Solutions of the problem of Erdös-Sierpiński: $\sigma(n) = \sigma(n+1)$

Lourdes Benito
lourdes.benito@estudiante.uam.es

Abstract

For $n \leq 1.5 \cdot 10^{10}$, we have found a total number of 1268 solutions to the Erdös-Sierpiński problem finding positive integer solutions of $\sigma(n) = \sigma(n+1)$, where $\sigma(n)$ is the sum of the positive divisors of n. On the basis of that set of solutions the following empirical properties are enunciated: first, all the $\sigma(n)$, n being a solution, are divisible by 6; second, the repetition of solutions leads to the formulation of a new problem: *Find the natural numbers n such that* $\sigma(n) = \sigma(n+1) = \sigma(n+k) = \sigma(n+k+1)$ *for some positive integer* k. A third empirical property concerns the asymptotic behavior of the function of n that gives the number of solutions for m less or equal to n, which we find to be as $n^{1/3}$. Finally some theorems related to the Erdös-Sierpiński problem are enunciated and proved.

1 Introduction

The problem of determining the natural numbers n that verify

$$\sigma(n) = \sigma(n+1) \tag{1}$$

Where $\sigma(n)$ is the sum of the positive divisors of n, is known as the Erdös-Sierpiński problem.

Erdös [Erdös 1945] had conjectured that there are infinitely many solutions to the (1) but he offered no proof. Some time later, Sierpiński [Sierpiński 1964] posited the same question.

The first natural numbers that satisfy (1) are:

$$n = 14,\ 206,\ 957,\ 1334,\ 1364,\ 1634,\ 2685\ldots$$

This sequence is identified as the A002961 sequence by the Sloane's On-Line Encyclopedia of Integer Sequences.

Guy [Guy 2004] , B13, communicates that Jud McCranie calculated solutions for the problem of Erdös-Sierpiński up to $n = 4.25 \cdot 10^9$. A total of 832 solutions were found. We have investigated the solutions up to $n = 1.5 \cdot 10^{10}$ (see D), and found a total of 1268 solutions.

Guy and Shanks [Guy & Shanks 1974] observe that the solutions for $n = 14$, $n = 206$ and $n = 19358$ are given by:

$$n = 2p, \quad n + 1 = 3^m q, \tag{2}$$

where

$$q = 3^{m+1} - 4, \quad p = (3^m q - 1)/2$$

are both prime, and m equals 1, 2 or 4.

They also indicate that the solutions for $n = 18873$, $n = 174717$ and $n = 5559060136088313$ are given by

$$n = 3^m q, \quad n + 1 = 2p, \tag{3}$$

with the primes

$$q = 3^{m+1} - 10, \quad p = (3^m q + 1)/2$$

for $m = 4$, 5 and 16.

With the help of the two functions `guyshanks1(1,1000)` and `guyshanks2(1,1000)`, written in Pari-GP language [Cohen et al. 2003] (see A), it is verified that no other solutions of the forms (2) and (3) exist for $m \leq 1000$.

2 Some Empirical Results

On the basis of the set of solutions of the Erdös-Sierpiński problem for $n \leq 1.5 \cdot 10^{10}$, the following empirical results can be enunciated:

For n a solution to the Erdös-Sierpiński problem

i) $\sigma(n)$ is divisible by 6.

ii) $\sigma(n)$ is divisible by 4 with the exception of:

$$\sigma(18873) = 28314 = 2 \cdot 3^2 \cdot 11^2 \cdot 13$$

iii) $\sigma(n)$ is divisible by 8 except the mentioned case ii) at the following ones:

$$\sigma(4364) = 7644 = 2^2 \cdot 3 \cdot 7^2 \cdot 13$$
$$\sigma(14841) = 22932 = 2^2 \cdot 3^2 \cdot 7^2 \cdot 13$$
$$\sigma(3582224) = 6976860 = 2^2 \cdot 3 \cdot 5 \cdot 11^2 \cdot 31^2$$
$$\sigma(195694137) = 293616180 = 2^2 \cdot 3^2 \cdot 5 \cdot 11^2 \cdot 13 \cdot 17 \cdot 61$$
$$\sigma(597311577) = 896138100 = 2^2 \cdot 3^3 \cdot 5^2 \cdot 11^2 \cdot 13 \cdot 211$$

iv) The only $\sigma(n)$ of the form $2^a \cdot 3^b$ with a and b natural numbers are:

$$\sigma(14) = 24 = 2^3 \cdot 3$$
$$\sigma(147454) = 221184 = 2^{13} \cdot 3^2$$

2.1 A new problem

If the solutions to the Erdös-Sierpiński problem are carefully examined, it will be observed that certain values are repeated. Therefore, a related problem can be enunciated:

Problem 1. *Find the natural numbers n that verify*

$$\sigma(n) = \sigma(n+1) = \sigma(n+k) = \sigma(n+k+1)$$

for some positive integer k.

For $n \leq 1.5 \cdot 10^{10}$, 22 solutions to this problem have been found (see C). The smallest solutions is: $\sigma(79826) = \sigma(79827) = \sigma(79833) = \sigma(79834) = 120960$.

$\sigma(n) = 4049740800$ has three different solutions. In this case, the problem can enunciated in a different way:

Problem 2. *Find the natural numbers n that verify*

$$\sigma(n) = \sigma(n+1) = \sigma(n+k) = \sigma(n+k+1) = \sigma(n+k') = \sigma(n+k'+1)$$

for some pair of positive integer numbers k and k'.

2.2 Estimation of the number of solutions to the Erdös-Sierpiński problem

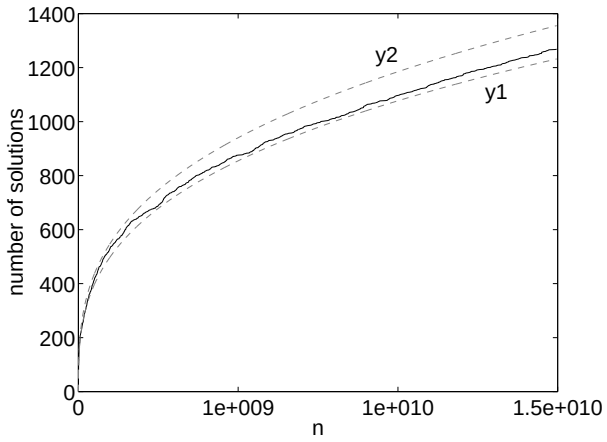

Figure 1: Number of solutions for (1) less or equal to n versus n. Dashed lines correspond to $y_1 = 0.5 \cdot n^{\frac{1}{3}}$ and $y_2 = 0.55 \cdot n^{\frac{1}{3}}$. The maximum value of n for which the number of solutions is over y_1 is $n = 258083942$, and the maximum value of n for which the number of solutions is below y_2 is $n = 2305557$.

In order to give an estimation of the number of solutions, different fit functions were tried, and the best fit obtained was in the form $\sim n^{\frac{1}{3}}$.

Then, it is found that, for $258083942 < n < 1.5 \cdot 10^{10}$ the number of solutions lies between y_1 and y_2

$$\begin{cases} y_1 &= 0.50 \cdot n^{\frac{1}{3}} \\ y_2 &= 0.55 \cdot n^{\frac{1}{3}} \end{cases}$$

If a linear adjustment based in $n^{\frac{1}{3}}$ is made, we get:

$$y_{adj} = 0.5088 \cdot n^{\frac{1}{3}} + 6.9183$$

where y_{adj} is the number of solutions less or equal to n that predicts the adjustment (see figure 2).

For example, an estimation of the number of solutions up to $n = 10^{15}$ to the Erdös-Sierpiński problem is: $0.5088 \cdot 10^{15 \cdot \frac{1}{3}} + 6.9183 \approx 5 \cdot 10^4$ solutions.

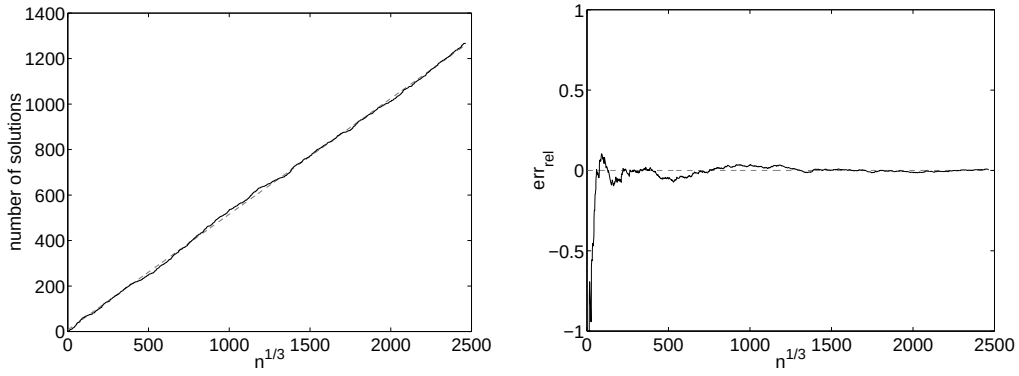

Figure 2: On the left, both the number of solutions less or equal to n (continuous line) and the linear adjustment (dashed line) are plotted versus $n^{1/3}$. On the right, it is represented the relative error (ϵ) corresponding to the adjustment. $\epsilon = \frac{y - y_{adj}}{y}$, where y is the number of solutions less or equal to n and y_{adj} is the number of solutions that predicts the adjustment. From $n = 792855$ ($n^{\frac{1}{3}} = 92.5546$) the relative error is smaller than 10% ($|\epsilon| < 0.1$).

3 Some theorems

Theorem 1. *$\sigma(n)$ is odd if and only if n is a square, or n is the double of a square.*

Proof.

- If p is prime and $p \neq 2 \Rightarrow \sigma(p^\alpha) = 1 + p + p^2 + \ldots + p^\alpha \equiv \alpha + 1 \mod 2$, then for $\sigma(p^\alpha)$ to be odd, α must be even.
- If $p = 2 \Rightarrow \sigma(2^\alpha) = 1 + 2 + \ldots + 2^\alpha$ is always odd.

Then for $\sigma(n)$ to be odd, in the decomposition in prime factors of n, the power of the primes $p > 2$ must be even. Therefore, n is a square number or a 2·square number. □

Theorem 2. *For every natural number n that verifies $\sigma(n) = \sigma(n+1)$, $\sigma(n)$ is multiple of 2 or 3.*

Proof. If $\sigma(n)$ is odd, from theorem 1 and, since two consecutive positive integer numbers cannot be both square, either n must be square and $n+1$ is the double of an square or n is the double of a square and $n+1$ is an square.

Then if $\gcd(x,2) = 1$, $\sigma(2^{2\alpha+1} \cdot x^2) = \sigma(2^{\alpha+1}) \cdot \sigma(x^2) = (1 + 2 + 2^2 + \ldots + 2^{2\alpha+1}) \cdot \sigma(x^2) = (1 + 2 + 2^2(1 + 2) + \ldots + 2^{2\alpha}(1 + 2)) \cdot \sigma(x^2) = 3 \cdot (1 + 2^2 + 2^4 + \ldots + 2^{2\alpha}) \cdot \sigma(x^2)$. □

Theorem 3. *If n is a positive integer such that $\sigma(n) = \sigma(n+1)$ is odd, then:*

$$n = 2y^2,\ n + 1 = x^2 \text{ with } x^2 - 2y^2 = 1$$

or

$$n = x^2,\quad n + 1 = 2y^2 \text{ whit } x^2 - 2y^2 = -1,$$

where x and y are integer numbers.

Proof. From to theorem 1 if $\sigma(n)$ is odd, then n must be square or 2·square. If n is odd, then $n = x^2$, and $n + 1 = 2y^2$ because two consecutive positive integers cannot be both square numbers. Therefore $x^2 - 2y^2 = -1$.

If n is even then $n = 2y^2$, and $n + 1 = x^2$. Therefore $x^2 - 2y^2 = 1$. □

Using a Pari-Gp [Cohen et al. 2003] function (see B) based on the ideas of [Benito & Escribano 1998] we have verified that there is not any solution to the problem of Erdös-Sierpiński in which $\sigma(n)$ is odd for $n < 10^{50}$.

4 Open questions

1. The numerical evidences described in section 2.2, agree with the conjecture of Erdös about the existence of infinite n that satisfy $\sigma(n) = \sigma(n + 1)$. These evidences allow us to conjecture that the number of solutions less or equal than n is of the order of $n^{\frac{1}{3}}$.

2. Apart from those mentioned, do any other solutions to the Erdös-Sierpiński problem of forms (2) and (3) exist?

3. Does any n for which $\sigma(n) = \sigma(n + 1) \neq \dot{2}$ exist?

4. Does any n for which $\sigma(n) = \sigma(n + 1) \neq \dot{3}$ exist?

5. Apart from those mentioned, do any other solutions to the Erdös-Sierpiński problem in the form $\sigma(n) = \sigma(n + 1) = 2^a \cdot 3^b$ exist?

6. Do infinite solutions to problem 1 exist?

7. Apart from those mentioned, do any other solutions to the problem 2 exist?

References

[Benito & Escribano 1998] M. Benito & J. Escribano, Sucesiones de Brocot, Talleres Gráficos de Editorial Ochoa, Logroño, 1998.

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[Erdös 1945] P. Erdős, Some remarks on Euler's φ-function and some related problems, Bull. AMS 51 (1945) 540–544.

[Guy 2004] R.K. Guy, *Unsolved Problems in Number Theory*, Springer Verlag, New York, 2004.

[Guy & Shanks 1974] R. Guy & D. Shanks, A constructed solution of $\sigma(n) = \sigma(n+1)$, Fibonacci Quarterly 12 (1974), 299.

[Sierpiński 1964] W. Sierpiński, *Elementary Theory of Numbers*, Polska Akademia Nauk, Warsaw, Poland, 1964.

A Numerical code used in section 2

Below the reader will find the code of the Pari-Gp function that verifies that there are not more solutions of form (2) for values of m less than 1000.

```
q(m)=3^(m+1)-4

p(m)=(3^(2*m+1)-4*3^m-1)/2

guyshanks1(k1,k,i)=
     {
      for(i=k1,k,
        if(isprime(q(i)),
             if(isprime(p(i)), print(i," ",2*p(i)," ",3^i*q(i))
          ,)
         )
      }
```

And the code for the Pari-Gp function that verifies that there are not more solutions of form(3) for values of m less than 1000.

```
q(m)=3^(m+1)-10

p(m)=(3^(2*m+1)-10*3^m+1)/2

guyshanks2(k1,k,i)=
   {
    for(i=k1,k,
      if(isprime(q(i)),
         if(isprime(p(i)),print(i," ",3^i*q(i)," ",2*p(i)),)
         ,)
       )
   }
```

B Numerical code for theorem 3

```
noteven(k,z,t,a)=
    { z=1;
       while(denominator(z)<k,z=2+1/z;t=1+1/z;
           a=sigma(denominator(t)^2);
              if(a==sigma(numerator(t)^2\2),
                print(denominator(t)^2," ",numerator(t)^2\2," ",a),)
             )
     }
```

C Solutions for the problems 1 and 2

$\sigma(n)$	n	index n	$n+k$	index $n+k$	k
120960	79826	21	79833	22	7
17418240	9669915	112	10195305	116	525390
27095040	13577355	129	17714486	135	4137131
220631040	105967784	236	109606496	240	3638712
309657600	157073930	266	186027314	286	28953384
339655680	177961544	279	208193654	296	30232110
840153600	450427130	399	552488553	430	102061423
1132185600	610698123	448	628487810	453	17789687
2868203520	1593132723	619	1717235637	635	124102914
3096576000	1974224366	652	2038559845	659	64335479
3690086400	2004024915	654	2008900875	655	4875960
4049740800	2155986584	667	2482257261	686	326270677
4049740800	2155986584	667	2663065825	712	507079241
4049740800	2482257261	686	2663065825	712	180808564
4790016000	2750303997	725	3071446581	749	321142584
6991246080	3639165255	795	4642434141	857	1003268886
10879989120	5479093304	893	6209887131	938	730793827
11544519168	7038224205	979	7566526345	998	528302140
11805393600	6421134644	951	7559982333	997	1138847689
12773376000	8053053458	1014	8334008133	1024	280954675
15926803200	9660726662	1079	10458788337	1112	798061675
21250252800	11017504952	1137	13099733673	1208	2082228721

D Solutions for the problem of Erdös-Sierpiński up to $n = 1.5 \cdot 10^{10}$

n	$n+1$	$\sigma(n)$
14	15	24
206	207	312
957	958	1440
1334	1335	2160
1364	1365	2688
1634	1635	2640
2685	2686	4320
2974	2975	4464
4364	4365	7644
14841	14842	22932
18873	18874	28314
19358	19359	29040
20145	20146	34560
24957	24958	37440
33998	33999	51840
36566	36567	56160
42818	42819	65280
56564	56565	100800
64665	64666	115200
74918	74919	114912
79826	79827	120960
79833	79834	120960
84134	84135	138240
92685	92686	153216
109214	109215	194400
111506	111507	168960
116937	116938	178560
122073	122074	186048
138237	138238	207360
147454	147455	221184
161001	161002	244800
162602	162603	280800
166934	166935	276480
174717	174718	262080
190773	190774	314496
193893	193894	300960
201597	201598	302400
230390	230391	414720

n	$n+1$	$\sigma(n)$
274533	274534	443520
289454	289455	483840
347738	347739	549120
383594	383595	622080
416577	416578	645120
422073	422074	636480
430137	430138	648000
438993	438994	662400
440013	440014	700416
445874	445875	786240
455373	455374	692640
484173	484174	730080
522621	522622	823680
544334	544335	950400
605985	605986	984960
621027	621028	1097712
649154	649155	1118880
655005	655006	1128960
685995	685996	1209600
695313	695314	1048320
739556	739557	1404480
792855	792856	1612800
937425	937426	1607040
949634	949635	1684800
1154174	1154175	2083200
1174305	1174306	2068416
1187361	1187362	2006784
1207358	1207359	1811040
1238965	1238966	1867320
1642154	1642155	2661120
1670955	1670956	3386880
1765664	1765665	3628800
1857513	1857514	2851200
2168906	2168907	3279360
2284814	2284815	3937248
2305557	2305558	3617280
2913105	2913106	5019840
3296864	3296865	6531840

n	$n+1$	$\sigma(n)$
3477435	3477436	6350400
3571905	3571906	6128640
3582224	3582225	6976860
3682622	3682623	5806080
3726009	3726010	6739200
4328937	4328938	6511680
4473782	4473783	6722352
4481985	4481986	7171200
4701537	4701538	7375680
4795155	4795156	8963136
5002335	5002336	9906624
5003738	5003739	7783776
5181045	5181046	8467200
5351175	5351176	10155600
5446425	5446426	9106560
5459024	5459025	10624320
5517458	5517459	8339760
6309387	6309388	11491200
6431732	6431733	11583936
6444873	6444874	9878400
6514995	6514996	11430720
6771405	6771406	10895040
7192917	7192918	10804248
7263944	7263945	13910400
7796438	7796439	13789440
7845386	7845387	11781120
7955492	7955493	13942656
8428125	8428126	14999040
8561817	8561818	13590720
9279332	9279333	16262400
9293427	9293428	16934400
9309464	9309465	18057600
9309754	9309755	14555520
9359469	9359470	16936128
9577557	9577558	15275520
9669915	9669916	17418240
9693818	9693819	14938560
10074477	10074478	15396480
10118654	10118655	19051200
10195305	10195306	17418240
10491057	10491058	16174080
10608745	10608746	16251840
10693605	10693606	19998720
10813424	10813425	20951040
10838246	10838247	17203200
11737275	11737276	21748608
11783937	11783938	17694720
12143457	12143458	18738720
12290054	12290055	21427200
12673094	12673095	21772800
12825266	12825267	21288960
13088834	13088835	22800960
13577355	13577356	27095040
14824635	14824636	27578880

n	$n+1$	$\sigma(n)$
15511898	15511899	23284800
15751533	15751534	24514560
16207345	16207346	25280640
17456175	17456176	34997760
17714486	17714487	27095040
17727554	17727555	29756160
17754344	17754345	35493120
17983593	17983594	27237600
18077605	18077606	27143424
18106497	18106498	28226880
18151478	18151479	29030400
18573902	18573903	28540512
19514054	19514055	34276608
19886385	19886386	32203584
20423835	20423836	35773920
21003644	21003645	38102400
21219824	21219825	41113440
21431276	21431277	37537920
22083214	22083215	33868800
22131795	22131796	40803840
23087241	23087242	36547200
23694344	23694345	44478720
23953995	23953996	45864000
24056305	24056306	36892800
24357025	24357026	37658304
25096665	25096666	44323200
25645706	25645707	40953600
27117261	27117262	43908480
27166634	27166635	47309184
28291892	28291893	49674240
28440044	28440045	50803200
29097782	29097783	51577344
29249775	29249776	56916000
30828435	30828436	54093312
30891674	30891675	51264576
32088381	32088382	48771072
32225337	32225338	49282560
32409530	32409531	65007360
33422277	33422278	51891840
33696975	33696976	67495680
33876117	33876118	55157760
34292145	34292146	58786560
34577834	34577835	57024000
34883654	34883655	56488320
35266622	35266623	57784320
36352035	36352036	73120320
37498653	37498654	58262400
37587494	37587495	66251520
39175954	39175955	59875200
39420404	39420405	70761600
39526304	39526305	81285120
40635386	40635387	66594528
41171024	41171025	83967840
41435415	41435416	85017600

n	$n+1$	$\sigma(n)$
42026414	42026415	67441248
42632955	42632956	74666592
42697154	42697155	68463360
43284897	43284898	64995840
45437258	45437259	74856960
45741662	45741663	72648576
45931976	45931977	86486400
46016666	46016667	70493760
46523373	46523374	72285696
46688954	46688955	77474880
50128034	50128035	82162080
51174626	51174627	79453440
51372315	51372316	92252160
52586505	52586506	93899520
53470988	53470989	93844800
53809833	53809834	90703872
55750934	55750935	90205920
56033835	56033836	106638336
56169026	56169027	84324240
56548238	56548239	87091200
57393063	57393064	110315520
57453494	57453495	103749120
58371495	58371496	120657600
58428525	58428526	98431200
62634518	62634519	96768000
63434222	63434223	95191200
63581314	63581315	95800320
66276014	66276015	115831296
67798664	67798665	132649920
69076994	69076995	119750400
70217697	70217698	105431040
70282053	70282054	107481600
72541341	72541342	108848376
72794966	72794967	115637760
79059945	79059946	138568320
80889206	80889207	128217600
81166838	81166839	124637184
81463166	81463167	124590960
86701394	86701395	151787520
87215966	87215967	137894400
90776846	90776847	138551040
92897577	92897578	141494400
94412913	94412914	145353600
94682132	94682133	169478400
97716518	97716519	147038112
99253635	99253636	173940480
99276644	99276645	173980800
99600025	99600026	149454720
100600730	100600731	193052160
103782141	103782142	167731200
103988625	103988626	189326592
105967784	105967785	220631040
107522942	107522943	166924800
108899205	108899206	180247680

n	$n+1$	$\sigma(n)$
109602824	109602825	205701120
109606496	109606497	220631040
110768834	110768835	184680000
115326117	115326118	174343104
116206166	116206167	197683200
117558693	117558694	199180800
118151715	118151716	206841600
119192282	119192283	209710080
119461226	119461227	179262720
124776945	124776946	219024000
125686694	125686695	217479168
126561945	126561946	220521600
126664161	126664162	192576384
127360364	127360365	228904704
132178214	132178215	230985216
135329775	135329776	276410880
137558577	137558578	209139840
140981444	140981445	275788800
141029343	141029344	278818848
149205914	149205915	271434240
150306435	150306436	301916160
150323876	150323877	270950400
152022134	152022135	259580160
152553513	152553514	237129120
154957034	154957035	248209920
155849414	155849415	268240896
157010535	157010536	317813760
157073930	157073931	309657600
157946438	157946439	260789760
161921528	161921529	307307520
163088073	163088074	248814720
163670115	163670116	299819520
164233250	164233251	308481264
165559934	165559935	265434624
165907442	165907443	251983872
166307895	166307896	321179040
166684594	166684595	250145280
167853015	167853016	331138080
174145905	174145906	302253120
176112014	176112015	290304000
177961544	177961545	339655680
178657773	178657774	277102080
179933853	179933854	273102336
181061013	181061014	293207040
183398396	183398397	326430720
183565322	183565323	290594304
184677602	184677603	286675200
186027314	186027315	309657600
186091941	186091942	291594240
187434621	187434622	304819200
191710070	191710071	346563360
193075641	193075642	304746624
195694137	195694138	293616180
197028117	197028118	345945600

n	$n+1$	$\sigma(n)$
197682375	197682376	380090880
204348837	204348838	341268480
207459385	207459386	312560640
208193654	208193655	339655680
208492011	208492012	386908704
216308102	216308103	346705920
217056454	217056455	330946560
217282233	217282234	351267840
218986646	218986647	337841280
221283644	221283645	408965760
225247701	225247702	344678400
229899075	229899076	459970560
230196057	230196058	377758080
230512755	230512756	403603200
232120622	232120623	372556800
235554753	235554754	374547456
236174115	236174116	419126400
238133384	238133385	492480000
239595602	239595603	365601600
242337921	242337922	381024000
243267374	243267375	440294400
243873962	243873963	380160000
244340108	244340109	427714560
248269886	248269887	392601600
248535614	248535615	407151360
258083942	258083943	389491200
258102465	258102466	429235200
261553725	261553726	482112000
262865426	262865427	394377984
264398588	264398589	471744000
266771054	266771055	452922624
266775105	266775106	449305920
266837235	266837236	522547200
268890218	268890219	430133760
270230876	270230877	480184320
271316625	271316626	478033920
273303644	273303645	482630400
273443181	273443182	430843392
274508637	274508638	416747520
274517606	274517607	451906560
279113505	279113506	490492800
281204445	281204446	476824320
282635385	282635386	473776128
283785182	283785183	450717696
285473241	285473242	439193664
285782973	285782974	436101120
285930518	285930519	435939840
290396715	290396716	542868480
298921965	298921966	539136000
300140642	300140643	451256832
302280542	302280543	454053600
304137938	304137939	491774976
306347222	306347223	505612800
311327565	311327566	509794560

n	$n+1$	$\sigma(n)$
316843653	316843654	529514496
320148212	320148213	560387520
320419197	320419198	529416576
320747006	320747007	518745600
321125282	321125283	481766400
323954774	323954775	599961600
326349585	326349586	566092800
326566107	326566108	625121280
327517454	327517455	536215680
329252175	329252176	732096000
332870595	332870596	584962560
333956931	333956932	584672256
334925577	334925578	572947200
336451125	336451126	582865920
344136321	344136322	544190400
346962230	346962231	678620160
355790534	355790535	603832320
357340922	357340923	558835200
359949854	359949855	589317120
360112178	360112179	549020160
360775778	360775779	611331840
365839929	365839930	689472000
366809138	366809139	554299200
377621235	377621236	665945280
377642595	377642596	675247104
385801622	385801623	578869200
388280655	388280656	814233600
389049825	389049826	652297536
391392134	391392135	707616000
393956282	393956283	635627520
402952995	402952996	723340800
407162564	407162565	723844800
408284121	408284122	674697600
409829846	409829847	659570688
410035563	410035564	719409600
410658255	410658256	862069824
410956814	410956815	669081600
412971795	412971796	726485760
419674904	419674905	864138240
420720266	420720267	661893120
421407885	421407886	674956800
424152105	424152106	774144000
424169702	424169703	715080960
424869182	424869183	637562016
424942604	424942605	778377600
426678915	426678916	773902080
429314457	429314458	673868160
438112184	438112185	865728000
439631576	439631577	875629440
444485349	444485350	877443840
449392874	449392875	798595200
449557155	449557156	799212960
450427130	450427131	840153600
455468925	455468926	783699840

n	$n+1$	$\sigma(n)$
455917292	455917293	803362560
461989545	461989546	751887360
462791234	462791235	748984320
467064273	467064274	711849600
470181524	470181525	899942400
470580824	470580825	1012435200
471123524	471123525	824947200
476944725	476944726	807448320
477353624	477353625	1013575680
482159864	482159865	958003200
483448244	483448245	910103040
485899814	485899815	798336000
492816764	492816765	970776576
494692665	494692666	801360000
497411013	497411014	765642240
500763555	500763556	882161280
501982982	501982983	779500800
504561165	504561166	808315200
504919286	504919287	770964480
505890878	505890879	772390080
515431395	515431396	914004000
515837973	515837974	830269440
519216873	519216874	866764800
528686324	528686325	973896000
529492285	529492286	823919040
532778385	532778386	923598720
534248324	534248325	1068681600
545860833	545860834	864864000
552231885	552231886	884467584
552488553	552488554	840153600
554519655	554519656	1057536000
558542546	558542547	837935280
558986571	558986572	1040195520
564467013	564467014	912824640
575712494	575712495	1064448000
581521166	581521167	903052800
582269793	582269794	936105984
585380414	585380415	954809856
587819066	587819067	887328000
589847558	589847559	931875840
594593055	594593056	1221502464
594822915	594822916	1115412480
597311577	597311578	896138100
597801098	597801099	944939520
598197482	598197483	968647680
601306641	601306642	980179200
607090826	607090827	927037440
610698123	610698124	1132185600
610752933	610752934	1066867200
612863198	612863199	979292160
614325704	614325705	1168473600
619297286	619297287	998645760
628487810	628487811	1132185600
631410795	631410796	1133692560

n	$n+1$	$\sigma(n)$
633776115	633776116	1176215040
634191033	634191034	975421440
634738833	634738834	985608000
637135994	637135995	1086400512
638431442	638431443	1045094400
641703842	641703843	1037097600
643397204	643397205	1126339200
648322994	648322995	1076834304
660899295	660899296	1361453184
674604386	674604387	1065972960
688208624	688208625	1336070736
691546635	691546636	1362816000
694405844	694405845	1415232000
696637641	696637642	1119283200
701792234	701792235	1270080000
708455194	708455195	1067302656
712579329	712579330	1393459200
715379834	715379835	1158312960
717122132	717122133	1307577600
717254811	717254812	1307819520
718206224	718206225	1406160000
729322485	729322486	1169925120
731494658	731494659	1118810880
734850074	734850075	1292595840
739667738	739667739	1115700480
743194142	743194143	1121804640
745574582	745574583	1128701952
750424184	750424185	1486555200
754701321	754701322	1151341632
757040624	757040625	1491654528
757522941	757522942	1255276800
757924502	757924503	1205591040
760288022	760288023	1254839040
762188834	762188835	1280240640
763854494	763854495	1280530944
771201914	771201915	1382489856
776509485	776509486	1242915840
776679717	776679718	1175708160
787042964	787042965	1377782784
792332954	792332955	1439424000
795084914	795084915	1306368000
800679495	800679496	1602478080
805543244	805543245	1556755200
809377107	809377108	1416683520
809677070	809677071	1482624000
821038490	821038491	1507645440
823843251	823843252	1521676800
826057053	826057054	1309089600
838806044	838806045	1690730496
839785754	839785755	1371686400
841147365	841147366	1418342400
850102113	850102114	1322956800
869779454	869779455	1442880000
871489604	871489605	1595559168

n	$n+1$	$\sigma(n)$
880114245	880114246	1445672448
888498273	888498274	1345397760
894676665	894676666	1446681600
900230121	900230122	1576972800
902758065	902758066	1577511936
904330334	904330335	1474640640
918518516	918518517	1609276032
927201429	927201430	1710543744
941021961	941021962	1474704000
941043465	941043466	1632571200
941805386	941805387	1422713160
950151735	950151736	1898265600
958532444	958532445	1792627200
959690486	959690487	1465274880
962270414	962270415	1748459520
965865326	965865327	1496309760
970312286	970312287	1516838400
974224082	974224083	1628605440
977502770	977502771	1774700928
980114624	980114625	2019239040
980387534	980387535	1733114880
990151437	990151438	1492992000
990903902	990903903	1538611200
993723993	993723994	1497787200
996199082	996199083	1601233920
1003519041	1003519042	1555200000
1003853594	1003853595	1607316480
1004341334	1004341335	1619896320
1014313454	1014313455	1970749440
1042359417	1042359418	1663309440
1043940050	1043940051	1949875200
1052065105	1052065106	1583172864
1062094364	1062094365	1868106240
1071121941	1071121942	1779148800
1079305155	1079305156	1944633600
1079539881	1079539882	1720904832
1081731987	1081731988	1927074240
1093469012	1093469013	2028499200
1094226081	1094226082	1679553792
1099997084	1099997085	1934543520
1119042914	1119042915	1832150016
1120072886	1120072887	1721088000
1125322658	1125322659	1702632960
1146174975	1146174976	2376633600
1150521146	1150521147	1726639200
1160438498	1160438499	1830956400
1162085865	1162085866	1859760000
1162291245	1162291246	1882165248
1174254445	1174254446	1777434624
1182828602	1182828603	1838592000
1185219398	1185219399	1985679360
1192884434	1192884435	2123297280
1194752234	1194752235	1959552000
1197349485	1197349486	1941408000

n	$n+1$	$\sigma(n)$
1210604198	1210604199	1864152576
1219414065	1219414066	2002492800
1222236518	1222236519	1862455680
1264822922	1264822923	2165861376
1270238265	1270238266	2206751040
1276154955	1276154956	2249498160
1281127598	1281127599	1962578592
1282336802	1282336803	2045010240
1296451610	1296451611	2361078720
1306770422	1306770423	2006484480
1309277966	1309277967	2007742464
1310176497	1310176498	2029547520
1320060026	1320060027	2091398400
1324771641	1324771642	2005548480
1326589382	1326589383	2033579520
1360834587	1360834588	2488147200
1362145004	1362145005	2636874240
1368446961	1368446962	2189566080
1368653985	1368653986	2560896000
1374005786	1374005787	2285936640
1386728565	1386728566	2235340800
1387113386	1387113387	2105698560
1394603001	1394603002	2390169600
1397922044	1397922045	2477502720
1399432977	1399432978	2108376000
1416471975	1416471976	2671257600
1420948334	1420948335	2310789600
1422323901	1422323902	2159136000
1423714305	1423714306	2599572096
1426056878	1426056879	2160829440
1430642601	1430642602	2240784000
1441337534	1441337535	2740832640
1444189130	1444189131	2600792064
1445827184	1445827185	2873566080
1446523532	1446523533	2578168320
1451859314	1451859315	2362348800
1454389474	1454389475	2375847936
1477493157	1477493158	2269301760
1477806285	1477806286	2420046720
1482846105	1482846106	2557247616
1484912234	1484912235	2399604480
1486228665	1486228666	2402483328
1490409705	1490409706	2404774656
1490553686	1490553687	2468966400
1499403464	1499403465	3113510400
1504744305	1504744306	2482099200
1509454737	1509454738	2568994560
1517132564	1517132565	2917555200
1519766714	1519766715	2471648256
1532594282	1532594283	2420858880
1536890144	1536890145	3033676800
1544716605	1544716606	2495750400
1572927255	1572927256	3010867200
1573252317	1573252318	2802159360

n	$n+1$	$\sigma(n)$
1582614164	1582614165	2803046400
1584068421	1584068422	2382912000
1593132723	1593132724	2868203520
1593374354	1593374355	2895782400
1596907893	1596907894	2537256960
1617468153	1617468154	2466011520
1620114777	1620114778	2515968000
1622259105	1622259106	2624832000
1622658878	1622658879	2542510080
1627752805	1627752806	2491084800
1636870245	1636870246	2785259520
1641468777	1641468778	2500485120
1652534265	1652534266	2668723200
1654051455	1654051456	3360614400
1659998744	1659998745	3289248000
1701073353	1701073354	2707955712
1702831197	1702831198	2605768704
1710620925	1710620926	3134799360
1717235637	1717235638	2868203520
1741926195	1741926196	3109155840
1757457009	1757457010	3164945472
1780850486	1780850487	2850059520
1815142394	1815142395	3171571200
1823100417	1823100418	2790837504
1828575554	1828575555	3058352640
1828831334	1828831335	2993310720
1862536754	1862536755	3010694400
1869497301	1869497302	2864678400
1874572664	1874572665	3515814720
1878621129	1878621130	3404104704
1882144785	1882144786	3041337600
1896933464	1896933465	3861043200
1914983785	1914983786	2874476160
1935043695	1935043696	3899750400
1963548938	1963548939	3204956160
1974224366	1974224367	3096576000
1980748844	1980748845	3622993920
2004024915	2004024916	3690086400
2008900875	2008900876	3690086400
2012680305	2012680306	3715717824
2012770214	2012770215	3715883808
2025278558	2025278559	3112013520
2038559845	2038559846	3096576000
2050415018	2050415019	3081888000
2050637757	2050637758	3338657280
2080798377	2080798378	3236688000
2093975738	2093975739	3199150080
2096303541	2096303542	3191270400
2110707513	2110707514	3168966528
2132331777	2132331778	3348633600
2155986584	2155986585	4049740800
2171186913	2171186914	3548160000
2180223242	2180223243	3585254400
2198039804	2198039805	4182796800

n	$n+1$	$\sigma(n)$
2200985654	2200985655	3857863680
2220013245	2220013246	3813765120
2242007834	2242007835	3740221440
2265046155	2265046156	4059095040
2271952935	2271952936	4659379200
2301062642	2301062643	3690116352
2339216594	2339216595	4122256320
2362552226	2362552227	3902805504
2363522264	2363522265	4436752320
2413254362	2413254363	3679603200
2417626101	2417626102	3753792000
2418650145	2418650146	4389396480
2427599241	2427599242	3641616000
2436487755	2436487756	4287596544
2438581562	2438581563	3850392000
2482257261	2482257262	4049740800
2486595111	2486595112	4688409600
2491787505	2491787506	4102640640
2496444950	2496444951	4799692800
2504224414	2504224415	3943779840
2511438435	2511438436	4859382528
2519311041	2519311042	4021617600
2525777373	2525777374	3921372000
2530218477	2530218478	3855962880
2547205395	2547205396	4663346688
2572674578	2572674579	3874590720
2577152618	2577152619	3907332000
2579306138	2579306139	3962649600
2580447915	2580447916	4589706240
2604192633	2604192634	4416768000
2612162342	2612162343	3987601920
2620825665	2620825666	4200336000
2625459638	2625459639	3955875840
2631035582	2631035583	4620844800
2636601518	2636601519	3956359680
2642123378	2642123379	4030456320
2643152546	2643152547	4071513600
2643273325	2643273326	4086434880
2648768678	2648768679	3984552000
2651601068	2651601069	4741632000
2662376475	2662376476	4949683200
2663065825	2663065826	4049740800
2663676482	2663676483	3995744256
2670460418	2670460419	4182554880
2672549313	2672549314	4078771200
2680240893	2680240894	4160471040
2682401014	2682401015	4119994368
2700045145	2700045146	4084577280
2701104194	2701104195	4381267968
2710873430	2710873431	5040921600
2721592005	2721592006	4792487040
2725561604	2725561605	4770275328
2731964570	2731964571	4987180800
2735905964	2735905965	5225472000

n	$n+1$	$\sigma(n)$
2750303997	2750303998	4790016000
2755545428	2755545429	4875945984
2768514956	2768514957	4879329840
2776693635	2776693636	5080320000
2804058297	2804058298	4218480000
2818305026	2818305027	4276359360
2819443155	2819443156	4955005440
2835455997	2835455998	4253184000
2843383178	2843383179	4787693568
2850203618	2850203619	4309381440
2853956595	2853956596	5239503360
2895986373	2895986374	4611188736
2912718782	2912718783	4434091200
2917955157	2917955158	4486285440
2935743938	2935743939	4441789440
2943619886	2943619887	4584565440
2997136285	2997136286	4557047040
2998540155	2998540156	5485898880
3013954406	3013954407	4548960000
3015627284	3015627285	5392033920
3036444506	3036444507	4611297600
3040519041	3040519042	5246841600
3051440175	3051440176	6285312000
3061124522	3061124523	4753382400
3071446581	3071446582	4790016000
3072780242	3072780243	5281174080
3079856636	3079856637	5448643200
3083915186	3083915187	5094835200
3094921641	3094921642	4804531200
3096435464	3096435465	5836216320
3111762224	3111762225	6044238144
3121635404	3121635405	5839827840
3133126737	3133126738	5561740800
3145697835	3145697836	5860512000
3148541252	3148541253	5802451200
3217638333	3217638334	5283532800
3228747405	3228747406	5632623360
3235279904	3235279905	6637438080
3243746793	3243746794	4981616640
3267087561	3267087562	4903113600
3275075385	3275075386	5811886080
3306424706	3306424707	5346432000
3324377618	3324377619	5137292160
3348095751	3348095752	6493294080
3348821534	3348821535	5643509760
3357140115	3357140116	6471843840
3357544515	3357544516	5876140032
3370066790	3370066791	6096384000
3375741878	3375741879	5292518400
3397208175	3397208176	6749568000
3432893114	3432893115	5966231040
3442670762	3442670763	5472230400
3445559054	3445559055	6019453440
3450269745	3450269746	6518191680

n	$n+1$	$\sigma(n)$
3455837468	3455837469	6340239360
3456980289	3456980290	6272640000
3460019144	3460019145	6594048000
3473994842	3473994843	5476723200
3494400507	3494400508	6164121600
3502038969	3502038970	6363721728
3538118744	3538118745	7413120000
3539119646	3539119647	5424122880
3545298945	3545298946	6241173120
3551951985	3551951986	5959977408
3561303602	3561303603	5588352000
3573409694	3573409695	5774146560
3590239214	3590239215	5774328000
3607719734	3607719735	5822668800
3612710618	3612710619	6139584000
3625110224	3625110225	7527137280
3639165255	3639165256	6991246080
3645013910	3645013911	6602383872
3664162178	3664162179	5573655360
3665831793	3665831794	5500293120
3669348417	3669348418	5704231680
3690981435	3690981436	6552342720
3707606846	3707606847	5723827200
3754038794	3754038795	6474371904
3784717825	3784717826	5678208000
3785486924	3785486925	7019550720
3807615614	3807615615	6396157440
3811784738	3811784739	5990215680
3841593315	3841593316	7501455360
3846779013	3846779014	6407119872
3879608421	3879608422	5851625472
3881572622	3881572623	5897707200
3885392666	3885392667	5875752960
3909038973	3909038974	6398300160
3940876797	3940876798	6322821120
3947868165	3947868166	7025356800
3951230294	3951230295	6550502400
3955887369	3955887370	7464960000
3980692917	3980692918	6161126400
3992996318	3992996319	6040500480
4006853781	4006853782	6324998400
4026925017	4026925018	6358302720
4078727025	4078727026	6761620800
4091522913	4091522914	6243868800
4097433074	4097433075	7274105856
4109262794	4109262795	7783776000
4134271941	4134271942	6476682240
4138129875	4138129876	7529034240
4144232757	4144232758	6411018240
4149788715	4149788716	7302282624
4160824004	4160824005	7298339328
4170924465	4170924466	7054387200
4174624425	4174624426	7273820160
4209572835	4209572836	8732505600

n	$n+1$	$\sigma(n)$
4282545464	4282545465	8352460800
4284410084	4284410085	7620480000
4325359364	4325359365	7689528000
4327493114	4327493115	7581600000
4366223738	4366223739	6617355264
4386065732	4386065733	7676121600
4406906294	4406906295	8356608000
4408349854	4408349855	6827950080
4422012038	4422012039	6677143200
4429935705	4429935706	7649832960
4449208605	4449208606	7180790400
4458311505	4458311506	8151736320
4468377506	4468377507	6739200000
4494044673	4494044674	7749181440
4507685073	4507685074	6761905920
4545894464	4545894465	9089428608
4559923718	4559923719	7887559680
4560996806	4560996807	6879600000
4585020945	4585020946	7540853760
4587565124	4587565125	8968377600
4603109510	4603109511	8345272320
4603669857	4603669858	7122044160
4623761564	4623761565	8146914048
4632801634	4632801635	7493575680
4642434141	4642434142	6991246080
4642703324	4642703325	9287093088
4649544494	4649544495	8062419456
4651215195	4651215196	8202571776
4667584706	4667584707	7194220800
4717352061	4717352062	7085232000
4737216855	4737216856	9376819200
4746472941	4746472942	7273728000
4775076386	4775076387	7185024000
4796088693	4796088694	7226755200
4797227193	4797227194	7347013632
4804522370	4804522371	8676315648
4821970881	4821970882	8066822400
4833333297	4833333298	7925299200
4833941822	4833941823	7511961600
4903088073	4903088074	7649510400
4935144201	4935144202	7463715840
4936589235	4936589236	8867607840
4940681558	4940681559	7702781184
4998435705	4998435706	8769930624
5123636955	5123636956	9097583040
5150223134	5150223135	9623577600
5165722538	5165722539	7831287360
5172886124	5172886125	10755763200
5202813284	5202813285	9434880000
5242307186	5242307187	8108190720
5253090134	5253090135	8523325440
5348755796	5348755797	9412515840
5352958844	5352958845	10617868800
5359791314	5359791315	8953099776
5375508410	5375508411	9719377920

n	$n+1$	$\sigma(n)$
5385211821	5385211822	8649089280
5427896678	5427896679	8224912800
5432903469	5432903470	9913622400
5445097838	5445097839	8168584320
5445185301	5445185302	8224519680
5479093304	5479093305	10879989120
5490255837	5490255838	8420474880
5491968542	5491968543	8281084032
5494510982	5494510983	8339853312
5500478594	5500478595	8981280000
5510791454	5510791455	9656478720
5519778134	5519778135	9080709120
5541993165	5541993166	9220780800
5544901064	5544901065	10447626240
5545417934	5545417935	9531260928
5563579125	5563579126	10082741760
5626429654	5626429655	8589542400
5629446926	5629446927	8815716000
5634066314	5634066315	9422645760
5644686933	5644686934	9102297600
5665350158	5665350159	9519330600
5670322749	5670322750	10673574912
5681536604	5681536605	9991655856
5686737164	5686737165	10479974400
5692954508	5692954509	10274584320
5709589214	5709589215	10062614016
5723314118	5723314119	8725812480
5755229793	5755229794	9044421120
5762790164	5762790165	10179134784
5775814004	5775814005	10553856768
5776374086	5776374087	9906624000
5776993737	5776993738	9224064000
5787424005	5787424006	10875271680
5809197321	5809197322	9105408000
5820854906	5820854907	8937976320
5832962541	5832962542	10325532672
5840469194	5840469195	10464436224
5852546972	5852546973	11489264640
5914811331	5914811332	10352422080
5927787998	5927787999	10221120000
5936535818	5936535819	9183767040
5950421961	5950421962	8953176960
5957398825	5957398826	8959248000
6028191134	6028191135	10501920000
6092910369	6092910370	11496038400
6114169305	6114169306	11107549440
6125067963	6125067964	10954944000
6129737858	6129737859	9859449600
6150019821	6150019822	9291179520
6177665265	6177665266	9970853760
6209887131	6209887132	10879989120
6213887854	6213887855	9587600640
6263416142	6263416143	9796101120
6276695834	6276695835	10117094400

n	$n+1$	$\sigma(n)$
6289941681	6289941682	9519602400
6303187545	6303187546	10151350272
6323899202	6323899203	9489085200
6337055697	6337055698	9836640000
6338902515	6338902516	11128271616
6365484746	6365484747	9945936000
6384238455	6384238456	12489523200
6387315722	6387315723	9680186880
6407312517	6407312518	9681120000
6421134644	6421134645	11805393600
6444232454	6444232455	10546398720
6462099465	6462099466	10546433280
6478162515	6478162516	12974846976
6546585814	6546585815	9961491456
6556060105	6556060106	9868642560
6582298814	6582298815	12358241280
6665508422	6665508423	11007360000
6698903210	6698903211	12991829760
6733970955	6733970956	12548390400
6745284482	6745284483	10747883520
6753106635	6753106636	12428881920
6759723974	6759723975	11313561600
6763356482	6763356483	10291966272
6797446305	6797446306	12111724800
6810341702	6810341703	10559385600
6840927105	6840927106	11549260800
6848581970	6848581971	12977832960
6848833233	6848833234	10793502720
6872594822	6872594823	10788595200
6887753865	6887753866	12244896000
6918166953	6918166954	10410940800
6938862801	6938862802	10559808000
6945907898	6945907899	10618283520
6988868181	6988868182	10944460800
7001097045	7001097046	11208637440
7035145784	7035145785	13289702400
7035200414	7035200415	12454041600
7038224205	7038224206	11544519168
7055172075	7055172076	13339146240
7062444194	7062444195	11527971840
7065869865	7065869866	12006973440
7093047795	7093047796	12543552000
7136029881	7136029882	10979942400
7170901257	7170901258	10947847680
7227011834	7227011835	13005619200
7281010424	7281010425	14117846400
7297171545	7297171546	12822001920
7319445693	7319445694	12003160320
7331338862	7331338863	11399270400
7344483314	7344483315	12682365696
7393460462	7393460463	11906611200
7445006294	7445006295	12336952320
7447913793	7447913794	11456121600
7458396477	7458396478	12226636800

n	$n+1$	$\sigma(n)$
7489018142	7489018143	11573452800
7559982333	7559982334	11805393600
7566526345	7566526346	11544519168
7573002585	7573002586	12344306688
7583687397	7583687398	14270054400
7608436244	7608436245	13679124480
7684360364	7684360365	13891046400
7736203874	7736203875	13580835840
7807348941	7807348942	12334291200
7824898430	7824898431	14157158400
7852265174	7852265175	13034165760
7855843154	7855843155	12570695424
7872272342	7872272343	13145932800
7889370381	7889370382	11860341120
7927222064	7927222065	15633285120
7937938503	7937938504	14944849920
8014942946	8014942947	12490536960
8044919486	8044919487	13007381760
8053053458	8053053459	12773376000
8058531165	8058531166	14206752000
8058680793	8058680794	12174624000
8158787762	8158787763	12708347904
8172565004	8172565005	14350307328
8200886102	8200886103	12363466752
8201729762	8201729763	12389640120
8222604884	8222604885	15641458560
8232031785	8232031786	13641114240
8300316633	8300316634	12884699520
8334008133	8334008134	12773376000
8353083981	8353083982	13134274560
8364655754	8364655755	16392499200
8386329177	8386329178	12829659336
8387009785	8387009786	13119667200
8434544643	8434544644	14898723840
8444488455	8444488456	16690302720
8447452424	8447452425	15918903000
8467155375	8467155376	16657505280
8473555994	8473555995	14096954880
8479112355	8479112356	17831923200
8526576375	8526576376	16716585600
8587286841	8587286842	13232419200
8620666382	8620666383	13380640560
8638277745	8638277746	14810480640
8665644195	8665644196	16690544640
8685824121	8685824122	14435366400
8702074689	8702074690	16035148800
8725014573	8725014574	13117427712
8735807186	8735807187	13561067520
8769559635	8769559636	15850598400
8779889547	8779889548	15894627840
8793177585	8793177586	14138530560
8823385197	8823385198	14265538560
8823690081	8823690082	13503559680
8839304253	8839304254	14542488576

n	$n+1$	$\sigma(n)$
8848034012	8848034013	16042586112
8889922405	8889922406	13377498624
8918633097	8918633098	14352624000
8924340164	8924340165	15676416000
8924974658	8924974659	13435994880
8926708581	8926708582	15011568000
8927992478	8927992479	14447393280
8935480334	8935480335	14945472000
8959123334	8959123335	15360710400
8982566397	8982566398	14831631360
8986141604	8986141605	17709088320
9000795158	9000795159	13995770880
9019375244	9019375245	17322439680
9029020994	9029020995	16605388800
9037193253	9037193254	13799116800
9118836315	9118836316	16012956960
9169180461	9169180462	15166569600
9179100873	9179100874	13809216960
9200175561	9200175562	13875696000
9281569004	9281569005	16511040000
9294569306	9294569307	15284505600
9333462974	9333462975	15944408064
9356676957	9356676958	14867424000
9373663881	9373663882	15355267200
9380536821	9380536822	14529715200
9410443305	9410443306	15989944320
9419517524	9419517525	17023910400
9444883106	9444883107	14170291200
9604661594	9604661595	16231622400
9660726662	9660726663	15926803200
9677872185	9677872186	15857233920
9682598738	9682598739	14578237440
9704053442	9704053443	15116889600
9720122895	9720122896	20839291200
9721808649	9721808650	18231333120
9738551978	9738551979	15526038528
9743177367	9743177368	18339955200
9772872314	9772872315	15639526656
9822281468	9822281469	18190448640
9846250982	9846250983	14908093200
9864022653	9864022654	15002582400
9881681865	9881681866	17891850240
9901462155	9901462156	17638871040
9903222861	9903222862	16547328000
9907425621	9907425622	14871542400
9933673665	9933673666	17892389376
9952509501	9952509502	16097961600
9994068405	9994068406	17567746560
10041523569	10041523570	19615115520
10047476625	10047476626	16740172800
10071727784	10071727785	20881152000
10093338548	10093338549	18445190400
10134703178	10134703179	15510528000
10178508584	10178508585	19157472000

n	$n+1$	$\sigma(n)$
10214744355	10214744356	19465488000
10220882997	10220882998	15513120000
10259728166	10259728167	15660933120
10276605386	10276605387	15518397960
10288401513	10288401514	15968171520
10368504705	10368504706	18716544000
10404109845	10404109846	18069682176
10447502042	10447502043	15824471040
10458788337	10458788338	15926803200
10465495754	10465495755	19691320320
10500225015	10500225016	20329850880
10509796353	10509796354	16120166400
10548614714	10548614715	18018201600
10589249726	10589249727	18511234560
10599233121	10599233122	15999984000
10628165954	10628165955	18887592960
10667172194	10667172195	18492364800
10683341955	10683341956	22455014400
10705014962	10705014963	16345929600
10746668822	10746668823	16180819200
10813709006	10813709007	16294037760
10861160804	10861160805	21794572800
10879793073	10879793074	16731187200
10897945064	10897945065	23290675200
10898252198	10898252199	16581801600
10910114504	10910114505	20606400000
10928089473	10928089474	16745895936
10932089054	10932089055	17951155200
10944441915	10944441916	19585843200
10949846901	10949846902	16779571200
10961162198	10961162199	18942094080
10999426125	10999426126	18545200128
11004619574	11004619575	18373824000
11017504952	11017504953	21250252800
11068869405	11068869406	20477318400
11131104153	11131104154	17061408000
11132480115	11132480116	19544484960
11167244565	11167244566	18075657600
11202972057	11202972058	16897795200
11214869210	11214869211	20275557120
11259462224	11259462225	22147153920
11274364761	11274364762	17296588800
11275073882	11275073883	17328729600
11315247824	11315247825	22228577280
11325724995	11325724996	19991087424
11333860214	11333860215	18811699200
11353438089	11353438090	20437401600
11379725558	11379725559	17354826720
11414984175	11414984176	23695626240
11450750882	11450750883	18163740672
11458340433	11458340434	17188427520
11461170146	11461170147	17748979200
11569116362	11569116363	18329794560
11596066274	11596066275	19402758144

n	$n+1$	$\sigma(n)$
11613667605	11613667606	18592104960
11658394935	11658394936	23221416960
11668446933	11668446934	19415531520
11710892534	11710892535	19958400000
11728405689	11728405690	22231480320
11806906605	11806906606	21058652160
11814798098	11814798099	17834463360
11833321101	11833321102	18368913024
11833558622	11833558623	17936614080
11859052490	11859052491	21366858240
11892171345	11892171346	20217600000
11921749005	11921749006	19334246400
11999987594	11999987595	22029396480
12014226746	12014226747	18472924800
12018829185	12018829186	22828635648
12043112841	12043112842	18134588160
12047290983	12047290984	22756406400
12047350341	12047350342	18106260480
12049943895	12049943896	23425459200
12060533355	12060533356	21171870720
12108186285	12108186286	22338892800
12119290982	12119290983	18404305920
12126113055	12126113056	25289488224
12185617995	12185617996	22708224000
12231581835	12231581836	23038525440
12253580901	12253580902	18737409600
12280618977	12280618978	18422691840
12283482098	12283482099	19053066240
12289214763	12289214764	21668774400
12399400358	12399400359	18679096800
12417230661	12417230662	19440352512
12445107464	12445107465	24579676800
12451932404	12451932405	23563612800
12466503093	12466503094	18833472000
12498423146	12498423147	21349785600
12554639853	12554639854	19156176000
12663171345	12663171346	22137338880
12699356522	12699356523	19876200960
12699758462	12699758463	19495365120
12749740106	12749740107	19270863360
12766664744	12766664745	24047063040
12785849714	12785849715	21125339136
12810988178	12810988179	20271513600
12899851005	12899851006	22838796288
12907449602	12907449603	20321280000
12927447476	12927447477	22686048000
12956972715	12956972716	22729346640
12986152713	12986152714	19570636800
13062428414	13062428415	24716482560
13095119505	13095119506	23442048000
13099733673	13099733674	21250252800
13134574695	13134574696	25181798400
13227684362	13227684363	19987624800
13230950246	13230950247	20235571200

n	$n+1$	$\sigma(n)$
13241401593	13241401594	20282296320
13249628721	13249628722	22647081600
13260992294	13260992295	21910487040
13282424241	13282424242	20128331520
13354413662	13354413663	20086617600
13365122234	13365122235	21401210880
13392099482	13392099483	20778700800
13395782366	13395782367	21275654400
13416534214	13416534215	20188984320
13450076642	13450076643	20187864576
13461425445	13461425446	23332377600
13466449826	13466449827	20605777920
13496676975	13496676976	26413309440
13527048794	13527048795	23572684800
13566112101	13566112102	20743257600
13591526805	13591526806	24455208960
13650375123	13650375124	25299993600
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13702406684	13702406685	24037171200
13733557826	13733557827	21038641920
13772046981	13772046982	22934246400
13788513386	13788513387	22298664960
13805769614	13805769615	25540945920
13837122477	13837122478	21483221760
13845453795	13845453796	25306444800
13893096609	13893096610	25634568960
14025157575	14025157576	27403246080
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14108223033	14108223034	21162960000
14109389018	14109389019	22832409600
14213854082	14213854083	22273719552
14265705795	14265705796	25128956160
14273271657	14273271658	22122293760
14352871598	14352871599	23952015360
14388149445	14388149446	24085555200
14408290634	14408290635	23061024000
14430450722	14430450723	21646603776
14436222537	14436222538	22769123328
14495466110	14495466111	26475724800
14496234524	14496234525	26642044800
14499055053	14499055054	25029181440
14499531387	14499531388	25735449600
14502331185	14502331186	25403258880
14540047118	14540047119	22773983232
14548468095	14548468096	29405376000
14620266218	14620266219	22725964800
14634672675	14634672676	28295688960
14640578414	14640578415	27776286720
14682686258	14682686259	22495656960
14697981362	14697981363	22730803200
14717686053	14717686054	22465175040

n	$n+1$	$\sigma(n)$
14723684001	14723684002	23284340352
14913095786	14913095787	23386890240
14969353035	14969353036	29499724800