−56,−114,129,58,94,71,−36,23,107,−59,−84,166,25,87,141,−62,−54,−134,−8,80,−126,−88,−131,−38,43,−93,−81,136,−12,120,148,−132,−28,−57,−104,29,47,−133,−18,−157,−115,139,−42,83,−156,−125,−98,−31,−27,−67,−4,40,−63,−44,103,−19,−147,122,128,68,−6,60,74,−66,−14,140,−52,−154,−145,102,−9,90,111,−99,−21,−127,−78,106,−49,153,155,135,−2,20,137,−22,−117,159,95,61,64,34,−3,30,37,−33,−7,70,−26,−77,96,51,164,45,−113,119,158,105,−39,53,144,−92,−91,−101,−1,10,−100)

The divisibility criterion with 347

p=3, r=1, s=174, γ=173,

v_{inv}=(0;41,−63,−64,−54,−154,152,−132,−68,−14,140,−12,120,−159,−145,62,74,−46,113,−89,−151,122,168,55,144,−52,173,5,−50,153,−142,32,27,77,−76,66,34,7,−70,6,−60,−94,−101,−31,−37,23,117,−129,−98,−61,−84,146,−72,26,87,171,25,97,71,−16,160,135,38,−33,−17,170,35,−3,30,47,−123,−158,−155,162,115,−109,49,−143,42,−73,36,−13,130,88,161,125,138,8,−80,106,−19,−157,−165,−85,156,−172,−15,150,−112,79,−96,−81,116,−119,149,−102,−21,−137,−18,−167,−65,−44,93,111,−69,−4,40,−53,−164,−95,−91,−131,−78,86,−166,−75,56,134,48,−133,−58,−114,99,51,−163,−105,9,−90,−141,22,127,118,−139,2,−20,−147,82,−126,−128,−108,39,−43,83,−136,−28,−67,−24,−107,29,57,124,148,−92,−121,169,45,−103,−11,110,−59,−104,−1,10,−100)

The divisibility criterion with 349

p=3, r=1, s=59, γ=58,

v_{inv}=(0;47,−121,163,115,−103,−17,170,45,−101,−37,21,139,6,−60,−98,−67,−28,−69,−8,80,−102,−27,−79,92,127,126,136,36,−11,110,−53,−168,−65,−48,131,86,−162,−125,−146,64,58,118,−133,−66,−38,31,39,−41,61,88,167,75,−52,171,35,−1,10,−100)

The divisibility criterion with 353

p=3, r=1, s=17, γ=16,
v_{inv}=(0;59,116,−101,−49,137,42,−67,−36,7,−70,−6,60,106,−1,10,−100)

The divisibility criterion with 359

p=3, r=1, s=180, γ=179,

v_{inv}=(0;77,−52,161,−174,−55,−168,−115,73,−12,120,−123,153,−94,−137,−66,−58,−138,−56,−158,144,−4,40,−41,51,−151,74,−22,−139,−46,101,67,48,−121,133,106,17,−170,−95,−127,−166,−135,−86,142,16,−160,164,155,−114,63,88,−162,−175,−45,91,167,125,−173,−65,−68,−38,21,149,−54,−178,−15,150,−64,−78,62,98,97,107,7,−70,−18,−179,−5,50,−141,−26,−99,−87,152,−84,122,−143,−6,60,118,−103,−47,111,−33,−29,−69,−28,−79,72,−2,20,159,−154,104,37,−11,110,−23,−129,−146,24,119,−113,53,−171,−85,132,116,−83,112,−43,71,8,−80,82,−102,−57,−148,44,−81,92,157,−134,−96,−117,93,147,−34,−19,−169,−105,−27,−89,172,75,−32,−39,31,49,−131,−126,−176,−35,−9,90,177,25,109,−13,130,136,76,−42,61,108,−3,30,59,128,156,−124,163,165,145,−14,140,36,−1,10,−100)

The divisibility criterion with 367

p=3, r=1, s=184, γ=183,

v_{dir}=(0;101,91,−176,−75,16,−160,132,148,−12,120,−99,−111,9,−90,166,175,85,−116,59,144,28,87,−136,−108,−21,−157,102,81,−76,26,107,31,57,164,−172,−115,49,−123,129,178,55,−183,−5,50,−133,−138,−88,146,8,−80,66,74,−6,60,134,128,−179

,−45,83,−96,−141,−58,−154,72,14,−140,−68,−54,173,105,51,−143,−38,13,−130,−168,−155,82,−86,126,−159,122,−119,89,−156,92,181,25,117,−69,−44,73,4,−40,33,37,−3,30,67,64,94,161,−142,−48,113,−29,−77,36,7,−70,−34,−27,−97,−131,−158,112,−19,−177,−65,−84,106,41,−43,63,104,61,124,−139,−78,46,−93,−171,−125,149,−22,−147,2,−20,−167,−165,182,15,−150,32,47,−103,−71,−24,−127,169,145,18,−180,−35,−17,170,135,118,−79,56,174,95,151,−42,53,−163,162,−152,52,−153,62,114,−39,23,137,98,121,−109,−11,110,1,−10,100)

The divisibility criterion with 373

p=3, r=1, s=94, γ=93,

v_{dir}=(0;119,−71,−36,−13,130,−181,−55,177,95,169,175,115,−31,−63,−116,41,−37,−3,30,73,16,−160,108,39,−17,170,165,−158,88,−134,−152,28,93,−184,−25,−123,111,9,−90,154,−48,107,49,−117,51,−137,−122,101,109,29,83,−84,94,179,75,−4,40,−27,−103,−89,144,52,−147,−22,−153,38,−7,70,46,−87,124,−121,91,−164,148,12,−120,81,−64,−106,−59,−156,68,66,86,−114,21,163, −138,−112,1,−10,100)

The divisibility criterion with 379

p=3, r=1, s=190, γ=189,

v_{dir}=(0;137,146,56,−181,−85,92,−162,104,97,167,−154,24,139,126,−123,93,−172,−175,−145,−66,−98,−157,54,−161,94,−182,−75,−8,80,−42,41,−31,−69,−68,−78,22,159,−74,−18,180,95,187,25,129,−153,14,−140,−116,23,149,26,119,−53,151,6,−60,−158,64,118,−43,51,−131,173,165,−134,−176,−135,−166,144,76,−2,20,179,105,87,−112,−17,170,−184,−55,171,185,45,−71,−48,101,127,−133,−186,−35,−29,−89,132,−183,−65,−108,−57,−188,−15,150,16,−160,84,−82,62,138,136,156,−44,61,148,36,19,189,5,−50,121,−73,−28,−99,−147,−46,81,−52,141,106,77,−12,120,−63,−128,143,86,−102,−117,33,49,−111,−27,−109,−47,91,−152,4,−40,21,169,−174,−155,34,39,−11,110,37,9,−90,142,96,177,125,−113,−7,70,58,178,115,−13,130,−163,114,−3,30,79,−32,−59,−168,164,−124,103,107,67,88,−122,83,−72,−38,1,−10,100)

The divisibility criterion with 383

p=3, r=1, s=192, γ=191,

v_{dir}=(0;149,42,−37,−13,130,−151,−22,−163,98,169,−158,48,−97,−179,−125,101,139,142,112,29,93,−164,108,69,76,6,−60,−166,128,−131,161,−78,14,−140,−132,171,−178,−135,−182,−95,184,75,16,−160,68,86,−94,174,175,165,−118,31,73,36,23,153,2,−20,−183,−85,84,−74,−26,−123,81,−44,57,−187,−45,67,96,189,25,133,−181,−105,−99,−159,58,186,55,−167,138,152,12,−120,51,−127,121,−61,−156,28,103,119,−41,27,113,19,−190,−15,150,32,63,136,172,−188,−35,−33,−53,147,62,146,72,46,−77,4,−40,17,−170,168,−148,−52,137,162,−88,114,9,−90,134,−191,−5,50,−117,21,173,185,65,116,−11,110,49,−107,−79,24,143,102,129,−141,−122,71,56,−177,−14

5,−82,54,−157,38,3,−30,−83,64,126,−111,−39,7,−70,−66,−106,−89,124,−91,144,92,−154,8,−80,34,43,−47,87,−104,−109,−59,−176,−155,18,−180,−115,1,−10,100)

The divisibility criterion with 389

p=3, r=1, s=195, γ=194,

v_{inv}=(0;167,−114,−27,−119,23,159,−34,−49,101,157,−14,140,156,−4,40,−11,110,67,108,87,−92,142,136,−193,−15,150,56,−171,154,16,−160,44,−51,121,−43,41,−21,−179,−155,−6,60,178,165,−94,162,−64,−138,−176,−185,−95,172,−164,84,−62,−158,24,149,66,118,−13,130,−133,163,−74,−38,−9,90,−122,53,−141,−146,−96,182,125,−83,52,−131,143,126,−93,152,36,29,99,177,175,−194,−5,50,−111,−57,181,135,−183,−115,−17,170,−144,−116,−7,70,78,−2,20,189,55,−161,54,−151,−46,71,68,98,187,75,28,109,77,8,−80,22,169,−134,173,−174,184,105,117,−3,30,89,−112,−47,81,−32,−69,−88,102,147,86,−82,42,−31,−79,12,−120,33,59,188,65,128,−113,−37,−19,190,45,−61,−168,124,−73,−48,91,−132,153,26,129,−123,63,148,76,18,−180,−145,−106,−107,−97,192,25,139,166,−104,−127,103,137,186,85,−72,−58,191,35,39,−1,10,−100)

The divisibility criterion with 397

p=3, r=1, s=100, γ=99,

v_{inv}=(0;191,75,44,−43,33,67,124,−49,93,−136,169,−102,−171,122,−29,−107,−121,19,−190,−85,56,−163,42,−23,−167,82,−26,−137,179,195,35,47,−73,−64,−154,−48,83,−36,−37,−27,−127,79,4,−40,3,−30,−97,176,−172,132,−129,99,−196,−25,−147,−118,−11,110,91,−116,−31,−87,76,34,57,−173,142,168,−92,126,−69,−104,−151,−78,−14,140,188,105,141,178,−192,−65,−144,−148,−108,−111,−81,16,−160,12,−120,9,−90,106,131,−119,−1,10,−100)

The divisibility criterion with 401

p=3, r=1, s=101, γ=100,

v_{inv}=(0;−198,−25,−151,−94,138,−177,166,−56,159,14,−140,197,35,51,−109,−113,−73,−72,−82,18,−180,196,45,−49,89,−88,78,22,181,195,55,−149,−114,−63,−172,116,43,−29,−111,−93,128,−77,−32,−81,8,−80,−2,20,−200,−5,50,−99,188,125,−47,69,112,83,−28,−121,7,−70,−102,−183,−175,146,144,164,−36,−41,9,−90,98,−178,176,−156,−44,39,11,−110,−103,−173,126,−57,169,−86,58,−179,186,145,154,64,162,−16,160,4,−40,−1,10,−100)

The divisibility criterion with 409

p=3, r=1, s=103, γ=102,

v_{inv}=(0;−182,184,−204,−5,50,−91,92,−102,202,25,159,46,−51,101,−192,−125,23,179,−154,−96,142,−193,−115,−77,−48,71,108,147,166,−24,−169,54,−131,83,−12,1

20,27,139,−163,−6,60,−191,−135,123,−3,30,109,137,−143,203,15,−150,−136,133,−103,−197,−75,−68,−138,153,106,167,−34,−69,−128,53,−121,−17,170,−64,−178,144,196,85,−32,−89,72,98,−162,−16,160,36,49,−81,−8,80,18,−180,164,−4,40,9,−90,82,−2,20,−200,−45,41,−1,10,−100)

The divisibility criterion with 419

p=3, r=1, s=210, γ=209,

v_{dir}=(0;−162,−56,141,−153,−146,203,65,188,−204,−55,131,−53,111,147,206,35,69,148,196,135,−93,92,−82,−18,180,−124,−17,170,−24,−179,114,117,87,−32,−99,152,156,116,97,−132,63,208,15,−150,−176,84,−2,20,−200,−95,112,137,−113,−127,13,−130,43,−11,110,157,106,197,125,7,−70,−138,123,27,149,186,−184,164,36,59,−171,34,79,48,−61,191,185,−174,64,198,115,107,187,−194,−155,−126,3,−30,−119,−67,−168,4,−40,−19,190,195,145,−193,−165,−26,−159,−86,22,199,105,207,25,169,−14,140,−143,173,−54,121,47,−51,91,−72,−118,−77,−68,−158,−96,122,37,49,−71,−128,23,189,205,45,−31,−109,−167,−6,60,−181,134,−83,−8,80,38,39,29,129,−33,−89,52,−101,172,−44,21,209,5,−50,81,28,139,−133,73,108,177,−94,102,−182,144,−183,154,136,−103,192,175,−74,−98,142,−163,−46,41,9,−90,62,−201,−85,12,−120,−57,151,166,16,−160,−76,−78,−58,161,66,178,−104,202,75,88,−42,1,−10,100)

The divisibility criterion with 421

p=3, r=1, s=71, γ=70,

v_{inv}=(0;−158,−104,198,125,13,−130,37,51,−89,48,−59,169,−6,60,−179,106,203,75,92,−78,−62,199,115,113,133,−67,−172,36,61,−189,206,45,−29,−131,47,−49,69,152,164,44,−19,190,205,55,−129,27,151,174,−56,139,−127,7,−70,−142,157,114,123,33,91,−68,−162,−64,−202,−85,8,−80,−42,−1,10,−100)

The divisibility criterion with 431

p=3, r=1, s=216, γ=215,

v_{inv}=(0;−138,87,−8,80,62,−189,166,64,−209,−65,−212,−35,−81,−52,89,−28,−151,−214,−15,150,−207,−85,−12,120,93,−68,−182,96,−98,118,113,163,94,−78,−82,−42,−11,110,193,−206,−95,88,−18,180,−76,−102,158,144,−147,177,−46,29,141,−117,−123,−63,199,165,74,122,73,132,−27,−161,−114,−153,−194,−215,−5,50,−69,−172,−4,40,31,121,83,32,111,183,−106,198,175,−26,−171,−14,140,−107,208,75,112,173,−6,60,−169,−34,−91,48,−49,59,−159,−134,47,−39,−41,−21,210,55,−119,−103,168,44,−9,90,−38,−51,79,72,142,−127,−23,−201,−145,157,154,184,−116,−133,37,61,−179,66,202,135,−57,139,−97,108,213,25,181,−86,−2,20,−200,−155,−174,16,−160,−124,−53,99,−128,−13,130,−7,70,162,104,−178,56,−129,−3,30,131,−17,170,24,191,−186,136,−67,−192,196,195,205,105,−188,156,164,84,22,211,45,−19,190,−176,36,71,152,204,115,143,−137,77,92,−58,149,−197,−185,126,33,101,−148,187,−146,167,54,−109,−203,−125,−43,−1,10,−100)

The divisibility criterion with 433

p=3, r=1, s=217, γ=216,

v_{inv}=(0;−134,41,23,203,135,−51,77,96,−94,74,126,39,43,3,−30,−133,31,123,69,176,−28,−153,−202,−145,151,−211,−55,117,129,9,−90,34,93,−64,207,95,−84,−26,−173,−2,20,−200,−165,−82,−46,27,163,102,−154,−192,188,−148,181,−78,−86,−6,60,−167,−62,187,−138,81,56,−127,−29,−143,131,−11,110,199,175,−18,180,−68,−186,128,19,−190,168,52,−87,4,−40,−33,−103,164,92,−54,107,−204,−125,−49,57,−137,71,156,172,12,−120,−99,124,59,−157,−162,−112,−179,58,−147,171,22,213,35,83,36,73,136,−61,177,−38,−53,97,−104,174,−8,80,66,206,105,−184,108,−214,−25,−183,98,−114,−159,−142,121,89,−24,−193,198,185,−118,−119,−109,−209,−75,−116,−139,91,−44,7,−70,−166,−72,−146,161,122,79,76,106,−194,208,85,16,−160,−132,21,−210,−65,−216,−5,50,−67,−196,−205,−115,−149,191,−178,48,−47,37,63,−197,−195,−215,−15,150,−201,−155,−182,88,−14,140,−101,144,−141,111,189,−158,−152,−212,−45,17,−170,−32,−113,−169,−42,−13,130,−1,10,−100)

The divisibility criterion with 439

p=3, r=1, s=220, γ=219,

v_{inv}=(0;−122,−97,92,−42,−19,190,−144,123,87,8,−80,−78,−98,102,−142,103,−152,203,165,106,−182,64,−201,−185,94,−62,181,−54,101,−132,3,−30,−139,73,148,−163,−126,−57,131,7,−70,−178,24,199,205,145,−133,13,−130,−17,170,56,−121,−107,192,−164,−116,−157,−186,104,−162,−136,43,9,−90,22,219,5,−50,61,−171,−46,21,−210,−95,72,158,176,−4,40,39,49,−51,71,168,76,118,137,−53,91,−32,−119,−127,−47,31,129,27,169,66,218,15,−150,183,−74,−138,63,−191,154,216,35,89,−12,120,117,147,−153,213,65,−211,−85,−28,−159,−166,−96,82,58,−141,93,−52,81,68,198,215,45,−11,110,217,25,189,−134,23,209,105,−172,−36,−79,−88,2,−20,200,195,−194,184,−84,−38,−59,151,−193,174,16,−160,−156,−196,204,155,206,135,−33,−109,212,75,128,37,69,188,−124,−77,−108,202,175,6,−60,161,146,−143,113,187,−114,−177,14,−140,83,48,−41,−29,−149,173,26,179,−34,−99,112,197,−214,−55,111,207,125,67,208,115,167,86,18,−180,44,−1,10,−100)

The divisibility criterion with 443

p=3, r=1, s=222, γ=221,

v_{inv}=(0;−114,−189,118,149,−161,−162,−152,191,−138,51,−67,−216,−55,107,−184,68,206,155,−221,−5,50,−57,127,59,−147,141,−81,−76,−126,−69,−196,188,−108,194,−168,−92,34,103,−144,111,219,25,193,−158,−192,148,−151,181,−38,−63,187,−98,94,−54,97,−84,−46,17,−170,−72,−166,−112,−209,−125,−79,−96,74,146,−131,−19,190,−128,−49,47,−27,−173,−42,−23,−213,−85,−36,−83,−56,117,159,182,−48,37,73,156,212,95,−64,197,−198,208,135,−21,210,115,179,−18,180,−28,−163,−142,91,−24,−203,−185,78,106,−174,−32,−123,−99,104,−154,211,105,−164,−132,−9,90,−14,140,−71,−176,−12,120,129,39,53,−87,−16,160,172,52,−77,−116,−169,−82,−

66,217,45,−7,70,186,−88,−6,60,−157,−202,−195,178,−8,80,86,26,183,−58,137,−41,−33,−113,−199,218,35,93,−44,−3,30,143,−101,124,89,−4,40,43,13,−130,−29,−153,201,205,165,122,109,−204,−175,−22,220,15,−150,171,62,−177,−2,20,−200,−215,−65,207,145,−121,−119,−139,61,−167,−102,134,−11,110,−214,−75,−136,31,133,−1,10,−100)

The divisibility criterion with 449

p=3, r=1, s=17, γ=16,

v_{inv}=(0;−102,122,127,77,128,67,−221,−35,−99,92,−22,220,45,−1,10,−100)

The divisibility criterion with 457

p=3, r=1, s=77, γ=76,

v_{inv}=(0;−86,−54,83,84,74,174,88,34,117,201,−182,−8,80,114,−226,−25,−207,−215,−135,−21,210,185,−22,220,85,64,−183,2,−20,200,−172,−108,166,168,148,−109,176,68,−223,−55,93,−16,160,228,5,−50,43,27,187,−42,−37,−87,−44,−17,170,128,91,4,−40,−57,113,−216,−125,−121,−161,−218,−105,136,11,−110,186,−32,−137,−1,10,−100)

The divisibility criterion with 461

p=3, r=1, s=231, γ=230,

v_{inv}=(0;−78,−142,37,91,12,−120,−183,−14,140,−17,170,144,−57,109,−168,−164,−204,196,−116,−223,−75,−172,−124,−143,47,−9,90,22,−220,−105,128,103,−108,158,−197,126,123,153,−147,87,52,−59,129,93,−8,80,122,163,214,165,194,−96,38,81,112,−198,136,23,−230,−5,50,−39,−71,−212,−185,6,−60,139,−7,70,222,85,72,202,−176,−84,−82,−102,98,−58,119,193,−86,−62,159,−207,226,45,11,−110,178,64,−179,−54,79,132,63,−169,−154,157,−187,26,201,−166,−184,−4,40,61,−149,107,−148,97,−48,19,−190,56,−99,68,−219,−115,228,25,211,195,−106,138,3,−30,−161,227,35,111,−188,36,101,−88,−42,−41,−51,49,−29,−171,−134,−43,−31,−151,127,113,−208,−225,−55,89,32,141,−27,−191,66,−199,146,−77,−152,137,13,−130,−83,−92,−2,20,−200,156,−177,−74,−182,−24,−221,−95,28,181,34,121,173,114,−218,−125,−133,−53,69,−229,−15,150,−117,−213,−175,−94,18,−180,−44,−21,210,205,−206,216,145,−67,209,215,155,−167,−174,−104,118,203,−186,16,−160,217,135,33,131,73,192,−76,−162,−224,−65,189,−46,−1,10,−100)

The divisibility criterion with 463

p=3, r=1, s=78, γ=77,

v_{dir}=(0;−74,−186,8,−80,−126,−129,−99,64,−177,−82,−106,134,49,−27,−193,78,146,−71,−216,−155,161,−221,−105,124,149,−101,84,86,66,−197,118,209,225,65,−187,18,−180,−52,57,−107,144,−51,47,−7,70,226,55,−87,−56,97,−44,−23,230,15,−1

50,111,−184,−12,120,189,−38,−83,−96,34,123,159,−201,158,−191,58,−117,−219,−125,−139,1,−10,100)

The divisibility criterion with 467

p=3, r=1, s=234, γ=233,

v_{inv}=(0;−66,193,−62,153,−129,−111,176,108,−146,59,−123,−171,−158,179,78,154,−139,−11,110,−166,−208,212,215,185,18,−180,−68,213,205,−182,−48,13,−130,−101,76,174,128,121,191,−42,−47,3,−30,−167,−198,112,−186,−8,80,134,61,−143,29,177,98,−46,−7,70,−233,−5,50,−33,−137,−31,−157,169,178,88,54,−73,−204,172,148,−79,−144,39,77,164,228,55,−83,−104,106,−126,−141,9,−90,−34,−127,−131,−91,−24,−227,−65,183,38,87,64,−173,−138,−21,210,−232,−15,150,−99,56,−93,−4,40,67,−203,162,−219,−145,49,−23,230,35,117,231,25,217,165,218,155,−149,89,44,27,197,−102,86,74,194,−72,−214,−195,82,114,−206,192,−52,53,−63,163,−229,−45,−17,170,168,188,−12,120,201,−142,19,−190,32,147,−69,223,105,−116,226,75,184,28,187,−2,20,−200,132,81,124,161,−209,222,115,−216,−175,−118,−221,−125,−151,109,−156,159,−189,22,−220,−135,−51,43,37,97,−36,−107,136,41,57,−103,96,−26,−207,202,−152,119,211,225,85,84,94,−6,60,−133,−71,−224,−95,16,−160,199,−122,−181,−58,113,−196,92,14,−140,−1,10,−100)

The divisibility criterion with 479

p=3, r=1, s=240, γ=239,

v_{inv}=(0;−42,−59,111,−152,83,128,157,−133,−107,112,−162,183,86,98,−22,220,195,−34,−139,−47,−9,90,58,−101,52,−41,−69,211,−194,24,239,5,−50,21,−210,184,76,198,−64,161,−173,−186,−56,81,148,−43,−49,11,−110,142,17,−170,−216,−235,−45,−29,−189,−26,−219,−205,134,97,−12,120,237,25,229,105,−92,−38,−99,32,159,−153,93,28,199,−74,−218,−215,234,55,−71,231,85,108,−122,−217,−225,−145,13,−130,−137,−67,191,6,−60,121,227,125,187,46,19,−190,−16,160,−163,193,−14,140,37,109,−132,−117,212,−204,124,197,−54,61,−131,−127,−167,233,65,−171,−206,144,−3,30,179,126,177,146,−23,230,95,8,−80,−158,143,7,−70,221,185,66,−181,−106,102,−62,141,27,209,−174,−176,−156,123,207,−154,103,−72,−238,−15,150,−63,151,−73,−228,−115,192,−4,40,79,168,236,35,129,147,−33,−149,53,−51,31,169,226,135,87,88,78,178,136,77,188,36,119,−232,−75,−208,164,−203,114,−182,−96,2,−20,200,−84,−118,222,175,166,−223,−165,213,−214,224,155,−113,172,196,−44,−39,−89,−68,201,−94,−18,180,116,−202,104,−82,−138,−57,91,48,−1,10,−100)

The divisibility criterion with 487

p=3, r=1, s=244, γ=243,

v_{dir}=(0;−26,−227,−165,189,58,−93,−44,−47,−17,170,−239,−45,−37,−117,196,−12,120,−226,−175,−198,32,167,−209,142,41,77,204,−92,−54,53,−43,−57,83,144,21,−210,152,−59,103,−56,73,−243,−5,50,−13,130,161,−149,29,197,−22,220,235,85,12

4,221,225,185,98,−6,60,−113,156,−99,16,−160,139,71,−223,−205,102,−46,−27,−217,222,215,−202,72,−233,−105,76,214,−192,−28,−207,122,241,25,237,65,−163,169,−229,−145,−11,110,−126,−201,62,−133,−131,−151,49,−3,30,187,78,194,8,−80,−174,−208,132,141,51,−23,230,135,111,−136,−101,36,127,191,38,107,−96,−14,140,61,−123,−231,−125,−211,162,−159,129,171,238,55,−63,143,31,177,178,168,−219,242,15,−150,39,97,4,−40,−87,−104,66,−173,−218,232,115,−176,−188,−68,193,18,−180,−148,19,−190,−48,−7,70,−213,182,128,181,138,81,164,−179,−158,119,−216,212,−172,−228,−155,89,84,134,121,−236,−75,−224,−195,2,−20,200,−52,33,157,−109,116,−186,−88,−94,−34,−147,9,−90,−74,−234,−95,−24,240,35,137,91,64,−153,69,−203,82,154,−79,−184,−108,106,−86,−114,166,−199,42,67,−183,−118,206,−112,146,1,−10,100)

The divisibility criterion with 491

p=3, r=1, s=246, γ=245,

v_{dir}=(0;−18,180,164,−167,197,−6,60,−109,108,−98,−2,20,−200,36,131,163,−157,97,12,−120,218,−216,196,4,−40,−91,−72,229,165,−177,−194,−24,240,55,−59,99,−8,80,182,144,33,161,−137,−103,48,11,−110,118,−198,16,−160,127,203,−66,169,−217,206,−96,−22,220,−236,−95,−32,−171,237,85,132,153,−57,79,192,44,51,−19,190,64,−149,17,−170,227,185,114,−158,107,−88,−102,38,111,−128,−193,−34,−151,37,121,−228,−175,−214,176,204,−76,−222,−235,−105,68,−189,−74,−242,−35,−141,−63,139,83,152,−47,−21,210,−136,−113,148,−7,70,−209,126,213,−166,187,94,42,71,−219,226,195,14,−140,−73,239,65,−159,117,−188,−84,−142,−53,39,101,−28,−211,146,13,−130,−173,−234,−115,168,−207,106,−78,−202,56,−69,199,−26,−231,−145,−23,230,155,−77,−212,156,−87,−112,138,93,52,−29,−201,46,31,181,154,−67,179,174,224,215,−186,−104,58,−89,−92,−62,129,183,134,133,143,43,61,−119,208,−116,178,184,124,233,125,223,225,205,−86,−122,238,75,232,135,123,243,25,241,45,41,81,172,244,15,−150,27,221,245,5,−50,9,−90,−82,−162,147,3,−30,−191,−54,49,1,−10,100)

The divisibility criterion with 499

p=3, r=1, s=250, γ=249,

v_{dir}=(0;−2,20,−200,4,−40,−99,−8,80,198,16,−160,103,−32,−179,−206,64,−141,−87,−128,−217,174,−243,−65,151,−13,130,197,26,239,105,−52,21,−210,104,−42,−79,−208,84,158,−83,−168,183,166,−163,133,167,−173,233,165,−153,33,169,−193,−66,161,−113,132,177,226,235,145,47,29,209,−94,−58,81,188,116,−162,123,−232,−175,−246,−35,−149,−7,70,−201,14,−140,−97,−28,−219,194,56,−61,111,−112,122,−222,224,−244,−55,51,−11,110,−102,22,−220,204,−44,−59,91,88,118,−182,−176,−236,−135,−147,−27,−229,−205,54,−41,−89,−108,82,178,216,−164,143,67,−171,213,−134,−157,73,−231,−185,−146,−37,−129,−207,74,−241,−85,−148,−17,170,−203,34,159,−93,−68,181,186,136,137,127,227,225,245,45,49,9,−90,−98,−18,180,196,36,139,107,−72,221,−214,144,57,−71,211,−114,142,77,228,215,−154,43,69,−191,

−86,−138,−117,172,−223,234,155,−53,31,189,106,−62,121,−212,124,−242,−75,−248,−15,150,−3,30,199,6,−60,101,−12,120,−202,24,−240,−95,−48,−19,190,96,38,119,−192,−76,−238,−115,152,−23,230,195,46,39,109,−92,−78,−218,184,156,−63,131,187,126,237,125,247,25,249,5,−50,1,−10,100)

The divisibility criterion with 503

p=3, r=1, s=252, γ=251,

v_{dir}=(0;6,−60,97,36,143,79,216,−148,−29,−213,118,−174,231,205,−38,−123,224,−228,−235,−165,141,99,16,−160,91,96,46,43,73,−227,−245,−65,147,39,113,−124,234,175,−241,−105,44,63,−127,−239,−125,244,75,−247,−45,−53,27,233,185,162,−111,104,−34,−163,121,−204,28,223,−218,168,−171,201,2,−20,200,12,−120,194,72,−217,158,−71,207,−58,77,236,155,−41,−93,−76,−246,−55,47,33,173,−221,198,32,183,182,192,92,86,146,49,13,−130,−209,78,226,−248,−35,−153,21,−210,88,126,249,25,−250,−15,150,9,−90,−106,54,−37,−133,−179,−222,208,−68,177,242,95,56,−57,67,−167,161,−101,4,−40,−103,24,−240,−115,144,69,−187,−142,−89,−116,154,−31,−193,−82,−186,−152,11,−110,94,66,−157,61,−107,64,−137,−139,−119,184,172,−211,98,26,243,85,156,−51,7,−70,197,42,83,176,−251,−5,50,3,−30,−203,18,−180,−212,108,−74,237,145,59,−87,−136,−149,−19,190,112,−114,134,169,−181,−202,8,−80,−206,48,23,−230,−215,138,129,219,−178,−232,−195,−62,117,−164,131,199,22,−220,188,132,189,122,−214,128,229,225,−238,−135,−159,81,196,52,−17,170,−191,−102,14,−140,−109,84,166,−151,1,−10,100)

The divisibility criterion with 509

p=3, r=1, s=255, γ=254,

v_{inv}=(0;18,−180,−236,−185,−186,−176,233,215,−114,122,−202,−16,160,−73,221,−174,213,−94,−78,−238,−165,123,−212,84,178,−253,−15,150,27,239,155,−23,230,245,95,68,−171,183,206,−24,240,145,77,248,65,−141,−117,152,7,−70,191,126,−242,−125,232,225,−214,104,−22,220,−164,113,−112,102,−2,20,−200,−36,−149,−37,−139,−137,−157,43,79,228,−244,−105,32,189,146,67,−161,83,188,156,−33,−179,−246,−85,−168,153,−3,30,209,−54,31,199,46,49,19,−190,−136,−167,143,97,48,29,219,−154,13,−130,−227,234,205,−14,140,127,−252,−25,250,45,59,−81,−208,44,69,−181,−226,224,−204,4,−40,−109,72,−211,74,−231,−235,−195,−86,−158,53,−21,210,−64,131,217,−134,−187,−166,133,197,66,−151,−17,170,−173,203,6,−60,91,108,−62,111,−92,−98,−38,−129,−237,−175,223,−194,−96,−58,71,−201,−26,−249,−55,41,99,28,229,−254,−5,50,9,−90,−118,162,−93,−88,−138,−147,−57,61,−101,−8,80,218,−144,−87,−148,−47,−39,−119,172,−193,−106,42,89,128,247,75,−241,−135,−177,243,115,−132,−207,34,169,−163,103,−12,120,−182,−216,124,−222,184,196,76,−251,−35,−159,63,−121,192,116,−142,−107,52,−11,110,−82,−198,−56,51,−1,10,−100)

The divisibility criterion with 521

p=3, r=1, s=27, γ=26,

v_{inv}=(0;42,101,32,201,74,−219,106,−18,180,−237,−235,−255,−55,29,231,−226,176,−197,−114,98,62,−99,−52,−1,10,−100)

The divisibility criterion with 523

p=3, r=1, s=262, γ=261,

v_{inv}=(0;46,63,−107,24,−240,−215,58,−57,47,53,−7,70,−177,201,82,226,−168,111,−64,117,−124,194,152,49,33,193,162,−51,−13,130,−254,−75,227,−178,211,−18,180,−231,218,−88,−166,91,136,209,2,−20,200,92,126,−214,48,43,93,116,−114,94,106,−14,140,169,−121,164,−71,187,222,−128,234,−248,−135,−219,98,66,−137,−199,−102,−26,260,15,−150,−69,167,−101,−36,−163,61,−87,−176,191,182,−251,−105,4,−40,−123,184,252,95,96,86,186,232,−228,188,212,−28,−243,−185,−242,−195,−142,−149,−79,−256,−55,27,253,85,196,132,249,125,−204,−52,−3,30,223,−138,−189,−202,−72,197,122,−174,171,−141,−159,21,−210,8,−80,−246,−155,−19,190,192,172,−151,−59,67,−147,−99,−56,37,153,39,133,239,225,−158,11,−110,54,−17,170,−131,−259,−25,250,115,−104,−6,60,−77,247,145,119,−144,−129,244,175,−181,241,205,42,103,16,−160,31,213,−38,−143,−139,−179,221,−118,134,229,−198,−112,74,−217,78,−257,−45,−73,207,22,−220,108,−34,−183,261,5,−50,−23,230,−208,−12,120,−154,−29,−233,238,235,−258,−35,−173,161,−41,−113,84,206,32,203,62,−97,−76,237,245,165,−81,−236,−255,−65,127,−224,148,89,156,9,−90,−146,−109,44,83,216,−68,157,−1,10,−100)

The divisibility criterion with 541

p=3, r=1, s=271, γ=270,

v_{inv}=(0;82,262,85,232,−156,−63,89,192,244,265,55,−9,90,182,−197,−194,−224,76,−219,26,−260,−105,−32,−221,46,81,−269,−15,150,123,−148,−143,−193,−234,176,−137,−253,−175,127,−188,257,135,−268,−25,250,205,114,−58,39,151,113,−48,−61,69,−149,−133,248,225,−86,−222,56,−19,190,264,65,−109,8,−80,259,115,−68,139,233,−166,37,171,−87,−212,−44,−101,−72,179,−167,47,71,−169,67,−129,208,84,242,−256,−145,−173,107,12,−120,118,−98,−102,−62,79,−249,−215,−14,140,223,−66,119,−108,−2,20,−200,−164,17,−170,77,−229,126,−178,157,53,11,−110,18,−180,177,−147,−153,−93,−152,−103,−52,−21,210,64,−99,−92,−162,−3,30,241,−246,−245,−255,−155,−73,189,−267,−35,−191,−254,−165,27,−270,−5,50,41,131,−228,116,−78,239,−226,96,122,−138,−243,266,45,91,172,−97,−112,38,161,13,−130,218,−16,160,23,−230,136,263,75,−209,−74,199,174,−117,88,202,144,183,−207,−94,−142,−203,−134,258,125,−168,57,−29,−251,−195,−214,−24,240,−236,196,204,124,−158,−43,−111,28,261,95,132,−238,216,4,−40,−141,−213,−34,−201,−154,−83,−252,−185,227,−106,−22,220,−36,−181,187,−247,−235,186,−237,206,104,42,121,−128,198,184,−217,6,−60,59,−49,−51,−31,−231,146,163,−7,70,−159,−33,−211,−54,−1,10,−100)

The divisibility criterion with 547

p=3, r=1, s=92, γ=91,

v_{inv}=(0;94,154,101,84,254,195,238,−192,−268,−55,3,−30,−247,−265,−85,−244,252,215,38,167,−29,−257,−165,9,−90,−194,−248,−255,−185,209,98,114,−46,−87,−224,52,27,−270,−35,−197,−218,−8,80,−253,−205,−138,−261,−125,156,81,−263,−105,−44,−107,−24,240,−212,−68,133,−236,172,−79,243,−242,232,−132,226,−72,173,−89,−204,−148,−161,−31,−237,182,−179,149,151,131,−216,−28,−267,−65,103,64,−93,−164,−1,10,−100)

The divisibility criterion with 557

p=3, r=1, s=140, γ=139,

v_{dir}=(0;114,−26,260,185,−179,119,−76,203,198,248,−252,−265,−135,236,−132,206,168,−9,90,214,88,234,−112,6,−60,43,127,−156,−111,−4,40,157,101,104,74,−183,159,81,−253,−255,−235,122,−106,−54,−17,170,−29,−267,−115,36,197,258,205,178,−109,−24,240,−172,49,67,−113,16,−160,−71,153,141,261,175,−79,233,−102,−94,−174,69,−133,216,68,−123,116,−46,−97,−144,−231,82,−263,−155,−121,96,154,131,−196,−268,−105,−64,83,−273,−55,−7,70,−143,−241,182,−149,−181,139,−276,−25,250,−272,−65,93,184,−169,19,−190,229,−62,63,−73,173,−59,33,227,−42,−137,256,225,−22,220,28,277,15,−150,−171,39,167,1,−10,100)

The divisibility criterion with 563

p=3, r=1, s=282, γ=281,

v_{inv}=(0;126,−134,214,112,6,−60,37,193,−241,158,109,36,203,222,32,243,−178,91,216,92,206,192,−231,58,−17,170,−11,110,26,−260,−215,−102,−106,−66,97,156,129,−164,−49,−73,167,19,−190,211,142,269,125,−124,114,−14,140,−274,−75,187,−181,121,−84,277,45,113,−4,40,163,59,−27,270,115,−24,240,−148,−209,−162,−69,127,−144,−249,238,−128,154,149,199,262,195,−261,−205,−202,−232,68,−117,44,123,−104,−86,−266,−155,−139,264,175,−61,47,93,196,−271,−105,−76,197,−281,−5,50,63,−67,107,56,3,−30,−263,−185,161,79,−227,18,−180,111,16,−160,−89,−236,108,46,103,96,166,29,273,85,276,55,13,−130,174,−51,−53,−33,−233,78,−217,−82,257,245,−198,−272,−95,−176,71,−147,−219,−62,57,−7,70,−137,244,−188,191,−221,−42,−143,−259,−225,−2,20,−200,−252,268,135,−224,−12,120,−74,177,−81,247,−218,−72,157,119,−64,77,−207,−182,131,−184,151,179,−101,−116,34,223,22,−220,−52,−43,−133,204,212,132,−194,251,−258,−235,98,146,229,−38,−183,141,279,25,−250,248,−228,28,−280,−15,150,189,−201,−242,168,9,−90,−226,8,−80,237,−118,54,23,−230,48,83,−267,−145,−239,138,−254,−275,−65,87,256,255,265,165,39,173,−41,−153,−159,−99,−136,234,−88,−246,208,172,−31,−253,278,35,213,122,−94,−186,171,−21,210,152,169,−1,10,−100)

The divisibility criterion with 569

p=3, r=1, s=143, γ=142,

v_{inv}=(0;138,−242,144,267,175,−43,−139,252,−244,164,67,−101,−128,142,−282,−25,250,−224,−36,−209,−186,153,177,−63,61,−41,−159,−117,32,249,−214,−136,222,56,9,−90,−238,104,98,158,127,−132,182,−113,−8,80,−231,34,229,−14,140,−262,−225,−26,260,245,−174,33,239,−114,2,−20,200,276,85,−281,−35,−219,−86,−278,−65,81,−241,134,−202,−256,284,5,−50,−69,121,−72,151,197,−263,−215,−126,122,−82,251,−234,64,−71,141,−272,−125,112,18,−180,93,208,196,−253,254,−264,−205,−226,−16,160,107,68,−111,−28,280,45,119,−52,−49,−79,221,66,−91,−228,4,−40,−169,−17,170,7,−70,131,−172,13,−130,162,87,268,165,57,−1,10,−100)

The divisibility criterion with 571

p=3, r=1, s=286, γ=285,

v_{dir}=(0;142,−278,−75,179,−77,199,−277,−85,279,65,−79,219,94,202,264,215,134,−198,267,185,−137,228,4,−40,−171,−3,30,271,145,263,225,34,231,−26,260,255,−266,−195,237,−86,−282,−35,−221,−74,169,23,−230,16,−160,−113,−12,120,−58,9,−90,−242,136,−218,−104,−102,−122,78,−209,−194,227,14,−140,258,275,105,92,222,64,−69,119,−48,−91,−232,36,211,174,−27,270,155,163,83,−259,−265,−205,−234,56,11,−110,−42,−151,−203,−254,256,−276,−95,−192,207,214,144,273,125,−108,−62,49,81,−239,106,82,−249,206,224,44,131,−168,−33,−241,126,−118,38,191,−197,257,285,5,−50,−71,139,−248,196,−247,186,−147,−243,146,253,−246,176,−47,−101,−132,178,−67,99,152,193,−217,−114,−2,20,−200,−284,−15,150,213,154,173,−17,170,13,−130,158,133,−188,167,43,141,−268,−175,37,201,274,115,−8,80,−229,6,−60,29,281,45,121,−68,109,52,51,61,−39,−181,97,172,−7,70,−129,148,233,−46,−111,−32,−251,226,24,−240,116,−18,180,−87,−272,−135,208,204,244,−156,−153,−183,117,−28,280,55,21,−210,−184,127,−128,138,−238,96,182,−107,−72,149,223,54,31,261,245,−166,−53,−41,−161,−103,−112,−22,220,84,−269,−165,−63,59,−19,190,−187,157,143,283,25,−250,216,124,−98,−162,−93,−212,−164,−73,159,123,−88,−262,−235,66,−89,−252,236,−76,189,−177,57,1,−10,100)

The divisibility criterion with 577

p=3, r=1, s=289, γ=288,

v_{inv}=(0;154,191,−179,59,−13,130,−146,−271,−175,19,−190,169,41,167,61,−33,−247,162,111,44,137,−216,−148,−251,202,288,5,−50,−77,193,−199,259,−282,−65,73,−153,−201,279,95,204,268,205,258,−272,−165,−81,233,−22,220,108,74,−163,−101,−144,286,25,−250,192,−189,159,141,−256,252,−212,−188,149,241,−102,−134,186,−129,136,−206,−248,172,11,−110,−54,−37,−207,−238,72,−143,276,125,−96,−194,209,218,128,−126,106,94,214,168,51,67,−93,−224,−68,103,124,−86,283,55,27,−270,−185,119,−36,−217,−138,226,48,97,184,−109,−64,63,−53,−47,−107,−84,263,255,−242,112,34,237,−62,43,147,261,275,135,−196,229,18,−180,69,−113,−24,240,−92,−234,32,257,−262,−265,−235,42,157,161,121,−56,−17,170,31,267,215,158,

151,221,98,174,−9,90,254,−232,12,−120,46,117,−16,160,131,−156,−171,−21,210,208,228,28,−280,−85,273,155,181,−79,213,178,−49,−87,−284,−45,−127,116,−6,60,−23,230,8,−80,223,78,−203,−278,−105,−104,−114,−14,140,−246,152,211,198,−249,182,−89,−264,−245,142,−266,−225,−58,3,−30,−277,−115,−4,40,177,−39,−187,139,−236,52,57,7,−70,123,−76,183,−99,−164,−91,−244,132,−166,−71,133,−176,29,287,15,−150,−231,2,−20,200,−269,−195,219,118,−26,260,285,35,227,38,197,−239,82,−243,122,−66,83,−253,222,88,274,145,281,75,−173,−1,10,−100)

The divisibility criterion with 587

p=3, r=1, s=294, γ=293,

v_{inv}=(0;174,21,−210,−248,132,−146,286,75,−163,−131,136,−186,99,184,−79,203,−269,−245,102,154,221,138,−206,−288,−55,−37,−217,−178,19,−190,139,−216,−188,119,−16,160,161,151,251,−162,−141,236,−12,120,−26,260,−252,172,41,177,−9,90,274,195,−189,129,−116,−14,140,−226,−88,293,5,−50,−87,283,105,124,−66,73,−143,256,−212,−228,−68,93,244,−92,−254,192,−159,−171,−51,−77,183,−69,103,144,−266,−275,−185,89,284,95,224,108,94,234,8,−80,213,218,168,81,−223,−118,6,−60,13,−130,126,−86,273,205,−289,−45,−137,196,−199,229,58,7,−70,113,44,147,291,25,−250,152,241,−62,33,257,−222,−128,106,114,34,247,−122,46,127,−96,−214,−208,−268,−255,202,−259,242,−72,133,−156,−201,249,−142,246,−112,−54,−47,−117,−4,40,187,−109,−84,253,−182,59,−3,30,287,65,−63,43,157,191,−149,−271,−225,−98,−194,179,−29,290,35,237,−22,220,148,281,125,−76,173,31,277,165,111,64,−53,−57,−17,170,61,−23,230,48,107,104,134,−166,−101,−164,−121,36,227,78,−193,169,71,−123,56,27,−270,−235,2,−20,200,−239,42,167,91,264,−292,−15,150,261,−262,272,215,198,−219,−158,−181,49,97,204,−279,−145,276,175,11,−110,−74,153,231,38,207,278,155,211,238,−32,−267,−265,−285,−85,263,−282,−115,−24,240,−52,−67,83,−243,82,−233,−18,180,−39,−197,209,258,−232,−28,280,135,−176,−1,10,−100)

The divisibility criterion with 593

p=3, r=1, s=297, γ=296,

v_{inv}=(0;186,−81,217,202,−241,38,213,242,−48,−113,−56,−33,−263,258,−208,−292,−45,−143,244,−68,87,−277,−195,171,69,−97,−216,−212,−252,148,−294,−25,250,−128,94,246,−88,287,95,236,12,−120,14,−140,214,232,52,73,−137,184,−61,17,−170,−79,197,−191,131,−124,54,53,63,−37,−223,−142,234,32,273,235,22,−220,−172,−59,−3,30,293,35,243,−58,−13,130,−114,−46,−133,144,−254,168,99,196,−181,31,283,135,−164,−139,204,−261,238,−8,80,−207,291,55,43,163,149,289,75,−157,−209,−282,−145,264,−268,−285,−115,−36,−233,−42,−173,−49,−103,−156,−219,−182,41,183,−51,−83,237,2,−20,200,−221,−162,−159,−189,111,76,−167,−109,−96,−226,−112,−66,67,−77,177,9,−90,−286,−105,−136,174,39,203,−251,138,−194,161,169,89,296,5,−50,−93,−256,188,−101,−176,−19,190,−121,24,−240,28,−280,−165,−129,104,146,−274,−225,−122,34,253,−158,−199,211,262,−248,108,106,126,−74,

147,−284,−125,64,−47,−123,44,153,249,−118,−6,60,−7,70,−107,−116,−26,260,−228,−92,−266,288,85,−257,198,−201,231,62,−27,270,265,−278,−185,71,−117,−16,160,179,−11,110,86,−267,−295,−15,150,279,175,29,−290,−65,57,23,−230,−72,127,−84,247,−98,−206,281,155,229,82,−227,−102,−166,−119,4,−40,−193,151,269,275,215,222,152,259,−218,−192,141,−224,−132,134,−154,−239,18,−180,21,−210,−272,−245,78,−187,91,276,205,−271,−255,178,−1,10,−100)

The divisibility criterion with 599

p=3, r=1, s=300, γ=299,

v_{inv}=(0;198,−183,33,269,−294,−55,−49,−109,−108,−118,−18,180,−3,30,299,5,−50,−99,−208,283,165,147,−272,−275,−245,54,59,9,−90,−298,−15,150,297,25,−250,104,158,217,226,136,−162,−177,−27,270,295,45,149,−292,−75,151,287,125,−52,−79,191,−113,−68,81,−211,−286,−135,152,277,225,146,−262,224,156,237,26,−260,204,−243,34,259,−194,143,−232,−76,161,187,−73,131,−112,−78,181,−13,130,−102,−178,−17,170,97,228,116,38,219,206,−263,234,56,39,209,−293,−65,51,89,−291,−85,251,−114,−58,−19,190,−103,−168,−117,−28,280,195,−153,−267,274,255,−154,−257,174,57,29,−290,−95,−248,84,−241,14,−140,202,−223,−166,−137,172,77,−171,−87,271,285,145,−252,124,−42,−179,−7,70,−101,−188,83,−231,−86,261,−214,−256,164,157,227,126,−62,21,−210,−296,−35,−249,94,258,−184,43,169,107,128,−82,221,186,−63,31,289,105,148,−282,−175,−47,−129,92,278,215,246,−64,41,189,−93,−268,284,155,247,−74,141,−212,−276,−235,−46,−139,192,−123,32,279,205,−253,134,−142,222,176,37,229,106,138,−182,23,−230,−96,−238,−16,160,197,−173,−67,71,−111,−88,281,185,−53,−69,91,288,115,48,119,8,−80,201,−213,−266,264,−244,44,159,207,−273,−265,254,−144,242,−24,240,−4,40,199,−193,133,−132,122,−22,220,196,−163,−167,−127,72,−121,12,−120,2,−20,200,−203,233,66,−61,11,−110,−98,−218,−216,−236,−36,−239,−6,60,−1,10,−100)

The divisibility criterion with 601

p=3, r=1, s=151, γ=150,

v_{inv}=(0;202,−217,−234,−64,39,211,294,65,−49,−111,−92,−282,−185,47,131,−108,−122,18,−180,−3,30,−300,−5,50,101,192,−117,−32,−281,−195,147,−268,276,245,−46,−141,208,−277,−235,−54,−61,9,−90,299,15,−150,298,25,−250,96,242,−16,160,203,−227,−134,138,−178,−23,230,104,162,183,−27,270,−296,−45,−151,−293,−75,149,−288,−125,48,121,−8,80,−199,187,−67,69,−89,289,115,52,81,−209,287,135,−148,278,225,154,263,−226,−144,238,24,−240,−4,40,201,−207,267,−266,256,−156,−243,26,−260,196,−157,−233,−74,139,−188,77,−169,−113,−72,119,12,−120,−2,20,−200,197,−167,−133,128,−78,179,13,−130,98,222,184,−37,−231,−94,−262,216,244,−36,−241,6,−60,−1,10,−100)

The divisibility criterion with 607

p=3, r=1, s=102, γ=101,

v_{dir}=(0;214,288,155,271,−282,−215,−278,−255,122,−6,60,7,−70,93,284,195,−129,76,−153,−291,−125,36,247,−42,−187,49,117,44,167,151,−296,−75,143,−216,−268,252,−92,−294,−95,−264,212,−299,−45,−157,−251,82,−213,−298,−55,−57,−37,−237,−58,−27,270,−272,292,115,64,−33,−277,−265,222,208,−259,162,201,−189,69,−83,223,198,−159,−231,−118,−34,−267,242,8,−80,193,−109,−124,26,−260,172,101,204,−219,−238,−48,−127,56,47,137,−156,−261,182,1,−10,100)

The divisibility criterion with 613

p=3, r=1, s=52, γ=51,

v_{inv}=(0;226,192,−81,197,−131,84,−227,−182,−19,190,−61,−3,30,−300,−65,37,243,22,−220,−252,68,−67,57,43,183,9,−90,287,195,−111,−116,−66,47,143,−204,201,−171,−129,64,−27,270,−248,28,−280,−265,198,−141,184,−1,10,−100)

The divisibility criterion with 617

p=3, r=1, s=45, γ=44,

v_{inv}=(0;234,128,−46,−157,−281,−275,282,265,−182,−31,−307,−15,150,−266,192,−69,73,−113,−104,−194,89,−273,262,−152,286,225,218,288,205,−199,139,−156,−291,−175,−101,−224,−228,−188,29,−290,−185,−1,10,−100)

The divisibility criterion with 619

p=3, r=1, s=310, γ=309,

v_{dir}=(0;238,96,278,−304,−55,−69,71,−91,291,185,7,−70,81,−191,53,89,−271,234,136,−122,−18,180,57,49,129,−52,−99,−248,4,−40,−219,−286,−235,−126,22,−220,−276,284,255,−74,121,28,−280,−295,−145,212,−263,154,−302,−75,131,−72,101,228,196,−103,−208,223,246,16,−160,−257,94,298,115,88,−261,134,−102,−218,−296,−135,112,118,58,39,229,186,−3,30,−300,−95,−288,−215,293,165,207,−213,273,−254,64,−21,210,−243,−46,−159,−267,194,−83,211,−253,54,79,−171,−147,232,156,297,125,−12,120,38,239,86,−241,−66,41,209,−233,−146,222,256,−84,221,266,−184,−17,170,157,287,225,226,216,−303,−65,31,309,5,−50,−119,−48,−139,152,−282,−275,274,−264,164,217,306,35,269,−214,283,265,−174,−117,−68,61,9,−90,281,285,245,26,−260,124,−2,20,−200,143,−192,63,−11,110,138,−142,182,37,249,−14,140,−162,−237,−106,−178,−77,151,−272,244,36,259,−114,−98,−258,104,198,−123,−8,80,−181,−47,−149,252,−44,−179,−67,51,109,148,−242,−56,−59,−29,290,195,−93,−308,−15,150,−262,144,−202,163,227,206,−203,173,127,−32,−299,−105,−188,23,−230,−176,−97,−268,204,−183,−27,270,−224,−236,−116,−78,161,247,6,−60,−19,190,−43,−189,33,289,205,−193,73,−111,−128,42,199,−133,92,−301,−85,231,166,197,−113,−108,−158,−277,294,155,307,25,−250,24,−240,−76,141,−172,−137,132,−82,201,−153,292,175,107,168,177,87,−251,34,279,305,45,169,167,187,−13,130,−62,1,−10,100)

The divisibility criterion with 631

p=3, r=1, s=316, γ=315,

v_{inv}=(0;262,−96,−302,−135,88,−249,−34,−291,−245,−74,109,172,173,163,263,−106,−202,127,−8,80,−γγγγγγγγγγ169,−203,137,−108,−182,−73,99,272,−196,67,−39,−241,−114,−122,−42,−211,217,−277,246,64,−9,90,−269,166,233,194,−47,−161,−283,306,95,312,35,281,−286,−295,−205,157,−308,−75,119,72,−89,259,−66,29,−290,−255,26,−260,76,−129,28,−280,276,−236,−164,−253,6,−60,−31,310,55,81,−179,−103,−232,−204,147,−208,187,23,−230,−224,−284,−315,−5,50,131,−48,−151,248,44,191,−17,170,193,−37,−261,86,−229,−234,−184,−53,−101,−252,−4,40,231,214,−247,−54,−91,279,−266,136,−98,−282,296,195,−57,−61,−21,210,−207,177,123,32,311,45,181,83,−199,97,292,235,174,153,−268,156,−298,−175,−143,168,213,−237,−154,278,−256,36,271,−186,−33,−301,−145,188,13,−130,38,251,14,−140,138,−118,−82,189,3,−30,300,155,−288,−275,226,264,−116,−102,−242,−104,−222,−304,−115,−112,−142,158,313,25,−250,−24,240,124,22,−220,307,85,−219,297,185,43,201,−117,−92,289,265,−126,−2,20,−200,107,192,−27,270,−176,−133,68,−49,−141,148,−218,287,285,305,105,212,−227,−254,16,−160,−293,−225,−274,216,−267,146,−198,87,−239,−134,78,−149,228,244,84,−209,197,−77,139,−128,18,−180,−93,299,165,243,94,−309,−65,19,−190,7,−70,69,−59,−41,−221,−314,−15,150,−238,−144,178,113,132,−58,−51,−121,−52,−111,−152,258,−56,−71,79,−159,−303,−125,−12,120,62,11,−110,−162,−273,206,−167,−223,−294,−215,257,−46,−171,−183,−63,−1,10,−100)

The divisibility criterion with 641

p=3, r=1, s=17, γ=16,

v_{inv}=(0;282,−256,−4,40,241,154,−258,16,−160,318,25,−250,−64,−1,10,−100)

The divisibility criterion with 643

p=3, r=1, s=108, γ=107,

v_{inv}=(0;286,−288,308,135,−64,−3,30,−300,−215,221,−281,238,192,9,−90,257,2,−20,200,−71,7,−27,270,−128,−6,60,43,213,−201,81,−167,−259,18,−180,−129,4,−40,−243,−142,134,−54,−103,−256,−12,120,86,−217,241,162,309,125,36,283,−258,8,−80,157,−284,268,−108,−206,131,−24,240,172,209,−161,−319,−25,250,72,−77,127,16,−160,314,75,−107,−216,231,262,−48,−163,−299,−225,321,5,−50,−143,144,−154,254,32,−320,−15,150,−214,211,−181,−119,−96,317,45,193,−1,10,−100)

The divisibility criterion with 647

p=3, r=1, s=324, γ=323,

v_{dir}=(0;294,295,285,−262,32,−320,−35,−297,−265,62,27,−270,112,174,201,−69,43,217,−229,−298,−255,−38,−267,82,−173,−211,169,251,78,−133,36,287,−282,232,

268,−92,273,−142,126,34,307,165,291,−322,−15,150,−206,119,104,254,48,167,271,−122,−74,93,−283,242,168,261,−22,220,−259,2,−20,200,−59,−57,−77,123,64,7,−70,53,117,124,54,107,224,−299,−245,−138,86,−213,189,51,137,−76,113,164,301,225,−309,−145,156,−266,72,−73,83,−183,−111,−184,−101,−284,252,68,−33,−317,−65,3,−30,300,235,238,208,−139,96,−313,−105,−244,−148,186,81,−163,−311,−125,−44,−207,129,4,−40,−247,−118,−114,−154,246,128,14,−140,106,234,248,108,214,−199,49,157,−276,172,221,−269,102,274,−152,226,−319,−45,−197,29,−290,312,115,144,−146,166,281,−222,279,−202,79,−143,136,−66,13,−130,6,−60,−47,−177,−171,−231,−278,192,21,−210,159,−296,−275,162,321,25,−250,−88,233,258,8,−80,153,−236,−228,−308,−155,256,28,−280,212,−179,−151,216,−219,249,98,314,95,−303,−205,109,204,−99,−304,−195,9,−90,253,58,67,−23,230,288,−292,−315,−85,203,−89,243,158,−286,272,−132,26,−260,12,−120,−94,293,305,185,91,−263,42,227,318,55,97,−323,−5,50,147,−176,−181,−131,16,−160,306,175,191,31,−310,−135,56,87,−223,289,−302,−215,209,−149,196,−19,190,41,237,218,−239,−198,39,257,18,−180,−141,116,134,−46,−187,−71,63,17,−170,−241,−178,−161,316,75,−103,−264,52,127,24,−240,−188,−61,−37,−277,182,121,84,−193,−11,110,194,1,−10,100)

The divisibility criterion with 653

p=3, r=1, s=164, γ=163,

v_{dir}=(0;306,205,−91,257,42,233,282,−208,121,96,−307,−195,−9,90,−247,−142,114,166,299,275,−138,74,−87,217,−211,151,−204,81,−157,264,−28,280,−188,−79,137,−64,−13,130,6,−60,−53,−123,−76,107,236,252,92,−267,58,73,−77,117,136,−54,−113,−176,−199,31,−310,−165,−309,−175,−209,131,−4,40,253,82,−167,−289,278,−168,−279,178,179,169,269,−78,127,36,293,−318,−85,197,−11,110,206,−101,−296,−305,−215,191,49,163,−324,−25,250,112,186,99,316,105,256,52,133,−24,240,212,−161,304,225,−291,298,285,−238,−232,−292,308,185,109,216,−201,51,143,−124,−66,7,−70,47,183,129,16,−160,294,325,15,−150,194,19,−190,−59,−63,−23,230,312,145,−144,134,−34,−313,−135,44,213,−171,−249,−122,−86,207,−111,−196,1,−10,100)

The divisibility criterion with 659

p=3, r=1, s=330, γ=329,

v_{dir}=(0;318,115,168,297,325,45,209,−113,−188,−97,311,185,127,48,179,187,107,248,156,−242,−216,183,147,−152,202,−43,−229,313,165,327,25,−250,−136,42,239,246,176,217,−193,−47,−189,−87,211,−133,12,−120,−118,−138,62,39,269,−54,−119,−128,−38,−279,154,−222,243,206,−83,171,267,−34,−319,−105,−268,44,219,−213,153,−212,143,−112,−198,3,−30,300,295,−314,−155,232,316,135,−32,320,95,−291,274,−104,−278,144,−122,−98,321,85,−191,−67,11,−110,−218,203,−53,−129,−28,280,−164,322,75,−91,251,126,58,79,−131,−8,80,−141,92,−261,−26,260,36,299,305,245,186,117,148,−162,302,275,−114,−178,−197,−7,70,−41,−249,−146,142,−10

2,−298,−315,−145,132,−2,20,−200,23,−230,323,65,9,−90,241,226,−283,194,37,28
9,−254,−96,301,285,−214,163,−312,−175,−227,293,−294,304,255,86,−201,33,329
,5,−50,−159,272,−84,181,167,307,225,−273,94,−281,174,237,266,−24,240,236,27
6,−124,−78,121,108,238,256,76,−101,−308,−215,173,247,166,317,125,68,−21,210
,−123,−88,221,−233,−306,−235,−286,224,−263,−6,60,59,69,−31,310,195,27,−270,
64,19,−190,−77,111,208,−103,−288,244,196,17,−170,−277,134,−22,220,−223,253
,106,258,56,99,328,15,−150,182,157,−252,−116,−158,262,16,−160,282,−184,−137
,52,139,−72,61,49,169,287,−234,−296,324,55,109,228,−303,−265,14,−140,82,−16
1,292,−284,204,−63,−29,290,−264,4,−40,−259,−46,−199,13,−130,−18,180,177,20
7,−93,271,−74,81,−151,192,57,89,−231,−326,−35,−309,−205,73,−71,51,149,−172,
−257,−66,1,−10,100)

The divisibility criterion with 661

p=3, r=1, s=111, γ=110,

v_{inv}=(0;322,85,−189,−93,269,−46,−201,27,−270,56,101,312,185,133,−8,80,−139,6
8,−19,190,83,−169,−293,286,−216,177,213,−147,148,−158,258,64,21,−210,117,15
2,−198,−3,30,−300,−305,−255,−94,279,−146,138,−58,−81,149,−168,−303,−275,1
06,262,24,−240,−244,−204,57,91,−249,−154,218,−197,−13,130,22,−220,217,−187
,−113,−192,−63,−31,310,205,−67,9,−90,239,254,104,282,−176,−223,247,174,243,
214,−157,248,164,−318,−125,−72,59,71,−49,−171,−273,86,−199,7,−70,39,271,−6
6,−1,10,−100)

The divisibility criterion with 673

p=3, r=1, s=113, γ=112,

v_{inv}=(0;−327,−95,277,−78,107,276,−68,7,−70,27,−270,8,−80,127,76,−87,197,49,18
3,189,129,56,113,216,−141,64,33,−330,−65,−23,230,−281,118,166,−314,−225,231
,−291,218,−161,264,52,153,−184,−179,−229,271,−18,180,219,−171,−309,−275,58
,93,−257,−122,−126,−86,187,149,−144,94,−267,−22,220,−181,−209,71,−37,−303,
−335,−15,150,−154,194,79,−117,−176,−259,−102,−326,−105,−296,268,12,−120,−
146,114,206,−41,−263,−62,−53,−143,84,−167,324,125,96,−287,178,239,302,−328
,−85,177,249,202,−1,10,−100)

The divisibility criterion with 677

p=3, r=1, s=170, γ=169,

v_{dir}=(0;−323,−155,196,71,−33,330,85,−173,−301,302,−312,−265,−58,−97,293,−22
2,189,141,−56,−117,−184,−191,−121,−144,86,−183,−201,−21,210,−69,13,−130,−
54,−137,16,−160,246,248,228,−249,−218,149,−136,6,−60,−77,93,−253,−178,−251
,−198,−51,−167,316,225,−219,159,−236,329,95,−273,22,−220,169,−336,−25,250,
208,−49,−187,−161,256,148,−126,−94,263,78,−103,−324,−145,96,−283,122,134,1
4,−140,46,217,−139,36,317,215,−119,−164,286,−152,166,−306,−325,−135,−4,40,

277,−62,−57,−107,−284,132,34,337,15,−150,146,−106,−294,232,−289,182,211,−79,113,224,−209,59,87,−193,−101,333,55,127,84,−163,276,−52,−157,216,−129,−64,−37,−307,−315,−235,319,195,81,−133,−24,240,308,305,335,35,327,115,204,−9,90,−223,199,41,267,38,297,−262,−88,203,1,−10,100)

The divisibility criterion with 683

p=3, r=1, s=342, γ=341,

v_{inv}=(0;−317,−245,−282,88,−197,−79,107,296,−228,231,−261,−122,−146,94,−257,−162,254,192,129,76,−77,87,−187,−179,−259,−142,54,143,−64,−43,−253,−202,−29,290,−168,314,275,−18,180,249,242,312,295,−218,131,56,123,136,6,−60,−83,147,−104,−326,−155,184,209,−41,−273,−2,20,−200,−49,−193,−119,−176,−289,158,−214,91,−227,221,−161,244,292,−188,−169,324,175,299,−258,−152,154,−174,−309,−325,−165,284,−108,−286,128,86,−177,−279,58,103,336,55,133,36,323,185,199,59,93,−247,−262,−112,−246,−272,−12,120,166,−294,208,−31,310,315,265,82,−137,4,−40,−283,98,−297,238,−331,−105,−316,−255,−182,−229,241,322,195,99,−307,338,35,333,85,−167,304,−308,−335,−65,−33,330,115,216,−111,−256,−172,−329,−125,−116,−206,11,−110,−266,−72,37,313,285,−118,−186,−189,−159,224,−191,−139,24,−240,−332,−95,267,62,63,53,153,−164,274,−8,80,−117,−196,−89,207,−21,210,−51,−173,−319,−225,201,39,293,−198,−69,7,−70,17,−170,334,75,−67,−13,130,66,23,−230,251,222,−171,−339,−25,250,232,−271,−22,220,−151,144,−74,57,113,236,−311,−305,318,235,−301,278,−48,−203,−19,190,149,−124,−126,−106,−306,328,135,16,−160,234,−291,178,269,42,263,102,−337,−45,−233,281,−78,97,−287,138,−14,140,−34,340,15,−150,134,26,−260,−132,−46,−223,181,239,−341,−5,50,183,219,−141,44,243,302,−288,148,−114,−226,211,−61,−73,47,213,−81,127,96,−277,38,303,−298,248,252,212,−71,27,−270,−32,320,215,−101,327,145,−84,157,−204,−9,90,−217,121,156,−194,−109,−276,28,−280,68,3,−30,300,−268,−52,−163,264,92,−237,321,205,−1,10,−100)

The divisibility criterion with 691

p=3, r=1, s=116, γ=115,

v_{dir}=(0;−309,326,195,123,152,−138,−2,20,−200,−73,39,301,−246,−304,276,4,−40,−291,146,−78,89,−199,−83,139,−8,80,−109,−292,156,−178,−293,166,−278,16,−160,218,−107,−312,−335,−105,−332,−135,−32,320,255,214,−67,−γγγγγγγγγγ21,210,−27,270,64,51,181,263,134,42,271,54,151,−128,−102,329,165,−268,−84,149,−108,−302,256,204,33,−330,−155,168,−298,216,−87,179,283,−66,−31,310,−336,−95,259,174,333,125,132,62,71,−19,190,173,343,25,−250,−264,−124,−142,38,311,345,5,−50,−191,−163,248,284,−76,69,1,−10,100)

The divisibility criterion with 701

p=3, r=1, s=351, γ=350,

v_{inv}=(0;−299,186,243,−327,−235,247,334,165,−248,−324,−265,−154,138,22,−220,97,−269,−114,−262,−184,−263,−174,338,125,152,−118,−222,117,232,−217,67,31,−310,296,−156,158,−178,−323,−275,−54,−161,208,23,−230,197,133,72,−19,190,203,73,−29,290,−96,259,214,−37,−331,−195,−153,128,122,182,283,−26,260,204,63,71,−9,90,−199,−113,−272,−84,139,12,−120,−202,−83,129,112,282,−16,160,−198,−123,−172,318,325,255,254,264,164,−238,277,34,−340,−105,349,15,−150,98,−279,−14,140,2,−20,200,103,−329,−215,47,231,−207,−33,330,205,53,171,−308,276,44,261,194,163,−228,177,333,175,−348,−25,250,304,−236,257,234,−237,267,134,62,81,−109,−312,316,345,55,151,−108,−322,−285,46,241,−307,266,144,−38,−321,−295,146,−58,−121,−192,−183,−273,−74,39,311,−306,256,244,−337,−135,−52,−181,−293,126,142,−18,180,303,−226,157,−168,278,24,−240,297,−166,258,224,−137,−32,320,305,−246,−344,−65,−51,−191,−193,−173,328,225,−147,68,21,−210,−3,30,−300,196,143,−28,280,4,−40,−301,206,43,271,94,−239,287,−66,−41,−291,106,342,85,−149,88,−179,−313,326,245,−347,−35,350,5,−50,−201,−93,229,−187,−233,227,−167,268,124,162,−218,77,−69,−11,110,302,−216,57,131,92,−219,87,−169,288,−76,59,111,292,−116,−242,317,335,155,−148,78,−79,89,−189,−213,27,−270,−104,339,115,252,284,−36,−341,−95,249,314,−336,−145,48,221,−107,−332,−185,−253,−274,−64,−61,−91,209,13,−130,−102,319,315,−346,−45,−251,−294,136,42,281,−6,60,101,−309,286,−56,−141,8,−80,99,−289,86,−159,188,223,−127,−132,−82,119,212,−17,170,−298,176,343,75,−49,−211,7,−70,−1,10,−100)

The divisibility criterion with 709

p=3, r=1, s=355, γ=354,

v_{inv}=(0;−291,74,−31,310,−264,−196,−167,252,316,−324,−305,214,−13,130,118,238,−253,−306,224,−113,−288,44,269,146,−42,−289,54,169,−272,−116,−258,−256,−276,−76,51,199,137,48,229,−163,212,7,−70,−9,90,−191,−217,43,279,46,249,346,85,−141,−8,80,−91,201,117,248,−353,−15,150,−82,111,308,−244,313,−294,104,−331,−235,223,−103,321,335,195,177,−352,−25,250,336,185,277,66,49,219,−63,−79,81,−101,301,−174,322,325,295,−114,−278,−56,−149,72,−11,110,318,−344,−105,341,135,68,29,−290,64,69,19,−190,−227,143,−12,120,218,−53,−179,−337,−175,332,225,−123,−188,−247,343,115,268,156,−142,2,−20,200,127,148,−62,−89,181,317,−334,−205,−77,61,99,−281,−26,260,236,−233,203,97,−261,−226,133,88,−171,292,−84,131,108,338,165,−232,193,197,157,−152,102,−311,274,96,−251,−326,−285,14,−140,−18,180,327,275,86,−151,92,−211,−17,170,−282,−16,160,−182,−307,234,−213,3,−30,300,−164,222,−93,221,−83,121,208,47,239,−263,−206,−67,−39,−319,354,5,−50,−209,−37,−339,−155,132,98,−271,−126,−158,162,−202,−107,−348,−65,−59,−119,−228,153,−112,−298,144,−22,220,−73,21,−210,−27,270,136,58,129,128,138,38,329,255,286,−24,240,−273,−106,351,35,−350,−45,−259,−246,333,215,−23,230,−173,312,−284,4,−40,−309,254,296,−124,−178,−347,−75,41,299,−154,122,198,147,−52,−189,−237,243,−303,194,187,257,266,176,−342,−125,−168,262,216,−33,330,245,−323,−315,314,−304,204,87,−161,192,207,57,139,28,−280,−36,−

349,−55,−159,172,−302,184,287,−34,340,145,−32,320,345,95,−241,283,6,−60,−109,−328,−265,−186,−267,−166,242,−293,94,−231,183,297,−

134,−78,71,−1,10,−100)

The divisibility criterion with 719

p=3, r=1, s=360, γ=359,

v_{inv}=(0;−281,−66,−59,−129,−148,42,299,−114,−298,104,−321,334,255,326,335,245,−293,54,179,−352,−75,31,−310,224,−83,111,328,315,−274,−136,−78,61,109,348,115,288,−4,40,319,−314,264,236,−203,−127,−168,242,−263,−246,303,−154,102,−301,134,98,−261,−266,−216,3,−30,300,−124,−198,−177,332,275,126,178,−342,−175,312,−244,283,46,259,286,16,−160,162,−182,−337,−225,93,−211,−47,−249,333,265,226,−103,311,−234,183,327,325,345,145,−12,120,238,−223,73,−11,110,338,215,7,−70,−19,190,257,306,−184,−317,294,−64,−79,71,9,−90,181,347,125,188,277,106,−341,−185,−307,194,217,−13,130,138,58,139,48,239,−233,173,−292,44,279,86,−141,−28,280,76,−41,−309,214,17,−170,262,256,316,−284,−36,−359,−5,50,219,−33,330,295,−74,21,−210,−57,−149,52,199,167,−232,163,−192,−237,213,27,−270,−176,322,−344,−155,112,318,−304,164,−202,−137,−68,−39,−329,−305,174,−302,144,−2,20,−200,−157,132,118,258,296,−84,121,228,−123,−208,−77,51,209,67,49,229,−133,−108,−358,−15,150,−62,−99,271,166,−222,63,89,−171,272,156,−122,−218,23,−230,143,8,−80,81,−91,191,247,−313,254,336,235,−193,−227,113,308,−204,−117,−268,−196,−197,−187,−287,−6,60,119,248,−323,354,55,169,−252,−356,−35,350,95,−231,153,−92,201,147,−32,320,−324,−355,−45,−269,−186,−297,94,−221,53,189,267,206,97,−251,353,65,69,29,−290,24,−240,243,−273,−146,22,−220,43,289,−14,140,38,339,205,107,−351,−85,131,128,158,−142,−18,180,357,25,−250,343,165,−212,−37,−349,−105,331,285,26,−260,−276,−116,−278,−96,241,−253,−346,−135,−88,161,−172,282,56,159,−152,82,−101,291,−34,340,195,207,87,−151,72,−1,10,−100)

The divisibility criterion with 727

p=3, r=1, s=364, γ=363,

v_{dir}=(0;−273,−178,326,−352,−115,−304,132,134,114,314,−232,139,64,87,−143,−24,240,−219,9,−90,173,−276,−148,26,−260,−308,172,−266,−248,299,−82,93,−203,−151,56,167,−216,−21,210,81,−83,103,−303,122,234,−159,136,94,−213,−51,−217,−11,110,354,95,−223,49,237,−189,−291,2,−20,200,181,−356,−75,23,−230,119,264,268,228,−99,263,278,128,174,−286,−48,−247,289,18,−180,346,175,−296,52,207,111,344,195,231,−129,−164,186,321,−302,112,334,295,−42,−307,162,−166,206,121,244,−259,−318,272,188,301,−102,293,−22,220,−19,190,281,98,−253,349,145,4,−40,−327,362,15,−150,46,267,238,−199,−191,−271,−198,−201,−171,256,348,155,−96,233,−149,36,−360,−35,350,135,104,−313,222,−39,−337,−265,−258,−328,−355,−85,123,224,−59,−137,−84,113,324,−332,−315,242,−239,209,91,−183,−351,−12

5,−204,−141,−44,−287,−38,−347,−165,196,221,−29,290,8,−80,73,−3,30,−300,92,−193,−251,329,345,185,331,325,−342,−215,−31,310,−192,−261,−298,72,7,−70,−27,270,208,101,−283,−78,53,197,211,71,17,−170,246,−279,−118,−274,−168,226,−79,63,97,−243,249,−309,182,361,25,−250,319,−282,−88,153,−76,33,−330,−335,−285,−58,−147,16,−160,146,−6,60,127,184,341,225,−69,−37,−357,−65,−77,43,297,−62,−107,343,205,131,144,14,−140,−54,−187,−311,202,161,−156,106,−333,−305,142,34,−340,−235,169,−236,179,−336,−275,−158,126,194,241,−229,109,−363,−5,50,227,−89,163,−176,306,−152,66,67,57,157,−116,−294,32,−320,292,−12,120,254,−359,−45,−277,−138,−74,13,−130,−154,86,−133,−124,−214,−41,−317,262,288,28,−280,−108,353,105,−323,322,−312,212,61,117,284,68,47,257,338,255,358,55,177,−316,252,−339,−245,269,218,1,−10,100)

The divisibility criterion with 733

p=3, r=1, s=62, γ=61,

v_{inv}=(0;−267,−262,−312,188,319,−258,−352,−145,−16,160,−134,−126,−206,−139,−76,27,−270,−232,121,256,−361,−55,−183,364,25,−250,301,−78,47,263,302,−88,147,−4,40,333,335,315,−218,−19,190,299,−58,−153,64,93,−197,−229,91,−177,304,−108,347,195,249,−291,−22,220,−1,10,−100)

The divisibility criterion with 739

p=3, r=1, s=124, γ=123,

v_{dir}=(0;−261,−346,−235,133,148,−2,20,−200,−217,−47,−269,−266,−296,4,−40,−339,−305,94,−201,−207,−147,−8,80,−61,−129,−188,−337,−325,294,16,−160,122,258,−363,−65,−89,151,−32,320,−244,223,−13,130,178,−302,64,99,−251,293,26,−260,−356,−135,−128,−198,−237,153,−52,−219,−27,270,256,−343,−265,−306,104,−301,54,199,227,−53,−209,−127,−208,−137,−108,341,285,106,−321,254,−323,274,216,57,169,−212,−97,231,−93,191,307,−114,−338,−315,194,277,186,357,125,228,−63,−109,351,185,367,25,−250,283,126,218,37,369,5,−50,−239,173,−252,303,−74,1,−10,100)

The divisibility criterion with 743

p=3, r=1, s=372, γ=371,

v_{dir}=(0;−257,341,305,−78,37,−370,−15,150,−14,140,86,−117,−316,188,349,225,−21,210,129,196,269,282,152,−34,340,315,−178,294,32,−320,228,−51,−233,101,−267,−302,48,263,342,295,22,−220,−29,290,72,23,−230,71,33,−330,328,−308,108,−337,−345,−265,−322,248,−251,281,162,−134,−146,−26,260,−371,−5,50,243,−201,−219,−39,−353,−185,364,75,−7,70,43,313,−158,94,−197,−259,361,105,−307,98,−237,141,76,−17,170,−214,−89,147,16,−160,114,346,255,−321,238,−151,24,−240,171,−224,11,−110,357,145,36,−360,−115,−336,−355,−165,164,−154,54,203,199,239,−161,124,246,−231,81,−67,−73,−13,130,186,369,25,−250,271,262,352,195,279,1

82,−334,368,35,−350,−215,−79,47,273,242,−191,−319,218,49,253,−301,38,363,85,−107,327,−298,8,−80,57,173,−244,211,119,296,12,−120,−286,−112,−366,−55,−193,−299,18,−180,314,−168,194,289,82,−77,27,−270,−272,−252,291,62,123,256,−331,338,335,365,65,93,−187,−359,−125,−236,131,176,−274,−232,91,−167,184,−354,−175,264,332,−348,−235,121,276,212,109,−347,−245,221,19,−190,−329,318,−208,−149,4,−40,−343,−285,−122,−266,−312,148,6,−60,−143,−56,−183,344,275,222,9,−90,157,−84,97,−227,41,333,−358,−135,−136,−126,−226,31,−310,128,206,169,−204,−189,−339,−325,278,192,309,−118,−306,88,−137,−116,−326,288,92,−177,284,132,166,−174,254,−311,138,106,−317,198,249,−261,−362,−95,207,159,−104,297,2,−20,200,229,−61,−133,−156,74,3,−30,300,−28,280,172,−234,111,−367,−45,−293,−42,−323,258,−351,−205,−179,304,−68,−63,−113,−356,−155,64,103,−287,−102,277,202,209,139,96,−217,−59,−153,44,303,−58,−163,144,46,283,142,66,83,−87,127,216,69,53,213,99,−247,241,−181,324,−268,−292,−52,−223,1,−10,100)

The divisibility criterion with 751

p=3, r=1, s=126, γ=125,

v_{inv}=(0;−249,237,−117,−332,316,−156,58,171,−208,−173,228,−27,270,304,−36,360,155,−48,−271,−294,−64,−111,359,165,−148,−22,220,53,221,43,321,−206,−193,−323,226,−7,70,51,241,−157,68,71,41,341,345,305,−46,−291,−94,189,363,125,252,−267,−334,336,−356,−195,−303,26,−260,347,285,154,−38,−371,−45,−301,6,−60,−151,8,−80,49,261,−357,−185,348,275,254,−287,−134,−162,118,322,−216,−93,179,−288,−124,−262,367,85,−99,239,−137,−132,−182,318,−176,258,−327,266,344,315,−146,−42,−331,306,−56,−191,−343,−325,246,−207,−183,328,−276,−244,187,−368,−75,−1,10,−100)

The divisibility criterion with 757

p=3, r=1, s=28, γ=27,

v_{inv}=(0;−243,159,−76,3,−30,300,28,−280,−228,9,−90,143,84,−83,73,27,−270,−328,252,−249,

219,81,−53,−227,−1,10,−100)

The divisibility criterion with 761

p=3, r=1, s=191, γ=190,

v_{inv}=(0;−239,107,−309,46,301,34,−340,356,245,−167,148,42,341,−366,−145,−72,−41,−351,−295,−94,179,−268,−364,−165,128,242,−137,−152,−2,20,−200,−283,−214,−143,−92,159,−68,−81,49,271,334,−296,−84,79,−29,290,144,82,−59,−171,188,−358,−225,−33,330,−256,277,274,304,4,−40,−361,−195,−333,286,184,−318,136,162,−98,219,93,−169,168,−158,58,181,−288,−164,118,342,−376,−45,−311,66,101,−249,207,213,153,−8,80,−39,−371,−95,189,−368,−125,−272,−324,196,323,−186,338,−336,316,−116,−362,−185,328,−236,77,−9,90,−139,−132,−202,−263,347,335,−3

06,16,−160,78,−19,190,−378,−25,250,−217,−113,369,115,372,85,−89,129,232,−37,370,105,−289,−154,18,−180,278,264,−357,−235,67,91,−149,−32,320,−156,38,−380,−5,50,261,−327,226,23,−230,17,−170,178,−258,297,74,21,−210,−183,308,−36,360,205,233,−47,−291,−134,−182,298,64,121,312,−76,−1,10,−100)

The divisibility criterion with 769

p=3, r=1, s=97, γ=96,

v_{inv}=(0;−231,3,−30,300,76,9,−90,131,228,27,−270,−376,−85,81,−41,−359,−255,243,−123,−308,4,−40,−369,−155,12,−120,−338,304,36,−360,−245,143,108,−311,34,−340,324,−164,102,−251,203,277,306,16,−160,62,149,48,289,186,−322,144,98,−211,−197,−337,294,136,178,−242,113,−361,−235,43,339,−314,64,129,248,−173,192,−382,−25,250,−193,−377,−75,−19,190,−362,−225,−57,−199,−317,94,−171,172,−182,282,256,−253,223,77,−1,10,−100)

The divisibility criterion with 773

p=3, r=1, s=194, γ=193,

v_{inv}=(0;−227,−49,−283,−262,301,82,−47,−303,−62,−153,−16,160,−54,−233,11,−110,327,−178,234,−21,210,219,129,256,−241,91,−137,−176,214,179,−244,121,336,−268,361,255,−231,−9,90,−127,−276,−332,228,39,383,35,−350,−365,−215,−169,144,106,−287,−222,−99,217,149,56,213,189,−344,348,385,15,−150,−46,−313,38,−380,−65,−123,−316,68,93,−157,24,−240,81,−37,370,165,−104,267,−351,−355,−315,58,193,−384,−25,250,−181,264,−321,118,366,205,269,−371,−155,4,−40,−373,−135,−196,−359,−275,−342,328,−188,334,−248,161,−64,−133,−216,−159,44,333,−238,61,163,−84,67,103,−257,251,−191,364,225,69,83,−57,−203,−289,−202,−299,−102,247,−151,−36,360,265,−331,218,139,156,−14,140,146,86,−87,97,−197,−349,−375,−115,377,95,−177,224,79,−17,170,−154,−6,60,173,−184,294,152,26,−260,281,282,272,372,145,96,−187,324,−148,−66,−113,357,295,142,126,286,232,−1,10,−100)

The divisibility criterion with 787

p=3, r=1, s=394, γ=393,

v_{inv}=(0;−213,−231,−51,−277,−378,−155,−24,240,−39,390,35,−350,352,−372,−215,−211,−251,149,84,−53,−257,209,271,−349,342,−272,359,345,−302,−128,−294,−208,−281,−338,232,41,377,165,−76,−27,270,−339,242,−59,−197,−391,−25,250,−139,−184,266,−299,−158,6,−60,−187,296,188,−306,−88,93,−143,−144,−134,−234,−21,210,261,−249,129,284,308,68,107,−283,−318,32,−320,52,267,−309,−58,−207,−291,−238,19,−190,326,−112,333,−182,246,−99,203,331,−162,46,327,−122,−354,392,15,−150,−74,−47,−317,22,−220,−161,36,−360,−335,202,341,−262,259,−229,−71,−77,−17,170,−126,−314,−8,80,−13,130,274,−379,−145,−124,−334,192,−346,312,28,−280,−348,332,−172,146,114,−353,382,115,−363,−305,−98,193,−356,−375,−

185,276,388,55,237,−9,90,−113,343,−282,−328,132,254,−179,216,201,351,−362,−315,2,−20,200,361,325,−102,233,31,−310,−48,−307,−78,−7,70,87,−83,43,357,365,285,298,168,−106,273,−369,−245,89,−103,243,−69,−97,183,−256,199,371,225,111,−323,82,−33,330,−152,−54,−247,109,−303,−118,393,5,−50,−287,−278,−368,−255,189,−316,12,−120,−374,−195,376,175,−176,186,−286,−288,−268,319,−42,−367,−265,289,258,−219,−171,136,214,221,151,64,147,104,−253,169,−116,373,205,311,38,−380,−135,−224,−121,−364,−295,−198,−381,−125,−324,92,−133,−244,79,−3,30,−300,−148,−94,153,44,347,−322,72,67,117,−383,−105,263,−269,329,−142,−154,−34,340,−252,159,−16,160,−26,260,−239,29,−290,−248,119,384,95,−163,56,227,91,−123,−344,292,228,81,−23,230,61,177,−196,386,75,37,−370,−235,−11,110,−313,−18,180,−226,−101,223,131,264,−279,−358,−355,−385,−85,63,157,4,−40,−387,−65,−137,−204,−321,62,167,−96,173,−156,−14,140,174,−166,86,−73,−57,−217,−191,336,−212,−241,49,297,178,−206,−301,−138,−194,366,275,−389,−45,−337,222,141,164,−66,−127,−304,−108,293,218,181,−236,−1,10,−100)

The divisibility criterion with 797

p=3, r=1, s=200, γ=199,

v_{inv}=(0;−203,−361,−375,−235,−41,−387,−115,353,−342,232,71,87,−73,−67,−127,−324,52,277,−379,−195,356,−372,−265,259,−199,396,25,−250,109,−293,−258,189,−296,−228,−111,313,58,217,221,181,−216,−231,−81,13,−130,−294,−248,89,−93,133,264,−249,99,−193,336,−172,126,334,−152,−74,−57,−227,−121,−384,−145,−144,−154,−54,−257,179,−196,366,325,−62,−177,176,−166,66,137,224,151,84,−43,−367,−315,−38,380,185,−256,169,−96,163,−36,360,385,135,244,−49,−307,−118,383,155,44,357,−382,−165,56,237,21,−210,−291,−278,389,95,−153,−64,−157,−24,240,−9,90,−103,233,61,187,−276,369,295,238,11,−110,303,158,14,−140,−194,346,−272,329,−102,223,161,−16,160,−6,60,197,−376,−225,−141,−184,246,−69,−107,273,−339,202,371,275,−359,−395,−35,350,−312,−68,−117,373,255,−159,−4,40,397,15,−150,−94,143,164,−46,−337,182,−226,−131,−284,−348,292,268,−289,−298,−208,−311,−78,−17,170,−106,263,−239,−1,10,−100)

The divisibility criterion with 809

p=3, r=1, s=102, γ=101,

v_{dir}=(0;−191,292,316,76,49,319,46,349,−254,113,−321,−26,260,−173,112,−311,−126,−358,344,−204,−387,−175,132,298,256,−133,−288,−356,324,−4,40,−400,−45,−359,354,−304,−196,342,−184,222,207,357,−334,104,−231,−117,361,−374,−305,−186,242,7,−70,−109,281,−383,−215,−277,343,−194,322,16,−160,−18,180,−182,202,−402,−25,250,−73,−79,−19,190,−282,393,115,−341,174,−122,−398,−65,−159,−28,280,−373,−315,−86,51,299,246,−33,330,−64,−169,72,89,−81,1,−10,100)

The divisibility criterion with 811

p=3, r=1, s=406, γ=405,

v_{dir}=(0;−189,268,−247,37,−370,−355,306,184,−218,−253,97,−159,−32,320,44,371,345,−206,−373,−325,6,−60,−211,−323,−14,140,222,213,303,214,293,314,104,−229,−143,−192,298,264,−207,−363,386,195,−328,36,−360,356,−316,−84,29,−290,−344,196,−338,136,262,−187,248,−47,−341,166,−38,380,255,−117,359,−346,216,273,−297,−274,307,174,−118,369,365,405,5,−50,−311,−134,−282,387,185,−228,−153,−92,109,−279,357,−326,16,−160,−22,220,233,103,−219,−243,−3,30,−300,−244,7,−70,−111,299,254,−107,259,−157,−52,−291,−334,96,−149,−132,−302,−224,−193,308,164,−18,180,−178,158,42,391,145,172,−98,169,−68,−131,−312,−124,−382,−235,−83,19,−190,278,−347,226,173,−108,269,−257,137,252,−87,59,221,223,203,403,25,−250,67,141,212,313,114,−329,46,351,−266,227,163,−8,80,11,−110,289,354,−296,−284,−404,−15,150,122,402,35,−350,256,−127,−352,276,−327,26,−260,167,−48,−331,66,151,112,−309,−154,−82,9,−90,89,−79,−21,210,333,−86,49,321,34,−340,156,62,191,−288,−364,396,95,−139,−232,−113,319,54,271,−277,337,−126,−362,376,295,294,304,204,393,125,372,335,−106,249,−57,−241,−23,230,133,292,324,4,−40,400,55,261,−177,148,142,202,−398,−75,−61,−201,388,175,−128,−342,176,−138,−242,−13,130,322,24,−240,−33,330,−56,−251,77,41,401,45,361,−366,−395,−105,239,43,381,245,−17,170,−78,−31,310,144,182,−198,358,−336,116,−349,246,−27,270,−267,237,63,181,−188,258,−147,−152,−102,209,343,−186,238,53,281,−377,−285,−394,−115,339,−146,−162,−2,20,−200,378,275,−317,−74,−71,−101,199,−368,−375,−305,−194,318,64,171,−88,69,121,−399,−65,−161,−12,120,−389,−165,28,−280,367,385,205,383,225,183,−208,−353,286,384,215,283,−397,−85,39,−390,−155,−72,−91,99,−179,168,−58,−231,−123,−392,−135,−272,287,374,315,94,−129,−332,76,51,301,234,93,−119,379,265,−217,−263,197,−348,236,73,81,1,−10,100)

The divisibility criterion with 821

p=3, r=1, s=411, γ=410,

v_{inv}=(0;−179,148,162,22,−220,−263,167,−28,280,−337,86,−39,390,205,−408,−25,250,−37,370,405,55,271,−247,7,−70,−121,389,215,313,154,102,−199,348,−196,318,104,−219,−273,267,−207,−393,−175,108,−259,127,372,385,255,−87,49,331,−26,260,−137,−272,257,−107,249,−27,270,−237,−93,109,−269,227,193,−288,−404,−65,−171,68,141,232,143,212,343,−146,−182,178,−138,−262,157,72,101,−189,248,−17,170,−58,−241,−53,−291,−374,−365,366,−376,−345,166,−18,180,−158,−62,−201,368,−396,−145,−192,278,−317,−114,319,94,−119,369,−406,−45,−371,−395,−155,−92,99,−169,48,341,−126,−382,−285,387,235,113,−309,−194,298,304,244,23,−230,−163,−12,120,−379,−315,−134,−302,−264,177,−128,−362,336,−76,−61,−211,−353,246,3,−30,300,284,−377,−335,66,161,32,−320,−84,19,−190,258,−117,349,−206,−403,−75,−71,−111,289,394,165,−8,80,21,−210,−363,346,−176,118,−359,306,224,223,233,133,312,164,2,−20,200,−358,296,324,44,381,295,334,−56,−261,147,172,−78,−41,410,5,−50,−321,−74,−81,−11,110,−279,327,14,−140,−242,−43,−391,−195,308,204,−398,−125,−392,−185,208,383,275,−287,407,35,−350,216,303,254,

−77,−51,−311,−174,98,−159,−52,−301,−274,277,−307,−214,−323,−54,−281,347,−186,218,283,−367,386,245,13,−130,−342,136,282,−357,286,−397,−135,−292,−364,356,−276,297,314,144,202,−378,−325,−34,340,−116,339,−106,239,73,91,−89,69,131,332,−36,360,−316,−124,−402,−85,29,−290,−384,−265,187,−228,−183,188,−238,−83,9,−90,79,31,−310,−184,198,−338,96,−139,−252,57,251,−47,−351,226,203,−388,−225,−213,−333,46,361,−326,−24,240,63,191,−268,217,293,354,−256,97,−149,−152,−122,399,115,−329,6,−60,−221,−253,67,151,132,322,64,181,−168,38,−380,−305,−234,−123,409,15,−150,−142,−222,−243,−33,330,−16,160,42,401,95,−129,−352,236,103,−209,−373,−375,−355,266,−197,328,4,−40,400,105,−229,−173,88,−59,−231,−153,−112,299,294,344,−156,−82,−1,10,−100)

The divisibility criterion with 823

p=3, r=1, s=412, γ=411,

v_{dir}=(0;−177,124,406,55,273,−261,141,236,109,−267,201,−364,348,−188,234,129,356,−268,211,359,−298,−312,−172,74,83,−7,70,123,−407,−45,−373,−385,−265,181,−164,−6,60,223,239,79,33,−330,8,−80,−23,230,169,−44,−383,−285,381,305,242,49,333,−38,380,315,142,226,209,379,325,42,403,85,−27,270,−231,−159,−56,−263,161,36,−360,308,212,349,−198,334,−48,−343,138,266,−191,264,−171,64,183,−184,194,−294,−352,228,189,−244,−29,290,392,195,−304,−252,51,313,162,26,−260,131,336,−68,−143,−216,−309,−202,374,375,365,−358,288,−411,−5,50,323,62,203,−384,−275,281,−341,118,−357,278,−311,−182,174,−94,117,−347,178,−134,−306,−232,−149,−156,−86,37,−370,408,35,−350,208,389,225,219,279,−321,−82,−3,30,−300,−292,−372,−395,−165,4,−40,400,115,−327,−22,220,269,−221,−259,121,−387,−245,−19,190,−254,71,113,−307,−222,−249,21,−210,−369,398,135,296,332,−28,280,−331,18,−180,154,106,−237,−99,167,−24,240,69,133,316,132,326,32,−320,−92,97,−147,−176,114,−317,−122,397,145,196,−314,−152,−126,−386,−255,81,13,−130,−346,168,−34,340,−108,257,−101,187,−224,−229,−179,144,206,409,25,−250,31,−310,−192,274,−271,241,59,233,139,256,−91,87,−47,−353,238,89,−67,−153,−116,337,−78,−43,−393,−185,204,−394,−175,104,−217,−299,−302,−272,251,−41,410,15,−150,−146,−186,214,329,2,−20,200,−354,248,−11,110,−277,301,282,−351,218,289,402,95,−127,−376,−355,258,−111,287,−401,−105,227,199,−344,148,166,−14,140,246,9,−90,77,53,293,362,−328,−12,120,−377,−345,158,66,163,16,−160,−46,−363,338,−88,57,253,−61,−213,−339,98,−157,−76,−63,−193,284,−371,−405,−65,−173,84,−17,170,−54,−283,361,−318,−112,297,322,72,103,−207,−399,−125,−396,−155,−96,137,276,−291,−382,−295,−342,128,366,−368,388,235,119,−367,378,335,−58,−243,−39,390,215,319,102,−197,324,52,303,262,−151,−136,−286,391,205,−404,−75,−73,−93,107,−247,1,−10,100)

The divisibility criterion with 827

p=3, r=1, s=414, γ=413,

v_{inv}=(0;−173,76,67,157,84,−13,130,354,−232,−161,−44,−387,−265,169,−36,360,−292,−388,−255,69,137,284,−359,282,−339,82,7,−70,−127,−384,−295,−358,272,−239,−91,83,−3,30,−300,−308,−228,−201,356,−252,39,−390,−235,−131,−344,132,334,−32,320,108,−253,49,337,−62,−207,−411,−25,250,−19,190,−246,−21,210,381,325,58,247,11,−110,273,−249,9,−90,73,97,−143,−224,−241,−71,−117,343,−122,393,205,−396,−175,96,−133,−324,−68,−147,−184,186,−206,406,75,77,57,257,−89,63,197,−316,−148,−174,86,−33,330,8,−80,−27,270,−219,−291,−398,−155,−104,213,351,−202,366,−352,212,361,−302,−288,399,145,204,−386,−275,269,−209,−391,−225,−231,−171,56,267,−189,236,121,−383,−305,−258,99,−163,−24,240,81,17,−170,46,367,−362,312,188,−226,−221,−271,229,191,−256,79,37,−370,392,215,331,−2,20,−200,346,−152,−134,−314,−168,26,−260,119,−363,322,88,−53,−297,−338,72,107,−243,−51,−317,−138,−274,259,−109,263,−149,−164,−14,140,254,−59,−237,−111,283,−349,182,−166,6,−60,−227,−211,−371,402,115,−323,−78,−47,−357,262,−139,−264,159,64,187,−216,−321,−98,153,124,−413,−5,50,327,38,−380,−335,42,407,65,177,−116,333,−22,220,281,−329,−18,180,−146,−194,286,−379,−345,142,234,141,244,41,−410,−35,350,−192,266,−179,136,294,368,−372,412,15,−150,−154,−114,313,178,−126,−394,−195,296,348,−172,66,167,−16,160,54,287,−389,−245,−31,310,208,401,125,404,95,−123,403,105,−223,−251,29,−290,−408,−55,−277,289,−409,−45,−377,−365,342,−112,293,378,355,−242,−61,−217,−311,−198,326,48,347,−162,−34,340,−92,93,−103,203,−376,−375,−385,−285,369,−382,−315,−158,−74,−87,43,397,165,4,−40,400,135,304,268,−199,336,−52,−307,−238,−101,183,−176,106,−233,−151,−144,−214,−341,102,−193,276,−279,309,218,301,298,328,28,−280,319,118,−353,222,261,−129,−364,332,−12,120,−373,−405,−85,23,−230,−181,156,94,−113,303,278,−299,−318,−128,−374,−395,−185,196,−306,−248,−1,10,−100)

The divisibility criterion with 829

p=3, r=1, s=139, γ=138,

v_{inv}=(0;−171,52,309,226,227,217,317,146,198,−322,−96,131,348,−164,−18,180,−142,−238,−107,241,77,59,239,97,−141,−248,−7,70,129,368,−364,324,76,69,139,268,−193,272,−233,−157,−88,51,319,126,398,165,8,−80,−29,290,−413,−15,150,158,78,49,339,−74,−89,61,219,297,346,−144,−218,−307,−246,−27,270,−213,−357,254,−53,−299,−326,−56,−269,203,−372,404,105,−221,−277,283,−343,114,−311,−206,402,125,408,65,179,−132,−338,64,189,−232,−167,12,−120,371,−394,−205,392,225,237,117,−341,94,−111,281,−323,−86,31,−310,−216,−327,−46,−369,374,405,95,−121,381,335,−34,340,−84,11,−110,271,−223,−257,83,−1,10,−100)

The divisibility criterion with 839

p=3, r=1, s=420, γ=419,

v_{inv}=(0;−161,−68,−159,−88,41,−410,−95,111,−271,193,−252,3,−30,300,356,−204,362,−264,123,−391,−285,333,26,−260,83,9,−90,61,229,227,247,47,369,−334,−16,160,78,59,249,27,−270,183,−152,−158,−98,141,268,−163,−48,−359,234,177,−92,

81,29,−290,383,365,−294,−416,−35,350,−144,−238,−137,−308,−276,243,87,−31,310,256,−43,−409,−105,211,407,125,−411,−85,11,−110,261,−93,91,−71,−129,−388,−315,−206,382,375,−394,−255,33,−330,−56,−279,273,−213,−387,−325,−106,221,307,286,−343,74,99,−151,−168,2,−20,200,−322,−136,−318,−176,82,19,−190,222,297,386,335,6,−60,−239,−127,−408,−115,311,246,57,269,−173,52,319,166,18,−180,122,−381,−385,−345,94,−101,171,−32,320,156,118,−341,54,299,366,−304,−316,−196,282,−303,−326,−96,121,−371,354,−184,162,58,259,−73,−109,251,7,−70,−139,−288,363,−274,223,287,−353,174,−62,−219,−327,−86,21,−210,−417,−25,250,17,−170,22,−220,−317,−186,182,−142,−258,63,209,−412,−75,−89,51,329,66,179,−112,281,−293,413,65,189,−212,−397,−225,−267,153,148,198,−302,−336,4,−40,400,195,−272,203,−352,164,38,−380,−395,−245,−67,−169,12,−120,361,−254,23,−230,−217,−347,114,−301,−346,104,−201,332,36,−360,244,77,69,149,188,−202,342,−64,−199,312,236,157,108,−241,−107,231,207,−392,−275,233,187,−192,242,97,−131,−368,324,116,−321,−146,−218,−337,14,−140,−278,263,−113,291,−393,−265,133,348,−124,401,185,−172,42,419,5,−50,−339,34,−340,44,399,205,−372,364,−284,323,126,418,15,−150,−178,102,−181,132,358,−224,−277,253,−13,130,378,415,45,389,305,306,296,396,235,167,8,−80,−39,390,295,406,135,328,76,79,49,349,−134,−338,24,−240,−117,331,46,379,405,145,228,237,147,208,−402,−175,72,119,−351,154,138,298,376,−404,−155,−128,−398,−215,−367,314,216,357,−214,−377,414,55,289,−373,374,−384,−355,194,−262,103,−191,232,197,−292,403,165,28,−280,283,−313,−226,−257,53,309,266,−143,−248,−37,370,−344,84,−1,10,−100)

The divisibility criterion with 853

p=3, r=1, s=214, γ=213,

v_{inv}=(0;−147,−236,−199,284,−281,251,49,363,−218,−379,378,−368,268,−121,357,−158,−126,407,195,−244,−119,337,42,−420,−65,−203,324,172,−14,140,306,352,−108,227,289,−331,−102,167,36,−360,188,−174,34,−340,−12,120,−347,58,273,−171,4,−40,400,265,−91,57,283,−271,151,196,−254,−19,190,−194,234,219,369,−278,221,349,−78,−73,−123,377,−358,168,26,−260,41,−410,−165,−56,−293,371,−298,421,55,303,382,−408,−185,144,266,−101,157,136,346,−48,−373,318,232,239,169,16,−160,−106,207,−364,228,279,−231,−249,−69,−163,−76,−93,77,83,23,−230,−259,31,−310,−312,−292,361,−198,274,−181,104,−187,164,66,193,−224,−319,−222,−339,−22,220,359,−178,74,113,−277,211,−404,−225,−309,−322,−192,214,419,75,103,−177,64,213,−424,−25,250,59,263,−71,−143,−276,201,−304,−372,308,332,92,−67,−183,124,−387,−395,−315,−262,61,243,129,416,105,−197,264,−81,−43,−423,−35,350,−88,27,−270,141,296,−401,−255,−9,90,−47,−383,418,85,3,−30,300,412,145,256,−1,10,−100)

The divisibility criterion with 857

p=3, r=1, s=429, γ=428,

v_{inv}=(0;−143,−284,269,−119,333,98,−123,373,−302,−408,−205,336,68,177,−56,−297,399,295,−379,362,−192,206,−346,32,−320,−228,−291,339,38,−380,372,−292,349,−62,−237,−201,296,−389,−395,−335,−78,−77,−87,13,−130,−414,−145,−264,69,167,44,417,115,−293,359,−162,−94,83,27,−270,129,424,45,407,215,421,75,107,−213,416,125,−393,−355,122,−363,202,−306,−368,252,51,347,−42,420,85,7,−70,−157,−144,−274,169,24,−240,−171,−4,40,−400,−285,279,−219,−381,382,−392,−365,222,351,−82,−37,370,−272,149,224,331,118,−323,−198,266,−89,33,−330,−128,423,55,307,358,−152,−194,226,311,318,248,91,−53,−327,−158,−134,−374,312,308,348,−52,−337,−58,−277,199,−276,189,−176,46,397,315,278,−209,376,−332,−108,223,341,18,−180,86,−3,30,−300,−428,−5,50,357,−142,−294,369,−262,49,367,−242,−151,−204,326,168,34,−340,−28,280,−229,−281,239,181,−96,103,−173,16,−160,−114,283,−259,19,−190,186,−146,−254,−31,310,328,148,234,231,261,−39,390,385,−422,−65,−207,356,−132,−394,−345,22,−220,−371,282,−249,−81,−47,−387,−415,−135,−364,212,−406,−225,−321,−218,−391,−375,322,208,−366,232,251,61,247,101,−153,−184,126,−403,−255,−21,210,−386,−425,−35,350,−72,−137,−344,12,−120,343,−2,20,−200,286,−289,319,238,191,−196,246,111,−253,−41,410,185,−136,−354,112,−263,59,267,−99,133,384,−412,−165,−64,−217,−401,−275,179,−76,−97,113,−273,159,124,−383,402,265,−79,−67,−187,156,154,174,−26,260,−29,290,−329,−138,−334,−88,23,−230,−271,139,324,188,−166,−54,−317,−258,9,−90,43,427,15,−150,−214,426,25,−250,−71,−147,−244,−131,−404,−245,−121,353,−102,163,84,17,−170,−14,140,314,288,−309,−338,−48,−377,342,8,−80,−57,−287,299,−419,−95,93,−73,−127,413,155,164,74,117,−313,−298,409,195,−236,−211,396,325,178,−66,−197,256,11,−110,243,141,304,388,405,235,221,361,−182,106,−203,316,268,−109,233,241,161,104,−183,116,−303,−398,−305,−378,352,−92,63,227,301,418,105,−193,216,411,175,−36,360,−172,6,−60,−257,−1,10,−100)

The divisibility criterion with 859

p=3, r=1, s=14, γ=13,
v_{dir}=(0;−141,−308,−356,124,−381,374,−304,−396,−335,−86,1,−10,100)

The divisibility criterion with 863

p=3, r=1, s=432, γ=431,

v_{dir}=(0;−137,−356,108,−217,−419,−125,387,−418,−135,−376,308,372,−268,91,−47,−393,−385,398,335,102,−157,−156,−166,−66,−203,304,412,195,−224,−349,38,−380,348,−28,280,−211,384,−388,428,35,−350,48,383,−378,328,172,6,−60,−263,41,−410,−215,424,75,113,−267,81,53,333,122,−357,118,−317,−282,231,279,−201,284,−251,−79,−73,−133,−396,−355,98,−117,307,382,−368,228,309,362,−168,−46,−403,−285,261,−21,210,−374,288,−291,321,242,169,36,−360,148,246,129,−427,−45,−413,−185,124,−377,318,272,−131,−416,−155,−176,34,−340,−52,−343,−22,220,389,425,65,213,−404,−275,161,116,−297,381,−358,128,−417,−145,−276,171,16,−160,−126,397,345,2,−20,200,−274,151,216,429,25,−250,−89,27,−270,111,−247,−1

19,327,182,−94,77,93,−67,−193,204,−314,−312,−332,−132,−406,−255,−39,390,41
5,165,76,103,−167,−56,−303,−422,−95,87,−7,70,163,96,−97,107,−207,344,12,−12
0,337,82,43,−430,−15,150,226,329,162,106,−197,244,149,236,229,299,−401,−305
,−402,−295,361,−158,−146,−266,71,153,196,−234,−249,−99,127,−407,−245,−139,
−336,−92,57,293,−341,−42,420,115,−287,281,−221,−379,338,72,143,296,−371,25
8,9,−90,37,−370,248,109,−227,−319,−262,31,−310,−352,68,183,−104,177,−44,−4
23,−85,−13,130,426,55,313,322,232,269,−101,147,256,29,−290,311,342,32,−320,
−252,−69,−173,4,−40,400,315,302,−431,−5,50,363,−178,54,323,222,369,−238,−2
09,364,−188,154,186,−134,−386,408,235,239,199,−264,51,353,−78,−83,−33,330,1
52,206,−334,−112,257,19,−190,174,−14,140,326,192,−194,214,−414,−175,24,−24
0,−189,164,86,3,−30,300,−411,−205,324,212,−394,−375,298,−391,−405,−265,61,
253,59,273,−141,−316,−292,331,142,306,392,395,365,−198,254,49,373,−278,191,
−184,114,−277,181,−84,−23,230,289,−301,421,105,−187,144,286,−271,121,−347,
18,−180,74,123,−367,218,409,225,339,62,243,159,136,366,−208,354,−88,17,−170
,−26,260,−11,110,−237,−219,−399,−325,−202,294,−351,58,283,−241,−179,64,223
,359,−138,−346,8,−80,−63,−233,−259,1,−10,100)

The divisibility criterion with 877

p=3, r=1, s=220, γ=219,

v_{dir}=(0;−123,353,−22,220,431,75,127,−393,422,165,104,−163,−124,363,−122,343,
78,97,−93,53,347,38,−380,292,−289,259,41,−410,−285,219,−436,−25,250,131,−4
33,−55,−327,−238,−251,−121,333,178,−26,260,31,−310,−408,−305,419,195,−196,
206,−306,429,95,−73,−147,−284,209,−336,−148,−274,109,−213,376,−252,−111,2
33,301,−379,282,−189,136,394,−432,−65,−227,−361,102,−143,−324,−268,49,387,
−362,112,−243,−201,256,71,167,84,37,−370,192,−166,−94,63,247,161,144,314,36
8,−172,−34,340,108,−203,276,−129,413,255,81,67,207,−316,−348,−28,280,−169,
−64,−237,−261,−21,210,−346,−48,−397,−415,−235,−281,179,−36,360,−92,43,−43
0,−85,−27,270,−69,−187,116,−283,199,−236,−271,79,87,7,−70,−177,16,−160,−15
4,−214,386,−352,12,−120,323,278,−149,−264,9,−90,23,−230,−331,−198,226,371,
−202,266,−29,290,−269,59,287,−239,−241,−221,−421,−175,−4,40,−400,−385,342,
88,−3,30,−300,369,−182,66,217,−416,−225,−381,302,−389,382,−312,−388,372,−2
12,366,−152,−234,−291,279,−159,−164,−114,263,1,−10,100)

The divisibility criterion with 881

p=3, r=1, s=221, γ=220,

v_{inv}=(0;−119,309,434,65,231,333,194,−178,18,−180,38,−380,276,−117,289,−247,−
173,−32,320,324,284,−197,208,−318,−344,−84,−41,410,305,−407,−335,−174,−22,
220,−438,−25,250,143,332,204,−278,137,392,−396,436,45,431,95,−69,−191,148,2
82,−177,8,−80,−81,−71,−171,−52,−361,86,21,−210,338,144,322,304,−397,−435,−
55,−331,−214,378,−256,−83,−51,−371,186,−98,99,−109,209,−328,−244,−203,268,
−37,370,−176,−2,20,−200,238,263,13,−130,419,215,−388,356,−36,360,−76,−121,

329,234,303,−387,346,64,241,233,313,394,−416,−245,−193,168,82,61,271,−67,−211,348,44,−440,−5,50,381,−286,217,−408,−325,−274,97,−89,9,−90,19,−190,138,382,−296,317,354,−16,160,162,142,342,104,−159,−172,−42,420,205,−288,237,273,−87,−11,110,−219,428,125,−369,166,102,−139,−372,196,−198,218,−418,−225,−393,406,345,74,141,352,4,−40,400,405,355,−26,260,43,−430,−105,169,72,161,152,242,223,413,275,−107,189,−128,399,415,255,93,−49,−391,386,−336,−164,−122,339,134,422,185,−88,−1,10,−100)

The divisibility criterion with 883

p=3, r=1, s=442, γ=441,

v_{inv}=(0;−117,287,−221,−439,−25,250,149,276,−111,227,379,−258,−69,−193,164,126,−377,238,269,−41,410,315,382,−288,231,339,142,346,72,163,136,406,355,−18,180,−34,340,132,−437,−45,−433,−85,−33,330,232,329,242,229,359,−58,−303,381,−278,131,−427,−145,−316,−372,188,−114,257,79,93,−47,−413,−285,201,−244,−209,324,292,−271,61,273,−81,−73,−153,−236,−289,241,239,259,59,293,−281,161,156,206,−294,291,−261,−39,390,−368,148,286,−211,344,92,−37,370,−168,−86,−23,230,349,42,−420,−215,384,−308,431,105,−167,−96,77,113,−247,−179,24,−240,−249,−159,−176,−6,60,283,−181,44,−440,−15,150,266,−11,110,−217,404,375,−218,414,275,−101,127,−387,338,152,246,189,−124,357,−38,380,−268,31,−310,−432,−95,67,213,−364,108,−197,204,−274,91,−27,270,−51,−373,198,−214,374,−208,314,392,−388,348,52,363,−98,97,−87,−13,130,−417,−245,−199,224,409,325,282,−171,−56,−323,−302,371,−178,14,−140,−366,128,−397,438,35,−350,−32,320,332,212,−354,8,−80,−83,−53,−353,−2,20,−200,234,309,−441,−5,50,383,−298,331,222,429,125,−367,138,386,−328,−252,−129,407,345,82,63,253,119,−307,421,205,−284,191,−144,−326,−272,71,173,36,−360,68,203,−264,−9,90,−17,170,66,223,419,225,399,425,165,116,−277,121,−327,−262,−29,290,−251,−139,−376,228,369,−158,−186,94,−57,−313,−402,−395,418,235,299,−341,−122,337,162,146,306,−411,−305,401,405,365,−118,297,−321,−322,−312,−412,−295,301,−361,78,103,−147,−296,311,422,195,−184,74,143,336,172,46,423,185,−84,−43,430,115,−267,21,−210,334,192,−154,−226,−389,358,−48,−403,−385,318,352,12,−120,317,362,−88,−3,30,−300,351,22,−220,434,75,133,436,55,333,202,−254,−109,207,−304,391,−378,248,169,76,123,−347,−62,−263,−19,190,−134,−426,−155,−216,394,−408,−335,−182,54,343,102,−137,−396,428,135,416,255,99,−107,187,−104,157,196,−194,174,26,−260,−49,−393,398,435,65,233,319,342,112,−237,−279,141,356,−28,280,−151,−256,−89,7,−70,−183,64,243,219,−424,−175,−16,160,166,106,−177,4,−40,400,415,265,−1,10,−100)

The divisibility criterion with 887

p=3, r=1, s=444, γ=443,

v_{dir}=(0;−113,243,231,351,38,−380,252,141,364,−92,33,−330,−248,−181,36,−360,52,367,−122,333,218,−406,−375,202,−246,−201,236,301,−349,−58,−307,409,345,9

8,−93,43,−430,−135,−424,−195,176,14,−140,−374,192,−146,−314,−408,−355,2,−20,200,−226,−401,−425,−185,76,127,−383,282,−159,−184,66,227,391,−362,72,167,104,−153,−244,−221,436,75,137,404,395,−402,−415,−285,189,−116,273,−69,−197,196,−186,86,27,−270,39,−390,352,28,−280,139,384,−292,259,71,177,4,−40,400,435,85,37,−370,152,254,121,−323,−318,−368,132,−433,−105,163,144,334,208,−306,399,−442,−15,150,274,−79,−97,83,57,317,378,−232,−341,−138,−394,392,−372,172,54,347,78,107,−183,56,327,278,−119,303,−369,142,354,8,−80,−87,−17,170,74,147,304,−379,242,241,251,151,264,21,−210,326,288,−219,416,275,−89,3,−30,300,−339,−158,−194,166,114,−253,−131,423,205,−276,99,−103,143,344,108,−193,156,214,−366,112,−233,−331,−238,−281,149,284,−179,16,−160,−174,−34,340,148,294,−279,129,−403,−405,−385,302,−359,42,−420,−235,−311,−438,−55,−337,−178,6,−60,−287,209,−316,−388,332,228,381,−262,−41,410,335,198,−206,286,−199,216,−386,312,428,155,224,421,225,411,325,298,−319,−358,32,−320,−348,−68,−207,296,−299,329,258,81,77,117,−283,169,84,47,417,265,11,−110,213,−356,12,−120,313,418,255,111,−223,−431,−125,363,−82,−67,−217,396,−412,−315,−398,432,115,−263,−31,310,−439,−45,−437,−65,−237,−291,249,171,64,247,191,−136,−414,−295,289,−229,−371,162,154,234,321,338,168,94,−53,−357,22,−220,426,175,24,−240,−261,−51,−377,222,441,25,−250,−161,−164,−134,−434,−95,63,257,91,−23,230,361,−62,−267,9,−90,13,−130,413,305,−389,342,128,−393,382,−272,59,297,−309,429,145,324,308,−419,−245,−211,336,188,−106,173,44,−440,−35,350,48,407,365,−102,133,−443,−5,50,387,−322,−328,−268,19,−190,126,−373,182,−46,−427,−165,−124,353,18,−180,26,−260,−61,−277,109,−203,256,101,−123,343,118,−293,269,−29,290,−239,−271,49,397,−422,−215,376,−212,346,88,7,−70,−187,96,−73,−157,−204,266,1,−10,100)

The divisibility criterion with 907

p=3, r=1, s=152, γ=151,

v_{inv}=(0;−93,23,−230,−421,−325,−378,152,294,−219,376,−132,413,405,−422,−315,429,245,271,11,−110,193,−116,253,191,−96,53,377,−142,−394,312,−399,362,8,−80,−107,163,184,−26,260,121,−303,309,−369,62,287,−149,−324,−388,252,201,−196,146,354,88,27,−270,−21,210,−286,139,424,295,−229,−431,−225,436,175,64,267,51,397,−342,−208,266,61,297,−249,−231,−411,−425,−285,129,−383,202,−206,246,261,111,−203,216,−346,−168,−134,433,205,−236,−361,−18,180,14,−140,−414,−395,322,408,−452,−15,150,314,−419,−345,−178,−34,340,228,441,125,−343,−198,166,154,274,−19,190,−86,−47,−437,−165,−164,−174,−74,−167,−144,−374,112,−213,316,−439,−145,−364,12,−120,293,−209,276,−39,390,−272,−1,10,−100)

The divisibility criterion with 911

p=3, r=1, s=456, γ=455,

v_{inv}=(0;−89,−21,210,−278,47,441,145,372,−76,−151,−312,387,−226,438,175,72,191,−88,−31,310,−367,26,−260,−133,419,365,−6,60,311,−377,126,−349,−154,−282,

87,41,−410,−455,−5,50,411,445,105,−139,−432,−235,−383,186,−38,380,−156,−262,−113,219,−368,36,−360,−44,440,155,272,13,−130,389,−246,−273,−3,30,−300,267,63,281,−77,−141,−412,−435,−205,228,453,25,−250,−233,−403,386,−216,338,264,93,−19,190,−78,−131,399,−346,−184,18,−180,−22,220,−378,136,−449,−65,−261,−123,319,454,15,−150,−322,−424,−315,417,385,−206,238,353,114,−229,−443,−125,339,254,193,−108,169,132,−409,446,95,−39,390,−256,−173,−92,9,−90,−11,110,−189,68,231,423,325,394,−296,227,−448,−75,−161,−212,298,−247,−263,−103,119,−279,57,341,234,393,−286,127,−359,−54,−371,66,251,223,−408,436,195,−128,369,−46,−451,−45,450,55,361,34,−340,−244,−293,197,−148,−342,−224,418,375,−106,149,332,324,404,−396,316,−427,−285,117,−259,−143,−392,276,−27,270,33,−330,−344,−204,218,−358,−64,−271,−23,230,433,225,−428,−275,17,−170,−122,309,−357,−74,−171,−112,209,−268,−53,−381,166,162,202,−198,158,242,313,−397,326,384,−196,138,442,135,−439,−165,−172,−102,109,−179,−32,320,444,115,−239,−343,−214,318,−447,−85,−61,−301,277,−37,370,−56,−351,−134,429,265,83,81,101,−99,79,121,−299,257,163,192,−98,69,221,−388,236,373,−86,−51,−401,366,−16,160,222,−398,336,284,−107,159,232,413,425,305,−317,437,185,−28,280,−67,−241,−323,−414,−415,−405,406,−416,−395,306,−327,−374,96,−49,−421,−345,−194,118,−269,−43,430,255,183,−8,80,111,−199,168,142,402,−376,116,−249,−243,−303,297,−237,−363,−14,140,422,335,294,−207,248,253,203,−208,258,153,292,−187,48,431,245,283,−97,59,321,434,215,−328,−364,−4,40,−400,356,84,71,201,−188,58,331,334,304,−307,337,274,−7,70,211,−288,147,352,124,−329,−354,−104,129,−379,146,362,24,−240,−333,−314,407,−426,−295,217,−348,−164,−182,−2,20,−200,178,42,−420,−355,−94,29,−290,167,152,302,−287,137,452,35,−350,−144,−382,176,62,291,−177,−52,−391,266,73,181,12,−120,289,−157,−252,−213,308,−347,−174,−82,−91,−1,10,−100)

The divisibility criterion with 919

p=3, r=1, s=460, γ=459,

v_{inv}=(0;−81,−109,171,128,−361,−66,−259,−167,−168,−158,−258,−177,−68,−239,−367,−6,60,319,−433,−265,−107,151,328,396,−284,83,89,29,−290,143,408,−404,364,36,−360,−76,−159,−248,−277,13,−130,381,−134,421,385,−174,−98,61,309,−333,−346,−216,322,456,35,−350,−176,−78,−139,−448,−115,231,447,125,−331,−366,−16,160,238,377,−94,21,−210,262,137,−451,−85,−69,−229,452,75,169,148,358,96,−41,410,−424,−355,−126,341,266,97,−51,−409,414,455,45,−450,−95,31,−310,343,246,297,−213,292,−163,−208,242,337,306,−303,273,27,−270,−57,−349,−186,22,−220,362,56,359,86,59,329,386,−184,2,−20,200,−162,−218,342,256,197,−132,401,−334,−336,−316,403,−354,−136,441,185,−12,120,−281,53,389,−214,302,−263,−127,351,166,178,58,339,286,−103,111,−191,72,199,−152,−318,423,365,26,−260,−157,−268,−77,−149,−348,−196,122,−301,253,227,−432,−275,−7,70,219,−352,−156,−278,23,−230,−457,−25,250,257,187,−32,320,−443,−165,−188,42,−420,−395,274,17,−170,−138,−458,−15,150,338,296,−203,192,−82,−99,71,209,−252,−237,−387,1

94,−102,101,−91,−9,90,19,−190,62,299,−233,−427,−325,−426,−335,−326,−416,−435,−245,−307,313,−373,54,379,−114,221,−372,44,−440,−195,112,−201,172,118,−261,−147,−368,4,−40,400,−324,−436,−235,−407,394,−264,−117,251,247,287,−113,211,−272,−37,370,−24,240,357,106,−141,−428,−315,393,−254,−217,332,356,116,−241,−347,−206,222,−382,144,398,−304,283,−73,−189,52,399,−314,383,−154,−298,223,−392,244,317,−413,454,55,369,−14,140,438,215,−312,363,46,459,5,−50,−419,−405,374,−64,−279,33,−330,−376,84,79,129,−371,34,−340,−276,3,−30,300,−243,−327,−406,384,−164,−198,142,418,415,445,145,388,−204,202,−182,−18,180,38,−380,124,−321,453,65,269,67,249,267,87,49,429,305,−293,173,108,−161,−228,442,175,88,39,−390,224,−402,344,236,397,−294,183,8,−80,−119,271,47,449,105,−131,391,−234,−417,−425,−345,−226,422,375,−74,−179,−48,−439,−205,212,−282,63,289,−133,411,−434,−255,−207,232,437,225,−412,444,155,288,−123,311,−353,−146,−378,104,−121,291,−153,−308,323,446,135,−431,−285,93,−11,110,−181,−28,280,−43,430,295,−193,92,−1,10,−100)

The divisibility criterion with 929

p=3, r=1, s=233, γ=232,

v_{inv}=(0;−71,−219,332,396,−244,−347,−246,−327,−446,−185,−8,80,129,−361,−106,131,−381,94,−11,110,−171,−148,−378,64,289,−103,101,−81,−119,261,177,88,49,439,255,237,417,−454,−105,121,−281,23,−230,442,225,−392,204,−182,−38,380,−84,−89,−39,390,−184,−18,180,58,349,226,−402,304,−253,−257,−217,312,−333,−386,144,418,−464,−5,50,429,355,166,198,−122,291,−123,301,−223,372,−4,40,−400,284,−53,−399,274,47,459,55,379,−74,−189,32,−320,413,−414,424,405,−334,−376,44,−440,−245,−337,−346,−256,−227,412,−404,324,−453,−115,221,−352,−196,102,−91,−19,190,−42,420,445,195,−92,−9,90,29,−290,113,−201,152,338,336,356,156,298,−193,72,209,−232,462,25,−250,−287,83,99,−61,−319,403,−314,353,186,−2,20,−200,142,438,265,137,−441,−235,−437,−275,−37,370,16,−160,−258,−207,212,−262,−167,−188,22,−220,342,296,−173,−128,351,206,−202,162,238,407,−354,−176,−98,51,419,455,95,−21,210,−242,−367,−46,460,45,−450,−145,−408,364,76,169,168,178,78,149,368,36,−360,−116,231,−452,−125,321,−423,−415,

434,305,−263,−157,−288,93,−1,10,−100)

The divisibility criterion with 937

p=3, r=1, s=469, γ=468,

v_{inv}=(0;−63,−307,259,221,−336,−388,132,−383,82,117,−233,456,125,−313,319,−379,42,−420,452,165,224,−366,−88,−57,−367,−78,−157,−304,229,−416,412,−372,−28,280,11,−110,163,244,371,38,−380,52,417,−422,−465,−35,350,248,331,438,305,−239,−421,462,65,287,−59,−347,−278,−31,310,−289,79,147,404,−292,109,−153,−344,−308,269,121,−273,−81,−127,333,418,−432,−365,−98,43,−430,−385,102,−83,−107,133,−393,182,54,397,−222,346,288,−69,−247,−341,−338,−368,−68,−257,−

241,−401,262,191,−36,360,148,394,−192,46,−460,−85,−87,−67,−267,−141,−464,−45,450,185,24,−240,−411,362,128,−343,−318,369,58,357,178,94,−3,30,−300,189,−16,160,274,71,227,−396,212,−246,−351,−238,−431,−375,2,−20,200,−126,323,−419,442,265,161,264,171,164,234,−466,−25,250,311,−299,179,84,97,−33,330,448,205,−176,−114,203,−156,−314,329,458,105,−113,193,−56,−377,22,−220,326,−449,−195,76,177,104,−103,93,7,−70,−237,−441,−275,−61,−327,459,95,−13,130,−363,−118,243,381,−62,−317,359,158,294,−129,353,218,−306,249,321,−399,242,391,−162,−254,−271,−101,73,207,−196,86,77,167,204,−166,−214,266,151,364,108,−143,−444,−245,−361,−138,443,255,261,201,−136,423,455,135,−413,382,−72,−217,296,−149,−384,92,17,−170,−174,−134,403,−282,9,−90,−37,370,48,457,115,−213,256,251,301,−199,116,−223,356,188,−6,60,337,378,−32,320,−389,142,454,145,424,445,235,461,75,187,4,−40,400,−252,−291,99,−53,−407,322,−409,342,328,468,5,−50,−437,−315,339,358,168,194,−66,−277,−41,410,−352,−228,406,−312,309,−279,−21,210,−226,386,−112,183,44,−440,−285,39,−390,152,354,208,−206,186,14,−140,463,55,387,−122,283,−19,190,−26,260,211,−236,−451,−175,−124,303,−219,316,−349,−258,−231,436,325,−439,−295,139,−453,−155,−324,429,395,−202,146,414,−392,172,154,334,408,−332,−428,−405,302,−209,216,−286,49,447,215,−276,−51,−427,−415,402,−272,−91,−27,270,111,−173,−144,−434,−345,−298,169,184,34,−340,−348,−268,−131,373,18,−180,−74,−197,96,−23,230,−426,−425,−435,−335,−398,232,−446,−225,376,−12,120,−263,−181,−64,−297,159,284,−29,290,−89,−47,−467,−15,150,374,8,−80,−137,433,355,198,−106,123,−293,119,−253,−281,−1,10,−100)

The divisibility criterion with 941

p=3, r=1, s=471, γ=470,

v_{inv}=(0;−59,−351,−254,−283,7,−70,−241,−413,366,104,−99,49,451,195,−68,−261,−213,248,343,334,424,465,55,391,−146,−422,456,145,432,385,−86,−81,−131,369,74,201,−128,339,374,24,−240,−423,466,45,−450,−205,168,202,−138,439,315,−327,447,235,−468,−25,250,323,−407,306,−237,−453,−175,−132,379,−26,260,223,−348,−284,17,−170,−182,−62,−321,387,−106,119,−249,−333,−434,−365,−114,199,−108,139,−449,−215,268,143,452,185,32,−320,377,−6,60,341,354,224,−358,−184,−42,420,−436,−345,−314,317,−347,−294,117,−229,408,−316,337,394,−176,−122,279,33,−330,−464,−65,−291,87,71,231,−428,−425,−455,−155,−332,−444,−265,−173,−152,−362,−144,−442,−285,27,−270,−123,289,−67,−271,−113,189,−8,80,141,−469,−15,150,382,−56,−381,46,−460,−105,109,−149,−392,156,322,−397,206,−178,−102,79,151,372,44,−440,−305,227,−388,116,−219,308,−257,−253,−293,107,−129,349,274,83,111,−169,−192,38,−380,36,−360,−164,−242,−403,266,163,252,303,−207,188,2,−20,200,−118,239,433,375,14,−140,459,115,−209,208,−198,98,−39,390,−136,419,−426,−445,−255,−273,−93,−11,110,−159,−292,97,−29,290,−77,−171,−172,−162,−262,−203,148,402,−256,−263,−193,48,461,95,−9,90,41,−410,336,404,−276,−63,−311,287,−47,470,5,−50,−441,−295,127,−329,467,35,−350,−264,−183,

−52,−421,446,245,373,34,−340,−364,−124,299,−167,−212,238,443,275,73,211,−228,398,−216,278,43,−430,−405,286,−37,370,64,301,−187,−12,120,−259,−233,448,225,−368,−84,−101,69,251,313,−307,247,353,234,−458,−125,309,−267,−153,−352,−244,−383,66,281,13,−130,359,174,142,462,85,91,31,−310,277,53,411,−346,−304,217,−288,57,371,54,401,−246,−363,−134,399,−226,378,−16,160,282,3,−30,300,−177,−112,179,92,21,−210,218,−298,157,312,−297,147,412,−356,−204,158,302,−197,88,61,331,454,165,232,−438,−325,427,435,355,214,−258,−243,−393,166,222,−338,−384,76,181,72,221,−328,457,135,−409,326,−437,−335,−414,376,4,−40,400,−236,−463,−75,−191,28,−280,−23,230,−418,416,−396,196,−78,−161,−272,−103,89,51,431,395,−186,−22,220,−318,357,194,−58,−361,−154,−342,−344,−324,417,−406,296,−137,429,415,−386,96,−19,190,−18,180,82,121,−269,−133,389,−126,319,−367,−94,−1,10,−100)

The divisibility criterion with 947

p=3, r=1, s=474, γ=473,

v_{inv}=(0;−53,−417,382,−32,320,−359,−198,86,87,77,177,124,−293,89,57,377,18,−180,−94,−7,70,247,371,78,167,224,−346,−328,439,345,338,408,−292,79,157,324,−399,202,−126,313,−289,49,457,165,244,401,−222,326,−419,402,−232,426,−472,−15,150,394,−152,−374,−48,−467,−65,−297,129,−343,−358,−208,186,34,−340,−388,92,27,−270,−141,463,105,−103,83,117,−223,336,428,455,185,44,−440,−335,−438,−355,−238,−461,−125,303,−189,−4,40,−400,212,−226,366,128,−333,−458,−155,−344,−348,−308,239,451,225,−356,−228,386,−72,−227,376,28,−280,−41,410,−312,279,51,437,365,138,−433,−405,262,221,−316,319,−349,−298,139,−443,−305,209,−196,66,287,−29,290,−59,−357,−218,286,−19,190,−6,60,347,318,−339,−398,192,−26,260,241,431,425,−462,−115,203,−136,413,−342,−368,−108,133,−383,42,−420,412,−332,−468,−55,−397,182,74,207,−176,−134,393,−142,473,5,−50,−447,−265,−191,16,−160,−294,99,−43,430,435,385,−62,−327,429,445,285,−9,90,47,−470,−35,350,288,−39,390,−112,173,164,254,301,−169,−204,146,434,395,−162,−274,−101,63,317,−329,449,245,391,−122,273,111,−163,−264,−201,116,−213,236,−466,−75,−197,76,187,24,−240,−441,−325,409,−302,179,104,−93,−17,170,194,−46,460,135,−403,242,421,−422,432,415,−362,−168,−214,246,381,−22,220,−306,219,−296,119,−243,−411,322,−379,2,−20,200,−106,113,−183,−64,−307,229,−396,172,174,154,354,248,361,178,114,−193,36,−360,−188,−14,140,−453,−205,156,334,448,255,291,−69,−257,−271,−131,363,158,314,−299,149,404,−252,−321,369,98,−33,330,−459,−145,−444,−295,109,−143,−464,−95,3,−30,300,−159,−304,199,−96,13,−130,353,258,261,231,−416,372,68,267,171,184,54,407,−282,−21,210,−206,166,234,−446,−275,−91,−37,370,88,67,277,71,237,471,25,−250,−341,−378,−8,80,147,424,−452,−215,256,281,31,−310,259,251,331,−469,−45,450,235,−456,−175,−144,−454,−195,56,387,−82,−127,323,−389,102,−73,−217,276,81,137,−423,442,315,−309,249,351,278,61,337,418,−392,132,−373,−58,−367,−118,233,−436,−375,−38,380,−12,120,−253,−311,269,151,384,−52,−427,−465,−85,−97,23,−230,406,−272,−121,2

63,211,−216,266,181,84,107,−123,283,11,−110,153,364,148,414,−352,−268,−161,−284,−1,10,−100)

The divisibility criterion with 953

p=3, r=1, s=477, γ=476,

v_{inv}=(0;−47,470,65,303,−171,−196,54,413,−318,321,−351,−302,161,296,−101,57,383,−18,180,106,−107,117,−217,264,219,−284,−19,190,6,−60,−353,−282,−39,390,−88,−73,−223,324,−381,−2,20,−200,94,13,−130,347,342,392,−108,127,−317,311,−251,−349,−322,361,202,−114,187,36,−360,−212,214,−234,434,425,−438,−385,38,−380,−12,120,−247,−389,78,173,176,146,446,305,−191,4,−40,400,−188,−26,260,259,269,169,216,−254,−319,331,−451,−255,−309,231,−404,228,−374,−72,−233,424,−428,468,85,103,−77,−183,−76,−193,24,−240,−459,−175,−156,−346,−352,−292,61,343,382,−8,80,153,376,52,433,435,415,−338,−432,−445,−315,291,−51,−443,−335,−462,−145,−456,−205,144,466,105,−97,17,−170,−206,154,366,152,386,−48,−473,−35,350,312,−261,−249,−369,−122,267,189,16,−160,−306,201,−104,87,83,123,−277,−89,−63,−323,371,102,−67,−283,−29,290,−41,410,−288,21,−210,194,−34,340,412,−308,221,−304,181,96,−7,70,253,329,−431,−455,−215,244,419,−378,−32,320,−341,−402,208,−174,−166,−246,−399,178,126,−307,211,−204,134,−387,58,373,82,133,−377,−42,420,−388,68,273,129,−337,−442,−345,−362,−192,14,−140,447,295,−91,−43,430,465,115,−197,64,313,−271,−149,−416,348,332,−461,−155,−356,−252,−339,−422,408,−268,−179,−116,207,−164,−266,−199,84,113,−177,−136,407,−258,−279,−69,−263,−229,384,−28,280,59,363,182,86,93,23,−230,394,−128,327,−411,298,−121,257,289,−31,310,−241,−449,−275,−109,137,−417,358,232,−414,328,−421,398,−168,−226,354,272,139,−437,−395,138,−427,458,185,56,393,−118,227,−364,−172,−186,−46,460,165,256,299,−131,357,242,439,375,62,333,−471,−55,−403,218,−274,−119,237,−464,−125,297,−111,157,336,452,245,409,−278,−79,−163,−276,−99,37,−370,−112,167,236,−454,−225,344,372,92,33,−330,441,355,262,239,469,75,203,−124,287,−11,110,−147,−436,−405,238,−474,−25,250,359,222,−314,281,49,463,135,−397,158,326,−401,198,−74,−213,224,−334,−472,−45,450,265,209,−184,−66,−293,71,243,429,475,15,−150,−406,248,379,22,−220,294,−81,−143,−476,−5,50,453,235,−444,−325,391,−98,27,−270,−159,−316,301,−151,−396,148,426,−448,−285,−9,90,53,423,−418,368,132,−367,−142,467,95,3,−30,300,−141,457,195,−44,440,365,162,286,−1,10,−100)

The divisibility criterion with 967

p=3, r=1, s=162, γ=161,

v_{dir}=(0;−33,330,−399,122,−253,−371,−158,−354,−328,379,78,187,64,327,−369,−178,−154,−394

,72,247,431,−442,−415,282,81,157,364,228,−346,−408,212,−186,−74,−227,336,−459,−245,−451,−325,349,378,88,87,97,−3,30,−300,99,−23,230,−366,−208,146,47

4,95,17,−170,−234,406,−192,−14,140,−433,462,215,−216,226,−326,359,278,121,−243,−471,−125,283,71,257,331,−409,222,−286,−41,410,−232,386,8,−80,−167,−264,−261,−291,9,−90,−67,−297,69,277,131,−343,−438,−455,−285,−51,−457,−265,−251,−391,42,−420,332,−419,322,−319,289,11,−110,133,−363,−238,446,375,118,−213,196,−26,260,301,−109,123,−263,−271,−191,−24,240,−466,−175,−184,−94,−27,270,201,−76,−207,136,−393,62,347,398,−112,153,404,−172,−214,206,−126,293,−29,290,1,−10,100)

The divisibility criterion with 971

p=3, r=1, s=486, γ=485,

v_{dir}=(0;−29,290,13,−130,329,−377,−114,169,252,393,−46,460,255,363,254,373,154,402,−136,389,−6,60,371,174,202,−78,−191,−32,320,−287,−43,430,−416,276,153,412,−236,418,−296,47,−470,−155,−392,36,−360,−284,−73,−241,468,175,192,22,−220,258,333,−417,286,53,441,445,405,−166,−282,−93,−41,410,−216,218,−238,438,475,105,−79,−181,−132,349,394,−56,−411,226,−318,267,243,483,25,−250,−413,246,453,325,−337,457,285,63,341,474,115,−179,−152,−422,336,−447,−385,−34,340,484,15,−150,−442,−435,466,195,−8,80,171,232,−378,−104,69,281,103,−59,−381,−74,−231,368,204,−98,9,−90,−71,−261,−303,117,−199,48,−480,−55,−421,326,−347,−414,256,353,354,344,444,415,−266,−253,−383,−54,−431,426,−376,−124,269,223,−288,−33,330,−387,−14,140,−429,406,−176,−182,−122,249,423,−346,−424,356,324,−327,357,314,−227,328,−367,−214,198,−38,380,84,131,−339,477,85,121,−239,448,375,134,−369,−194,−2,20,−200,58,391,−26,260,313,−217,228,−338,467,185,92,51,461,245,463,225,−308,167,272,193,12,−120,229,−348,−404,156,382,64,331,−397,86,111,−139,419,−306,147,472,135,−379,−94,−31,310,−187,−72,−251,−403,146,482,35,−350,−384,−44,440,455,305,−137,399,−106,89,81,161,332,−407,186,82,151,432,−436,476,95,21,−210,158,362,264,273,183,112,−149,−452,−335,437,485,5,−50,−471,−145,479,65,321,−297,57,401,−126,289,23,−230,358,304,−127,299,−77,−201,68,291,3,−30,300,−87,−101,39,−390,16,−160,−342,−464,−215,208,−138,409,−206,118,−209,148,462,235,−408,196,−18,180,142,−449,−365,−234,398,−96,−11,110,−129,319,−277,−143,459,265,263,283,83,141,−439,−465,−205,108,−109,119,−219,248,433,−446,−395,66,311,−197,28,−280,−113,159,352,364,244,473,125,−279,−123,259,323,−317,257,343,454,315,−237,428,−396,76,211,−168,−262,−293,17,−170,−242,478,75,221,−268,−233,388,4,−40,400,−116,189,52,451,345,434,−456,−295,37,−370,−184,−102,49,481,45,−450,−355,−334,427,−386,−24,240,−458,−275,−163,−312,207,−128,309,−177,−172,−222,278,133,−359,−294,27,−270,−213,188,62,351,374,144,−469,−165,−292,7,−70,−271,−203,88,91,61,361,274,173,212,−178,−162,−322,307,−157,−372,−164,−302,107,−99,19,−190,−42,420,−316,247,443,425,−366,−224,298,−67,−301,97,1,−10,100)

The divisibility criterion with 977

p=3, r=1, s=489, γ=488,

v_{inv}=(0;−23,230,−346,−448,−405,142,−443,−455,−335,419,−282,−111,133,−353,−378,−128,303,

−99,13,−130,323,−299,59,387,38,−380,−108,103,−53,−447,−415,242,−466,−225,296,−29,290,31,−310,169,264,291,21,−210,146,−483,−55,−427,362,288,51,467,215,−196,6,−60,−377,−138,403,−122,243,−476,−125,273,201,−56,−417,262,311,−179,−164,−314,209,−136,383,78,197,−16,160,354,368,228,−326,329,−359,−318,249,441,475,135,−373,−178,−174,−214,186,94,37,−370,−208,126,−283,−101,33,−330,369,218,−226,306,−129,313,−199,36,−360,−308,149,464,245,481,75,227,−316,229,−336,429,−382,−88,−97,−7,70,277,161,344,468,205,−96,−17,170,254,391,−2,20,−200,46,−460,−285,−81,−167,−284,−91,−67,−307,139,−413,222,−266,−271,−221,256,371,198,−26,260,331,−379,−118,203,−76,−217,216,−206,106,−83,−147,−484,−45,450,385,58,397,−62,−357,−338,449,395,−42,420,−292,−11,110,−123,253,401,−102,43,−430,392,−12,120,−223,276,171,244,−486,−25,250,431,−402,112,−143,453,355,358,328,−349,−418,272,211,−156,−394,32,−320,269,241,−456,−325,319,−259,−341,479,95,27,−270,−231,356,348,428,−372,−188,−74,−237,416,−252,−411,202,−66,−317,239,−436,452,365,258,351,398,−72,−257,−361,−298,49,487,15,−150,−454,−345,−458,−305,119,−213,176,194,14,−140,423,−322,289,41,−410,192,34,−340,469,195,4,−40,400,−92,−57,−407,162,334,−409,182,134,−363,−278,−151,−444,−445,−435,442,465,235,−396,52,457,315,−219,236,−406,152,434,−432,412,−212,166,294,−9,90,77,207,−116,183,124,−263,−301,79,187,84,137,−393,22,−220,246,471,175,204,−86,−117,193,24,−240,446,425,−342,−488,−5,50,477,115,−173,−224,286,71,267,261,321,−279,−141,433,−422,312,−189,−64,−337,439,−482,−65,−327,339,−459,−295,19,−190,−54,−437,462,265,281,121,−233,376,148,474,145,−473,−155,−404,132,−343,−478,−105,73,247,461,275,181,144,−463,−255,−381,−98,3,−30,300,−69,−287,−61,−367,−238,426,−352,−388,−28,280,131,−333,399,−82,−157,−384,−68,−297,39,−390,−8,80,177,184,114,−163,−324,309,−159,−364,−268,−251,−421,302,−89,−87,−107,93,47,−470,−185,−104,63,347,438,−472,−165,−304,109,−113,153,424,−332,389,18,−180,−154,−414,232,−366,−248,−451,−375,−158,−374,−168,−274,−191,−44,440,485,35,−350,−408,172,234,−386,−48

,480,85,127,−293,−1,10,−100)

The divisibility criterion with 983

p=3, r=1, s=492, γ=491,

v_{dir}=(0;−17,170,266,289,59,393,2,−20,200,−34,340,−451,−405,118,−197,4,−40,400,−68,−303,81,173,236,−394,8,−80,−183,−136,377,162,346,472,195,16,−160,−366,−272,−229,324,−291,−39,390,32,−320,251,439,−458,−335,401,−78,−203,64,343,−481,−105,67,313,−181,−156,−406,128,−297,21,−210,134,−357,−362,−312,171,256,389,42,−420,268,269,259,359,342,−471,−205,84,143,−447,−445,−465,−265,−299,41,−410,168,286,89,93,53,453,385,82,163,336,−411,178,186,106,−77,−213,164,326,−311,161,356,372,212,−154,−426,328,−331,361,322,−271,−239,424,−308,1

31,−327,321,−261,−339,441,−478,−135,367,262,329,−341,461,305,−101,27,−270,−249,−459,−325,301,−61,−373,−202,54,443,485,65,333,−381,−122,237,−404,108,−97,−13,130,−317,221,−244,474,175,216,−194,−26,260,349,442,−488,−35,350,432,−388,−52,−463,−285,−99,7,−70,−283,−119,207,−104,57,413,−198,14,−140,417,−238,414,−208,114,−157,−396,28,−280,−149,−476,−155,−416,228,−314,191,56,423,−298,31,−310,151,456,355,382,112,−137,387,62,363,302,−71,−273,−219,224,−274,−209,124,−257,−379,−142,437,−438,448,435,−418,248,469,225,−284,−109,107,−87,−113,147,−487,−45,450,415,−218,214,−174,−226,294,9,−90,−83,−153,−436,428,−348,−452,−395,18,−180,−166,−306,111,−127,287,79,193,36,−360,−332,371,222,−254,−409,158,386,72,263,319,−241,444,475,165,316,−211,144,−457,−345,−482,−95,−33,330,−351,−422,288,69,293,19,−190,−66,−323,281,139,−407,138,−397,38,−380,−132,337,−421,278,169,276,189,76,223,−264,−309,141,−427,338,−431,378,152,446,455,365,282,129,−307,121,−227,304,−91,−73,−253,−419,258,369,242,−454,−375,−182,−146,477,145,−467,−245,484,75,233,−364,−292,−29,290,49,−490,−15,150,466,255,399,−58,−403,98,3,−30,300,−51,−473,−185,−116,177,196,6,−60,−383,−102,37,−370,−232,354,392,12,−120,217,−204,74,243,−464,−275,−199,24,−240,434,−408,148,486,55,433,−398,48,−480,−115,167,296,−11,110,−117,187,96,23,−230,334,−391,−22,220,−234,374,192,46,−460,−315,201,−44,440,−468,−235,384,92,63,353,402,−88,−103,47,−470,−215,184,126,−277,−179,−176,−206,94,43,−430,368,252,429,−358,−352,−412,188,86,123,−247,−479,−125,267,279,159,376,172,246,489,25,−250,−449,−425,318,−231,344,−491,−5,50,483,85,133,−347,−462,−295,1,−10,100)

The divisibility criterion with 991

p=3, r=1, s=496, γ=495,

v_{inv}=(0;−9,90,91,81,181,172,262,353,434,−376,−204,58,411,−146,469,265,323,−257,−403,66,331,−337,397,−6,60,391,54,451,445,−486,−95,−41,410,−136,369,274,233,−348,−484,−115,159,392,44,−440,436,−396,−4,40,−400,36,−360,−364,−324,267,303,−57,−421,246,−478,−175,−232,338,−407,106,−69,−301,37,−370,−264,−333,357,394,24,−240,418,−216,178,202,−38,380,164,342,−447,−485,−105,59,401,−46,460,355,414,−176,−222,238,−398,16,−160,−382,−144,449,465,305,−77,−221,228,−298,7,−70,−291,−63,−361,−354,−424,276,213,−148,489,65,341,−437,406,−96,−31,310,−127,279,183,152,462,335,−377,−194,−42,420,−236,378,184,142,−429,326,−287,−103,39,−390,−64,−351,−454,−415,186,122,−229,308,−107,79,201,−28,280,173,252,453,425,−286,−113,139,−399,26,−260,−373,−234,358,384,124,−249,−483,−125,259,383,134,−349,−474,−215,168,302,−47,470,255,423,−266,−313,157,412,−156,−422,256,413,−166,−322,247,−488,−75,−241,428,−316,187,112,−129,299,−17,170,282,153,452,435,−386,−104,49,−490,−55,−441,446,495,5,−50,−491,−45,450,455,405,−86,−131,319,−217,188,102,−29,290,73,261,363,334,−367,−294,−33,330,−327,297,3,−30,300,−27,270,273,243,−448,−475,−205,68,311,−137,379,174,242,−438,416,−196,−22,220,−218,198,2,−20,200,−18,180,182,162,362,344,−467

,−285,−123,239,−408,116,−169,−292,−53,−461,−345,477,185,132,−329,317,−197,−12,120,−209,108,−89,−101,19,−190,−82,−171,−272,−253,−443,466,295,23,−230,318,−207,88,111,−119,199,−8,80,191,72,271,263,343,−457,−385,−114,149,492,35,−350,−464,−315,177,212,−138,389,74,251,463,325,−277,−203,48,−480,−155,−432,356,404,−76,−231,328,−307,97,21,−210,118,−189,−92,−71,−281,−163,−352,−444,476,195,32,−320,227,−288,−93,−61,−381,−154,−442,456,395,14,−140,409,−126,269,283,143,−439,426,−296,−13,130,−309,117,−179,−192,−62,−371,−254,−433,366,304,−67,−321,237,−388,−84,−151,−472,−235,368,284,133,−339,417,−206,78,211,−128,289,83,161,372,244,−458,−375,−214,158,402,−56,−431,346,−487,−85,−141,419,−226,278,193,52,471,245,−468,−275,−223,248,493,25,−250,−473,−225,268,293,43,−430,336,−387,−94,−51,−481,−145,459,365,314,−167,−312,147,−479,−165,−332,347,494,15,−150,−482,−135,359,374,224,−258,−393,−34,340,−427,306,−87,−121,219,−208,98,11,−110,109,−99,−1,10,−100)

The divisibility criterion with 997

p=3, r=1, s=84, γ=83,

v_{dir}=(0;−3,30,−300,9,−90,−97,−27,270,291,81,187,124,−243,436,−372,−268,−311,119,−193,−64,−357,−418,192,74,257,421,−222,226,−266,−331,319,−199,−4,40,−400,12,−120,203,−36,360,388,108,−83,−167,−324,249,−496,−25,250,491,75,247,−476,−225,256,431,−322,229,−296,−31,310,−109,93,67,327,−279,−201,16,−160,−394,−48,480,185,144,−443,442,−432,332,−329,299,1,−10,100)