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ADVANCES

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**Supporting information for article:**

**On the combinatorics of crystal structures: number of Wyckoff sequences of given length**

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Supplemental material for the manuscript  
*On the combinatorics of crystal structures:  
Number of Wyckoff sequences of given length*  
authored by  
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# 1 Mathematical background

## 1.1 MacMahon's formula

In the general case the combinations of a multiset with finite multiplicities are given by (see: Wieder, T. (2011). *Progr. Appl. Math.* **2**, 61–66; Alekseyev, M. (2018). <https://mathoverflow.net/questions/293000/the-combinations-of-a-finite-multiset>. Retrieved 26/08/2021)

$${}^n W_k = \sum_{\mathcal{J} \subseteq \{1,2,\dots,n\}} (-1)^{|\mathcal{J}|} \binom{n+k-1-|\mathcal{J}|-M_{\mathcal{J}}}{n-1}, \quad (1)$$

in which the sum runs over the powerset of the set of indices  $\{1, 2, \dots, n\}$ , namely the set of all its possible subsets  $\mathcal{J}$ , of which there are  $2^n$  in number, fulfilling the condition  $1 \leq i_1 < i_2 < \dots < i_{|\mathcal{J}|} \leq n$  on the indices. The index subsets are used in the binomial coefficient to define the sum  $M_{\mathcal{J}} = \sum_{i \in \mathcal{J}} m_i$  by extracting the multiplicities  $m_i$  from their corresponding locations in the same sized set of multiplicities  $\{m_1, m_2, \dots, m_n\}$ .

## 1.2 Algebraic derivation of equation 7

The following section shows how the summation formula given in equation 13 can be derived by algebraic transformations from the generating polynomial of equation 5. Recall that

$${}^n W_k = [x^k] (1 + x + \dots + x^k)^\nu (1 + x)^\varphi. \quad (2)$$

By the convolution rule for formal power series (see, for instance: Merlini, D., Sprugnoli, R. & Verri, M. C. (2007). *Amer. Math. Monthly* **114**, 40–57) this becomes

$${}^n W_k = \sum_{i=0}^k [x^i] (1 + x + \dots + x^k)^\nu \times [x^{k-i}] (1 + x)^\varphi. \quad (3)$$

Here, the second factor immediately results from the standard expansion according to the binomial theorem as being

$$[x^{k-i}] (1 + x)^\varphi = \binom{\varphi}{k-i}. \quad (4)$$

Note, that for the first factor

$$1 + x + \dots + x^k = \frac{1 - x^{k+1}}{1 - x}, \quad (5)$$

as the result of the expansion of a geometric series, and hence

$$(1 + x + \dots + x^k)^\nu = (1 - x^{k+1})^\nu (1 - x)^{-\nu}. \quad (6)$$

Thus, after a second application of the convolution rule, one has

$$\sum_{j=0}^i [x^j] (1 - x^{k+1})^\nu \times [x^{i-j}] (1 - x)^{-\nu}. \quad (7)$$

Now, by the binomial theorem again, one finds

$$[x^j] (1 - x^\kappa)^\nu = (-1)^{j\kappa} \binom{\nu}{j\kappa} \quad (8)$$

and

$$[x^{i-j}](1-x)^{-\nu} = (-1)^{i-j\kappa} \binom{-\nu}{i-j\kappa}. \quad (9)$$

Here,  $\kappa = k + 1$ . Note, that in the latter equation 9 one has to choose  $i - j\kappa$  instead of  $i - j$ , since one can only choose multiples of  $\kappa$  in the former equation 8, and thus has to subtract these choices in the latter equation 9, correspondingly. Thus,

$${}^nW_k = \sum_{i=0}^k \binom{\varphi}{k-i} (-1)^i \sum_{j=0}^i \binom{\nu}{j\kappa} \binom{-\nu}{i-j\kappa}. \quad (10)$$

Now, for reasons becoming clear in the following, it proves useful to split the double sum into two parts,  ${}^nW_k = S_{j=0} + S_{j>0}$ , with one part each summing over all the  $j = 0$  and  $j > 0$  terms, respectively. It then happens, that the sum for  $j = 0$  already yields the result stated in equation 13, namely as

$$\begin{aligned} S_{j=0} &= \sum_{i=0}^k (-1)^i \binom{\nu}{0} \binom{-\nu}{i} \binom{\varphi}{k-i} \\ &= \sum_{i=0}^k (-1)^i \binom{-\nu}{i} \binom{\varphi}{k-i} \\ &= \sum_{i=0}^k \binom{\nu+i-1}{i} \binom{\varphi}{k-i}, \end{aligned} \quad (11)$$

and using an identity for binomial coefficients (see Riordan, J. (1968). *Combinatorial Identities*, New York: John Wiley & Sons, page 1) used in the final algebraic transformation step. It remains to prove that  $S_{j>0} = 0$ , where

$$S_{j>0} = \sum_{i=1}^k \sum_{j=1}^i (-1)^i \binom{\nu}{j\kappa} \binom{-\nu}{i-j\kappa} \binom{\varphi}{k-i}. \quad (12)$$

Here, it suffices to show that the pair of binomial coefficients containing the index  $\kappa = k + 1$  cannot both be non-zero simultaneously, and thus each individual product term of the sum will vanish independently. For this purpose, recall that a binomial coefficient  ${}^nC_k$  is non-zero if  $n \geq k$ . Thus, the binomial coefficients under consideration are both non-zero if and only if both conditions (i)  $\nu \geq j\kappa$  and (ii)  $-\nu \geq i - j\kappa \Leftrightarrow j\kappa \geq \nu + i$  hold true. However, combining both relations results in  $\nu \geq j\kappa \geq \nu + i$ , a condition which cannot be fulfilled for both comparative subrelations simultaneously, given that  $i > 0$ .

## 2 Number of Wyckoff sequences of length $6 \leq k \leq 20$

Table 1: Number of Wyckoff sequences of length  $6 \leq k \leq 20$  for the 44 combinatorial types  $(\nu, \varphi)$  with  $\nu$  non-fixed and  $\varphi$  fixed Wyckoff positions.

type	$k = 6$	$k = 7$	$k = 8$	$k = 9$	$k = 10$	$k = 11$	$k = 12$	$k = 13$	$k = 14$	$k = 15$	$k = 16$	$k = 17$	$k = 18$	$k = 19$	$k = 20$
(1,0)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
(1,2)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
(1,4)	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
(1,8)	247	255	256	256	256	256	256	256	256	256	256	256	256	256	256
(2,0)	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
(2,2)	24	28	32	36	40	44	48	52	56	60	64	68	72	76	80
(2,4)	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304
(3,0)	28	36	45	55	66	78	91	105	120	136	153	171	190	210	231
(3,2)	85	113	145	181	221	265	313	365	421	481	545	613	685	761	841
(3,3)	146	198	258	326	402	486	578	678	786	902	1026	1158	1298	1446	1602
(3,4)	248	344	456	584	728	888	1064	1256	1464	1688	1928	2184	2456	2744	3048
(4,0)	84	120	165	220	286	364	455	560	680	816	969	1140	1330	1540	1771
(4,2)	231	344	489	670	891	1156	1469	1834	2255	2736	3281	3894	4579	5340	6181
(4,3)	377	575	833	1159	1561	2047	2625	3303	4089	4991	6017	7175	8473	9919	11521
(4,4)	608	952	1408	1992	2720	3608	4672	5928	7392	9080	11008	13192	15648	18392	21440
(4,5)	968	1560	2360	3400	4712	6328	8280	10600	13320	16472	20088	24200	28840	34040	39832
(4,6)	1520	2528	3920	5760	8112	11040	14608	18880	23920	29792	36560	44288	53040	62880	73872
(5,0)	210	330	495	715	1001	1365	1820	2380	3060	3876	4845	5985	7315	8855	10626
(5,2)	532	876	1365	2035	2926	4082	5551	7385	9640	12376	15657	19551	24130	29470	35651
(5,3)	833	1408	2241	3400	4961	7008	9633	12936	17025	22016	28033	35208	43681	53600	65121
(5,4)	1289	2241	3649	5641	8361	11969	16641	22569	29961	39041	50049	63241	78889	97281	118721
(5,6)	2972	5500	9420	15180	23292	34332	48940	67820	91740	121532	158092	202380	255420	318300	392172
(6,0)	462	792	1287	2002	3003	4368	6188	8568	11628	15504	20349	26334	33649	42504	53130
(6,4)	2471	4712	8361	14002	22363	34332	50973	73542	103503	142544	192593	255834	334723	432004	550725
(6,5)	3653	7183	13073	22363	36365	56695	85305	124515	177045	246047	335137	448427	590557	766727	982729
(6,6)	5336	10836	20256	35436	58728	93060	142000	209820	301560	423092	581184	783564	1038984	1357284	1749456
(7,0)	924	1716	3003	5005	8008	12376	18564	27132	38760	54264	74613	100947	134596	177100	230230
(7,4)	4396	9108	17469	31471	53834	88166	139139	212681	316184	458728	651321	907155	1241878	1673882	2224607
(7,5)	6321	13504	26577	48940	85305	142000	227305	351820	528865	774912	1110049	1558476	2149033	2915760	3898489
(7,6)	8989	19825	40081	75517	134245	227305	369305	579125	880685	1303777	1884961	2668525	3707509	5064793	6814249
(7,8)	17584	41456	88720	175504	325360	571312	958160	1545040	2408240	3644272	5373200	7742224	10929520	15148336	20651344
(8,4)	7380	16488	33957	65428	119262	207428	346567	559248	875432	1334160	1985481	2892636	4134514	5808396	8033003
(8,5)	10364	23868	50445	99385	184690	326690	553995	905815	1434680	2209592	3319641	4878117	7027150	9942910	13841399
(8,6)	14407	34232	74313	149830	284075	511380	880685	1459810	2340495	3644272	5529233	8197758	11905267	16970060	23784309
(9,0)	3003	6435	12870	24310	43758	75582	125970	203490	319770	490314	735471	1081575	1562275	2220075	3108105
(9,6)	22180	56412	130725	280555	564630	1076010	1956695	3416505	5757000	9401272	14930505	23128263	35033530	52003590	75787899
(10,4)	18238	46552	108823	236522	483483	937872	1738828	3099032	5334668	8904464	14459741	22907654	35490081	53880904	80304730
(10,5)	24650	64790	155375	345345	720005	1421355	2676700	4837860	8433700	14239132	23364205	37367395	58397735	89370985	134185634
(10,6)	33028	89440	220165	500720	1065350	2141360	4098055	7514560	13271560	22672832	37603337	60731600	95765130	147768720	223556619
(10,8)	57799	166344	432073	1030490	2286955	4772780	9446125	17852030	32398735	56730512	96220561	158611106	254831667	400030580	614859189
(12,6)	67582	204840	562263	1420406	3343899	7408752	15571660	31249128	60198156	111820016	201045213	351002010	596723937	990214584	1607261850
(13,8)	151634	511402	1550927	4300699	11047673	26564629	60297692	130098892	268366964	531832420	1016715821	1881628273	3381401443	5916065911	10100480866
(15,6)	169919	595395	1881510	5448670	14640774	36866574	87697730	198383370	429121650	891732586	1787261391	3466710075	6526802575	11957753475	21366824625
(19,8)	697480	3013560	11652910	40985850	132802324	400489068	1133504470	3031952322	7709522536	18728264280	43650074935	97969817325	212429838390	446250553770	910461513255

### 3 Frequencies of occurrence $f$ versus Wyckoff sequence length $k$

#### 3.1 Overview

The following pages contain plots of the frequencies of occurrence  $f$  of Wyckoff sequences of length  $k$  for all 230 space group types.

The full listings of the frequencies of occurrence  $f$  of Wyckoff sequences of length  $k$  is given in ascending order of the space group type number (in boldface) and listed according to the pairs  $(k, f)$  in ascending order of  $k$ . Note, that the space group types of number 78, 93, 95, 96, 145, 153, 154, 170, 172, 179, 181, 212 are absent in the listing since no Wyckoff sequence of any length is observed for these space group types.

In the subsequent plots the space group types are denoted by their space group type numbers and augmented by the information about their combinatorial type  $(\nu, \phi)$ , in which  $\nu$  and  $\phi$  are the number of non-fixed and fixed sites, respectively. For reasons of clarity both plot ranges share a cutoff at 50. Potential frequencies, calculated according to the formula

$$f_{\text{calc}}(k) = {}^{\nu+\phi}W_k = \sum_{i=0}^k \binom{\nu+i-1}{i} \binom{\phi}{k-i}, \quad (13)$$

are highlighted with light green bars, while actual frequencies as found in the Pearson's Crystal Data Crystal Structure Database for Inorganic Compounds (Villars, P. & Cenzual, K. Release 2019/2020. ASM International, Materials Park, Ohio, USA. <http://www.crystalimpact.com/pcd/Default.htm>) are highlighted by red bars.

Table 2: Frequency of occurrence  $f$  of distinct Wyckoff sequences in the PCD for the 230 space group types, denoted by their numbers (#).

#	$f$	#	$f$	#	$f$	#	$f$	#	$f$	#	$f$	#	$f$	#	$f$	#	$f$		
1	94	24	5	47	93	70	106	93	0	116	11	139	392	162	44	185	44	208	2
2	1113	25	24	48	9	71	245	94	5	117	20	140	118	163	70	186	152	209	4
3	38	26	68	49	7	72	75	95	0	118	28	141	130	164	188	187	88	210	6
4	91	27	3	50	12	73	21	96	0	119	44	142	82	165	84	188	16	211	1
5	194	28	20	51	104	74	126	97	9	120	14	143	76	166	487	189	119	212	0
6	36	29	59	52	65	75	13	98	12	121	49	144	39	167	215	190	75	213	44
7	71	30	18	53	48	76	23	99	25	122	80	145	0	168	5	191	180	214	9
8	156	31	119	54	35	77	7	100	26	123	334	146	88	169	18	192	21	215	72
9	77	32	32	55	208	78	0	101	2	124	15	147	119	170	0	193	77	216	167
10	112	33	68	56	73	79	18	102	10	125	25	148	277	171	4	194	534	217	85
11	417	34	34	57	150	80	12	103	2	126	29	149	11	172	0	195	17	218	48
12	1240	35	32	58	227	81	29	104	7	127	136	150	56	173	140	196	19	219	24
13	241	36	157	59	162	82	78	105	6	128	60	151	14	174	61	197	39	220	66
14	461	37	16	60	155	83	25	106	6	129	122	152	67	175	24	198	56	221	276
15	704	38	86	61	117	84	27	107	39	130	54	153	0	176	398	199	28	222	8
16	11	39	23	62	466	85	63	108	18	131	24	154	0	177	3	200	39	223	52
17	10	40	51	63	507	86	51	109	17	132	20	155	99	178	33	201	24	224	30
18	75	41	50	64	231	87	175	110	13	133	7	156	93	179	0	202	30	225	287
19	69	42	30	65	211	88	87	111	18	134	15	157	30	180	45	203	121	226	61
20	86	43	74	66	70	89	2	112	11	135	37	158	20	181	0	204	83	227	272
21	27	44	60	67	40	90	14	113	63	136	96	159	78	182	42	205	89	228	11
22	14	45	20	68	31	91	14	114	54	137	68	160	191	183	12	206	26	229	116
23	20	46	41	69	102	92	65	115	25	138	44	161	68	184	13	207	2	230	40



### 3.2 Listings (full)

**1:** (2, 1), (5, 1), (6, 1), (7, 1), (8, 1), (9, 1), (10, 1), (11, 1), (12, 1), (13, 1), (14, 1), (15, 1), (16, 1), (17, 1), (18, 1), (19, 1), (20, 1), (21, 1), (22, 1), (23, 1), (24, 1), (25, 1), (26, 1), (27, 1), (28, 1), (30, 1), (31, 1), (32, 1), (33, 1), (34, 1), (35, 1), (36, 1), (37, 1), (38, 1), (39, 1), (40, 1), (41, 1), (42, 1), (44, 1), (45, 1), (46, 1), (48, 1), (49, 1), (50, 1), (51, 1), (52, 1), (54, 1), (55, 1), (56, 1), (58, 1), (60, 1), (61, 1), (62, 1), (64, 1), (66, 1), (67, 1), (68, 1), (72, 1), (74, 1), (75, 1), (76, 1), (79, 1), (80, 1), (82, 1), (84, 1), (86, 1), (90, 1), (94, 1), (95, 1), (96, 1), (98, 1), (100, 1), (102, 1), (103, 1), (106, 1), (112, 1), (116, 1), (120, 1), (124, 1), (136, 1), (144, 1), (160, 1), (168, 1), (187, 1), (210, 1), (212, 1), (217, 1), (224, 1), (229, 1), (240, 1), (248, 1), (249, 1), (332, 1), (408, 1);

**2:** (1, 1), (2, 3), (3, 5), (4, 9), (5, 9), (6, 9), (7, 8), (8, 18), (9, 20), (10, 19), (11, 21), (12, 21), (13, 18), (14, 24), (15, 24), (16, 25), (17, 22), (18, 23), (19, 20), (20, 20), (21, 27), (22, 26), (23, 17), (24, 20), (25, 18), (26, 15), (27, 18), (28, 10), (29, 18), (30, 16), (31, 9), (32, 11), (33, 10), (34, 15), (35, 6), (36, 8), (37, 11), (38, 4), (39, 8), (40, 9), (41, 11), (42, 10), (43, 6), (44, 6), (45, 7), (46, 5), (47, 5), (48, 5), (49, 5), (50, 6), (51, 6), (52, 4), (53, 3), (54, 7), (55, 3), (56, 3), (57, 4), (58, 4), (59, 1), (60, 3), (61, 4), (62, 4), (63, 2), (64, 4), (65, 4), (66, 5), (67, 6), (68, 8), (69, 5), (70, 4), (71, 5), (72, 3), (73, 5), (74, 3), (75, 7), (76, 3), (77, 2), (78, 2), (79, 3), (80, 1), (81, 5), (82, 2), (83, 5), (84, 3), (85, 4), (86, 3), (87, 4), (89, 1), (90, 2), (91, 1), (92, 1), (93, 2), (94, 1), (95, 3), (96, 2), (97, 2), (98, 3), (99, 3), (100, 2), (101, 1), (102, 1), (103, 2), (104, 3), (105, 1), (106, 1), (107, 1), (108, 1), (109, 2), (110, 2), (111, 3), (112, 3), (113, 3), (114, 3), (115, 1), (116, 2), (117, 1), (118, 3), (119, 3), (120, 2), (121, 3), (122, 3), (123, 1), (124, 1), (125, 2), (126, 1), (127, 3), (128, 3), (129, 4), (130, 2), (131, 4), (132, 5), (133, 2), (134, 2), (135, 6), (136, 1), (137, 2), (138, 2), (139, 4), (140, 2), (141, 2), (142, 3), (143, 2), (144, 2), (145, 2), (146, 2), (147, 1), (148, 2), (149, 2), (151, 2), (152, 1), (153, 1), (154, 3), (155, 1), (156, 3), (158, 1), (159, 3), (160, 2), (161, 2), (163, 1), (164, 2), (165, 1), (166, 3), (168, 1), (170, 2), (171, 3), (172, 4), (173, 1), (174, 1), (175, 3), (176, 1), (179, 1), (180, 1), (181, 2), (182, 1), (183, 1), (184, 1), (189, 1), (193, 2), (194, 2), (195, 3), (196, 1), (197, 1), (198, 1), (199, 1), (200, 3), (201, 1), (203, 1), (204, 2), (205, 1), (206, 1), (209, 1), (210, 1), (211, 2), (212, 1), (213, 1), (214, 2), (215, 1), (219, 1), (220, 2), (222, 2), (223, 2), (224, 1), (228, 2), (231, 1), (232, 1), (233, 1), (234, 1), (236, 1), (237, 1), (239, 1), (241, 1), (242, 1), (243, 1), (245, 1), (247, 1), (248, 1), (249, 1), (251, 1), (252, 1), (253, 2), (254, 1), (255, 1), (258, 1), (260, 1), (263, 1), (264, 1), (265, 2), (268, 1), (271, 1), (274, 1), (275, 1), (278, 1), (280, 1), (283, 1), (284, 1), (285, 1), (287, 1), (288, 1), (289, 1), (291, 1), (293, 1), (298, 2), (302, 2), (303, 1), (314, 2), (317, 1), (320, 1), (327, 2), (335, 2), (338, 1), (345, 1), (347, 1), (350, 1), (354, 1), (360, 1), (363, 1), (367, 1), (370, 1), (375, 1), (376, 1), (377, 1), (379, 1), (383, 1), (384, 1), (391, 1), (402, 1), (403, 1), (408, 1), (409, 1), (418, 2), (424, 1), (429, 1), (432, 1), (435, 1), (436, 1), (446, 1), (461, 1), (477, 1), (490, 1), (491, 1), (493, 1);

**3:** (5, 1), (6, 1), (7, 1), (8, 1), (9, 1), (10, 1), (11, 1), (13, 1), (14, 3), (16, 2), (20, 3), (22, 1), (24, 1), (28, 5), (30, 3), (31, 1), (33, 1), (34, 1), (37, 1), (42, 1), (51, 2), (56, 2), (62, 1), (63, 1), (78, 1);

**4:** (1, 1), (2, 1), (3, 1), (4, 1), (5, 1), (6, 1), (7, 1), (8, 1), (9, 1), (10, 1), (11, 1), (12, 1), (13, 1), (14, 1), (15, 1), (16, 1), (17, 1), (18, 1), (19, 1), (20, 1), (21, 1), (22, 1), (23, 1), (24, 1), (25, 1), (26, 1), (27, 1), (28, 1), (29, 1), (30, 1), (31, 1), (32, 1), (33, 1), (34, 1), (35, 1), (36, 1), (37, 1), (38, 1), (39, 1), (40, 1), (41, 1), (42, 1), (43, 1), (44, 1), (45, 1), (46, 1), (47, 1), (48, 1), (49, 1), (50, 1), (51, 1), (52, 1), (53, 1), (54, 1), (55, 1), (56, 1), (57, 1), (58, 1), (60, 1), (61, 1), (62, 1), (64, 1), (67, 1), (68, 1), (69, 1), (72, 1), (73, 1), (76, 1), (80, 1), (83, 1), (84, 1), (86, 1), (88, 1), (92, 1), (94, 1), (103, 1), (108, 1), (113, 1), (114, 1), (119, 1), (141, 1), (144, 1), (152, 1), (167, 1), (168, 1), (175, 1), (198, 1), (202, 1), (226, 1), (235, 1), (312, 1);

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(75, 1), (76, 1), (79, 1), (84, 1), (88, 1), (93, 1), (96, 1), (129, 1), (131, 1);

**6:** (4, 1), (5, 1), (7, 1), (8, 2), (9, 1), (10, 1), (12, 2), (13, 1), (14, 3), (16, 1), (17, 1), (18, 1), (19, 2), (20, 2), (21, 1), (22, 1), (24, 3), (26, 1), (32, 2), (34, 1), (36, 1), (42, 1), (51, 1), (60, 1), (65, 1), (120, 1), (147, 1);

**7:** (4, 1), (5, 1), (6, 1), (8, 1), (9, 1), (10, 1), (11, 1), (12, 1), (13, 1), (14, 1), (15, 1), (16, 1), (17, 1), (18, 1), (19, 1), (20, 1), (21, 1), (22, 1), (23, 1), (24, 1), (25, 1), (26, 1), (27, 1), (28, 1), (29, 1), (30, 1), (31, 1), (32, 1), (33, 1), (34, 1), (35, 1), (36, 1), (37, 1), (38, 1), (39, 1), (40, 1), (44, 1), (46, 1), (48, 1), (50, 1), (51, 1), (52, 1), (54, 1), (55, 1), (56, 1), (60, 1), (61, 1), (62, 1), (63, 1), (64, 1), (70, 1), (72, 1), (80, 1), (81, 1), (84, 1), (85, 1), (86, 1), (87, 1), (96, 1), (104, 1), (106, 1), (116, 1), (126, 1), (138, 1), (144, 1), (152, 1), (168, 1), (176, 1), (200, 1), (314, 1), (441, 1);

**8:** (2, 1), (3, 2), (4, 3), (5, 2), (6, 3), (7, 6), (8, 4), (9, 4), (10, 5), (11, 4), (12, 4), (13, 5), (14, 7), (15, 5), (16, 5), (17, 5), (18, 5), (19, 7), (20, 3), (21, 2), (22, 2), (23, 4), (24, 3), (25, 3), (26, 2), (27, 2), (28, 3), (29, 1), (30, 2), (31, 2), (32, 2), (33, 2), (34, 1), (36, 1), (37, 2), (38, 3), (39, 2), (40, 1), (41, 3), (42, 4), (43, 4), (44, 1), (45, 1), (47, 2), (51, 1), (52, 1), (53, 2), (54, 2), (55, 2), (57, 1), (58, 1), (71, 1), (74, 1), (76, 1), (87, 1), (91, 1), (98, 1), (116, 1), (155, 1), (178, 1), (226, 1), (263, 1);

**9:** (2, 1), (3, 1), (4, 1), (5, 1), (6, 1), (7, 1), (8, 1), (9, 1), (10, 1), (11, 1), (12, 1), (13, 1), (14, 1), (15, 1), (16, 1), (17, 1), (18, 1), (19, 1), (20, 1), (21, 1), (22, 1), (23, 1), (24, 1), (25, 1), (26, 1), (27, 1), (28, 1), (29, 1), (30, 1), (31, 1), (32, 1), (33, 1), (34, 1), (35, 1), (36, 1), (37, 1), (38, 1), (39, 1), (40, 1), (41, 1), (42, 1), (43, 1), (44, 1), (46, 1), (47, 1), (48, 1), (49, 1), (50, 1), (51, 1), (52, 1), (53, 1), (55, 1), (56, 1), (57, 1), (58, 1), (60, 1), (68, 1), (71, 1), (72, 1), (74, 1), (75, 1), (76, 1), (78, 1), (80, 1), (84, 1), (87, 1), (90, 1), (92, 1), (96, 1), (107, 1), (122, 1), (125, 1), (137, 1), (143, 1), (179, 1), (183, 1), (288, 1);

**10:** (2, 1), (4, 5), (5, 8), (6, 9), (7, 5), (8, 8), (9, 2), (10, 7), (11, 7), (12, 5), (13, 6), (14, 5), (15, 3), (16, 2), (17, 3), (18, 3), (19, 2), (20, 2), (21, 3), (24, 2), (25, 2), (27, 2), (30, 3), (32, 1), (33, 1), (34, 2), (35, 1), (36, 1), (40, 2), (42, 2), (50, 2), (51, 1), (53, 1), (59, 1), (115, 1), (148, 1);

**11:** (2, 3), (3, 1), (4, 5), (5, 10), (6, 8), (7, 12), (8, 17), (9, 14), (10, 15), (11, 11), (12, 19), (13, 17), (14, 22), (15, 17), (16, 20), (17, 15), (18, 17), (19, 14), (20, 11), (21, 15), (22, 14), (23, 14), (24, 9), (25, 7), (26, 3), (27, 3), (28, 4), (29, 7), (30, 2), (31, 3), (32, 5), (33, 3), (34, 5), (35, 3), (36, 5), (37, 1), (39, 1), (40, 1), (42, 5), (43, 3), (45, 1), (46, 3), (47, 1), (48, 4), (49, 1), (50, 1), (53, 1), (54, 1), (57, 1), (62, 1), (63, 1), (64, 1), (68, 2), (69, 1), (70, 2), (71, 1), (72, 2), (73, 3), (74, 1), (75, 1), (76, 1), (78, 3), (79, 1), (80, 1), (82, 1), (83, 1), (84, 1), (85, 1), (87, 2), (90, 1), (92, 1), (105, 1), (108, 1), (110, 1), (117, 1), (118, 1), (130, 1), (137, 1), (142, 1), (143, 1), (227, 1), (326, 1), (487, 1);

**12:** (1, 2), (2, 5), (3, 17), (4, 28), (5, 41), (6, 51), (7, 67), (8, 77), (9, 61), (10, 56), (11, 59), (12, 62), (13, 59), (14, 42), (15, 66), (16, 46), (17, 48), (18, 42), (19, 31), (20, 32), (21, 21), (22, 21), (23, 24), (24, 22), (25, 27), (26, 16), (27, 19), (28, 14), (29, 19), (30, 12), (31, 9), (32, 7), (33, 8), (34, 5), (35, 2), (36, 3), (37, 7), (38, 2), (39, 2), (40, 2), (41, 1), (42, 2), (43, 2), (44, 4), (45, 3), (46, 1), (47, 7), (48, 3), (49, 4), (50, 5), (51, 3), (52, 3), (53, 4), (54, 3), (55, 1), (56, 1), (57, 4), (59, 1), (60, 1), (61, 1), (62, 2), (64, 2), (65, 1), (68, 1), (69, 3), (70, 1), (71, 2), (73, 1), (75, 1), (76, 1), (77, 1), (78, 2), (80, 2), (82, 1), (83, 2), (87, 2), (90, 3), (92, 2), (95, 1), (96, 1), (97, 1), (98, 1), (100, 1), (101, 1), (102, 3), (103, 1), (108, 1), (109, 1), (117, 1), (138, 2), (139, 1), (161, 1), (181, 1), (277, 1), (289, 1), (313, 1), (428, 1);

**13:** (3, 2), (4, 7), (5, 6), (6, 11), (7, 8), (8, 8), (9, 10), (10, 13), (11, 8), (12, 10), (13, 6), (14, 11), (15, 9), (16, 8), (17, 8), (18, 5), (19, 4), (20, 6), (21, 5), (22, 2), (23, 5), (24, 7), (25, 5), (26, 5), (28, 8), (29, 3), (30, 9), (31, 4), (32, 2), (33, 4), (34, 2), (35, 1), (36, 2), (38, 2), (39, 1), (40, 2), (42, 1), (43, 1), (44, 3), (45, 2), (47, 2), (48, 1), (49, 1), (50, 2), (51, 1), (53, 2), (54, 1), (60, 1), (62, 1), (63, 2), (80, 2), (82, 1), (84, 1), (85, 1), (90, 1), (128, 1), (132, 1), (176, 1), (197, 1), (209, 1);

**14:** (2, 2), (3, 6), (4, 4), (5, 6), (6, 8), (7, 8), (8, 9), (9, 9), (10, 9), (11, 8), (12, 8), (13, 10), (14, 9), (15, 10),

(16, 7), (17, 8), (18, 10), (19, 9), (20, 8), (21, 7), (22, 9), (23, 6), (24, 9), (25, 5), (26, 5), (27, 7), (28, 4), (29, 7), (30, 6), (31, 4), (32, 3), (33, 6), (34, 7), (35, 6), (36, 5), (37, 5), (38, 4), (39, 3), (40, 4), (41, 2), (42, 3), (43, 3), (44, 2), (45, 2), (46, 2), (47, 5), (48, 2), (49, 1), (50, 3), (51, 1), (52, 3), (53, 3), (54, 1), (55, 3), (56, 1), (57, 2), (58, 1), (59, 3), (60, 1), (61, 1), (62, 2), (63, 2), (64, 1), (65, 2), (66, 4), (67, 2), (68, 1), (69, 1), (70, 1), (71, 1), (72, 2), (73, 2), (74, 1), (75, 2), (76, 1), (77, 2), (78, 1), (79, 1), (80, 1), (81, 1), (82, 1), (83, 1), (84, 1), (85, 1), (86, 1), (87, 2), (89, 2), (90, 1), (91, 2), (92, 1), (94, 2), (95, 2), (96, 1), (97, 1), (100, 3), (102, 1), (103, 1), (104, 1), (105, 2), (106, 1), (107, 1), (108, 1), (109, 1), (110, 1), (112, 2), (114, 1), (115, 1), (116, 1), (117, 1), (118, 1), (119, 1), (120, 1), (121, 1), (122, 1), (123, 1), (124, 1), (125, 1), (126, 2), (127, 1), (128, 1), (129, 1), (130, 1), (131, 1), (132, 1), (133, 1), (134, 2), (135, 2), (136, 1), (137, 3), (138, 2), (140, 1), (141, 1), (142, 2), (143, 1), (144, 1), (145, 1), (146, 1), (147, 1), (148, 1), (149, 1), (150, 1), (151, 1), (152, 1), (153, 1), (154, 1), (155, 1), (156, 1), (157, 1), (158, 1), (159, 1), (161, 1), (168, 1), (170, 1), (181, 1), (182, 1), (183, 1), (185, 1), (189, 1), (191, 1), (194, 1), (201, 1), (207, 2), (209, 1), (213, 1), (219, 1), (223, 1), (231, 1), (234, 1), (237, 1), (238, 1), (239, 1), (240, 1), (250, 1), (254, 1), (255, 1), (267, 1), (273, 1), (284, 1), (301, 1), (307, 1), (316, 1), (344, 1), (399, 1), (403, 1), (441, 1), (442, 1), (443, 1), (456, 1);

**15:** (1, 2), (2, 7), (3, 5), (4, 12), (5, 17), (6, 21), (7, 22), (8, 22), (9, 20), (10, 20), (11, 20), (12, 21), (13, 25), (14, 24), (15, 13), (16, 12), (17, 21), (18, 16), (19, 12), (20, 16), (21, 15), (22, 15), (23, 15), (24, 14), (25, 7), (26, 9), (27, 10), (28, 7), (29, 13), (30, 9), (31, 7), (32, 5), (33, 6), (34, 9), (35, 3), (36, 8), (37, 4), (38, 5), (39, 9), (40, 4), (41, 4), (42, 5), (43, 5), (44, 5), (45, 4), (46, 5), (47, 3), (48, 4), (49, 4), (50, 3), (51, 3), (52, 3), (53, 4), (54, 1), (55, 1), (56, 3), (57, 2), (59, 4), (60, 4), (61, 2), (62, 3), (64, 3), (65, 4), (66, 1), (67, 2), (68, 2), (69, 1), (70, 2), (71, 1), (72, 2), (73, 3), (74, 3), (75, 3), (76, 1), (77, 2), (78, 3), (81, 2), (82, 2), (83, 1), (86, 2), (87, 1), (88, 3), (89, 1), (91, 1), (92, 2), (94, 1), (95, 1), (96, 1), (97, 1), (98, 1), (99, 1), (100, 1), (101, 1), (102, 2), (103, 2), (105, 1), (106, 1), (107, 1), (108, 4), (109, 1), (110, 1), (111, 1), (112, 2), (113, 4), (116, 1), (117, 1), (118, 1), (121, 1), (122, 1), (124, 1), (126, 1), (127, 1), (129, 1), (131, 1), (132, 2), (134, 2), (135, 2), (136, 1), (137, 2), (138, 1), (140, 2), (142, 2), (143, 2), (144, 2), (145, 1), (146, 2), (147, 2), (148, 1), (151, 1), (155, 1), (162, 1), (166, 1), (180, 1), (192, 1), (197, 1), (203, 1), (204, 1), (219, 2), (221, 1), (224, 1), (323, 1), (331, 2), (332, 1), (341, 1), (357, 1), (419, 1);

**16:** (6, 1), (9, 2), (10, 1), (11, 1), (20, 2), (26, 1), (31, 1), (37, 1), (64, 1);

**17:** (3, 1), (4, 1), (5, 1), (10, 1), (11, 2), (14, 1), (22, 1), (25, 1), (27, 1);

**18:** (1, 1), (3, 1), (4, 2), (5, 4), (6, 3), (7, 3), (8, 4), (9, 5), (10, 2), (11, 4), (12, 4), (13, 2), (14, 3), (15, 5), (16, 1), (17, 1), (18, 3), (19, 2), (20, 1), (21, 1), (22, 1), (23, 1), (24, 2), (26, 1), (27, 2), (28, 1), (29, 1), (30, 3), (32, 1), (33, 1), (35, 1), (38, 1), (42, 1), (43, 1), (49, 1), (55, 1), (62, 1), (102, 1), (106, 1);

**19:** (1, 1), (2, 1), (3, 1), (4, 1), (5, 1), (6, 1), (7, 1), (8, 1), (9, 1), (10, 1), (11, 1), (12, 1), (13, 1), (14, 1), (15, 1), (16, 1), (17, 1), (18, 1), (19, 1), (20, 1), (21, 1), (22, 1), (23, 1), (24, 1), (25, 1), (26, 1), (27, 1), (28, 1), (29, 1), (30, 1), (31, 1), (32, 1), (33, 1), (34, 1), (35, 1), (36, 1), (37, 1), (38, 1), (39, 1), (40, 1), (41, 1), (42, 1), (45, 1), (46, 1), (47, 1), (49, 1), (51, 1), (52, 1), (56, 1), (57, 1), (60, 1), (61, 1), (64, 1), (65, 1), (66, 1), (68, 1), (70, 1), (72, 1), (74, 1), (76, 1), (89, 1), (99, 1), (100, 1), (119, 1), (123, 1), (133, 1), (140, 1), (157, 1), (158, 1);

**20:** (3, 2), (4, 4), (5, 2), (6, 4), (7, 5), (8, 7), (9, 3), (10, 6), (11, 7), (12, 3), (13, 3), (14, 5), (15, 1), (17, 3), (18, 2), (19, 2), (20, 3), (21, 2), (22, 1), (23, 2), (24, 2), (26, 1), (30, 1), (32, 1), (33, 1), (34, 1), (35, 1), (37, 1), (38, 1), (42, 1), (43, 1), (47, 1), (49, 1), (53, 1), (70, 1), (98, 1), (128, 1), (204, 1);

**21:** (2, 1), (3, 2), (4, 1), (5, 1), (6, 1), (7, 1), (8, 2), (9, 1), (10, 1), (11, 2), (12, 3), (14, 1), (16, 1), (17, 1), (18, 1), (19, 3), (29, 1), (30, 1), (44, 1), (55, 1);

**22:** (2, 1), (6, 2), (7, 2), (8, 4), (11, 2), (20, 2), (46, 1);

**23:** (3, 2), (4, 3), (5, 1), (6, 1), (8, 2), (9, 1), (10, 1), (12, 1), (14, 2), (15, 1), (16, 1), (22, 1), (43, 1), (44, 1), (46, 1);

**24:** (8, 1), (14, 1), (16, 1), (18, 1), (27, 1);  
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**28:** (2, 1), (4, 3), (6, 2), (7, 1), (8, 1), (9, 1), (12, 1), (13, 1), (15, 1), (16, 1), (17, 1), (20, 1), (23, 1), (25, 1), (27, 1), (38, 1), (46, 1);  
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**41:** (2, 2), (3, 3), (4, 2), (5, 4), (6, 1), (7, 1), (8, 4), (10, 4), (11, 1), (12, 2), (13, 4), (14, 1), (15, 2), (16, 2), (17, 2), (19, 1), (24, 4), (26, 3), (27, 1), (28, 1), (29, 1), (32, 1), (33, 1), (39, 1), (45, 1);  
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**47:** (2, 1), (3, 2), (4, 4), (5, 8), (6, 3), (7, 5), (8, 9), (9, 12), (10, 13), (11, 8), (12, 4), (13, 7), (14, 3), (16, 2), (18, 6), (19, 1), (20, 1), (28, 1), (38, 2), (41, 1);  
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**60:** (2, 2), (3, 3), (4, 5), (5, 5), (6, 6), (7, 7), (8, 6), (9, 6), (10, 7), (11, 7), (12, 3), (13, 5), (14, 7), (15, 6), (16, 5), (17, 7), (18, 6), (19, 4), (20, 6), (22, 4), (23, 4), (24, 3), (25, 4), (26, 5), (27, 1), (28, 3), (30, 2), (31, 2), (32, 1), (33, 1), (35, 1), (36, 2), (37, 2), (38, 2), (39, 2), (42, 1), (43, 1), (45, 2), (46, 1), (48, 1), (63, 2), (64, 1), (65, 1), (71, 1), (127, 1), (166, 1);

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**76:** (4, 1), (5, 1), (8, 1), (9, 1), (10, 1), (11, 1), (12, 1), (13, 1), (16, 1), (17, 1), (22, 1), (23, 1), (24, 1), (25, 1), (26, 1), (27, 1), (28, 1), (37, 1), (41, 1), (48, 1), (49, 1), (52, 1), (54, 1);

**77:** (1, 1), (2, 1), (11, 1), (12, 2), (53, 1), (200, 1);

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**84:** (2, 1), (4, 4), (5, 5), (6, 4), (7, 3), (8, 1), (10, 2), (11, 2), (12, 1), (14, 1), (27, 1), (30, 1), (47, 1);

**85:** (3, 2), (4, 4), (5, 6), (6, 4), (7, 6), (8, 4), (9, 4), (10, 4), (11, 3), (12, 3), (13, 2), (14, 3), (15, 1), (17, 2), (19, 2), (20, 1), (21, 2), (23, 1), (25, 1), (27, 1), (31, 1), (32, 1), (40, 1), (43, 1), (72, 1), (136, 1), (275, 1);

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**87:** (2, 2), (3, 5), (4, 11), (5, 23), (6, 20), (7, 14), (8, 14), (9, 12), (10, 11), (11, 13), (12, 7), (13, 6), (14, 6), (15, 4), (16, 3), (17, 2), (18, 1), (19, 4), (22, 2), (25, 1), (33, 1), (35, 1), (38, 1), (43, 1), (44, 1), (49, 1), (50, 1), (52, 2), (53, 2), (54, 1), (62, 1), (72, 1);

**88:** (2, 2), (3, 6), (4, 6), (5, 6), (6, 6), (7, 6), (8, 5), (9, 8), (10, 5), (11, 3), (12, 5), (13, 3), (14, 1), (15, 3), (16, 2), (18, 1), (19, 1), (20, 1), (21, 1), (22, 2), (24, 1), (25, 1), (26, 2), (27, 1), (29, 1), (30, 1), (32, 1), (33, 1), (40, 1), (47, 1), (53, 1), (66, 1), (114, 1);

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**90:** (6, 2), (8, 4), (9, 1), (10, 2), (11, 2), (12, 3);

**91:** (3, 1), (5, 1), (6, 2), (7, 1), (8, 2), (9, 1), (13, 1), (14, 1), (16, 1), (19, 1), (26, 1), (39, 1);

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**101:** (7, 1), (14, 1);

**102:** (2, 1), (4, 1), (5, 2), (6, 2), (8, 1), (10, 1), (13, 1), (14, 1);

**103:** (2, 1), (13, 1);

**104:** (5, 3), (6, 1), (8, 1), (9, 1), (38, 1);

**105:** (5, 1), (7, 1), (8, 2), (10, 1), (11, 1);

**106:** (4, 1), (5, 1), (13, 1), (18, 1), (25, 1), (135, 1);

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**121:** (2, 1), (3, 3), (4, 7), (5, 10), (6, 7), (7, 3), (8, 2), (9, 3), (10, 4), (11, 1), (12, 1), (13, 2), (19, 1), (27, 1), (28, 1), (41, 1), (73, 1);  
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**124:** (2, 1), (3, 4), (4, 3), (7, 6), (11, 1);  
**125:** (2, 1), (3, 3), (4, 4), (5, 3), (6, 3), (7, 5), (8, 2), (9, 3), (21, 1);  
**126:** (4, 5), (5, 1), (6, 1), (7, 1), (8, 1), (11, 2), (18, 1), (19, 1), (21, 1), (22, 2), (23, 5), (24, 3), (25, 2), (26, 2), (28, 1);  
**127:** (2, 1), (3, 6), (4, 16), (5, 16), (6, 13), (7, 13), (8, 18), (9, 10), (10, 15), (11, 2), (12, 2), (13, 4), (14, 2), (15, 1), (16, 1), (17, 4), (19, 1), (21, 1), (22, 4), (26, 1), (31, 2), (36, 1), (39, 1), (101, 1);  
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**133:** (4, 1), (6, 2), (7, 1), (11, 1), (12, 1), (136, 1);  
**134:** (2, 1), (4, 1), (5, 2), (6, 4), (8, 3), (9, 1), (13, 1), (14, 1), (16, 1);  
**135:** (1, 1), (3, 1), (4, 3), (5, 5), (6, 2), (7, 1), (8, 1), (9, 6), (10, 5), (11, 3), (12, 2), (13, 2), (15, 1), (18, 2), (21, 1), (25, 1);



**136:** (1, 1), (2, 3), (3, 8), (4, 14), (5, 8), (6, 8), (7, 9), (8, 5), (9, 5), (10, 6), (11, 6), (12, 1), (13, 1), (14, 1), (15, 2), (16, 2), (17, 1), (18, 1), (19, 1), (21, 2), (22, 3), (24, 1), (27, 1), (31, 1), (32, 2), (33, 1), (36, 1), (57, 1);  
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**146:** (2, 1), (3, 1), (4, 4), (5, 3), (6, 4), (7, 2), (8, 6), (9, 5), (10, 4), (11, 2), (12, 4), (13, 2), (14, 3), (15, 4), (16, 5), (18, 2), (19, 1), (20, 1), (21, 1), (22, 1), (24, 4), (25, 2), (26, 3), (28, 1), (29, 1), (30, 1), (31, 1), (33, 2), (35, 1), (36, 2), (44, 2), (51, 1), (52, 1), (56, 1), (59, 1), (60, 1), (62, 1), (66, 1), (68, 2), (69, 1), (75, 1), (98, 1);  
**147:** (3, 3), (4, 5), (5, 12), (6, 10), (7, 9), (8, 7), (9, 3), (10, 8), (11, 8), (12, 7), (13, 4), (14, 5), (15, 4), (16, 1), (17, 1), (18, 3), (19, 3), (21, 1), (22, 4), (23, 2), (24, 3), (25, 2), (26, 1), (27, 1), (28, 1), (31, 2), (32, 1), (34, 1), (35, 1), (38, 1), (71, 1), (158, 1), (175, 1), (259, 1), (271, 1);  
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**151:** (3, 1), (4, 1), (5, 2), (7, 1), (8, 1), (9, 3), (11, 1), (12, 1), (14, 1), (26, 1), (36, 1);  
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(68, 1), (72, 2), (73, 1), (75, 1), (80, 1), (87, 1), (88, 1), (128, 1);

**157:** (4, 1), (5, 3), (6, 4), (7, 1), (8, 2), (10, 3), (11, 1), (12, 1), (13, 1), (14, 2), (15, 1), (16, 1), (18, 1), (19, 1), (22, 1), (28, 1), (33, 1), (40, 1), (51, 1), (56, 1), (62, 1);

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**160:** (2, 3), (3, 5), (4, 3), (5, 7), (6, 5), (7, 9), (8, 9), (9, 8), (10, 8), (11, 3), (12, 7), (13, 5), (14, 5), (15, 4), (16, 1), (17, 2), (18, 5), (19, 3), (20, 2), (21, 3), (22, 2), (24, 2), (25, 1), (26, 1), (27, 2), (28, 2), (30, 1), (32, 1), (33, 2), (34, 2), (36, 2), (37, 1), (38, 1), (39, 1), (40, 1), (42, 2), (43, 3), (44, 3), (45, 3), (46, 4), (47, 2), (48, 4), (49, 1), (50, 3), (51, 5), (52, 5), (53, 2), (54, 2), (55, 1), (56, 1), (57, 1), (58, 3), (60, 1), (62, 1), (64, 2), (68, 1), (70, 1), (72, 1), (74, 1), (76, 1), (80, 2), (84, 1), (85, 1), (86, 1), (88, 1), (94, 1), (95, 1), (96, 1), (98, 1), (100, 1), (108, 1), (116, 1), (126, 1), (174, 1), (262, 1), (274, 1), (346, 1);

**161:** (2, 1), (3, 2), (4, 3), (5, 4), (6, 5), (7, 4), (8, 5), (9, 4), (10, 5), (11, 2), (12, 3), (14, 1), (15, 2), (16, 1), (17, 1), (18, 3), (19, 3), (20, 4), (21, 4), (22, 3), (23, 1), (24, 1), (25, 1), (35, 2), (36, 1), (72, 1), (73, 1);

**162:** (2, 1), (3, 4), (4, 8), (5, 13), (6, 8), (7, 6), (8, 2), (16, 1), (53, 1);

**163:** (2, 1), (3, 3), (4, 10), (5, 13), (6, 12), (7, 8), (8, 3), (9, 3), (10, 3), (11, 4), (12, 2), (13, 1), (14, 1), (15, 1), (18, 2), (22, 1), (24, 1), (90, 1);

**164:** (2, 3), (3, 10), (4, 14), (5, 18), (6, 23), (7, 15), (8, 15), (9, 20), (10, 13), (11, 13), (12, 9), (13, 7), (14, 3), (15, 2), (17, 2), (18, 2), (19, 4), (20, 3), (21, 2), (22, 2), (23, 2), (26, 1), (28, 1), (31, 1), (32, 1), (37, 1), (38, 1);

**165:** (2, 1), (3, 1), (4, 6), (5, 8), (6, 7), (7, 2), (8, 6), (9, 9), (10, 6), (11, 5), (12, 8), (13, 3), (14, 3), (15, 2), (16, 5), (17, 1), (18, 3), (19, 2), (22, 2), (24, 1), (25, 1), (28, 1), (43, 1);

**166:** (1, 2), (2, 7), (3, 20), (4, 32), (5, 35), (6, 48), (7, 45), (8, 35), (9, 32), (10, 24), (11, 36), (12, 30), (13, 23), (14, 13), (15, 17), (16, 10), (17, 7), (18, 12), (19, 19), (20, 10), (21, 5), (22, 2), (23, 5), (24, 2), (25, 1), (28, 2), (30, 1), (31, 1), (32, 2), (33, 1), (34, 1), (37, 1), (38, 1), (39, 1), (43, 1), (45, 1), (47, 1), (53, 1);

**167:** (1, 1), (2, 4), (3, 13), (4, 15), (5, 20), (6, 23), (7, 22), (8, 17), (9, 16), (10, 15), (11, 11), (12, 8), (13, 6), (14, 4), (15, 7), (16, 4), (17, 3), (18, 5), (19, 3), (20, 1), (21, 4), (22, 2), (23, 1), (25, 2), (27, 2), (29, 1), (30, 1), (31, 1), (40, 1), (45, 1), (122, 1);

**168:** (10, 1), (12, 1), (22, 1), (38, 1), (74, 1);

**169:** (5, 1), (6, 1), (7, 1), (8, 1), (9, 1), (12, 1), (15, 1), (16, 1), (17, 1), (18, 1), (23, 1), (28, 1), (29, 1), (30, 1), (32, 1), (34, 1), (39, 1), (59, 1);

**171:** (7, 1), (11, 1), (13, 1), (40, 1);

**173:** (2, 1), (3, 2), (4, 4), (5, 8), (6, 7), (7, 4), (8, 9), (9, 10), (10, 3), (11, 8), (12, 7), (13, 5), (14, 7), (15, 8), (16, 6), (17, 2), (18, 6), (19, 5), (20, 1), (21, 4), (22, 3), (23, 2), (24, 3), (25, 2), (26, 3), (27, 1), (28, 2), (29, 1), (30, 3), (31, 1), (32, 2), (34, 1), (35, 1), (36, 1), (40, 2), (46, 1), (68, 1), (74, 1), (75, 1), (79, 1);

**174:** (4, 1), (5, 4), (6, 3), (7, 2), (8, 4), (9, 6), (10, 1), (11, 1), (12, 3), (13, 1), (14, 3), (15, 2), (16, 3), (17, 6), (18, 2), (19, 2), (20, 2), (21, 1), (22, 2), (26, 2), (27, 2), (28, 2), (29, 1), (31, 1), (32, 1), (45, 1), (52, 1), (132, 1);

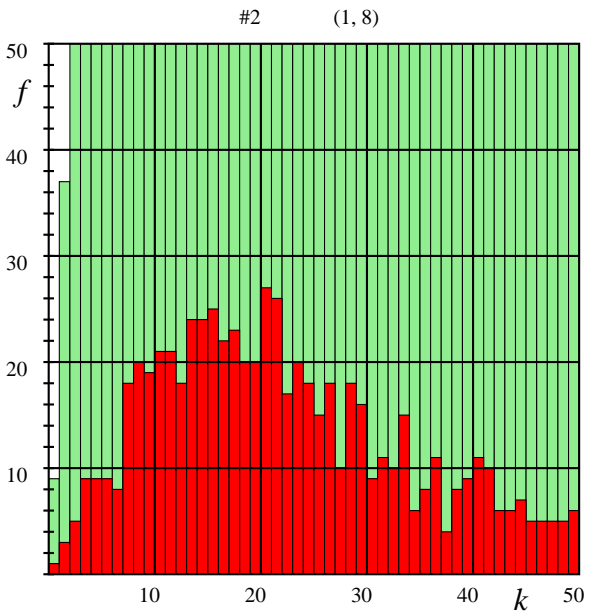
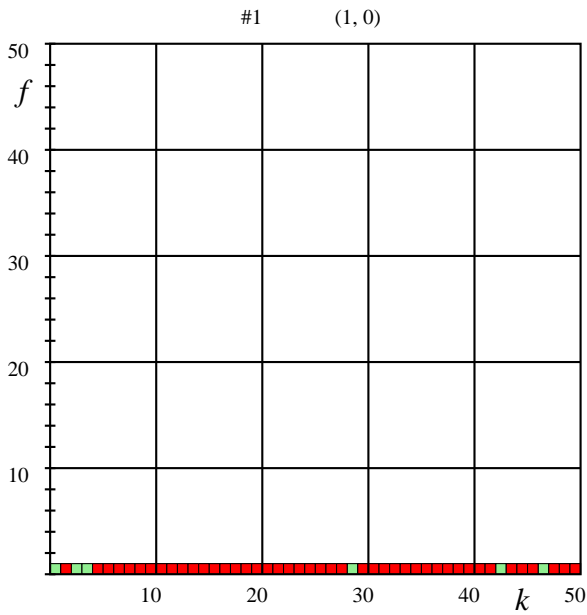
**175:** (3, 1), (4, 1), (5, 2), (7, 3), (8, 1), (9, 3), (10, 1), (11, 4), (12, 1), (15, 1), (22, 1), (24, 1), (25, 1), (29, 1), (33, 1), (76, 1);

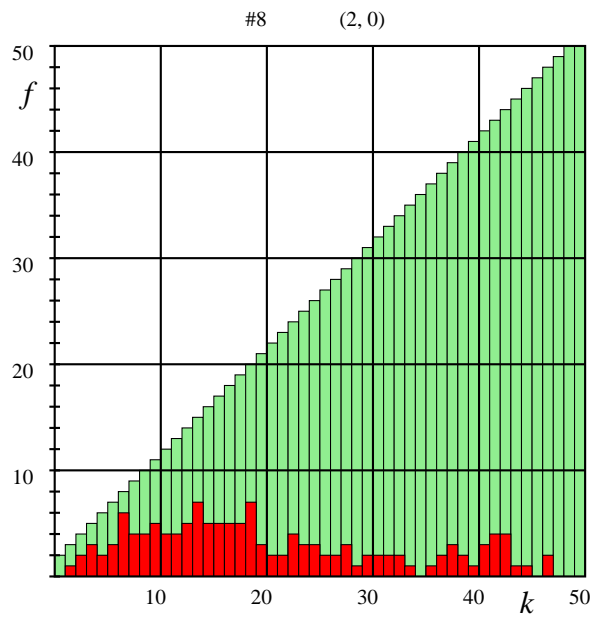
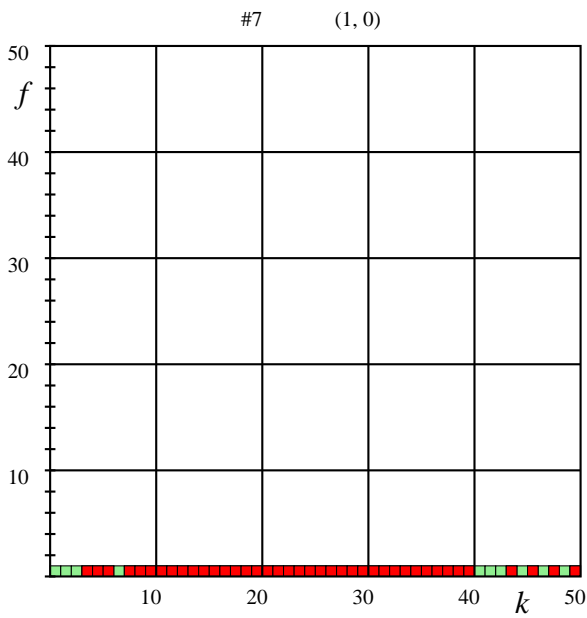
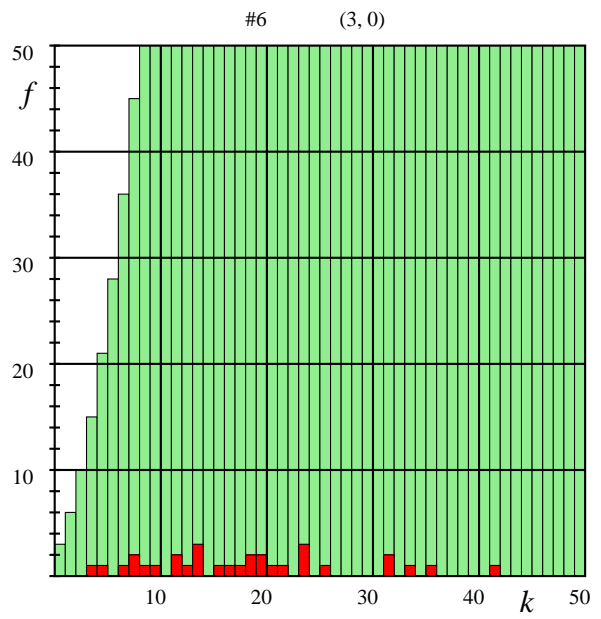
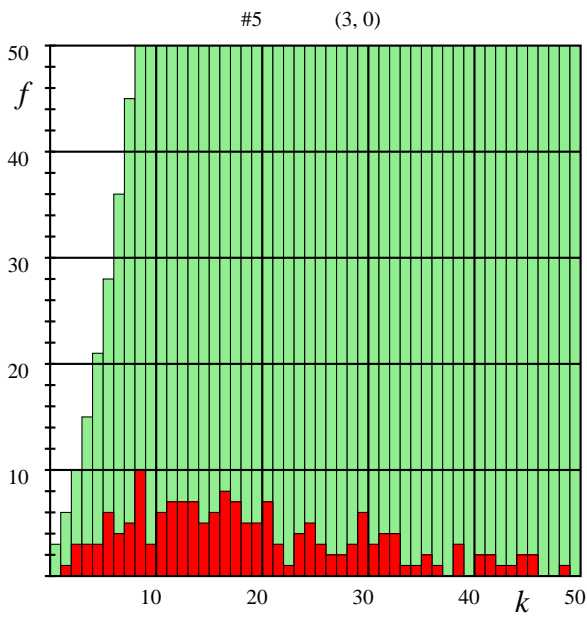
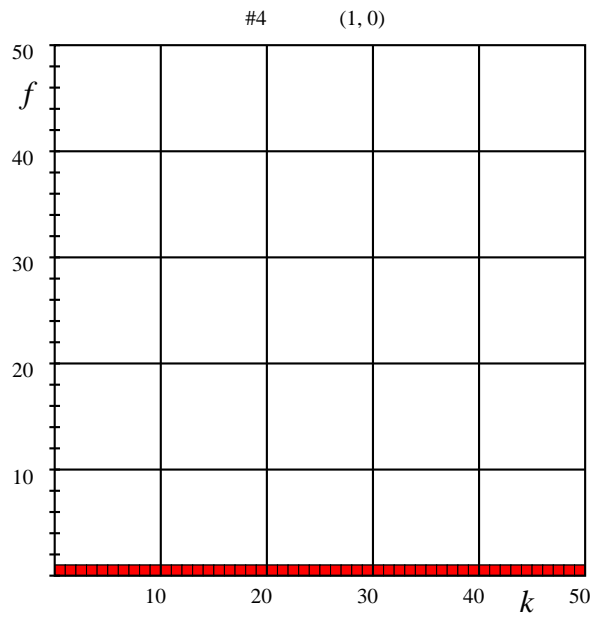
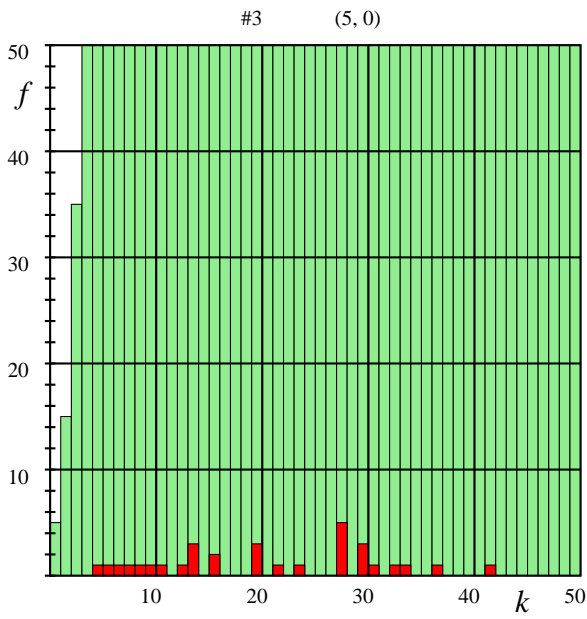
**176:** (2, 3), (3, 8), (4, 19), (5, 31), (6, 34), (7, 28), (8, 42), (9, 49), (10, 30), (11, 21), (12, 20), (13, 13), (14, 9), (15, 9), (16, 8), (17, 10), (18, 8), (19, 6), (20, 4), (22, 1), (23, 2), (24, 4), (26, 1), (27, 1), (28, 4), (29, 2), (30, 2), (32, 1), (33, 3), (34, 1), (35, 1), (37, 3), (40, 1), (46, 2), (48, 1), (49, 1), (52, 1), (53, 1), (61, 1), (63, 1), (66, 1), (68, 2), (72, 1), (91, 1), (96, 1), (104, 1), (109, 1), (116, 1), (129, 1), (131, 1);

**177:** (6, 1), (9, 1), (13, 1);  
**178:** (1, 1), (2, 1), (3, 2), (4, 2), (6, 2), (7, 2), (8, 3), (9, 4), (10, 5), (11, 3), (12, 3), (13, 2), (16, 1), (17, 1), (19, 1);  
**180:** (2, 4), (3, 6), (4, 8), (5, 4), (6, 4), (7, 2), (8, 1), (11, 3), (13, 2), (17, 1), (18, 2), (19, 3), (21, 1), (22, 1), (23, 2), (25, 1);  
**182:** (2, 1), (3, 2), (4, 14), (5, 5), (6, 5), (7, 4), (8, 1), (9, 2), (10, 2), (12, 1), (13, 1), (14, 1), (17, 1), (19, 1), (20, 1);  
**183:** (3, 2), (4, 1), (7, 2), (8, 1), (9, 3), (10, 1), (22, 1), (25, 1);  
**184:** (6, 1), (7, 1), (8, 1), (9, 2), (10, 2), (11, 4), (14, 1), (18, 1);  
**185:** (2, 1), (4, 1), (5, 4), (6, 1), (7, 5), (8, 4), (9, 2), (10, 6), (11, 4), (13, 2), (15, 1), (16, 2), (18, 1), (19, 2), (20, 1), (21, 3), (23, 2), (24, 1), (32, 1);  
**186:** (2, 3), (3, 4), (4, 8), (5, 11), (6, 11), (7, 15), (8, 19), (9, 13), (10, 11), (11, 11), (12, 5), (13, 3), (14, 6), (15, 6), (16, 9), (17, 1), (18, 4), (20, 3), (23, 2), (26, 1), (27, 2), (30, 1), (31, 1), (41, 2);  
**187:** (2, 1), (3, 5), (4, 6), (5, 10), (6, 9), (7, 7), (8, 4), (9, 7), (10, 3), (11, 4), (12, 2), (13, 2), (14, 2), (15, 1), (16, 2), (17, 2), (18, 4), (19, 1), (20, 2), (21, 2), (24, 1), (25, 1), (26, 1), (27, 5), (29, 1), (35, 2), (79, 1);  
**188:** (2, 1), (3, 1), (4, 1), (5, 2), (6, 2), (8, 3), (10, 1), (12, 2), (13, 1), (14, 1), (15, 1);  
**189:** (3, 5), (4, 9), (5, 14), (6, 19), (7, 18), (8, 12), (9, 7), (10, 6), (11, 2), (12, 1), (14, 1), (15, 4), (16, 2), (17, 5), (18, 4), (19, 2), (20, 1), (21, 1), (23, 1), (24, 2), (26, 1), (28, 2);  
**190:** (4, 8), (5, 11), (6, 6), (7, 13), (8, 7), (9, 6), (10, 2), (11, 2), (12, 8), (13, 1), (15, 3), (18, 1), (19, 1), (20, 2), (21, 1), (22, 1), (107, 1), (108, 1);  
**191:** (1, 1), (2, 7), (3, 13), (4, 25), (5, 26), (6, 15), (7, 13), (8, 12), (9, 8), (10, 6), (11, 4), (12, 6), (13, 6), (14, 4), (15, 2), (16, 6), (17, 3), (18, 4), (19, 3), (20, 7), (21, 6), (23, 3);  
**192:** (5, 2), (6, 5), (7, 2), (8, 5), (9, 1), (10, 3), (11, 3);  
**193:** (2, 1), (3, 7), (4, 16), (5, 10), (6, 9), (7, 6), (8, 4), (9, 5), (10, 6), (11, 2), (12, 1), (13, 4), (14, 1), (18, 1), (21, 1), (25, 1), (30, 1), (37, 1);  
**194:** (1, 3), (2, 13), (3, 27), (4, 43), (5, 70), (6, 44), (7, 50), (8, 36), (9, 34), (10, 31), (11, 40), (12, 27), (13, 20), (14, 17), (15, 16), (16, 9), (17, 4), (18, 10), (19, 4), (20, 6), (21, 4), (22, 2), (23, 4), (24, 2), (25, 1), (26, 1), (29, 1), (36, 1), (39, 3), (42, 1), (43, 1), (44, 1), (47, 1), (51, 3), (52, 3), (53, 1);  
**195:** (3, 1), (4, 1), (6, 2), (8, 2), (9, 2), (10, 4), (12, 1), (14, 1), (19, 1), (20, 1), (35, 1);  
**196:** (4, 1), (5, 4), (7, 4), (8, 1), (10, 1), (13, 2), (14, 1), (16, 2), (20, 1), (23, 1), (25, 1);  
**197:** (3, 2), (4, 5), (5, 4), (6, 4), (7, 2), (9, 3), (10, 6), (12, 1), (13, 2), (14, 1), (15, 3), (16, 1), (27, 1), (29, 1), (30, 1), (37, 1), (38, 1);  
**198:** (2, 2), (3, 3), (4, 3), (5, 5), (6, 4), (7, 5), (8, 4), (9, 2), (10, 3), (11, 2), (12, 5), (13, 2), (14, 2), (16, 3), (18, 1), (19, 1), (22, 2), (26, 2), (30, 1), (33, 1), (47, 1), (49, 1), (51, 1);  
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**202:** (2, 1), (3, 2), (4, 5), (5, 2), (6, 3), (7, 1), (8, 2), (9, 1), (10, 1), (11, 3), (12, 1), (13, 1), (14, 2), (20, 1), (59, 1), (62, 1), (77, 1), (83, 1);  
**203:** (5, 3), (6, 3), (7, 4), (8, 3), (9, 4), (10, 10), (11, 10), (12, 12), (13, 9), (14, 11), (15, 8), (16, 10), (17, 8), (18, 6), (19, 5), (20, 3), (21, 1), (22, 1), (24, 3), (26, 1), (30, 1), (31, 1), (32, 1), (33, 1), (35, 1), (49, 1);

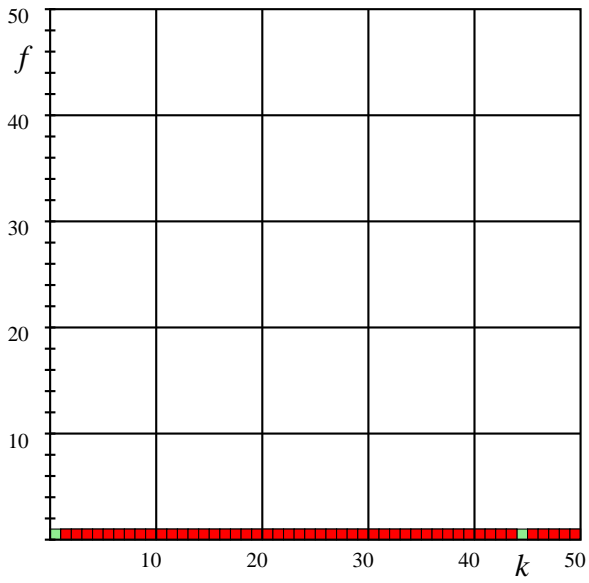
**204:** (2, 4), (3, 7), (4, 10), (5, 8), (6, 12), (7, 6), (8, 6), (9, 8), (10, 6), (11, 3), (12, 1), (13, 4), (14, 4), (18, 1), (20, 1), (64, 1), (70, 1);  
**205:** (1, 2), (2, 4), (3, 7), (4, 6), (5, 7), (6, 9), (7, 5), (8, 5), (9, 4), (10, 6), (11, 2), (12, 1), (13, 3), (14, 4), (15, 2), (17, 2), (18, 2), (19, 1), (20, 2), (21, 1), (22, 1), (24, 1), (26, 1), (29, 1), (31, 1), (32, 1), (33, 1), (34, 2), (35, 1), (37, 1), (50, 1), (54, 1), (83, 1);  
**206:** (1, 1), (3, 4), (4, 4), (5, 6), (6, 4), (7, 3), (10, 1), (26, 1), (27, 1), (31, 1);  
**207:** (3, 1), (7, 1);  
**208:** (6, 1), (8, 1);  
**209:** (3, 1), (11, 1), (12, 2);  
**210:** (3, 1), (4, 1), (5, 1), (6, 1), (7, 2);  
**211:** (2, 1);  
**213:** (2, 2), (3, 1), (4, 4), (5, 4), (6, 8), (7, 6), (8, 2), (9, 6), (10, 5), (11, 1), (12, 1), (13, 1), (14, 1), (15, 1), (18, 1);  
**214:** (3, 2), (4, 1), (5, 1), (6, 1), (8, 1), (11, 1), (15, 1), (24, 1);  
**215:** (2, 1), (3, 4), (4, 3), (5, 6), (6, 7), (7, 12), (8, 20), (9, 8), (10, 6), (12, 2), (13, 1), (19, 1), (23, 1);  
**216:** (2, 3), (3, 8), (4, 10), (5, 22), (6, 20), (7, 20), (8, 9), (9, 6), (10, 6), (11, 7), (12, 2), (13, 5), (14, 4), (15, 4), (16, 3), (17, 12), (18, 5), (19, 7), (20, 5), (22, 1), (25, 1), (26, 1), (28, 1), (29, 1), (37, 1), (108, 1), (118, 1), (367, 1);  
**217:** (2, 2), (3, 6), (4, 15), (5, 8), (6, 17), (7, 8), (8, 7), (9, 2), (10, 6), (11, 2), (12, 4), (13, 1), (18, 1), (19, 1), (20, 1), (21, 1), (24, 1), (32, 1), (77, 1);  
**218:** (3, 3), (4, 5), (5, 3), (6, 9), (7, 5), (8, 4), (9, 8), (10, 4), (11, 2), (12, 1), (13, 2), (22, 1), (31, 1);  
**219:** (3, 1), (4, 2), (5, 3), (6, 7), (7, 2), (8, 2), (10, 1), (11, 1), (12, 1), (13, 1), (14, 1), (21, 1), (22, 1);  
**220:** (1, 2), (2, 3), (3, 4), (4, 6), (5, 8), (6, 11), (7, 9), (8, 3), (9, 3), (10, 6), (11, 2), (12, 1), (13, 2), (19, 2), (21, 2), (23, 1), (48, 1);  
**221:** (1, 1), (2, 8), (3, 34), (4, 25), (5, 14), (6, 16), (7, 26), (8, 31), (9, 30), (10, 30), (11, 22), (12, 9), (13, 7), (14, 8), (15, 4), (16, 2), (17, 2), (19, 2), (20, 2), (22, 1), (23, 2);  
**222:** (4, 1), (5, 1), (6, 2), (10, 1), (12, 1), (13, 1), (14, 1);  
**223:** (2, 3), (3, 4), (4, 10), (5, 9), (6, 5), (7, 7), (8, 4), (9, 4), (10, 1), (12, 2), (13, 1), (25, 1), (28, 1);  
**224:** (2, 7), (3, 2), (4, 3), (5, 4), (6, 4), (7, 5), (8, 4), (10, 1);  
**225:** (1, 1), (2, 14), (3, 28), (4, 48), (5, 44), (6, 44), (7, 30), (8, 24), (9, 14), (10, 4), (11, 5), (12, 1), (13, 10), (14, 1), (15, 1), (16, 1), (21, 1), (23, 3), (24, 2), (25, 1), (26, 3), (27, 1), (28, 2), (29, 1), (32, 2), (36, 1);  
**226:** (2, 1), (3, 1), (4, 5), (5, 6), (6, 1), (7, 5), (8, 5), (9, 5), (10, 5), (11, 5), (12, 6), (13, 4), (14, 4), (15, 3), (16, 2), (17, 1), (19, 1), (58, 1);  
**227:** (1, 2), (2, 8), (3, 13), (4, 37), (5, 31), (6, 23), (7, 23), (8, 21), (9, 22), (10, 21), (11, 13), (12, 11), (13, 11), (14, 5), (15, 10), (16, 7), (17, 3), (18, 1), (19, 1), (20, 4), (21, 2), (23, 1), (26, 1), (48, 1);  
**228:** (2, 1), (3, 1), (5, 3), (6, 1), (10, 1), (11, 1), (12, 1), (13, 1), (31, 1);  
**229:** (1, 2), (2, 9), (3, 13), (4, 15), (5, 12), (6, 8), (7, 10), (8, 4), (9, 6), (10, 5), (11, 3), (12, 6), (13, 2), (14, 6), (15, 5), (16, 3), (17, 1), (21, 1), (30, 1), (44, 1), (45, 1), (49, 1), (54, 1);  
**230:** (2, 3), (3, 6), (4, 7), (5, 7), (6, 6), (7, 2), (8, 1), (9, 4), (10, 2), (11, 1), (22, 1);

3.3 Plots ( $f \leq 50, k \leq 50$ )

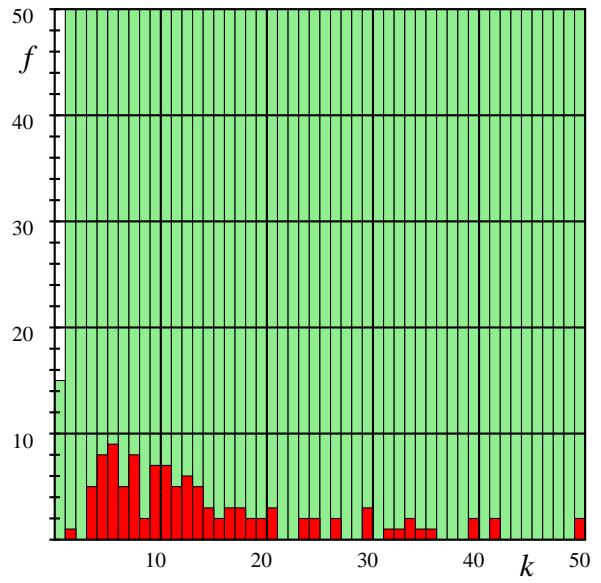




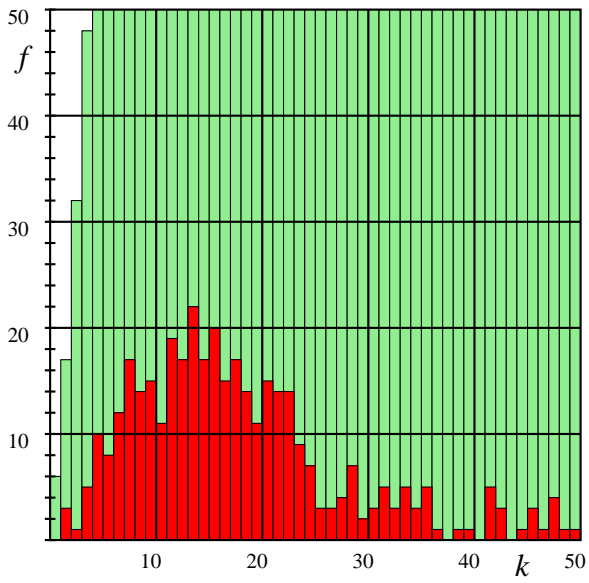
#9 (1, 0)



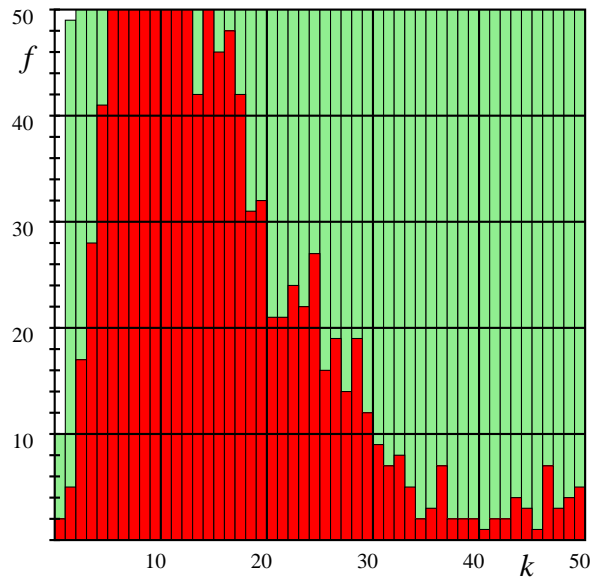
#10 (7, 8)



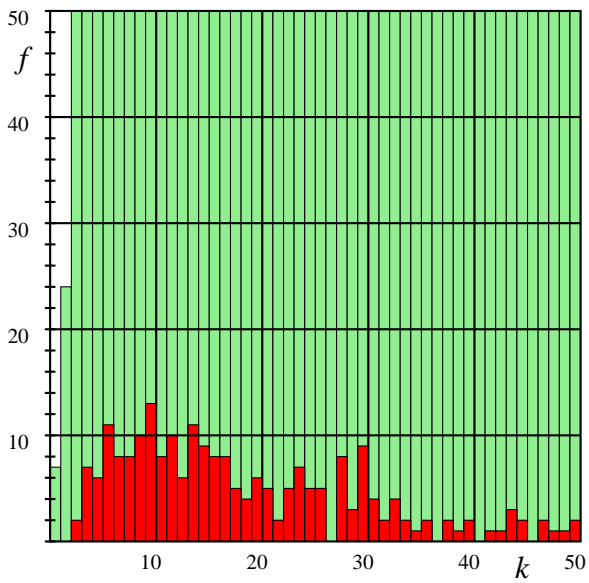
#11 (2, 4)



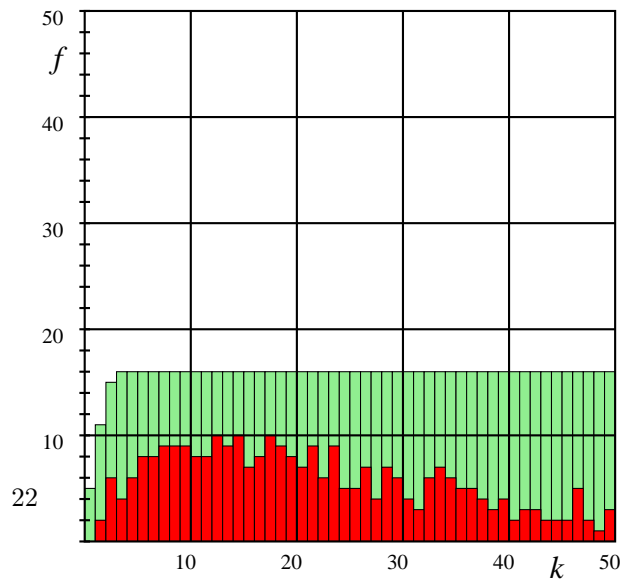
#12 (4, 6)



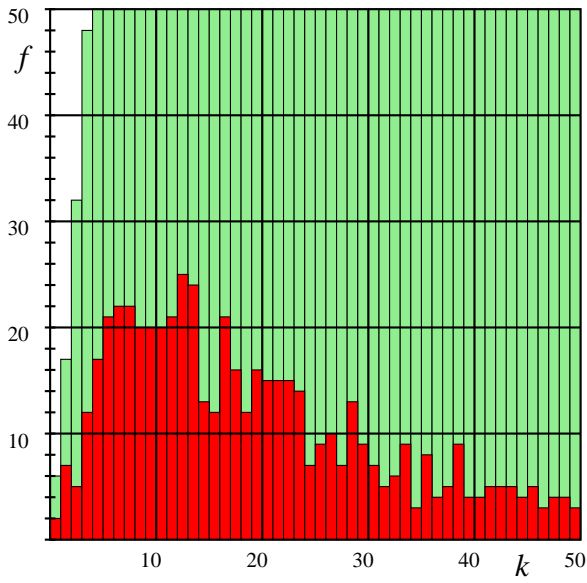
#13 (3, 4)



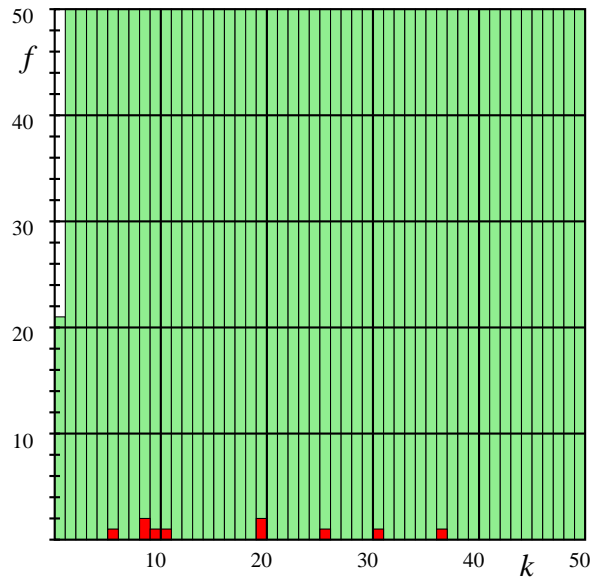
#14 (1, 4)



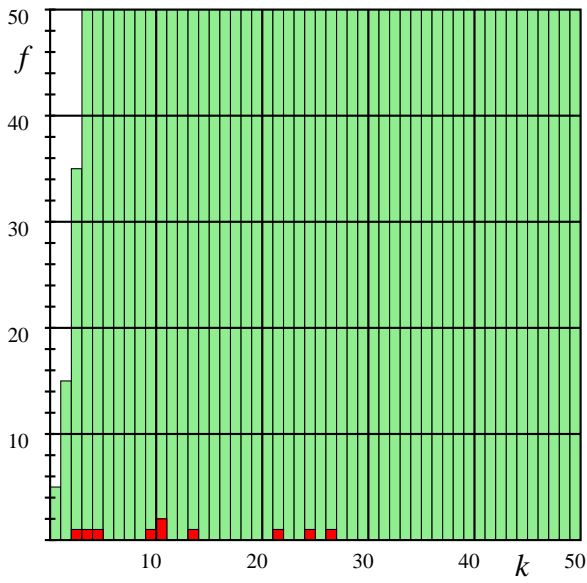
#15 (2, 4)



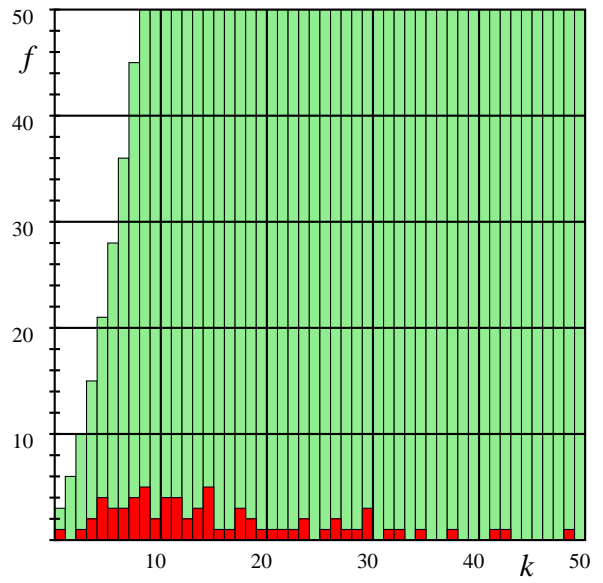
#16 (13, 8)



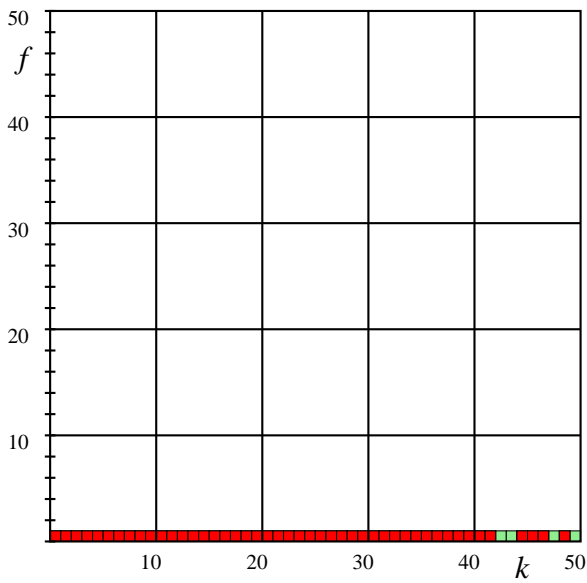
#17 (5, 0)



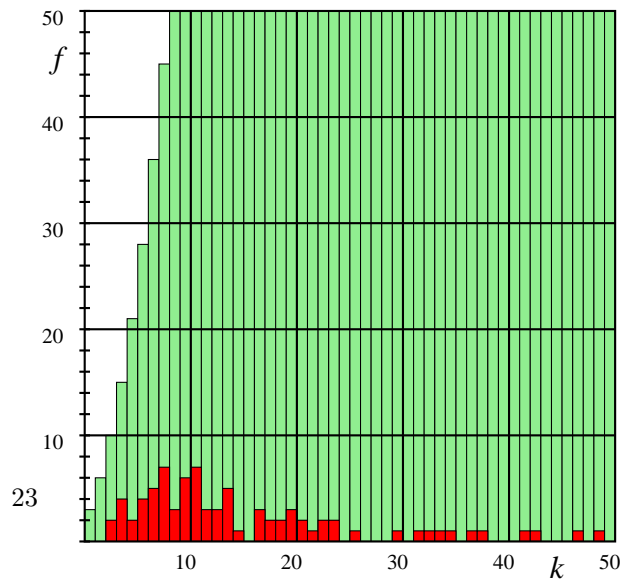
#18 (3, 0)



#19 (1, 0)

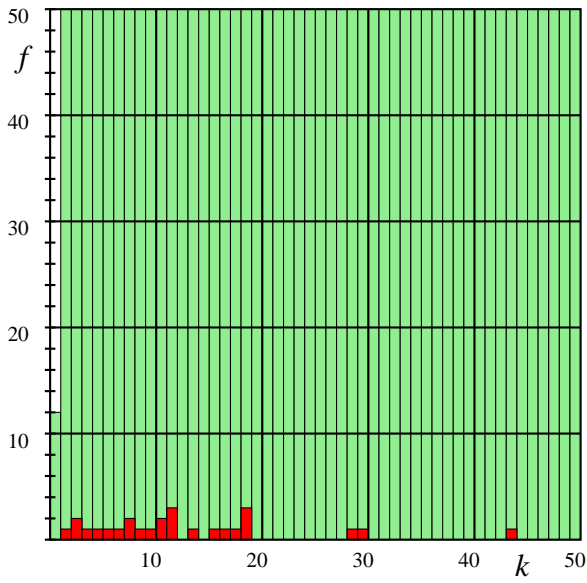


#20 (3, 0)

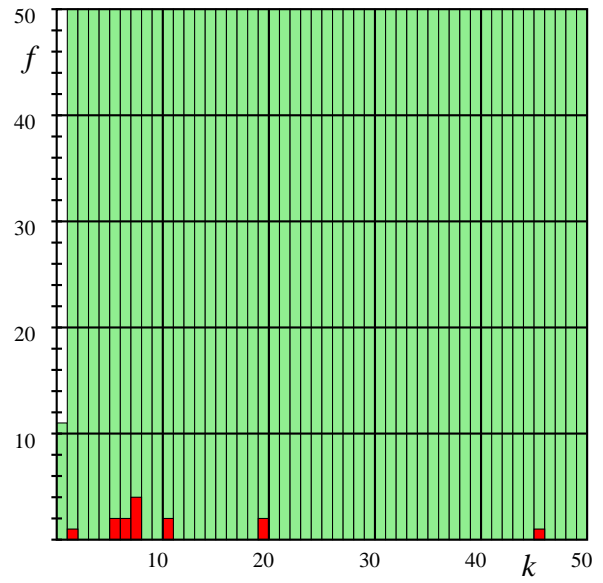




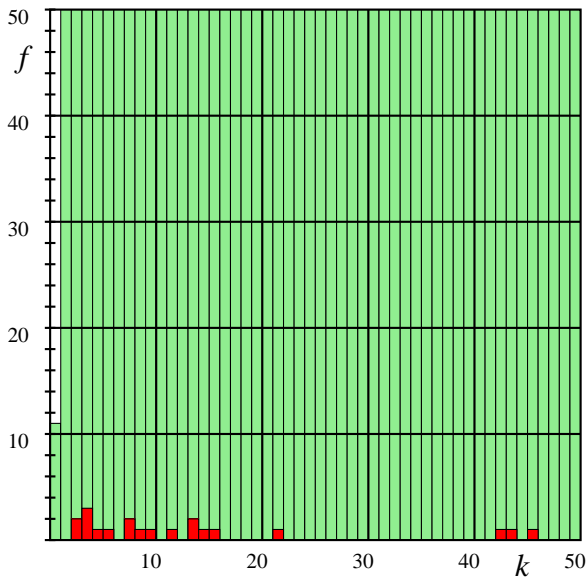
#21 (8, 4)



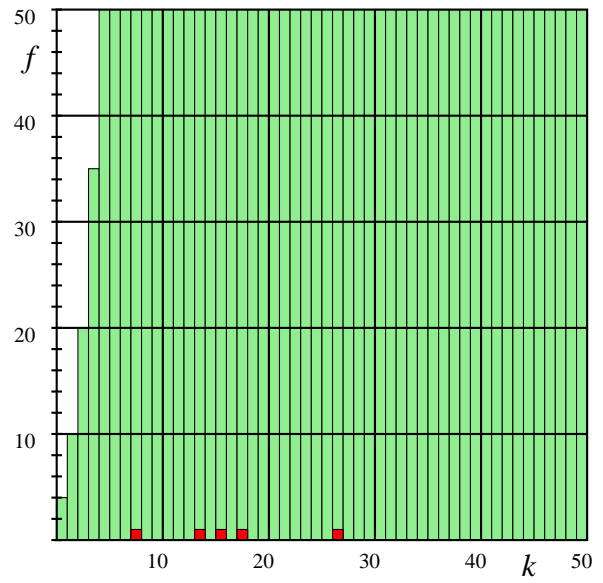
#22 (7, 4)



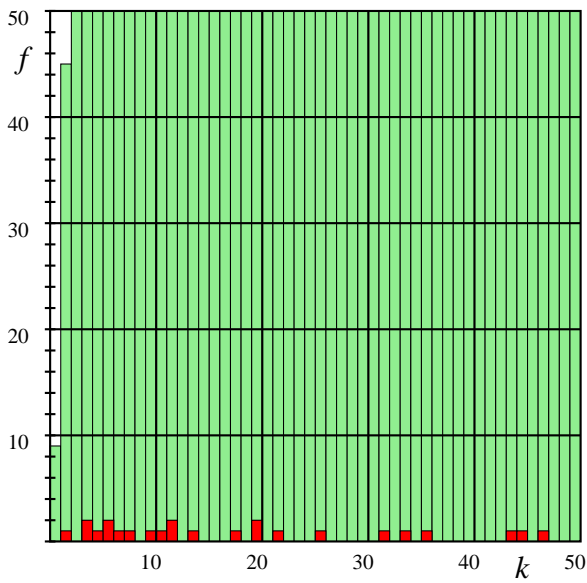
#23 (7, 4)



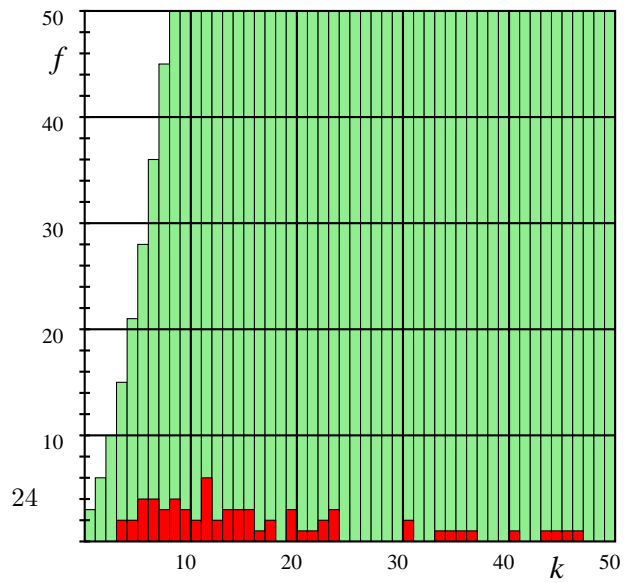
#24 (4, 0)



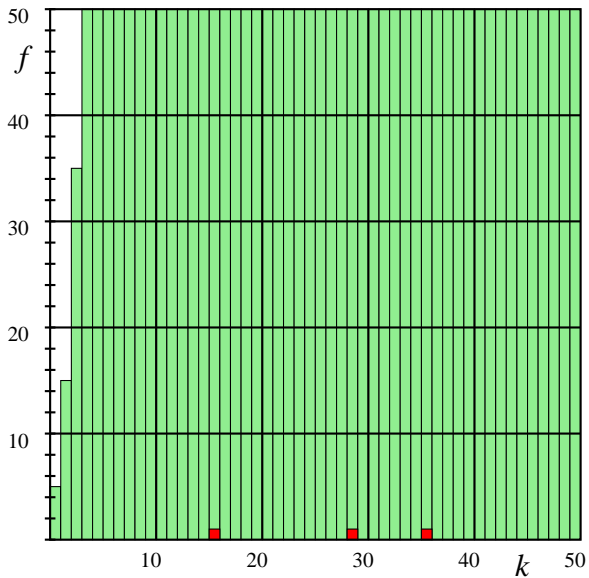
#25 (9, 0)



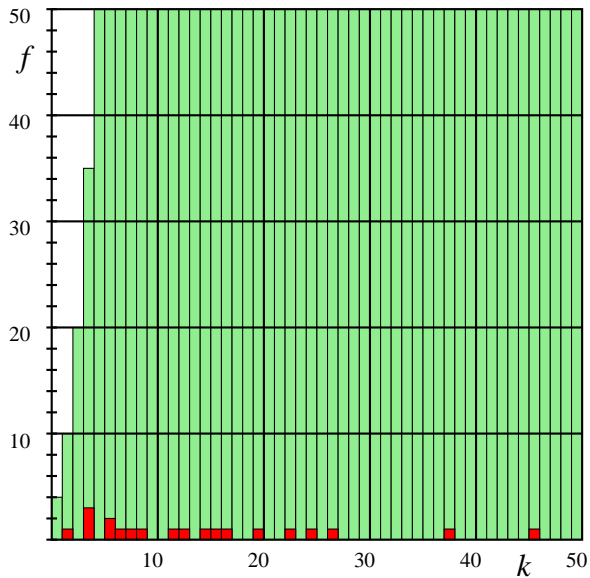
#26 (3, 0)



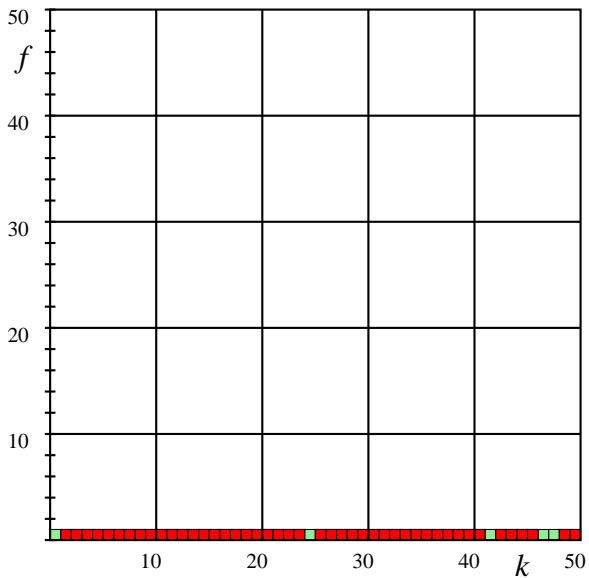
#27 (5, 0)



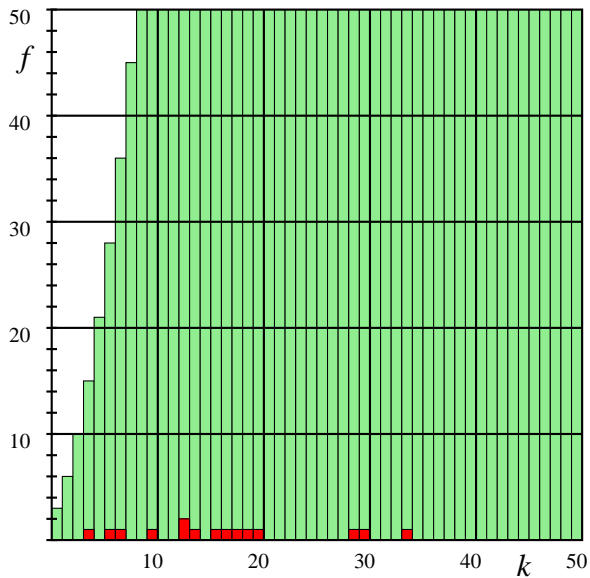
#28 (4, 0)



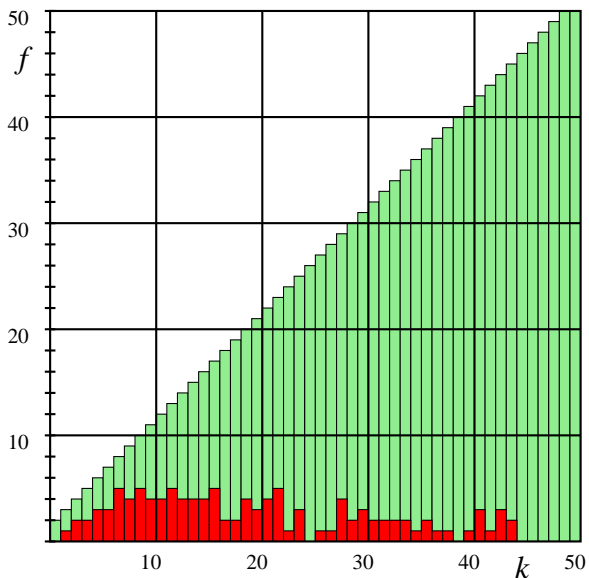
#29 (1, 0)



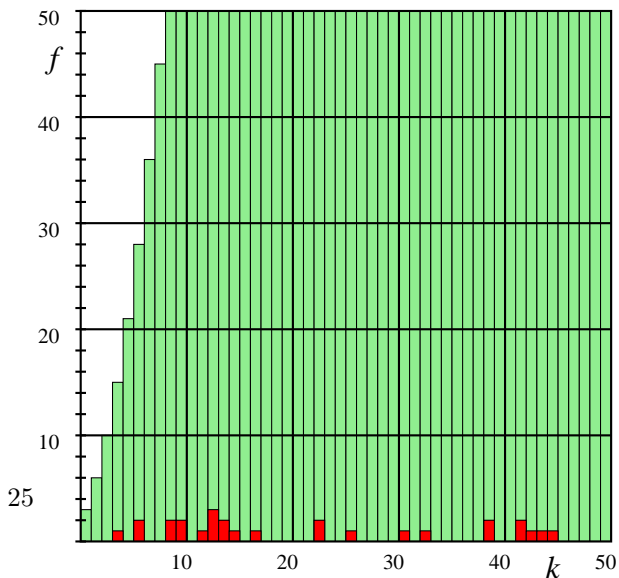
#30 (3, 0)



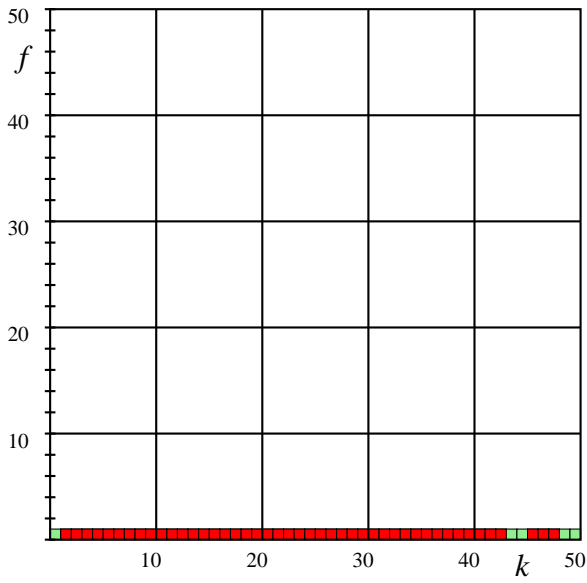
#31 (2, 0)



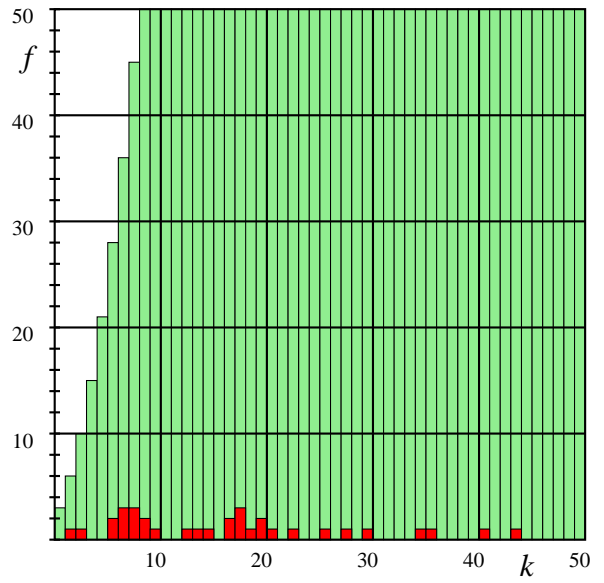
#32 (3, 0)



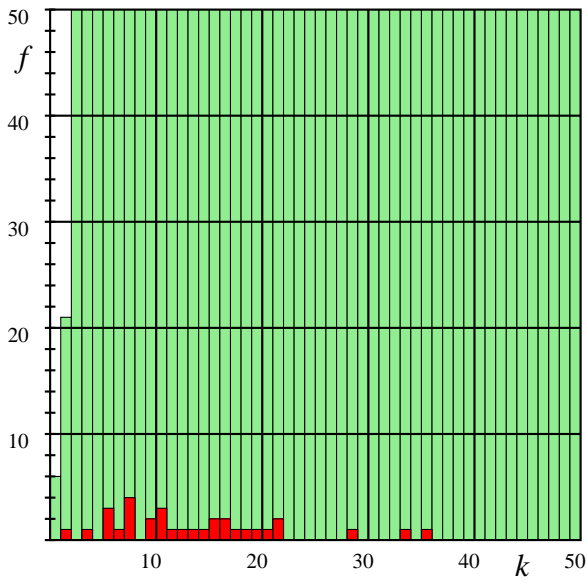
#33 (1, 0)



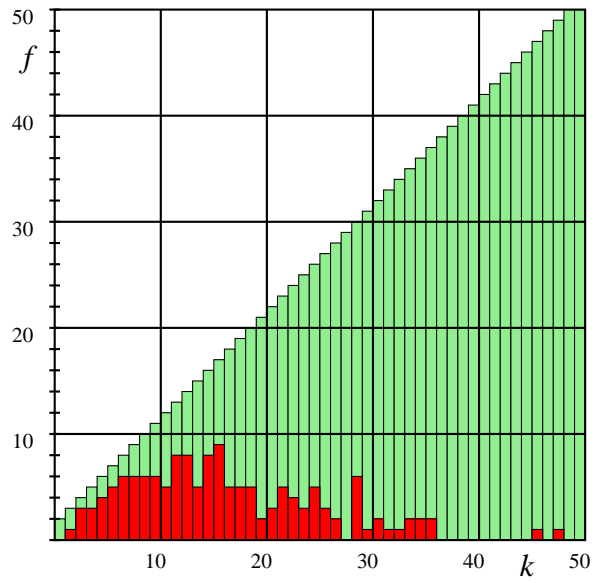
#34 (3, 0)



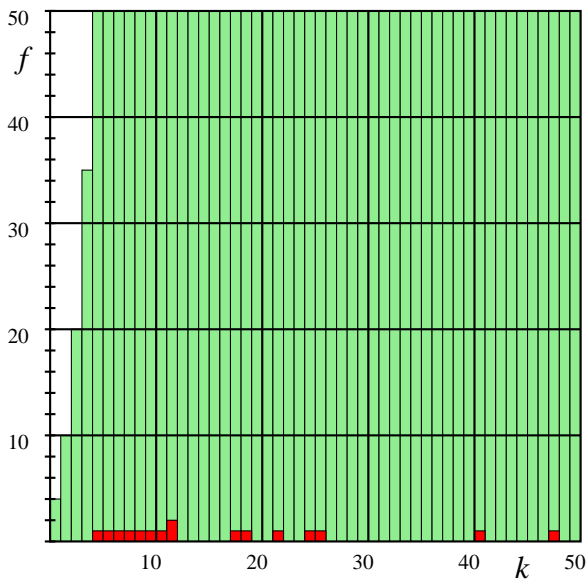
#35 (6, 0)



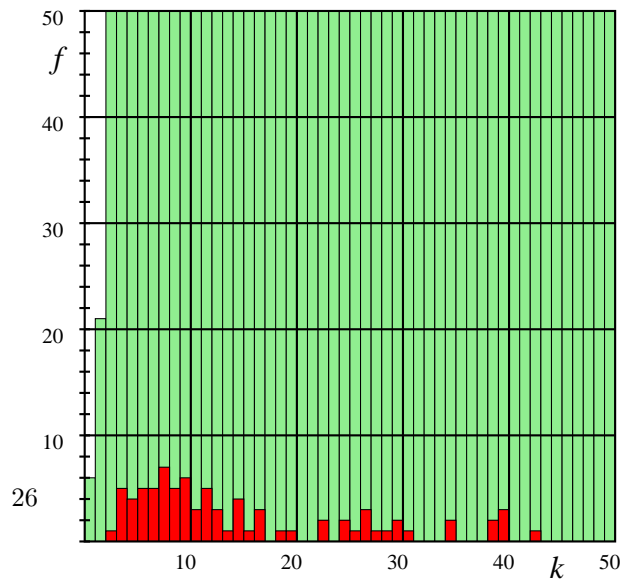
#36 (2, 0)



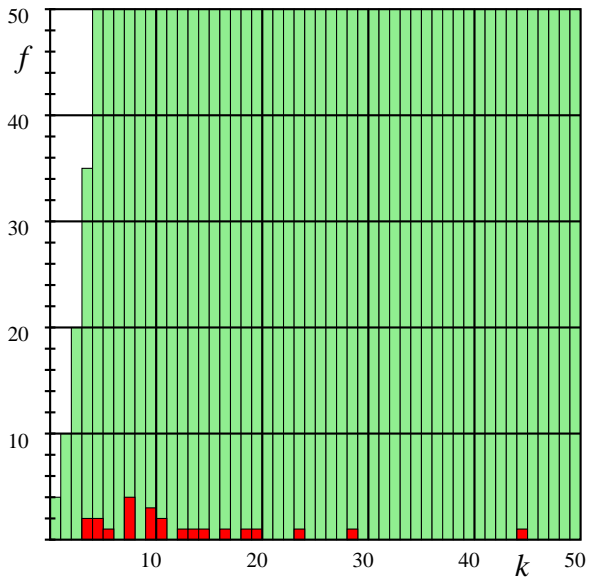
#37 (4, 0)



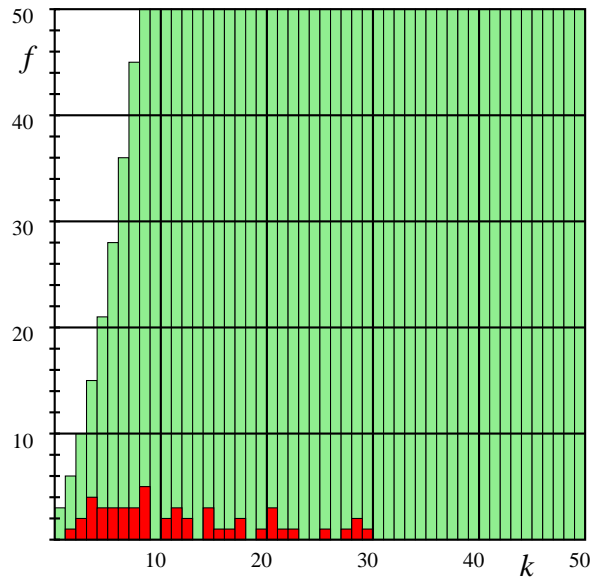
#38 (6, 0)



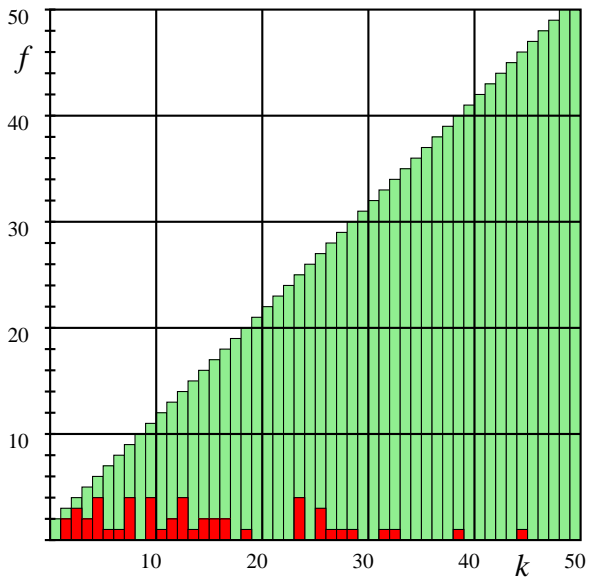
#39 (4, 0)



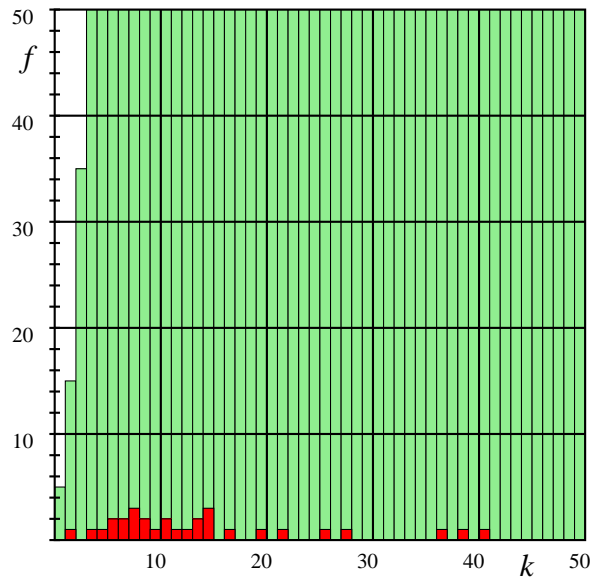
#40 (3, 0)



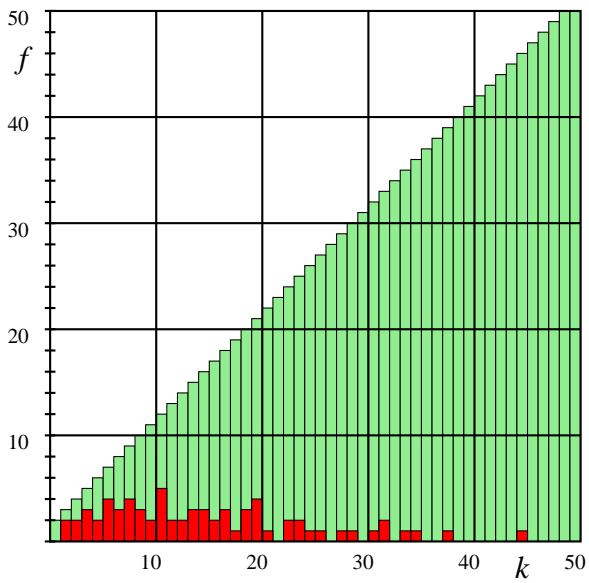
#41 (2, 0)



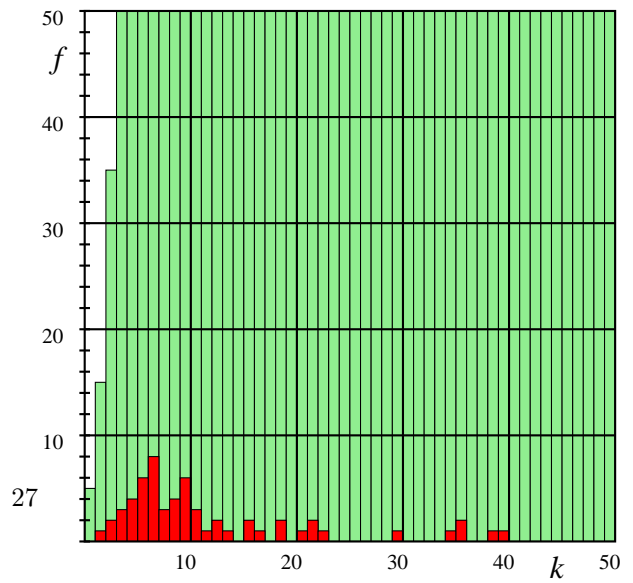
#42 (5, 0)



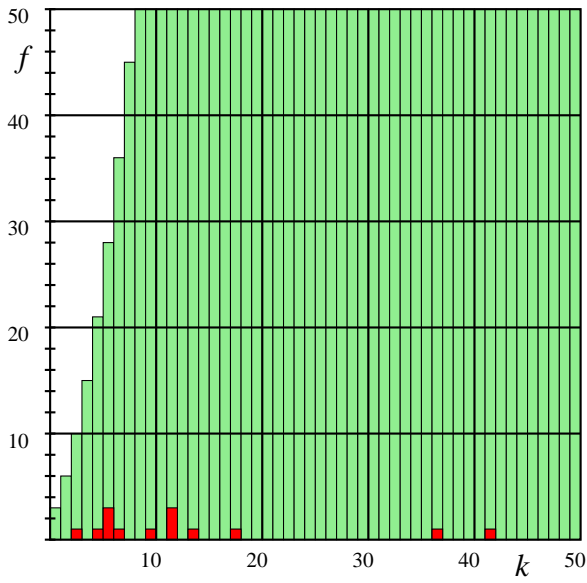
#43 (2, 0)



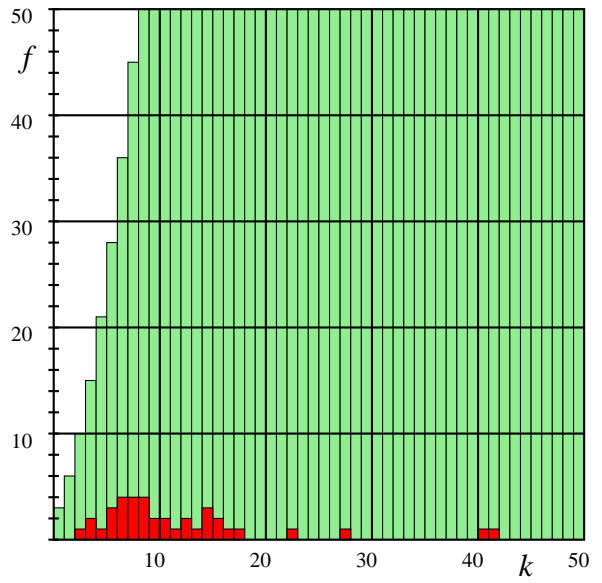
#44 (5, 0)



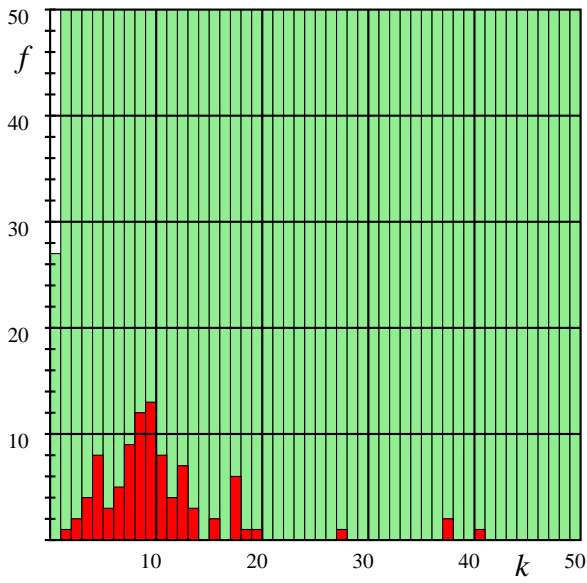
#45 (3, 0)



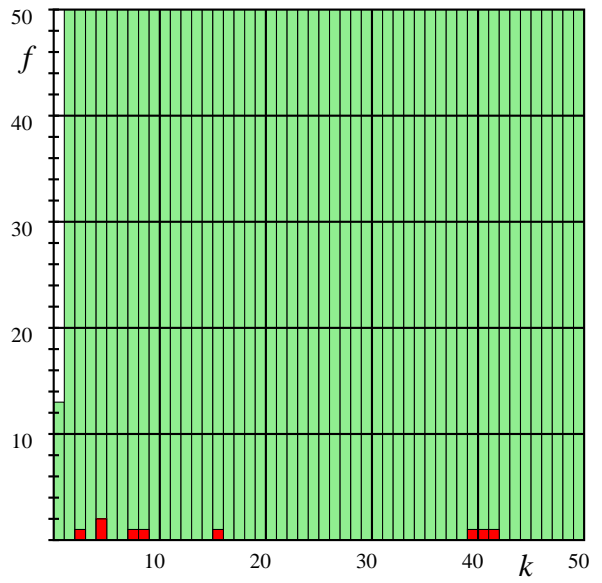
#46 (3, 0)



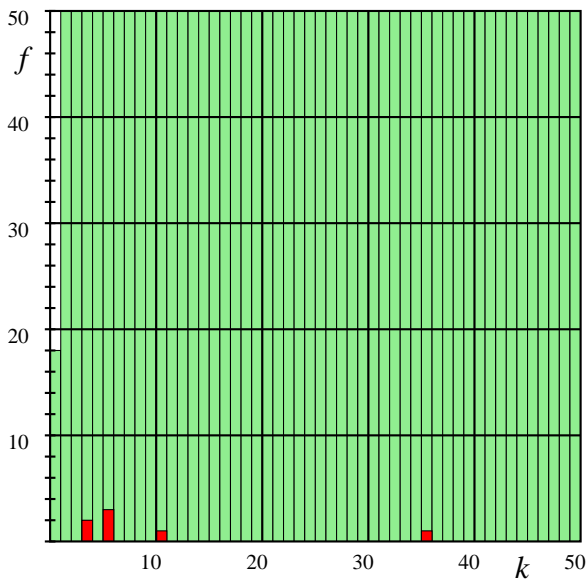
#47 (19, 8)



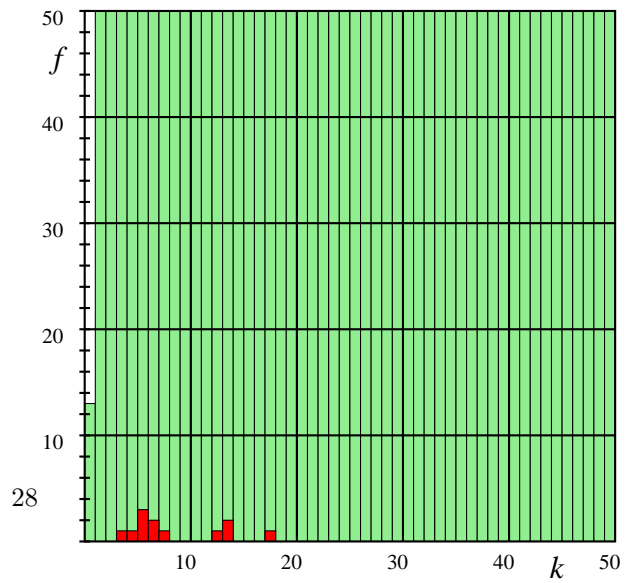
#48 (7, 6)



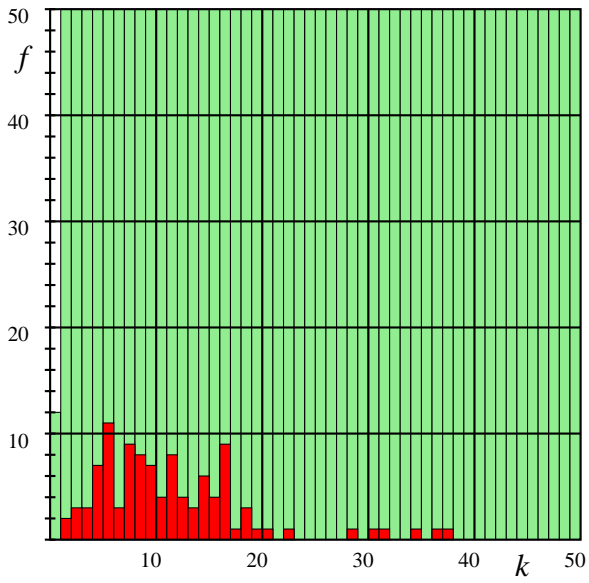
#49 (10, 8)



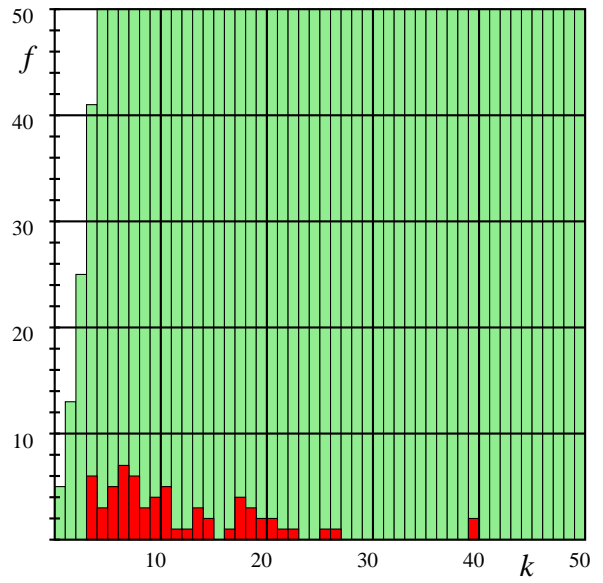
#50 (7, 6)



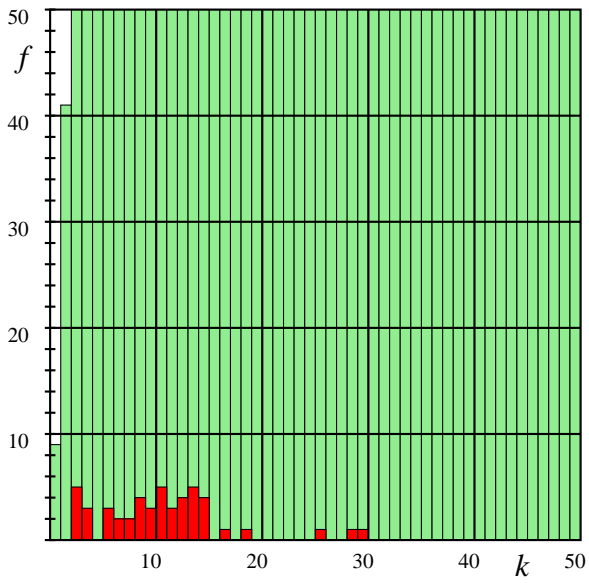
#51 (8, 4)



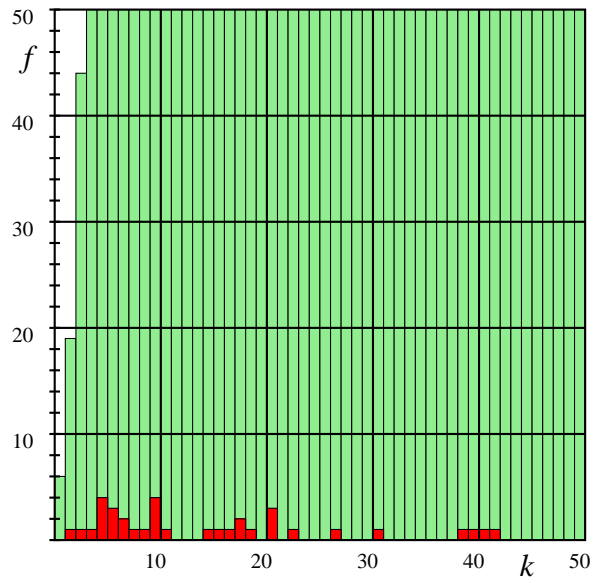
#52 (3, 2)



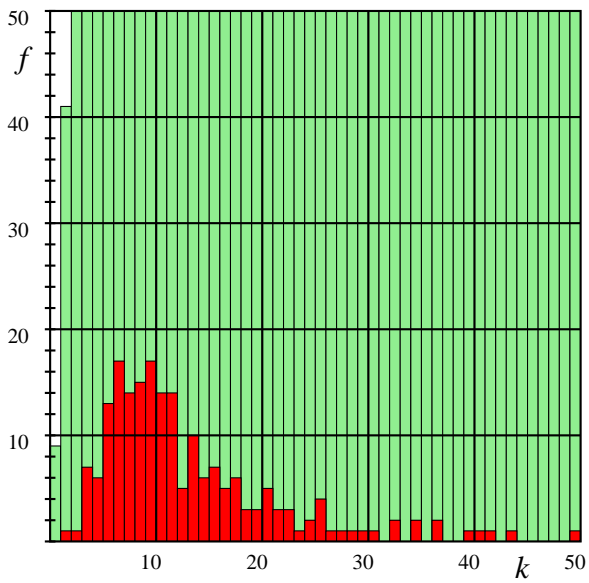
#53 (5, 4)



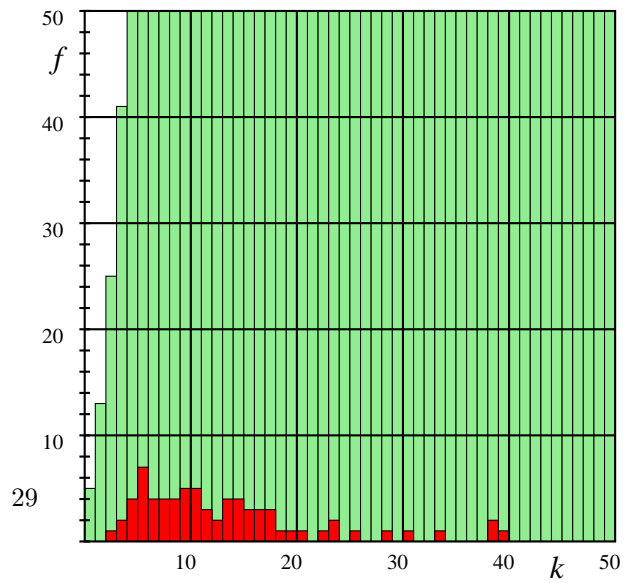
#54 (4, 2)



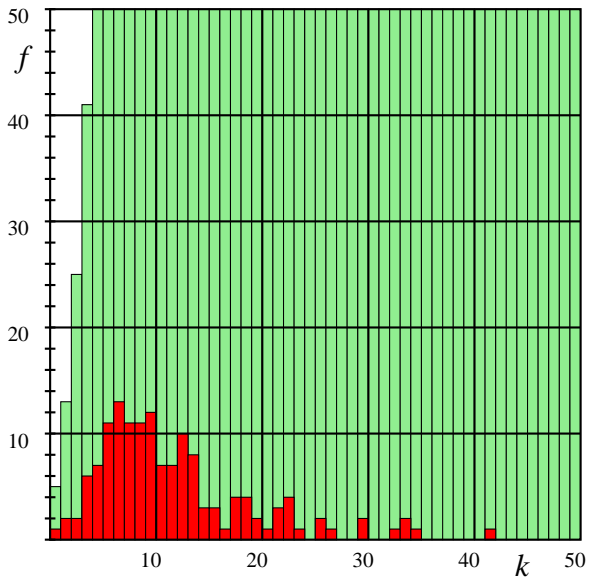
#55 (5, 4)



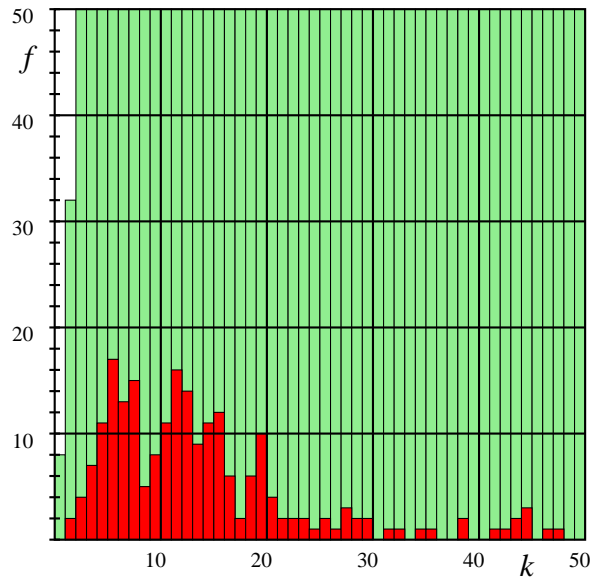
#56 (3, 2)



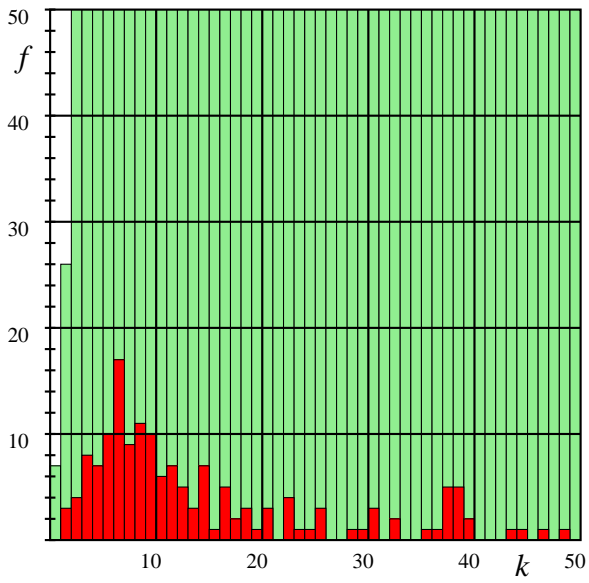
#57 (3, 2)



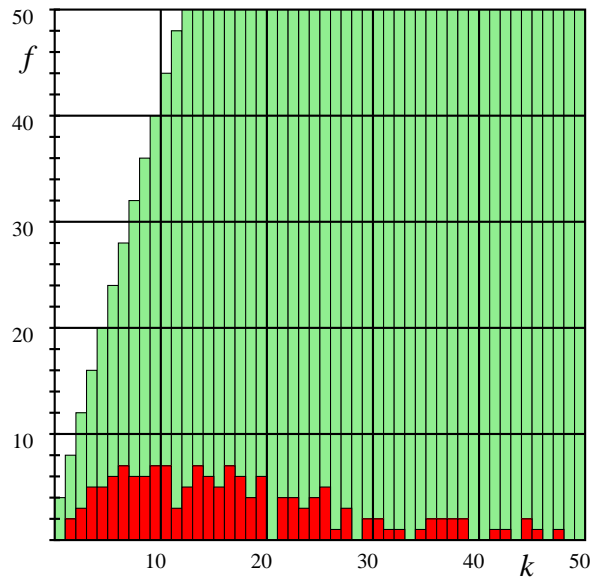
#58 (4, 4)



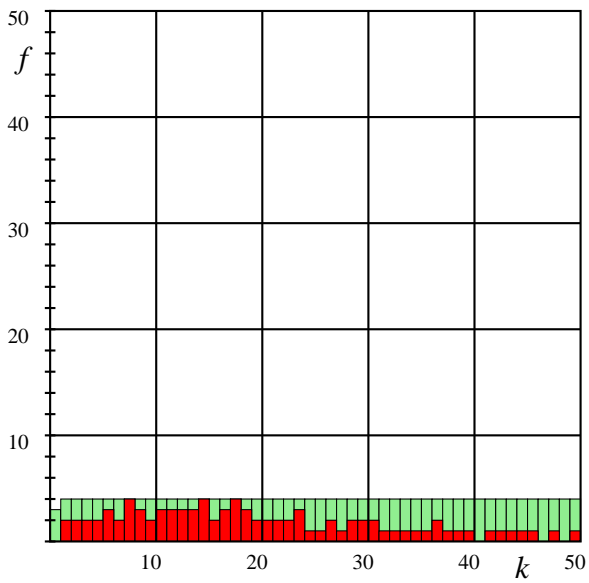
#59 (5, 2)



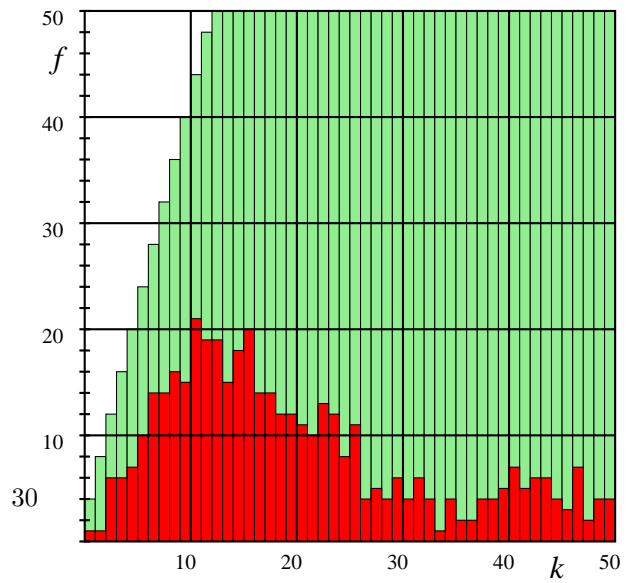
#60 (2, 2)



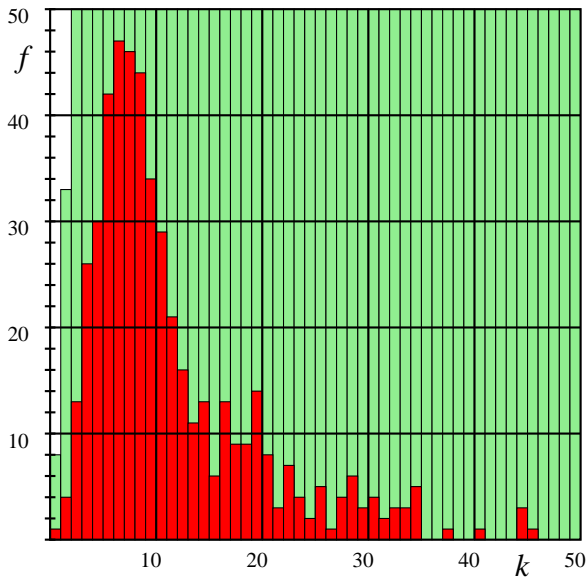
#61 (1, 2)



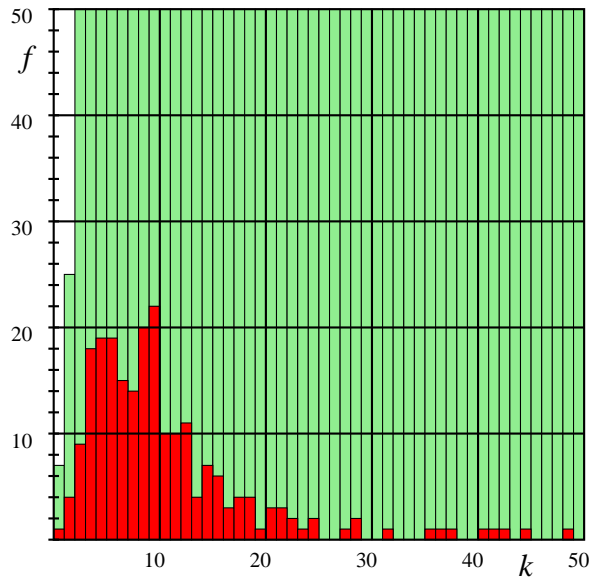
#62 (2, 2)



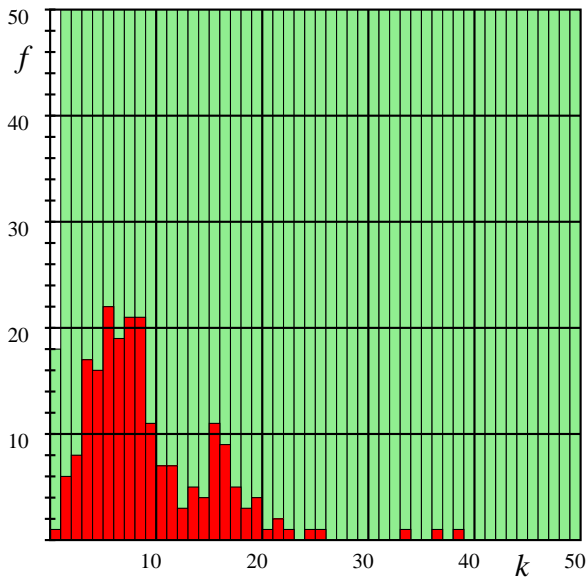
#63 (5, 3)



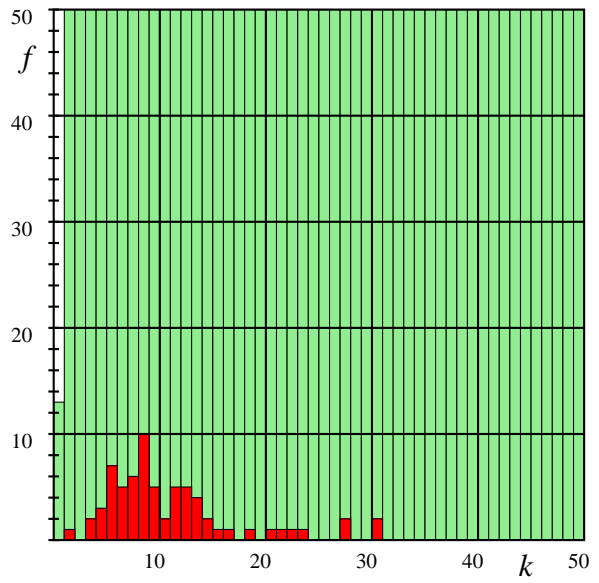
#64 (4, 3)



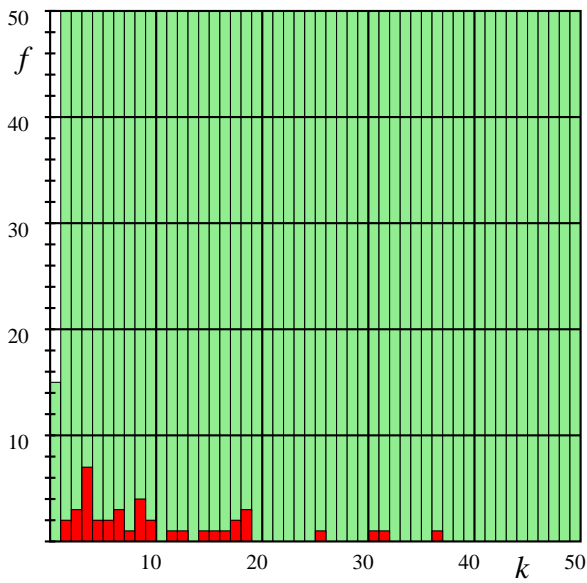
#65 (12, 6)



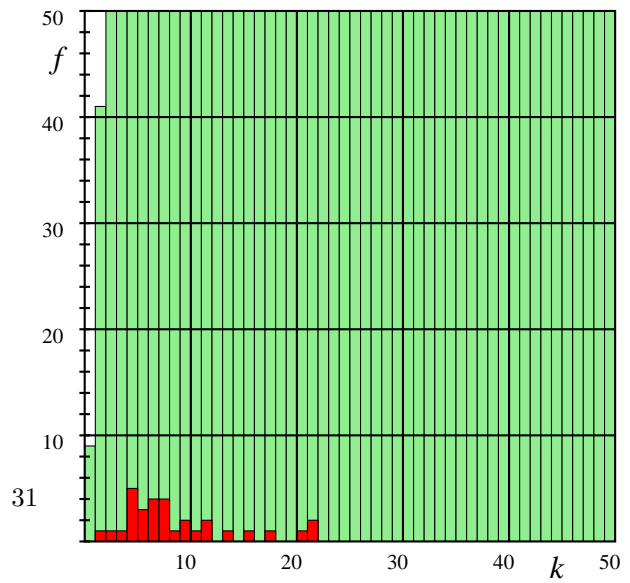
#66 (7, 6)



#67 (9, 6)

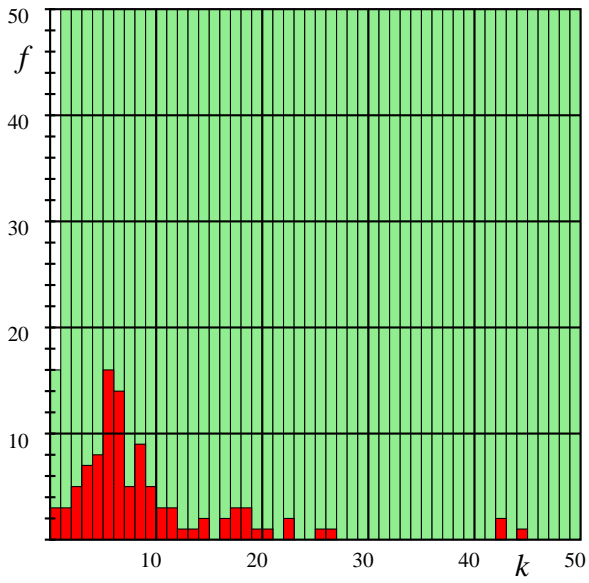


#68 (5, 4)

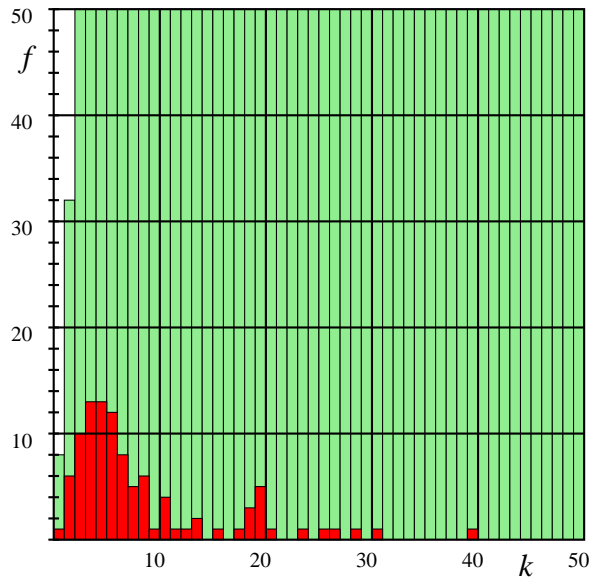




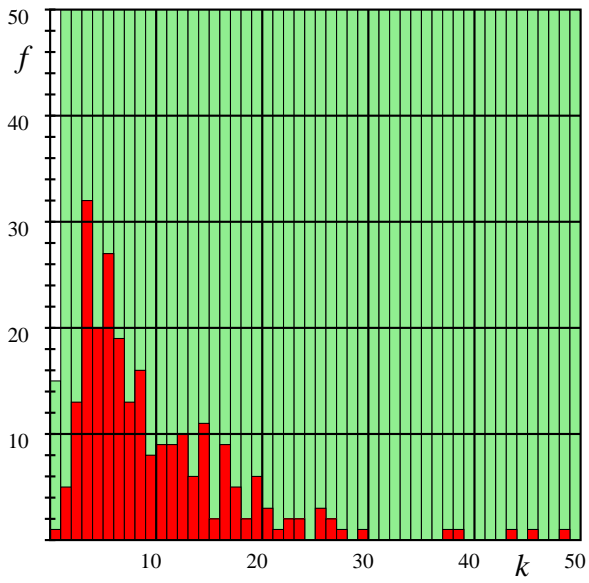
#69 (10, 6)



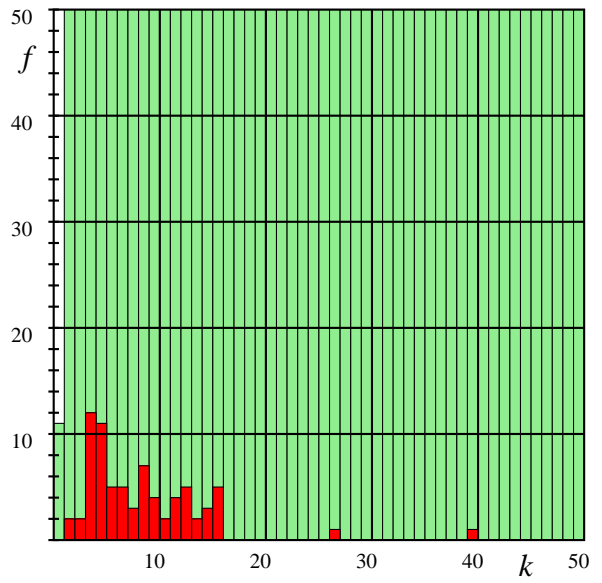
#70 (4, 4)



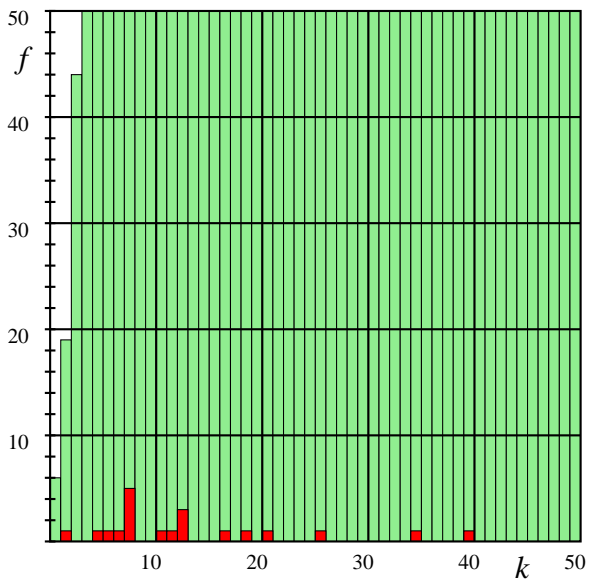
#71 (10, 5)



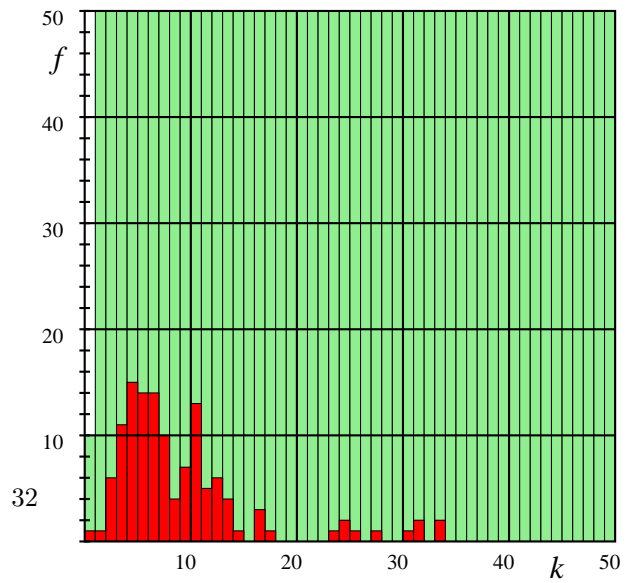
#72 (6, 5)



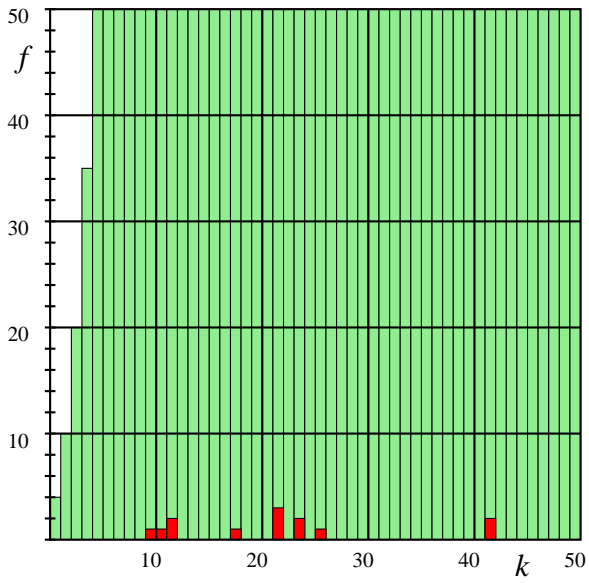
#73 (4, 2)



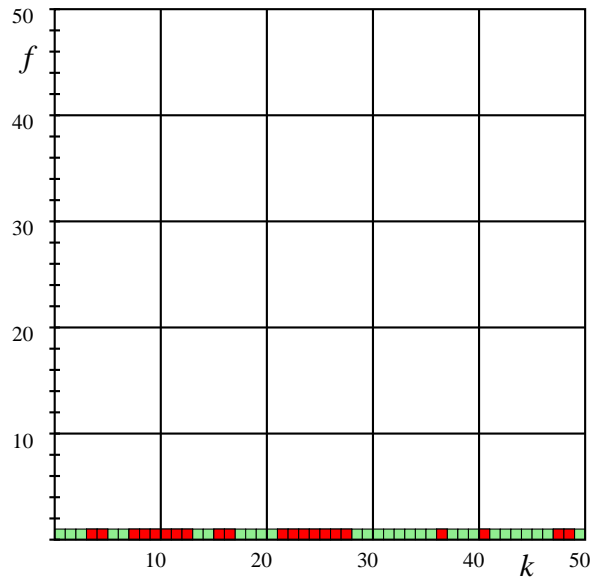
#74 (6, 4)



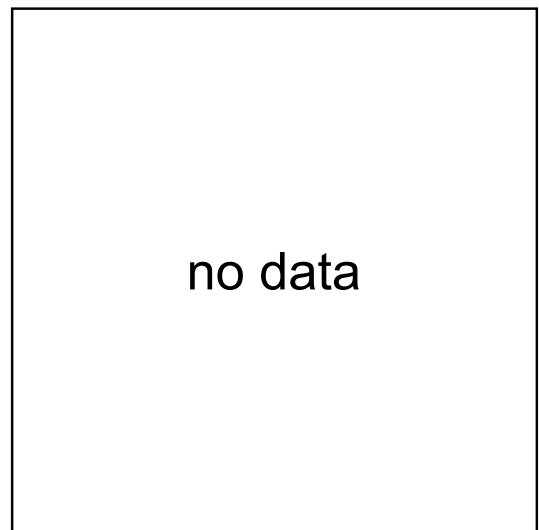
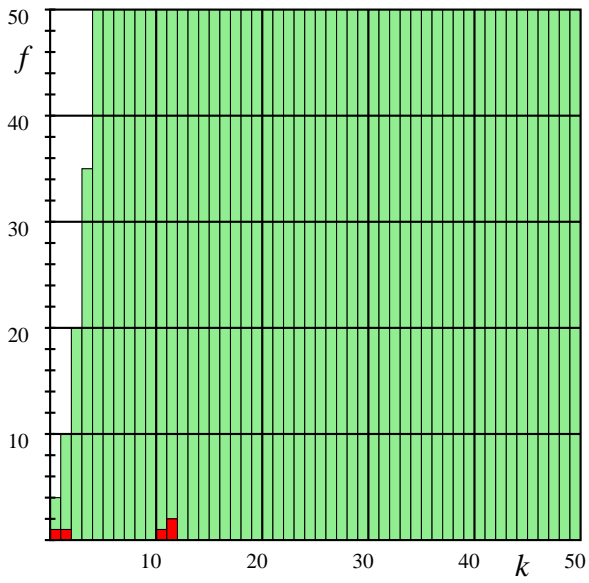
#75 (4, 0)



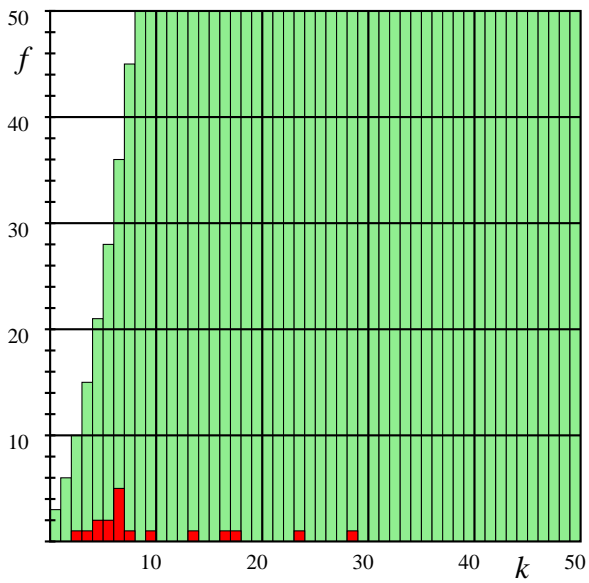
#76 (1, 0)



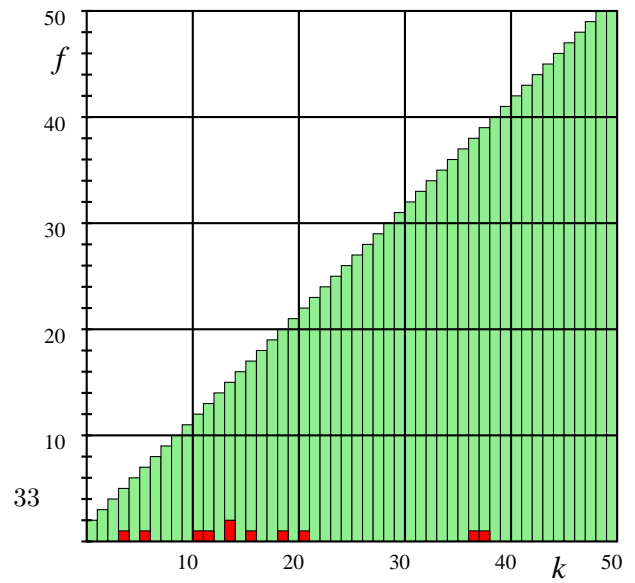
#77 (4, 0)



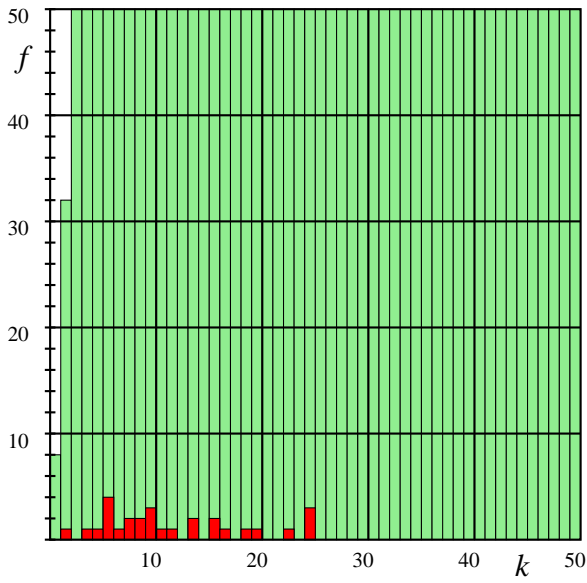
#79 (3, 0)



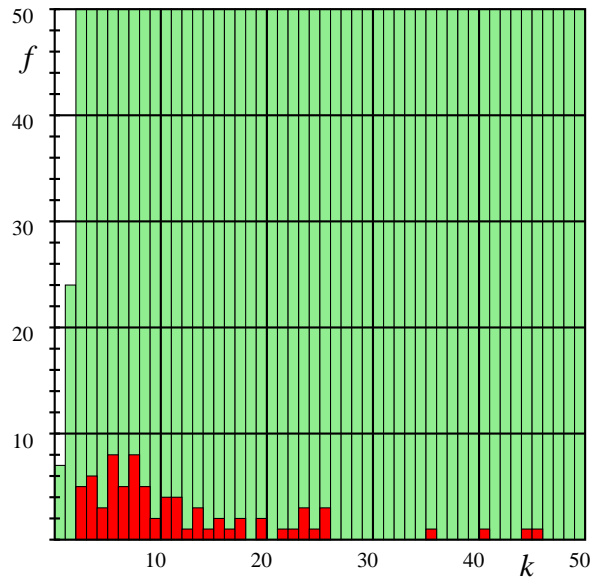
#80 (2, 0)



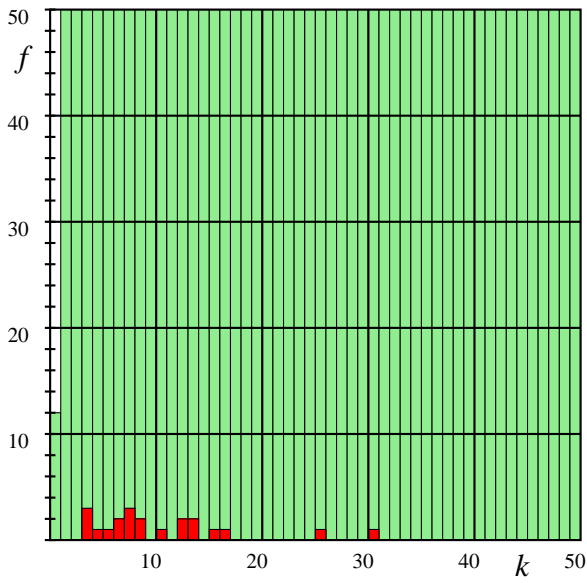
#81 (4, 4)



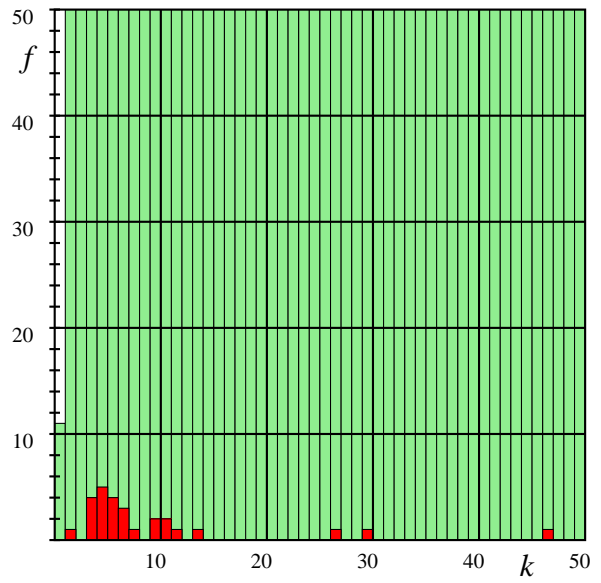
#82 (3, 4)



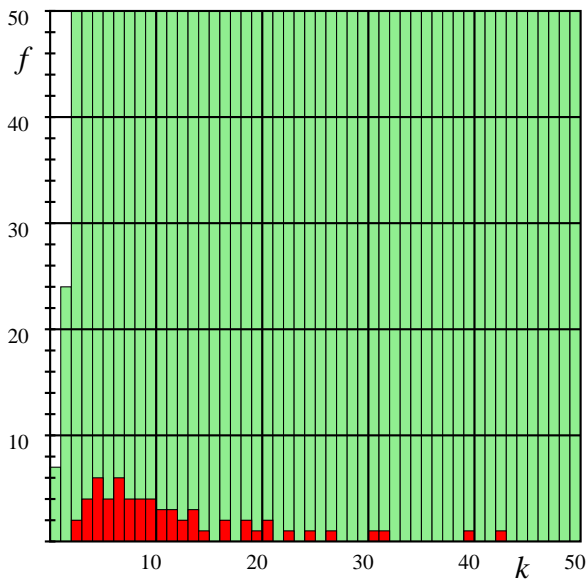
#83 (6, 6)



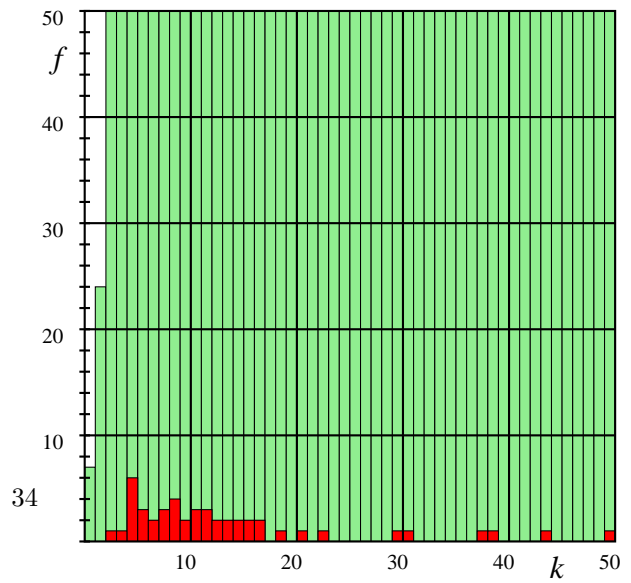
#84 (5, 6)



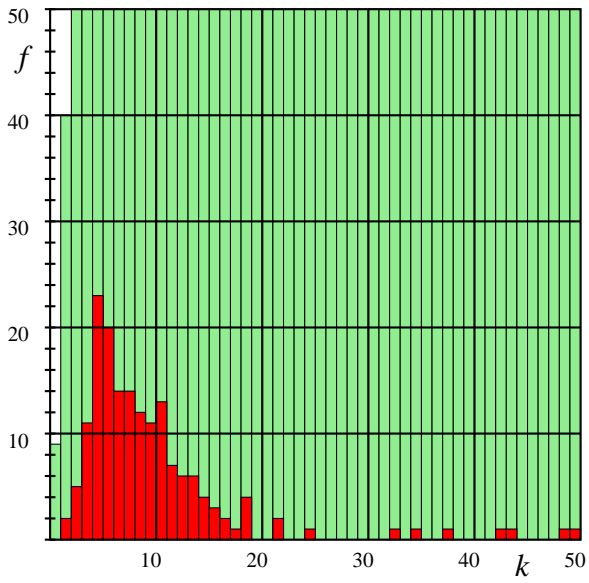
#85 (3, 4)



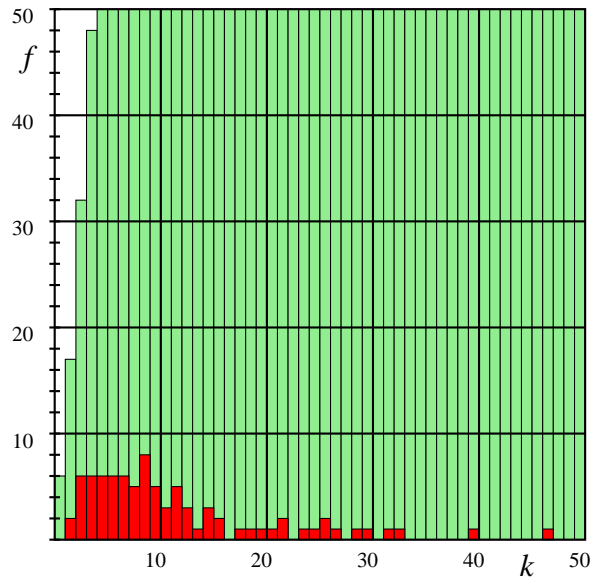
#86 (3, 4)



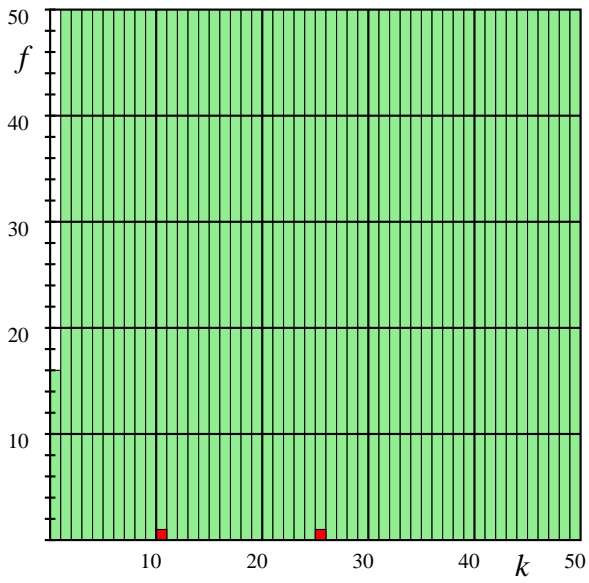
#87 (4, 5)



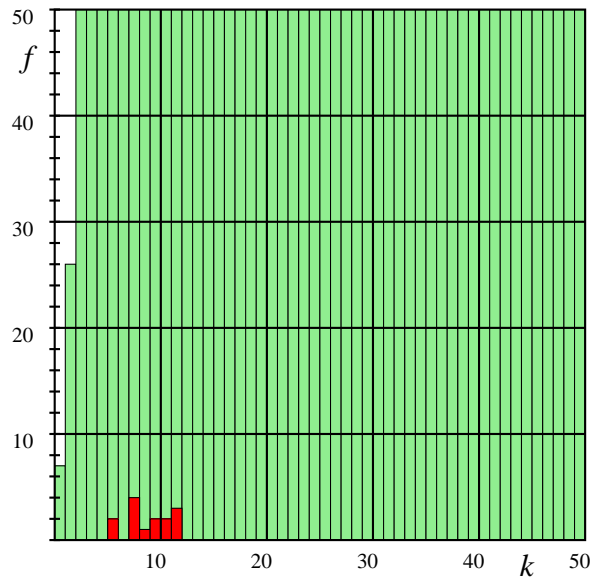
#88 (2, 4)



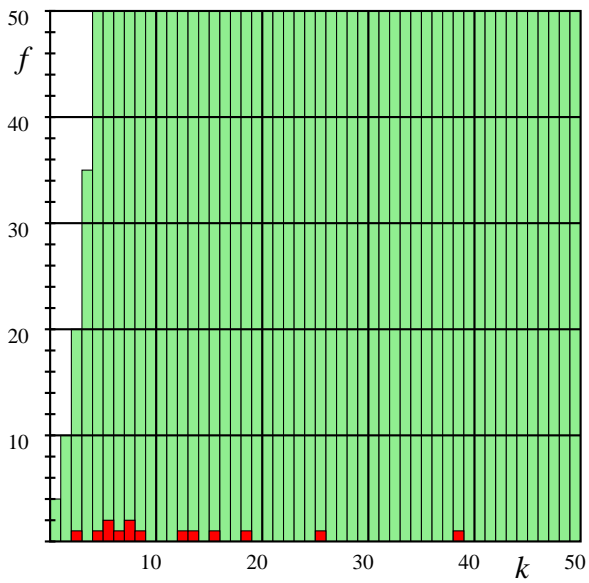
#89 (10, 6)



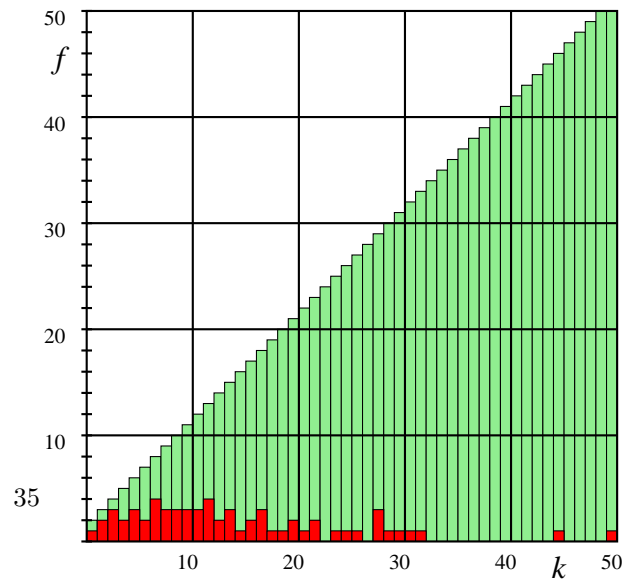
#90 (5, 2)



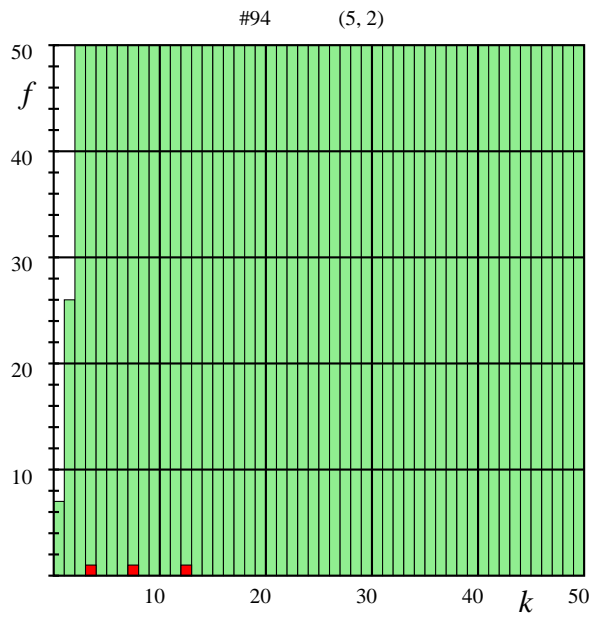
#91 (4, 0)



#92 (2, 0)

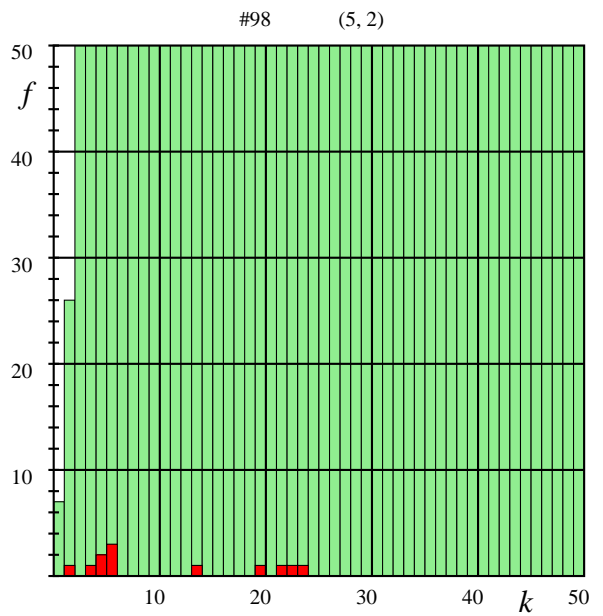
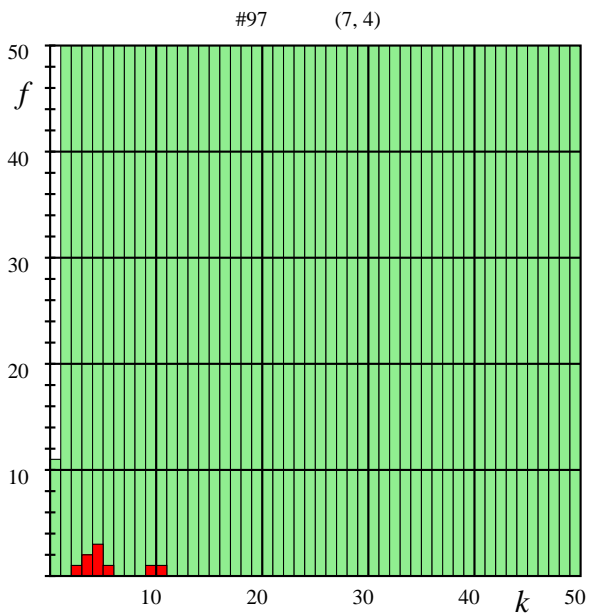


no data

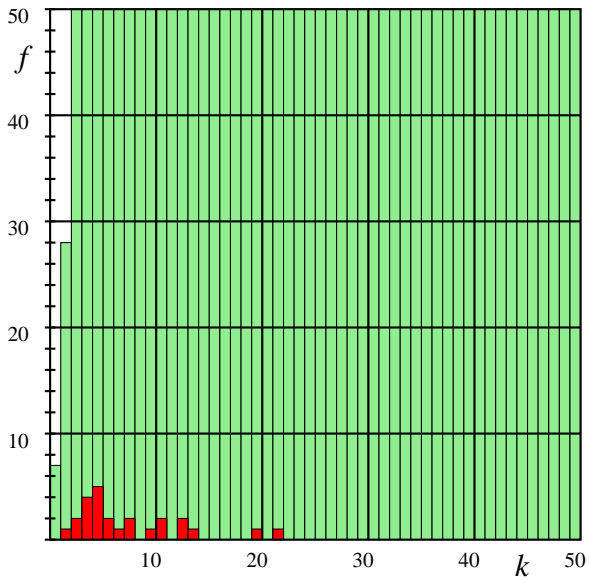


no data

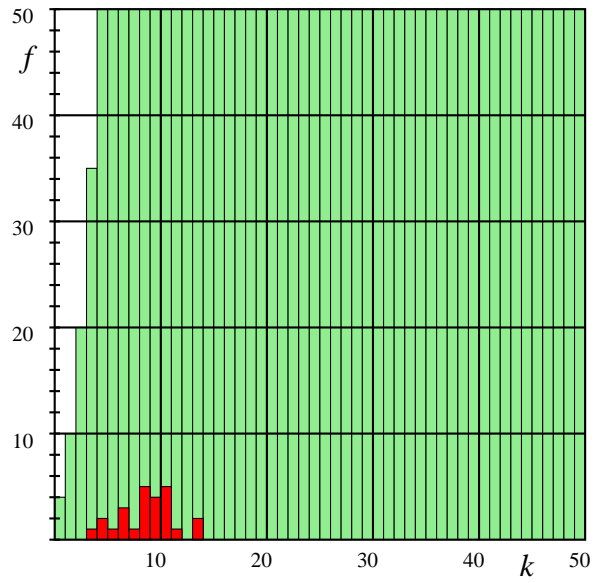
no data



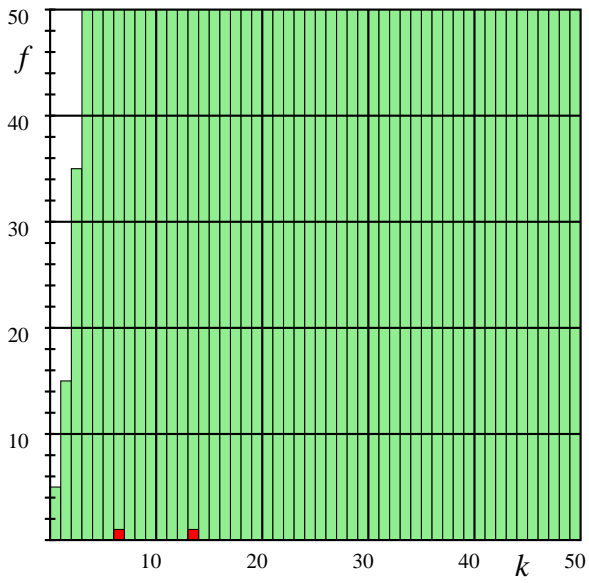
#99 (7, 0)



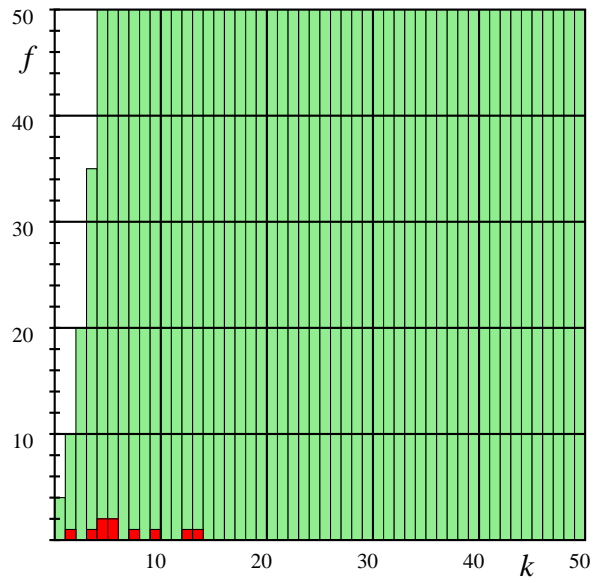
#100 (4, 0)



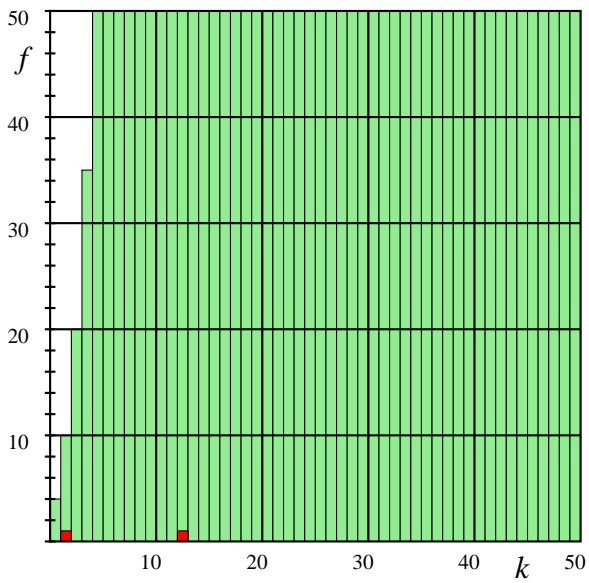
#101 (5, 0)



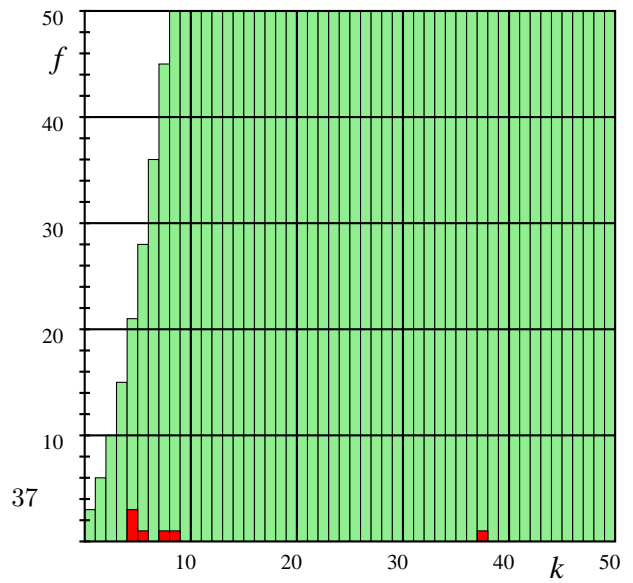
#102 (4, 0)



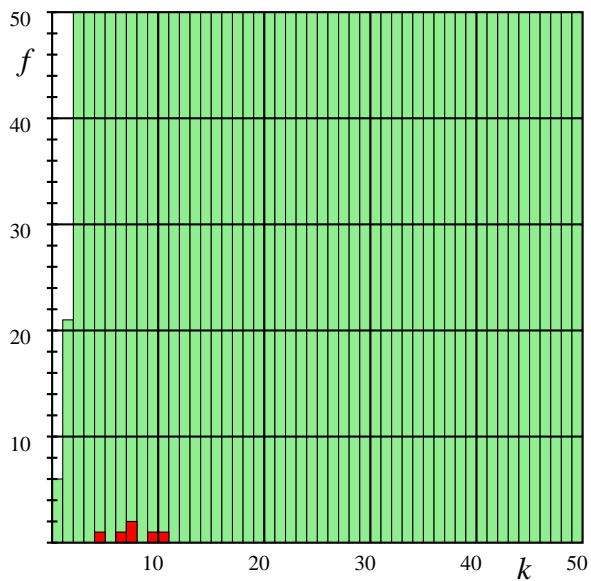
#103 (4, 0)



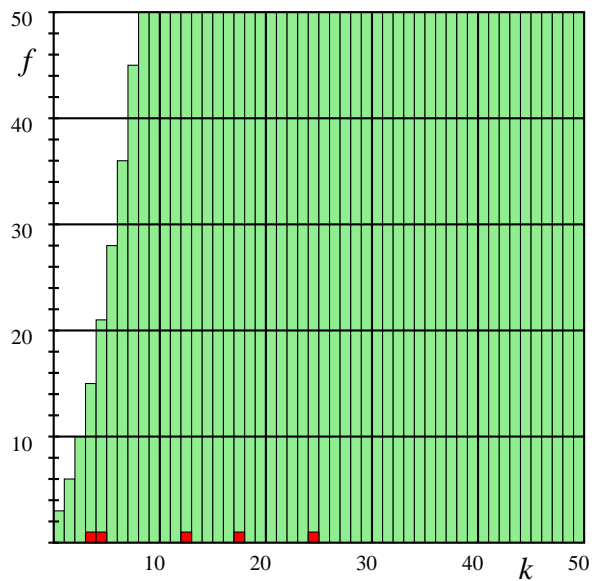
#104 (3, 0)



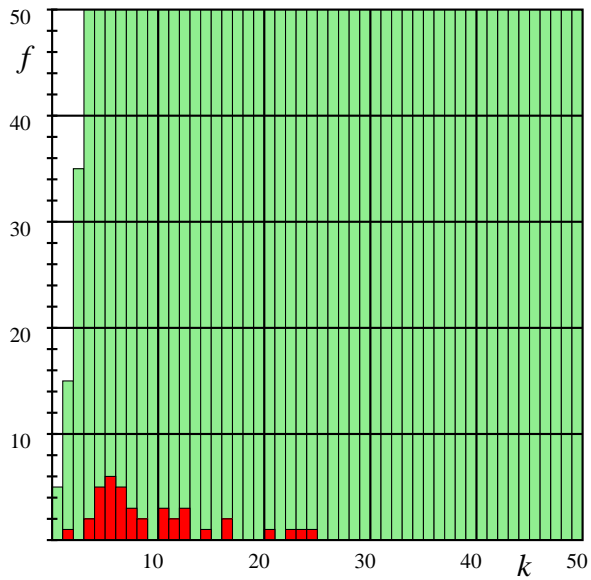
#105 (6, 0)



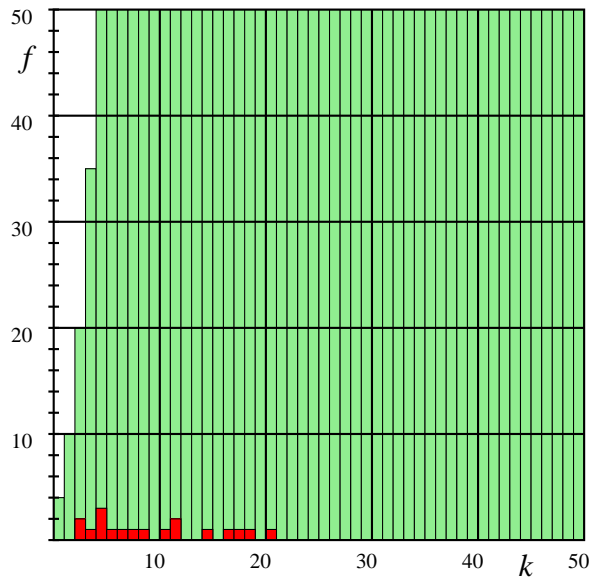
#106 (3, 0)



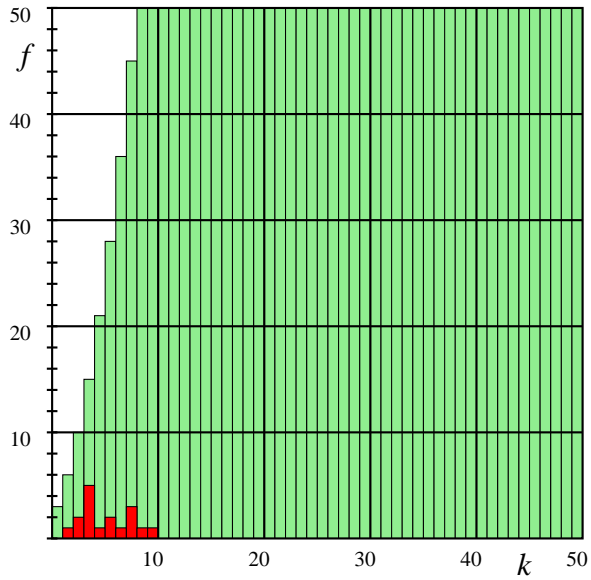
#107 (5, 0)



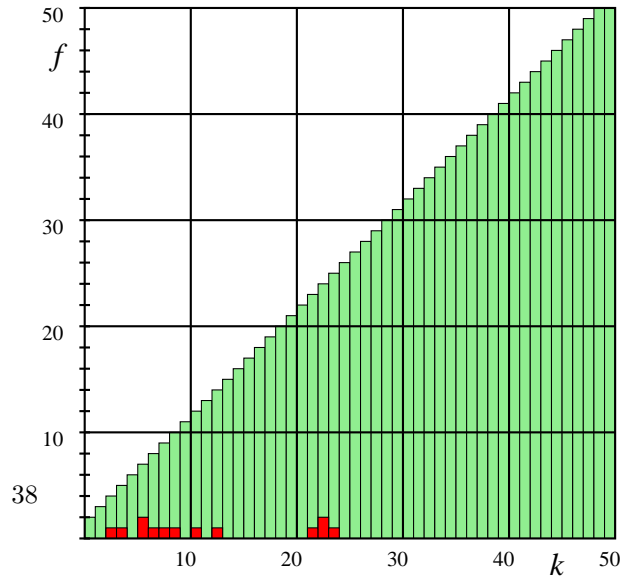
#108 (4, 0)



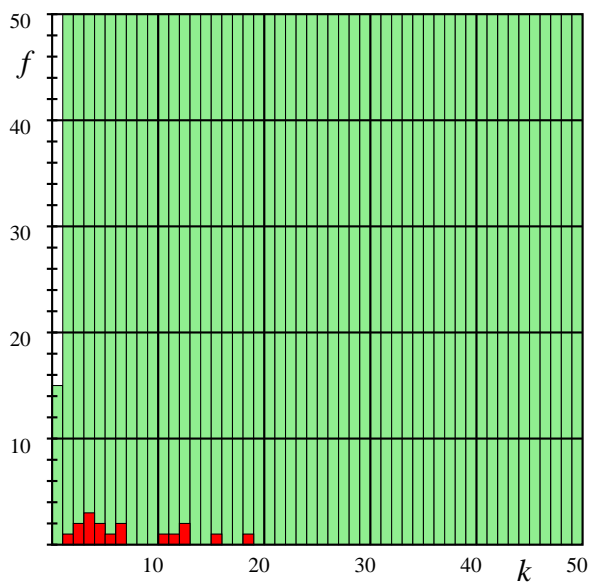
#109 (3, 0)



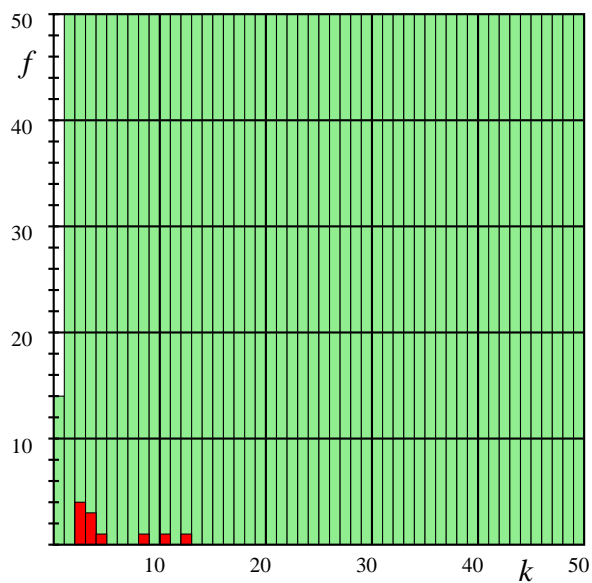
#110 (2, 0)



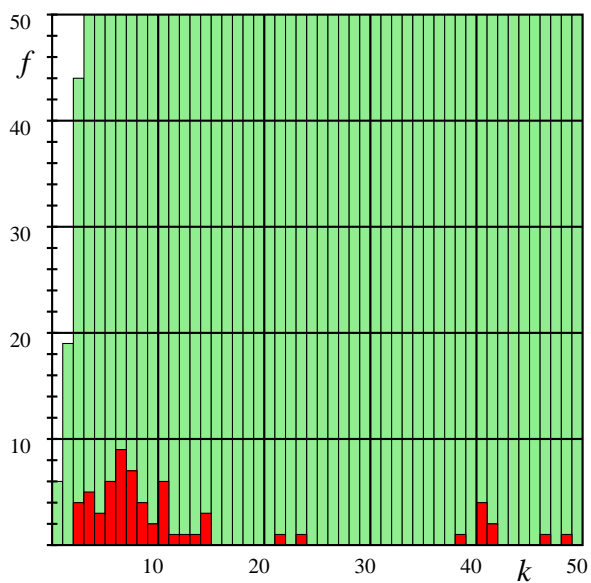
#111 (9, 6)



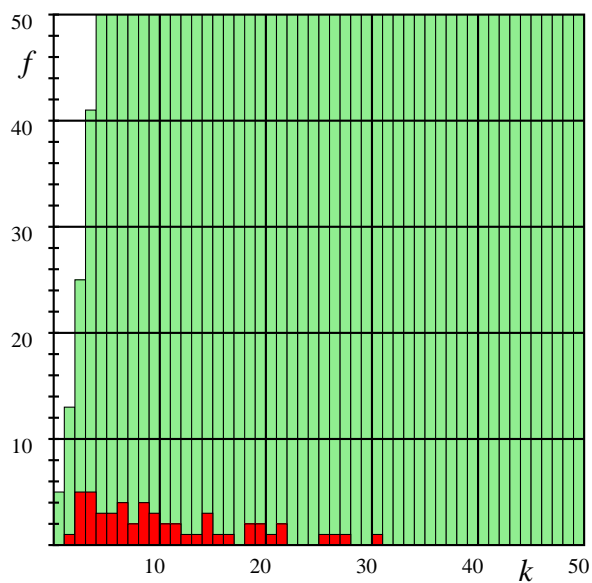
#112 (8, 6)



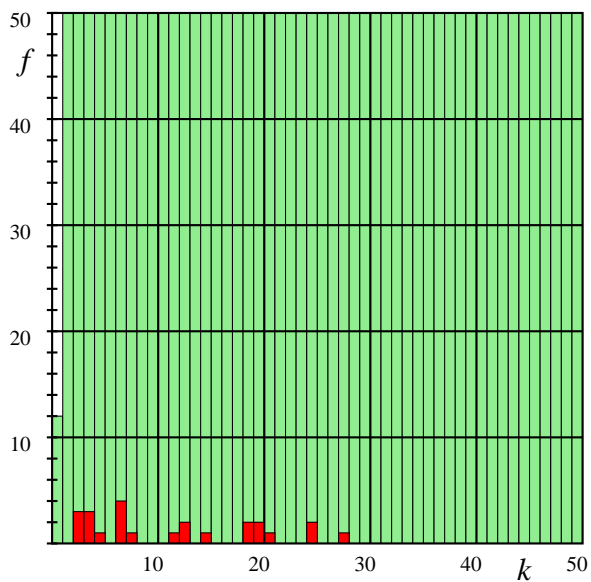
#113 (4, 2)



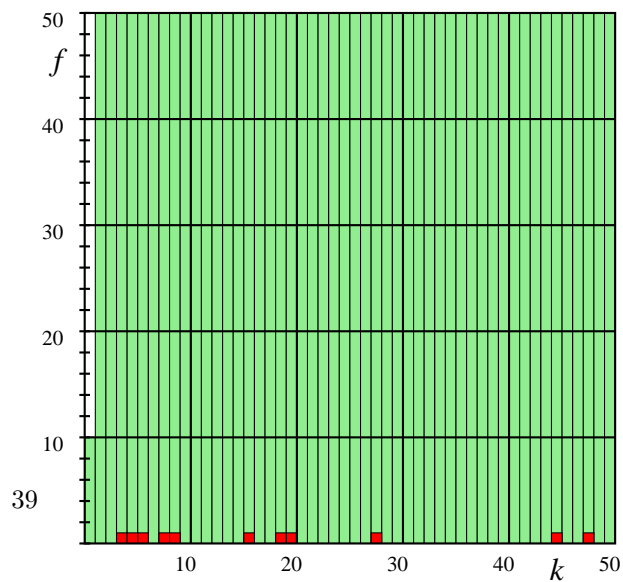
#114 (3, 2)



#115 (8, 4)

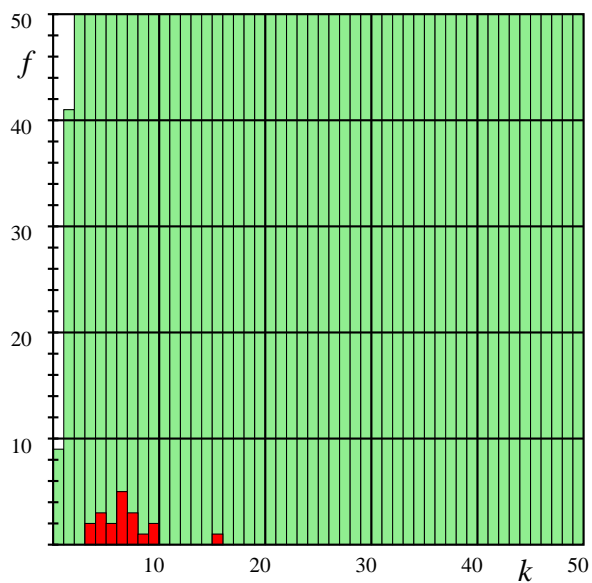


#116 (6, 4)

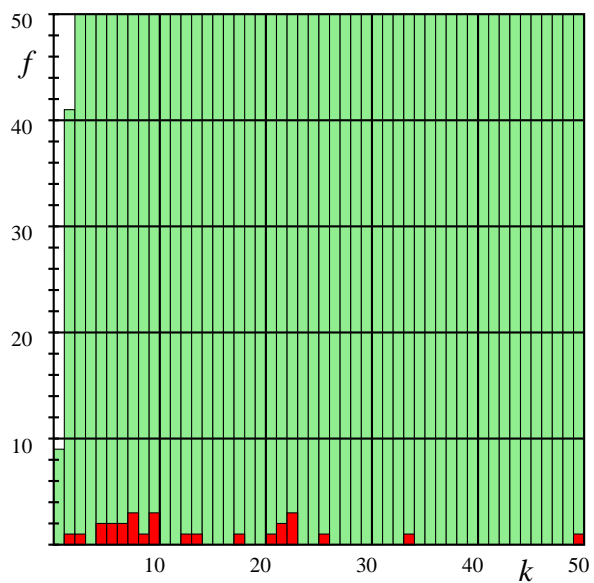




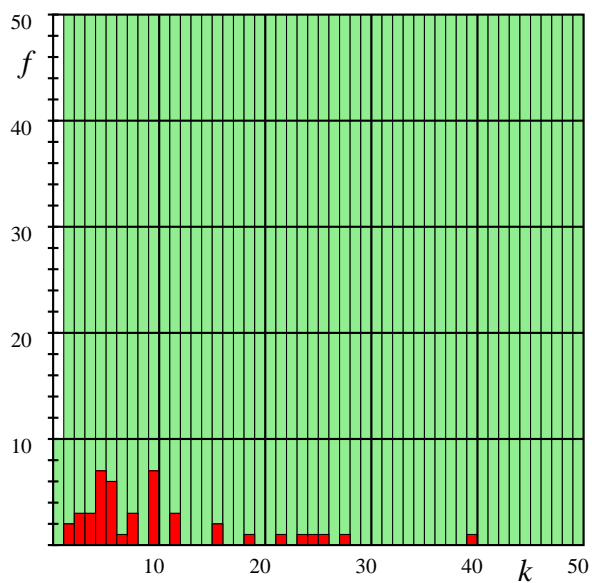
#117 (5, 4)



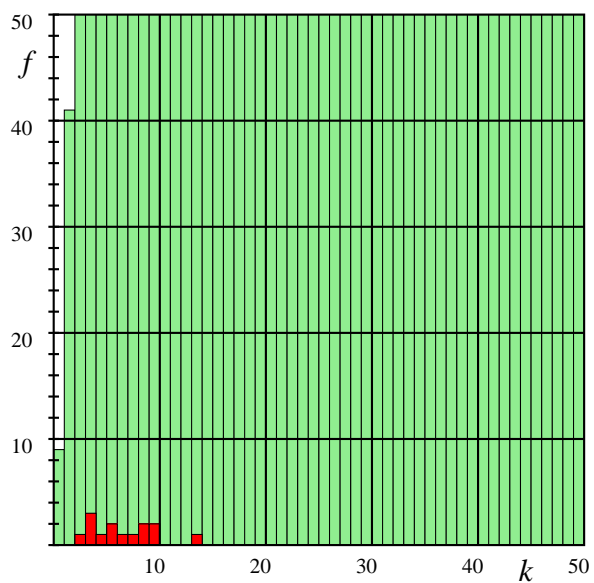
#118 (5, 4)



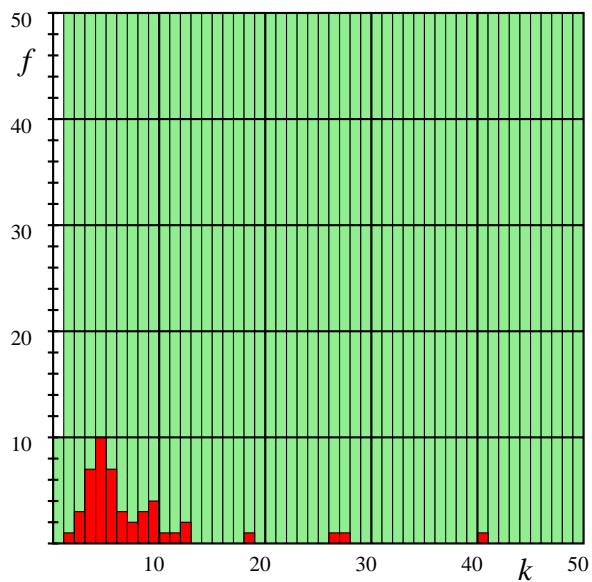
#119 (6, 4)



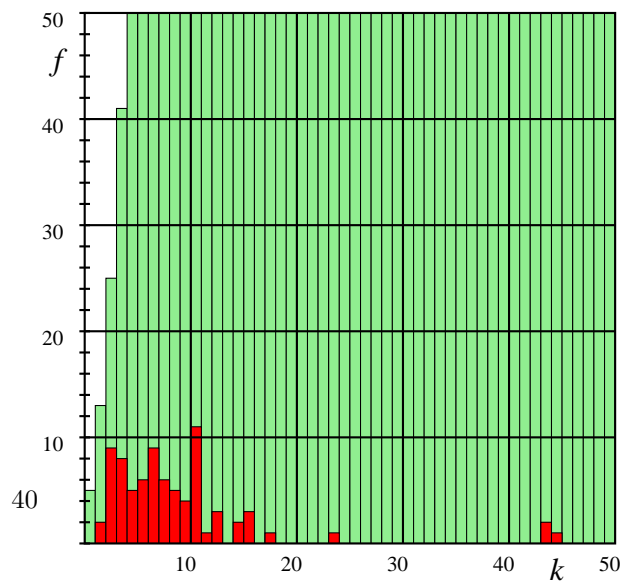
#120 (5, 4)



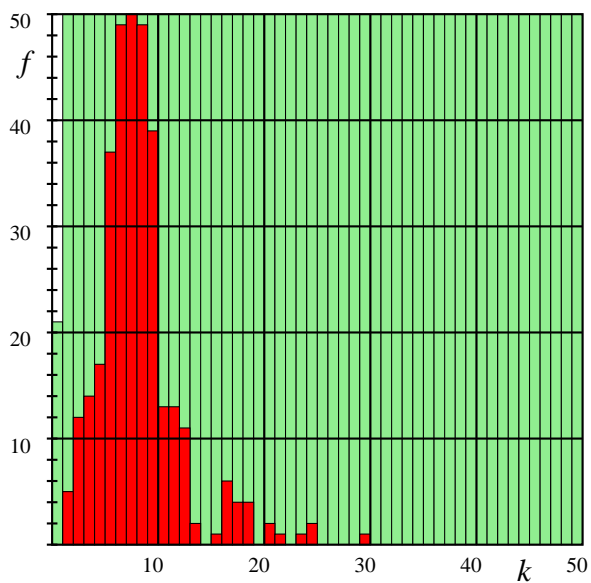
#121 (6, 4)



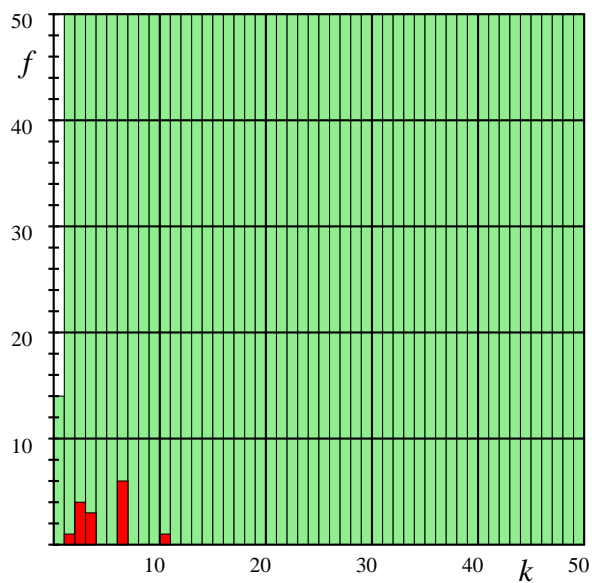
#122 (3, 2)



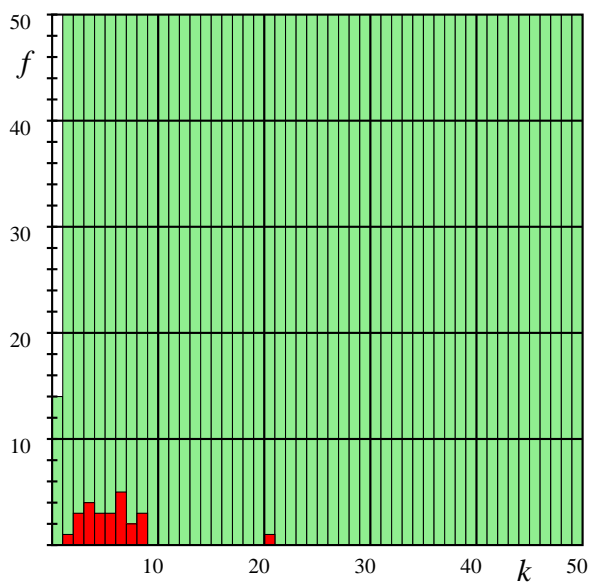
#123 (15, 6)



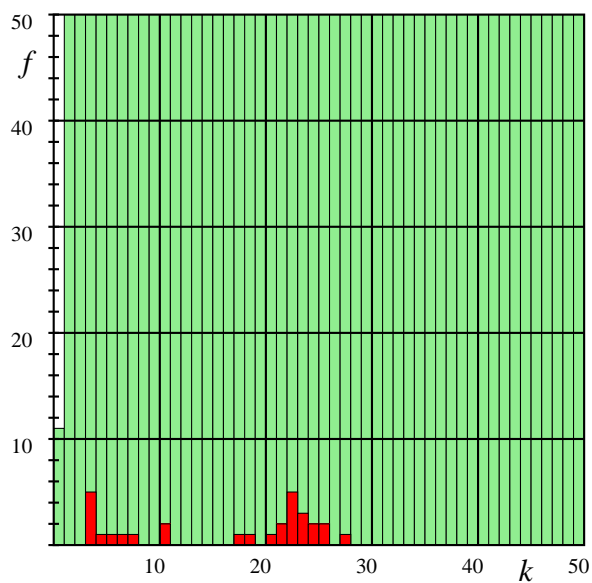
#124 (8, 6)



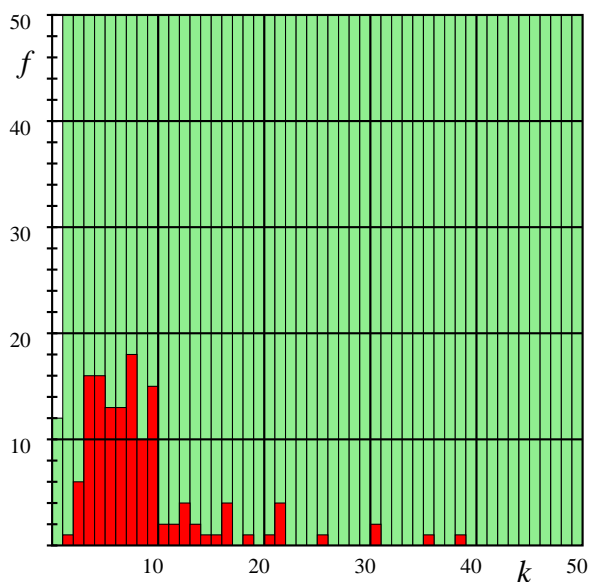
#125 (8, 6)



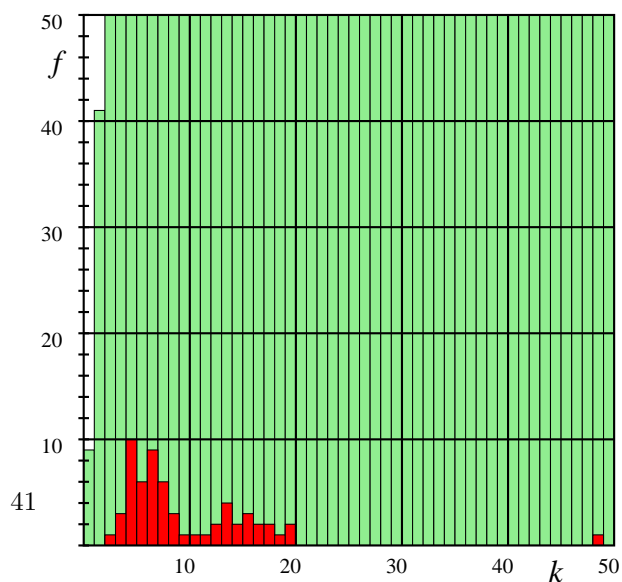
#126 (6, 5)



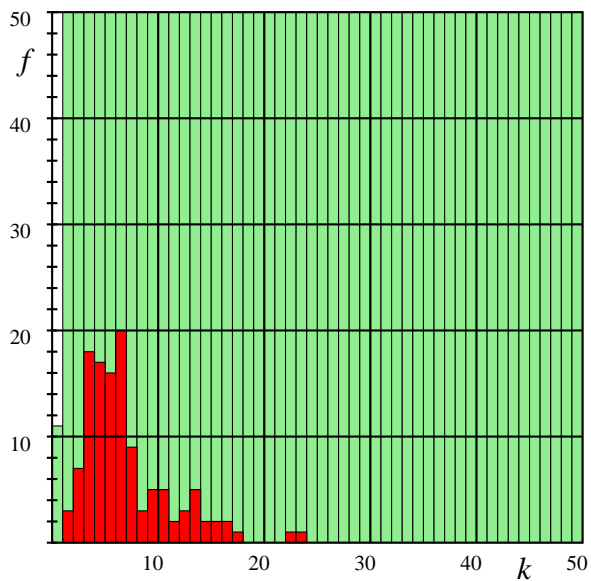
#127 (8, 4)



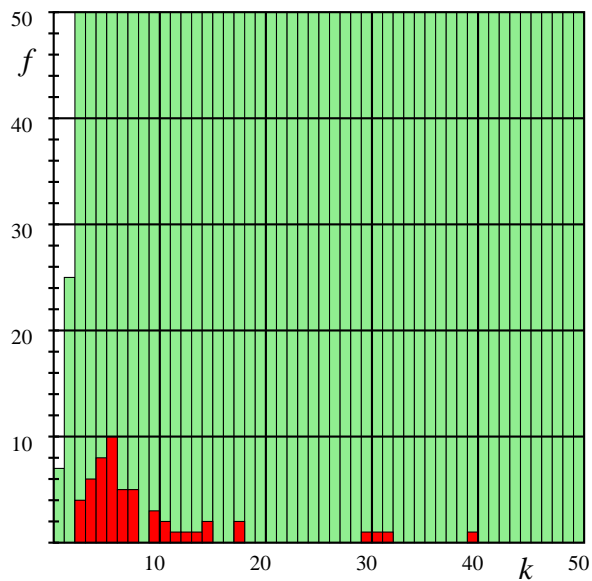
#128 (5, 4)



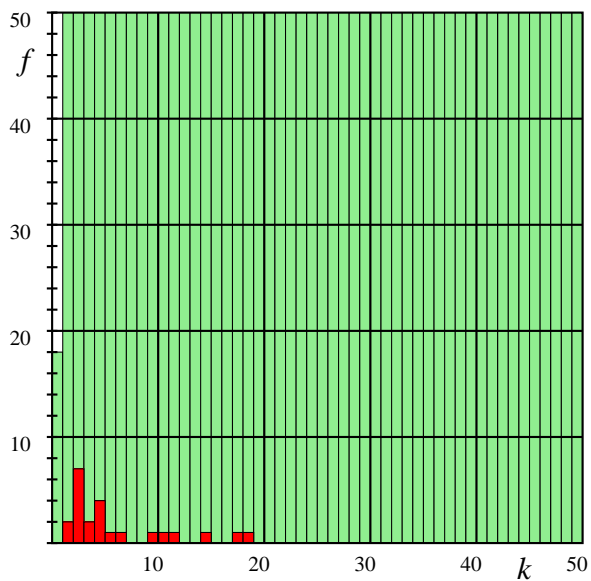
#129 (7, 4)



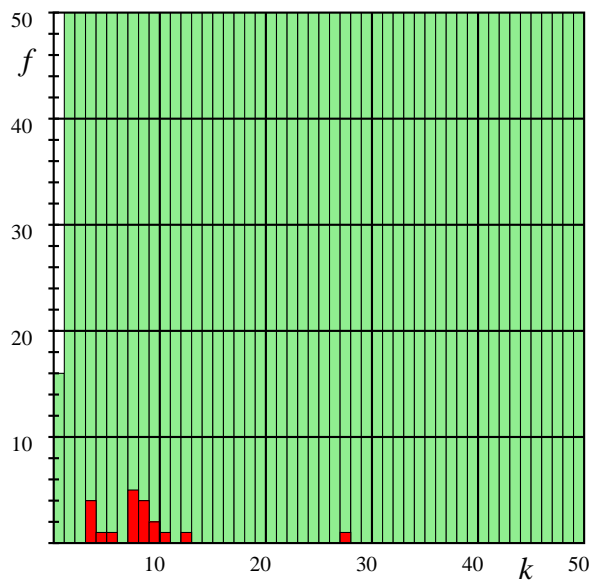
#130 (4, 3)



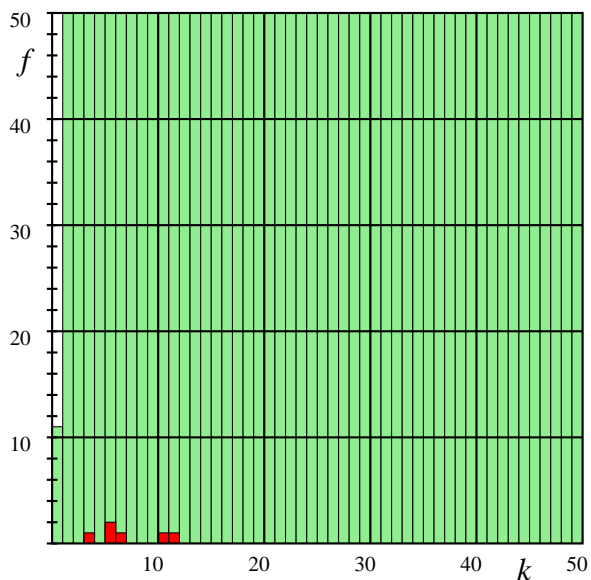
#131 (12, 6)



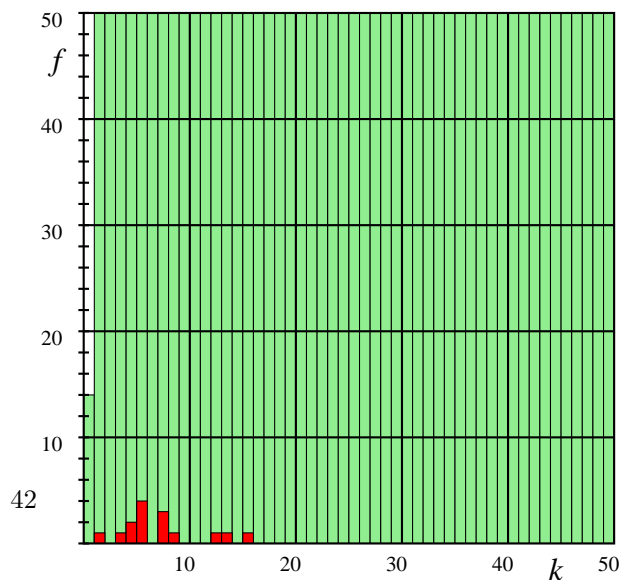
#132 (10, 6)



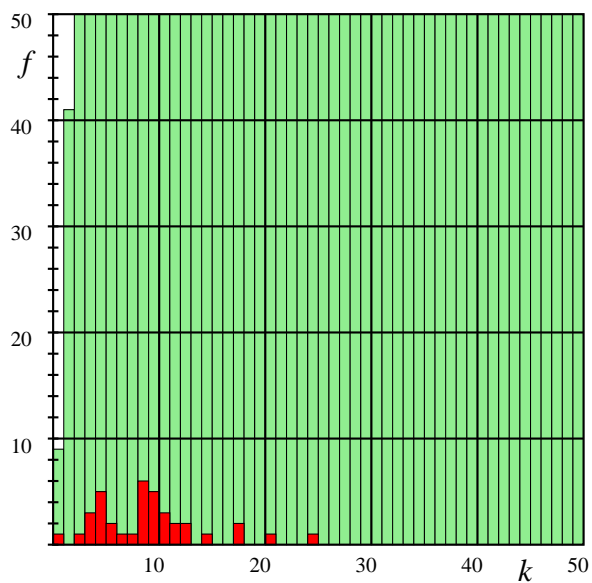
#133 (6, 5)



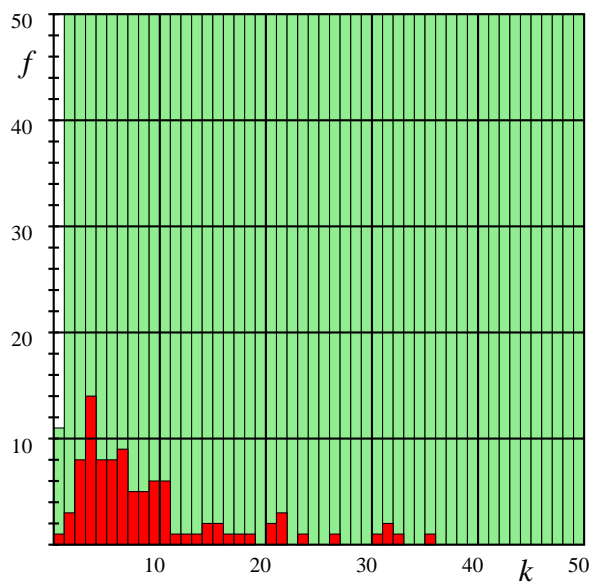
#134 (8, 6)



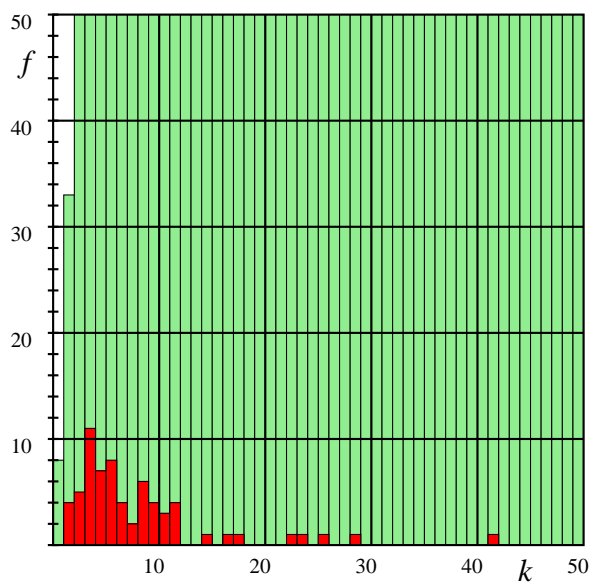
#135 (5, 4)



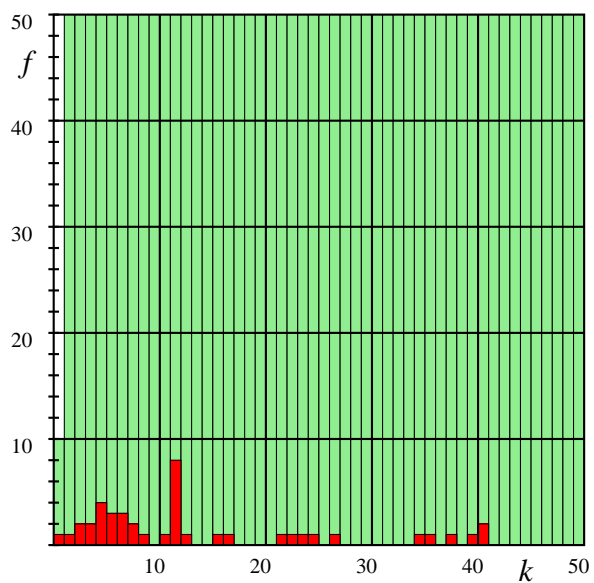
#136 (7, 4)



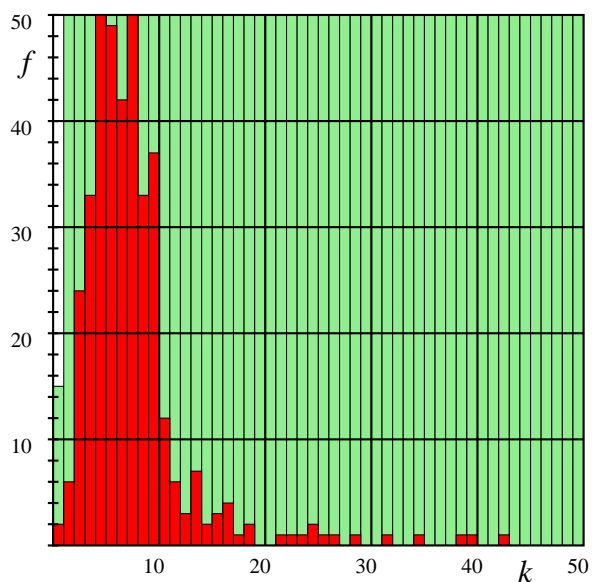
#137 (5, 3)



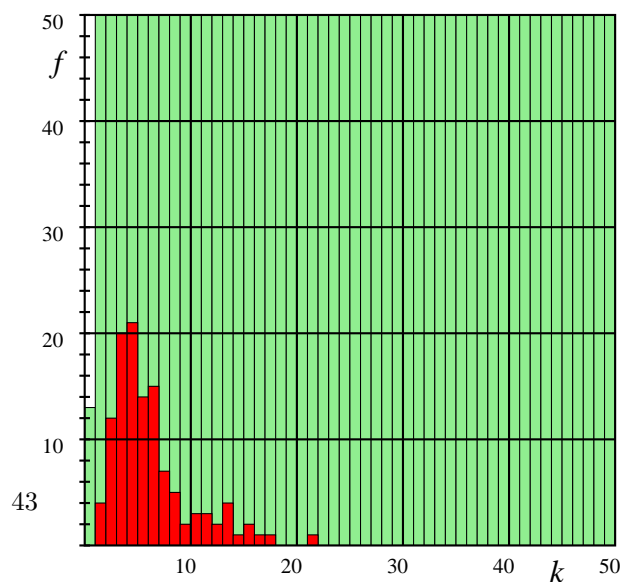
#138 (6, 4)



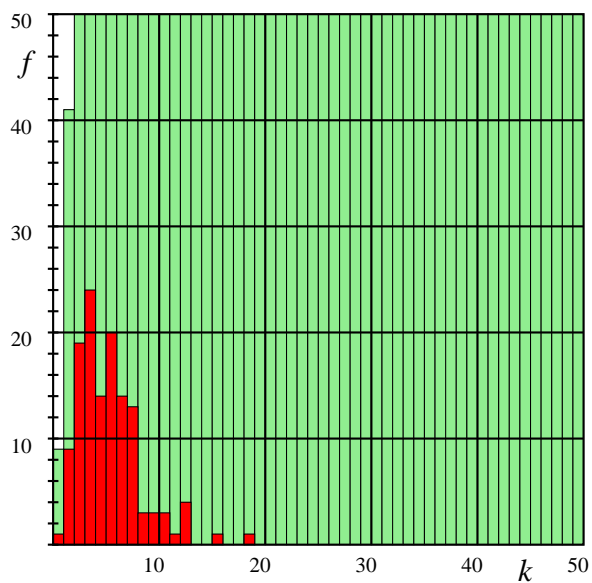
#139 (10, 5)



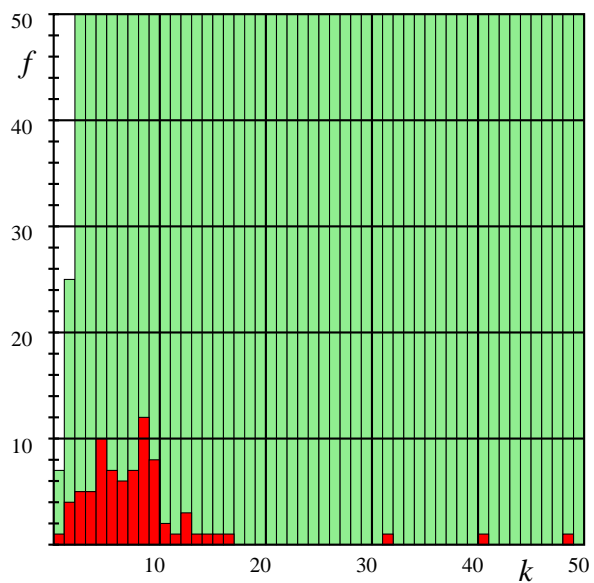
#140 (8, 5)



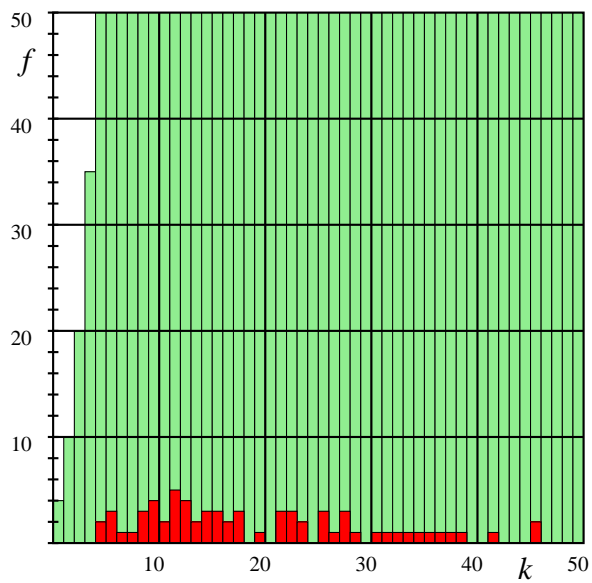
#141 (5, 4)



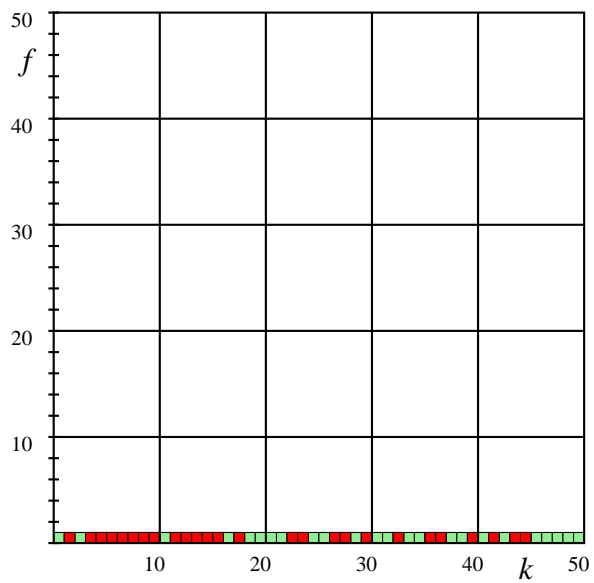
#142 (4, 3)



#143 (4, 0)

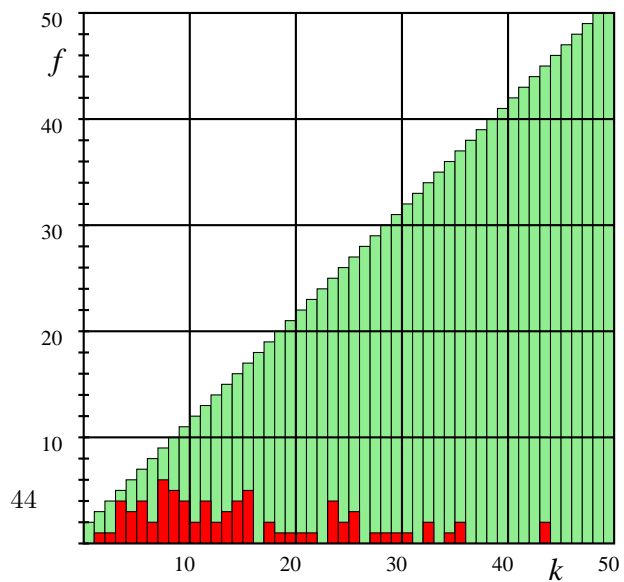


#144 (1, 0)

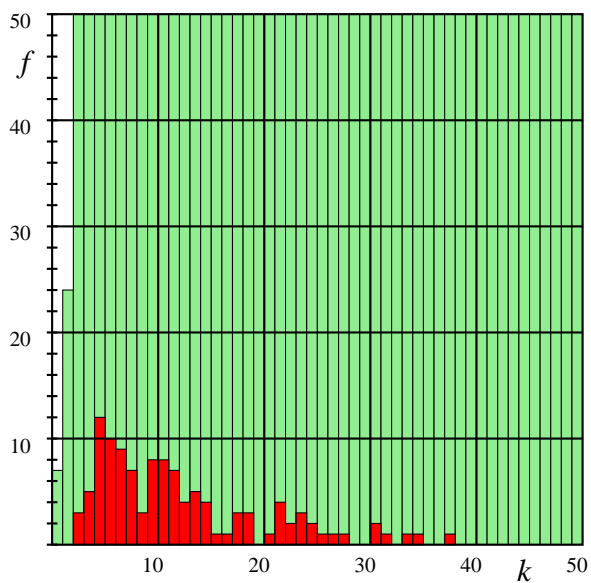


no data

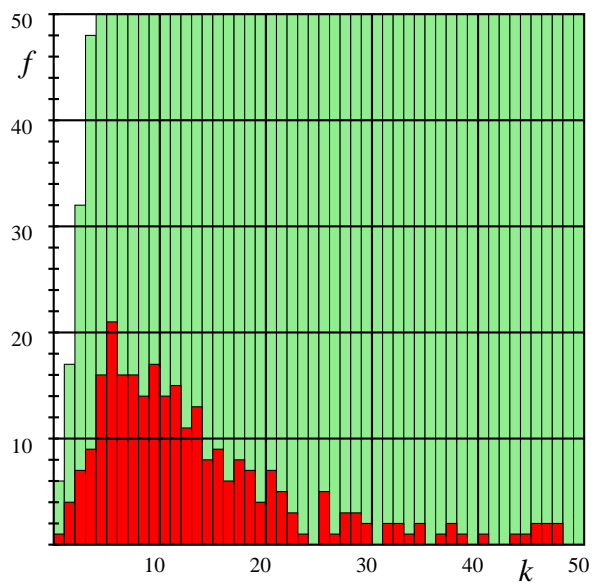
#146 (2, 0)



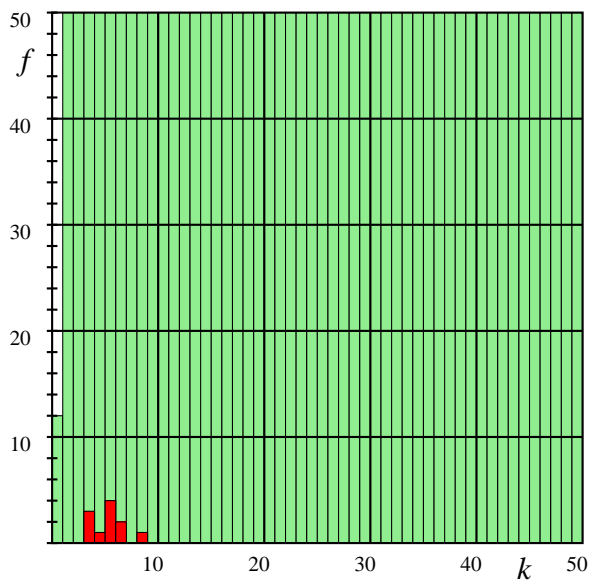
#147 (3, 4)



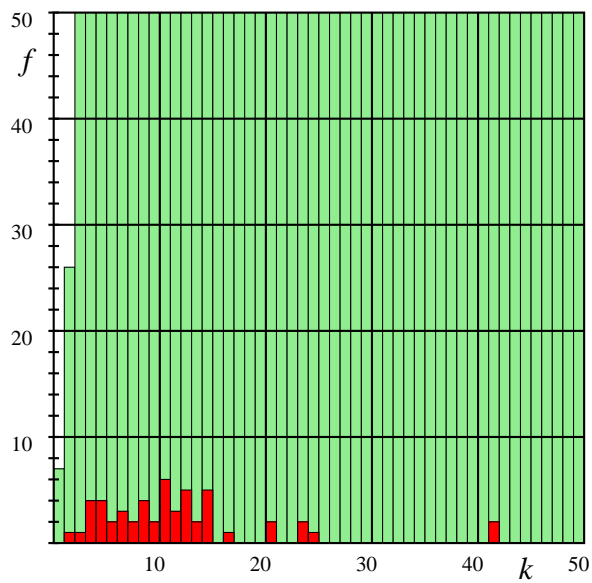
#148 (2, 4)



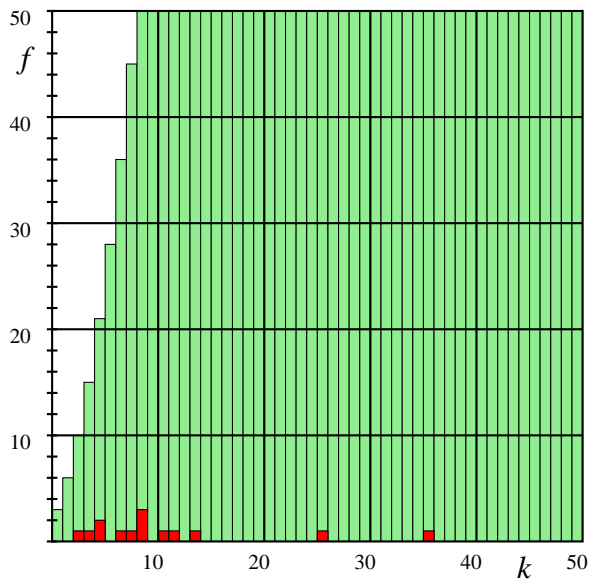
#149 (6, 6)



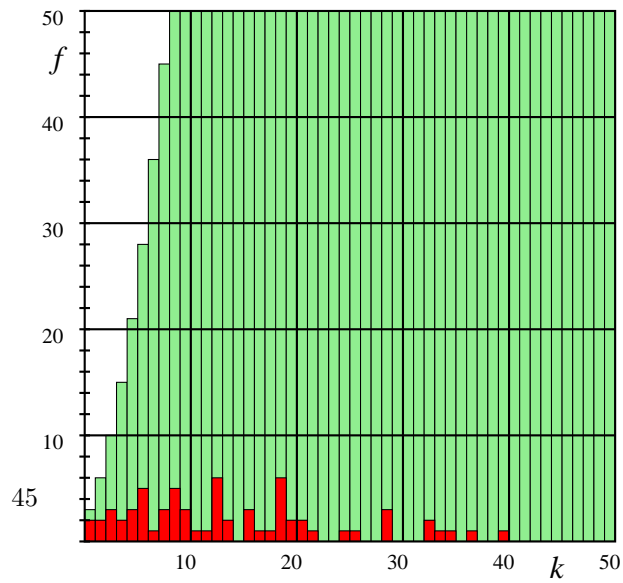
#150 (5, 2)

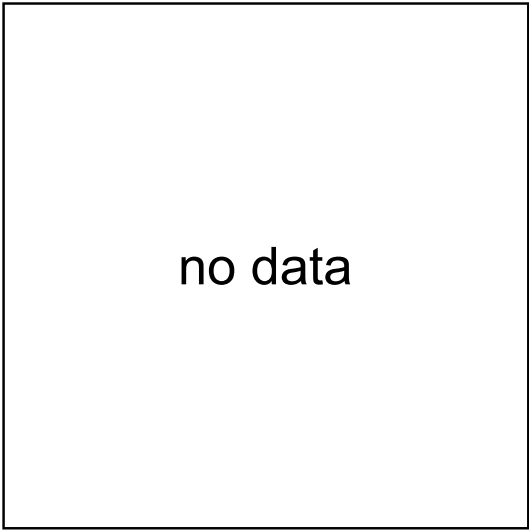


#151 (3, 0)

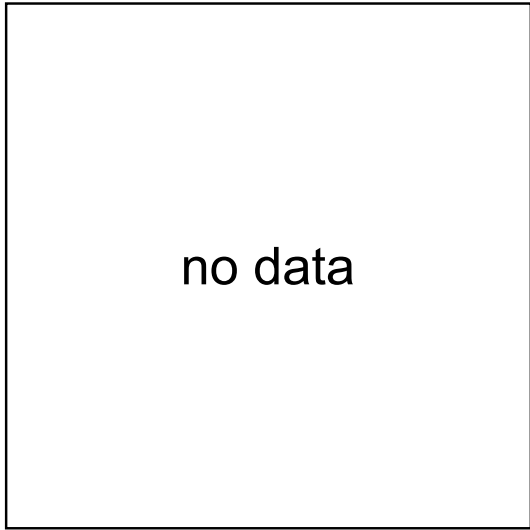
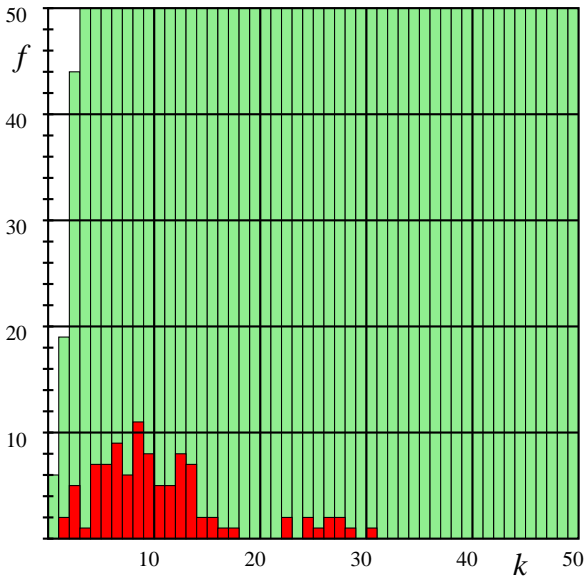


#152 (3, 0)

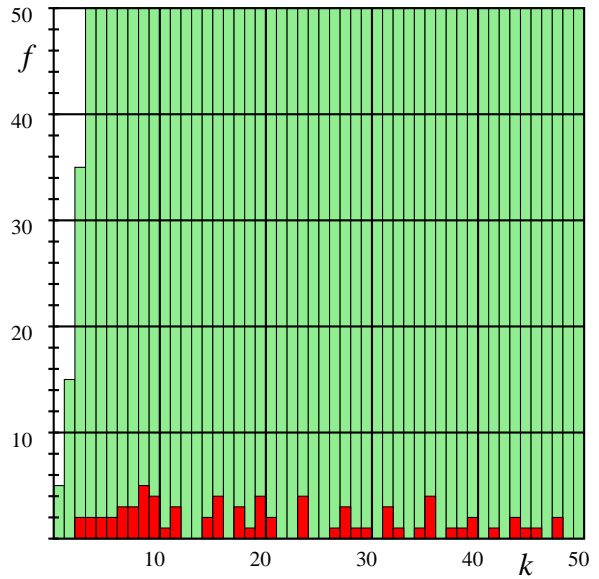




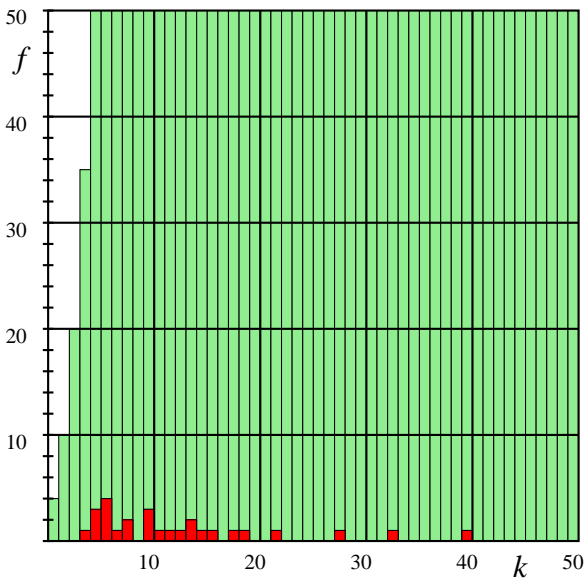
#155 (4, 2)



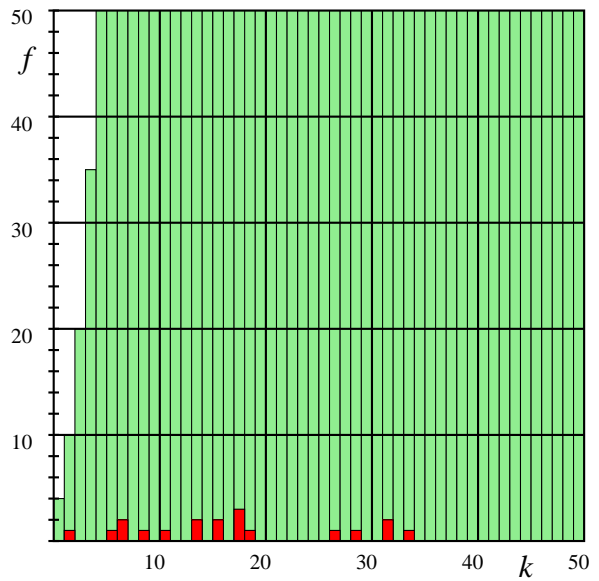
#156 (5, 0)



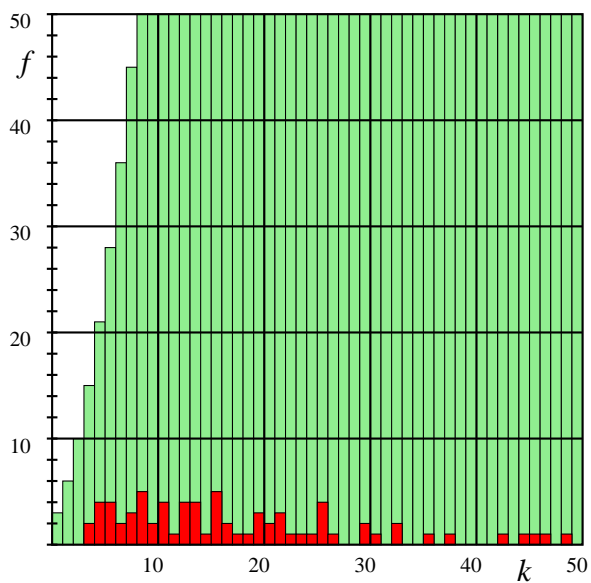
#157 (4, 0)



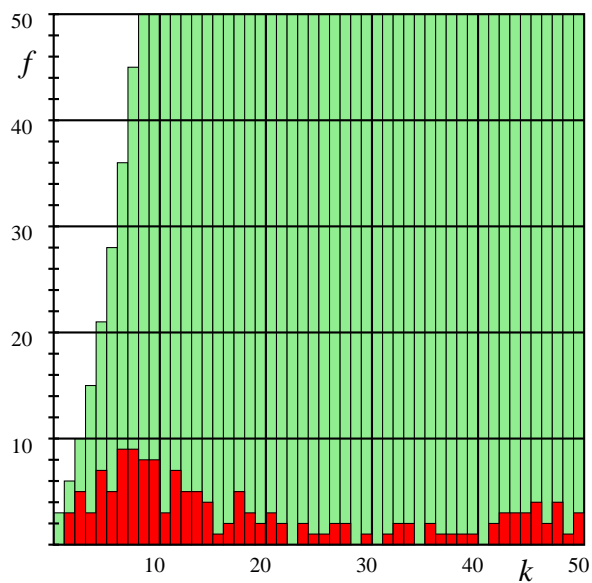
#158 (4, 0)



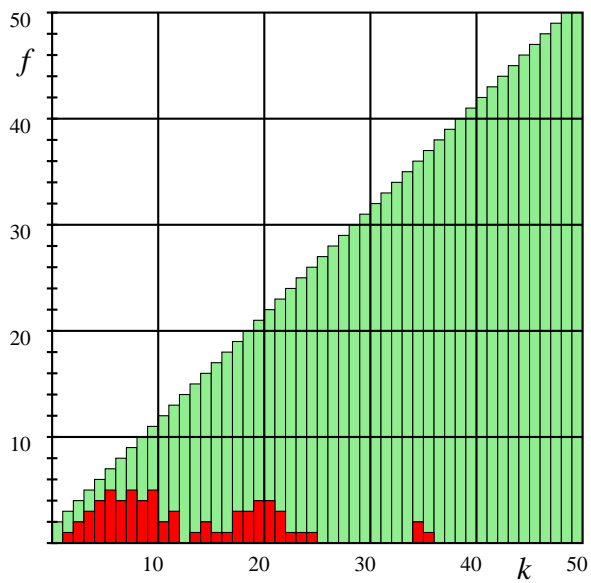
#159 (3, 0)



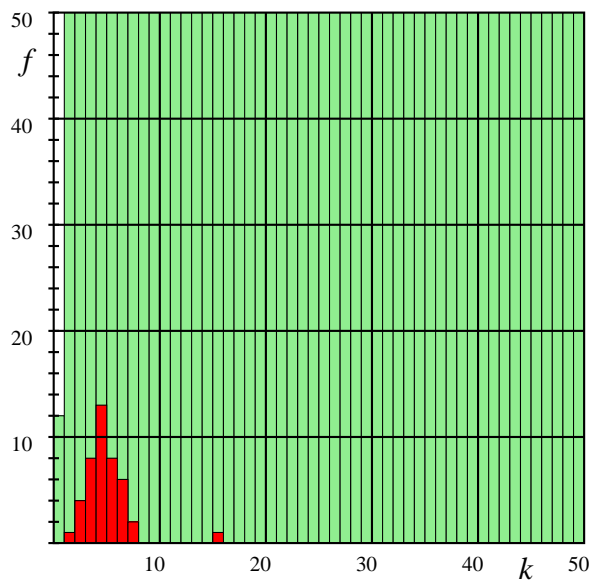
#160 (3, 0)



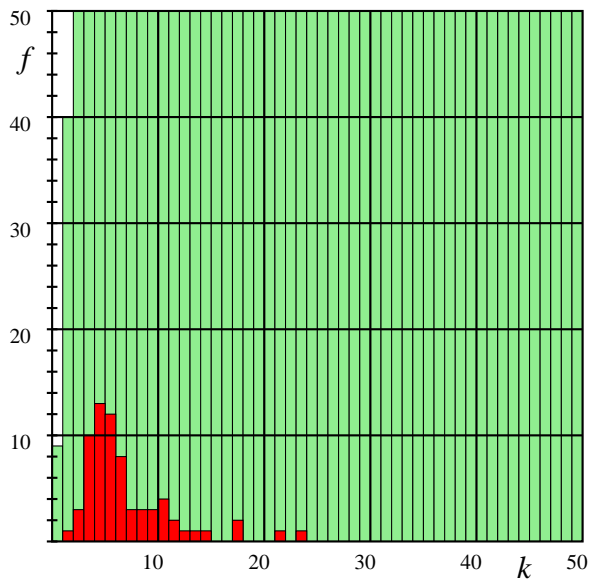
#161 (2, 0)



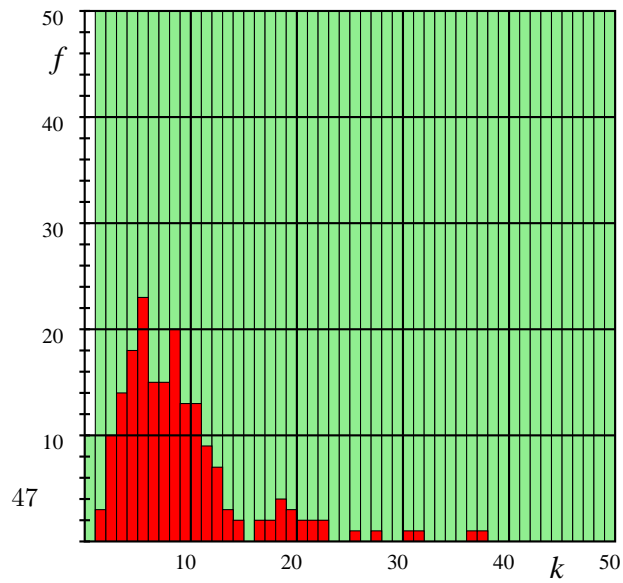
#162 (6, 6)



#163 (4, 5)

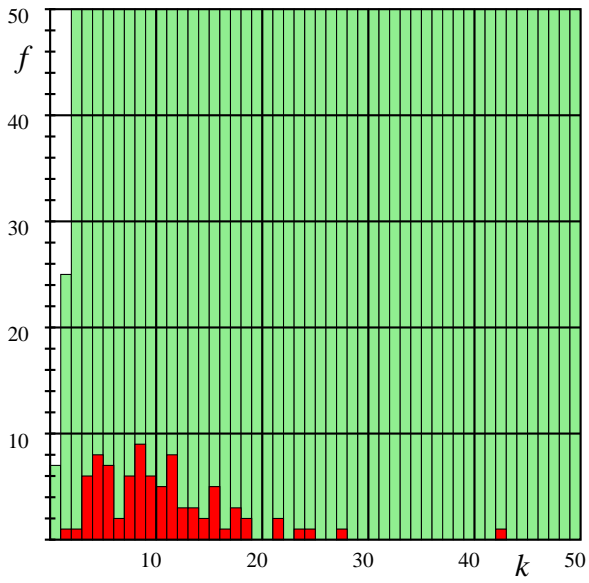


#164 (6, 4)

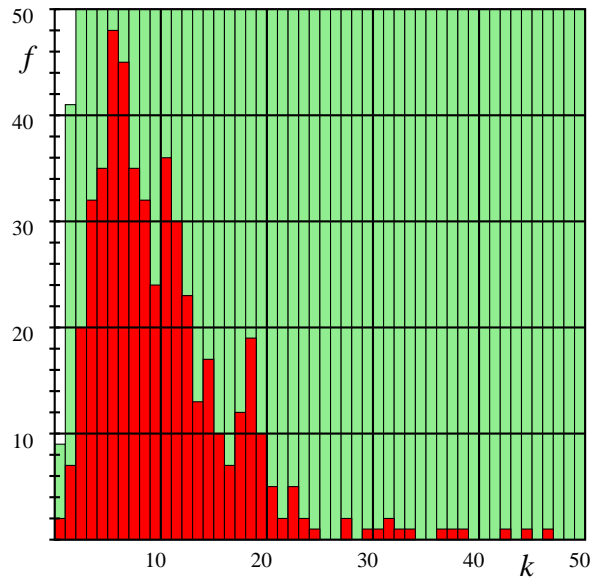




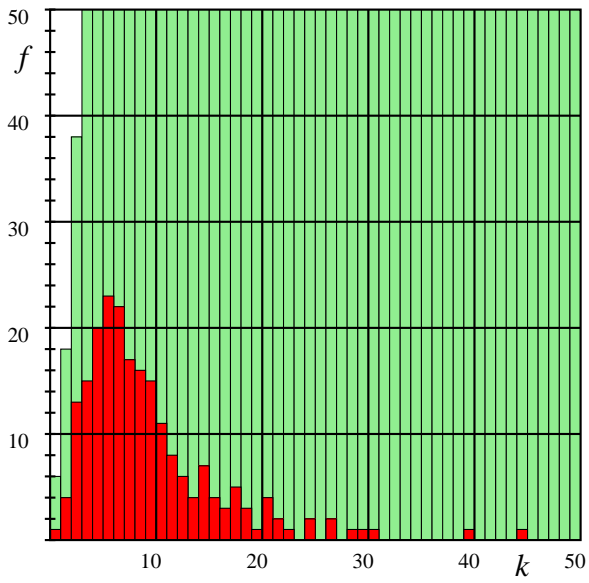
#165 (4, 3)



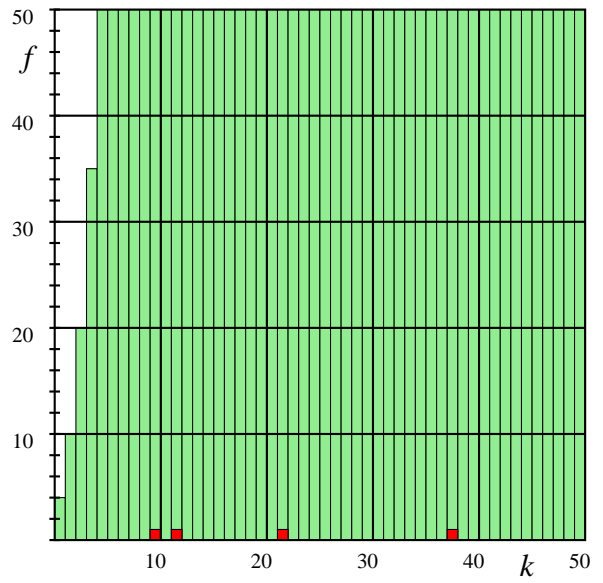
#166 (5, 4)



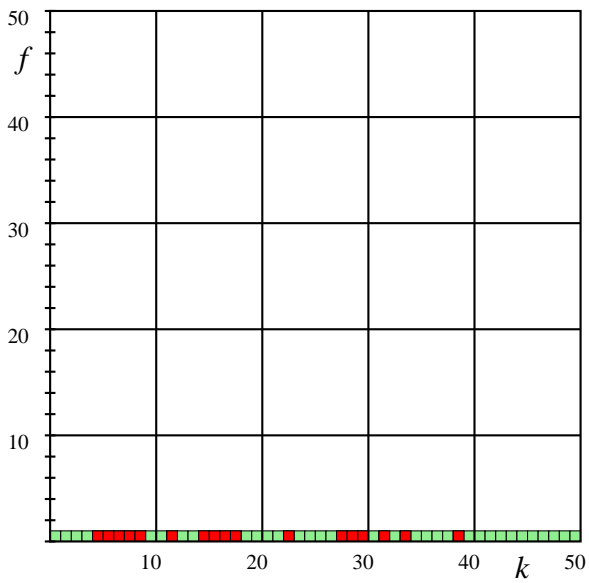
#167 (3, 3)



#168 (4, 0)

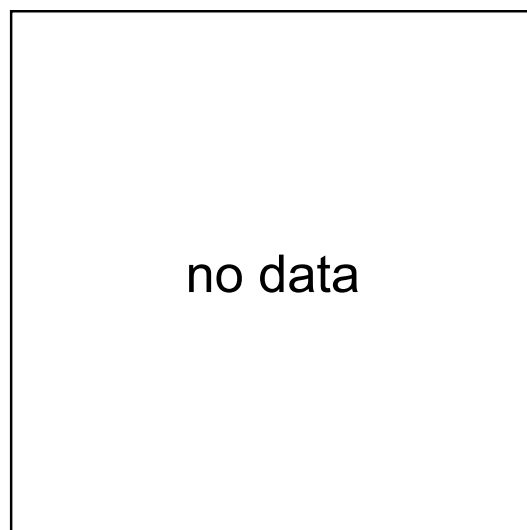
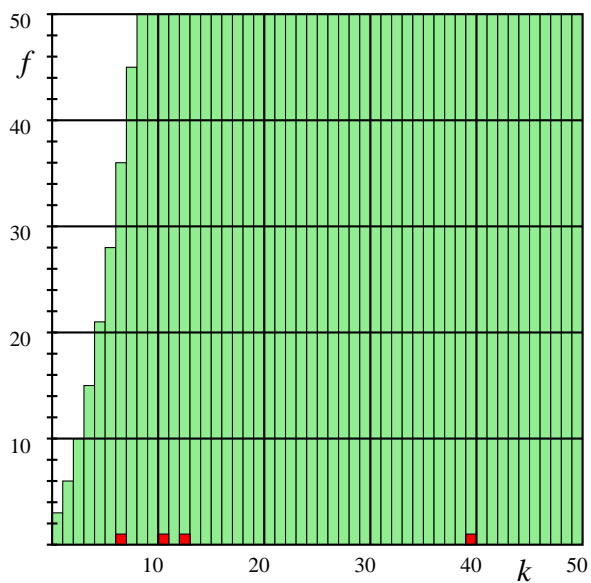


#169 (1, 0)

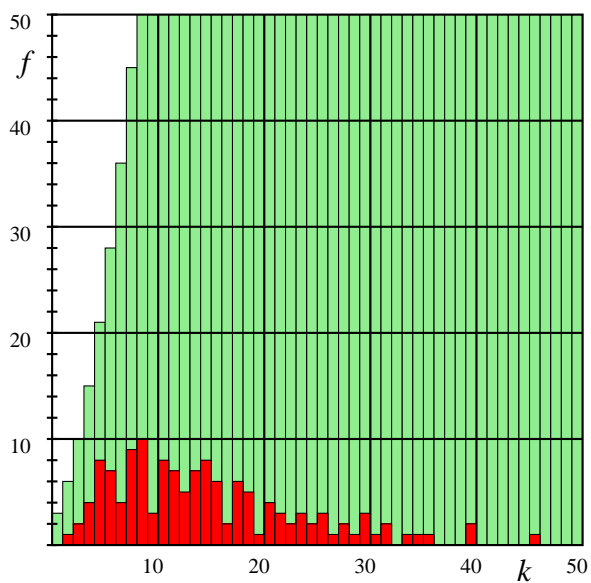


no data

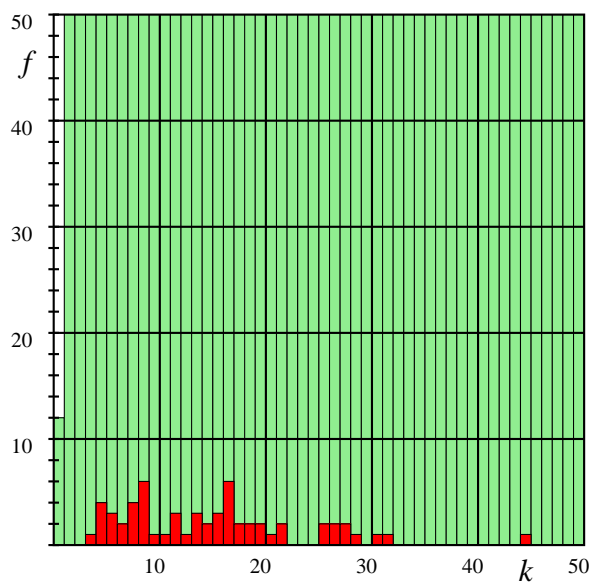
#171 (3, 0)



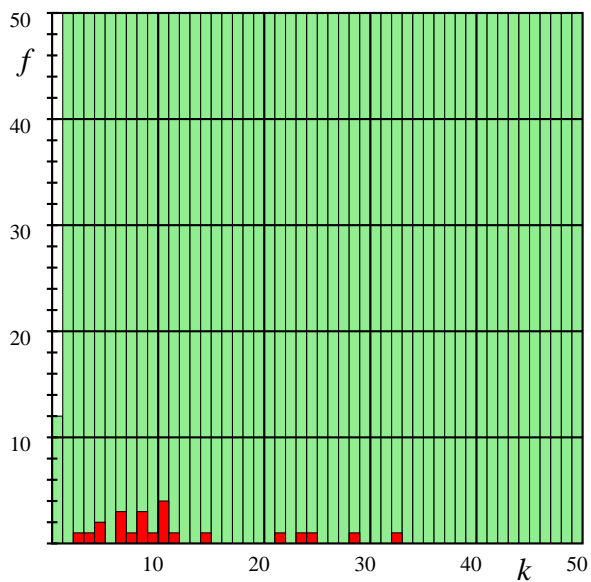
#173 (3, 0)



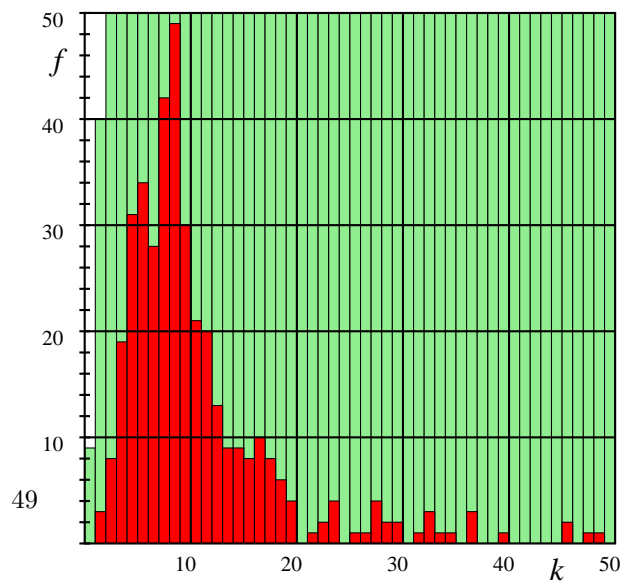
#174 (6, 6)



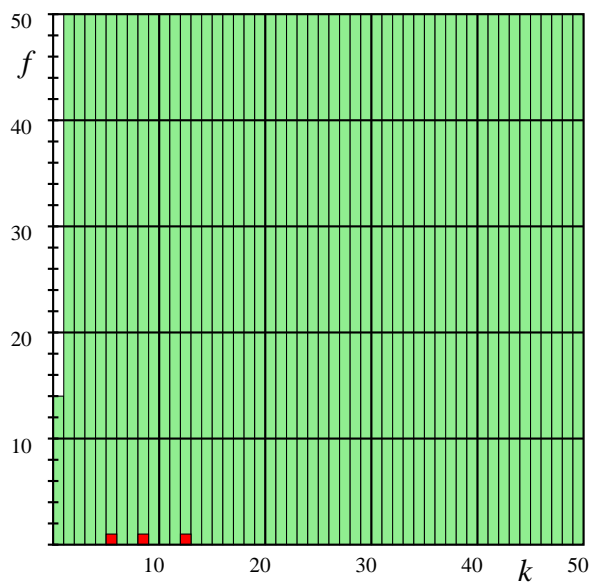
#175 (6, 6)



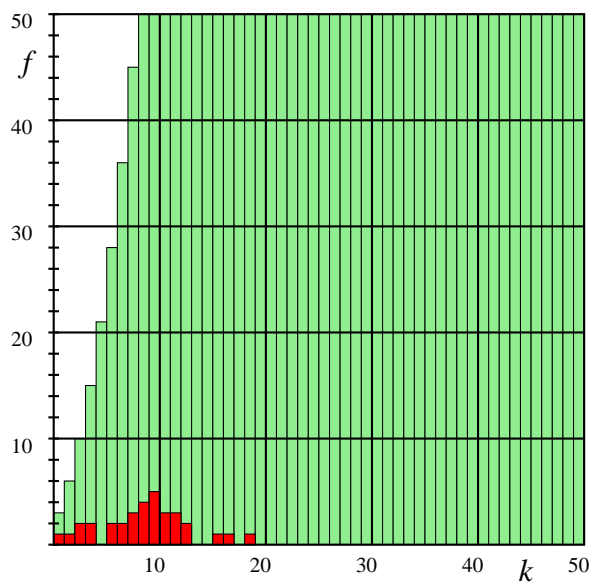
#176 (4, 5)



#177 (8, 6)

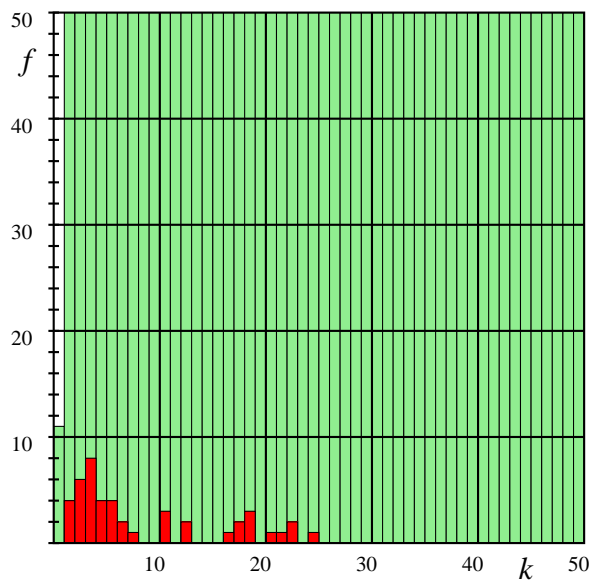


#178 (3, 0)



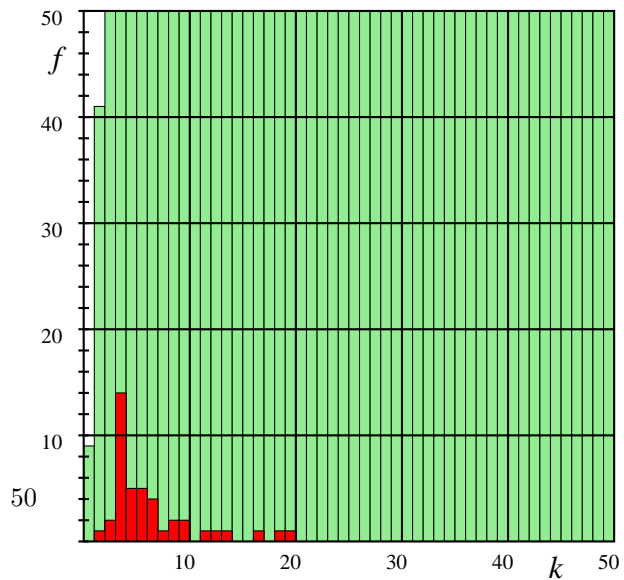
no data

#180 (7, 4)

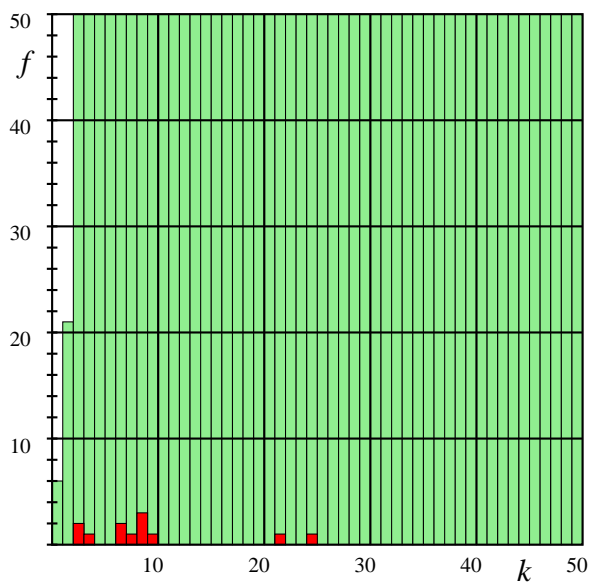


no data

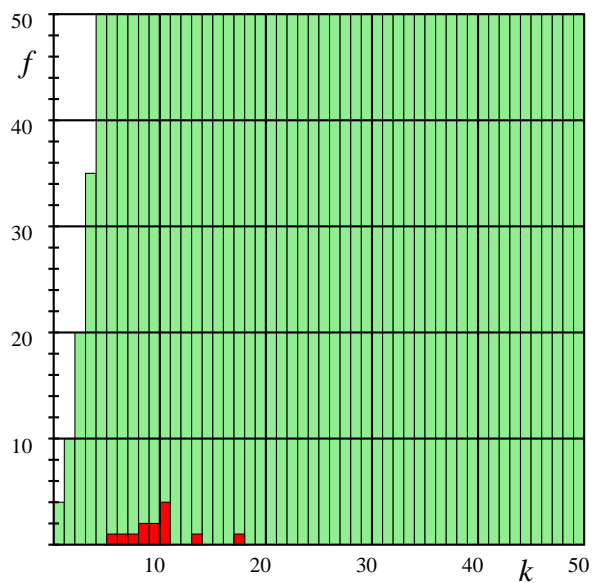
#182 (5, 4)



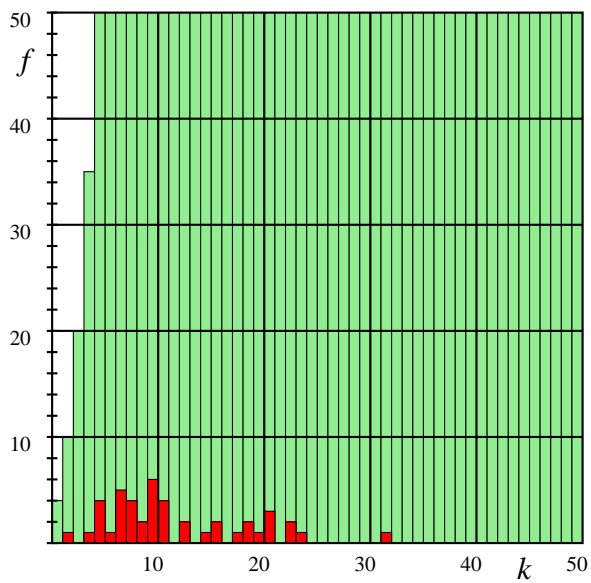
#183 (6, 0)



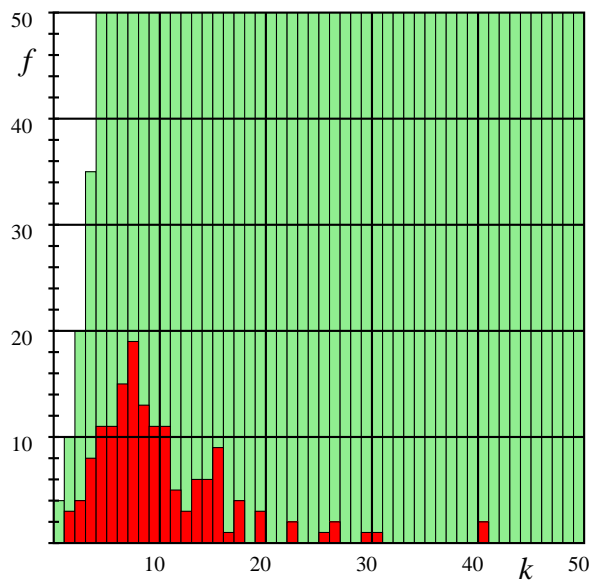
#184 (4, 0)



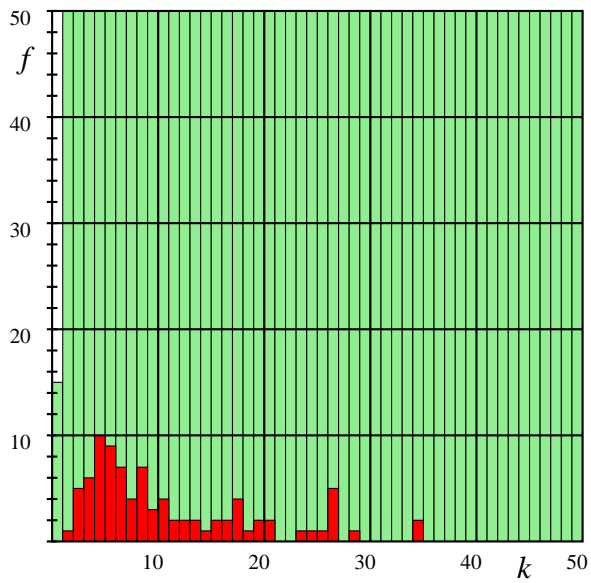
#185 (4, 0)



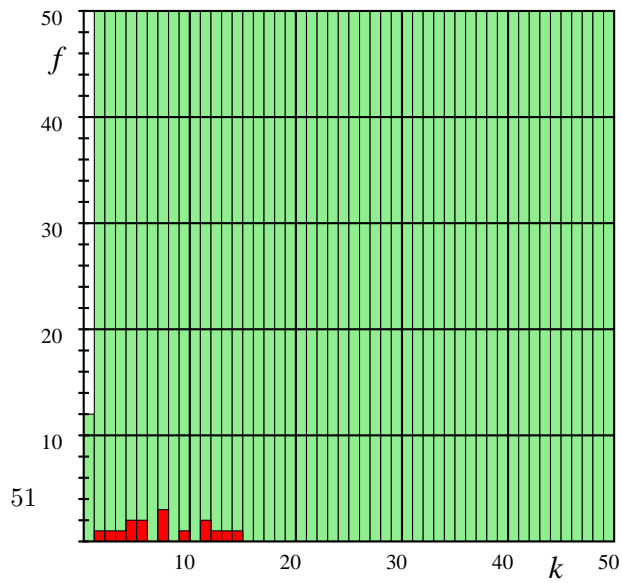
#186 (4, 0)



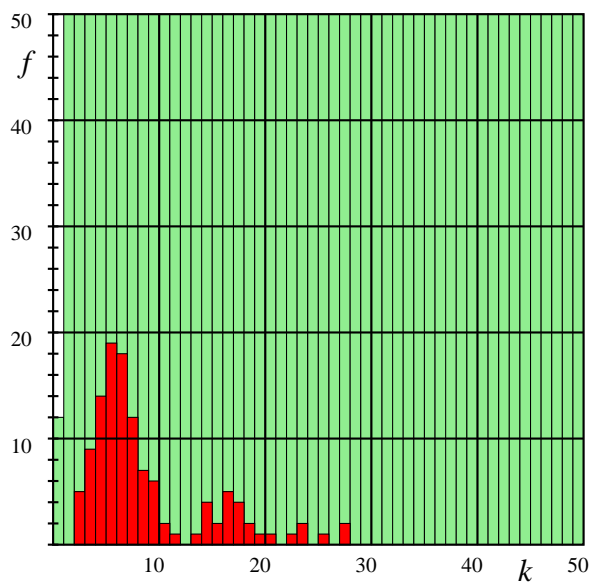
#187 (9, 6)



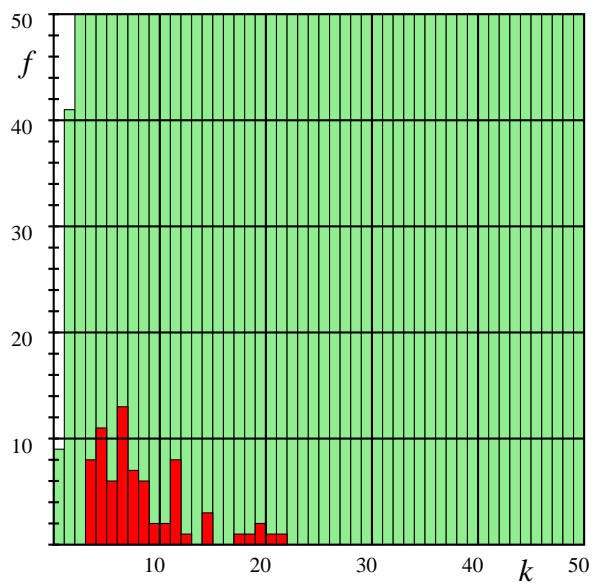
#188 (6, 6)



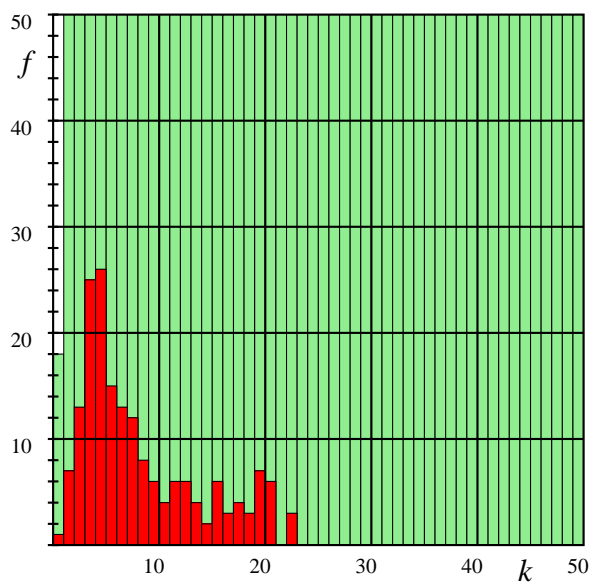
#189 (8, 4)



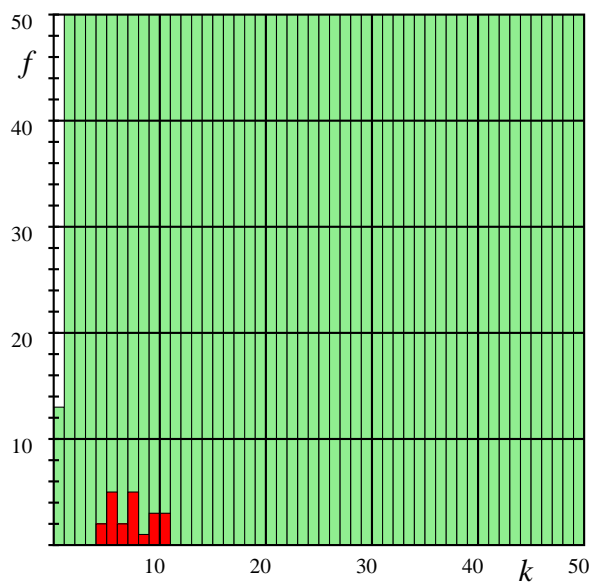
#190 (5, 4)



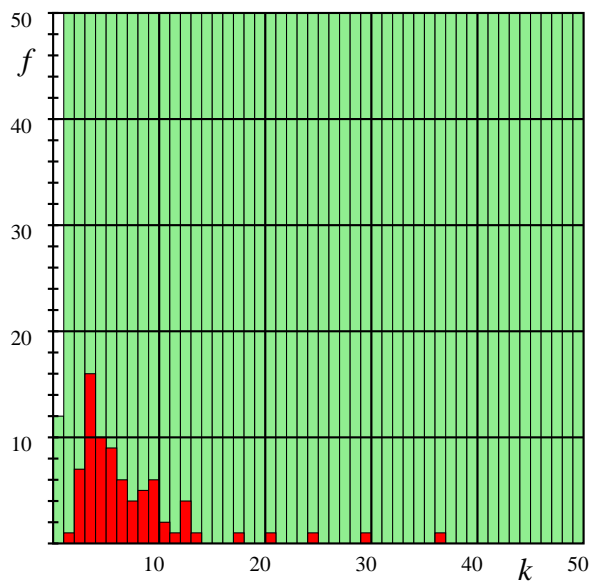
#191 (12, 6)



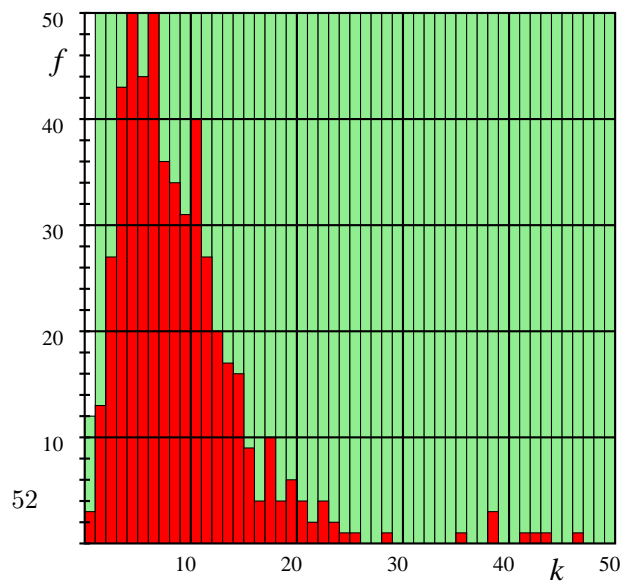
#192 (7, 6)



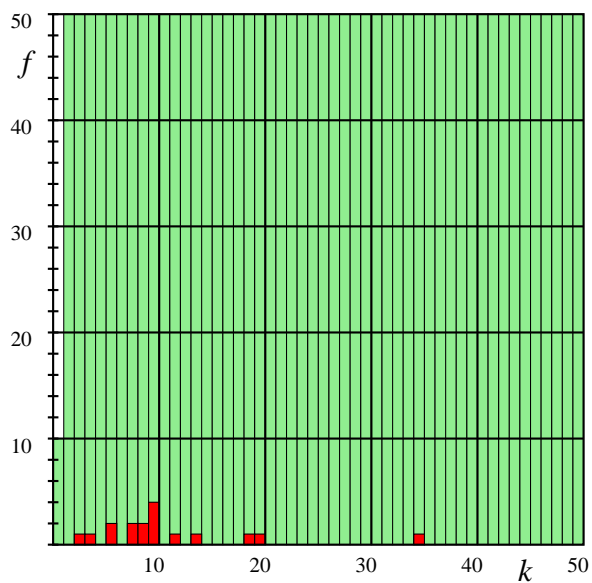
#193 (7, 5)



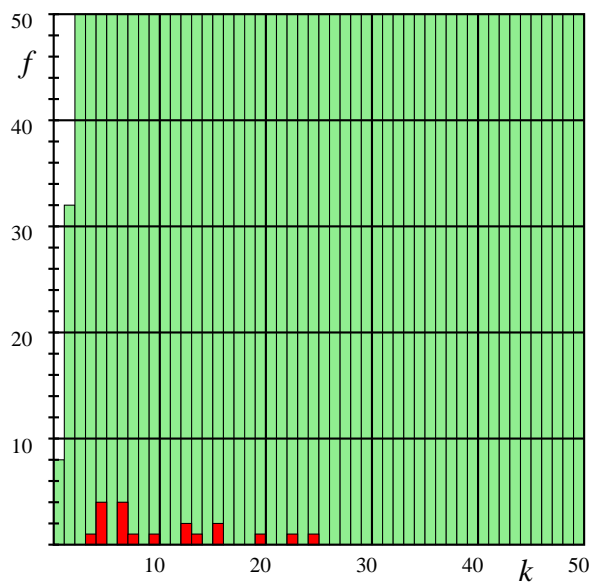
#194 (7, 5)



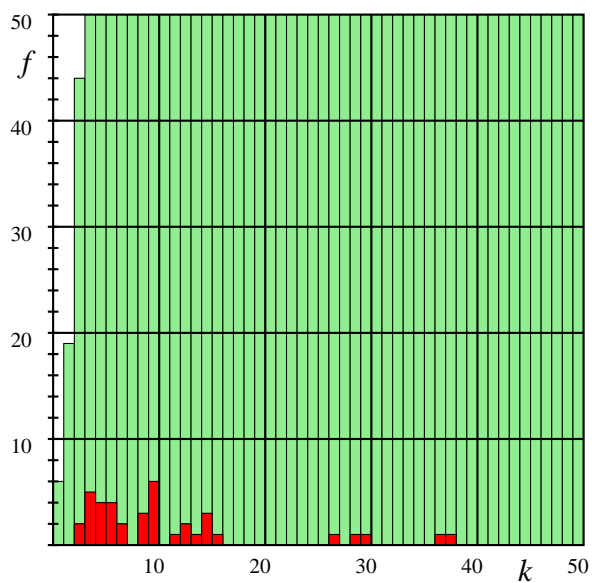
#195 (6, 4)



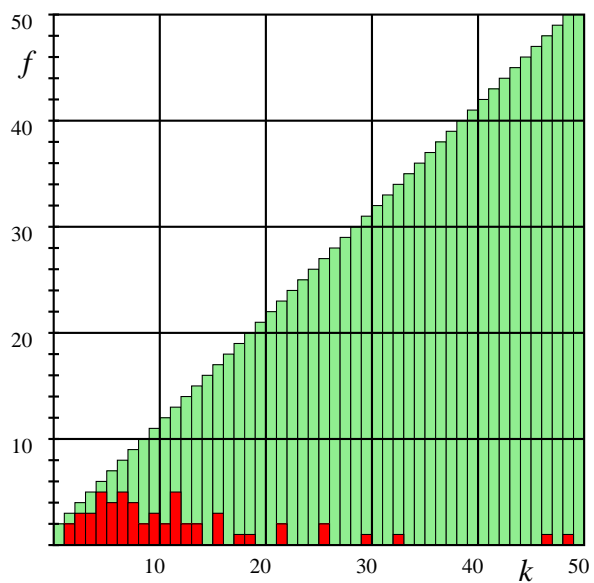
#196 (4, 4)



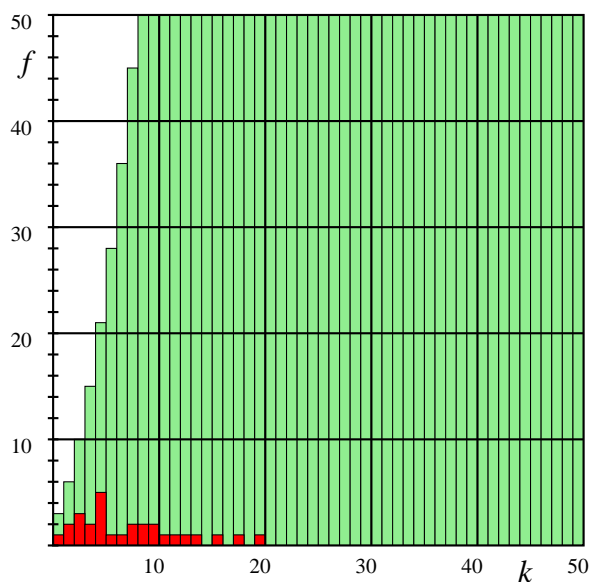
#197 (4, 2)



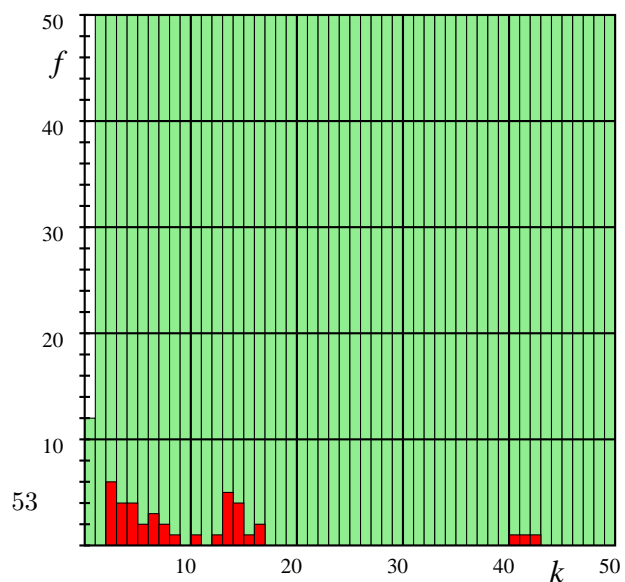
#198 (2, 0)



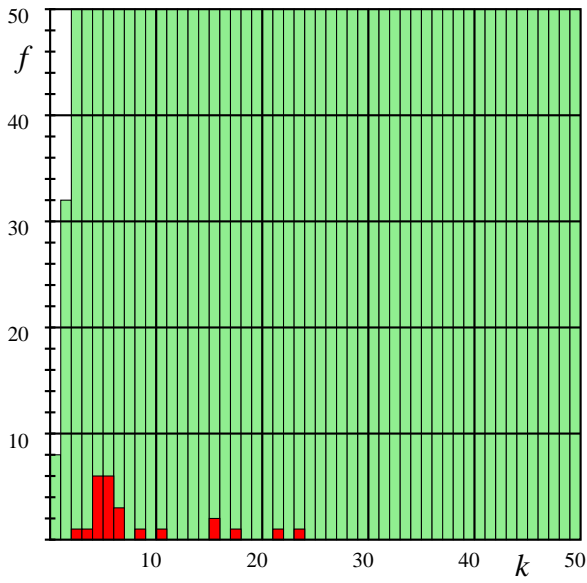
#199 (3, 0)



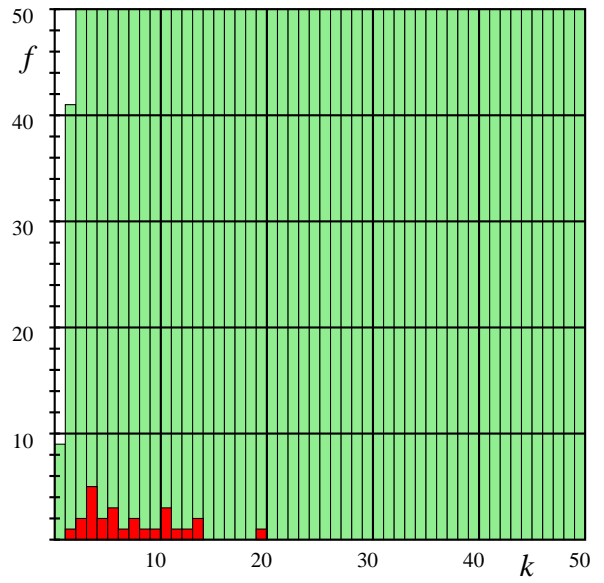
#200 (8, 4)



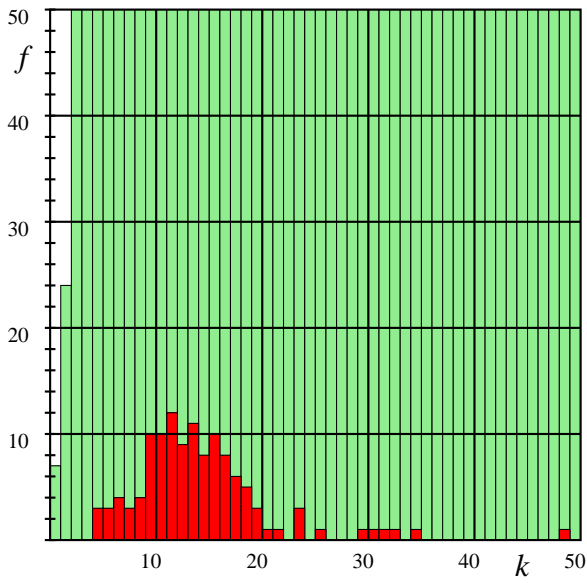
#201 (4, 4)



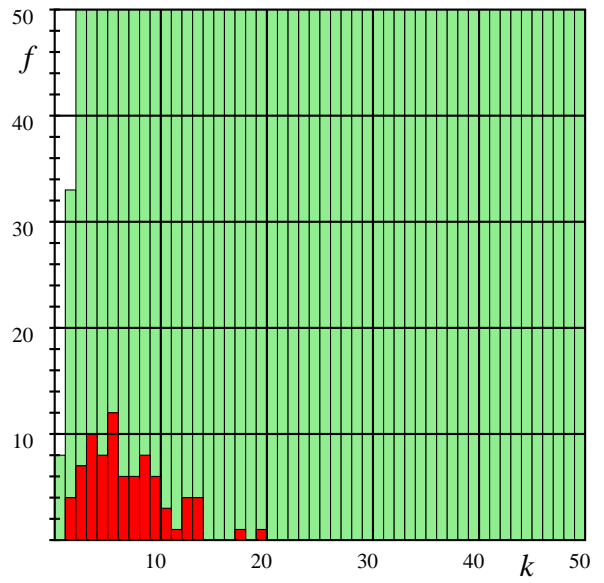
#202 (5, 4)



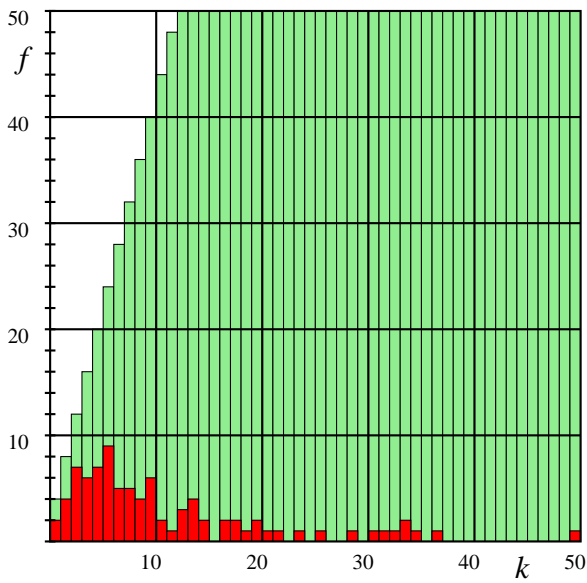
#203 (3, 4)



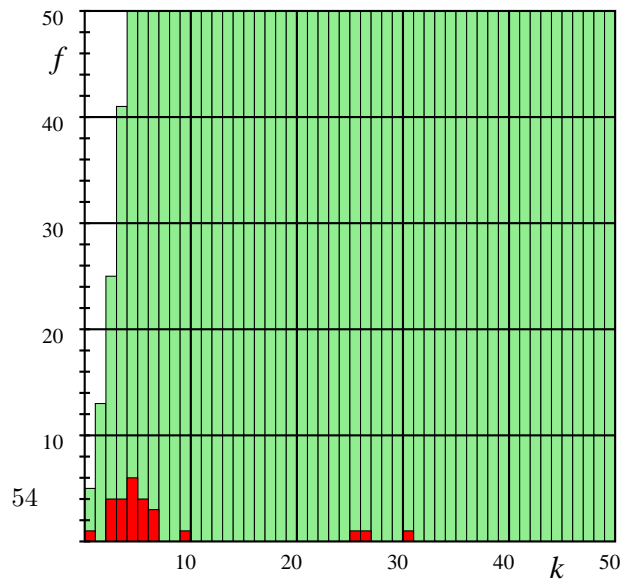
#204 (5, 3)



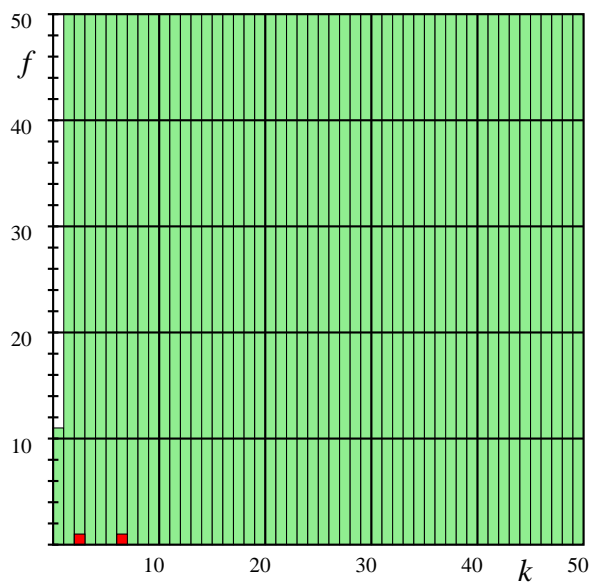
#205 (2, 2)



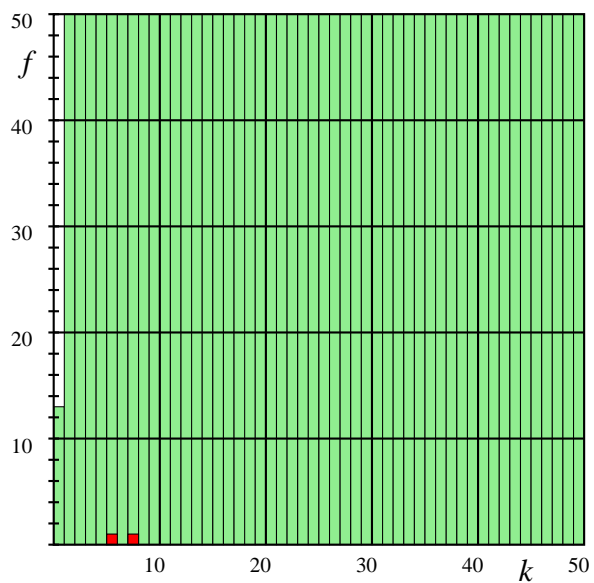
#206 (3, 2)



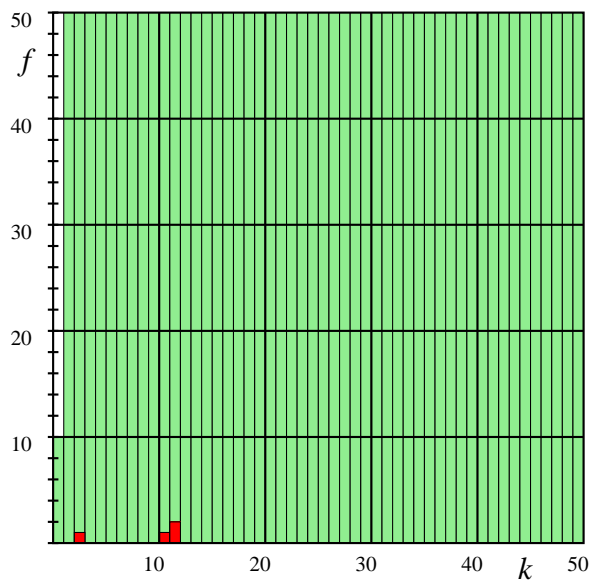
#207 (7, 4)



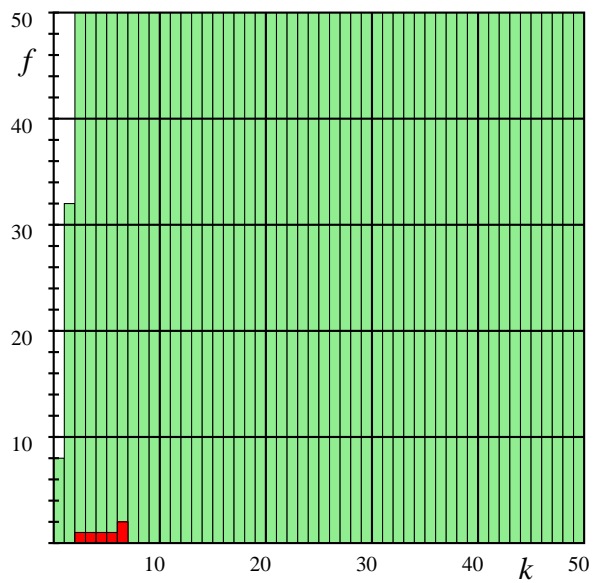
#208 (7, 6)



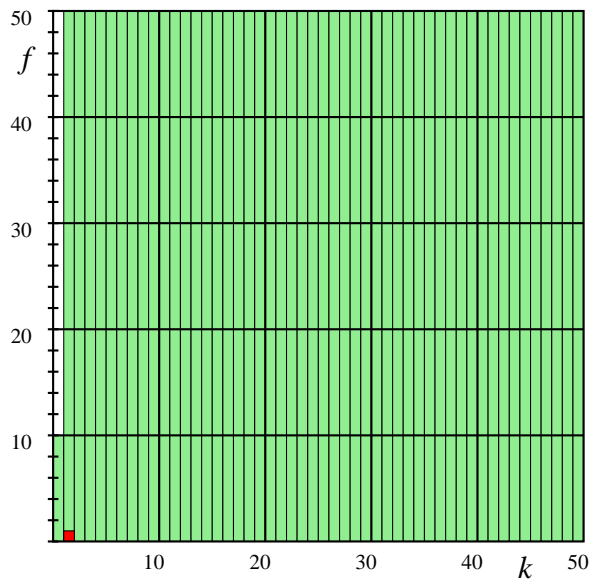
#209 (6, 4)



#210 (4, 4)



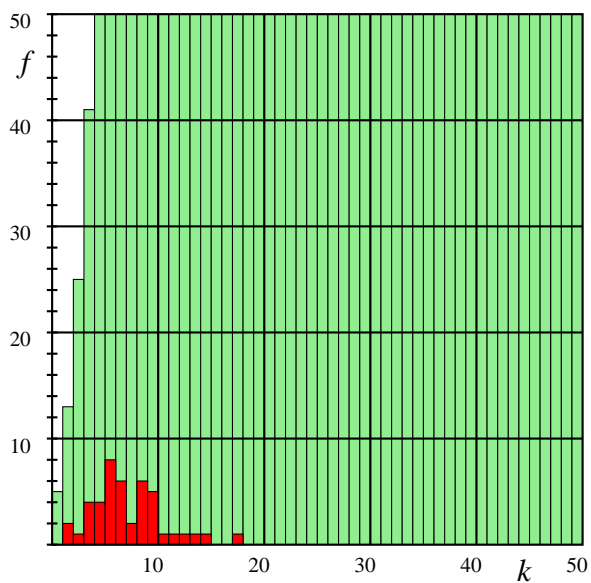
#211 (6, 4)



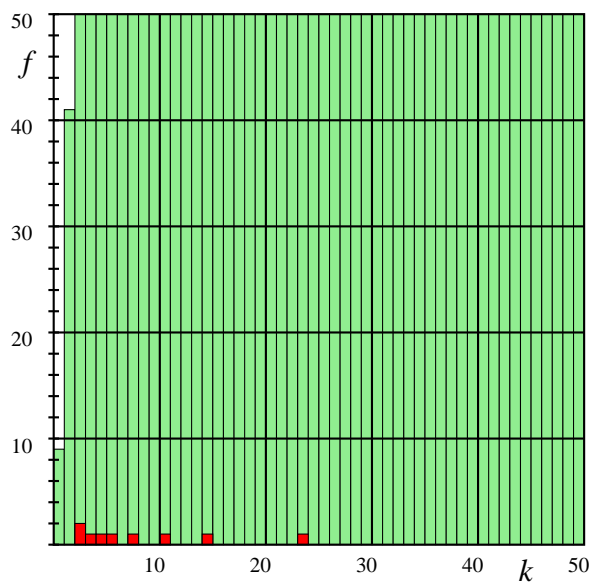
no data



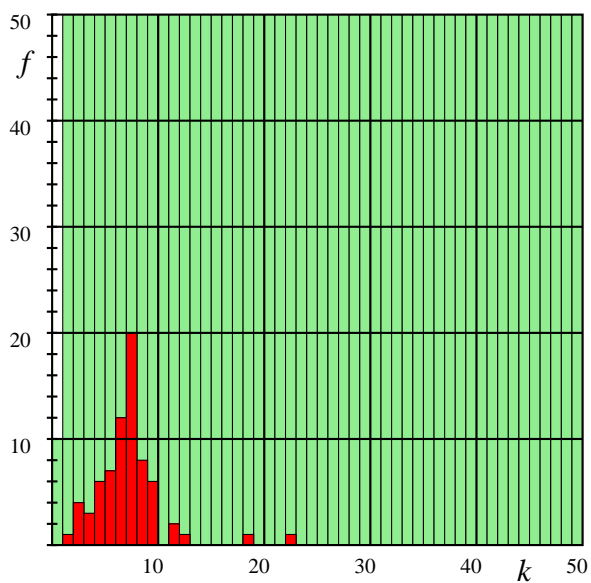
#213 (3, 2)



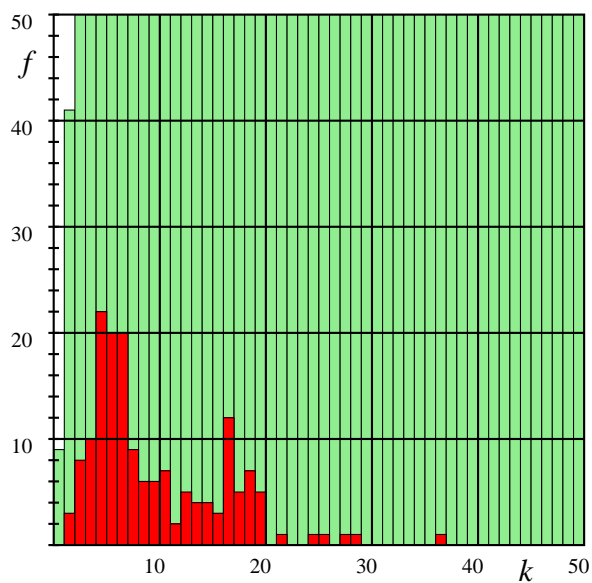
#214 (5, 4)



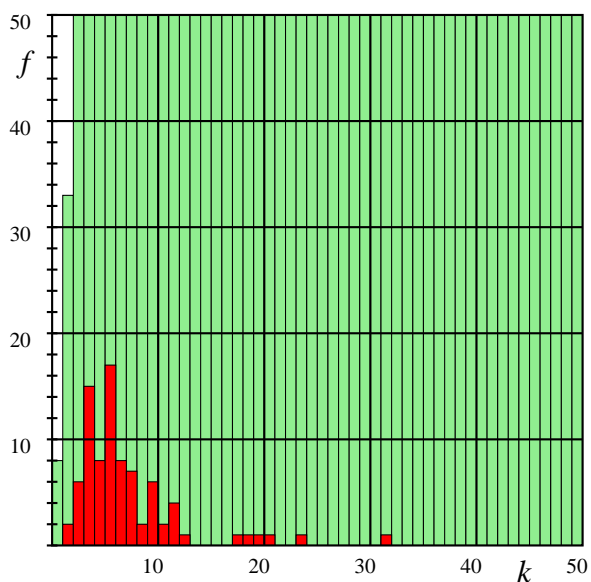
#215 (6, 4)



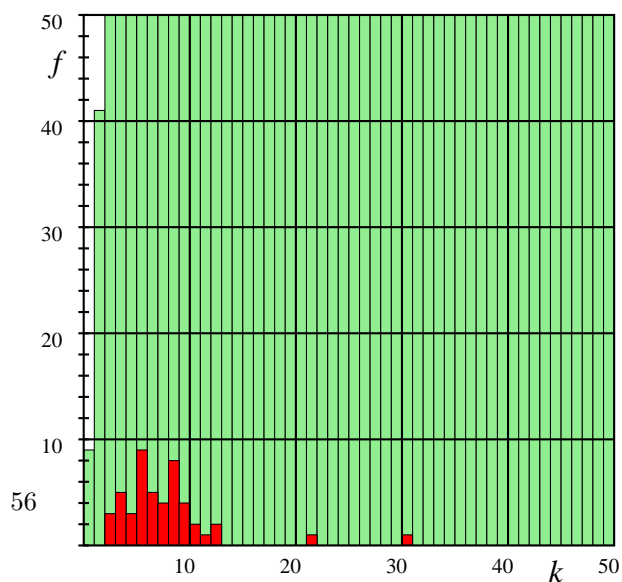
#216 (5, 4)



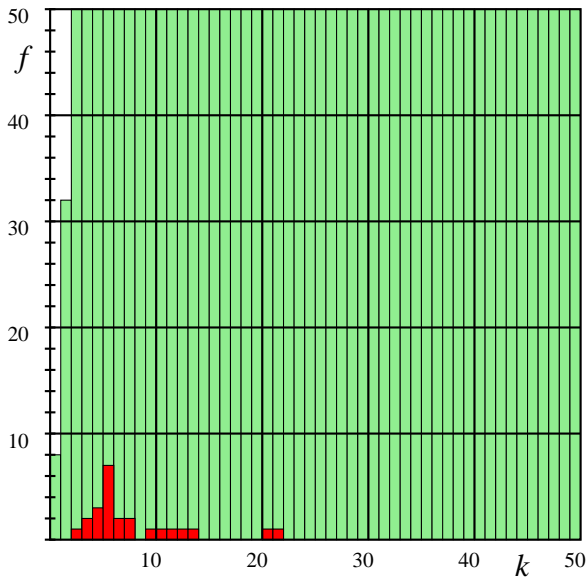
#217 (5, 3)



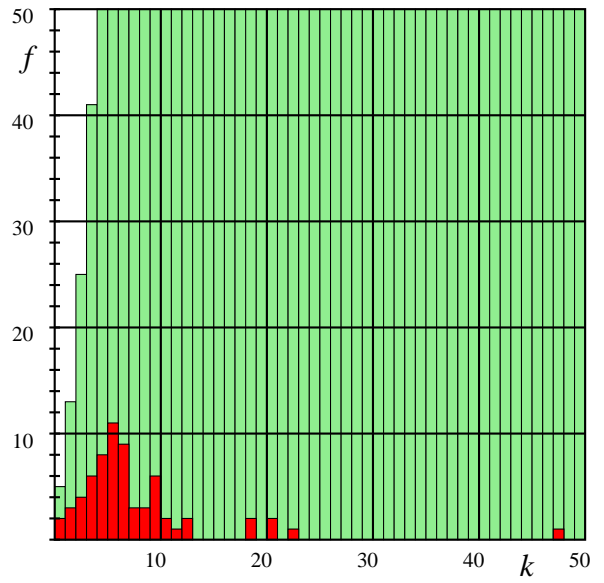
#218 (5, 4)



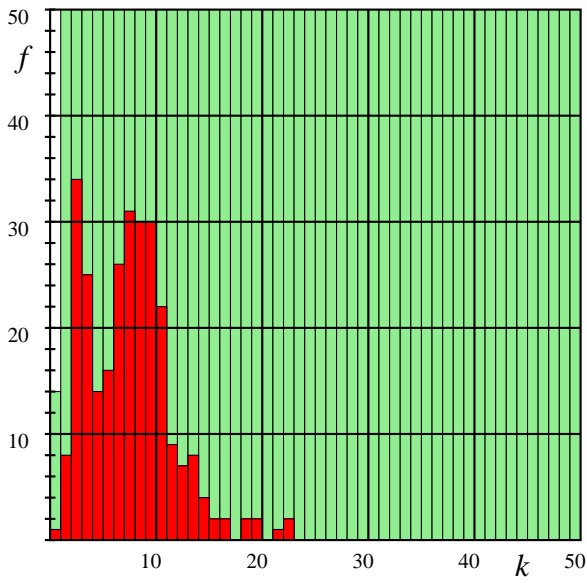
#219 (4, 4)



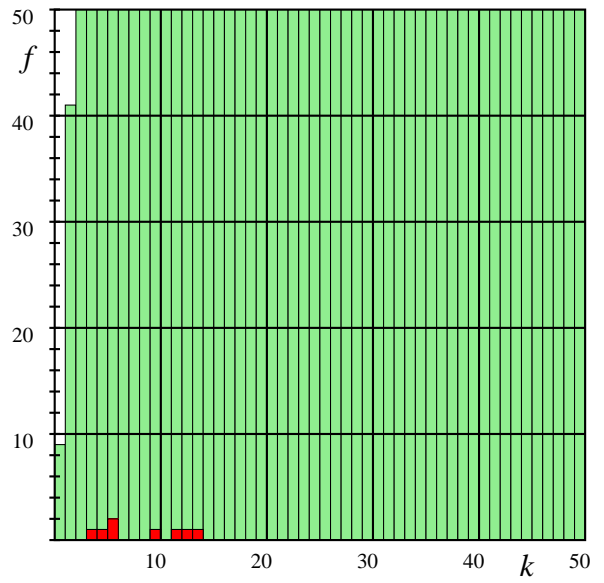
#220 (3, 2)



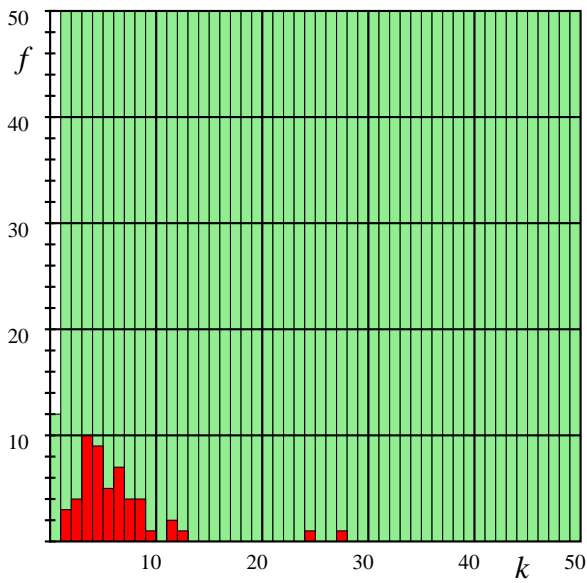
#221 (10, 4)



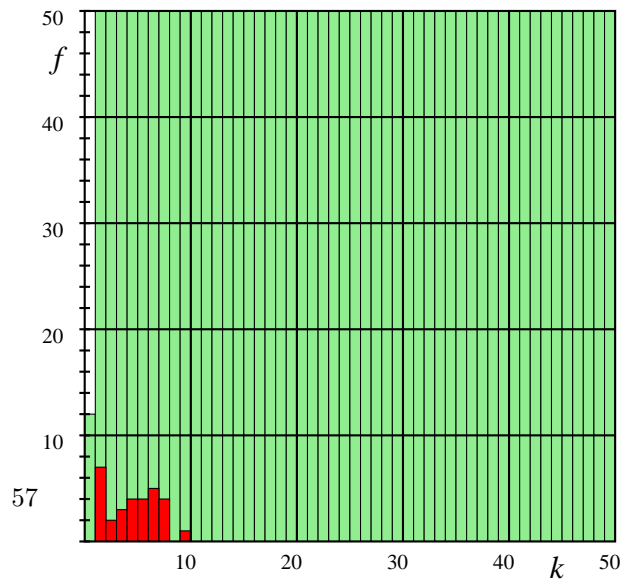
#222 (5, 4)



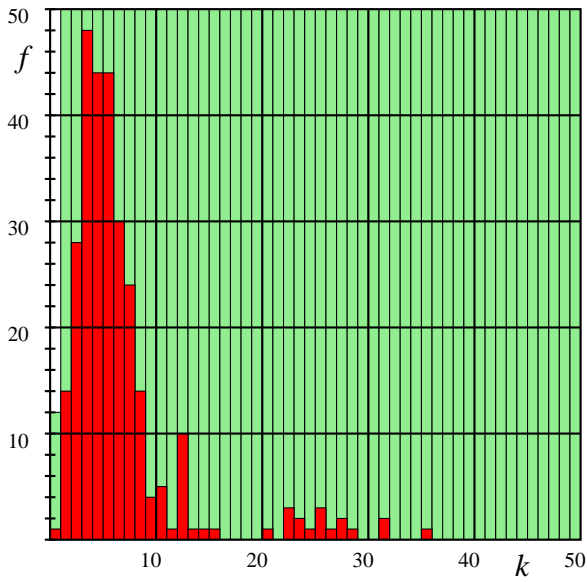
#223 (7, 5)



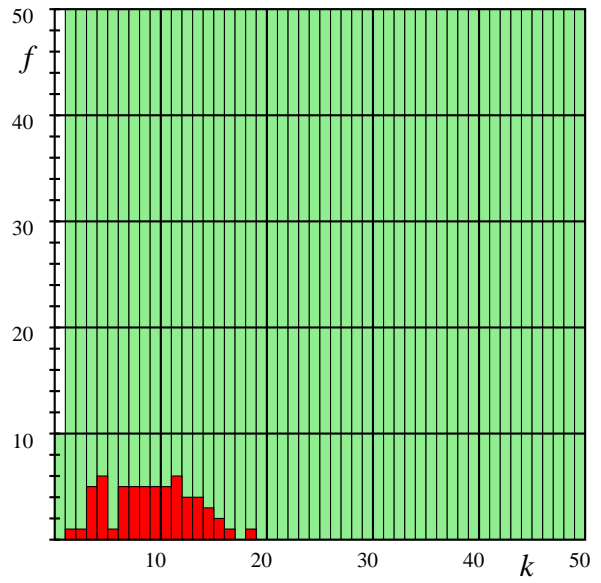
#224 (7, 5)



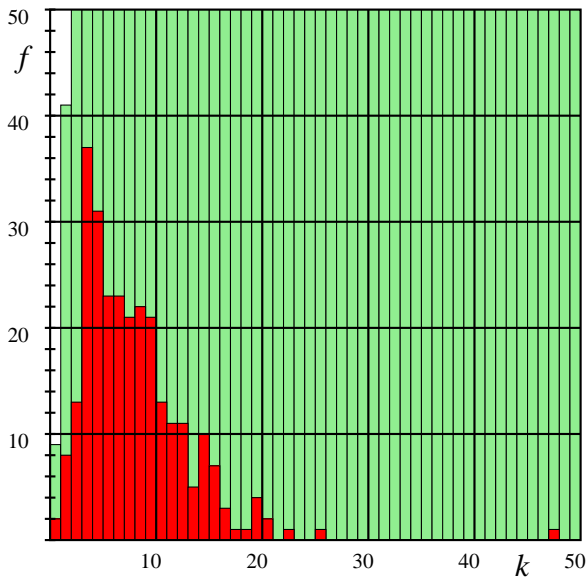
#225 (8, 4)



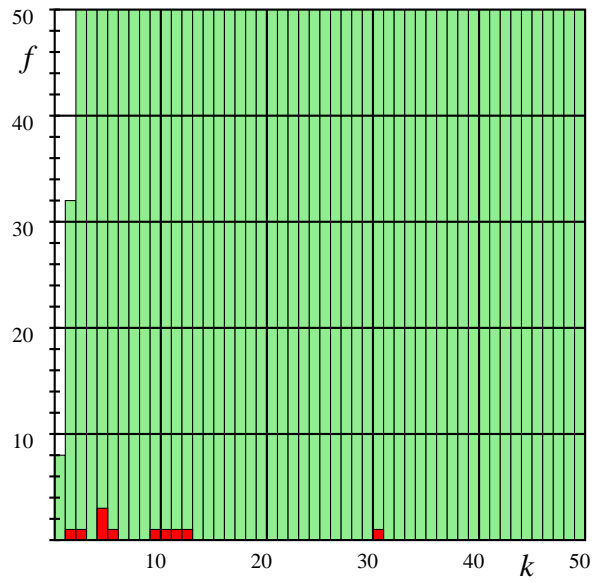
#226 (6, 4)



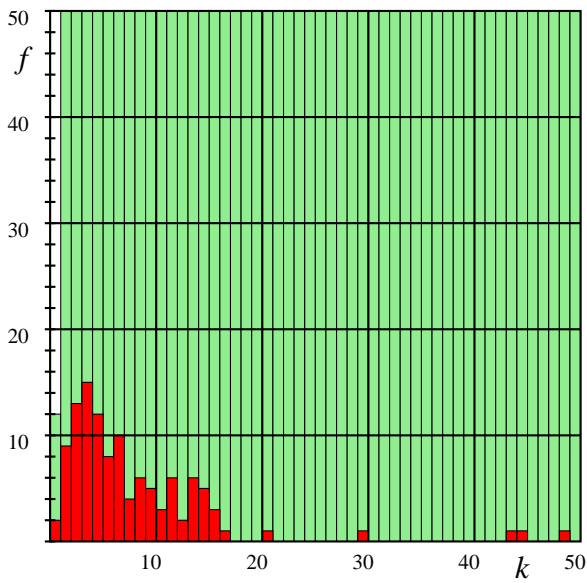
#227 (5, 4)



#228 (4, 4)



#229 (8, 4)



#230 (4, 4)

