

Stifled Numbers are numbers whose digits add up to its base. So there can be no single digit stifled number in any base. In base ten the set 2s10 has 9 two digit stifled numbers:

2s10 = {19, 28, 37, 46, 55, 64, 73, 82, 91} 9

The set 3s10 has 54 three digit stifled numbers in base ten:

3s10 = {109, 118, 127, 136, 145, 154, 163, 172, 181, 190,	19
208, 217, 226, 235, 244, 253, 262, 271, 280,	28
307, 316, 325, 334, 343, 352, 361, 370,	36
406, 415, 424, 433, 442, 451, 460,	43
505, 514, 523, 532, 541, 550,	49
604, 613, 622, 631, 640,	54
703, 712, 721, 730,	58
802, 811, 820,	61
901, 910}	63

The set 4s10 has 218 four digit stifled numbers in base ten:

4s10 = {1009, 1018, 1027, 1036, 1045, 1054, 1063, 1072, 1081, 1090,	73
1108, 1117, 1126, 1135, 1144, 1153, 1162, 1171, 1280,	82
1207, 1216, 1225, 1234, 1243, 1252, 1261, 1270,	90
1306, 1315, 1324, 1333, 1342, 1351, 1360,	97
1405, 1414, 1423, 1432, 1441, 1450,	103
1504, 1513, 1522, 1531, 1540,	108
1603, 1612, 1621, 1630,	112
1702, 1711, 1720,	115
1801, 1810,	117
1900,	118
2008, 2017, 2026, 2035, 2044, 2053, 2062, 2071, 2080	127
2107, 2116, 2125, 2134, 2143, 2152, 2161, 2170,	135
2206, 2213, 2224, 2233, 2242, 2251, 2260,	142
2305, 2314, 2323, 2332, 2341, 2350,	148
2404, 2413, 2422, 2431, 2440,	153
2503, 2512, 2521, 2530,	157
2602, 2611, 2620,	160
2701, 2710,	162
2800,	163
3007, 3016, 3025, 3034, 3043, 3052, 3061, 3070,	171
3106, 3015, 3024, 3033, 3042, 3051, 3060,	178
3205, 3214, 3223, 3232, 3241, 3250,	184
3304, 3313, 3322, 3331, 3340,	189
3403, 3412, 3421, 3430,	193
3502, 3511, 3520,	196
3601, 3610,	198
3700,	199
4006, 4015, 4024, 4033, 4042, 4051, 4060,	206
4105, 4114, 4123, 4132, 4141, 4150,	212
4204, 4213, 4222, 4231, 4240,	217
4303, 4312, 4321, 4330,	221
4402, 4411, 4420,	224
4501, 4510,	226
4600,	227

5005, 5014, 5023, 5032, 5041, 5050,	233
5104, 5113, 5122, 5131, 5140,	238
5203, 5212, 5221, 5230,	242
5302, 5311, 5320,	245
5401, 5410,	247
5500,	248
6004, 6013, 6022, 6031, 6040,	253
6103, 6112, 6121, 6130,	257
6202, 6211, 6220,	260
6301, 6310,	262
7003, 7012, 7021, 7030,	266
7102, 7111, 7120,	269
7201, 7210,	271
7300,	272
8002, 8011, 8020,	275
8101, 8110,	277
8200,	278
9001, 9010,	280
9100}	281

So from the above we can see that there are 281 base 10 stified digits less than 10000.

#### Greater Stified Numbers

Greater Stified Numbers are numbers whose digits add up to a value greater than its base.

In base ten the set  $2s > 10$  has 36 two digit greater stified numbers:

$2s > 10 = \{29,$   
 38, 39,  
 47, 48, 49,  
 56, 57, 58, 59,  
 65, 66, 67, 68, 69,  
 74, 75, 76, 77, 78, 79,  
 83, 84, 85, 86, 87, 88, 89,  
 92, 93, 94, 95, 96, 97, 98, 99}

#### Lesser Stified Numbers

Lesser Stified Numbers are numbers whose digits add up to a value less than its base.

In base ten the set  $1s < 10$  has 10 one digit lesser stified numbers:

$1s < 10 = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9\}$

In base ten the set  $2s < 10$  has 43 two digit lesser stified numbers:

$2s < 10 = \{10, 11, 12, 13, 14, 15, 16, 17, 18,$   
 20, 21, 22, 23, 24, 25, 26, 27,  
 30, 31, 32, 33, 34, 35, 36,  
 40, 41, 42, 43, 44, 45,  
 50, 51, 52, 53, 54,

60, 61, 62, 63,  
 70, 71, 72,  
 80, 81,  
 90}

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Binary

In base 2, any number that is  $2^a + 2^b$  is a stifled number where a and b are positive integers and are not equal.

$2^0$	$2^1$	$2^2$	$2^3$	$2^4$	$2^5$	$2^6$	$2^7$	s2	nth
1	2	4	8	16	32	64	128		
1	1	0	0	0	0	0	0	3	1
1	0	1	0	0	0	0	0	5	2
0	1	1	0	0	0	0	0	6	3
1	0	0	1	0	0	0	0	9	4
0	1	0	1	0	0	0	0	10	5
0	0	1	1	0	0	0	0	12	6
1	0	0	0	1	0	0	0	17	7
0	1	0	0	1	0	0	0	18	8
0	0	1	0	1	0	0	0	20	9
0	0	0	1	1	0	0	0	24	10
1	0	0	0	0	1	0	0	33	11
0	1	0	0	0	1	0	0	34	12
0	0	1	0	0	1	0	0	36	13
0	0	0	1	0	1	0	0	40	14
0	0	0	0	1	1	0	0	48	15
1	0	0	0	0	0	1	0	65	16
0	1	0	0	0	0	1	0	66	17
0	0	1	0	0	0	1	0	68	18
0	0	0	1	0	0	1	0	72	19
0	0	0	0	1	0	1	0	80	20
0	0	0	0	0	1	1	0	96	21
1	0	0	0	0	0	0	1	129	22
0	1	0	0	0	0	0	1	130	23
0	0	1	0	0	0	0	1	132	24
0	0	0	1	0	0	0	1	136	25
0	0	0	0	1	0	0	1	144	26
0	0	0	0	0	1	0	1	160	27
0	0	0	0	0	0	1	1	192	28

Stifled Numbers (Part 2)

by Adi Cox. 18-3-13

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Number x	Stifled set of bases	Stifled Numbers in their respective bases	n Stifled Numbers
1	{NULL}	-	0
2	{NULL}	-	0

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3	{2}	11	1
4	{NULL}	-	0
5	{2, 3}	101, 12	2
6	{2}	110	1
7	{3, 4}	21, 13	2
8	{NULL}	-	0
9	{2, 5}	1001, 14	2
10	{2}	1010	1
11	{3, 6}	102, 15	2
12	{2}	1100	1
13	{3, 4, 5, 7}	111, 31, 23, 16	4
14	{NULL}	-	0
15	{3, 8}	120, 17	2
16	{6}	24	1
17	{2, 5, 9}	10001, 32, 18	3
18	{2}	10020	1
19	{3, 4, 7, 10}	201, 103, 25, 19	4
20	{2}	10100	1
21	{3, 5, 6, 11}	210, 41, 33, 1 (10)	4
22	{4, 8}	112, 26	2
23	{12}	1 (11)	1
24	{2}	11000	1
25	{4, 7, 9, 13}	121, 34, 27, 1 (12)	4
26	{6}	42	1
27	{14}	1 (13)	1
28	{4, 10}	130, 28	2
29	{3, 5, 8, 15}	1002, 104, 35, 1 (14)	4
30	{NULL}	-	0
31	{3, 6, 7, 11, 16}	1011, 51, 43, 29, 1 (15)	5
32	{NULL}	-	0
33	{2, 3, 5, 9, 17}	10001, 1020, 113, 36, 1 (16)	5
34	{2, 4, 12}	10010, 202, 2 (10)	3
35	{18}	1 (17)	1
36	{2, 8}	100100, 44	2
37	{3, 4, 5, 7, 10, 13, 19}	1101, 211, 122, 52, 37, 2 (11), 1 (18)	7
38	{NULL}	-	0
39	{3, 20}	1110, 1 (19)	2
40	{2, 4, 14}	101000, 220, 2 (12)	3
41	{4, 6, 9, 11, 21}	131, 105, 45, 38, 1 (20)	5
42	{NULL}	-	0
43	{7, 8, 15, 22}	61, 53, 2 (13), 1 (21)	4
44	{NULL}	-	0
45	{3, 5, 12, 23}	1200, 140, 39, 1 (22)	4
46	{6, 10, 26}	114, 46, 2 (14)	3
47	{24}	1 (23)	1
48	{2, 25}	110000, 1 (24)	2
49	{4, 9, 13, 17}	301, 54, 3 (10), 2 (15)	4
50	{8}	62	1
51	{6, 11, 26}	123, 47, 1 (25)	3
52	{4, 18}	310, 2 (16)	2
53	{5, 14, 27}	203, 3 (11), 1 (26)	3
54	{NULL}	-	0
55	{3, 7, 10, 19, 28}	2001, 106, 55, 2 (17), 1 (27)	5
56	{6, 12}	132, 48	2
57	{3, 5, 8, 9, 15, 29}	2010, 212, 71, 63, 3 (12), 1 (28)	6
58	{20}	2 (18)	1
59	{30}	1 (29)	1
60	{NULL}	-	0
61	{5, 6, 7, 11, 13, 16, 21, 31}	221, 141, 115, 56, 49, 3 (13), 2 (19), 1 (30)	8
62	{NULL}	-	0

63	{3,32}	2100,1(31)	2
64	{10,22}	64,2(20)	2
65	{2,5,9,17,33}	1000001,230,72,3(14),1(32)	5
66	{2,6,14}	1000010,150,4(10)	3
67	{4,7,12,23,34}	1003,124,57,2(21),1(33)	5
68	{2}	1000100	1
69	{18,35}	3(15),1(34)	2
70	{4,24}	1012,2(22)	2
71	{8,11,15,36}	107,65,4(11),1(35)	4
72	{2}	1001000	1
73	{4,7,9,10,13,19,25,37}	1021,133,81,73,58,3(16),2(23),1(36)	8
74	{NULL}	-	0
75	{38}	1(37)	1
76	{4,6,16,26}	1030,204,4(12),2(24)	4
77	{5,20,39}	302,3(17),1(38)	3
78	{8,12}	116,66	2
79	{7,14,27,40}	142,59,2(25),1(39)	4
80	{2}	1010000	1
81	{5,6,11,17,21,41}	311,213,74,4(13),3(18)1(40)	6
82	{4,10,28}	1102,82,2(26)	3
83	{3,42}	10002,1(41)	2
84	{NULL}	-	0
85	{3,4,5,7,8,13, 15,22,29,43}	10011,1111,320,151,125,67, 5(10),3(19),2(27),1(42)	10
86	{6,18}	222,4(14)	2
87	{3,44}	10020,1(43)	2
88	{4,30}	1120,2(28)	2
89	{9,12,23,45}	108,75,3(20),1(44)	4
90	{NULL}	-	0
91	{3,6,7,10,11,16, 19,24,31,46}	10101;231,160,91,83,5(11), 4(15),3(21),2(29),1(45)	10
92	{8,14}	134,68	2
93	{3,24,47}	10110,3(21),1(46)	3
94	{32}	2(30)	1
95	{48}	1(47)	1
96	{2,6,20}	1100000,240,4(16)	3
97	{4,9,13,17,25,33,49}	1201,117,76,5(12),3(22),2(31),1(48)	7
98	{NULL}	-	0
99	{3,8,15,50}	10200,143,69,1(49)	4
100	{4,12,34}	1210,84,2(32)	3

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The html file below was used to find the stified numbers in their various bases above.  
(Change the value of B to change the base, which is currently set to binary)

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```

<!DOCTYPE HTML PUBLIC " - //W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd"
">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<title>A for loop</title>
</head>
<body>
<script type="text/javascript" language="javascript">
document.write("<h3>The 6 digit base B numbers = B<h3>")

```

```

B=2;
u=0;
v=B-1;

for (a = u; a <= v; a++)
{
    for (b = u; b <= v; b++)
    {
        for (c = u; c <= v; c++)
        {
            for (d = u; d <= v; d++)
            {
                for (e = u; e <= v; e++)
                {
                    for (f = u; f <= v; f++)
                    {

                        if(a + b + c + d + e + f == B)
                        {
                            document.write(a,b,c,d,e,f," = ",
                            B*B*B*B*B*a + B*B*B*B*B*b + B*B*B*B*c + B*B*d + B*e + f , "<br />");
                        }
                    }
                }
            }
        }
    }
}

</script>
</body>
</html>

```