Linear codes for SSS-based polynomial masking

The SSS-based masking is a special case of GCM (Generalized Code-based masking)

$n = 3$ shares, $t = 1$, $\ell = 8$ bits: (3,1)-SSS (Shamir's Secret Sharing)

Parameters:

- $Z = (X + \alpha_1 Y_1, X + \alpha_2 Y_1, X + \alpha_3 Y_1) = X\mathbf{G} + Y\mathbf{H}$ where $X, Y = (Y_1)$ and Z are the sensitive variable, a mask and the protected variable, respectively, where α_i for $1 \leq i \leq 3$ are three public points in SSS-scheme
- $\mathbf{G} = [1, 1, 1]$ and $\mathbf{H} = [\alpha_1, \alpha_2, \alpha_3]$ are two generator matrices of codes $\mathcal{C}$ and $\mathcal{D}$, resp.
- $\alpha_i \in \mathbb{F}_{2^\ell} \backslash \{0\}$ and $\alpha_1 \neq \alpha_2 \neq \alpha_3$, thus there are $\binom{255}{3}$ = 2731135 linear codes for (3,1)-SSS
- Each nonzero element over $\mathbb{F}_{2^\ell}$ can be denoted as α^i where $i \in \{0, 1, \ldots, 254\}$, the corresponding irreducible polynomial is $g(\alpha) = \alpha^8 + \alpha^4 + \alpha^3 + \alpha^2 + 1$
- Due to equivalence of linear codes, we simplify the enumeration by choosing $(\alpha_1, \alpha_2, \alpha_3) = (\alpha^i, \alpha^j, \alpha^k)$ where $i = 0$ and $0 < j < k$. Therefore, we get 32131 linear codes

In [1]:

```
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
import re
import pandas as pd # Pandas for tables
from IPython.display import Latex
from IPython.display import HTML
```

In [2]:

```
def read_log(file_name):

    pow_ind = []
    dim_all = []
    d_orig_w = []
    d_dual_w = []
    d_dual_b = []
    with open(file_name, 'r') as fp:
        wd = fp.read().split("\n")[:]
        len_all = 0
        for i in range(len(wd)):
            if wd[i].startswith("j, k ="):
                pow_ind.append([int(i) for i in re.findall(r"\d+", wd[i])])
                len_all = len_all + 1
            elif wd[i].startswith("Dimension:"):
                dim_all.append([int(i) for i in re.findall(r"\d+", wd[i])])
            elif wd[i].startswith("WD orig D (word):"):
                d_orig_w.append([int(i) for i in re.findall(r"\d+", wd[i])])
            elif wd[i].startswith("WD dual D (word):"):
                d_dual_w.append([int(i) for i in re.findall(r"\d+", wd[i])])
            elif wd[i].startswith("WD dual D  (bit):"):
                d_dual_b.append([int(i) for i in re.findall(r"\d+", wd[i]+wd[i+1])])
            else:
                continue

    return pow_ind, d_dual_b
```

1. Loading all weight enumerators

In [3]:

```
pow_ind, d_dual_b = read_log("./magma_paper/gen_codes_sss_3_1_8b.log") # indices and Weight distributions

print(len(pow_ind)) # 91 entries: 91 for (3,1)-SSS
#print(len(d_dual_b))
```

```
32131
```

1.1 Generating values

In [4]:

```
alpha_all = np.array(['$\\alpha^{%d}$'%i for i in np.arange(255)])
d_all = np.zeros(len(pow_ind))
B_all = np.zeros(len(pow_ind))
alpha_2 = np.zeros(len(pow_ind), dtype=int)
alpha_3 = np.zeros(len(pow_ind), dtype=int)
for i in range(len(pow_ind)):
    d_all[i] = d_dual_b[i][2]
    B_all[i] = d_dual_b[i][3]
    alpha_2[i] = pow_ind[i][0]
    alpha_3[i] = pow_ind[i][1]
```

1.2 Defining styles of dataframe

See more setting of dataframe from https://mode.com/example-gallery/python_dataframe_styling/

In [5]:

```
# Set properties for th, td and caption elements in dataframe
th_props = [('font-size', '14px'), ('text-align', 'left'), ('font-weight', 'bold'), ('background-color', '#E0E0E0')]
td_props = [('font-size', '13px'), ('text-align', 'left'), ('min-width', '80px')]
cp_props = [('font-size', '16px'), ('text-align', 'center')]
# Set table styles
styles = [dict(selector="th", props=th_props), dict(selector="td", props=td_props), dict(selector="caption", props=cp_props)]
cm_1 = sns.light_palette("red", as_cmap=True)
cm_2 = sns.light_palette("purple", as_cmap=True, reverse=True)
```

In [6]:

```
#df = pd.DataFrame({'$\|\alpha_2$': alpha_all[alpha_2[:]], '$\|\alpha_3$': alpha_all[alpha_3[:]], '$d_{\mathcal{D}}^\perp$': d_all[:],
#                   '$B_{d_{\mathcal{D}}^\perp}$': B_all[:], 'Weight Enumerators': d_dual_b[:]})

pd.set_option('display.max_colwidth', 1000)
pd.set_option('display.width', 800)
```

We omit the complete Tab. I here to avoid wasting of spaces. Hereafter, we only show all codes with maximized $d_{\mathcal{D}}^{\perp} = 4$.

2. Optimal linear codes for (3,1)-SSS-based masking

2.1 Linear codes with $d_{\mathcal{D}}^{\perp} = 4$

We focus on the the linear codes with greater $d_{\mathcal{D}}^{\perp}$, which are better in the sense of side-channel resistance (from our paper).

In [7]:

```
# Finding the indices of d_C=6
d_index = []
d_index_alpha_2 = []
d_index_alpha_3 = []
d_D_perp = 4
for i in range(len(d_dual_b)):
    if d_dual_b[i][2] == d_D_perp:
        d_index.append(i)
        d_index_alpha_2.append(pow_ind[i][0])
        d_index_alpha_3.append(pow_ind[i][1])

d_index = np.array(d_index)
d_index_alpha_2 = np.array(d_index_alpha_2)
d_index_alpha_3 = np.array(d_index_alpha_3)
```

In [8]:

```
print(len(d_index))
#print(d_index)
```

```
768
```

In [9]:

```
def highlight(s, threshold, column):
    is_min = pd.Series(data=False, index=s.index)
    is_min[column] = (s.loc[column] <= threshold)
    return ['background-color: gold' if is_min.any() else '' for v in is_min]
```

In [10]:

```
df_4 = pd.DataFrame({'$\\alpha_2$': np.array(alpha_all)[d_index_alpha_2], '$\\alpha_3$': np.array(alpha_all)[d_index_alpha_3], '$d_{\mathcal
                     d_all[d_index], '$B_{d_{\mathcal{D}}^\perp}$': B_all[d_index], 'Weight Enumerators* (the first 22 values)': np.array(d_d
df_4 = df_4.sort_values(by=['$B_{d_{\mathcal{D}}^\perp}$'], ascending=True)

(df_4.style
    .apply(highlight, threshold=12, column=['$B_{d_{\mathcal{D}}^\perp}$'], axis=1)
    .background_gradient(cmap=cm_2, subset=['$B_{d_{\mathcal{D}}^\perp}$' ])
    .set_caption('Tab. II Linear codes for (3,1)-SSS-based masking with $d_{\mathcal{D}}^\perp=3$.')
    .set_table_styles(styles))
```

Out[10]:

Tab. II Linear codes for (3,1)-SSS-based masking with $d_{\mathcal{D}}^{\perp} = 3$.

	α_2	α_3	$d_{\mathcal{D}}^{\perp}$	$B_{d_{\mathcal{D}}^{\perp}}$	Weight Enumerators* (the first 22 values)
707	α^{175}	α^{247}	4	36	[0, 1, 4, 36, 5, 200, 6, 538, 7, 1312, 8, 2854, 9, 5088, 10, 7712, 11, 9824, 12, 10476, 175, 248]
311	α^{72}	α^{80}	4	36	[0, 1, 4, 36, 5, 200, 6, 538, 7, 1312, 8, 2854, 9, 5088, 10, 7712, 11, 9824, 12, 10476, 72, 81]
24	α^{8}	α^{183}	4	36	[0, 1, 4, 36, 5, 200, 6, 538, 7, 1312, 8, 2854, 9, 5088, 10, 7712, 11, 9824, 12, 10476, 8, 184]
492	α^{87}	α^{214}	4	37	[0, 1, 4, 37, 5, 198, 6, 537, 7, 1320, 8, 2842, 9, 5080, 10, 7748, 11, 9816, 12, 10442, 87, 215]
485	α^{86}	α^{214}	4	37	[0, 1, 4, 37, 5, 200, 6, 534, 7, 1308, 8, 2862, 9, 5108, 10, 7692, 11, 9788, 12, 10526, 86, 215]
552	α^{127}	α^{168}	4	37	[0, 1, 4, 37, 5, 198, 6, 537, 7, 1320, 8, 2842, 9, 5080, 10, 7748, 11, 9816, 12, 10442, 127, 169]
214	α^{41}	α^{128}	4	37	[0, 1, 4, 37, 5, 198, 6, 537, 7, 1320, 8, 2842, 9, 5080, 10, 7748, 11, 9816, 12, 10442, 41, 129]
494	α^{88}	α^{104}	4	37	[0, 1, 4, 37, 5, 197, 6, 542, 7, 1308, 8, 2838, 9, 5144, 10, 7700, 11, 9708, 12, 10566, 88, 105]
213	α^{41}	α^{127}	4	37	[0, 1, 4, 37, 5, 200, 6, 534, 7, 1308, 8, 2862, 9, 5108, 10, 7692, 11, 9788, 12, 10526, 41, 128]
484	α^{86}	α^{213}	4	37	[0, 1, 4, 37, 5, 200, 6, 536, 7, 1306, 8, 2848, 9, 5122, 10, 7734, 11, 9746, 12, 10456, 86, 214]
229	α^{42}	α^{128}	4	37	[0, 1, 4, 37, 5, 200, 6, 536, 7, 1306, 8, 2848, 9, 5122, 10, 7734, 11, 9746, 12, 10456, 42, 129]
325	α^{72}	α^{245}	4	37	[0, 1, 4, 37, 5, 201, 6, 526, 7, 1312, 8, 2902, 9, 5068, 10, 7620, 11, 9888, 12, 10566, 72, 246]
575	α^{151}	α^{239}	4	37	[0, 1, 4, 37, 5, 197, 6, 542, 7, 1308, 8, 2838, 9, 5144, 10, 7700, 11, 9708, 12, 10566, 151, 240]
50	α^{10}	α^{82}	4	37	[0, 1, 4, 37, 5, 201, 6, 526, 7, 1312, 8, 2902, 9, 5068, 10, 7620, 11, 9888, 12, 10566, 10, 83]
167	α^{16}	α^{167}	4	37	[0, 1, 4, 37, 5, 197, 6, 542, 7, 1308, 8, 2838, 9, 5144, 10, 7700, 11, 9708, 12, 10566, 16, 168]
698	α^{173}	α^{183}	4	37	[0, 1, 4, 37, 5, 201, 6, 526, 7, 1312, 8, 2902, 9, 5068, 10, 7620, 11, 9888, 12, 10566, 173, 184]
558	α^{128}	α^{169}	4	37	[0, 1, 4, 37, 5, 200, 6, 534, 7, 1308, 8, 2862, 9, 5108, 10, 7692, 11, 9788, 12, 10526, 128, 170]
553	α^{127}	α^{169}	4	37	[0, 1, 4, 37, 5, 200, 6, 536, 7, 1306, 8, 2848, 9, 5122, 10, 7734, 11, 9746, 12, 10456, 127, 170]
551	α^{127}	α^{167}	4	38	[0, 1, 4, 38, 5, 197, 6, 531, 7, 1326, 8, 2856, 9, 5066, 10, 7734, 11, 9830, 12, 10442, 127, 168]
491	α^{87}	α^{213}	4	38	[0, 1, 4, 38, 5, 199, 6, 529, 7, 1312, 8, 2870, 9, 5108, 10, 7692, 11, 9760, 12, 10512, 87, 214]
696	α^{173}	α^{181}	4	38	[0, 1, 4, 38, 5, 208, 6, 509, 7, 1276, 8, 2978, 9, 5140, 10, 7464, 11, 9820, 12, 10732, 173, 182]
493	α^{87}	α^{215}	4	38	[0, 1, 4, 38, 5, 201, 6, 527, 7, 1306, 8, 2876, 9, 5102, 10, 7698, 11, 9810, 12, 10462, 87, 216]
705	α^{174}	α^{247}	4	38	[0, 1, 4, 38, 5, 200, 6, 525, 7, 1312, 8, 2890, 9, 5088, 10, 7656, 11, 9824, 12, 10532, 174, 248]
697	α^{173}	α^{182}	4	38	[0, 1, 4, 38, 5, 208, 6, 512, 7, 1276, 8, 2958, 9, 5140, 10, 7520, 11, 9820, 12, 10648, 173, 183]
702	α^{174}	α^{182}	4	38	[0, 1, 4, 38, 5, 207, 6, 510, 7, 1282, 8, 2972, 9, 5126, 10, 7478, 11, 9834, 12, 10718, 174, 183]
499	α^{88}	α^{215}	4	38	[0, 1, 4, 38, 5, 197, 6, 531, 7, 1326, 8, 2856, 9, 5066, 10, 7734, 11, 9830, 12, 10442, 88, 216]
500	α^{89}	α^{104}	4	38	[0, 1, 4, 38, 5, 194, 6, 548, 7, 1312, 8, 2802, 9, 5152, 10, 7764, 11, 9712, 12, 10508, 89, 105]
576	α^{151}	α^{240}	4	38	[0, 1, 4, 38, 5, 194, 6, 548, 7, 1312, 8, 2802, 9, 5152, 10, 7764, 11, 9712, 12, 10508, 151, 241]
199	α^{40}	α^{127}	4	38	[0, 1, 4, 38, 5, 201, 6, 527, 7, 1306, 8, 2876, 9, 5102, 10, 7698, 11, 9810, 12, 10462, 40, 128]
145	α^{15}	α^{166}	4	38	[0, 1, 4, 38, 5, 194, 6, 548, 7, 1312, 8, 2802, 9, 5152, 10, 7764, 11, 9712, 12, 10508, 15, 167]
343	α^{73}	α^{247}	4	38	[0, 1, 4, 38, 5, 207, 6, 510, 7, 1282, 8, 2972, 9, 5126, 10, 7478, 11, 9834, 12, 10718, 73, 248]
547	α^{126}	α^{168}	4	38	[0, 1, 4, 38, 5, 199, 6, 529, 7, 1312, 8, 2870, 9, 5108, 10, 7692, 11, 9760, 12, 10512, 126, 169]
1	α^{8}	α^{81}	4	38	[0, 1, 4, 38, 5, 207, 6, 510, 7, 1282, 8, 2972, 9, 5126, 10, 7478, 11, 9834, 12, 10718, 8, 82]
26	α^{9}	α^{82}	4	38	[0, 1, 4, 38, 5, 208, 6, 512, 7, 1276, 8, 2958, 9, 5140, 10, 7520, 11, 9820, 12, 10648, 9, 83]
23	α^{8}	α^{182}	4	38	[0, 1, 4, 38, 5, 200, 6, 525, 7, 1312, 8, 2890, 9, 5088, 10, 7656, 11, 9824, 12, 10532, 8, 183]
688	α^{172}	α^{180}	4	38	[0, 1, 4, 38, 5, 207, 6, 512, 7, 1278, 8, 2964, 9, 5146, 10, 7486, 11, 9798, 12, 10726, 172, 181]
375	α^{75}	α^{247}	4	38	[0, 1, 4, 38, 5, 207, 6, 512, 7, 1278, 8, 2964, 9, 5146, 10, 7486, 11, 9798, 12, 10726, 75, 248]
2	α^{8}	α^{82}	4	38	[0, 1, 4, 38, 5, 208, 6, 509, 7, 1276, 8, 2978, 9, 5140, 10, 7464, 11, 9820, 12, 10732, 8, 83]
230	α^{42}	α^{129}	4	38	[0, 1, 4, 38, 5, 199, 6, 529, 7, 1312, 8, 2870, 9, 5108, 10, 7692, 11, 9760, 12, 10512, 42, 130]
359	α^{74}	α^{247}	4	38	[0, 1, 4, 38, 5, 208, 6, 509, 7, 1276, 8, 2978, 9, 5140, 10, 7464, 11, 9820, 12, 10732, 74, 248]
200	α^{40}	α^{128}	4	38	[0, 1, 4, 38, 5, 197, 6, 531, 7, 1326, 8, 2856, 9, 5066, 10, 7734, 11, 9830, 12, 10442, 40, 129]
342	α^{73}	α^{246}	4	38	[0, 1, 4, 38, 5, 208, 6, 512, 7, 1276, 8, 2958, 9, 5140, 10, 7520, 11, 9820, 12, 10648, 73, 247]
557	α^{128}	α^{168}	4	38	[0, 1, 4, 38, 5, 201, 6, 527, 7, 1306, 8, 2876, 9, 5102, 10, 7698, 11, 9810, 12, 10462, 128, 169]
328	α^{73}	α^{81}	4	38	[0, 1, 4, 38, 5, 200, 6, 525, 7, 1312, 8, 2890, 9, 5088, 10, 7656, 11, 9824, 12, 10532, 73, 82]
3	α^{8}	α^{83}	4	38	[0, 1, 4, 38, 5, 207, 6, 512, 7, 1278, 8, 2964, 9, 5146, 10, 7486, 11, 9798, 12, 10726, 8, 84]
574	α^{151}	α^{238}	4	39	[0, 1, 4, 39, 5, 189, 6, 555, 7, 1302, 8, 2820, 9, 5186, 10, 7646, 11, 9742, 12, 10640, 151, 239]
546	α^{126}	α^{167}	4	39	[0, 1, 4, 39, 5, 195, 6, 527, 7, 1334, 8, 2864, 9, 5058, 10, 7714, 11, 9822, 12, 10492, 126, 168]
507	α^{90}	α^{194}	4	39	[0, 1, 4, 39, 5, 185, 6, 545, 7, 1372, 8, 2786, 9, 5008, 10, 7836, 11, 9852, 12, 10422, 90, 195]
512	α^{104}	α^{165}	4	39	[0, 1, 4, 39, 5, 185, 6, 545, 7, 1372, 8, 2786, 9, 5008, 10, 7836, 11, 9852, 12, 10422, 104, 166]
513	α^{104}	α^{166}	4	39	[0, 1, 4, 39, 5, 189, 6, 540, 7, 1344, 8, 2830, 9, 5068, 10, 7708, 11, 9824, 12, 10578, 104, 167]
562	α^{129}	α^{169}	4	39	[0, 1, 4, 39, 5, 201, 6, 519, 7, 1306, 8, 2904, 9, 5102, 10, 7642, 11, 9810, 12, 10532, 129, 170]
286	α^{61}	α^{151}	4	39	[0, 1, 4, 39, 5, 185, 6, 545, 7, 1372, 8, 2786, 9, 5008, 10, 7836, 11, 9852, 12, 10422, 61, 152]
486	α^{86}	α^{215}	4	39	[0, 1, 4, 39, 5, 201, 6, 519, 7, 1306, 8, 2904, 9, 5102, 10, 7642, 11, 9810, 12, 10532, 86, 216]
503	α^{89}	α^{193}	4	39	[0, 1, 4, 39, 5, 189, 6, 540, 7, 1344, 8, 2830, 9, 5068, 10, 7708, 11, 9824, 12, 10578, 89, 194]
300	α^{62}	α^{151}	4	39	[0, 1, 4, 39, 5, 189, 6, 540, 7, 1344, 8, 2830, 9, 5068, 10, 7708, 11, 9824, 12, 10578, 62, 152]
326	α^{72}	α^{246}	4	39	[0, 1, 4, 39, 5, 203, 6, 512, 7, 1298, 8, 2944, 9, 5110, 10, 7550, 11, 9818, 12, 10636, 72, 247]
215	α^{41}	α^{129}	4	39	[0, 1, 4, 39, 5, 195, 6, 527, 7, 1334, 8, 2864, 9, 5058, 10, 7714, 11, 9822, 12, 10492, 41, 130]
198	α^{40}	α^{126}	4	39	[0, 1, 4, 39, 5, 201, 6, 519, 7, 1306, 8, 2904, 9, 5102, 10, 7642, 11, 9810, 12, 10532, 40, 127]
25	α^{9}	α^{81}	4	39	[0, 1, 4, 39, 5, 203, 6, 512, 7, 1298, 8, 2944, 9, 5110, 10, 7550, 11, 9818, 12, 10636, 9, 82]
487	α^{87}	α^{104}	4	39	[0, 1, 4, 39, 5, 189, 6, 555, 7, 1302, 8, 2820, 9, 5186, 10, 7646, 11, 9742, 12, 10640, 87, 105]
498	α^{88}	α^{214}	4	39	[0, 1, 4, 39, 5, 195, 6, 527, 7, 1334, 8, 2864, 9, 5058, 10, 7714, 11, 9822, 12, 10492, 88, 215]
703	α^{174}	α^{183}	4	39	[0, 1, 4, 39, 5, 203, 6, 512, 7, 1298, 8, 2944, 9, 5110, 10, 7550, 11, 9818, 12, 10636, 174, 184]
186	α^{17}	α^{168}	4	39	[0, 1, 4, 39, 5, 189, 6, 555, 7, 1302, 8, 2820, 9, 5186, 10, 7646, 11, 9742, 12, 10640, 17, 169]
545	α^{126}	α^{166}	4	40	[0, 1, 4, 40, 5, 194, 6, 526, 7, 1330, 8, 2868, 9, 5074, 10, 7686, 11, 9834, 12, 10538, 126, 167]
180	α^{17}	α^{58}	4	40	[0, 1, 4, 40, 5, 192, 6, 523, 7, 1354, 8, 2864, 9, 5002, 10, 7742, 11, 9906, 12, 10422, 17, 59]
201	α^{40}	α^{129}	4	40	[0, 1, 4, 40, 5, 194, 6, 526, 7, 1330, 8, 2868, 9, 5074, 10, 7686, 11, 9834, 12, 10538, 40, 130]
504	α^{89}	α^{215}	4	40	[0, 1, 4, 40, 5, 194, 6, 526, 7, 1330, 8, 2868, 9, 5074, 10, 7686, 11, 9834, 12, 10538, 89, 216]
390	α^{76}	α^{247}	4	40	[0, 1, 4, 40, 5, 205, 6, 507, 7, 1286, 8, 2952, 9, 5138, 10, 7550, 11, 9790, 12, 10622, 76, 248]
222	α^{41}	α^{238}	4	40	[0, 1, 4, 40, 5, 192, 6, 523, 7, 1354, 8, 2864, 9, 5002, 10, 7742, 11, 9906, 12, 10422, 41, 239]
341	α^{73}	α^{245}	4	40	[0, 1, 4, 40, 5, 204, 6, 509, 7, 1292, 8, 2938, 9, 5124, 10, 7592, 11, 9804, 12, 10552, 73, 246]
327	α^{72}	α^{247}	4	40	[0, 1, 4, 40, 5, 202, 6, 502, 7, 1307, 8, 2980, 9, 5082, 10, 7486, 11, 9854, 12, 10698, 72, 248]
324	α^{72}	α^{244}	4	40	[0, 1, 4, 40, 5, 202, 6, 513, 7, 1300, 8, 2918, 9, 5116, 10, 7628, 11, 9796, 12, 10532, 72, 245]
74	α^{11}	α^{83}	4	40	[0, 1, 4, 40, 5, 202, 6, 513, 7, 1300, 8, 2918, 9, 5116, 10, 7628, 11, 9796, 12, 10532, 11, 84]
0	α^{8}	α^{80}	4	40	[0, 1, 4, 40, 5, 202, 6, 502, 7, 1307, 8, 2980, 9, 5082, 10, 7486, 11, 9854, 12, 10698, 8, 81]
753	α^{197}	α^{214}	4	40	[0, 1, 4, 40, 5, 192, 6, 523, 7, 1354, 8, 2864, 9, 5002, 10, 7742, 11, 9906, 12, 10422, 197, 215]
4	α^{8}	α^{84}	4	40	[0, 1, 4, 40, 5, 205, 6, 507, 7, 1286, 8, 2952, 9, 5138, 10, 7550, 11, 9790, 12, 10622, 8, 85]
706	α^{175}	α^{183}	4	40	[0, 1, 4, 40, 5, 202, 6, 502, 7, 1307, 8, 2980, 9, 5082, 10, 7486, 11, 9854, 12, 10698, 175, 184]
690	α^{172}	α^{182}	4	40	[0, 1, 4, 40, 5, 204, 6, 509, 7, 1292, 8, 2938, 9, 5124, 10, 7592, 11, 9804, 12, 10552, 172, 183]
691	α^{172}	α^{183}	4	40	[0, 1, 4, 40, 5, 202, 6, 513, 7, 1300, 8, 2918, 9, 5116, 10, 7628, 11, 9796, 12, 10532, 172, 184]
51	α^{10}	α^{83}	4	40	[0, 1, 4, 40, 5, 204, 6, 509, 7, 1292, 8, 2938, 9, 5124, 10, 7592, 11, 9804, 12, 10552, 10, 84]
678	α^{171}	α^{179}	4	40	[0, 1, 4, 40, 5, 205, 6, 507, 7, 1286, 8, 2952, 9, 5138, 10, 7550, 11, 9790, 12, 10622, 171, 180]
689	α^{172}	α^{181}	4	41	[0, 1, 4, 41, 5, 207, 6, 498, 7, 1278, 8, 2980, 9, 5146, 10, 7514, 11, 9798, 12, 10628, 172, 182]
97	α^{12}	α^{163}	4	41	[0, 1, 4, 41, 5, 179, 6, 558, 7, 1343, 8, 2784, 9, 5122, 10, 7718, 11, 9794, 12, 10576, 12, 164]
516	α^{104}	α^{178}	4	41	[0, 1, 4, 41, 5, 184, 6, 544, 7, 1330, 8, 2848, 9, 5122, 10, 7598, 11, 9818, 12, 10704, 104, 179]
515	α^{104}	α^{177}	4	41	[0, 1, 4, 41, 5, 194, 6, 520, 7, 1322, 8, 2888, 9, 5122, 10, 7638, 11, 9714, 12, 10616, 104, 178]
579	α^{151}	α^{243}	4	41	[0, 1, 4, 41, 5, 179, 6, 558, 7, 1343, 8, 2784, 9, 5122, 10, 7718, 11, 9794, 12, 10576, 151, 244]
358	α^{74}	α^{246}	4	41	[0, 1, 4, 41, 5, 207, 6, 498, 7, 1278, 8, 2980, 9, 5146, 10, 7514, 11, 9798, 12, 10628, 74, 247]
354	α^{74}	α^{151}	4	41	[0, 1, 4, 41, 5, 184, 6, 544, 7, 1330, 8, 2848, 9, 5122, 10, 7598, 11, 9818, 12, 10704, 74, 152]
400	α^{77}	α^{181}	4	41	[0, 1, 4, 41, 5, 184, 6, 544, 7, 1330, 8, 2848, 9, 5122, 10, 7598, 11, 9818, 12, 10704, 77, 182]
338	α^{73}	α^{151}	4	41	[0, 1, 4, 41, 5, 194, 6, 520, 7, 1322, 8, 2888, 9, 5122, 10, 7638, 11, 9714, 12, 10616, 73, 152]
27	α^{9}	α^{83}	4	41	[0, 1, 4, 41, 5, 207, 6, 498, 7, 1278, 8, 2980, 9, 5146, 10, 7514, 11, 9798, 12, 10628, 9, 84]
509	α^{92}	α^{104}	4	41	[0, 1, 4, 41, 5, 179, 6, 558, 7, 1343, 8, 2784, 9, 5122, 10, 7718, 11, 9794, 12, 10576, 92, 105]
508	α^{91}	α^{104}	4	41	[0, 1, 4, 41, 5, 189, 6, 534, 7, 1338, 8, 2824, 9, 5102, 10, 7758, 11, 9746, 12, 10488, 91, 105]
645	α^{168}	α^{176}	4	41	[0, 1, 4, 41, 5, 188, 6, 538, 7, 1338, 8, 2804, 9, 5122, 10, 7794, 11, 9682, 12, 10468, 168, 177]
7	α^{8}	α^{87}	4	41	[0, 1, 4, 41, 5, 188, 6, 538, 7, 1338, 8, 2804, 9, 5122, 10, 7794, 11, 9682, 12, 10468, 8, 88]
505	α^{90}	α^{104}	4	41	[0, 1, 4, 41, 5, 193, 6, 536, 7, 1321, 8, 2810, 9, 5124, 10, 7800, 11, 9748, 12, 10418, 90, 105]
577	α^{151}	α^{241}	4	41	[0, 1, 4, 41, 5, 193, 6, 536, 7, 1321, 8, 2810, 9, 5124, 10, 7800, 11, 9748, 12, 10418, 151, 242]
413	α^{78}	α^{182}	4	41	[0, 1, 4, 41, 5, 194, 6, 520, 7, 1322, 8, 2888, 9, 5122, 10, 7638, 11, 9714, 12, 10616, 78, 183]
578	α^{151}	α^{242}	4	41	[0, 1, 4, 41, 5, 189, 6, 534, 7, 1338, 8, 2824, 9, 5102, 10, 7758, 11, 9746, 12, 10488, 151, 243]
111	α^{13}	α^{164}	4	41	[0, 1, 4, 41, 5, 189, 6, 534, 7, 1338, 8, 2824, 9, 5102, 10, 7758, 11, 9746, 12, 10488, 13, 165]
431	α^{79}	α^{247}	4	41	[0, 1, 4, 41, 5, 188, 6, 538, 7, 1338, 8, 2804, 9, 5122, 10, 7794, 11, 9682, 12, 10468, 79, 248]
125	α^{14}	α^{165}	4	41	[0, 1, 4, 41, 5, 193, 6, 536, 7, 1321, 8, 2810, 9, 5124, 10, 7800, 11, 9748, 12, 10418, 14, 166]
668	α^{170}	α^{178}	4	42	[0, 1, 4, 42, 5, 203, 6, 507, 7, 1292, 8, 2918, 9, 5144, 10, 7644, 11, 9740, 12, 10520, 170, 179]
426	α^{79}	α^{183}	4	42	[0, 1, 4, 42, 5, 187, 6, 538, 7, 1308, 8, 2862, 9, 5192, 10, 7584, 11, 9692, 12, 10704, 79, 184]
514	α^{104}	α^{176}	4	42	[0, 1, 4, 42, 5, 187, 6, 538, 7, 1308, 8, 2862, 9, 5192, 10, 7584, 11, 9692, 12, 10704, 104, 177]
181	α^{17}	α^{59}	4	42	[0, 1, 4, 42, 5, 187, 6, 524, 7, 1364, 8, 2842, 9, 5016, 10, 7772, 11, 9860, 12, 10428, 17, 60]
139	α^{15}	α^{56}	4	42	[0, 1, 4, 42, 5, 188, 6, 523, 7, 1358, 8, 2848, 9, 5030, 10, 7758, 11, 9846, 12, 10442, 15, 57]
179	α^{17}	α^{57}	4	42	[0, 1, 4, 42, 5, 188, 6, 526, 7, 1346, 8, 2852, 9, 5074, 10, 7702, 11, 9802, 12, 10558, 17, 58]
48	α^{9}	α^{183}	4	42	[0, 1, 4, 42, 5, 191, 6, 512, 7, 1354, 8, 2892, 9, 5022, 10, 7694, 11, 9842, 12, 10486, 9, 184]
701	α^{173}	α^{247}	4	42	[0, 1, 4, 42, 5, 196, 6, 505, 7, 1332, 8, 2926, 9, 5052, 10, 7636, 11, 9844, 12, 10512, 173, 248]
704	α^{174}	α^{246}	4	42	[0, 1, 4, 42, 5, 191, 6, 512, 7, 1354, 8, 2892, 9, 5022, 10, 7694, 11, 9842, 12, 10486, 174, 247]
161	α^{16}	α^{57}	4	42	[0, 1, 4, 42, 5, 193, 6, 510, 7, 1348, 8, 2898, 9, 5016, 10, 7700, 11, 9892, 12, 10436, 16, 58]
682	α^{171}	α^{183}	4	42	[0, 1, 4, 42, 5, 202, 6, 507, 7, 1300, 8, 2918, 9, 5116, 10, 7644, 11, 9796, 12, 10520, 171, 184]
160	α^{16}	α^{56}	4	42	[0, 1, 4, 42, 5, 187, 6, 531, 7, 1346, 8, 2824, 9, 5094, 10, 7766, 11, 9738, 12, 10482, 16, 57]
417	α^{78}	α^{247}	4	42	[0, 1, 4, 42, 5, 196, 6, 525, 7, 1310, 8, 2840, 9, 5150, 10, 7766, 11, 9686, 12, 10450, 78, 248]
208	α^{40}	α^{238}	4	42	[0, 1, 4, 42, 5, 188, 6, 526, 7, 1346, 8, 2852, 9, 5074, 10, 7702, 11, 9802, 12, 10558, 40, 239]
657	α^{169}	α^{177}	4	42	[0, 1, 4, 42, 5, 196, 6, 525, 7, 1310, 8, 2840, 9, 5150, 10, 7766, 11, 9686, 12, 10450, 169, 178]
5	α^{8}	α^{85}	4	42	[0, 1, 4, 42, 5, 203, 6, 507, 7, 1292, 8, 2918, 9, 5144, 10, 7644, 11, 9740, 12, 10520, 8, 86]
312	α^{72}	α^{81}	4	42	[0, 1, 4, 42, 5, 191, 6, 512, 7, 1354, 8, 2892, 9, 5022, 10, 7694, 11, 9842, 12, 10486, 72, 82]
321	α^{72}	α^{151}	4	42	[0, 1, 4, 42, 5, 187, 6, 538, 7, 1308, 8, 2862, 9, 5192, 10, 7584, 11, 9692, 12, 10704, 72, 152]
323	α^{72}	α^{243}	4	42	[0, 1, 4, 42, 5, 202, 6, 507, 7, 1300, 8, 2918, 9, 5116, 10, 7644, 11, 9796, 12, 10520, 72, 244]
6	α^{8}	α^{86}	4	42	[0, 1, 4, 42, 5, 196, 6, 525, 7, 1310, 8, 2840, 9, 5150, 10, 7766, 11, 9686, 12, 10450, 8, 87]
764	α^{199}	α^{215}	4	42	[0, 1, 4, 42, 5, 187, 6, 531, 7, 1346, 8, 2824, 9, 5094, 10, 7766, 11, 9738, 12, 10482, 199, 216]
344	α^{74}	α^{82}	4	42	[0, 1, 4, 42, 5, 196, 6, 505, 7, 1332, 8, 2926, 9, 5052, 10, 7636, 11, 9844, 12, 10512, 74, 83]
237	α^{42}	α^{238}	4	42	[0, 1, 4, 42, 5, 187, 6, 524, 7, 1364, 8, 2842, 9, 5016, 10, 7772, 11, 9860, 12, 10428, 42, 239]
96	α^{12}	α^{84}	4	42	[0, 1, 4, 42, 5, 202, 6, 507, 7, 1300, 8, 2918, 9, 5116, 10, 7644, 11, 9796, 12, 10520, 12, 85]
763	α^{199}	α^{214}	4	42	[0, 1, 4, 42, 5, 188, 6, 523, 7, 1358, 8, 2848, 9, 5030, 10, 7758, 11, 9846, 12, 10442, 199, 215]
750	α^{196}	α^{213}	4	42	[0, 1, 4, 42, 5, 187, 6, 524, 7, 1364, 8, 2842, 9, 5016, 10, 7772, 11, 9860, 12, 10428, 196, 214]
209	α^{40}	α^{239}	4	42	[0, 1, 4, 42, 5, 187, 6, 531, 7, 1346, 8, 2824, 9, 5094, 10, 7766, 11, 9738, 12, 10482, 40, 240]
22	α^{8}	α^{181}	4	42	[0, 1, 4, 42, 5, 196, 6, 505, 7, 1332, 8, 2926, 9, 5052, 10, 7636, 11, 9844, 12, 10512, 8, 182]
758	α^{198}	α^{215}	4	42	[0, 1, 4, 42, 5, 188, 6, 526, 7, 1346, 8, 2852, 9, 5074, 10, 7702, 11, 9802, 12, 10558, 198, 216]
404	α^{77}	α^{247}	4	42	[0, 1, 4, 42, 5, 203, 6, 507, 7, 1292, 8, 2918, 9, 5144, 10, 7644, 11, 9740, 12, 10520, 77, 248]
757	α^{198}	α^{214}	4	42	[0, 1, 4, 42, 5, 193, 6, 510, 7, 1348, 8, 2898, 9, 5016, 10, 7700, 11, 9892, 12, 10436, 198, 215]
223	α^{41}	α^{239}	4	42	[0, 1, 4, 42, 5, 193, 6, 510, 7, 1348, 8, 2898, 9, 5016, 10, 7700, 11, 9892, 12, 10436, 41, 240]
224	α^{41}	α^{240}	4	42	[0, 1, 4, 42, 5, 188, 6, 523, 7, 1358, 8, 2848, 9, 5030, 10, 7758, 11, 9846, 12, 10442, 41, 241]
187	α^{17}	α^{180}	4	43	[0, 1, 4, 43, 5, 184, 6, 525, 7, 1360, 8, 2846, 9, 5072, 10, 7704, 11, 9744, 12, 10602, 17, 181]
303	α^{62}	α^{238}	4	43	[0, 1, 4, 43, 5, 183, 6, 540, 7, 1330, 8, 2828, 9, 5142, 10, 7690, 11, 9754, 12, 10544, 62, 239]
162	α^{16}	α^{58}	4	43	[0, 1, 4, 43, 5, 189, 6, 513, 7, 1356, 8, 2882, 9, 5024, 10, 7708, 11, 9868, 12, 10462, 16, 59]
28	α^{9}	α^{84}	4	43	[0, 1, 4, 43, 5, 206, 6, 497, 7, 1280, 8, 2954, 9, 5152, 10, 7580, 11, 9776, 12, 10582, 9, 85]
469	α^{83}	α^{247}	4	43	[0, 1, 4, 43, 5, 170, 6, 556, 7, 1404, 8, 2710, 9, 5044, 10, 7932, 11, 9708, 12, 10418, 83, 248]
752	α^{197}	α^{213}	4	43	[0, 1, 4, 43, 5, 189, 6, 513, 7, 1356, 8, 2882, 9, 5024, 10, 7708, 11, 9868, 12, 10462, 197, 214]
8	α^{8}	α^{88}	4	43	[0, 1, 4, 43, 5, 177, 6, 542, 7, 1379, 8, 2768, 9, 5078, 10, 7846, 11, 9670, 12, 10468, 8, 89]
11	α^{8}	α^{91}	4	43	[0, 1, 4, 43, 5, 170, 6, 556, 7, 1404, 8, 2710, 9, 5044, 10, 7932, 11, 9708, 12, 10418, 8, 92]
444	α^{80}	α^{247}	4	43	[0, 1, 4, 43, 5, 177, 6, 542, 7, 1379, 8, 2768, 9, 5078, 10, 7846, 11, 9670, 12, 10468, 80, 248]
32	α^{9}	α^{88}	4	43	[0, 1, 4, 43, 5, 182, 6, 536, 7, 1356, 8, 2802, 9, 5108, 10, 7768, 11, 9692, 12, 10558, 9, 89]
430	α^{79}	α^{246}	4	43	[0, 1, 4, 43, 5, 182, 6, 536, 7, 1356, 8, 2802, 9, 5108, 10, 7768, 11, 9692, 12, 10558, 79, 247]
238	α^{42}	α^{239}	4	43	[0, 1, 4, 43, 5, 189, 6, 513, 7, 1356, 8, 2882, 9, 5024, 10, 7708, 11, 9868, 12, 10462, 42, 240]
386	α^{76}	α^{180}	4	43	[0, 1, 4, 43, 5, 178, 6, 549, 7, 1340, 8, 2806, 9, 5156, 10, 7664, 11, 9708, 12, 10690, 76, 181]
416	α^{78}	α^{246}	4	43	[0, 1, 4, 43, 5, 194, 6, 521, 7, 1324, 8, 2842, 9, 5108, 10, 7780, 11, 9756, 12, 10422, 78, 247]
184	α^{17}	α^{78}	4	43	[0, 1, 4, 43, 5, 184, 6, 532, 7, 1348, 8, 2822, 9, 5116, 10, 7732, 11, 9700, 12, 10578, 17, 79]
185	α^{17}	α^{79}	4	43	[0, 1, 4, 43, 5, 183, 6, 540, 7, 1330, 8, 2828, 9, 5142, 10, 7690, 11, 9754, 12, 10544, 17, 80]
31	α^{9}	α^{87}	4	43	[0, 1, 4, 43, 5, 194, 6, 521, 7, 1324, 8, 2842, 9, 5108, 10, 7780, 11, 9756, 12, 10422, 9, 88]
370	α^{75}	α^{151}	4	43	[0, 1, 4, 43, 5, 178, 6, 549, 7, 1340, 8, 2806, 9, 5156, 10, 7664, 11, 9708, 12, 10690, 75, 152]
374	α^{75}	α^{246}	4	43	[0, 1, 4, 43, 5, 206, 6, 497, 7, 1280, 8, 2954, 9, 5152, 10, 7580, 11, 9776, 12, 10582, 75, 247]
10	α^{8}	α^{90}	4	43	[0, 1, 4, 43, 5, 170, 6, 556, 7, 1404, 8, 2710, 9, 5044, 10, 7932, 11, 9708, 12, 10418, 8, 91]
369	α^{75}	α^{92}	4	43	[0, 1, 4, 43, 5, 184, 6, 525, 7, 1360, 8, 2846, 9, 5072, 10, 7704, 11, 9744, 12, 10602, 75, 93]
463	α^{82}	α^{247}	4	43	[0, 1, 4, 43, 5, 170, 6, 556, 7, 1404, 8, 2710, 9, 5044, 10, 7932, 11, 9708, 12, 10418, 82, 248]
590	α^{164}	α^{172}	4	43	[0, 1, 4, 43, 5, 170, 6, 556, 7, 1404, 8, 2710, 9, 5044, 10, 7932, 11, 9708, 12, 10418, 164, 173]
646	α^{168}	α^{177}	4	43	[0, 1, 4, 43, 5, 194, 6, 521, 7, 1324, 8, 2842, 9, 5108, 10, 7780, 11, 9756, 12, 10422, 168, 178]
633	α^{167}	α^{176}	4	43	[0, 1, 4, 43, 5, 182, 6, 536, 7, 1356, 8, 2802, 9, 5108, 10, 7768, 11, 9692, 12, 10558, 167, 177]
632	α^{167}	α^{175}	4	43	[0, 1, 4, 43, 5, 177, 6, 542, 7, 1379, 8, 2768, 9, 5078, 10, 7846, 11, 9670, 12, 10468, 167, 176]
604	α^{165}	α^{173}	4	43	[0, 1, 4, 43, 5, 170, 6, 556, 7, 1404, 8, 2710, 9, 5044, 10, 7932, 11, 9708, 12, 10418, 165, 174]
580	α^{163}	α^{238}	4	43	[0, 1, 4, 43, 5, 184, 6, 525, 7, 1360, 8, 2846, 9, 5072, 10, 7704, 11, 9744, 12, 10602, 163, 239]
679	α^{171}	α^{180}	4	43	[0, 1, 4, 43, 5, 206, 6, 497, 7, 1280, 8, 2954, 9, 5152, 10, 7580, 11, 9776, 12, 10582, 171, 181]
289	α^{61}	α^{238}	4	43	[0, 1, 4, 43, 5, 184, 6, 532, 7, 1348, 8, 2822, 9, 5116, 10, 7732, 11, 9700, 12, 10578, 61, 239]
517	α^{104}	α^{179}	4	43	[0, 1, 4, 43, 5, 178, 6, 549, 7, 1340, 8, 2806, 9, 5156, 10, 7664, 11, 9708, 12, 10690, 104, 180]
708	α^{176}	α^{193}	4	43	[0, 1, 4, 43, 5, 183, 6, 540, 7, 1330, 8, 2828, 9, 5142, 10, 7690, 11, 9754, 12, 10544, 176, 194]
710	α^{177}	α^{194}	4	43	[0, 1, 4, 43, 5, 184, 6, 532, 7, 1348, 8, 2822, 9, 5116, 10, 7732, 11, 9700, 12, 10578, 177, 195]
166	α^{16}	α^{78}	4	44	[0, 1, 4, 44, 5, 190, 6, 521, 7, 1332, 8, 2846, 9, 5116, 10, 7732, 11, 9732, 12, 10532, 16, 79]
587	α^{163}	α^{245}	4	44	[0, 1, 4, 44, 5, 187, 6, 509, 7, 1364, 8, 2890, 9, 5016, 10, 7688, 11, 9860, 12, 10512, 163, 246]
415	α^{78}	α^{245}	4	44	[0, 1, 4, 44, 5, 187, 6, 518, 7, 1346, 8, 2860, 9, 5094, 10, 7710, 11, 9738, 12, 10538, 78, 246]
762	α^{199}	α^{213}	4	44	[0, 1, 4, 44, 5, 184, 6, 520, 7, 1365, 8, 2846, 9, 5044, 10, 7752, 11, 9808, 12, 10468, 199, 214]
120	α^{14}	α^{56}	4	44	[0, 1, 4, 44, 5, 184, 6, 520, 7, 1365, 8, 2846, 9, 5044, 10, 7752, 11, 9808, 12, 10468, 14, 57]
618	α^{166}	α^{174}	4	44	[0, 1, 4, 44, 5, 170, 6, 550, 7, 1403, 8, 2724, 9, 5050, 10, 7918, 11, 9694, 12, 10418, 166, 175]
240	α^{42}	α^{241}	4	44	[0, 1, 4, 44, 5, 184, 6, 520, 7, 1365, 8, 2846, 9, 5044, 10, 7752, 11, 9808, 12, 10468, 42, 242]
591	α^{164}	α^{173}	4	44	[0, 1, 4, 44, 5, 170, 6, 554, 7, 1380, 8, 2758, 9, 5084, 10, 7792, 11, 9748, 12, 10524, 164, 174]
61	α^{10}	α^{173}	4	44	[0, 1, 4, 44, 5, 187, 6, 509, 7, 1364, 8, 2890, 9, 5016, 10, 7688, 11, 9860, 12, 10512, 10, 174]
709	α^{177}	α^{193}	4	44	[0, 1, 4, 44, 5, 190, 6, 521, 7, 1332, 8, 2846, 9, 5116, 10, 7732, 11, 9732, 12, 10532, 177, 194]
340	α^{73}	α^{244}	4	44	[0, 1, 4, 44, 5, 203, 6, 495, 7, 1292, 8, 2946, 9, 5144, 10, 7616, 11, 9740, 12, 10520, 73, 245]
634	α^{167}	α^{177}	4	44	[0, 1, 4, 44, 5, 187, 6, 518, 7, 1346, 8, 2860, 9, 5094, 10, 7710, 11, 9738, 12, 10538, 167, 178]
681	α^{171}	α^{182}	4	44	[0, 1, 4, 44, 5, 203, 6, 495, 7, 1292, 8, 2946, 9, 5144, 10, 7616, 11, 9740, 12, 10520, 171, 183]
56	α^{10}	α^{88}	4	44	[0, 1, 4, 44, 5, 187, 6, 518, 7, 1346, 8, 2860, 9, 5094, 10, 7710, 11, 9738, 12, 10538, 10, 89]
35	α^{9}	α^{91}	4	44	[0, 1, 4, 44, 5, 170, 6, 554, 7, 1380, 8, 2758, 9, 5084, 10, 7792, 11, 9748, 12, 10524, 9, 92]
304	α^{62}	α^{239}	4	44	[0, 1, 4, 44, 5, 190, 6, 521, 7, 1332, 8, 2846, 9, 5116, 10, 7732, 11, 9732, 12, 10532, 62, 240]
458	α^{82}	α^{92}	4	44	[0, 1, 4, 44, 5, 187, 6, 509, 7, 1364, 8, 2890, 9, 5016, 10, 7688, 11, 9860, 12, 10512, 82, 93]
75	α^{11}	α^{84}	4	44	[0, 1, 4, 44, 5, 203, 6, 495, 7, 1292, 8, 2946, 9, 5144, 10, 7616, 11, 9740, 12, 10520, 11, 85]
462	α^{82}	α^{246}	4	44	[0, 1, 4, 44, 5, 170, 6, 554, 7, 1380, 8, 2758, 9, 5084, 10, 7792, 11, 9748, 12, 10524, 82, 247]
455	α^{81}	α^{247}	4	44	[0, 1, 4, 44, 5, 170, 6, 550, 7, 1403, 8, 2724, 9, 5050, 10, 7918, 11, 9694, 12, 10418, 81, 248]
9	α^{8}	α^{89}	4	44	[0, 1, 4, 44, 5, 170, 6, 550, 7, 1403, 8, 2724, 9, 5050, 10, 7918, 11, 9694, 12, 10418, 8, 90]
18	α^{8}	α^{177}	4	45	[0, 1, 4, 45, 5, 183, 6, 497, 7, 1402, 8, 2920, 9, 4902, 10, 7674, 11, 10002, 12, 10480, 8, 178]
402	α^{77}	α^{245}	4	45	[0, 1, 4, 45, 5, 201, 6, 500, 7, 1300, 8, 2906, 9, 5136, 10, 7696, 11, 9732, 12, 10474, 77, 246]
608	α^{165}	α^{238}	4	45	[0, 1, 4, 45, 5, 181, 6, 513, 7, 1392, 8, 2850, 9, 4972, 10, 7788, 11, 9872, 12, 10402, 165, 239]
594	α^{164}	α^{238}	4	45	[0, 1, 4, 45, 5, 183, 6, 515, 7, 1366, 8, 2860, 9, 5058, 10, 7718, 11, 9758, 12, 10532, 164, 239]
603	α^{164}	α^{247}	4	45	[0, 1, 4, 45, 5, 185, 6, 507, 7, 1370, 8, 2884, 9, 5022, 10, 7710, 11, 9810, 12, 10492, 164, 248]
52	α^{10}	α^{84}	4	45	[0, 1, 4, 45, 5, 203, 6, 490, 7, 1292, 8, 2954, 9, 5144, 10, 7616, 11, 9740, 12, 10506, 10, 85]
647	α^{168}	α^{178}	4	45	[0, 1, 4, 45, 5, 201, 6, 500, 7, 1300, 8, 2906, 9, 5136, 10, 7696, 11, 9732, 12, 10474, 168, 179]
607	α^{165}	α^{176}	4	45	[0, 1, 4, 45, 5, 176, 6, 540, 7, 1352, 8, 2814, 9, 5128, 10, 7692, 11, 9736, 12, 10606, 165, 177]
593	α^{164}	α^{175}	4	45	[0, 1, 4, 45, 5, 174, 6, 541, 7, 1360, 8, 2814, 9, 5120, 10, 7672, 11, 9728, 12, 10670, 164, 176]
658	α^{169}	α^{178}	4	45	[0, 1, 4, 45, 5, 209, 6, 505, 7, 1276, 8, 2890, 9, 5144, 10, 7716, 11, 9772, 12, 10442, 169, 179]
360	α^{75}	α^{83}	4	45	[0, 1, 4, 45, 5, 193, 6, 492, 7, 1346, 8, 2940, 9, 5030, 10, 7658, 11, 9850, 12, 10436, 75, 84]
337	α^{73}	α^{90}	4	45	[0, 1, 4, 45, 5, 181, 6, 513, 7, 1392, 8, 2850, 9, 4972, 10, 7788, 11, 9872, 12, 10402, 73, 91]
14	α^{8}	α^{173}	4	45	[0, 1, 4, 45, 5, 185, 6, 506, 7, 1372, 8, 2890, 9, 5008, 10, 7696, 11, 9852, 12, 10506, 8, 174]
236	α^{42}	α^{172}	4	45	[0, 1, 4, 45, 5, 176, 6, 526, 7, 1394, 8, 2816, 9, 5010, 10, 7782, 11, 9818, 12, 10488, 42, 173]
620	α^{166}	α^{176}	4	45	[0, 1, 4, 45, 5, 174, 6, 542, 7, 1360, 8, 2806, 9, 5120, 10, 7700, 11, 9728, 12, 10614, 166, 177]
239	α^{42}	α^{240}	4	45	[0, 1, 4, 45, 5, 186, 6, 508, 7, 1366, 8, 2876, 9, 5022, 10, 7738, 11, 9838, 12, 10436, 42, 241]
241	α^{56}	α^{72}	4	45	[0, 1, 4, 45, 5, 185, 6, 530, 7, 1339, 8, 2796, 9, 5150, 10, 7818, 11, 9630, 12, 10468, 56, 73]
81	α^{11}	α^{90}	4	45	[0, 1, 4, 45, 5, 176, 6, 540, 7, 1352, 8, 2814, 9, 5128, 10, 7692, 11, 9736, 12, 10606, 11, 91]
242	α^{56}	α^{73}	4	45	[0, 1, 4, 45, 5, 175, 6, 541, 7, 1366, 8, 2788, 9, 5090, 10, 7798, 11, 9758, 12, 10428, 56, 74]
357	α^{74}	α^{245}	4	45	[0, 1, 4, 45, 5, 203, 6, 490, 7, 1292, 8, 2954, 9, 5144, 10, 7616, 11, 9740, 12, 10506, 74, 246]
353	α^{74}	α^{91}	4	45	[0, 1, 4, 45, 5, 183, 6, 515, 7, 1366, 8, 2860, 9, 5058, 10, 7718, 11, 9758, 12, 10532, 74, 92]
82	α^{11}	α^{91}	4	45	[0, 1, 4, 45, 5, 174, 6, 541, 7, 1360, 8, 2814, 9, 5120, 10, 7672, 11, 9728, 12, 10670, 11, 92]
13	α^{8}	α^{172}	4	45	[0, 1, 4, 45, 5, 185, 6, 507, 7, 1370, 8, 2884, 9, 5022, 10, 7710, 11, 9810, 12, 10492, 8, 173]
83	α^{11}	α^{174}	4	45	[0, 1, 4, 45, 5, 186, 6, 501, 7, 1370, 8, 2916, 9, 5002, 10, 7646, 11, 9874, 12, 10540, 11, 175]
617	α^{165}	α^{247}	4	45	[0, 1, 4, 45, 5, 185, 6, 506, 7, 1372, 8, 2890, 9, 5008, 10, 7696, 11, 9852, 12, 10506, 165, 248]
756	α^{198}	α^{213}	4	45	[0, 1, 4, 45, 5, 186, 6, 508, 7, 1366, 8, 2876, 9, 5022, 10, 7738, 11, 9838, 12, 10436, 198, 214]
403	α^{77}	α^{246}	4	45	[0, 1, 4, 45, 5, 209, 6, 505, 7, 1276, 8, 2890, 9, 5144, 10, 7716, 11, 9772, 12, 10442, 77, 247]
739	α^{182}	α^{238}	4	45	[0, 1, 4, 45, 5, 175, 6, 541, 7, 1366, 8, 2788, 9, 5090, 10, 7798, 11, 9758, 12, 10428, 182, 239]
441	α^{80}	α^{244}	4	45	[0, 1, 4, 45, 5, 174, 6, 541, 7, 1360, 8, 2814, 9, 5120, 10, 7672, 11, 9728, 12, 10670, 80, 245]
192	α^{17}	α^{199}	4	45	[0, 1, 4, 45, 5, 175, 6, 541, 7, 1366, 8, 2788, 9, 5090, 10, 7798, 11, 9758, 12, 10428, 17, 200]
21	α^{8}	α^{180}	4	45	[0, 1, 4, 45, 5, 193, 6, 492, 7, 1346, 8, 2940, 9, 5030, 10, 7658, 11, 9850, 12, 10436, 8, 181]
188	α^{17}	α^{181}	4	45	[0, 1, 4, 45, 5, 183, 6, 515, 7, 1366, 8, 2860, 9, 5058, 10, 7718, 11, 9758, 12, 10532, 17, 182]
695	α^{172}	α^{247}	4	45	[0, 1, 4, 45, 5, 193, 6, 492, 7, 1346, 8, 2940, 9, 5030, 10, 7658, 11, 9850, 12, 10436, 172, 248]
448	α^{81}	α^{92}	4	45	[0, 1, 4, 45, 5, 186, 6, 501, 7, 1370, 8, 2916, 9, 5002, 10, 7646, 11, 9874, 12, 10540, 81, 93]
680	α^{171}	α^{181}	4	45	[0, 1, 4, 45, 5, 203, 6, 490, 7, 1292, 8, 2954, 9, 5144, 10, 7616, 11, 9740, 12, 10506, 171, 182]
57	α^{10}	α^{89}	4	45	[0, 1, 4, 45, 5, 174, 6, 542, 7, 1360, 8, 2806, 9, 5120, 10, 7700, 11, 9728, 12, 10614, 10, 90]
175	α^{16}	α^{199}	4	45	[0, 1, 4, 45, 5, 185, 6, 530, 7, 1339, 8, 2796, 9, 5150, 10, 7818, 11, 9630, 12, 10468, 16, 200]
456	α^{82}	α^{90}	4	45	[0, 1, 4, 45, 5, 185, 6, 506, 7, 1372, 8, 2890, 9, 5008, 10, 7696, 11, 9852, 12, 10506, 82, 91]
667	α^{169}	α^{247}	4	45	[0, 1, 4, 45, 5, 183, 6, 497, 7, 1402, 8, 2920, 9, 4902, 10, 7674, 11, 10002, 12, 10480, 169, 248]
464	α^{83}	α^{91}	4	45	[0, 1, 4, 45, 5, 185, 6, 507, 7, 1370, 8, 2884, 9, 5022, 10, 7710, 11, 9810, 12, 10492, 83, 92]
466	α^{83}	α^{125}	4	45	[0, 1, 4, 45, 5, 176, 6, 526, 7, 1394, 8, 2816, 9, 5010, 10, 7782, 11, 9818, 12, 10488, 83, 126]
55	α^{10}	α^{87}	4	45	[0, 1, 4, 45, 5, 201, 6, 500, 7, 1300, 8, 2906, 9, 5136, 10, 7696, 11, 9732, 12, 10474, 10, 88]
140	α^{15}	α^{57}	4	45	[0, 1, 4, 45, 5, 186, 6, 508, 7, 1366, 8, 2876, 9, 5022, 10, 7738, 11, 9838, 12, 10436, 15, 58]
429	α^{79}	α^{245}	4	45	[0, 1, 4, 45, 5, 174, 6, 542, 7, 1360, 8, 2806, 9, 5120, 10, 7700, 11, 9728, 12, 10614, 79, 246]
189	α^{17}	α^{182}	4	45	[0, 1, 4, 45, 5, 181, 6, 513, 7, 1392, 8, 2850, 9, 4972, 10, 7788, 11, 9872, 12, 10402, 17, 183]
566	α^{130}	α^{213}	4	45	[0, 1, 4, 45, 5, 176, 6, 526, 7, 1394, 8, 2816, 9, 5010, 10, 7782, 11, 9818, 12, 10488, 130, 214]
405	α^{78}	α^{86}	4	45	[0, 1, 4, 45, 5, 183, 6, 497, 7, 1402, 8, 2920, 9, 4902, 10, 7674, 11, 10002, 12, 10480, 78, 87]
586	α^{163}	α^{244}	4	45	[0, 1, 4, 45, 5, 186, 6, 501, 7, 1370, 8, 2916, 9, 5002, 10, 7646, 11, 9874, 12, 10540, 163, 245]
30	α^{9}	α^{86}	4	45	[0, 1, 4, 45, 5, 209, 6, 505, 7, 1276, 8, 2890, 9, 5144, 10, 7716, 11, 9772, 12, 10442, 9, 87]
428	α^{79}	α^{244}	4	45	[0, 1, 4, 45, 5, 176, 6, 540, 7, 1352, 8, 2814, 9, 5128, 10, 7692, 11, 9736, 12, 10606, 79, 245]
747	α^{183}	α^{239}	4	45	[0, 1, 4, 45, 5, 185, 6, 530, 7, 1339, 8, 2796, 9, 5150, 10, 7818, 11, 9630, 12, 10468, 183, 240]
669	α^{170}	α^{179}	4	46	[0, 1, 4, 46, 5, 204, 6, 493, 7, 1280, 8, 2938, 9, 5168, 10, 7624, 11, 9760, 12, 10532, 170, 180]
563	α^{129}	α^{213}	4	46	[0, 1, 4, 46, 5, 182, 6, 510, 7, 1374, 8, 2868, 9, 5030, 10, 7718, 11, 9814, 12, 10518, 129, 214]
589	α^{163}	α^{247}	4	46	[0, 1, 4, 46, 5, 186, 6, 499, 7, 1362, 8, 2912, 9, 5050, 10, 7654, 11, 9754, 12, 10562, 163, 248]
465	α^{83}	α^{92}	4	46	[0, 1, 4, 46, 5, 185, 6, 506, 7, 1358, 8, 2888, 9, 5066, 10, 7682, 11, 9766, 12, 10538, 83, 93]
656	α^{168}	α^{247}	4	46	[0, 1, 4, 46, 5, 181, 6, 494, 7, 1410, 8, 2920, 9, 4894, 10, 7682, 11, 9994, 12, 10474, 168, 248]
401	α^{77}	α^{244}	4	46	[0, 1, 4, 46, 5, 196, 6, 498, 7, 1314, 8, 2912, 9, 5130, 10, 7674, 11, 9722, 12, 10498, 77, 245]
320	α^{72}	α^{89}	4	46	[0, 1, 4, 46, 5, 176, 6, 515, 7, 1406, 8, 2840, 9, 4966, 10, 7782, 11, 9862, 12, 10442, 72, 90]
592	α^{164}	α^{174}	4	46	[0, 1, 4, 46, 5, 169, 6, 544, 7, 1373, 8, 2798, 9, 5120, 10, 7680, 11, 9704, 12, 10696, 164, 175]
414	α^{78}	α^{244}	4	46	[0, 1, 4, 46, 5, 180, 6, 525, 7, 1344, 8, 2858, 9, 5120, 10, 7656, 11, 9760, 12, 10580, 78, 245]
588	α^{163}	α^{246}	4	46	[0, 1, 4, 46, 5, 185, 6, 506, 7, 1358, 8, 2888, 9, 5066, 10, 7682, 11, 9766, 12, 10538, 163, 247]
454	α^{81}	α^{246}	4	46	[0, 1, 4, 46, 5, 168, 6, 552, 7, 1376, 8, 2750, 9, 5120, 10, 7800, 11, 9696, 12, 10536, 81, 247]
644	α^{167}	α^{247}	4	46	[0, 1, 4, 46, 5, 181, 6, 494, 7, 1410, 8, 2920, 9, 4894, 10, 7682, 11, 9994, 12, 10474, 167, 248]
453	α^{81}	α^{245}	4	46	[0, 1, 4, 46, 5, 169, 6, 544, 7, 1373, 8, 2798, 9, 5120, 10, 7680, 11, 9704, 12, 10696, 81, 246]
635	α^{167}	α^{178}	4	46	[0, 1, 4, 46, 5, 196, 6, 498, 7, 1314, 8, 2912, 9, 5130, 10, 7674, 11, 9722, 12, 10498, 167, 179]
329	α^{73}	α^{82}	4	46	[0, 1, 4, 46, 5, 189, 6, 489, 7, 1362, 8, 2948, 9, 5014, 10, 7618, 11, 9834, 12, 10550, 73, 83]
472	α^{84}	α^{126}	4	46	[0, 1, 4, 46, 5, 182, 6, 510, 7, 1374, 8, 2868, 9, 5030, 10, 7718, 11, 9814, 12, 10518, 84, 127]
700	α^{173}	α^{246}	4	46	[0, 1, 4, 46, 5, 189, 6, 489, 7, 1362, 8, 2948, 9, 5014, 10, 7618, 11, 9834, 12, 10550, 173, 247]
619	α^{166}	α^{175}	4	46	[0, 1, 4, 46, 5, 169, 6, 551, 7, 1370, 8, 2756, 9, 5134, 10, 7786, 11, 9682, 12, 10550, 166, 176]
445	α^{81}	α^{89}	4	46	[0, 1, 4, 46, 5, 183, 6, 500, 7, 1386, 8, 2904, 9, 4966, 10, 7682, 11, 9922, 12, 10506, 81, 90]
470	α^{84}	α^{92}	4	46	[0, 1, 4, 46, 5, 186, 6, 499, 7, 1362, 8, 2912, 9, 5050, 10, 7654, 11, 9754, 12, 10562, 84, 93]
418	α^{79}	α^{87}	4	46	[0, 1, 4, 46, 5, 181, 6, 494, 7, 1410, 8, 2920, 9, 4894, 10, 7682, 11, 9994, 12, 10474, 79, 88]
631	α^{166}	α^{247}	4	46	[0, 1, 4, 46, 5, 183, 6, 500, 7, 1386, 8, 2904, 9, 4966, 10, 7682, 11, 9922, 12, 10506, 166, 248]
687	α^{171}	α^{247}	4	46	[0, 1, 4, 46, 5, 190, 6, 491, 7, 1362, 8, 2928, 9, 4994, 10, 7694, 11, 9898, 12, 10402, 171, 248]
622	α^{166}	α^{238}	4	46	[0, 1, 4, 46, 5, 176, 6, 515, 7, 1406, 8, 2840, 9, 4966, 10, 7782, 11, 9862, 12, 10442, 166, 239]
376	α^{76}	α^{84}	4	46	[0, 1, 4, 46, 5, 190, 6, 491, 7, 1362, 8, 2928, 9, 4994, 10, 7694, 11, 9898, 12, 10402, 76, 85]
621	α^{166}	α^{177}	4	46	[0, 1, 4, 46, 5, 180, 6, 525, 7, 1344, 8, 2858, 9, 5120, 10, 7656, 11, 9760, 12, 10580, 166, 178]
605	α^{165}	α^{174}	4	46	[0, 1, 4, 46, 5, 168, 6, 552, 7, 1376, 8, 2750, 9, 5120, 10, 7800, 11, 9696, 12, 10536, 165, 175]
443	α^{80}	α^{246}	4	46	[0, 1, 4, 46, 5, 169, 6, 551, 7, 1370, 8, 2756, 9, 5134, 10, 7786, 11, 9682, 12, 10550, 80, 247]
432	α^{80}	α^{88}	4	46	[0, 1, 4, 46, 5, 181, 6, 494, 7, 1410, 8, 2920, 9, 4894, 10, 7682, 11, 9994, 12, 10474, 80, 89]
389	α^{76}	α^{246}	4	46	[0, 1, 4, 46, 5, 204, 6, 493, 7, 1280, 8, 2938, 9, 5168, 10, 7624, 11, 9760, 12, 10532, 76, 247]
767	α^{199}	α^{241}	4	46	[0, 1, 4, 46, 5, 181, 6, 510, 7, 1378, 8, 2868, 9, 5030, 10, 7718, 11, 9786, 12, 10518, 199, 242]
29	α^{9}	α^{85}	4	46	[0, 1, 4, 46, 5, 204, 6, 493, 7, 1280, 8, 2938, 9, 5168, 10, 7624, 11, 9760, 12, 10532, 9, 86]
235	α^{42}	α^{171}	4	46	[0, 1, 4, 46, 5, 182, 6, 510, 7, 1374, 8, 2868, 9, 5030, 10, 7718, 11, 9814, 12, 10518, 42, 172]
59	α^{10}	α^{91}	4	46	[0, 1, 4, 46, 5, 169, 6, 544, 7, 1373, 8, 2798, 9, 5120, 10, 7680, 11, 9704, 12, 10696, 10, 92]
225	α^{42}	α^{56}	4	46	[0, 1, 4, 46, 5, 181, 6, 510, 7, 1378, 8, 2868, 9, 5030, 10, 7718, 11, 9786, 12, 10518, 42, 57]
138	α^{14}	α^{213}	4	46	[0, 1, 4, 46, 5, 181, 6, 510, 7, 1378, 8, 2868, 9, 5030, 10, 7718, 11, 9786, 12, 10518, 14, 214]
34	α^{9}	α^{90}	4	46	[0, 1, 4, 46, 5, 168, 6, 552, 7, 1376, 8, 2750, 9, 5120, 10, 7800, 11, 9696, 12, 10536, 9, 91]
33	α^{9}	α^{89}	4	46	[0, 1, 4, 46, 5, 169, 6, 551, 7, 1370, 8, 2756, 9, 5134, 10, 7786, 11, 9682, 12, 10550, 9, 90]
37	α^{9}	α^{172}	4	46	[0, 1, 4, 46, 5, 185, 6, 506, 7, 1358, 8, 2888, 9, 5066, 10, 7682, 11, 9766, 12, 10538, 9, 173]
80	α^{11}	α^{89}	4	46	[0, 1, 4, 46, 5, 180, 6, 525, 7, 1344, 8, 2858, 9, 5120, 10, 7656, 11, 9760, 12, 10580, 11, 90]
190	α^{17}	α^{183}	4	46	[0, 1, 4, 46, 5, 176, 6, 515, 7, 1406, 8, 2840, 9, 4966, 10, 7782, 11, 9862, 12, 10442, 17, 184]
47	α^{9}	α^{182}	4	46	[0, 1, 4, 46, 5, 189, 6, 489, 7, 1362, 8, 2948, 9, 5014, 10, 7618, 11, 9834, 12, 10550, 9, 183]
17	α^{8}	α^{176}	4	46	[0, 1, 4, 46, 5, 181, 6, 494, 7, 1410, 8, 2920, 9, 4894, 10, 7682, 11, 9994, 12, 10474, 8, 177]
79	α^{11}	α^{88}	4	46	[0, 1, 4, 46, 5, 196, 6, 498, 7, 1314, 8, 2912, 9, 5130, 10, 7674, 11, 9722, 12, 10498, 11, 89]
16	α^{8}	α^{175}	4	46	[0, 1, 4, 46, 5, 181, 6, 494, 7, 1410, 8, 2920, 9, 4894, 10, 7682, 11, 9994, 12, 10474, 8, 176]
20	α^{8}	α^{179}	4	46	[0, 1, 4, 46, 5, 190, 6, 491, 7, 1362, 8, 2928, 9, 4994, 10, 7694, 11, 9898, 12, 10402, 8, 180]
15	α^{8}	α^{174}	4	46	[0, 1, 4, 46, 5, 183, 6, 500, 7, 1386, 8, 2904, 9, 4966, 10, 7682, 11, 9922, 12, 10506, 8, 175]
12	α^{8}	α^{171}	4	46	[0, 1, 4, 46, 5, 186, 6, 499, 7, 1362, 8, 2912, 9, 5050, 10, 7654, 11, 9754, 12, 10562, 8, 172]
677	α^{170}	α^{247}	4	47	[0, 1, 4, 47, 5, 184, 6, 492, 7, 1384, 8, 2926, 9, 4960, 10, 7660, 11, 9944, 12, 10498, 170, 248]
439	α^{80}	α^{193}	4	47	[0, 1, 4, 47, 5, 170, 6, 534, 7, 1380, 8, 2814, 9, 5084, 10, 7708, 11, 9748, 12, 10594, 80, 194]
581	α^{163}	α^{239}	4	47	[0, 1, 4, 47, 5, 175, 6, 527, 7, 1354, 8, 2856, 9, 5134, 10, 7602, 11, 9714, 12, 10740, 163, 240]
440	α^{80}	α^{194}	4	47	[0, 1, 4, 47, 5, 171, 6, 536, 7, 1374, 8, 2800, 9, 5098, 10, 7750, 11, 9734, 12, 10524, 80, 195]
38	α^{9}	α^{173}	4	47	[0, 1, 4, 47, 5, 186, 6, 502, 7, 1358, 8, 2896, 9, 5046, 10, 7662, 11, 9830, 12, 10588, 9, 174]
670	α^{170}	α^{180}	4	47	[0, 1, 4, 47, 5, 203, 6, 488, 7, 1285, 8, 2946, 9, 5160, 10, 7624, 11, 9760, 12, 10518, 170, 181]
602	α^{164}	α^{246}	4	47	[0, 1, 4, 47, 5, 186, 6, 502, 7, 1358, 8, 2896, 9, 5046, 10, 7662, 11, 9830, 12, 10588, 164, 247]
373	α^{75}	α^{245}	4	47	[0, 1, 4, 47, 5, 203, 6, 488, 7, 1285, 8, 2946, 9, 5160, 10, 7624, 11, 9760, 12, 10518, 75, 246]
168	α^{16}	α^{179}	4	47	[0, 1, 4, 47, 5, 175, 6, 527, 7, 1354, 8, 2856, 9, 5134, 10, 7602, 11, 9714, 12, 10740, 16, 180]
447	α^{81}	α^{91}	4	47	[0, 1, 4, 47, 5, 186, 6, 491, 7, 1370, 8, 2932, 9, 5002, 10, 7646, 11, 9874, 12, 10512, 81, 92]
62	α^{10}	α^{174}	4	47	[0, 1, 4, 47, 5, 186, 6, 491, 7, 1370, 8, 2932, 9, 5002, 10, 7646, 11, 9874, 12, 10512, 10, 175]
442	α^{80}	α^{245}	4	47	[0, 1, 4, 47, 5, 169, 6, 540, 7, 1370, 8, 2804, 9, 5134, 10, 7674, 11, 9682, 12, 10704, 80, 246]
601	α^{164}	α^{245}	4	47	[0, 1, 4, 47, 5, 186, 6, 491, 7, 1370, 8, 2932, 9, 5002, 10, 7646, 11, 9874, 12, 10512, 164, 246]
78	α^{11}	α^{87}	4	47	[0, 1, 4, 47, 5, 203, 6, 486, 7, 1292, 8, 2942, 9, 5144, 10, 7660, 11, 9740, 12, 10466, 11, 88]
457	α^{82}	α^{91}	4	47	[0, 1, 4, 47, 5, 186, 6, 502, 7, 1358, 8, 2896, 9, 5046, 10, 7662, 11, 9830, 12, 10588, 82, 92]
524	α^{113}	α^{175}	4	47	[0, 1, 4, 47, 5, 170, 6, 534, 7, 1380, 8, 2814, 9, 5084, 10, 7708, 11, 9748, 12, 10594, 113, 176]
53	α^{10}	α^{85}	4	47	[0, 1, 4, 47, 5, 203, 6, 488, 7, 1285, 8, 2946, 9, 5160, 10, 7624, 11, 9760, 12, 10518, 10, 86]
648	α^{168}	α^{179}	4	47	[0, 1, 4, 47, 5, 203, 6, 486, 7, 1292, 8, 2942, 9, 5144, 10, 7660, 11, 9740, 12, 10466, 168, 180]
427	α^{79}	α^{193}	4	47	[0, 1, 4, 47, 5, 172, 6, 520, 7, 1408, 8, 2818, 9, 5008, 10, 7784, 11, 9760, 12, 10518, 79, 194]
19	α^{8}	α^{178}	4	47	[0, 1, 4, 47, 5, 184, 6, 492, 7, 1384, 8, 2926, 9, 4960, 10, 7660, 11, 9944, 12, 10498, 8, 179]
54	α^{10}	α^{86}	4	47	[0, 1, 4, 47, 5, 207, 6, 494, 7, 1284, 8, 2918, 9, 5136, 10, 7668, 11, 9764, 12, 10506, 10, 87]
659	α^{169}	α^{179}	4	47	[0, 1, 4, 47, 5, 207, 6, 494, 7, 1284, 8, 2918, 9, 5136, 10, 7668, 11, 9764, 12, 10506, 169, 180]
284	α^{61}	α^{141}	4	47	[0, 1, 4, 47, 5, 171, 6, 536, 7, 1374, 8, 2800, 9, 5098, 10, 7750, 11, 9734, 12, 10524, 61, 142]
606	α^{165}	α^{175}	4	47	[0, 1, 4, 47, 5, 169, 6, 540, 7, 1370, 8, 2804, 9, 5134, 10, 7674, 11, 9682, 12, 10704, 165, 176]
58	α^{10}	α^{90}	4	47	[0, 1, 4, 47, 5, 169, 6, 540, 7, 1370, 8, 2804, 9, 5134, 10, 7674, 11, 9682, 12, 10704, 10, 91]
534	α^{114}	α^{176}	4	47	[0, 1, 4, 47, 5, 172, 6, 520, 7, 1408, 8, 2818, 9, 5008, 10, 7784, 11, 9760, 12, 10518, 114, 177]
533	α^{114}	α^{175}	4	47	[0, 1, 4, 47, 5, 171, 6, 536, 7, 1374, 8, 2800, 9, 5098, 10, 7750, 11, 9734, 12, 10524, 114, 176]
388	α^{76}	α^{245}	4	47	[0, 1, 4, 47, 5, 207, 6, 494, 7, 1284, 8, 2918, 9, 5136, 10, 7668, 11, 9764, 12, 10506, 76, 246]
387	α^{76}	α^{244}	4	47	[0, 1, 4, 47, 5, 203, 6, 486, 7, 1292, 8, 2942, 9, 5144, 10, 7660, 11, 9740, 12, 10466, 76, 245]
384	α^{76}	α^{92}	4	47	[0, 1, 4, 47, 5, 175, 6, 527, 7, 1354, 8, 2856, 9, 5134, 10, 7602, 11, 9714, 12, 10740, 76, 93]
298	α^{62}	α^{141}	4	47	[0, 1, 4, 47, 5, 172, 6, 520, 7, 1408, 8, 2818, 9, 5008, 10, 7784, 11, 9760, 12, 10518, 62, 142]
299	α^{62}	α^{142}	4	47	[0, 1, 4, 47, 5, 170, 6, 534, 7, 1380, 8, 2814, 9, 5084, 10, 7708, 11, 9748, 12, 10594, 62, 143]
391	α^{77}	α^{85}	4	47	[0, 1, 4, 47, 5, 184, 6, 492, 7, 1384, 8, 2926, 9, 4960, 10, 7660, 11, 9944, 12, 10498, 77, 86]
356	α^{74}	α^{244}	4	48	[0, 1, 4, 48, 5, 202, 6, 482, 7, 1291, 8, 2960, 9, 5146, 10, 7610, 11, 9774, 12, 10518, 74, 245]
248	α^{57}	α^{73}	4	48	[0, 1, 4, 48, 5, 181, 6, 516, 7, 1360, 8, 2818, 9, 5108, 10, 7812, 11, 9664, 12, 10448, 57, 74]
71	α^{10}	α^{183}	4	48	[0, 1, 4, 48, 5, 182, 6, 494, 7, 1375, 8, 2916, 9, 5030, 10, 7654, 11, 9794, 12, 10538, 10, 184]
451	α^{81}	α^{194}	4	48	[0, 1, 4, 48, 5, 168, 6, 537, 7, 1376, 8, 2798, 9, 5120, 10, 7716, 11, 9696, 12, 10620, 81, 195]
446	α^{81}	α^{90}	4	48	[0, 1, 4, 48, 5, 184, 6, 491, 7, 1366, 8, 2936, 9, 5038, 10, 7598, 11, 9822, 12, 10622, 81, 91]
232	α^{42}	α^{168}	4	48	[0, 1, 4, 48, 5, 180, 6, 510, 7, 1362, 8, 2852, 9, 5114, 10, 7734, 11, 9642, 12, 10538, 42, 169]
371	α^{75}	α^{179}	4	48	[0, 1, 4, 48, 5, 156, 6, 585, 7, 1312, 8, 2814, 9, 5184, 10, 7572, 11, 9856, 12, 10572, 75, 180]
231	α^{42}	α^{167}	4	48	[0, 1, 4, 48, 5, 172, 6, 520, 7, 1392, 8, 2822, 9, 5072, 10, 7736, 11, 9680, 12, 10628, 42, 168]
671	α^{170}	α^{181}	4	48	[0, 1, 4, 48, 5, 202, 6, 482, 7, 1291, 8, 2960, 9, 5146, 10, 7610, 11, 9774, 12, 10518, 170, 182]
666	α^{169}	α^{246}	4	48	[0, 1, 4, 48, 5, 186, 6, 480, 7, 1382, 8, 2956, 9, 4958, 10, 7646, 11, 9918, 12, 10466, 169, 247]
385	α^{76}	α^{151}	4	48	[0, 1, 4, 48, 5, 156, 6, 585, 7, 1312, 8, 2814, 9, 5184, 10, 7572, 11, 9856, 12, 10572, 76, 152]
392	α^{77}	α^{86}	4	48	[0, 1, 4, 48, 5, 186, 6, 480, 7, 1382, 8, 2956, 9, 4958, 10, 7646, 11, 9918, 12, 10466, 77, 87]
76	α^{11}	α^{85}	4	48	[0, 1, 4, 48, 5, 202, 6, 482, 7, 1291, 8, 2960, 9, 5146, 10, 7610, 11, 9774, 12, 10518, 11, 86]
548	α^{126}	α^{213}	4	48	[0, 1, 4, 48, 5, 180, 6, 510, 7, 1362, 8, 2852, 9, 5114, 10, 7734, 11, 9642, 12, 10538, 126, 214]
174	α^{16}	α^{198}	4	48	[0, 1, 4, 48, 5, 181, 6, 516, 7, 1360, 8, 2818, 9, 5108, 10, 7812, 11, 9664, 12, 10448, 16, 199]
699	α^{173}	α^{245}	4	48	[0, 1, 4, 48, 5, 182, 6, 494, 7, 1375, 8, 2916, 9, 5030, 10, 7654, 11, 9794, 12, 10538, 173, 246]
616	α^{165}	α^{246}	4	48	[0, 1, 4, 48, 5, 184, 6, 491, 7, 1366, 8, 2936, 9, 5038, 10, 7598, 11, 9822, 12, 10622, 165, 247]
740	α^{182}	α^{239}	4	48	[0, 1, 4, 48, 5, 181, 6, 516, 7, 1360, 8, 2818, 9, 5108, 10, 7812, 11, 9664, 12, 10448, 182, 240]
313	α^{72}	α^{82}	4	48	[0, 1, 4, 48, 5, 182, 6, 494, 7, 1375, 8, 2916, 9, 5030, 10, 7654, 11, 9794, 12, 10538, 72, 83]
518	α^{104}	α^{180}	4	48	[0, 1, 4, 48, 5, 156, 6, 585, 7, 1312, 8, 2814, 9, 5184, 10, 7572, 11, 9856, 12, 10572, 104, 181]
523	α^{113}	α^{174}	4	48	[0, 1, 4, 48, 5, 168, 6, 537, 7, 1376, 8, 2798, 9, 5120, 10, 7716, 11, 9696, 12, 10620, 113, 175]
39	α^{9}	α^{174}	4	48	[0, 1, 4, 48, 5, 184, 6, 491, 7, 1366, 8, 2936, 9, 5038, 10, 7598, 11, 9822, 12, 10622, 9, 175]
490	α^{87}	α^{129}	4	48	[0, 1, 4, 48, 5, 180, 6, 510, 7, 1362, 8, 2852, 9, 5114, 10, 7734, 11, 9642, 12, 10538, 87, 130]
285	α^{61}	α^{142}	4	48	[0, 1, 4, 48, 5, 168, 6, 537, 7, 1376, 8, 2798, 9, 5120, 10, 7716, 11, 9696, 12, 10620, 61, 143]
542	α^{125}	α^{213}	4	48	[0, 1, 4, 48, 5, 172, 6, 520, 7, 1392, 8, 2822, 9, 5072, 10, 7736, 11, 9680, 12, 10628, 125, 214]
497	α^{88}	α^{130}	4	48	[0, 1, 4, 48, 5, 172, 6, 520, 7, 1392, 8, 2822, 9, 5072, 10, 7736, 11, 9680, 12, 10628, 88, 131]
43	α^{9}	α^{178}	4	48	[0, 1, 4, 48, 5, 186, 6, 480, 7, 1382, 8, 2956, 9, 4958, 10, 7646, 11, 9918, 12, 10466, 9, 179]
77	α^{11}	α^{86}	4	49	[0, 1, 4, 49, 5, 207, 6, 484, 7, 1284, 8, 2934, 9, 5136, 10, 7668, 11, 9764, 12, 10478, 11, 87]
713	α^{178}	α^{195}	4	49	[0, 1, 4, 49, 5, 171, 6, 523, 7, 1368, 8, 2842, 9, 5132, 10, 7660, 11, 9656, 12, 10658, 178, 196]
714	α^{178}	α^{240}	4	49	[0, 1, 4, 49, 5, 190, 6, 514, 7, 1288, 8, 2866, 9, 5248, 10, 7672, 11, 9608, 12, 10554, 178, 241]
655	α^{168}	α^{246}	4	49	[0, 1, 4, 49, 5, 180, 6, 484, 7, 1398, 8, 2940, 9, 4958, 10, 7634, 11, 9886, 12, 10556, 168, 247]
522	α^{113}	α^{173}	4	49	[0, 1, 4, 49, 5, 168, 6, 529, 7, 1376, 8, 2826, 9, 5120, 10, 7660, 11, 9696, 12, 10690, 113, 174]
217	α^{41}	α^{167}	4	49	[0, 1, 4, 49, 5, 180, 6, 511, 7, 1362, 8, 2832, 9, 5114, 10, 7778, 11, 9642, 12, 10512, 41, 168]
731	α^{181}	α^{238}	4	49	[0, 1, 4, 49, 5, 174, 6, 530, 7, 1360, 8, 2794, 9, 5120, 10, 7800, 11, 9728, 12, 10434, 181, 239]
272	α^{60}	α^{141}	4	49	[0, 1, 4, 49, 5, 168, 6, 530, 7, 1376, 8, 2818, 9, 5120, 10, 7688, 11, 9696, 12, 10634, 60, 142]
660	α^{169}	α^{180}	4	49	[0, 1, 4, 49, 5, 207, 6, 484, 7, 1284, 8, 2934, 9, 5136, 10, 7668, 11, 9764, 12, 10478, 169, 181]
435	α^{80}	α^{91}	4	49	[0, 1, 4, 49, 5, 182, 6, 486, 7, 1378, 8, 2944, 9, 5010, 10, 7598, 11, 9850, 12, 10608, 80, 92]
297	α^{62}	α^{77}	4	49	[0, 1, 4, 49, 5, 190, 6, 514, 7, 1288, 8, 2866, 9, 5248, 10, 7672, 11, 9608, 12, 10554, 62, 78]
567	α^{130}	α^{214}	4	49	[0, 1, 4, 49, 5, 175, 6, 506, 7, 1395, 8, 2852, 9, 5022, 10, 7762, 11, 9782, 12, 10468, 130, 215]
191	α^{17}	α^{198}	4	49	[0, 1, 4, 49, 5, 174, 6, 530, 7, 1360, 8, 2794, 9, 5120, 10, 7800, 11, 9728, 12, 10434, 17, 199]
532	α^{114}	α^{174}	4	49	[0, 1, 4, 49, 5, 168, 6, 530, 7, 1376, 8, 2818, 9, 5120, 10, 7688, 11, 9696, 12, 10634, 114, 175]
221	α^{41}	α^{171}	4	49	[0, 1, 4, 49, 5, 175, 6, 506, 7, 1395, 8, 2852, 9, 5022, 10, 7762, 11, 9782, 12, 10468, 41, 172]
84	α^{11}	α^{175}	4	49	[0, 1, 4, 49, 5, 182, 6, 486, 7, 1378, 8, 2944, 9, 5010, 10, 7598, 11, 9850, 12, 10608, 11, 176]
273	α^{60}	α^{142}	4	49	[0, 1, 4, 49, 5, 168, 6, 529, 7, 1376, 8, 2826, 9, 5120, 10, 7660, 11, 9696, 12, 10690, 60, 143]
276	α^{60}	α^{238}	4	49	[0, 1, 4, 49, 5, 171, 6, 523, 7, 1368, 8, 2842, 9, 5132, 10, 7660, 11, 9656, 12, 10658, 60, 239]
372	α^{75}	α^{244}	4	49	[0, 1, 4, 49, 5, 207, 6, 484, 7, 1284, 8, 2934, 9, 5136, 10, 7668, 11, 9764, 12, 10478, 75, 245]
549	α^{126}	α^{214}	4	49	[0, 1, 4, 49, 5, 180, 6, 511, 7, 1362, 8, 2832, 9, 5114, 10, 7778, 11, 9642, 12, 10512, 126, 215]
183	α^{17}	α^{77}	4	49	[0, 1, 4, 49, 5, 171, 6, 523, 7, 1368, 8, 2842, 9, 5132, 10, 7660, 11, 9656, 12, 10658, 17, 78]
172	α^{16}	α^{183}	4	49	[0, 1, 4, 49, 5, 173, 6, 501, 7, 1414, 8, 2868, 9, 4978, 10, 7742, 11, 9790, 12, 10500, 16, 184]
461	α^{82}	α^{195}	4	49	[0, 1, 4, 49, 5, 168, 6, 529, 7, 1376, 8, 2826, 9, 5120, 10, 7660, 11, 9696, 12, 10690, 82, 196]
42	α^{9}	α^{177}	4	49	[0, 1, 4, 49, 5, 180, 6, 484, 7, 1398, 8, 2940, 9, 4958, 10, 7634, 11, 9886, 12, 10556, 9, 178]
600	α^{164}	α^{244}	4	49	[0, 1, 4, 49, 5, 182, 6, 486, 7, 1378, 8, 2944, 9, 5010, 10, 7598, 11, 9850, 12, 10608, 164, 245]
152	α^{15}	α^{193}	4	49	[0, 1, 4, 49, 5, 190, 6, 514, 7, 1288, 8, 2866, 9, 5248, 10, 7672, 11, 9608, 12, 10554, 15, 194]
452	α^{81}	α^{195}	4	49	[0, 1, 4, 49, 5, 168, 6, 530, 7, 1376, 8, 2818, 9, 5120, 10, 7688, 11, 9696, 12, 10634, 81, 196]
319	α^{72}	α^{88}	4	49	[0, 1, 4, 49, 5, 173, 6, 501, 7, 1414, 8, 2868, 9, 4978, 10, 7742, 11, 9790, 12, 10500, 72, 89]
471	α^{84}	α^{125}	4	49	[0, 1, 4, 49, 5, 175, 6, 506, 7, 1395, 8, 2852, 9, 5022, 10, 7762, 11, 9782, 12, 10468, 84, 126]
249	α^{57}	α^{74}	4	49	[0, 1, 4, 49, 5, 174, 6, 530, 7, 1360, 8, 2794, 9, 5120, 10, 7800, 11, 9728, 12, 10434, 57, 75]
636	α^{167}	α^{239}	4	49	[0, 1, 4, 49, 5, 173, 6, 501, 7, 1414, 8, 2868, 9, 4978, 10, 7742, 11, 9790, 12, 10500, 167, 240]
496	α^{88}	α^{129}	4	49	[0, 1, 4, 49, 5, 180, 6, 511, 7, 1362, 8, 2832, 9, 5114, 10, 7778, 11, 9642, 12, 10512, 88, 130]
406	α^{78}	α^{87}	4	49	[0, 1, 4, 49, 5, 180, 6, 484, 7, 1398, 8, 2940, 9, 4958, 10, 7634, 11, 9886, 12, 10556, 78, 88]
204	α^{40}	α^{167}	4	50	[0, 1, 4, 50, 5, 174, 6, 510, 7, 1378, 8, 2836, 9, 5114, 10, 7750, 11, 9610, 12, 10558, 40, 168]
157	α^{15}	α^{198}	4	50	[0, 1, 4, 50, 5, 176, 6, 523, 7, 1346, 8, 2816, 9, 5162, 10, 7758, 11, 9658, 12, 10490, 15, 199]
482	α^{86}	α^{128}	4	50	[0, 1, 4, 50, 5, 182, 6, 496, 7, 1360, 8, 2894, 9, 5088, 10, 7664, 11, 9728, 12, 10608, 86, 129]
477	α^{85}	α^{127}	4	50	[0, 1, 4, 50, 5, 181, 6, 499, 7, 1362, 8, 2880, 9, 5094, 10, 7686, 11, 9706, 12, 10602, 85, 128]
554	α^{127}	α^{213}	4	50	[0, 1, 4, 50, 5, 182, 6, 496, 7, 1360, 8, 2894, 9, 5088, 10, 7664, 11, 9728, 12, 10608, 127, 214]
555	α^{127}	α^{214}	4	50	[0, 1, 4, 50, 5, 183, 6, 501, 7, 1348, 8, 2866, 9, 5136, 10, 7728, 11, 9636, 12, 10532, 127, 215]
165	α^{16}	α^{77}	4	50	[0, 1, 4, 50, 5, 175, 6, 523, 7, 1342, 8, 2840, 9, 5178, 10, 7646, 11, 9670, 12, 10690, 16, 78]
623	α^{166}	α^{239}	4	50	[0, 1, 4, 50, 5, 173, 6, 496, 7, 1414, 8, 2876, 9, 4978, 10, 7742, 11, 9790, 12, 10486, 166, 240]
98	α^{12}	α^{175}	4	50	[0, 1, 4, 50, 5, 179, 6, 484, 7, 1392, 8, 2938, 9, 4988, 10, 7620, 11, 9856, 12, 10588, 12, 176]
556	α^{127}	α^{215}	4	50	[0, 1, 4, 50, 5, 174, 6, 510, 7, 1378, 8, 2836, 9, 5114, 10, 7750, 11, 9610, 12, 10558, 127, 216]
171	α^{16}	α^{182}	4	50	[0, 1, 4, 50, 5, 173, 6, 496, 7, 1414, 8, 2876, 9, 4978, 10, 7742, 11, 9790, 12, 10486, 16, 183]
169	α^{16}	α^{180}	4	50	[0, 1, 4, 50, 5, 178, 6, 499, 7, 1370, 8, 2880, 9, 5106, 10, 7686, 11, 9634, 12, 10602, 16, 181]
489	α^{87}	α^{128}	4	50	[0, 1, 4, 50, 5, 183, 6, 501, 7, 1348, 8, 2866, 9, 5136, 10, 7728, 11, 9636, 12, 10532, 87, 129]
564	α^{129}	α^{214}	4	50	[0, 1, 4, 50, 5, 182, 6, 498, 7, 1359, 8, 2880, 9, 5094, 10, 7706, 11, 9714, 12, 10538, 129, 215]
595	α^{164}	α^{239}	4	50	[0, 1, 4, 50, 5, 178, 6, 499, 7, 1370, 8, 2880, 9, 5106, 10, 7686, 11, 9634, 12, 10602, 164, 240]
433	α^{80}	α^{89}	4	50	[0, 1, 4, 50, 5, 180, 6, 487, 7, 1382, 8, 2924, 9, 5022, 10, 7642, 11, 9806, 12, 10582, 80, 90]
434	α^{80}	α^{90}	4	50	[0, 1, 4, 50, 5, 182, 6, 484, 7, 1372, 8, 2938, 9, 5044, 10, 7620, 11, 9772, 12, 10588, 80, 91]
630	α^{166}	α^{246}	4	50	[0, 1, 4, 50, 5, 180, 6, 487, 7, 1382, 8, 2924, 9, 5022, 10, 7642, 11, 9806, 12, 10582, 166, 247]
436	α^{80}	α^{92}	4	50	[0, 1, 4, 50, 5, 179, 6, 484, 7, 1392, 8, 2938, 9, 4988, 10, 7620, 11, 9856, 12, 10588, 80, 93]
582	α^{163}	α^{240}	4	50	[0, 1, 4, 50, 5, 168, 6, 521, 7, 1376, 8, 2854, 9, 5120, 10, 7604, 11, 9696, 12, 10760, 163, 241]
137	α^{14}	α^{197}	4	50	[0, 1, 4, 50, 5, 186, 6, 503, 7, 1346, 8, 2836, 9, 5114, 10, 7834, 11, 9674, 12, 10382, 14, 198]
585	α^{163}	α^{243}	4	50	[0, 1, 4, 50, 5, 179, 6, 484, 7, 1392, 8, 2938, 9, 4988, 10, 7620, 11, 9856, 12, 10588, 163, 244]
615	α^{165}	α^{245}	4	50	[0, 1, 4, 50, 5, 182, 6, 484, 7, 1372, 8, 2938, 9, 5044, 10, 7620, 11, 9772, 12, 10588, 165, 246]
495	α^{88}	α^{128}	4	50	[0, 1, 4, 50, 5, 174, 6, 510, 7, 1378, 8, 2836, 9, 5114, 10, 7750, 11, 9610, 12, 10558, 88, 129]
146	α^{15}	α^{178}	4	50	[0, 1, 4, 50, 5, 168, 6, 521, 7, 1376, 8, 2854, 9, 5120, 10, 7604, 11, 9696, 12, 10760, 15, 179]
559	α^{128}	α^{213}	4	50	[0, 1, 4, 50, 5, 181, 6, 499, 7, 1362, 8, 2880, 9, 5094, 10, 7686, 11, 9706, 12, 10602, 128, 214]
476	α^{85}	α^{126}	4	50	[0, 1, 4, 50, 5, 182, 6, 498, 7, 1359, 8, 2880, 9, 5094, 10, 7706, 11, 9714, 12, 10538, 85, 127]
654	α^{168}	α^{245}	4	50	[0, 1, 4, 50, 5, 183, 6, 480, 7, 1378, 8, 2940, 9, 5014, 10, 7662, 11, 9802, 12, 10486, 168, 246]
398	α^{77}	α^{92}	4	50	[0, 1, 4, 50, 5, 168, 6, 521, 7, 1376, 8, 2854, 9, 5120, 10, 7604, 11, 9696, 12, 10760, 77, 93]
66	α^{10}	α^{178}	4	50	[0, 1, 4, 50, 5, 183, 6, 480, 7, 1378, 8, 2940, 9, 5014, 10, 7662, 11, 9802, 12, 10486, 10, 179]
63	α^{10}	α^{175}	4	50	[0, 1, 4, 50, 5, 182, 6, 484, 7, 1372, 8, 2938, 9, 5044, 10, 7620, 11, 9772, 12, 10588, 10, 176]
368	α^{75}	α^{91}	4	50	[0, 1, 4, 50, 5, 178, 6, 499, 7, 1370, 8, 2880, 9, 5106, 10, 7686, 11, 9634, 12, 10602, 75, 92]
233	α^{42}	α^{169}	4	50	[0, 1, 4, 50, 5, 182, 6, 496, 7, 1360, 8, 2894, 9, 5088, 10, 7664, 11, 9728, 12, 10608, 42, 170]
247	α^{57}	α^{72}	4	50	[0, 1, 4, 50, 5, 176, 6, 523, 7, 1346, 8, 2816, 9, 5162, 10, 7758, 11, 9658, 12, 10490, 57, 73]
336	α^{73}	α^{89}	4	50	[0, 1, 4, 50, 5, 173, 6, 496, 7, 1414, 8, 2876, 9, 4978, 10, 7742, 11, 9790, 12, 10486, 73, 90]
255	α^{58}	α^{72}	4	50	[0, 1, 4, 50, 5, 186, 6, 503, 7, 1346, 8, 2836, 9, 5114, 10, 7834, 11, 9674, 12, 10382, 58, 73]
393	α^{77}	α^{87}	4	50	[0, 1, 4, 50, 5, 183, 6, 480, 7, 1378, 8, 2940, 9, 5014, 10, 7662, 11, 9802, 12, 10486, 77, 88]
40	α^{9}	α^{175}	4	50	[0, 1, 4, 50, 5, 180, 6, 487, 7, 1382, 8, 2924, 9, 5022, 10, 7642, 11, 9806, 12, 10582, 9, 176]
220	α^{41}	α^{170}	4	50	[0, 1, 4, 50, 5, 182, 6, 498, 7, 1359, 8, 2880, 9, 5094, 10, 7706, 11, 9714, 12, 10538, 41, 171]
712	α^{178}	α^{194}	4	50	[0, 1, 4, 50, 5, 175, 6, 523, 7, 1342, 8, 2840, 9, 5178, 10, 7646, 11, 9670, 12, 10690, 178, 195]
234	α^{42}	α^{170}	4	50	[0, 1, 4, 50, 5, 181, 6, 499, 7, 1362, 8, 2880, 9, 5094, 10, 7686, 11, 9706, 12, 10602, 42, 171]
748	α^{183}	α^{240}	4	50	[0, 1, 4, 50, 5, 176, 6, 523, 7, 1346, 8, 2816, 9, 5162, 10, 7758, 11, 9658, 12, 10490, 183, 241]
218	α^{41}	α^{168}	4	50	[0, 1, 4, 50, 5, 183, 6, 501, 7, 1348, 8, 2866, 9, 5136, 10, 7728, 11, 9636, 12, 10532, 41, 169]
749	α^{183}	α^{241}	4	50	[0, 1, 4, 50, 5, 186, 6, 503, 7, 1346, 8, 2836, 9, 5114, 10, 7834, 11, 9674, 12, 10382, 183, 242]
290	α^{61}	α^{239}	4	50	[0, 1, 4, 50, 5, 175, 6, 523, 7, 1342, 8, 2840, 9, 5178, 10, 7646, 11, 9670, 12, 10690, 61, 240]
355	α^{74}	α^{178}	4	51	[0, 1, 4, 51, 5, 151, 6, 580, 7, 1320, 8, 2806, 9, 5212, 10, 7588, 11, 9768, 12, 10578, 74, 179]
550	α^{126}	α^{215}	4	51	[0, 1, 4, 51, 5, 173, 6, 516, 7, 1372, 8, 2806, 9, 5144, 10, 7780, 11, 9580, 12, 10578, 126, 216]
694	α^{172}	α^{246}	4	51	[0, 1, 4, 51, 5, 184, 6, 475, 7, 1376, 8, 2954, 9, 5008, 10, 7628, 11, 9824, 12, 10550, 172, 247]
543	α^{125}	α^{214}	4	51	[0, 1, 4, 51, 5, 166, 6, 521, 7, 1384, 8, 2834, 9, 5112, 10, 7668, 11, 9688, 12, 10670, 125, 215]
345	α^{74}	α^{83}	4	51	[0, 1, 4, 51, 5, 184, 6, 475, 7, 1376, 8, 2954, 9, 5008, 10, 7628, 11, 9824, 12, 10550, 74, 84]
126	α^{14}	α^{177}	4	51	[0, 1, 4, 51, 5, 173, 6, 503, 7, 1366, 8, 2912, 9, 5106, 10, 7546, 11, 9742, 12, 10740, 14, 178]
46	α^{9}	α^{181}	4	51	[0, 1, 4, 51, 5, 184, 6, 475, 7, 1376, 8, 2954, 9, 5008, 10, 7628, 11, 9824, 12, 10550, 9, 182]
407	α^{78}	α^{88}	4	51	[0, 1, 4, 51, 5, 180, 6, 481, 7, 1380, 8, 2938, 9, 5036, 10, 7628, 11, 9764, 12, 10582, 78, 89]
480	α^{86}	α^{126}	4	51	[0, 1, 4, 51, 5, 183, 6, 492, 7, 1353, 8, 2894, 9, 5108, 10, 7692, 11, 9700, 12, 10538, 86, 127]
144	α^{15}	α^{77}	4	51	[0, 1, 4, 51, 5, 174, 6, 517, 7, 1348, 8, 2854, 9, 5164, 10, 7632, 11, 9684, 12, 10690, 15, 78]
256	α^{58}	α^{73}	4	51	[0, 1, 4, 51, 5, 183, 6, 505, 7, 1348, 8, 2826, 9, 5136, 10, 7828, 11, 9636, 12, 10422, 58, 74]
156	α^{15}	α^{197}	4	51	[0, 1, 4, 51, 5, 183, 6, 505, 7, 1348, 8, 2826, 9, 5136, 10, 7828, 11, 9636, 12, 10422, 15, 198]
488	α^{87}	α^{127}	4	51	[0, 1, 4, 51, 5, 179, 6, 504, 7, 1357, 8, 2850, 9, 5136, 10, 7736, 11, 9640, 12, 10558, 87, 128]
561	α^{128}	α^{215}	4	51	[0, 1, 4, 51, 5, 179, 6, 504, 7, 1357, 8, 2850, 9, 5136, 10, 7736, 11, 9640, 12, 10558, 128, 216]
41	α^{9}	α^{176}	4	51	[0, 1, 4, 51, 5, 178, 6, 482, 7, 1394, 8, 2932, 9, 4994, 10, 7642, 11, 9834, 12, 10568, 9, 177]
65	α^{10}	α^{177}	4	51	[0, 1, 4, 51, 5, 180, 6, 481, 7, 1380, 8, 2938, 9, 5036, 10, 7628, 11, 9764, 12, 10582, 10, 178]
741	α^{182}	α^{240}	4	51	[0, 1, 4, 51, 5, 183, 6, 505, 7, 1348, 8, 2826, 9, 5136, 10, 7828, 11, 9636, 12, 10422, 182, 241]
711	α^{178}	α^{193}	4	51	[0, 1, 4, 51, 5, 174, 6, 517, 7, 1348, 8, 2854, 9, 5164, 10, 7632, 11, 9684, 12, 10690, 178, 194]
501	α^{89}	α^{129}	4	51	[0, 1, 4, 51, 5, 173, 6, 516, 7, 1372, 8, 2806, 9, 5144, 10, 7780, 11, 9580, 12, 10578, 89, 130]
502	α^{89}	α^{130}	4	51	[0, 1, 4, 51, 5, 166, 6, 521, 7, 1384, 8, 2834, 9, 5112, 10, 7668, 11, 9688, 12, 10670, 89, 131]
565	α^{129}	α^{215}	4	51	[0, 1, 4, 51, 5, 183, 6, 492, 7, 1353, 8, 2894, 9, 5108, 10, 7692, 11, 9700, 12, 10538, 129, 216]
305	α^{62}	α^{240}	4	51	[0, 1, 4, 51, 5, 174, 6, 517, 7, 1348, 8, 2854, 9, 5164, 10, 7632, 11, 9684, 12, 10690, 62, 241]
583	α^{163}	α^{241}	4	51	[0, 1, 4, 51, 5, 173, 6, 503, 7, 1366, 8, 2912, 9, 5106, 10, 7546, 11, 9742, 12, 10740, 163, 242]
216	α^{41}	α^{166}	4	51	[0, 1, 4, 51, 5, 166, 6, 521, 7, 1384, 8, 2834, 9, 5112, 10, 7668, 11, 9688, 12, 10670, 41, 167]
519	α^{104}	α^{181}	4	51	[0, 1, 4, 51, 5, 151, 6, 580, 7, 1320, 8, 2806, 9, 5212, 10, 7588, 11, 9768, 12, 10578, 104, 182]
205	α^{40}	α^{168}	4	51	[0, 1, 4, 51, 5, 179, 6, 504, 7, 1357, 8, 2850, 9, 5136, 10, 7736, 11, 9640, 12, 10558, 40, 169]
411	α^{78}	α^{92}	4	51	[0, 1, 4, 51, 5, 173, 6, 503, 7, 1366, 8, 2912, 9, 5106, 10, 7546, 11, 9742, 12, 10740, 78, 93]
643	α^{167}	α^{246}	4	51	[0, 1, 4, 51, 5, 178, 6, 482, 7, 1394, 8, 2932, 9, 4994, 10, 7642, 11, 9834, 12, 10568, 167, 247]
203	α^{40}	α^{166}	4	51	[0, 1, 4, 51, 5, 173, 6, 516, 7, 1372, 8, 2806, 9, 5144, 10, 7780, 11, 9580, 12, 10578, 40, 167]
206	α^{40}	α^{169}	4	51	[0, 1, 4, 51, 5, 183, 6, 492, 7, 1353, 8, 2894, 9, 5108, 10, 7692, 11, 9700, 12, 10538, 40, 170]
399	α^{77}	α^{151}	4	51	[0, 1, 4, 51, 5, 151, 6, 580, 7, 1320, 8, 2806, 9, 5212, 10, 7588, 11, 9768, 12, 10578, 77, 152]
642	α^{167}	α^{245}	4	51	[0, 1, 4, 51, 5, 180, 6, 481, 7, 1380, 8, 2938, 9, 5036, 10, 7628, 11, 9764, 12, 10582, 167, 246]
419	α^{79}	α^{88}	4	51	[0, 1, 4, 51, 5, 178, 6, 482, 7, 1394, 8, 2932, 9, 4994, 10, 7642, 11, 9834, 12, 10568, 79, 89]
506	α^{90}	α^{130}	4	52	[0, 1, 4, 52, 5, 164, 6, 523, 7, 1378, 8, 2824, 9, 5162, 10, 7662, 11, 9594, 12, 10710, 90, 131]
423	α^{79}	α^{92}	4	52	[0, 1, 4, 52, 5, 172, 6, 497, 7, 1372, 8, 2926, 9, 5092, 10, 7532, 11, 9756, 12, 10740, 79, 93]
425	α^{79}	α^{151}	4	52	[0, 1, 4, 52, 5, 152, 6, 566, 7, 1334, 8, 2844, 9, 5134, 10, 7566, 11, 9918, 12, 10538, 79, 152]
361	α^{75}	α^{84}	4	52	[0, 1, 4, 52, 5, 183, 6, 473, 7, 1384, 8, 2942, 9, 4980, 10, 7684, 11, 9880, 12, 10452, 75, 85]
153	α^{15}	α^{194}	4	52	[0, 1, 4, 52, 5, 192, 6, 518, 7, 1282, 8, 2828, 9, 5242, 10, 7710, 11, 9658, 12, 10586, 15, 195]
322	α^{72}	α^{176}	4	52	[0, 1, 4, 52, 5, 152, 6, 566, 7, 1334, 8, 2844, 9, 5134, 10, 7566, 11, 9918, 12, 10538, 72, 177]
202	α^{40}	α^{165}	4	52	[0, 1, 4, 52, 5, 164, 6, 523, 7, 1378, 8, 2824, 9, 5162, 10, 7662, 11, 9594, 12, 10710, 40, 166]
257	α^{58}	α^{74}	4	52	[0, 1, 4, 52, 5, 187, 6, 508, 7, 1340, 8, 2810, 9, 5128, 10, 7836, 11, 9660, 12, 10448, 58, 75]
112	α^{13}	α^{176}	4	52	[0, 1, 4, 52, 5, 172, 6, 497, 7, 1372, 8, 2926, 9, 5092, 10, 7532, 11, 9756, 12, 10740, 13, 177]
584	α^{163}	α^{242}	4	52	[0, 1, 4, 52, 5, 172, 6, 497, 7, 1372, 8, 2926, 9, 5092, 10, 7532, 11, 9756, 12, 10740, 163, 243]
719	α^{179}	α^{240}	4	52	[0, 1, 4, 52, 5, 192, 6, 518, 7, 1282, 8, 2828, 9, 5242, 10, 7710, 11, 9658, 12, 10586, 179, 241]
766	α^{199}	α^{240}	4	52	[0, 1, 4, 52, 5, 172, 6, 493, 7, 1404, 8, 2874, 9, 5028, 10, 7736, 11, 9724, 12, 10512, 199, 241]
720	α^{179}	α^{241}	4	52	[0, 1, 4, 52, 5, 195, 6, 516, 7, 1268, 8, 2834, 9, 5264, 10, 7716, 11, 9652, 12, 10536, 179, 242]
521	α^{104}	α^{183}	4	52	[0, 1, 4, 52, 5, 152, 6, 566, 7, 1334, 8, 2844, 9, 5134, 10, 7566, 11, 9918, 12, 10538, 104, 184]
265	α^{59}	α^{238}	4	52	[0, 1, 4, 52, 5, 161, 6, 523, 7, 1398, 8, 2824, 9, 5106, 10, 7662, 11, 9678, 12, 10710, 59, 239]
732	α^{181}	α^{239}	4	52	[0, 1, 4, 52, 5, 187, 6, 508, 7, 1340, 8, 2810, 9, 5128, 10, 7836, 11, 9660, 12, 10448, 181, 240]
296	α^{62}	α^{76}	4	52	[0, 1, 4, 52, 5, 195, 6, 516, 7, 1268, 8, 2834, 9, 5264, 10, 7716, 11, 9652, 12, 10536, 62, 77]
219	α^{41}	α^{169}	4	52	[0, 1, 4, 52, 5, 188, 6, 496, 7, 1344, 8, 2878, 9, 5088, 10, 7680, 11, 9760, 12, 10628, 41, 170]
560	α^{128}	α^{214}	4	52	[0, 1, 4, 52, 5, 188, 6, 496, 7, 1344, 8, 2878, 9, 5088, 10, 7680, 11, 9760, 12, 10628, 128, 215]
210	α^{41}	α^{56}	4	52	[0, 1, 4, 52, 5, 172, 6, 493, 7, 1404, 8, 2874, 9, 5028, 10, 7736, 11, 9724, 12, 10512, 41, 57]
283	α^{61}	α^{76}	4	52	[0, 1, 4, 52, 5, 192, 6, 518, 7, 1282, 8, 2828, 9, 5242, 10, 7710, 11, 9658, 12, 10586, 61, 77]
544	α^{125}	α^{215}	4	52	[0, 1, 4, 52, 5, 164, 6, 523, 7, 1378, 8, 2824, 9, 5162, 10, 7662, 11, 9594, 12, 10710, 125, 216]
133	α^{14}	α^{193}	4	52	[0, 1, 4, 52, 5, 195, 6, 516, 7, 1268, 8, 2834, 9, 5264, 10, 7716, 11, 9652, 12, 10536, 14, 194]
718	α^{179}	α^{196}	4	52	[0, 1, 4, 52, 5, 161, 6, 523, 7, 1398, 8, 2824, 9, 5106, 10, 7662, 11, 9678, 12, 10710, 179, 197]
665	α^{169}	α^{245}	4	52	[0, 1, 4, 52, 5, 183, 6, 476, 7, 1378, 8, 2928, 9, 5014, 10, 7706, 11, 9802, 12, 10446, 169, 246]
609	α^{165}	α^{239}	4	52	[0, 1, 4, 52, 5, 175, 6, 496, 7, 1390, 8, 2860, 9, 5050, 10, 7758, 11, 9718, 12, 10506, 165, 240]
67	α^{10}	α^{179}	4	52	[0, 1, 4, 52, 5, 183, 6, 476, 7, 1378, 8, 2928, 9, 5014, 10, 7706, 11, 9802, 12, 10446, 10, 180]
159	α^{15}	α^{214}	4	52	[0, 1, 4, 52, 5, 172, 6, 493, 7, 1404, 8, 2874, 9, 5028, 10, 7736, 11, 9724, 12, 10512, 15, 215]
378	α^{76}	α^{86}	4	52	[0, 1, 4, 52, 5, 183, 6, 476, 7, 1378, 8, 2928, 9, 5014, 10, 7706, 11, 9802, 12, 10446, 76, 87]
481	α^{86}	α^{127}	4	52	[0, 1, 4, 52, 5, 188, 6, 496, 7, 1344, 8, 2878, 9, 5088, 10, 7680, 11, 9760, 12, 10628, 86, 128]
686	α^{171}	α^{246}	4	52	[0, 1, 4, 52, 5, 183, 6, 473, 7, 1384, 8, 2942, 9, 4980, 10, 7684, 11, 9880, 12, 10452, 171, 247]
182	α^{17}	α^{76}	4	52	[0, 1, 4, 52, 5, 161, 6, 523, 7, 1398, 8, 2824, 9, 5106, 10, 7662, 11, 9678, 12, 10710, 17, 77]
173	α^{16}	α^{197}	4	52	[0, 1, 4, 52, 5, 187, 6, 508, 7, 1340, 8, 2810, 9, 5128, 10, 7836, 11, 9660, 12, 10448, 16, 198]
45	α^{9}	α^{180}	4	52	[0, 1, 4, 52, 5, 183, 6, 473, 7, 1384, 8, 2942, 9, 4980, 10, 7684, 11, 9880, 12, 10452, 9, 181]
170	α^{16}	α^{181}	4	52	[0, 1, 4, 52, 5, 175, 6, 496, 7, 1390, 8, 2860, 9, 5050, 10, 7758, 11, 9718, 12, 10506, 16, 182]
352	α^{74}	α^{90}	4	52	[0, 1, 4, 52, 5, 175, 6, 496, 7, 1390, 8, 2860, 9, 5050, 10, 7758, 11, 9718, 12, 10506, 74, 91]
136	α^{14}	α^{196}	4	53	[0, 1, 4, 53, 5, 186, 6, 502, 7, 1310, 8, 2860, 9, 5198, 10, 7738, 11, 9670, 12, 10452, 14, 197]
520	α^{104}	α^{182}	4	53	[0, 1, 4, 53, 5, 149, 6, 568, 7, 1333, 8, 2834, 9, 5176, 10, 7560, 11, 9824, 12, 10578, 104, 183]
726	α^{180}	α^{241}	4	53	[0, 1, 4, 53, 5, 195, 6, 517, 7, 1268, 8, 2814, 9, 5264, 10, 7760, 11, 9652, 12, 10510, 180, 242]
330	α^{73}	α^{83}	4	53	[0, 1, 4, 53, 5, 180, 6, 470, 7, 1378, 8, 2960, 9, 5050, 10, 7614, 11, 9722, 12, 10568, 73, 84]
693	α^{172}	α^{245}	4	53	[0, 1, 4, 53, 5, 180, 6, 470, 7, 1378, 8, 2960, 9, 5050, 10, 7614, 11, 9722, 12, 10568, 172, 246]
742	α^{182}	α^{241}	4	53	[0, 1, 4, 53, 5, 186, 6, 502, 7, 1310, 8, 2860, 9, 5198, 10, 7738, 11, 9670, 12, 10452, 182, 242]
282	α^{61}	α^{75}	4	53	[0, 1, 4, 53, 5, 195, 6, 517, 7, 1268, 8, 2814, 9, 5264, 10, 7760, 11, 9652, 12, 10510, 61, 76]
412	α^{78}	α^{151}	4	53	[0, 1, 4, 53, 5, 149, 6, 568, 7, 1333, 8, 2834, 9, 5176, 10, 7560, 11, 9824, 12, 10578, 78, 152]
87	α^{11}	α^{178}	4	53	[0, 1, 4, 53, 5, 177, 6, 482, 7, 1378, 8, 2916, 9, 5078, 10, 7658, 11, 9690, 12, 10588, 11, 179]
70	α^{10}	α^{182}	4	53	[0, 1, 4, 53, 5, 180, 6, 470, 7, 1378, 8, 2960, 9, 5050, 10, 7614, 11, 9722, 12, 10568, 10, 183]
676	α^{170}	α^{246}	4	53	[0, 1, 4, 53, 5, 178, 6, 479, 7, 1394, 8, 2912, 9, 4994, 10, 7714, 11, 9834, 12, 10472, 170, 247]
134	α^{14}	α^{194}	4	53	[0, 1, 4, 53, 5, 195, 6, 517, 7, 1268, 8, 2814, 9, 5264, 10, 7760, 11, 9652, 12, 10510, 14, 195]
44	α^{9}	α^{179}	4	53	[0, 1, 4, 53, 5, 178, 6, 479, 7, 1394, 8, 2912, 9, 4994, 10, 7714, 11, 9834, 12, 10472, 9, 180]
261	α^{59}	α^{73}	4	53	[0, 1, 4, 53, 5, 186, 6, 502, 7, 1310, 8, 2860, 9, 5198, 10, 7738, 11, 9670, 12, 10452, 59, 74]
394	α^{77}	α^{88}	4	53	[0, 1, 4, 53, 5, 177, 6, 482, 7, 1378, 8, 2916, 9, 5078, 10, 7658, 11, 9690, 12, 10588, 77, 89]
377	α^{76}	α^{85}	4	53	[0, 1, 4, 53, 5, 178, 6, 479, 7, 1394, 8, 2912, 9, 4994, 10, 7714, 11, 9834, 12, 10472, 76, 86]
641	α^{167}	α^{244}	4	53	[0, 1, 4, 53, 5, 177, 6, 482, 7, 1378, 8, 2916, 9, 5078, 10, 7658, 11, 9690, 12, 10588, 167, 245]
339	α^{73}	α^{177}	4	53	[0, 1, 4, 53, 5, 149, 6, 568, 7, 1333, 8, 2834, 9, 5176, 10, 7560, 11, 9824, 12, 10578, 73, 178]
649	α^{168}	α^{240}	4	54	[0, 1, 4, 54, 5, 165, 6, 491, 7, 1426, 8, 2872, 9, 5014, 10, 7710, 11, 9706, 12, 10602, 168, 241]
64	α^{10}	α^{176}	4	54	[0, 1, 4, 54, 5, 176, 6, 488, 7, 1360, 8, 2922, 9, 5104, 10, 7604, 11, 9744, 12, 10612, 10, 177]
629	α^{166}	α^{245}	4	54	[0, 1, 4, 54, 5, 176, 6, 488, 7, 1360, 8, 2922, 9, 5104, 10, 7604, 11, 9744, 12, 10612, 166, 246]
318	α^{72}	α^{87}	4	54	[0, 1, 4, 54, 5, 165, 6, 491, 7, 1426, 8, 2872, 9, 5014, 10, 7710, 11, 9706, 12, 10602, 72, 88]
614	α^{165}	α^{244}	4	54	[0, 1, 4, 54, 5, 174, 6, 491, 7, 1360, 8, 2926, 9, 5120, 10, 7548, 11, 9728, 12, 10728, 165, 245]
207	α^{40}	α^{170}	4	54	[0, 1, 4, 54, 5, 169, 6, 490, 7, 1406, 8, 2872, 9, 5050, 10, 7730, 11, 9686, 12, 10538, 40, 171]
653	α^{168}	α^{244}	4	54	[0, 1, 4, 54, 5, 179, 6, 475, 7, 1380, 8, 2918, 9, 5056, 10, 7708, 11, 9700, 12, 10480, 168, 245]
88	α^{11}	α^{179}	4	54	[0, 1, 4, 54, 5, 179, 6, 475, 7, 1380, 8, 2918, 9, 5056, 10, 7708, 11, 9700, 12, 10480, 11, 180]
85	α^{11}	α^{176}	4	54	[0, 1, 4, 54, 5, 174, 6, 491, 7, 1360, 8, 2926, 9, 5120, 10, 7548, 11, 9728, 12, 10728, 11, 177]
661	α^{169}	α^{241}	4	54	[0, 1, 4, 54, 5, 167, 6, 486, 7, 1423, 8, 2892, 9, 4994, 10, 7694, 11, 9778, 12, 10558, 169, 242]
132	α^{14}	α^{183}	4	54	[0, 1, 4, 54, 5, 167, 6, 486, 7, 1423, 8, 2892, 9, 4994, 10, 7694, 11, 9778, 12, 10558, 14, 184]
379	α^{76}	α^{87}	4	54	[0, 1, 4, 54, 5, 179, 6, 475, 7, 1380, 8, 2918, 9, 5056, 10, 7708, 11, 9700, 12, 10480, 76, 88]
568	α^{130}	α^{215}	4	54	[0, 1, 4, 54, 5, 169, 6, 490, 7, 1406, 8, 2872, 9, 5050, 10, 7730, 11, 9686, 12, 10538, 130, 216]
317	α^{72}	α^{86}	4	54	[0, 1, 4, 54, 5, 167, 6, 486, 7, 1423, 8, 2892, 9, 4994, 10, 7694, 11, 9778, 12, 10558, 72, 87]
475	α^{85}	α^{125}	4	54	[0, 1, 4, 54, 5, 169, 6, 490, 7, 1406, 8, 2872, 9, 5050, 10, 7730, 11, 9686, 12, 10538, 85, 126]
151	α^{15}	α^{183}	4	54	[0, 1, 4, 54, 5, 165, 6, 491, 7, 1426, 8, 2872, 9, 5014, 10, 7710, 11, 9706, 12, 10602, 15, 184]
60	α^{10}	α^{151}	4	54	[0, 1, 4, 54, 5, 146, 6, 556, 7, 1357, 8, 2882, 9, 5100, 10, 7468, 11, 9944, 12, 10668, 10, 152]
92	α^{11}	α^{183}	4	54	[0, 1, 4, 54, 5, 175, 6, 482, 7, 1394, 8, 2896, 9, 5030, 10, 7722, 11, 9754, 12, 10498, 11, 184]
420	α^{79}	α^{89}	4	54	[0, 1, 4, 54, 5, 176, 6, 488, 7, 1360, 8, 2922, 9, 5104, 10, 7604, 11, 9744, 12, 10612, 79, 90]
692	α^{172}	α^{244}	4	54	[0, 1, 4, 54, 5, 175, 6, 482, 7, 1394, 8, 2896, 9, 5030, 10, 7722, 11, 9754, 12, 10498, 172, 245]
314	α^{72}	α^{83}	4	54	[0, 1, 4, 54, 5, 175, 6, 482, 7, 1394, 8, 2896, 9, 5030, 10, 7722, 11, 9754, 12, 10498, 72, 84]
571	α^{141}	α^{245}	4	54	[0, 1, 4, 54, 5, 146, 6, 556, 7, 1357, 8, 2882, 9, 5100, 10, 7468, 11, 9944, 12, 10668, 141, 246]
421	α^{79}	α^{90}	4	54	[0, 1, 4, 54, 5, 174, 6, 491, 7, 1360, 8, 2926, 9, 5120, 10, 7548, 11, 9728, 12, 10728, 79, 91]
511	α^{104}	α^{114}	4	54	[0, 1, 4, 54, 5, 146, 6, 556, 7, 1357, 8, 2882, 9, 5100, 10, 7468, 11, 9944, 12, 10668, 104, 115]
573	α^{142}	α^{246}	4	55	[0, 1, 4, 55, 5, 148, 6, 544, 7, 1360, 8, 2914, 9, 5064, 10, 7440, 11, 10016, 12, 10678, 142, 247]
637	α^{167}	α^{240}	4	55	[0, 1, 4, 55, 5, 165, 6, 485, 7, 1424, 8, 2886, 9, 5028, 10, 7696, 11, 9664, 12, 10602, 167, 241]
86	α^{11}	α^{177}	4	55	[0, 1, 4, 55, 5, 174, 6, 486, 7, 1360, 8, 2934, 9, 5120, 10, 7548, 11, 9728, 12, 10714, 11, 178]
717	α^{179}	α^{195}	4	55	[0, 1, 4, 55, 5, 159, 6, 528, 7, 1370, 8, 2816, 9, 5182, 10, 7630, 11, 9666, 12, 10732, 179, 196]
761	α^{198}	α^{240}	4	55	[0, 1, 4, 55, 5, 162, 6, 500, 7, 1408, 8, 2870, 9, 5056, 10, 7668, 11, 9744, 12, 10586, 198, 241]
127	α^{14}	α^{178}	4	55	[0, 1, 4, 55, 5, 169, 6, 499, 7, 1370, 8, 2884, 9, 5134, 10, 7606, 11, 9682, 12, 10720, 14, 179]
628	α^{166}	α^{244}	4	55	[0, 1, 4, 55, 5, 174, 6, 486, 7, 1360, 8, 2934, 9, 5120, 10, 7548, 11, 9728, 12, 10714, 166, 245]
725	α^{180}	α^{240}	4	55	[0, 1, 4, 55, 5, 187, 6, 518, 7, 1295, 8, 2792, 9, 5242, 10, 7790, 11, 9634, 12, 10516, 180, 241]
36	α^{9}	α^{151}	4	55	[0, 1, 4, 55, 5, 148, 6, 544, 7, 1360, 8, 2914, 9, 5064, 10, 7440, 11, 10016, 12, 10678, 9, 152]
683	α^{171}	α^{243}	4	55	[0, 1, 4, 55, 5, 167, 6, 484, 7, 1420, 8, 2886, 9, 5008, 10, 7716, 11, 9756, 12, 10538, 171, 244]
597	α^{164}	α^{241}	4	55	[0, 1, 4, 55, 5, 169, 6, 499, 7, 1370, 8, 2884, 9, 5134, 10, 7606, 11, 9682, 12, 10720, 164, 242]
106	α^{12}	α^{183}	4	55	[0, 1, 4, 55, 5, 167, 6, 484, 7, 1420, 8, 2886, 9, 5008, 10, 7716, 11, 9756, 12, 10538, 12, 184]
596	α^{164}	α^{240}	4	55	[0, 1, 4, 55, 5, 168, 6, 496, 7, 1368, 8, 2898, 9, 5168, 10, 7584, 11, 9576, 12, 10726, 164, 241]
271	α^{60}	α^{75}	4	55	[0, 1, 4, 55, 5, 187, 6, 518, 7, 1295, 8, 2792, 9, 5242, 10, 7790, 11, 9634, 12, 10516, 60, 76]
383	α^{76}	α^{91}	4	55	[0, 1, 4, 55, 5, 168, 6, 496, 7, 1368, 8, 2898, 9, 5168, 10, 7584, 11, 9576, 12, 10726, 76, 92]
408	α^{78}	α^{89}	4	55	[0, 1, 4, 55, 5, 174, 6, 486, 7, 1360, 8, 2934, 9, 5120, 10, 7548, 11, 9728, 12, 10714, 78, 90]
158	α^{15}	α^{213}	4	55	[0, 1, 4, 55, 5, 162, 6, 500, 7, 1408, 8, 2870, 9, 5056, 10, 7668, 11, 9744, 12, 10586, 15, 214]
154	α^{15}	α^{195}	4	55	[0, 1, 4, 55, 5, 187, 6, 518, 7, 1295, 8, 2792, 9, 5242, 10, 7790, 11, 9634, 12, 10516, 15, 196]
150	α^{15}	α^{182}	4	55	[0, 1, 4, 55, 5, 165, 6, 485, 7, 1424, 8, 2886, 9, 5028, 10, 7696, 11, 9664, 12, 10602, 15, 183]
397	α^{77}	α^{91}	4	55	[0, 1, 4, 55, 5, 169, 6, 499, 7, 1370, 8, 2884, 9, 5134, 10, 7606, 11, 9682, 12, 10720, 77, 92]
226	α^{42}	α^{57}	4	55	[0, 1, 4, 55, 5, 162, 6, 500, 7, 1408, 8, 2870, 9, 5056, 10, 7668, 11, 9744, 12, 10586, 42, 58]
147	α^{15}	α^{179}	4	55	[0, 1, 4, 55, 5, 168, 6, 496, 7, 1368, 8, 2898, 9, 5168, 10, 7584, 11, 9576, 12, 10726, 15, 180]
510	α^{104}	α^{113}	4	55	[0, 1, 4, 55, 5, 148, 6, 544, 7, 1360, 8, 2914, 9, 5064, 10, 7440, 11, 10016, 12, 10678, 104, 114]
335	α^{73}	α^{88}	4	55	[0, 1, 4, 55, 5, 165, 6, 485, 7, 1424, 8, 2886, 9, 5028, 10, 7696, 11, 9664, 12, 10602, 73, 89]
164	α^{16}	α^{76}	4	55	[0, 1, 4, 55, 5, 159, 6, 528, 7, 1370, 8, 2816, 9, 5182, 10, 7630, 11, 9666, 12, 10732, 16, 77]
315	α^{72}	α^{84}	4	55	[0, 1, 4, 55, 5, 167, 6, 484, 7, 1420, 8, 2886, 9, 5008, 10, 7716, 11, 9756, 12, 10538, 72, 85]
277	α^{60}	α^{239}	4	55	[0, 1, 4, 55, 5, 159, 6, 528, 7, 1370, 8, 2816, 9, 5182, 10, 7630, 11, 9666, 12, 10732, 60, 240]
124	α^{14}	α^{76}	4	56	[0, 1, 4, 56, 5, 160, 6, 525, 7, 1358, 8, 2816, 9, 5230, 10, 7638, 11, 9574, 12, 10726, 14, 77]
143	α^{15}	α^{76}	4	56	[0, 1, 4, 56, 5, 157, 6, 531, 7, 1366, 8, 2800, 9, 5218, 10, 7638, 11, 9614, 12, 10758, 15, 77]
113	α^{13}	α^{177}	4	56	[0, 1, 4, 56, 5, 170, 6, 489, 7, 1368, 8, 2918, 9, 5128, 10, 7556, 11, 9704, 12, 10740, 13, 178]
306	α^{62}	α^{241}	4	56	[0, 1, 4, 56, 5, 160, 6, 525, 7, 1358, 8, 2816, 9, 5230, 10, 7638, 11, 9574, 12, 10726, 62, 242]
715	α^{179}	α^{193}	4	56	[0, 1, 4, 56, 5, 160, 6, 525, 7, 1358, 8, 2816, 9, 5230, 10, 7638, 11, 9574, 12, 10726, 179, 194]
135	α^{14}	α^{195}	4	56	[0, 1, 4, 56, 5, 190, 6, 504, 7, 1290, 8, 2836, 9, 5234, 10, 7734, 11, 9650, 12, 10554, 14, 196]
270	α^{60}	α^{74}	4	56	[0, 1, 4, 56, 5, 190, 6, 504, 7, 1290, 8, 2836, 9, 5234, 10, 7734, 11, 9650, 12, 10554, 60, 75]
733	α^{181}	α^{240}	4	56	[0, 1, 4, 56, 5, 183, 6, 512, 7, 1312, 8, 2806, 9, 5220, 10, 7776, 11, 9632, 12, 10516, 181, 241]
69	α^{10}	α^{181}	4	56	[0, 1, 4, 56, 5, 179, 6, 461, 7, 1384, 8, 2954, 9, 5036, 10, 7672, 11, 9736, 12, 10472, 10, 182]
734	α^{181}	α^{241}	4	56	[0, 1, 4, 56, 5, 190, 6, 504, 7, 1290, 8, 2836, 9, 5234, 10, 7734, 11, 9650, 12, 10554, 181, 242]
363	α^{75}	α^{86}	4	56	[0, 1, 4, 56, 5, 175, 6, 468, 7, 1393, 8, 2938, 9, 5036, 10, 7652, 11, 9740, 12, 10568, 75, 87]
716	α^{179}	α^{194}	4	56	[0, 1, 4, 56, 5, 157, 6, 531, 7, 1366, 8, 2800, 9, 5218, 10, 7638, 11, 9614, 12, 10758, 179, 195]
598	α^{164}	α^{242}	4	56	[0, 1, 4, 56, 5, 170, 6, 489, 7, 1368, 8, 2918, 9, 5128, 10, 7556, 11, 9704, 12, 10740, 164, 243]
291	α^{61}	α^{240}	4	56	[0, 1, 4, 56, 5, 157, 6, 531, 7, 1366, 8, 2800, 9, 5218, 10, 7638, 11, 9614, 12, 10758, 61, 241]
155	α^{15}	α^{196}	4	56	[0, 1, 4, 56, 5, 183, 6, 512, 7, 1312, 8, 2806, 9, 5220, 10, 7776, 11, 9632, 12, 10516, 15, 197]
685	α^{171}	α^{245}	4	56	[0, 1, 4, 56, 5, 179, 6, 461, 7, 1384, 8, 2954, 9, 5036, 10, 7672, 11, 9736, 12, 10472, 171, 246]
410	α^{78}	α^{91}	4	56	[0, 1, 4, 56, 5, 170, 6, 489, 7, 1368, 8, 2918, 9, 5128, 10, 7556, 11, 9704, 12, 10740, 78, 92]
346	α^{74}	α^{84}	4	56	[0, 1, 4, 56, 5, 179, 6, 461, 7, 1384, 8, 2954, 9, 5036, 10, 7672, 11, 9736, 12, 10472, 74, 85]
422	α^{79}	α^{91}	4	56	[0, 1, 4, 56, 5, 173, 6, 483, 7, 1366, 8, 2928, 9, 5106, 10, 7590, 11, 9742, 12, 10630, 79, 92]
99	α^{12}	α^{176}	4	56	[0, 1, 4, 56, 5, 173, 6, 483, 7, 1366, 8, 2928, 9, 5106, 10, 7590, 11, 9742, 12, 10630, 12, 177]
89	α^{11}	α^{180}	4	56	[0, 1, 4, 56, 5, 175, 6, 468, 7, 1393, 8, 2938, 9, 5036, 10, 7652, 11, 9740, 12, 10568, 11, 181]
262	α^{59}	α^{74}	4	56	[0, 1, 4, 56, 5, 183, 6, 512, 7, 1312, 8, 2806, 9, 5220, 10, 7776, 11, 9632, 12, 10516, 59, 75]
599	α^{164}	α^{243}	4	56	[0, 1, 4, 56, 5, 173, 6, 483, 7, 1366, 8, 2928, 9, 5106, 10, 7590, 11, 9742, 12, 10630, 164, 244]
664	α^{169}	α^{244}	4	56	[0, 1, 4, 56, 5, 175, 6, 468, 7, 1393, 8, 2938, 9, 5036, 10, 7652, 11, 9740, 12, 10568, 169, 245]
650	α^{168}	α^{241}	4	57	[0, 1, 4, 57, 5, 167, 6, 474, 7, 1414, 8, 2908, 9, 5042, 10, 7682, 11, 9678, 12, 10588, 168, 242]
131	α^{14}	α^{182}	4	57	[0, 1, 4, 57, 5, 167, 6, 474, 7, 1414, 8, 2908, 9, 5042, 10, 7682, 11, 9678, 12, 10588, 14, 183]
662	α^{169}	α^{242}	4	57	[0, 1, 4, 57, 5, 167, 6, 470, 7, 1418, 8, 2928, 9, 5022, 10, 7646, 11, 9714, 12, 10608, 169, 243]
672	α^{170}	α^{242}	4	57	[0, 1, 4, 57, 5, 163, 6, 476, 7, 1440, 8, 2894, 9, 4972, 10, 7724, 11, 9776, 12, 10518, 170, 243]
675	α^{170}	α^{245}	4	57	[0, 1, 4, 57, 5, 176, 6, 462, 7, 1396, 8, 2934, 9, 5020, 10, 7716, 11, 9748, 12, 10446, 170, 246]
316	α^{72}	α^{85}	4	57	[0, 1, 4, 57, 5, 163, 6, 476, 7, 1440, 8, 2894, 9, 4972, 10, 7724, 11, 9776, 12, 10518, 72, 86]
91	α^{11}	α^{182}	4	57	[0, 1, 4, 57, 5, 174, 6, 467, 7, 1394, 8, 2924, 9, 5050, 10, 7702, 11, 9690, 12, 10492, 11, 183]
331	α^{73}	α^{84}	4	57	[0, 1, 4, 57, 5, 174, 6, 467, 7, 1394, 8, 2924, 9, 5050, 10, 7702, 11, 9690, 12, 10492, 73, 85]
68	α^{10}	α^{180}	4	57	[0, 1, 4, 57, 5, 176, 6, 462, 7, 1396, 8, 2934, 9, 5020, 10, 7716, 11, 9748, 12, 10446, 10, 181]
118	α^{13}	α^{182}	4	57	[0, 1, 4, 57, 5, 167, 6, 470, 7, 1418, 8, 2928, 9, 5022, 10, 7646, 11, 9714, 12, 10608, 13, 183]
119	α^{13}	α^{183}	4	57	[0, 1, 4, 57, 5, 163, 6, 476, 7, 1440, 8, 2894, 9, 4972, 10, 7724, 11, 9776, 12, 10518, 13, 184]
362	α^{75}	α^{85}	4	57	[0, 1, 4, 57, 5, 176, 6, 462, 7, 1396, 8, 2934, 9, 5020, 10, 7716, 11, 9748, 12, 10446, 75, 86]
684	α^{171}	α^{244}	4	57	[0, 1, 4, 57, 5, 174, 6, 467, 7, 1394, 8, 2924, 9, 5050, 10, 7702, 11, 9690, 12, 10492, 171, 245]
334	α^{73}	α^{87}	4	57	[0, 1, 4, 57, 5, 167, 6, 474, 7, 1414, 8, 2908, 9, 5042, 10, 7682, 11, 9678, 12, 10588, 73, 88]
333	α^{73}	α^{86}	4	57	[0, 1, 4, 57, 5, 167, 6, 470, 7, 1418, 8, 2928, 9, 5022, 10, 7646, 11, 9714, 12, 10608, 73, 87]
624	α^{166}	α^{240}	4	58	[0, 1, 4, 58, 5, 161, 6, 478, 7, 1426, 8, 2892, 9, 5070, 10, 7670, 11, 9562, 12, 10678, 166, 241]
178	α^{16}	α^{215}	4	58	[0, 1, 4, 58, 5, 156, 6, 496, 7, 1420, 8, 2862, 9, 5076, 10, 7664, 11, 9676, 12, 10656, 16, 216]
640	α^{167}	α^{243}	4	58	[0, 1, 4, 58, 5, 172, 6, 470, 7, 1390, 8, 2908, 9, 5086, 10, 7710, 11, 9638, 12, 10518, 167, 244]
196	α^{40}	α^{56}	4	58	[0, 1, 4, 58, 5, 156, 6, 496, 7, 1420, 8, 2862, 9, 5076, 10, 7664, 11, 9676, 12, 10656, 40, 57]
332	α^{73}	α^{85}	4	58	[0, 1, 4, 58, 5, 166, 6, 468, 7, 1420, 8, 2922, 9, 5028, 10, 7668, 11, 9692, 12, 10588, 73, 86]
380	α^{76}	α^{88}	4	58	[0, 1, 4, 58, 5, 172, 6, 470, 7, 1390, 8, 2908, 9, 5086, 10, 7710, 11, 9638, 12, 10518, 76, 89]
409	α^{78}	α^{90}	4	58	[0, 1, 4, 58, 5, 170, 6, 480, 7, 1368, 8, 2926, 9, 5128, 10, 7584, 11, 9704, 12, 10656, 78, 91]
663	α^{169}	α^{243}	4	58	[0, 1, 4, 58, 5, 169, 6, 468, 7, 1409, 8, 2922, 9, 5036, 10, 7668, 11, 9708, 12, 10588, 169, 244]
351	α^{74}	α^{89}	4	58	[0, 1, 4, 58, 5, 161, 6, 478, 7, 1426, 8, 2892, 9, 5070, 10, 7670, 11, 9562, 12, 10678, 74, 90]
367	α^{75}	α^{90}	4	58	[0, 1, 4, 58, 5, 166, 6, 478, 7, 1403, 8, 2892, 9, 5106, 10, 7670, 11, 9550, 12, 10678, 75, 91]
673	α^{170}	α^{243}	4	58	[0, 1, 4, 58, 5, 166, 6, 468, 7, 1420, 8, 2922, 9, 5028, 10, 7668, 11, 9692, 12, 10588, 170, 244]
348	α^{74}	α^{86}	4	58	[0, 1, 4, 58, 5, 169, 6, 468, 7, 1409, 8, 2922, 9, 5036, 10, 7668, 11, 9708, 12, 10588, 74, 87]
765	α^{199}	α^{239}	4	58	[0, 1, 4, 58, 5, 156, 6, 496, 7, 1420, 8, 2862, 9, 5076, 10, 7664, 11, 9676, 12, 10656, 199, 240]
396	α^{77}	α^{90}	4	58	[0, 1, 4, 58, 5, 165, 6, 490, 7, 1378, 8, 2896, 9, 5142, 10, 7586, 11, 9658, 12, 10746, 77, 91]
104	α^{12}	α^{181}	4	58	[0, 1, 4, 58, 5, 169, 6, 468, 7, 1409, 8, 2922, 9, 5036, 10, 7668, 11, 9708, 12, 10588, 12, 182]
102	α^{12}	α^{179}	4	58	[0, 1, 4, 58, 5, 172, 6, 470, 7, 1390, 8, 2908, 9, 5086, 10, 7710, 11, 9638, 12, 10518, 12, 180]
612	α^{165}	α^{242}	4	58	[0, 1, 4, 58, 5, 165, 6, 490, 7, 1378, 8, 2896, 9, 5142, 10, 7586, 11, 9658, 12, 10746, 165, 243]
149	α^{15}	α^{181}	4	58	[0, 1, 4, 58, 5, 161, 6, 478, 7, 1426, 8, 2892, 9, 5070, 10, 7670, 11, 9562, 12, 10678, 15, 182]
148	α^{15}	α^{180}	4	58	[0, 1, 4, 58, 5, 166, 6, 478, 7, 1403, 8, 2892, 9, 5106, 10, 7670, 11, 9550, 12, 10678, 15, 181]
100	α^{12}	α^{177}	4	58	[0, 1, 4, 58, 5, 170, 6, 480, 7, 1368, 8, 2926, 9, 5128, 10, 7584, 11, 9704, 12, 10656, 12, 178]
105	α^{12}	α^{182}	4	58	[0, 1, 4, 58, 5, 166, 6, 468, 7, 1420, 8, 2922, 9, 5028, 10, 7668, 11, 9692, 12, 10588, 12, 183]
610	α^{165}	α^{240}	4	58	[0, 1, 4, 58, 5, 166, 6, 478, 7, 1403, 8, 2892, 9, 5106, 10, 7670, 11, 9550, 12, 10678, 165, 241]
114	α^{13}	α^{178}	4	58	[0, 1, 4, 58, 5, 165, 6, 490, 7, 1378, 8, 2896, 9, 5142, 10, 7586, 11, 9658, 12, 10746, 13, 179]
613	α^{165}	α^{243}	4	58	[0, 1, 4, 58, 5, 170, 6, 480, 7, 1368, 8, 2926, 9, 5128, 10, 7584, 11, 9704, 12, 10656, 165, 244]
382	α^{76}	α^{90}	4	59	[0, 1, 4, 59, 5, 165, 6, 481, 7, 1382, 8, 2912, 9, 5146, 10, 7594, 11, 9582, 12, 10708, 76, 91]
364	α^{75}	α^{87}	4	59	[0, 1, 4, 59, 5, 171, 6, 462, 7, 1398, 8, 2936, 9, 5058, 10, 7654, 11, 9694, 12, 10588, 75, 88]
395	α^{77}	α^{89}	4	59	[0, 1, 4, 59, 5, 167, 6, 480, 7, 1378, 8, 2912, 9, 5126, 10, 7614, 11, 9674, 12, 10644, 77, 90]
350	α^{74}	α^{88}	4	59	[0, 1, 4, 59, 5, 166, 6, 466, 7, 1414, 8, 2916, 9, 5062, 10, 7690, 11, 9614, 12, 10568, 74, 89]
724	α^{180}	α^{196}	4	59	[0, 1, 4, 59, 5, 143, 6, 549, 7, 1352, 8, 2854, 9, 5156, 10, 7536, 11, 9848, 12, 10642, 180, 197]
103	α^{12}	α^{180}	4	59	[0, 1, 4, 59, 5, 171, 6, 462, 7, 1398, 8, 2936, 9, 5058, 10, 7654, 11, 9694, 12, 10588, 12, 181]
266	α^{59}	α^{239}	4	59	[0, 1, 4, 59, 5, 143, 6, 549, 7, 1352, 8, 2854, 9, 5156, 10, 7536, 11, 9848, 12, 10642, 59, 240]
128	α^{14}	α^{179}	4	59	[0, 1, 4, 59, 5, 165, 6, 481, 7, 1382, 8, 2912, 9, 5146, 10, 7594, 11, 9582, 12, 10708, 14, 180]
101	α^{12}	α^{178}	4	59	[0, 1, 4, 59, 5, 167, 6, 480, 7, 1378, 8, 2912, 9, 5126, 10, 7614, 11, 9674, 12, 10644, 12, 179]
652	α^{168}	α^{243}	4	59	[0, 1, 4, 59, 5, 171, 6, 462, 7, 1398, 8, 2936, 9, 5058, 10, 7654, 11, 9694, 12, 10588, 168, 244]
163	α^{16}	α^{75}	4	59	[0, 1, 4, 59, 5, 143, 6, 549, 7, 1352, 8, 2854, 9, 5156, 10, 7536, 11, 9848, 12, 10642, 16, 76]
130	α^{14}	α^{181}	4	59	[0, 1, 4, 59, 5, 166, 6, 466, 7, 1414, 8, 2916, 9, 5062, 10, 7690, 11, 9614, 12, 10568, 14, 182]
627	α^{166}	α^{243}	4	59	[0, 1, 4, 59, 5, 167, 6, 480, 7, 1378, 8, 2912, 9, 5126, 10, 7614, 11, 9674, 12, 10644, 166, 244]
611	α^{165}	α^{241}	4	59	[0, 1, 4, 59, 5, 165, 6, 481, 7, 1382, 8, 2912, 9, 5146, 10, 7594, 11, 9582, 12, 10708, 165, 242]
638	α^{167}	α^{241}	4	59	[0, 1, 4, 59, 5, 166, 6, 466, 7, 1414, 8, 2916, 9, 5062, 10, 7690, 11, 9614, 12, 10568, 167, 242]
227	α^{42}	α^{58}	4	60	[0, 1, 4, 60, 5, 156, 6, 493, 7, 1420, 8, 2842, 9, 5076, 10, 7736, 11, 9676, 12, 10560, 42, 59]
674	α^{170}	α^{244}	4	60	[0, 1, 4, 60, 5, 171, 6, 457, 7, 1404, 8, 2926, 9, 5048, 10, 7732, 11, 9660, 12, 10452, 170, 245]
366	α^{75}	α^{89}	4	60	[0, 1, 4, 60, 5, 163, 6, 466, 7, 1414, 8, 2920, 9, 5098, 10, 7642, 11, 9534, 12, 10678, 75, 90]
365	α^{75}	α^{88}	4	60	[0, 1, 4, 60, 5, 169, 6, 460, 7, 1404, 8, 2930, 9, 5064, 10, 7676, 11, 9644, 12, 10568, 75, 89]
116	α^{13}	α^{180}	4	60	[0, 1, 4, 60, 5, 169, 6, 460, 7, 1404, 8, 2930, 9, 5064, 10, 7676, 11, 9644, 12, 10568, 13, 181]
117	α^{13}	α^{181}	4	60	[0, 1, 4, 60, 5, 168, 6, 460, 7, 1412, 8, 2930, 9, 5036, 10, 7676, 11, 9700, 12, 10568, 13, 182]
639	α^{167}	α^{242}	4	60	[0, 1, 4, 60, 5, 169, 6, 460, 7, 1404, 8, 2930, 9, 5064, 10, 7676, 11, 9644, 12, 10568, 167, 243]
49	α^{10}	α^{72}	4	60	[0, 1, 4, 60, 5, 147, 6, 526, 7, 1342, 8, 2940, 9, 5162, 10, 7414, 11, 9830, 12, 10698, 10, 73]
310	α^{62}	α^{245}	4	60	[0, 1, 4, 60, 5, 147, 6, 526, 7, 1342, 8, 2940, 9, 5162, 10, 7414, 11, 9830, 12, 10698, 62, 246]
743	α^{183}	α^{193}	4	60	[0, 1, 4, 60, 5, 147, 6, 526, 7, 1342, 8, 2940, 9, 5162, 10, 7414, 11, 9830, 12, 10698, 183, 194]
755	α^{197}	α^{239}	4	60	[0, 1, 4, 60, 5, 156, 6, 493, 7, 1420, 8, 2842, 9, 5076, 10, 7736, 11, 9676, 12, 10560, 197, 240]
760	α^{198}	α^{239}	4	60	[0, 1, 4, 60, 5, 153, 6, 490, 7, 1434, 8, 2856, 9, 5054, 10, 7714, 11, 9682, 12, 10566, 198, 240]
129	α^{14}	α^{180}	4	60	[0, 1, 4, 60, 5, 163, 6, 466, 7, 1414, 8, 2920, 9, 5098, 10, 7642, 11, 9534, 12, 10678, 14, 181]
625	α^{166}	α^{241}	4	60	[0, 1, 4, 60, 5, 163, 6, 466, 7, 1414, 8, 2920, 9, 5098, 10, 7642, 11, 9534, 12, 10678, 166, 242]
347	α^{74}	α^{85}	4	60	[0, 1, 4, 60, 5, 171, 6, 457, 7, 1404, 8, 2926, 9, 5048, 10, 7732, 11, 9660, 12, 10452, 74, 86]
349	α^{74}	α^{87}	4	60	[0, 1, 4, 60, 5, 168, 6, 460, 7, 1412, 8, 2930, 9, 5036, 10, 7676, 11, 9700, 12, 10568, 74, 88]
90	α^{11}	α^{181}	4	60	[0, 1, 4, 60, 5, 171, 6, 457, 7, 1404, 8, 2926, 9, 5048, 10, 7732, 11, 9660, 12, 10452, 11, 182]
651	α^{168}	α^{242}	4	60	[0, 1, 4, 60, 5, 168, 6, 460, 7, 1412, 8, 2930, 9, 5036, 10, 7676, 11, 9700, 12, 10568, 168, 243]
211	α^{41}	α^{57}	4	60	[0, 1, 4, 60, 5, 153, 6, 490, 7, 1434, 8, 2856, 9, 5054, 10, 7714, 11, 9682, 12, 10566, 41, 58]
176	α^{16}	α^{213}	4	60	[0, 1, 4, 60, 5, 156, 6, 493, 7, 1420, 8, 2842, 9, 5076, 10, 7736, 11, 9676, 12, 10560, 16, 214]
177	α^{16}	α^{214}	4	60	[0, 1, 4, 60, 5, 153, 6, 490, 7, 1434, 8, 2856, 9, 5054, 10, 7714, 11, 9682, 12, 10566, 16, 215]
309	α^{62}	α^{244}	4	61	[0, 1, 4, 61, 5, 137, 6, 547, 7, 1342, 8, 2900, 9, 5210, 10, 7382, 11, 9814, 12, 10780, 62, 245]
307	α^{62}	α^{242}	4	61	[0, 1, 4, 61, 5, 136, 6, 553, 7, 1344, 8, 2866, 9, 5216, 10, 7460, 11, 9792, 12, 10690, 62, 243]
115	α^{13}	α^{179}	4	61	[0, 1, 4, 61, 5, 162, 6, 478, 7, 1390, 8, 2904, 9, 5134, 10, 7622, 11, 9622, 12, 10656, 13, 180]
110	α^{13}	α^{75}	4	61	[0, 1, 4, 61, 5, 136, 6, 553, 7, 1344, 8, 2866, 9, 5216, 10, 7460, 11, 9792, 12, 10690, 13, 76]
721	α^{180}	α^{193}	4	61	[0, 1, 4, 61, 5, 136, 6, 553, 7, 1344, 8, 2866, 9, 5216, 10, 7460, 11, 9792, 12, 10690, 180, 194]
381	α^{76}	α^{89}	4	61	[0, 1, 4, 61, 5, 162, 6, 478, 7, 1390, 8, 2904, 9, 5134, 10, 7622, 11, 9622, 12, 10656, 76, 90]
735	α^{182}	α^{193}	4	61	[0, 1, 4, 61, 5, 137, 6, 547, 7, 1342, 8, 2900, 9, 5210, 10, 7382, 11, 9814, 12, 10780, 182, 194]
626	α^{166}	α^{242}	4	61	[0, 1, 4, 61, 5, 162, 6, 478, 7, 1390, 8, 2904, 9, 5134, 10, 7622, 11, 9622, 12, 10656, 166, 243]
73	α^{11}	α^{73}	4	61	[0, 1, 4, 61, 5, 137, 6, 547, 7, 1342, 8, 2900, 9, 5210, 10, 7382, 11, 9814, 12, 10780, 11, 74]
72	α^{11}	α^{72}	4	62	[0, 1, 4, 62, 5, 133, 6, 548, 7, 1358, 8, 2880, 9, 5194, 10, 7426, 11, 9798, 12, 10754, 11, 73]
569	α^{141}	α^{197}	4	62	[0, 1, 4, 62, 5, 167, 6, 491, 7, 1334, 8, 2888, 9, 5234, 10, 7582, 11, 9662, 12, 10698, 141, 198]
250	α^{57}	α^{114}	4	62	[0, 1, 4, 62, 5, 158, 6, 512, 7, 1304, 8, 2958, 9, 5192, 10, 7456, 11, 9864, 12, 10568, 57, 115]
745	α^{183}	α^{195}	4	62	[0, 1, 4, 62, 5, 128, 6, 561, 7, 1372, 8, 2822, 9, 5188, 10, 7532, 11, 9788, 12, 10640, 183, 196]
245	α^{56}	α^{169}	4	62	[0, 1, 4, 62, 5, 156, 6, 481, 7, 1420, 8, 2870, 9, 5076, 10, 7708, 11, 9676, 12, 10560, 56, 170]
244	α^{56}	α^{114}	4	62	[0, 1, 4, 62, 5, 167, 6, 491, 7, 1334, 8, 2888, 9, 5234, 10, 7582, 11, 9662, 12, 10698, 56, 115]
744	α^{183}	α^{194}	4	62	[0, 1, 4, 62, 5, 133, 6, 548, 7, 1358, 8, 2880, 9, 5194, 10, 7426, 11, 9798, 12, 10754, 183, 195]
253	α^{57}	α^{198}	4	62	[0, 1, 4, 62, 5, 158, 6, 512, 7, 1304, 8, 2958, 9, 5192, 10, 7456, 11, 9864, 12, 10568, 57, 199]
531	α^{113}	α^{199}	4	62	[0, 1, 4, 62, 5, 156, 6, 481, 7, 1420, 8, 2870, 9, 5076, 10, 7708, 11, 9676, 12, 10560, 113, 200]
295	α^{61}	α^{244}	4	62	[0, 1, 4, 62, 5, 133, 6, 548, 7, 1358, 8, 2880, 9, 5194, 10, 7426, 11, 9798, 12, 10754, 61, 245]
95	α^{12}	α^{74}	4	62	[0, 1, 4, 62, 5, 131, 6, 554, 7, 1358, 8, 2864, 9, 5210, 10, 7426, 11, 9782, 12, 10786, 12, 75]
278	α^{60}	α^{240}	4	62	[0, 1, 4, 62, 5, 135, 6, 554, 7, 1352, 8, 2846, 9, 5188, 10, 7504, 11, 9848, 12, 10664, 60, 241]
483	α^{86}	α^{142}	4	62	[0, 1, 4, 62, 5, 156, 6, 481, 7, 1420, 8, 2870, 9, 5076, 10, 7708, 11, 9676, 12, 10560, 86, 143]
281	α^{60}	α^{243}	4	62	[0, 1, 4, 62, 5, 128, 6, 561, 7, 1372, 8, 2822, 9, 5188, 10, 7532, 11, 9788, 12, 10640, 60, 244]
727	α^{181}	α^{193}	4	62	[0, 1, 4, 62, 5, 131, 6, 554, 7, 1358, 8, 2864, 9, 5210, 10, 7426, 11, 9782, 12, 10786, 181, 194]
142	α^{15}	α^{75}	4	62	[0, 1, 4, 62, 5, 135, 6, 554, 7, 1352, 8, 2846, 9, 5188, 10, 7504, 11, 9848, 12, 10664, 15, 76]
93	α^{12}	α^{72}	4	62	[0, 1, 4, 62, 5, 128, 6, 561, 7, 1372, 8, 2822, 9, 5188, 10, 7532, 11, 9788, 12, 10640, 12, 73]
260	α^{58}	α^{199}	4	62	[0, 1, 4, 62, 5, 167, 6, 491, 7, 1334, 8, 2888, 9, 5234, 10, 7582, 11, 9662, 12, 10698, 58, 200]
723	α^{180}	α^{195}	4	62	[0, 1, 4, 62, 5, 135, 6, 554, 7, 1352, 8, 2846, 9, 5188, 10, 7504, 11, 9848, 12, 10664, 180, 196]
308	α^{62}	α^{243}	4	62	[0, 1, 4, 62, 5, 131, 6, 554, 7, 1358, 8, 2864, 9, 5210, 10, 7426, 11, 9782, 12, 10786, 62, 244]
570	α^{141}	α^{198}	4	62	[0, 1, 4, 62, 5, 158, 6, 512, 7, 1304, 8, 2958, 9, 5192, 10, 7456, 11, 9864, 12, 10568, 141, 199]
123	α^{14}	α^{75}	4	63	[0, 1, 4, 63, 5, 135, 6, 554, 7, 1338, 8, 2844, 9, 5246, 10, 7490, 11, 9762, 12, 10696, 14, 76]
292	α^{61}	α^{241}	4	63	[0, 1, 4, 63, 5, 135, 6, 554, 7, 1338, 8, 2844, 9, 5246, 10, 7490, 11, 9762, 12, 10696, 61, 242]
243	α^{56}	α^{113}	4	63	[0, 1, 4, 63, 5, 151, 6, 510, 7, 1334, 8, 2952, 9, 5154, 10, 7478, 11, 9854, 12, 10548, 56, 114]
572	α^{142}	α^{198}	4	63	[0, 1, 4, 63, 5, 151, 6, 510, 7, 1334, 8, 2952, 9, 5154, 10, 7478, 11, 9854, 12, 10548, 142, 199]
269	α^{59}	α^{242}	4	63	[0, 1, 4, 63, 5, 127, 6, 561, 7, 1372, 8, 2802, 9, 5208, 10, 7596, 11, 9724, 12, 10550, 59, 243]
722	α^{180}	α^{194}	4	63	[0, 1, 4, 63, 5, 135, 6, 554, 7, 1338, 8, 2844, 9, 5246, 10, 7490, 11, 9762, 12, 10696, 180, 195]
107	α^{13}	α^{72}	4	63	[0, 1, 4, 63, 5, 127, 6, 561, 7, 1372, 8, 2802, 9, 5208, 10, 7596, 11, 9724, 12, 10550, 13, 73]
746	α^{183}	α^{196}	4	63	[0, 1, 4, 63, 5, 127, 6, 561, 7, 1372, 8, 2802, 9, 5208, 10, 7596, 11, 9724, 12, 10550, 183, 197]
254	α^{57}	α^{199}	4	63	[0, 1, 4, 63, 5, 151, 6, 510, 7, 1334, 8, 2952, 9, 5154, 10, 7478, 11, 9854, 12, 10548, 57, 200]
212	α^{41}	α^{58}	4	64	[0, 1, 4, 64, 5, 150, 6, 480, 7, 1436, 8, 2862, 9, 5076, 10, 7696, 11, 9644, 12, 10636, 41, 59]
302	α^{62}	α^{176}	4	64	[0, 1, 4, 64, 5, 133, 6, 542, 7, 1358, 8, 2868, 9, 5194, 10, 7510, 11, 9798, 12, 10586, 62, 177]
730	α^{181}	α^{196}	4	64	[0, 1, 4, 64, 5, 129, 6, 555, 7, 1366, 8, 2824, 9, 5202, 10, 7534, 11, 9774, 12, 10670, 181, 197]
194	α^{17}	α^{214}	4	64	[0, 1, 4, 64, 5, 150, 6, 480, 7, 1436, 8, 2862, 9, 5076, 10, 7696, 11, 9644, 12, 10636, 17, 215]
736	α^{182}	α^{194}	4	64	[0, 1, 4, 64, 5, 122, 6, 563, 7, 1364, 8, 2854, 9, 5228, 10, 7380, 11, 9796, 12, 10836, 182, 195]
535	α^{114}	α^{193}	4	64	[0, 1, 4, 64, 5, 133, 6, 542, 7, 1358, 8, 2868, 9, 5194, 10, 7510, 11, 9798, 12, 10586, 114, 194]
738	α^{182}	α^{196}	4	64	[0, 1, 4, 64, 5, 130, 6, 554, 7, 1354, 8, 2824, 9, 5250, 10, 7554, 11, 9682, 12, 10606, 182, 197]
141	α^{15}	α^{74}	4	64	[0, 1, 4, 64, 5, 129, 6, 555, 7, 1366, 8, 2824, 9, 5202, 10, 7534, 11, 9774, 12, 10670, 15, 75]
754	α^{197}	α^{238}	4	64	[0, 1, 4, 64, 5, 150, 6, 480, 7, 1436, 8, 2862, 9, 5076, 10, 7696, 11, 9644, 12, 10636, 197, 239]
478	α^{85}	α^{141}	4	64	[0, 1, 4, 64, 5, 148, 6, 494, 7, 1408, 8, 2858, 9, 5152, 10, 7620, 11, 9632, 12, 10712, 85, 142]
424	α^{79}	α^{141}	4	64	[0, 1, 4, 64, 5, 133, 6, 542, 7, 1358, 8, 2868, 9, 5194, 10, 7510, 11, 9798, 12, 10586, 79, 142]
246	α^{56}	α^{170}	4	64	[0, 1, 4, 64, 5, 148, 6, 494, 7, 1408, 8, 2858, 9, 5152, 10, 7620, 11, 9632, 12, 10712, 56, 171]
121	α^{14}	α^{73}	4	64	[0, 1, 4, 64, 5, 130, 6, 554, 7, 1354, 8, 2824, 9, 5250, 10, 7554, 11, 9682, 12, 10606, 14, 74]
541	α^{114}	α^{199}	4	64	[0, 1, 4, 64, 5, 148, 6, 494, 7, 1408, 8, 2858, 9, 5152, 10, 7620, 11, 9632, 12, 10712, 114, 200]
294	α^{61}	α^{243}	4	64	[0, 1, 4, 64, 5, 122, 6, 563, 7, 1364, 8, 2854, 9, 5228, 10, 7380, 11, 9796, 12, 10836, 61, 244]
267	α^{59}	α^{240}	4	64	[0, 1, 4, 64, 5, 129, 6, 555, 7, 1366, 8, 2824, 9, 5202, 10, 7534, 11, 9774, 12, 10670, 59, 241]
268	α^{59}	α^{241}	4	64	[0, 1, 4, 64, 5, 130, 6, 554, 7, 1354, 8, 2824, 9, 5250, 10, 7554, 11, 9682, 12, 10606, 59, 242]
94	α^{12}	α^{73}	4	64	[0, 1, 4, 64, 5, 122, 6, 563, 7, 1364, 8, 2854, 9, 5228, 10, 7380, 11, 9796, 12, 10836, 12, 74]
737	α^{182}	α^{195}	4	65	[0, 1, 4, 65, 5, 121, 6, 569, 7, 1352, 8, 2818, 9, 5292, 10, 7444, 11, 9688, 12, 10778, 182, 196]
280	α^{60}	α^{242}	4	65	[0, 1, 4, 65, 5, 121, 6, 569, 7, 1352, 8, 2818, 9, 5292, 10, 7444, 11, 9688, 12, 10778, 60, 243]
108	α^{13}	α^{73}	4	65	[0, 1, 4, 65, 5, 121, 6, 569, 7, 1352, 8, 2818, 9, 5292, 10, 7444, 11, 9688, 12, 10778, 13, 74]
729	α^{181}	α^{195}	4	66	[0, 1, 4, 66, 5, 127, 6, 559, 7, 1338, 8, 2836, 9, 5278, 10, 7458, 11, 9762, 12, 10718, 181, 196]
728	α^{181}	α^{194}	4	66	[0, 1, 4, 66, 5, 120, 6, 561, 7, 1360, 8, 2846, 9, 5264, 10, 7388, 11, 9744, 12, 10848, 181, 195]
293	α^{61}	α^{242}	4	66	[0, 1, 4, 66, 5, 120, 6, 561, 7, 1360, 8, 2846, 9, 5264, 10, 7388, 11, 9744, 12, 10848, 61, 243]
279	α^{60}	α^{241}	4	66	[0, 1, 4, 66, 5, 127, 6, 559, 7, 1338, 8, 2836, 9, 5278, 10, 7458, 11, 9762, 12, 10718, 60, 242]
122	α^{14}	α^{74}	4	66	[0, 1, 4, 66, 5, 127, 6, 559, 7, 1338, 8, 2836, 9, 5278, 10, 7458, 11, 9762, 12, 10718, 14, 75]
109	α^{13}	α^{74}	4	66	[0, 1, 4, 66, 5, 120, 6, 561, 7, 1360, 8, 2846, 9, 5264, 10, 7388, 11, 9744, 12, 10848, 13, 75]
759	α^{198}	α^{238}	4	67	[0, 1, 4, 67, 5, 132, 6, 510, 7, 1402, 8, 2920, 9, 5082, 10, 7510, 11, 9858, 12, 10588, 198, 239]
228	α^{42}	α^{59}	4	67	[0, 1, 4, 67, 5, 142, 6, 510, 7, 1355, 8, 2920, 9, 5162, 10, 7510, 11, 9806, 12, 10588, 42, 60]
193	α^{17}	α^{213}	4	67	[0, 1, 4, 67, 5, 142, 6, 510, 7, 1355, 8, 2920, 9, 5162, 10, 7510, 11, 9806, 12, 10588, 17, 214]
751	α^{196}	α^{238}	4	67	[0, 1, 4, 67, 5, 142, 6, 510, 7, 1355, 8, 2920, 9, 5162, 10, 7510, 11, 9806, 12, 10588, 196, 239]
197	α^{40}	α^{57}	4	67	[0, 1, 4, 67, 5, 132, 6, 510, 7, 1402, 8, 2920, 9, 5082, 10, 7510, 11, 9858, 12, 10588, 40, 58]
195	α^{17}	α^{215}	4	67	[0, 1, 4, 67, 5, 132, 6, 510, 7, 1402, 8, 2920, 9, 5082, 10, 7510, 11, 9858, 12, 10588, 17, 216]
438	α^{80}	α^{142}	4	68	[0, 1, 4, 68, 5, 130, 6, 530, 7, 1363, 8, 2880, 9, 5202, 10, 7498, 11, 9782, 12, 10606, 80, 143]
301	α^{62}	α^{175}	4	68	[0, 1, 4, 68, 5, 130, 6, 530, 7, 1363, 8, 2880, 9, 5202, 10, 7498, 11, 9782, 12, 10606, 62, 176]
525	α^{113}	α^{193}	4	68	[0, 1, 4, 68, 5, 130, 6, 530, 7, 1363, 8, 2880, 9, 5202, 10, 7498, 11, 9782, 12, 10606, 113, 194]
288	α^{61}	α^{175}	4	71	[0, 1, 4, 71, 5, 120, 6, 550, 7, 1360, 8, 2814, 9, 5264, 10, 7532, 11, 9744, 12, 10642, 61, 176]
252	α^{57}	α^{171}	4	71	[0, 1, 4, 71, 5, 131, 6, 504, 7, 1393, 8, 2906, 9, 5132, 10, 7528, 11, 9772, 12, 10638, 57, 172]
473	α^{84}	α^{141}	4	71	[0, 1, 4, 71, 5, 131, 6, 504, 7, 1393, 8, 2906, 9, 5132, 10, 7528, 11, 9772, 12, 10638, 84, 142]
437	α^{80}	α^{141}	4	71	[0, 1, 4, 71, 5, 120, 6, 550, 7, 1360, 8, 2814, 9, 5264, 10, 7532, 11, 9744, 12, 10642, 80, 142]
536	α^{114}	α^{194}	4	71	[0, 1, 4, 71, 5, 120, 6, 550, 7, 1360, 8, 2814, 9, 5264, 10, 7532, 11, 9744, 12, 10642, 114, 195]
540	α^{114}	α^{198}	4	71	[0, 1, 4, 71, 5, 131, 6, 504, 7, 1393, 8, 2906, 9, 5132, 10, 7528, 11, 9772, 12, 10638, 114, 199]
450	α^{81}	α^{142}	4	72	[0, 1, 4, 72, 5, 121, 6, 526, 7, 1390, 8, 2852, 9, 5194, 10, 7558, 11, 9734, 12, 10586, 81, 143]
539	α^{114}	α^{197}	4	72	[0, 1, 4, 72, 5, 127, 6, 494, 7, 1444, 8, 2826, 9, 5184, 10, 7620, 11, 9540, 12, 10760, 114, 198]
287	α^{61}	α^{174}	4	72	[0, 1, 4, 72, 5, 121, 6, 526, 7, 1390, 8, 2852, 9, 5194, 10, 7558, 11, 9734, 12, 10586, 61, 175]
526	α^{113}	α^{194}	4	72	[0, 1, 4, 72, 5, 121, 6, 526, 7, 1390, 8, 2852, 9, 5194, 10, 7558, 11, 9734, 12, 10586, 113, 195]
259	α^{58}	α^{172}	4	72	[0, 1, 4, 72, 5, 127, 6, 494, 7, 1444, 8, 2826, 9, 5184, 10, 7620, 11, 9540, 12, 10760, 58, 173]
467	α^{83}	α^{141}	4	72	[0, 1, 4, 72, 5, 127, 6, 494, 7, 1444, 8, 2826, 9, 5184, 10, 7620, 11, 9540, 12, 10760, 83, 142]
258	α^{58}	α^{171}	4	73	[0, 1, 4, 73, 5, 129, 6, 471, 7, 1474, 8, 2864, 9, 5094, 10, 7626, 11, 9594, 12, 10768, 58, 172]
251	α^{57}	α^{170}	4	73	[0, 1, 4, 73, 5, 131, 6, 498, 7, 1399, 8, 2900, 9, 5098, 10, 7578, 11, 9850, 12, 10548, 57, 171]
530	α^{113}	α^{198}	4	73	[0, 1, 4, 73, 5, 131, 6, 498, 7, 1399, 8, 2900, 9, 5098, 10, 7578, 11, 9850, 12, 10548, 113, 199]
529	α^{113}	α^{197}	4	73	[0, 1, 4, 73, 5, 129, 6, 471, 7, 1474, 8, 2864, 9, 5094, 10, 7626, 11, 9594, 12, 10768, 113, 198]
479	α^{85}	α^{142}	4	73	[0, 1, 4, 73, 5, 131, 6, 498, 7, 1399, 8, 2900, 9, 5098, 10, 7578, 11, 9850, 12, 10548, 85, 143]
474	α^{84}	α^{142}	4	73	[0, 1, 4, 73, 5, 129, 6, 471, 7, 1474, 8, 2864, 9, 5094, 10, 7626, 11, 9594, 12, 10768, 84, 143]
275	α^{60}	α^{174}	4	74	[0, 1, 4, 74, 5, 116, 6, 538, 7, 1380, 8, 2822, 9, 5228, 10, 7568, 11, 9764, 12, 10552, 60, 175]
274	α^{60}	α^{173}	4	74	[0, 1, 4, 74, 5, 118, 6, 518, 7, 1402, 8, 2860, 9, 5186, 10, 7566, 11, 9698, 12, 10566, 60, 174]
449	α^{81}	α^{141}	4	74	[0, 1, 4, 74, 5, 116, 6, 538, 7, 1380, 8, 2822, 9, 5228, 10, 7568, 11, 9764, 12, 10552, 81, 142]
460	α^{82}	α^{142}	4	74	[0, 1, 4, 74, 5, 118, 6, 518, 7, 1402, 8, 2860, 9, 5186, 10, 7566, 11, 9698, 12, 10566, 82, 143]
537	α^{114}	α^{195}	4	74	[0, 1, 4, 74, 5, 116, 6, 538, 7, 1380, 8, 2822, 9, 5228, 10, 7568, 11, 9764, 12, 10552, 114, 196]
538	α^{114}	α^{196}	4	74	[0, 1, 4, 74, 5, 118, 6, 518, 7, 1402, 8, 2860, 9, 5186, 10, 7566, 11, 9698, 12, 10566, 114, 197]
527	α^{113}	α^{195}	4	74	[0, 1, 4, 74, 5, 118, 6, 518, 7, 1402, 8, 2860, 9, 5186, 10, 7566, 11, 9698, 12, 10566, 113, 196]
264	α^{59}	α^{173}	4	74	[0, 1, 4, 74, 5, 118, 6, 518, 7, 1402, 8, 2860, 9, 5186, 10, 7566, 11, 9698, 12, 10566, 59, 174]
459	α^{82}	α^{141}	4	74	[0, 1, 4, 74, 5, 118, 6, 518, 7, 1402, 8, 2860, 9, 5186, 10, 7566, 11, 9698, 12, 10566, 82, 142]
528	α^{113}	α^{196}	4	76	[0, 1, 4, 76, 5, 118, 6, 500, 7, 1429, 8, 2874, 9, 5132, 10, 7588, 11, 9680, 12, 10608, 113, 197]
263	α^{59}	α^{172}	4	76	[0, 1, 4, 76, 5, 118, 6, 500, 7, 1429, 8, 2874, 9, 5132, 10, 7588, 11, 9680, 12, 10608, 59, 173]
468	α^{83}	α^{142}	4	76	[0, 1, 4, 76, 5, 118, 6, 500, 7, 1429, 8, 2874, 9, 5132, 10, 7588, 11, 9680, 12, 10608, 83, 143]

2.2 Optimal codes for (3,1)-SSS-based masking

As shown in our paper, the codes satifying two conditions are optimal:

- Maximizing $d_{\mathcal{D}}^{\perp}$, here $\max\{d_{\mathcal{D}}^{\perp}\} = 4$
- Minimizing $B_{d_{\mathcal{D}}^{\perp}}$, here $\min\{B_{d_{\mathcal{D}}^{\perp}}\} = 36$

Note that we use two complementary metrics **SNR** (signal-to-noise ratio) and **MI** (mutual information) to assess the side-channel resistance of SSS-based masking with different codes.

As a result of Tab. II, we conclude that the optimal codes for IPM are genetated by $\mathbf{H} = [\alpha_1, \alpha_2, \alpha_3]$ where $(\alpha_1, \alpha_2, \alpha_3) \in \{(\alpha^0, \alpha^{175}, \alpha^{247}), (\alpha^0, \alpha^{72}, \alpha^{80}), (\alpha^0, \alpha^8, \alpha^{183})\}$. Note that permutation on three public points does not change the codes due to equivalence.

The generator matrices of the three optimal codes are shown below.

- $(\alpha_1, \alpha_2, \alpha_3) = (\alpha^0, \alpha^{175}, \alpha^{247})$

$$\mathbf{H}_{optimal} = \begin{pmatrix} \alpha^0 & \alpha^{175} & \alpha^{247} \end{pmatrix} \in \mathbb{F}_{2^8}^{1\times 3} = \begin{pmatrix}
1&0&0&0&0&0&0&0&1&1&1&1&1&1&1&1&1&1&0&0&0&0&0&1\\
0&1&0&0&0&0&0&0&1&1&0&0&0&1&1&1&1&1&0&1&1&0&0&0\\
0&0&1&0&0&0&0&0&1&1&0&1&1&0&1&1&0&1&1&0&1&1&0&0\\
0&0&0&1&0&0&0&0&1&1&0&1&0&1&0&1&0&0&1&1&0&1&1&0\\
0&0&0&0&1&0&0&0&1&1&0&1&0&0&1&0&0&0&0&1&1&0&1&1\\
0&0&0&0&0&1&0&0&0&1&1&0&1&0&0&1&1&0&1&1&0&1&0&1\\
0&0&0&0&0&0&1&0&1&0&0&0&1&1&0&0&1&1&1&0&0&0&1&0\\
0&0&0&0&0&0&0&1&0&1&0&0&0&1&1&0&0&1&1&1&0&0&0&1
\end{pmatrix} \in \mathbb{F}_2^{8\times 24}$$

- $(\alpha_1, \alpha_2, \alpha_3) = (\alpha^0, \alpha^{72}, \alpha^{80})$

$$\mathbf{H}_{optimal} = \begin{pmatrix} \alpha^0 & \alpha^{72} & \alpha^{80} \end{pmatrix} \in \mathbb{F}_{2^8}^{1\times 3} = \begin{pmatrix}
1&0&0&0&0&0&0&0&1&0&1&0&0&1&1&0&1&0&1&1&1&1&1&1\\
0&1&0&0&0&0&0&0&0&1&0&1&0&0&1&1&1&1&1&0&0&1&1&1\\
0&0&1&0&0&0&0&0&1&0&0&1&0&0&0&1&1&1&0&0&1&0&1&1\\
0&0&0&1&0&0&0&0&1&1&1&1&0&0&0&0&1&1&0&1&1&1&0&1\\
0&0&0&0&1&0&0&0&0&1&1&1&1&0&0&0&1&1&0&1&0&1&1&0\\
0&0&0&0&0&1&0&0&0&0&1&1&1&1&0&0&0&1&1&0&1&0&1&1\\
0&0&0&0&0&0&1&0&0&0&0&1&1&1&1&0&1&0&0&0&1&1&0&1\\
0&0&0&0&0&0&0&1&0&0&0&0&1&1&1&1&1&1&1&1&1&1&1&0
\end{pmatrix} \in \mathbb{F}_2^{8\times 24}$$

- $(\alpha_1, \alpha_2, \alpha_3) = (\alpha^0, \alpha^8, \alpha^{183})$

$$\mathbf{H}_{optimal} = \begin{pmatrix} \alpha^0 & \alpha^{8} & \alpha^{183} \end{pmatrix} \in \mathbb{F}_{2^8}^{1\times 3} = \begin{pmatrix}
1&0&0&0&0&0&0&0&1&0&1&1&1&0&0&0&0&0&1&0&0&0&1&1\\
0&1&0&0&0&0&0&0&0&1&0&1&1&1&0&0&1&0&1&0&1&0&0&1\\
0&0&1&0&0&0&0&0&0&0&1&0&1&1&1&0&1&1&1&0&1&1&0&0\\
0&0&0&1&0&0&0&0&0&0&0&1&0&1&1&1&0&1&1&1&0&1&1&0\\
0&0&0&0&1&0&0&0&1&0&1&1&0&0&1&1&0&0&1&1&1&0&1&1\\
0&0&0&0&0&1&0&0&1&1&1&0&0&0&0&1&1&0&1&0&0&1&0&1\\
0&0&0&0&0&0&1&0&1&1&0&0&1&0&0&0&1&1&1&0&1&0&1&0\\
0&0&0&0&0&0&0&1&0&1&1&0&0&1&0&0&0&1&1&1&0&1&0&1
\end{pmatrix} \in \mathbb{F}_2^{8\times 24}$$

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