

On écrit les nombres de 1 à 100 sous leur forme 2-adique, 3-adique, 5-adique et 7-adique. Les nombres premiers  $p$  (en bleu) ont évidemment leur “dernier caractère” non nul dans toutes les écritures autres que  $p$ -adique ; il s’agit du coefficient de la puissance nulle de  $p$ , noté à droite, comme dans la numération décimale. On ne notera pas par ... la répétition infinie d’un nombre dans son écriture  $p$ -adique, sur la gauche au début de chaque écriture entre crochets.

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

Si on écrit les nombres en base 2, 3, 5 ou 7 (l'écriture p-adique ci-dessus consiste à "cumuler les digits" de l'écriture en base  $p$  ci-dessous), les nombres premiers  $p$  sont également les nombres dont tous les derniers caractères  $p'$ -adiques sont non nuls avec  $p' \neq p$ .

$n$	en base 2	en base 3	en base 5	en base 7	$n$	en base 2	en base 3	en base 5	en base 7
1	01	01	01	01	51	0110011	01220	0201	0102
2	10	02	02	02	52	0110100	01221	0202	0103
3	011	10	03	03	53	0110101	01222	0203	0104
4	100	011	04	04	54	0110110	02000	0204	0105
5	0101	012	10	05	55	0110111	02001	0210	0106
6	0110	020	011	06	56	0111000	02002	0211	0110
7	0111	021	012	10	57	0111001	02010	0212	0111
8	1000	022	013	011	58	0111010	02011	0213	0112
9	01001	100	014	012	59	0111011	02012	0214	0113
10	01010	0101	020	013	60	0111100	02020	0220	0114
11	01011	0102	021	014	61	0111101	02021	0221	0115
12	01100	0110	022	015	62	0111110	02022	0222	0116
13	01101	0111	023	016	63	0111111	02100	0223	0120
14	01110	0112	024	020	64	1000000	02101	0224	0121
15	01111	0120	030	021	65	01000001	02102	0230	0122
16	10000	0121	031	022	66	01000010	02110	0231	0123
17	010001	0122	032	023	67	01000011	02111	0232	0124
18	010010	0200	033	024	68	01000100	02112	0233	0125
19	010011	0201	034	025	69	01000101	02120	0234	0126
20	010100	0202	040	026	70	01000110	02121	0240	0130
21	010101	0210	041	030	71	01000111	02122	0241	0131
22	010110	0211	042	031	72	01001000	02200	0242	0132
23	010111	0212	043	032	73	01001001	02201	0243	0133
24	011000	0220	044	033	74	01001010	02202	0244	0134
25	011001	0221	100	034	75	01001011	02210	0300	0135
26	011010	0222	0101	035	76	01001100	02211	0301	0136
27	011011	1000	0102	036	77	01001101	02212	0302	0140
28	011100	01001	0103	040	78	01001110	02220	0303	0141
29	011101	01002	0104	041	79	01001111	02221	0304	0142
30	011110	01010	0110	042	80	01010000	02222	0310	0143
31	011111	01011	0111	043	81	01010001	10000	0311	0144
32	100000	01012	0112	044	82	01010010	010001	0312	0145
33	0100001	01020	0113	045	83	01010011	010002	0313	0146
34	0100010	01021	0114	046	84	01010100	010010	0314	0150
35	0100011	01022	0120	050	85	01010101	010011	0320	0151
36	0100100	01100	0121	051	86	01010110	010012	0321	0152
37	0100101	01101	0122	052	87	01010111	010020	0322	0153
38	0100110	01102	0123	053	88	01011000	010021	0323	0154
39	0100111	01110	0124	054	89	01011001	010022	0324	0155
40	0101000	01111	0130	055	90	01011010	010100	0330	0156
41	0101001	01112	0131	056	91	01011011	010101	0331	0160
42	0101010	01120	0132	060	92	01011100	010102	0332	0161
43	0101011	01121	0133	061	93	01011101	010110	0333	0162
44	0101100	01122	0134	062	94	01011110	010111	0334	0163
45	0101101	01200	0140	063	95	01011111	010112	0340	0164
46	0101110	01201	0141	064	96	01100000	010120	0341	0165
47	0101111	01202	0142	065	97	01100001	010121	0342	0166
48	0110000	01210	0143	066	98	01100010	010122	0343	0200
49	0110001	01211	0144	100	99	01100011	010200	0344	0201
50	0110010	01212	0200	0101	100	01100100	010201	0400	0202