SUPPLEMENTARY TABLES FOR THE PAPER "JOINTLY PERIODIC POINTS IN CELLULAR AUTOMATA: COMPUTER EXPLORATIONS AND CONJECTURES"

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These are tables supplementary to our Experimental Mathematics paper "Jointly periodic points in cellular automata: computer explorations and conjectures". The tables are explained in that paper.

The tables are organized in four groups:

- Tables of some span 4 and 5 c.a. (Tables 1-2)
- FDense Tables (Tables 3-7)
- FPeriod Tables (Tables 8-24)
- FProbPeriod Tables (Tables 25-33)

In the tables, decimal output data are approximated by truncation; e.g., 1.429 becomes 1.42 rather than 1.43.

1. Tables of some span 4 and 5 c.a.

Map	Tabular rule	Map	Tabular rule
1	0000 1111 0010 1101	17	0011 1001 1100 1100
2	0000 1111 0100 1011	18	0011 1010 0011 1100
3	0001 1100 0011 1110	19	0011 1010 1100 0011
4	0001 1110 0101 1010	20	0011 1100 0101 0011
5	0010 1001 0110 1101	21	0011 1100 0101 1100
6	0010 1101 0000 1111	22	0011 1100 1010 0011
7	0011 0011 0110 0011	23	0011 1100 1010 1100
8	0011 0011 0110 1100	24	0011 1110 0001 1100
9	0011 0011 1001 0011	25	0100 1001 0110 1011
10	0011 0011 1001 1100	26	0100 1011 0000 1111
11	0011 0101 0011 1100	27	0101 1010 0001 1110
12	0011 0101 1100 0011	28	0101 1010 0111 1000
13	0011 0110 0011 0011	29	0110 1011 0100 1001
14	0011 0110 1100 1100	30	0110 1101 0010 1001
15	0011 1000 0111 1100	31	0111 1000 0101 1010
16	0011 1001 0011 0011	32	0111 1100 0011 1000

Table 1. The 32 span 4 onto c.a. of the 2 shift which fix $\dots 000 \dots$ and are not linear in an end variable [Hedlund-Appel-Welch1963, Table I]. Maps 2, 6, 7 and 16 are one-to-one. The rule above for map 30 corrects a misprint in [Hedlund-Appel-Welch1963, Table I].

Map	Tabular rule	Map	Tabular rule
1	0001 0111 1110 1000 0001 0111 1111 0000	14	0100 1101 1111 0000 0100 1101 1011 0010
2	0001 1011 0111 0100 1110 0100 1111 0000	15	0110 0001 1010 1011 0110 0001 0110 0111
3	0010 0010 1111 0011 0010 1110 0000 1111	16	0110 1000 0111 1001 0110 0001 1110 1001
4	0010 1001 0110 1101 0100 1001 0110 1011	17	0110 1011 1100 0010 0100 1011 0001 1101
5	0010 1110 0000 1111 0010 1110 1111 0000	18	0111 0001 1011 0010 0111 0001 1000 1110
6	0100 0111 0001 0111 1011 1000 0000 1111	19	0111 0010 1011 0100 0111 0010 0111 1000
7	0100 0111 0100 1011 1000 1011 0100 1011	20	0111 1000 0100 1011 0111 1000 0111 1000
8	0100 1011 1000 0111 0100 1011 0100 1011	21	0111 1000 0100 1011 0111 1000 1011 0100
9	0100 1101 1011 0010 1000 1110 1011 0010	22	0111 1000 0100 1011 0111 1000 1111 0000
10	0100 1101 1011 0010 1100 1100 1011 0010	23	0111 1000 0100 1101 0111 1000 1000 1110
11	0100 1101 1101 0010 0011 0011 1101 0010	24	0111 1011 1000 0100 0100 1011 0000 1111
12	0100 1101 1101 0010 0111 0001 1101 0010	25	0111 1011 1100 0000 0100 1011 0000 1111
13	0100 1101 1101 0010 1111 0000 1101 0010	26	0111 1011 1100 0000 0100 1011 0100 1011

Table 2. 26 irregular span 5 onto maps of the 2 shift which fix $\dots 000 \dots$ and are not linear in an end variable [Hedlund-Appel-Welch1963, Table XII].

2. FDense Tables

Map	10-dense at	13-dense at	Map	10-dense at	13-dense at
1	11-24	13-24	17	17,18,20-24	24
2	10-24	13-24	18	17,19-24	23-24
3	18-24	24	19	19-24	23-24
4	21-24	(27)	20	17,19-23	(25)
5	17,19-23	(25	21	19-24	23-24
6	10-24	13-24	22	19-24	23-24
7	10-24	13-24	23	19-24	21-22
8	21-24	(27)	24	17,19-24	23-24
9	11-24	13-24	25	17,19-23	(25)
10	19,21-24	24	26	11-24	13-24
11	18-24	24	27	19, 21-24	24
12	17,19-23	(25)	28	22-24	(25)
13	11-24	13-24	29	19-24	23-24
14	22-24	(25)	30	19-24	23-24
15	19-24	23-24	31	17,18,20-24	24
16	10-24	13-24	32	19-24	21-22

Table 3. The map numbers refer to the 32 span 4 maps of Table 1. Table 3 shows for the given sample of maps, and for $m = 10$ and $m = 13$, for which k in the range $[m, 24]$ the jointly periodic points in $P_k(S_2)$ are m-dense. If the map is not m-dense for any k in this range, then the number listed in parentheses is the smallest k for which the jointly periodic points in $P_k(S_2)$ are m-dense.

Map	10-dense at	13-dense at	Map	10-dense at	13-dense at
F∘1	11-24	13,15-24	F∘17	19,21-24	24
F∘2	11-24	13-24	F∘18	19-24	23-24
F∘3	19-24	21-22	F∘19	19-24	(27)
F∘4	22-24	(25)	F∘20	21-24	23
F∘5	21-24	23	F∘21	17,19-24	23-24
F∘6	10-24	13-24	F∘22	19-24	(27)
F∘7	20-24	13-24	F∘23	18-24	24
F∘8	22-24	(25)	F∘24	19-24	23-24
F∘9	11-24	13,15-24	F∘25	21-24	23
F∘10	17-18,21-24	24	F∘26	11-24	13,15-24
F∘11	19-24	21,22	F∘27	17-18,20-24	24
F∘12	21-24	23	F∘28	21-24	(27)
F∘13	11-24	13,15-24	F∘29	19-24	(27)
F∘14	21-24	(27)	F∘30	19-24	(27)
F∘15	17-19,20-24	23-24	F∘31	19,21-24	24
F∘16	10-24	13-24	F∘32	18-24	24

TABLE 4. The map numbers refer to the 32 span 4 maps of Table 1. F is the involution $F = x_0 + 1$. Table 4 shows for the given sample of maps, and for $m = 10$ and $m = 13$, for which k in the range $[m, 24]$ the jointly periodic points in $P_k(S_2)$ m-dense. If the map is not m-dense for any k in this range, then the number listed in parentheses is the smallest k for which the jointly periodic points in $P_k(S_2)$ are m-dense.

Map	10-dense at	Map	10-dense at	Map	10-dense at	Map	10-dense at
F∘1	11-24	F∘17	19,21-24	D∘1	20-24	D∘17	21-24
F∘2	11-24	F∘18	19-24	D∘2	19,22-24	D∘18	21-24
F∘3	19-24	F∘19	19-24	D∘3	20-24	D∘19	22-24
F∘4	22-24	F∘20	21-24	D∘4	21,23-24	D∘20	20,24
F∘5	21-24	F∘21	17,19-24	D∘5	20,24	D∘21	21,23-24
F∘6	10-24	F∘22	19-24	D∘6	20,22,24	D∘22	24
F∘7	20-24	F∘23	18-24	D∘7	19,22-24	D∘23	21-24
F∘8	22-24	F∘24	19-24	D∘8	21,23-24	D∘24	21-24
F∘9	11-24	F∘25	21-24	D∘9	22-24	D∘25	22-24
F∘10	17-18,21-24	F∘26	11-24	D∘10	21,23-24	D∘26	22-24
F∘11	19-24	F∘27	17-18,20-24	D∘11	22-24	D∘27	21,23-24
F∘12	21-24	F∘28	21-24	D∘12	20-21,23-24	D∘28	22-24
F∘13	11-24	F∘29	19-24	D∘13	20-24	D∘29	22-24
F∘14	21-24	F∘30	19-24	D∘14	22-24	D∘30	24
F∘15	17-19,20-24	F∘31	19,21-24	D∘15	21,23-24	D∘31	21-24
F∘16	10-24	F∘32	18-24	D∘16	20,22,24	D∘32	21-24

TABLE 5. The c.a. listed are compositions, e.g. $D \circ j$ is map j followed by D. The map numbers j refer to the 32 span 4 maps of Table 1. The map D is given by $x_0 + x_1$. The map F is the flip involution $F = 1 + x_0$. The data on $F \circ j$ are copied in from Table 4 for contrast with $D \circ j$.

j	10-dense at	j	10-dense at	j	10-dense at	j	10-dense at
1	18-24	9	17-19,21-24	17	18-20,22-24	25	11,13-24
2	19,21-24	10	19-24	18	17,21-24	26	11,13-24
3	17-24	11	17,19-24	19	17-24		
4	18-19,21-24	12	18-24	20	18-24		
5	17-24	13	16-23	21	19-24		
6	15-24	14	16-24	22	19-24		
7	16-24	15	18-24	23	20-24		
8	11,13-24	16	18-19,21-24	24	11,13-24		

TABLE 6. The map numbers j refer to the 26 "irregular" span 5 maps of [Hedlund-Appel-Welch1963, Table XII], copied in Table 2.

j	10-dense at	j	10-dense at	j	10-dense at	j	10-dense at
1	20-24	9	22-23	17	21,24	25	20,23-24
2	18-24	10	21,24	18	22,24	26	19,22-24
3	20,22-24	11	21-24	19	23,24	27	21,24
4	21,23-24	12	21-24	20	22-24	28	21,23-24
5	21,23-24	13	21-24	21	22,24	29	20,22-23
6	19-24	14	21-24	22	23,24	30	19-24
7	20,22-24	15	21-24	23	21-24	31	21,24
8	21-24	16	20-21,23	24	21-24	32	20,22-24

TABLE 7. As in Table 5, the map numbers refer to the 32 span 4 maps of Table 1. For such a map j, let $p_j(x_0, x_1, x_2, x_3)$ be the polynomial such that $(jx)_0 = p_j(x_0, x_1, x_2, x_3)$. Then a row j of Table 7 refers to the map f_j such that $(f_jx)_0 = x_0 + p_j(x_1, x_2, x_3, x_4)$. Equivalently, $f_j = x_0 + (j \circ S_2)$. For the map f_j, all k in the range $[10, 24]$ at which f_j is 10-dense are listed.
By comparison to Table 5, we see that altering the rules j as we have produces maps which look more "random" in the sense that all the 10-density is being achieved at k on the order of 2×10. Note that the maps in Table 7 are by construction left permutative, and for these the jointly periodic points are known to be dense [Boyle-Kitchens1999].

3. FPeriod Tables

Output obtained from the FPeriod Program, discussed in Section 6 (Section FPeriod) , is compiled in the Tables below. In Tables 8-16, for a c.a. f, the numbers given for a row k are computed with respect to $P_k(S_N)$, the set of points fixed by the shift S_N. Except for Tables 15 and 16, the number of symbols N is 2. For a given k, L denotes the maximum f-period of a point in $P_k(S_N)$; P denotes the number of points in $P_k(S_N)$ which are f-periodic (so, $P+$Not-$P = N^k$); and ν_k denotes $\nu_k(f, S_N) = P^{1/k}$. In some later tables, ν_k^o is used to denote the kth root of the number of points of *least* S_n-period k which are periodic for f. The preperiod of a point x is the smallest nonnegative integer j such that $f^j(x)$ is f-periodic.

k	Fraction Periodic	ν_k	$L^{1/k}$	P	L	Not-P	Average Period	Average Preperiod	Maximum Preperiod
1	0.500000	1.00	1.00	1	1	1	1.00	0.50	1
2	0.250000	1.00	1.00	1	1	3	1.00	1.25	2
3	0.500000	1.58	1.44	4	3	4	2.50	0.50	1
4	0.062500	1.00	1.00	1	1	15	1.00	3.06	4
5	0.500000	1.74	1.71	16	15	16	14.12	0.50	1
6	0.250000	1.58	1.34	16	6	48	5.12	1.25	2
7	0.500000	1.81	1.32	64	7	64	6.91	0.50	1
8	0.003906	1.00	1.00	1	1	255	1.00	7.00	8
9	0.500000	1.85	1.58	256	63	256	62.05	0.50	1
10	0.250000	1.74	1.40	256	30	768	29.01	1.25	2
11	0.500000	1.87	1.69	1,024	341	1024	340.67	0.50	1
12	0.062500	1.58	1.23	256	12	3840	11.57	3.06	4
13	0.500000	1.89	1.67	4,096	819	4096	818.80	0.50	1
14	0.250000	1.81	1.20	4,096	14	12,288	13.89	1.25	2
15	0.500000	1.90	1.19	16,384	15	16,384	14.99	0.50	1
16	0.000015	1.00	1.00	1	1	65535	1.00	15.00	16
17	0.500000	1.92	1.38	65,536	255	65,536	254.33	0.50	1
18	0.250000	1.85	1.30	65,536	126	196,608	125.73	1.25	2
19	0.500000	1.92	1.62	262,144	9,709	262,144	9708.96	0.50	1
20	0.062500	1.74	1.22	65,536	60	983,040	59.88	3.06	4
21	0.500000	1.93	1.21	1,048,576	63	1,048,576	62.99	0.50	1
22	0.250000	1.87	1.34	1,048,576	682	3,145,728	681.67	1.25	2
23	0.500000	1.94	1.39	4,194,304	2,047	4,194,304	2047.00	0.50	1

Table 8. The c.a. is $A = x_0 + x_1$ on the 2-shift: a linear, two-to-one map. If $k = qe$ with q odd and e a nonnegative integer power of 2, then there are exactly $(2^{eq}/2^e) = 2^{e(q-1)}$ points in $P_k(S_2)$ which are A-periodic, and $\nu_k = 2^{(q-1)/q}$. In particular, $\nu_k = 2^{(k-1)/k}$ if k is odd.

k	Fraction Periodic	ν_k	$L^{1/k}$	P	L	Not-P	Average Period	Average Preperiod	Maximum Preperiod
1	.5000	1.00	1.00	1	1	1	1.00	0.50	1
2	.2500	1.00	1.00	1	1	3	1.00	1.25	2
3	.5000	1.58	1.44	4	3	4	2.50	0.50	1
4	.3125	1.49	1.41	5	4	11	2.50	1.31	3
5	.3437	1.61	1.58	11	10	21	9.44	0.97	2
6	.4375	1.74	1.61	28	18	36	11.31	0.69	2
7	.0625	1.34	1.32	8	7	120	6.91	4.00	7
8	.0195	1.22	1.18	5	4	251	3.25	6.58	12
9	.1484	1.61	1.58	76	63	436	58.26	3.17	7
10	.0888	1.57	1.52	91	70	933	18.17	7.77	17
11	.0703	1.57	1.46	144	66	1,904	65.35	5.52	14
12	.0576	1.57	1.36	236	42	3,860	24.44	10.98	34
13	.0350	1.54	1.53	287	273	7,905	217.65	11.93	29
14	.0201	1.51	1.39	330	105	16,054	12.65	36.60	74
15	.0123	1.49	1.44	404	255	32,364	179.68	35.36	91
16	.0232	1.58	1.54	1,525	1,008	64,011	272.23	33.28	98
17	.0286	1.62	1.52	3,758	1,377	127,314	913.23	31.04	114
18	.0091	1.54	1.53	2,386	2,250	259,758	2,026.85	55.23	152
19	.0039	1.49	1.47	2,091	1,672	522,197	1,658.11	91.44	251
20	.0015	1.44	1.31	1,635	240	1,046,941	14.16	279.12	575
21	.0046	1.54	1.48	9,650	4,326	2,087,502	461.24	244.11	638
22	.0011	1.47	1.40	4,896	1,848	4,189,408	1,158.45	274.42	647
23	.0027	1.54	1.53	23,461	19,297	8,365,147	18,849.71	269.70	824

TABLE 9. The c.a. is J, the composition $x_0 + x_1$ followed by the involution $U = x_0 + x_{-2}x_1x_2 + x_{-2}x_{-1}x_1x_2$. This invertible c.a. U is the involution of the 2-shift which replaces x_0 with $x_0 + 1$ when $x[-2, 2] = 10x_011$. J is biclosing but not permutative.

k	Fraction Periodic	ν_k	$L^{1/k}$	P	L	Not-P	Average Period	Average Preperiod	Maximum Preperiod
1	0.5000	1.00	1.00	1	1	1	1.00	0.50	1
2	0.2500	1.00	1.00	1	1	3	1.00	0.75	1
3	0.1250	1.00	1.00	1	1	7	1.00	1.62	2
4	0.3125	1.49	1.41	5	4	11	2.50	0.94	2
5	0.3437	1.61	1.58	11	10	21	9.44	0.66	1
6	0.0156	1.00	1.00	1	1	63	1.00	3.52	5
7	0.2812	1.66	1.54	36	21	92	17.62	1.05	2
8	0.0195	1.22	1.18	5	4	251	3.91	5.65	11
9	0.0546	1.44	1.22	28	6	484	5.82	5.18	11
10	0.1767	1.68	1.46	181	45	843	29.75	2.14	7
11	0.0703	1.57	1.55	144	132	1904	98.08	6.76	19
12	0.0012	1.14	1.12	5	4	4091	1.01	19.25	36
13	0.0556	1.60	1.49	456	182	7736	162.94	18.54	49
14	0.0261	1.54	1.35	428	70	15956	28.54	18.35	55
15	0.0342	1.59	1.45	1121	285	31647	138.58	21.60	58
16	0.0074	1.47	1.47	485	480	65051	430.96	71.09	146
17	0.0160	1.56	1.55	2109	1734	128963	1633.83	51.36	169
18	0.0060	1.50	1.41	1594	549	260550	334.44	70.40	233
19	0.0046	1.50	1.45	2452	1197	521836	834.45	92.00	227
20	0.0058	1.54	1.50	6165	3640	1042411	2700.37	70.21	211
21	0.0017	1.47	1.36	3627	693	2093525	585.86	356.39	817
22	0.0033	1.54	1.46	14004	4147	4180300	3305.59	251.62	864
23	0.0022	1.53	1.53	18746	18538	8369862	18491.96	262.30	900

TABLE 10. The c.a. E is the composition x_0+x_1 followed by $x_0+x_1x_2$, a linear 2-to-1 map followed by a degree 1 left permutative map.

k	Fraction Periodic	ν_k	$L^{1/k}$	P	L	Not-P	Average Period	Average Preperiod	Maximum Preperiod
1	1.0000	2.00	1.00	2	1	0	1.00	0.00	0
2	.5000	1.41	1.00	2	1	2	1.00	0.50	1
3	.2500	1.25	1.00	2	1	6	1.00	1.12	2
4	.1250	1.18	1.00	2	1	14	1.00	1.62	3
5	.2187	1.47	1.37	7	5	25	1.62	2.03	4
6	.4062	1.72	1.51	26	12	38	4.56	1.20	3
7	.0703	1.36	1.32	9	7	119	6.91	4.65	9
8	.0703	1.43	1.41	18	16	238	1.94	6.98	12
9	.1796	1.65	1.48	92	36	420	15.52	2.55	7
10	.0263	1.39	1.17	27	5	997	1.07	9.08	15
11	.1782	1.70	1.53	365	110	1,683	77.16	3.79	16
12	.0122	1.38	1.30	50	24	4,046	17.51	10.57	26
13	.1049	1.68	1.53	860	260	7,332	199.90	6.20	21
14	.0056	1.38	1.37	93	84	16,291	70.69	22.86	48
15	.0340	1.59	1.43	1,117	225	31,651	117.64	13.52	42
16	.0154	1.54	1.40	1,010	224	64,526	111.24	27.58	68
17	.0135	1.55	1.45	1,770	612	129,302	558.46	41.02	112
18	.0037	1.46	1.33	980	180	261,164	52.93	32.45	107
19	.0078	1.54	1.50	4,125	2,242	520,163	824.24	52.35	168
20	.0011	1.42	1.32	1,227	280	1,047,349	88.00	77.69	196
21	.0008	1.42	1.39	1,731	1,092	2,095,421	29.02	180.81	480
22	.0006	1.43	1.27	2,829	220	4,191,475	85.05	134.13	399
23	.0008	1.46	1.44	6,833	4,462	8,381,775	4,148.57	209.22	699

TABLE 11. The c.a. is $G = x_{-1}+x_0x_1+x_2$, which is bipermutative but not linear.

k	Fraction Periodic	ν_k	$L^{1/k}$	P	L	Not-P	Average Period	Average Preperiod	Maximum Preperiod
1	0.500000	1.00	1.00	1	1	1	1.00	0.50	1.00
2	0.750000	1.73	1.00	3	1	1	1.00	0.25	1.00
3	0.500000	1.58	1.00	4	1	4	1.00	0.88	2.00
4	0.687500	1.82	1.41	11	4	5	2.50	0.31	1.00
5	0.812500	1.91	1.71	26	15	6	9.75	0.19	1.00
6	0.281250	1.61	1.00	18	1	46	1.00	3.95	8.00
7	0.609375	1.86	1.74	78	49	50	37.75	0.94	5.00
8	0.667969	1.90	1.81	171	120	85	75.94	0.86	6.00
9	0.482422	1.84	1.55	247	54	265	44.93	2.83	12.00
10	0.535156	1.87	1.82	548	410	476	345.04	2.85	17.00
11	0.183105	1.71	1.60	375	176	1673	158.91	28.00	73.00
12	0.176270	1.73	1.40	722	60	3374	6.38	37.95	85.00
13	0.200073	1.76	1.59	1639	416	6553	220.46	19.73	76.00
14	0.212524	1.79	1.62	3482	882	12902	483.97	42.97	153.00
15	0.231598	1.81	1.59	7589	1095	25179	523.90	42.69	191.00
16	0.117599	1.74	1.63	7707	2688	57829	1422.26	159.56	457.00
17	0.078995	1.72	1.60	10354	3230	120718	2481.50	371.77	938.00
18	0.078449	1.73	1.37	20565	324	241579	302.81	350.15	1155.00
19	0.061646	1.72	1.64	32320	13471	491968	12128.71	404.87	1233.00
20	0.065800	1.74	1.64	68996	21240	979580	15870.41	285.87	1063.00
21	0.032823	1.69	1.56	68835	11865	2028317	816.87	1050.92	3506.00
22	0.021364	1.67	1.60	89609	32428	4104695	20280.02	1335.34	5030.00
23	0.011244	1.64	1.48	94324	9108	8294284	7929.18	4869.70	10024.00

TABLE 12. The c.a. is $B = x_0 + x_1x_2$ on the 2-shift. B is degree 1, left permutative and not right closing.

k	Fraction Periodic	ν_k	$L^{1/k}$	P	L	Not-P	Average Period	Average Preperiod	Maximum Preperiod
1	.5000	1.00	1.00	1	1	1	1.00	0.50	1
2	.7500	1.73	1.00	3	1	1	1.00	0.25	1
3	.5000	1.58	1.00	4	1	4	1.00	0.88	2
4	.6875	1.82	1.00	11	1	5	1.00	0.31	1
5	.8125	1.91	1.37	26	5	6	2.56	0.19	1
6	.6562	1.86	1.61	42	18	22	7.38	0.86	4
7	.6093	1.86	1.60	78	28	50	17.35	1.16	5
8	.5117	1.83	1.62	131	48	125	27.50	2.08	10
9	.4296	1.82	1.58	220	63	292	43.61	3.39	11
10	.4082	1.82	1.31	418	15	606	5.45	6.91	21
11	.4355	1.85	1.57	892	143	1,156	99.90	12.91	53
12	.3608	1.83	1.36	1,478	42	2,618	11.61	15.59	53
13	.3270	1.83	1.66	2,679	754	5,513	577.86	33.42	123
14	.2167	1.79	1.26	3,552	28	12,832	23.06	79.16	191
15	.2503	1.82	1.48	8,204	385	24,564	303.28	69.75	232
16	.3152	1.86	1.63	20,659	2,528	44,877	1,197.54	48.40	281
17	.1784	1.80	1.55	23,393	1,853	107,679	1,538.93	168.75	464
18	.1821	1.81	1.59	47,760	4,464	214,384	3,208.77	172.00	697
19	.1357	1.80	1.49	71,175	1,957	453,113	1,685.66	352.58	1082
20	.1620	1.82	1.56	169,886	7,976	878,690	5,604.39	258.96	953
21	.1032	1.79	1.52	216,612	7,056	1,880,540	6,344.22	2,389.64	4,363
22	.0902	1.79	1.35	378,612	740	3,815,692	633.16	2,315.42	6,465
23	.0858	1.79	1.58	720,246	39,353	7,668,362	36,059.28	1,760.56	5,984

TABLE 13. The c.a. is K, the composition which is the automorphism U of Table 9 followed by the left permutative, not right-closing map $x_0+x_1x_2$. The c.a. K is left closing, not right-closing, and not permutative on either side.

k	Fraction Periodic	ν_k	$L^{1/k}$	P	L	Not-P	Average Period	Average Preperiod	Maximum Preperiod
1	0.500	1.00	1.00	1	1	1	1.00	0.50	1
2	0.750	1.73	1.00	3	1	1	1.00	0.25	1
3	0.500	1.58	1.44	4	3	4	1.75	0.50	1
4	0.687	1.82	1.18	11	2	5	1.75	0.31	1
5	0.812	1.91	1.71	26	15	6	11.00	0.19	1
6	0.468	1.76	1.20	30	3	34	1.66	1.28	3
7	0.500	1.81	1.66	64	35	64	28.34	0.99	4
8	0.667	1.90	1.63	171	52	85	30.39	0.52	3
9	0.306	1.75	1.27	157	9	355	8.89	2.35	8
10	0.261	1.74	1.49	268	55	756	20.18	6.75	18
11	0.387	1.83	1.57	793	143	1255	53.53	3.00	13
12	0.088	1.63	1.16	362	6	3734	1.39	20.61	48
13	0.150	1.72	1.63	1236	611	6956	259.75	20.15	78
14	0.126	1.72	1.51	2068	329	14316	119.61	33.22	132
15	0.091	1.70	1.50	3014	465	29754	414.94	44.45	138
16	0.092	1.72	1.50	6043	728	59493	650.33	101.66	282
17	0.107	1.75	1.68	14145	6783	116927	3918.82	48.16	196
18	0.060	1.71	1.58	15753	4095	246391	3406.78	110.78	396
19	0.072	1.74	1.60	38191	7619	486097	6336.19	142.98	406
20	0.038	1.69	1.54	40396	5780	1008180	1691.96	279.69	780
21	0.018	1.65	1.48	37867	4011	2059285	3961.81	705.45	1777
22	0.017	1.66	1.51	75309	9658	4118995	4527.64	605.57	1770
23	0.017	1.67	1.57	144096	34477	8244512	26857.88	1191.56	2687

TABLE 14. The c.a. is C, the composition $x_0x_1 + x_2$ followed by $x_0 + x_1x_2$, on the 2-shift. The c.a. C is neither left nor right closing. It is not known whether the periodic points of C are dense.

k	Fraction Periodic	ν_k	$L^{1/k}$	P	L	Not-P	Average Period	Average Preperiod	Maximum Preperiod
1	1.00	3.00	2.00	3	2	0	1.67	0.00	0.00
2	1.00	3.00	2.44	9	6	0	4.56	0.00	0.00
3	1.00	3.00	2.46	27	15	0	9.30	0.00	0.00
4	0.11	1.73	1.56	9	6	72	4.56	0.89	1.00
5	1.00	3.00	2.77	243	165	0	121.13	0.00	0.00
6	1.00	3.00	2.80	729	486	0	334.54	0.00	0.00
7	1.00	3.00	2.57	2187	742	0	401.62	0.00	0.00
8	0.01	1.73	1.58	81	40	6480	33.50	4.24	9.00
9	1.00	3.00	2.24	19683	1469	0	1185.85	0.00	0.00
10	1.00	3.00	2.76	59049	25865	0	22737.63	0.00	0.00
11	1.00	3.00	2.92	177147	131857	0	109208.21	0.00	0.00
12	0.00	1.76	1.67	909	486	530532	239.27	45.51	133.00
13	1.00	3.00	2.79	1594323	631605	0	291222.95	0.00	0.00

TABLE 15. This map on the 3-shift is an automorphism W followed by the degree 9 linear map $x_0 + x_2$, where $W = x_0 + 2x_0x_1x_1 + 2x_0x_1 + x_1 * x_1 + x_1$. Let π denote the permutation on $\{0, 1, 2\}$ which transposes 0 and 2. Then $(Wx)_0 = x_0$ if $x_1 \neq 1$ and $(Wx)_0 = \pi(x_0)$ if $x_1 = 1$.

k	Fraction Periodic	ν_k	$L^{1/k}$	P	L	Not-P	Average Period	Average Preperiod	Maximum Preperiod
1	.3333	1.00	1.00	1	1	2	1.00	1.00	2
2	.5555	2.23	1.00	5	1	4	1.00	0.56	2
3	.2592	1.91	1.00	7	1	20	1.00	1.78	3
4	.2098	2.03	1.00	17	1	64	1.00	3.17	8
5	.4362	2.54	2.09	106	40	137	27.65	1.08	4
6	.2208	2.33	1.51	161	12	568	6.79	2.71	9
7	.0932	2.13	1.66	204	35	1,983	5.89	13.89	38
8	.0391	2.00	1.00	257	1	6,304	1.00	27.02	67
9	.1667	2.45	1.60	3,283	72	16,400	48.89	13.41	52
10	.0299	2.11	1.62	1,770	130	57,279	62.67	55.38	163
11	.0224	2.12	1.89	3,972	1122	173,175	593.34	99.23	297
12	.0164	2.13	1.40	8,729	60	522,712	12.56	88.45	222
13	.0076	2.06	1.81	12,117	2366	1,582,206	2,228.50	676.85	1,504

TABLE 16. The map $x_0 + x_1x_2$ on the 3-shift: still degree 1, left permutative, not right closing.

k	1	2	3	4	5	6	7	8	9	10	11	12	13
1	1.00	1.00	2.00	2.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00
2	0.00	0.00	0.00	1.41	1.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	1.81	1.44	1.81	1.81	0.00	1.44	1.44	1.81	1.81	1.44	1.44	0.00	0.00
4	1.41	0.00	0.00	1.86	0.00	1.41	1.68	0.00	0.00	0.00	1.68	1.68	1.41
5	1.90	1.82	1.90	1.82	1.71	1.97	1.71	1.97	1.90	1.37	1.71	1.71	1.82
6	1.61	0.00	1.51	1.69	0.00	1.69	1.76	1.86	1.81	1.61	1.51	1.61	0.00
7	1.77	1.80	1.80	1.77	1.74	1.88	1.90	1.99	1.45	1.85	1.90	1.70	1.92
8	1.62	1.70	1.75	1.70	1.48	1.72	1.81	1.90	1.80	0.00	1.78	1.72	1.70
9	1.89	1.76	1.74	1.90	1.90	1.91	1.91	1.99	1.79	1.58	1.76	1.77	1.80
10	1.80	1.58	1.25	1.83	1.78	1.81	1.91	1.95	1.67	0.00	1.76	1.68	1.90
11	1.66	1.69	1.75	1.73	1.78	1.85	1.92	1.99	1.67	1.66	1.80	1.51	1.48
12	1.71	1.75	1.78	1.84	1.68	1.85	1.84	1.97	1.77	1.70	1.68	1.73	1.69
13	1.73	1.72	1.79	1.73	1.72	1.87	1.93	2.00	1.72	1.69	1.80	1.75	1.84
14	1.66	1.61	1.73	1.73	1.63	1.81	1.91	1.98	1.57	1.54	1.69	1.68	1.74
15	1.66	1.71	1.60	1.73	1.74	1.85	1.92	1.99	1.78	1.67	1.70	1.68	1.76
16	1.68	1.64	1.74	1.71	1.72	1.79	1.93	1.98	1.54	1.65	1.67	1.49	1.75
17	1.69	1.53	1.73	1.68	1.72	1.84	1.91	2.00	1.73	1.59	1.73	1.65	1.69
18	1.68	1.46	1.69	1.68	1.71	1.83	1.91	1.99	1.65	1.59	1.57	1.65	1.67
19	1.67	1.61	1.68	1.67	1.69	1.81	1.93	2.00	1.71	1.63	1.66	1.71	1.73

TABLE 17. $\nu_k^o(\cdot, S_2)$ for the span five maps 1-13 of Table 2.

k	14	15	16	17	18	19	20	21	22	23	24	25	26
1	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
2	0.00	1.41	1.41	0.00	1.41	1.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	1.81	1.44	0.00	1.44	1.44	1.44	0.00	0.00	0.00	0.00	1.81	1.81	1.81
4	0.00	1.68	1.86	0.00	1.41	1.68	0.00	1.41	0.00	1.68	0.00	0.00	0.00
5	1.82	1.82	1.82	1.71	1.71	1.90	1.71	1.58	1.71	1.58	1.97	1.97	1.97
6	1.81	1.86	1.76	1.61	1.51	1.51	0.00	1.69	1.81	1.81	1.69	1.69	1.69
7	1.80	1.85	1.92	1.60	1.70	1.83	1.83	1.54	1.70	1.54	1.99	1.99	1.99
8	1.41	1.83	1.70	1.72	1.83	1.86	1.68	1.68	1.54	1.68	1.81	1.81	1.86
9	1.84	1.84	1.76	1.76	1.71	1.78	1.78	1.74	1.84	1.87	1.99	1.99	1.99
10	1.86	1.85	1.83	1.65	1.76	1.82	1.79	1.52	1.67	1.72	1.90	1.90	1.93
11	1.57	1.78	1.81	1.88	1.81	1.75	1.77	1.64	1.79	1.54	1.99	1.99	1.99
12	1.57	1.83	1.84	1.66	1.64	1.80	1.62	1.73	1.73	1.67	1.94	1.94	1.94
13	1.71	1.71	1.68	1.73	1.72	1.85	1.61	1.78	1.79	1.65	2.00	2.00	2.00
14	1.76	1.73	1.72	1.67	1.66	1.80	1.57	1.73	1.75	1.60	1.95	1.95	1.96
15	1.71	1.76	1.79	1.72	1.77	1.78	1.72	1.65	1.66	1.52	1.99	1.99	1.99
16	1.71	1.71	1.71	1.73	1.69	1.78	1.71	1.51	1.65	1.55	1.97	1.97	1.97
17	1.74	1.66	1.63	1.64	1.71	1.78	1.64	1.65	1.67	1.68	2.00	2.00	2.00
18	1.71	1.68	1.68	1.67	1.62	1.73	1.65	1.61	1.52	1.62	1.98	1.98	1.98
19	1.68	1.69	1.70	1.70	1.63	1.75	1.70	1.66	1.65	1.60	2.00	2.00	2.00

TABLE 18. $\nu_k^o(\cdot, S_2)$ for the span five maps 14-26 of Table 2.

k	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	2.00	2.00	1.00	1.00	2.00	2.00	2.00	1.00	2.00	1.00	1.00	2.00	2.00	1.00	1.00	2.00
2	0.00	1.41	0.00	1.41	1.41	1.41	1.41	1.41	0.00	0.00	0.00	1.41	0.00	1.41	1.41	1.41
3	1.81	1.81	1.81	1.44	0.00	1.81	1.81	1.44	1.81	1.44	1.81	0.00	1.81	1.44	1.44	1.81
4	1.68	1.86	1.68	1.41	1.41	1.86	1.86	1.41	1.68	1.41	1.68	1.41	1.68	0.00	1.68	1.86
5	1.97	1.97	1.82	1.90	1.58	1.97	1.97	1.90	1.97	1.82	1.82	1.58	1.97	1.58	1.90	1.97
6	1.90	1.94	1.81	1.61	1.76	1.94	1.94	1.61	1.90	1.34	1.81	1.76	1.90	1.86	1.81	1.94
7	1.99	1.99	1.83	1.70	1.80	1.99	1.99	1.70	1.99	1.74	1.83	1.80	1.99	1.83	1.70	1.99
8	1.95	1.98	1.81	1.48	1.75	1.98	1.98	1.48	1.95	1.78	1.81	1.75	1.95	1.54	1.88	1.98
9	1.99	1.99	1.86	1.68	1.82	1.99	1.99	1.68	1.99	1.82	1.86	1.82	1.99	1.73	1.86	1.99
10	1.98	1.99	1.76	1.70	1.82	1.99	1.99	1.70	1.98	1.75	1.76	1.82	1.98	1.56	1.65	1.99
11	1.99	1.99	1.70	1.65	1.68	1.99	1.99	1.65	1.99	1.89	1.70	1.68	1.99	1.60	1.90	1.99
12	1.99	1.99	1.51	1.65	1.61	1.99	1.99	1.65	1.99	1.65	1.51	1.61	1.99	1.34	1.75	1.99
13	2.00	2.00	1.70	1.57	1.63	2.00	2.00	1.57	2.00	1.73	1.70	1.63	2.00	1.54	1.68	2.00
14	1.99	1.99	1.74	1.65	1.70	1.99	1.99	1.65	1.99	1.81	1.74	1.70	1.99	1.66	1.74	1.99
15	1.99	1.99	1.71	1.68	1.70	1.99	1.99	1.68	1.99	1.73	1.71	1.70	1.99	1.47	1.77	1.99
16	1.99	1.99	1.74	1.67	1.70	1.99	1.99	1.67	1.99	1.76	1.74	1.70	1.99	1.59	1.67	1.99
17	2.00	2.00	1.67	1.53	1.71	2.00	2.00	1.53	2.00	1.75	1.67	1.71	2.00	1.59	1.61	2.00
18	1.99	1.99	1.71	1.56	1.65	1.99	1.99	1.56	1.99	1.71	1.71	1.65	1.99	1.52	1.63	1.99
19	2.00	2.00	1.73	1.54	1.72	2.00	2.00	1.54	2.00	1.77	1.73	1.72	2.00	1.57	1.69	2.00

TABLE 19. $\nu^o_k(\cdot, S_2)$ for the span four maps 1-16 of Table 1.

k	$F1$	$F2$	$F3$	$F4$	$F5$	$F6$	$F7$	$F8$	$F9$	$F10$	$F11$	$F12$	$F13$	$F14$	$F15$	$F16$
1	2.00	2.00	1.00	1.00	2.00	2.00	2.00	1.00	2.00	1.00	1.00	2.00	2.00	1.00	1.00	2.00
2	0.00	1.41	0.00	1.41	1.41	1.41	1.41	1.41	0.00	0.00	0.00	1.41	0.00	1.41	1.41	1.41
3	1.81	1.81	1.81	1.44	1.44	1.81	1.81	1.44	1.81	0.00	1.81	1.44	1.81	1.44	0.00	1.81
4	1.41	1.86	1.68	0.00	1.41	1.86	1.86	0.00	1.41	0.00	1.68	1.41	1.41	1.41	1.68	1.86
5	1.97	1.97	1.82	1.58	1.71	1.97	1.97	1.58	1.97	1.71	1.82	1.71	1.97	1.90	1.90	1.97
6	1.86	1.94	1.69	1.86	1.69	1.94	1.94	1.86	1.86	1.69	1.69	1.69	1.86	1.61	0.00	1.94
7	1.99	1.99	1.66	1.83	1.70	1.99	1.99	1.83	1.99	1.60	1.66	1.70	1.99	1.70	1.92	1.99
8	1.93	1.98	1.81	1.54	1.80	1.98	1.98	1.54	1.93	1.41	1.81	1.80	1.93	1.48	1.75	1.98
9	1.99	1.99	1.71	1.73	1.62	1.99	1.99	1.73	1.99	1.77	1.71	1.62	1.99	1.68	1.68	1.99
10	1.95	1.99	1.70	1.56	1.44	1.99	1.99	1.56	1.95	1.79	1.70	1.44	1.95	1.70	0.00	1.99
11	1.99	1.99	1.74	1.60	1.46	1.99	1.99	1.60	1.99	1.59	1.74	1.46	1.99	1.65	1.65	1.99
12	1.97	1.99	1.65	1.34	1.55	1.99	1.99	1.34	1.97	1.63	1.65	1.55	1.97	1.65	1.69	1.99
13	2.00	2.00	1.75	1.54	1.65	2.00	2.00	1.54	2.00	1.53	1.75	1.65	2.00	1.57	1.67	2.00
14	1.98	1.99	1.74	1.66	1.53	1.99	1.99	1.66	1.98	1.72	1.74	1.53	1.98	1.65	1.51	1.99
15	1.99	1.99	1.74	1.47	1.64	1.99	1.99	1.47	1.99	1.68	1.74	1.64	1.99	1.68	1.74	1.99
16	1.99	1.99	1.66	1.59	1.55	1.99	1.99	1.59	1.99	1.66	1.66	1.55	1.99	1.67	1.68	1.99
17	2.00	2.00	1.67	1.59	1.57	2.00	2.00	1.59	2.00	1.74	1.67	1.57	2.00	1.53	1.69	2.00
18	1.99	1.99	1.63	1.52	1.61	1.99	1.99	1.52	1.99	1.70	1.63	1.61	1.99	1.56	1.61	1.99
19	2.00	2.00	1.69	1.57	1.51	2.00	2.00	1.57	2.00	1.54	1.69	1.51	2.00	1.54	1.63	2.00

TABLE 20. $\nu^o_k(\cdot, S_2)$ for the span 4 maps 1-16 of Table 1, postcomposed with the flip map $F = x_0 + 1$.

k	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
1	1.00	1.00	2.00	2.00	1.00	2.00	1.00	1.00	2.00	2.00	1.00	1.00	2.00	2.00	1.00	1.00
2	0.00	1.41	0.00	1.41	1.41	0.00	0.00	1.41	1.41	0.00	0.00	1.41	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	1.44	0.00	1.81	0.00	0.00	1.81	1.44	1.44	0.00	0.00	0.00	1.81
4	0.00	1.68	1.68	1.41	1.68	1.68	1.68	1.68	1.41	1.68	1.41	0.00	1.68	1.68	0.00	1.68
5	1.71	1.90	1.71	1.58	1.90	1.71	1.82	1.90	1.58	1.97	1.82	1.58	1.71	1.71	1.71	1.82
6	1.69	0.00	1.34	1.76	1.81	1.34	1.69	0.00	1.76	1.90	1.34	1.86	1.34	1.34	1.69	1.69
7	1.60	1.92	1.54	1.80	1.70	1.54	1.66	1.92	1.80	1.99	1.74	1.83	1.54	1.54	1.60	1.66
8	1.41	1.75	1.41	1.75	1.88	1.41	1.81	1.75	1.75	1.95	1.78	1.54	1.41	1.41	1.41	1.81
9	1.77	1.68	1.74	1.82	1.86	1.74	1.71	1.68	1.82	1.99	1.82	1.73	1.74	1.74	1.77	1.71
10	1.79	0.00	1.72	1.82	1.65	1.72	1.70	0.00	1.82	1.98	1.75	1.56	1.72	1.72	1.79	1.70
11	1.59	1.65	1.41	1.68	1.90	1.41	1.74	1.65	1.68	1.99	1.89	1.60	1.41	1.41	1.59	1.74
12	1.63	1.69	1.59	1.61	1.75	1.59	1.65	1.69	1.61	1.99	1.65	1.34	1.59	1.59	1.63	1.65
13	1.53	1.67	1.66	1.63	1.68	1.66	1.75	1.67	1.63	2.00	1.73	1.54	1.66	1.66	1.53	1.75
14	1.72	1.51	1.44	1.70	1.74	1.44	1.74	1.51	1.70	1.99	1.81	1.66	1.44	1.44	1.72	1.74
15	1.68	1.74	1.58	1.70	1.77	1.58	1.74	1.74	1.70	1.99	1.73	1.47	1.58	1.58	1.68	1.74
16	1.66	1.68	1.64	1.70	1.67	1.64	1.66	1.68	1.70	1.99	1.76	1.59	1.64	1.64	1.66	1.66
17	1.74	1.69	1.59	1.71	1.61	1.59	1.67	1.69	1.71	2.00	1.75	1.59	1.59	1.59	1.74	1.67
18	1.70	1.61	1.46	1.65	1.63	1.46	1.63	1.61	1.65	1.99	1.71	1.52	1.46	1.46	1.70	1.63
19	1.54	1.63	1.60	1.72	1.69	1.60	1.69	1.63	1.72	2.00	1.77	1.57	1.60	1.60	1.54	1.69

TABLE 21. $\nu_k^o(\cdot, S_2)$ for the span 4 onto maps 17-32 of Table 1.

k	$F17$	$F18$	$F19$	$F20$	$F21$	$F22$	$F23$	$F24$	$F25$	$F26$	$F27$	$F28$	$F29$	$F30$	$F31$	$F32$
1	1.00	1.00	2.00	2.00	1.00	2.00	1.00	1.00	2.00	2.00	1.00	1.00	2.00	2.00	1.00	1.00
2	0.00	1.41	0.00	1.41	1.41	0.00	0.00	1.41	1.41	0.00	0.00	1.41	0.00	0.00	0.00	0.00
3	1.44	1.44	1.44	1.44	0.00	1.44	1.81	1.44	1.44	1.81	0.00	1.44	1.44	1.44	1.44	1.81
4	1.41	1.68	1.68	1.41	1.68	1.68	1.68	1.68	1.41	1.41	0.00	1.41	1.68	1.68	1.41	1.68
5	1.82	1.90	1.58	1.71	1.90	1.58	1.82	1.90	1.71	1.97	1.71	1.90	1.58	1.58	1.82	1.82
6	1.34	1.81	1.61	1.69	0.00	1.61	1.81	1.81	1.69	1.86	1.69	1.61	1.61	1.61	1.34	1.81
7	1.74	1.70	1.70	1.70	1.92	1.70	1.83	1.70	1.70	1.99	1.60	1.70	1.70	1.70	1.74	1.83
8	1.78	1.88	1.65	1.80	1.75	1.65	1.81	1.88	1.80	1.93	1.41	1.48	1.65	1.65	1.78	1.81
9	1.82	1.86	1.60	1.62	1.68	1.60	1.86	1.86	1.62	1.99	1.77	1.68	1.60	1.60	1.82	1.86
10	1.75	1.65	1.61	1.44	0.00	1.61	1.76	1.65	1.44	1.95	1.79	1.70	1.61	1.61	1.75	1.76
11	1.89	1.90	1.69	1.46	1.65	1.69	1.70	1.90	1.46	1.99	1.59	1.65	1.69	1.69	1.89	1.70
12	1.65	1.75	1.49	1.55	1.69	1.49	1.51	1.75	1.55	1.97	1.63	1.65	1.49	1.49	1.65	1.51
13	1.73	1.68	1.66	1.65	1.67	1.66	1.70	1.68	1.65	2.00	1.53	1.57	1.66	1.66	1.73	1.70
14	1.81	1.74	1.59	1.53	1.51	1.59	1.74	1.74	1.53	1.98	1.72	1.65	1.59	1.59	1.81	1.74
15	1.73	1.77	1.53	1.64	1.74	1.53	1.71	1.77	1.64	1.99	1.68	1.68	1.53	1.53	1.73	1.71
16	1.76	1.67	1.69	1.55	1.68	1.69	1.74	1.67	1.55	1.99	1.66	1.67	1.69	1.69	1.76	1.74
17	1.75	1.61	1.63	1.57	1.69	1.63	1.67	1.61	1.57	2.00	1.74	1.53	1.63	1.63	1.75	1.67
18	1.71	1.63	1.55	1.61	1.61	1.55	1.71	1.63	1.61	1.99	1.70	1.56	1.55	1.55	1.71	1.71
19	1.77	1.69	1.65	1.51	1.63	1.65	1.73	1.69	1.51	2.00	1.54	1.54	1.65	1.65	1.77	1.73

TABLE 22. $\nu_k^o(\cdot, S_2)$ for the span 4 maps 17-32 of Table 1, post-composed with the flip map $F = x_0 + 1$.

k	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1.00	1.00	2.00	2.00	1.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	1.00	2.00	2.00	1.00
2	1.41	0.00	1.41	0.00	0.00	0.00	0.00	0.00	1.41	1.41	1.41	0.00	1.41	0.00	0.00	0.00
3	1.44	0.00	1.44	0.00	0.00	1.44	1.44	1.81	0.00	0.00	1.44	1.81	0.00	1.81	1.44	1.44
4	0.00	1.41	1.41	1.68	1.68	0.00	1.86	1.41	0.00	0.00	1.41	1.41	1.41	1.41	1.68	1.86
5	1.37	1.37	1.58	1.71	1.82	1.90	1.37	1.71	1.90	1.71	1.58	1.82	1.37	1.71	1.37	1.90
6	1.51	1.51	1.51	1.34	1.51	1.34	1.34	0.00	0.00	1.51	0.00	1.61	1.34	0.00	1.34	0.00
7	1.74	1.88	1.54	1.60	1.66	1.60	1.77	1.54	1.70	1.66	0.00	1.74	1.80	1.54	1.60	1.32
8	1.48	1.58	1.65	1.62	1.41	1.65	0.00	1.62	1.62	1.58	1.68	1.54	0.00	1.62	1.68	0.00
9	1.62	1.78	1.74	1.58	1.74	1.58	1.68	0.00	1.48	1.48	1.44	1.73	1.44	0.00	1.64	1.60
10	1.34	1.62	1.40	1.54	1.66	1.58	1.52	1.68	1.61	1.62	1.34	1.47	1.34	1.68	1.34	1.50
11	1.58	1.69	1.43	1.64	1.51	1.76	1.67	1.60	1.55	1.53	1.60	1.66	1.58	1.60	1.57	1.67
12	1.54	1.44	1.60	1.51	1.63	1.74	1.46	1.56	0.00	1.54	1.54	1.44	1.52	1.56	1.38	1.38
13	1.61	1.66	1.62	1.65	1.56	1.77	1.59	1.63	1.32	1.66	1.61	1.47	1.57	1.63	1.68	1.60
14	1.64	1.62	1.52	1.57	1.53	1.80	1.55	1.40	1.55	1.41	1.60	1.55	1.48	1.40	1.55	1.65
15	1.60	1.74	1.60	1.38	1.62	1.73	1.58	1.62	1.52	1.52	1.50	1.49	1.66	1.62	1.66	1.61
16	1.48	1.73	1.47	1.53	1.50	1.60	1.51	1.59	1.49	1.44	1.29	1.58	1.57	1.59	1.49	1.57
17	1.46	1.69	1.58	1.59	1.62	1.64	1.61	1.47	1.60	1.58	1.56	1.55	1.46	1.47	1.63	1.36
18	1.56	1.72	1.55	1.49	1.55	1.52	1.46	1.50	1.51	1.52	1.54	1.45	1.56	1.50	1.52	1.45
19	1.56	1.66	1.56	1.55	1.52	1.64	1.45	1.60	1.47	1.51	1.55	1.56	1.52	1.60	1.59	1.48

TABLE 23. ν_k^o for 16 left permutative span 5 maps.
Let $p_n(x[0,4])$ denote the polynomial rule for the map n in Table 23 and let $q_n(x[0,3])$ denote the polynomial rule for the span 4 map n in Table 1. Then p_n is defined by $p_n(x[0,4]) = x_0 + q_n(x[1,4])$. The purpose of Table 23 is to allow a rough comparison of a sample of maps which are linear in an end variable to maps which are not (Table 23 vs. Table 1). We see no particular difference.

Table 24 gives complete cycle data for the c.a. B through shift period $k = 22$. For each k, all B-periods p of points from $P_k(S_2)$ are listed. The multiplicities given are the number μ_{orb} of B-cycles in $P_k(S_2)$ with the given size p; the number μ_{per} of points in all these cycles; and the number μ_{ev} of points in $P_k(S_2)$ with eventual period p.

k	p	μ_{orb}	μ_{per}	μ_{ev}	k	p	μ_{orb}	μ_{per}	μ_{ev}
1	1	1	1	2	16	1	2207	2207	2208
2	1	3	3	4		4	1	4	6192
3	1	4	4	8		120	1	120	23520
4	1	7	7	8		2688	2	5376	33616
	4	1	4	8	17	1	3571	3571	3572
5	1	11	11	12		1020	1	1020	1530
	15	1	15	20		2533	1	2533	119357
6	1	18	18	64		3230	1	3230	6613
7	1	29	29	30	18	1	5778	5778	5824
	49	1	49	98		9	1	9	9
8	1	47	47	48		38	36	1368	3834
	4	1	4	48		54	3	162	4815
	120	1	120	160		108	6	648	648
9	1	76	76	80		216	6	1296	7740
	9	1	9	9		296	36	10656	10656
	54	3	162	423		324	2	648	228618
10	1	123	123	124	19	1	9349	9349	9350
	15	1	15	40		76	1	76	76
	410	1	410	860		133	2	266	14421
11	1	199	199	200		171	1	171	171
	176	1	176	1848		646	1	646	2755
12	1	322	322	3692		4161	1	4161	25156
	4	1	4	8		4180	1	4180	12122
	56	6	336	336		13471	1	13471	460237
	60	1	60	60	20	1	15127	15127	15128
13	1	521	521	522		4	1	4	8
	10	13	130	650		15	1	15	1000
	26	1	26	117		132	5	660	1560
	143	1	143	3900		140	4	560	560
	403	1	403	845		410	1	410	9420
	416	1	416	2158		5240	2	10480	306300
14	1	843	843	844		20500	1	20500	197240
	49	1	49	602		21240	1	21240	517360
	161	2	322	2212	21	1	24476	24476	24480
	448	2	896	7686		14	3	42	42
	490	1	490	882		21	2	42	42
	882	1	882	4158		49	1	49	98
15	1	1364	1364	1368		57	21	1197	1197
	15	1	15	20		266	3	798	1949766
	180	1	180	180		2618	6	15708	15708
	399	5	1995	8625		4886	3	14658	14658
	450	3	1350	15705		11865	1	11865	91161
	530	3	1590	1590	22	1	39603	39603	39604
	1095	1	1095	5280		132	2	264	264
						176	1	176	910272
						660	1	660	1100
						1067	2	2134	112948
						14344	1	14344	924814
						32428	1	32428	2205302

Table 24. Table for $B = x_0 + x_1x_2$ constructed from FPeriod: complete data for shift-periods through $k = 22$. See the adjacent text for definitions of column items.

4. FProbPeriod Tables

For a given map f, a given positive integer N and a given positive integer m and given set of positive integers k, the program FProbPeriod will for each k randomly sample m blocks of length k on alphabet $\{0, 1, \dots N-1\}$, and compute the period and preperiod under f of the point x in $P_k(S_N)$ such that $x[0, k-1]$ is the chosen block. Here, by definition the period p of x is the eventual period: the smallest $j > 0$ such that for some $k \geq 0$, $f^k(x) = f^{k+j}(x)$. So, p is the length of the f-cycle into which x is mapped by some f^k, $k \geq 0$. The preperiod of x is the smallest nonnegative k such that $f^k(x)$ is f-periodic, that is $f^k(x) = f^{k+p}(x)$. For a given sample of m points from $P_k(S_2)$, the multiplicity μ of p is the number of times the sampled point has the (eventual) period p. In the following tables, we restrict to cellular automata f on $N = 2$ symbols.

k	p	μ	k	p	μ	k	p	μ
1	1	10	15	1	1	27	3402	4
2	1	10		399	3		12096	3
3	1	10		450	3		218835	2
4	1	4		530	1		242352	1
	4	6		1095	2	28	882	1
5	1	4	16	120	7		32144	2
	15	6		2688	3		57036	7
6	1	10	17	2533	9	29	98223	2
7	1	4		3230	1		193256	1
	49	6	18	296	1		340286	3
8	1	2		324	9		504252	4
	4	2	19	1	1	30	17580	1
	120	6		13471	9		161721	8
9	1	2	20	5240	3		212670	1
	9	1		20500	1	31	2228621	10
	54	7		21240	6	32	473792	10
10	410	10	21	266	10	33	74439	7
11	1	1	22	176	2		313984	3
	176	9		14344	4	34	2533	10
12	1	8		32428	4	35	1635074	6
	56	2	23	1	2		4485250	1
13	1	1		622	1		14840595	3
	143	3		9108	7	36	152	2
	403	2	24	1	2		324	2
	416	4		12432	4		22974	1
14	49	1		20256	4		1700772	1
	448	7	25	61830	4		4191696	4
	882	2		104425	6	37	1365226	1
			26	143	1		7065594	5
				6994	9		39209196	4

Table 25. FProbPeriod output for the c.a. $B = x_0 + x_1 x_2$ on two symbols, with sample size $m = 10$.

k	p_{30}	μ_{30}	p_{10}	μ_{10}	k	p_{30}	μ_{30}	p_{10}	μ_{10}	k	p_{30}	μ_{30}	p_{10}	μ_{10}
1	1	30	1	10	15	1	4			23	1	1		
2	1	30	1	10		180	1				622	2	622	1
3	1	30	1	10		399	10	399	6		9108	27	9108	9
4	1	13	1	5		450	8	450	1	24	1	4		
	4	17	4	5		530	2				184	1		
5	1	12	1	4		1095	5	1095	3		2330	1	2330	1
	15	18	15	6	16	1	2				7440	6	7440	1
6	1	30	1	10		4	1				12432	10	12432	5
7	1	9	1	3		120	12	120	3		20256	8	20256	3
	49	21	49	7		2688	15	2688	7	25	4325	1		
8	1	2	1	3	17	1	2				13015	1		
	4	6	4	2		2533	26	2533	9		61830	14	61830	4
	120	22	120	5		3230	2	3230	1		73175	4	73175	1
9	1	3			18	1	1	54	1		104425	10	104425	5
	54	27	54	10		216	2			26	6994	30	6994	10
10	1	2				296	5			27	3402	9	3402	3
	15	3	1	2		324	22	324	9		12096	9	12096	3
	410	25	410	8	19	4161	1	1	1		218835	10	218835	1
11	1	9	1	2		4180	2	4180	1		242352	2	242352	3
	176	21	176	8		13471	27	13471	8	28	448	5		
12	1	27	1	10	20	15	1				882	5	882	4
	56	3				5240	5	5240	5		32144	6	32144	1
13	1	1				20500	7	20500	1		57036	14	57036	5
	10	2	10	1		21240	17	21240	4	29	98223	4		
	143	13	143	2	21	1	1				193256	7		
	403	5	403	1		266	26	266	10		340286	13	340286	3
	416	9	416	6		11865	3				504252	6	504252	7
14	49	2			22	176	6	176	4	30	1	1		
	161	4	161	3		1067	1				450	5		
	448	11	448	4		14344	9				1800	1	1800	1
	490	1	490	1		32428	14	32428	6		127995	2		
	882	12	882	2							132720	1		
											161721	19	161721	7
											212670	1	212670	2

Table 26. Table for $B = x_0 + x_1x_2$ constructed as for Table 29, for sample sizes 10 and 30 for FProbPeriod. The longest orbit length p found is the same for both sample sizes, except for $k = 12$ and $k = 21$. Exact cycle data for the map B, through shift period $k = 22$, is given in Table 24. Note that for $k \leq 22$, only at $k = 12$ did the size-30 probabilistic sample miss the largest B period.

map	A	B	C	E	G	H	J	K
k	$L^{1/k}$	$L^{1/k}$	$L^{1/k}$	$L^{1/k}$	$L^{1/k}$	$L^{1/k}$	$L^{1/k}$	$L^{1/k}$
1	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
3	1.44	1.00	1.44	1.00	1.00	1.44	1.44	1.00
4	1.00	1.41	1.18	1.41	1.00	1.00	1.41	1.00
5	1.71	1.71	1.71	1.58	1.37	1.37	1.58	1.37
6	1.34	1.00	1.20	1.00	1.51	1.20	1.61	1.61
7	1.32	1.74	1.66	1.54	1.32	1.60	1.32	1.60
8	1.00	1.81	1.63	1.18	1.00	1.29	1.18	1.62
9	1.58	1.55	1.27	1.22	1.48	1.29	1.58	1.58
10	1.40	1.82	1.49	1.46	1.00	1.31	1.25	1.31
11	1.69	1.60	1.57	1.55	1.53	1.43	1.46	1.57
12	1.23	1.39	1.16	1.00	1.30	1.34	1.30	1.36
13	1.67	1.59	1.63	1.49	1.53	1.48	1.53	1.66
14	1.20	1.62	1.38	1.35	1.37	1.38	1.39	1.26
15	1.19	1.59	1.50	1.39	1.40	1.42	1.44	1.48
16	1.00	1.63	1.50	1.47	1.40	1.13	1.54	1.63
17	1.38	1.60	1.68	1.55	1.45	1.52	1.52	1.55
18	1.30	1.37	1.58	1.41	1.33	1.40	1.53	1.59
19	1.62	1.64	1.60	1.45	1.50	1.51	1.47	1.49
20	1.22	1.64	1.54	1.50	1.32	1.18	1.12	1.56
21	1.21	1.30	1.48	1.36	1.15	1.29	1.48	1.52
22	1.34	1.60	1.51	1.46	1.23	1.49	1.40	1.35
23	1.39	1.48	1.57	1.53	1.44	1.55	1.53	1.58
24	1.14	1.51	1.54	1.45	1.39	1.14	1.46	1.46
25	1.50	1.58	1.48	1.50	1.23	1.53	1.44	1.56
26	1.32	1.40	1.56	1.46	1.33	1.44	1.43	1.29
27	1.42	1.58	1.54	1.50	1.43	1.46	1.28	1.58
28	1.12	1.47	1.43	1.47	1.30	1.31	1.48	1.44
29	1.56	1.57	1.54	1.49	1.31	1.35	1.51	1.63
30	1.12	1.50	1.59	1.44	1.33	1.37	1.45	1.64
31	1.11	1.60	1.59	1.41	1.47	1.32	1.49	1.63
32	1.00	1.50	1.60	1.26	1.31	1.46	1.48	1.54
33	1.23	1.46	1.63	1.44	1.37	1.43	1.49	1.54
34	1.20	1.25	1.45	1.48	1.35	1.48	1.48	1.56
35	1.26	1.60	1.44	1.48	1.42	1.43	1.48	1.59
36	1.16	1.52	1.50	1.41	1.27	1.29	1.38	1.46
37	1.49	1.60	1.55	1.46	1.30	1.44	1.45	1.57

TABLE 27. This table is based at each k on a random sample of 10 blocks of length k on two symbols. L is the maximum period from the sample.
$A = x_0 + x_1$, linear, and $B = x_0 + x_1x_2$, permutative.
$C = B \circ B_{rev}$, nonclosing, where $B_{rev} = x_0x_1 + x_2$.
$G = x_{-1} + x_0x_1 + x_2$, bipermutative, nonlinear.
$E = B \circ A$, degree 2, left closing, not right closing.
$J = A \circ U$, where $U = x_0 + x_{-2}(1 + x_{-1})x_1x_2$ is invertible.
$H = A \circ A \circ U$, and $K = B \circ U$.

map	A	B	C	E	G	H	J	K
k	$M^{1/k}$	$M^{1/k}$	$M^{1/k}$	$M^{1/k}$	$M^{1/k}$	$M^{1/k}$	$M^{1/k}$	$M^{1/k}$
1	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
2	1.41	1.00	1.00	1.00	1.00	1.00	1.41	1.00
3	1.00	1.25	1.00	1.25	1.25	1.00	1.00	1.25
4	1.41	1.00	1.00	1.18	1.31	1.18	1.31	1.00
5	1.00	1.00	1.00	1.00	1.31	1.24	1.14	1.00
6	1.12	1.41	1.20	1.25	1.20	1.12	1.12	1.25
7	1.00	1.21	1.16	1.10	1.34	1.16	1.32	1.25
8	1.29	1.09	1.00	1.33	1.36	1.18	1.36	1.31
9	1.00	1.25	1.25	1.27	1.19	1.24	1.24	1.24
10	1.07	1.14	1.32	1.11	1.30	1.21	1.30	1.30
11	1.00	1.44	1.23	1.26	1.28	1.25	1.25	1.42
12	1.12	1.44	1.37	1.34	1.26	1.20	1.32	1.38
13	1.00	1.34	1.27	1.32	1.21	1.25	1.23	1.41
14	1.05	1.41	1.37	1.32	1.30	1.25	1.35	1.42
15	1.00	1.39	1.37	1.30	1.26	1.34	1.32	1.41
16	1.18	1.46	1.39	1.34	1.28	1.25	1.29	1.32
17	1.00	1.47	1.34	1.33	1.28	1.26	1.26	1.41
18	1.03	1.46	1.34	1.31	1.23	1.22	1.30	1.40
19	1.00	1.44	1.34	1.32	1.25	1.34	1.32	1.42
20	1.07	1.39	1.37	1.28	1.28	1.27	1.36	1.37
21	1.00	1.46	1.41	1.36	1.33	1.35	1.33	1.48
22	1.03	1.44	1.39	1.34	1.26	1.23	1.31	1.48
23	1.00	1.47	1.40	1.33	1.29	1.34	1.31	1.44
24	1.09	1.43	1.43	1.35	1.32	1.28	1.29	1.44
25	1.00	1.44	1.41	1.33	1.30	1.27	1.30	1.47
26	1.02	1.45	1.43	1.31	1.28	1.26	1.31	1.45
27	1.00	1.45	1.43	1.33	1.31	1.37	1.37	1.45
28	1.05	1.46	1.42	1.32	1.30	1.29	1.34	1.46
29	1.00	1.42	1.41	1.31	1.31	1.33	1.32	1.44
30	1.02	1.41	1.44	1.34	1.31	1.28	1.35	1.47
31	1.00	1.44	1.43	1.38	1.30	1.36	1.34	1.45
32	1.11	1.46	1.43	1.37	1.30	1.31	1.34	1.45
33	1.00	1.46	1.42	1.35	1.27	1.34	1.33	1.46
34	1.03	1.47	1.24	1.34	1.33	1.32	1.34	1.47
35	1.00	1.45	1.56	1.37	1.31	1.34	1.37	1.46
36	1.04	1.44	1.46	1.36	1.29	1.32	1.36	1.47
37	1.01	1.47	1.46	1.35	1.32	1.34	1.35	1.46

TABLE 28. This table is based at each k on a random sample of 10 blocks of length k on two symbols. M is the maximum preperiod from the sample. The maps are the same as used in Table 27 (Remark: For $x \in P_k(S_2)$ with $k = q2^j$ with q odd, the point $A^{j+1}(x)$ must be periodic under f, so $M \leq j + 1$.)

k	p	μ	k	p	μ	k	p	μ	k	p	μ
1	1	10	12	1	10	20	3	1	30	31	1
2	1	10	13	47	6		2790	9		82531	9
3	1	10		52	4	21	573	10	31	57747	10
4	1	10	14	1	1	22	11	3	32	85	2
5	1	1		5	3		519	3		91	2
	3	9		13	3		9658	4		234649	6
6	1	5		47	2	23	1499	8	33	3452570	6
	3	5		49	1		9384	2		10357710	4
7	1	3	15	31	7	24	1	1	34	1717	7
	5	7		145	3		35160	9		10574	1
8	1	5	16	29	1	25	20475	10		999056	2
	13	5		85	9	26	441	1	35	572068	1
9	1	1	17	101	3		9401	9		2860340	1
	9	9		399	7	27	4543	5		3262280	8
10	1	1	18	1	1		19710	1	36	56	2
	3	7		455	9		113643	4		4095	1
	5	1	19	1	1	28	5	1		729537	3
	11	1		401	4		1260	9		908910	1
11	11	6		2755	3	29	277298	10		2188611	3
	143	4		7125	2				37	5881335	2
										12081277	8

TABLE 29. This table is based at each k on a random sample by FProbPeriod of 10 blocks of length k on symbols $0, 1$. It is a table of the resulting periods p with multiplicities μ for the nonclosing map $C = B \circ B_{rev}$ where $B = x_0 + x_1x_2$ and $B_{rev} = x_0x_1 + x_2$. Here, a sampled block $x[0, k-1]$ determines a point x of period k, and the period p is by definition the eventual period of x under iteration by C. The multiplicity μ for a given period is the number of samples for which x has that period.

k	p	μ	k	p	μ	k	p	μ	k	p	μ	k	p	μ
1	1	1	11	11	7	19	2755	3	27	113643	6	34	1717	10
2	1	1		143	3		7125	5		122661	4	35	3262280	8
3	1	7	12	1	9		7619	2	28	35	2		6886355	2
	3	3		6	1	20	1395	9		180	5	36	56	2
4	1	6	13	13	2		5780	1		1260	2		504	2
	2	4		52	5	21	4011	10		26124	1		729537	3
5	1	2		611	3	22	11	1	29	277298	10		2188611	3
	5	3	14	7	2		878	5	30	5205	1	37	3768043	1
	15	5		35	2		5709	2		137190	1		5881335	2
6	1	7		91	6		9658	2		1237965	8		12081277	7
	3	3	15	87	2	23	9384	2	31	457777	1			
7	7	2		465	8		34477	8		1790157	9			
	35	8	16	680	7	24	1	2	32	680	1			
8	1	1		728	3		11720	5		728	3			
	4	2	17	1717	5		35160	3		267824	2			
	52	7		6783	5	25	4095	8		3754384	4			
9	1	1	18	9	1		20475	2	33	3452570	5			
	9	9		56	1	26	52	2		10357710	5			
10	15	7		4095	8		122213	8						
	55	3												

TABLE 30. This table is constructed just as Table 29 was, except for the following: the data is for the map D which is the map C composed with $(S_2)^{-2}$, i.e., D is the composition of $x_0 + x_1 x_2$ with $x_{-2}x{-}1 + x_0$.

k	p	μ_{30}	μ_{10}	k	p	μ_{30}	μ_{10}	k	p	μ_{30}	μ_{10}
1	1	30	10	17	255	30	10	36	252	30	10
2	1	30	10	18	126	30	10	37	3233097	30	10
3	1	7	3	19	9709	30	10	38	19418	30	10
	3	23	7	20	30	1	1	39	4095	30	10
4	1	30	10		60	29	9	40	120	30	10
5	15	30	10	21	63	30	10	41	41943	30	10
6	1	3	0	22	682	30	10	42	126	30	10
	3	9	3	23	2047	30	10	43	5461	30	10
	6	18	7	24	24	30	10	44	1364	30	10
7	7	30	1	25	25575	30	10	45	4095	30	10
8	1	30	9	26	1638	30	10	46	4094	30	10
9	63	30	10	27	13797	30	10	47	8388607	30	10
10	15	1	10	28	28	30	10	48	48	30	10
	30	29	10	29	475107	30	10	49	2097151	30	10
11	341	30	10	30	30	30	10				
12	12	30	10	31	31	30	10				
13	819	30	10	32	1	30	10				
14	14	30	10	33	1023	30	10				
15	15	30	10	34	510	30	10				
16	1	30	10	35	4095	30	10				

TABLE 31. Table for $A = x_0 + x_1$ constructed as for Table 29, for sample sizes 10 and 30 for FProbPeriod. Both sample sizes work well for this linear map.

k	Pre.	k	Pre.	k	Pre.	k	Pre.	k	Pre.	k	Pre.
18	0	21	216	24	394	27	2669	30	7988	33	100664
	45		232		1032		3329		8537		108279
	170		254		1627		5641		10545		146726
	226		578		1834		9244		12479		149017
	293		595		2880		9697		13204		157529
	362		756		3145		11036		13676		161009
	506		1174		3396		11583		16210		188071
	556		1313		3905		13921		16315		196758
	751		3058		5215		14745		24373		240207
	102		3186		5517		23357		31106		270439
19	0	22	73	25	57	28	6000	31	4184	34	74577
	9		350		404		7790		11132		80674
	145		381		463		14999		16211		161429
	201		522		750		18569		30108		193935
	291		587		1361		23067		30661		209842
	301		1163		1547		25108		32789		283852
	490		1480		1671		28943		39001		360139
	547		1788		2491		31291		57399		400913
	658		3131		9415		37745		70339		452695
	105		3247		9531		47285		99228		521740
20	0	23	0	26	428	29	2702	32	8955	35	38461
	44		0		7866		9704		14007		51383
	181		671		9538		10239		19792		71921
	230		2543		11744		10783		48308		82039
	257		2791		12056		11194		49195		122647
	290		2835		13070		13472		65168		261207
	445		2900		15762		19429		65824		416233
	556		3123		16164		22208		72902		492662
	622		6492		16999		31392		126309		529999
	755		7854		17346		31856		184781		555899

TABLE 32. This table is based at each k on a random sample of 10 blocks of length k on symbols $0, 1$. It is a table of the preperiods (Pre.) seen by FProbPeriod in a sample for the map $B = x_0 + x_1 x_2$.

k	Pre.	k	Pre.	k	Pre.	k	Pre.	k	Pre.	k	Pre.
18	0	21	134	24	316	27	2016	30	1862	33	1790
	15		159		969		2046		2020		6742
	17		286		1012		2543		2159		8823
	26		305		1027		3793		6736		19037
	53		551		1541		5981		15523		19158
	98		600		1954		10577		16289		19234
	113		696		2800		13024		29590		33862
	177		748		3054		14611		32253		56053
	184		1379		3371		15185		56898		105560
	198		1550		5430		17428		59246		119315
19	15	22	7	25	1215	28	982	31	2176	34	28492
	35		14		1379		5042		3552		176703
	48		202		3305		5438		3716		184042
	49		241		3429		5783		16352		203938
	108		389		3486		5890		30302		204854
	119		436		3673		8235		53475		261574
	211		481		3865		9723		55921		282167
	264		1003		4716		10118		58664		295105
	271		1119		4719		15474		60608		374994
	275		1477		6056		19004		65768		384473
20	7	23	177	26	289	29	7160	32	2686	35	15491
	20		198		327		8519		4683		68409
	136		341		1127		9150		9120		76254
	138		366		1301		16361		9808		134451
	273		793		4720		16679		18985		168960
	280		1036		5146		21158		19562		205781
	422		1043		5817		22279		32081		223889
	474		1402		8610		24581		76390		247831
	478		2389		11410		25450		89515		351861
	614		2613		12155		25558		98677		385646

TABLE 33. This table is based at each k on a random sample of 10 blocks of length k on symbols $0, 1$. It is a table of the preperiods (Pre.) seen by FProbPeriod in a sample for the nonclosing map $C = B \circ B_{rev}$, where $B = x_0 + x_1x_2$ and $B_{rev} = x_0x_1 + x_2$.

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