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3-5-Man chess data

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3-5-MAN CHESS DATA

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ABSTRACT

This reports the work of Karrer and Wirth in identifying percentage results and, respectively, the Depth to Mate (DTM) and Depth to Conversion (DTC) data in all 2-5-man chess endgames.

1. INTRODUCTION

Karrer (2000) mined Nalimov's endgame tables (EGTs) to produce a complete list of DTM maximals and statistics, wtm and btm. Wirth (2000) then computed the 4-1 EGTs to complete his 2-5-man DTC suite and to produce the analogous data for the DTC metric which was compared with Thompson's 'CD' data (2000).

Wirth (2000) also provided the results percentages, wtm and btm. As he also provided the number of positions won in a specific number of plies, quick wins based on shallow tactical devices may be discounted as required from these percentages. As Wirth eliminates from his EGTs duplicates of positions with two Kings on a long diagonal, his statistics are marginally more accurate than Nalimov's. Both, for reasons of comparability, discount only those unreachable positions where the side-not-to-move is in check. Most obvious among residual unreachables, White is credited with 77 unreachable KNNK wins in 1 move.

Tamplin (2001) provides an excellent query interface to these DTM and DTC EGTs, the latter via Lincke (2001) where even the 4-man tables are to the DTC metric. Here are some sidelights on Table 1's statistics.

- Independent maxDTM computations by Rasmussen (2000) agreed completely with Karrer's data.
- Thompson's 5-man EGTs maximise the DTC of the next position rather than postponing the next conversion to mate or a subgame: the weaker side is allowed to capture voluntarily as a human player might do. This produced different maxDTC data for KRKNP, KRRKN and KBNKP. Thompson (2001) now maximises the current DTC by maximising the number of men on the board first. Note that under DTC, the stronger side may unnaturally force-sacrifice surplus force, e.g., as in KQQQK.
- Wirth used the existing ETH(Zürich) software RETROENGINE which assumes that captures are made by the winner. Where this need not be so as in wKc3Rb4c2/bKa1, Wirth's depths in plies are 1 ply too great: the wtm maxDTCs for KQRKR and KRRKQ are therefore suspect. Similarly, Thompson (2001), e.g., with Ra4+ and Kd4/5/6 alongside Ra2+ for wKc5Rb4c2/bKa1Na7a8, can rate moves equi-optimal which differ in depth by one ply. It is unlikely that any player has incurred a 50-move draw on these grounds yet.

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					% of unbroken positions						maxDTC								maxDTM							
					=	=	1-0		0-1		counts				depths, moves				counts				depths, moves			
											1-0		0-1		1-0		0-1		1-0		0-1		1-0		0-1	
	Force	GBR	#	w-b	wtm	btm	wtm	btm	wtm	btm	wtm	btm	wtm	btm	wtm	btm	wtm	btm	wtm	btm	wtm	btm	wtm	btm	wtm	btm
1	KK	0000.00	2	1-1	100.00	100.00	0.00	0.00	0.00	0.00	0	0	0	0	—	—	—	—	0	0	0	0	—	—	—	—
2	KBK	0010.00	3	2-1	100.00	100.00	0.00	0.00	0.00	0.00	0	0	0	0	—	—	—	—	0	0	0	0	—	—	—	—
3	KNK	0001.00	3	2-1	100.00	100.00	0.00	0.00	0.00	0.00	0	0	0	0	—	—	—	—	0	0	0	0	—	—	—	—
4	KPK	0000.10	3	2-1	23.49	41.91	76.51	58.09	0.00	0.00	3	2	0	0	19	19	—	—	3	2	0	0	28	28	—	—
5	KQK	1000.00	3	2-1	0.00	10.32	100.00	89.68	0.00	0.00	1	8	0	0	10	10	—	—	1	8	0	0	10	10	—	—
6	KRK	0100.00	3	2-1	0.00	9.97	100.00	90.03	0.00	0.00	121	390	0	0	16	16	—	—	121	390	0	0	16	16	—	—
7	KBKB	0040.00	4	2-2	100 - ε	100 - ε	ε	0.00	0.00	ε	52	14	14	52	1	0	0	1	52	14	14	52	1	0	0	1
8	KBKN	0013.00	4	2-2	100 - ε	100 - ε	ε	0.00	0.00	ε	2	1	1	5	1	0	0	1	2	1	1	5	1	0	0	1
9	KBKP	0010.01	4	2-2	94.76	76.43	ε	ε	5.24	23.57	104	28	6	14	1	0	5	6	104	28	20	8	1	0	19	29
10	KNKN	0004.00	4	2-2	100 - ε	100 - ε	ε	0.00	0.00	ε	5	1	1	5	1	0	0	1	5	1	1	5	1	0	0	1
11	KNKP	0001.01	4	2-2	87.06	67.44	ε	ε	12.93	32.56	29	7	3	3	7	6	12	13	29	7	4	13	7	6	28	29
12	KPKP	0000.11	4	2-2	33.81	33.81	44.50	21.69	21.69	44.50	1	1	1	1	14	14	14	14	12	1	1	12	33	33	33	33
13	KQKB	1030.00	4	2-2	0.31	23.12	99.69	76.88	0.00	0.00	798	3804	0	0	12	12	—	—	2	6	0	0	17	17	—	—
14	KQKN	1003.00	4	2-2	0.65	19.52	99.35	80.48	0.00	0.00	4	17	0	0	19	19	—	—	3	12	0	0	21	21	—	—
15	KQKP	1000.01	4	2-2	0.63	12.08	99.37	80.17	ε	7.75	1	1	20	20	27	27	1	2	3	13	2	8	28	28	10	29
16	KQKQ	4000.00	4	2-2	57.80	57.80	41.74	0.45	0.45	41.74	5	3	3	5	10	9	9	10	2	2	2	2	13	12	12	13
17	KQKR	1300.00	4	2-2	0.80	5.83	99.01	65.51	0.19	28.66	2	11	55	291	31	31	2	3	10	59	4	23	35	35	18	19
18	KRKB	0130.00	4	2-2	64.88	96.77	35.12	3.23	0.00	0.00	29	1	0	0	18	18	—	—	29	1	0	0	29	29	—	—
19	KRKN	0103.00	4	2-2	51.67	89.11	48.33	10.89	ε	ε	2	2	1	4	27	27	0	1	1	1	1	4	40	40	0	1
20	KRKP	0100.01	4	2-2	8.40	17.50	91.43	66.10	0.17	16.40	28	42	3	3	16	16	10	11	82	2	1	1	26	32	42	43
21	KRKR	0400.00	4	2-2	70.21	70.21	29.12	0.67	0.67	29.12	58	108	108	58	4	3	3	4	136	18	18	136	19	19	19	19
22	KBBK	0020.00	4	3-1	50.76	58.82	49.24	41.18	0.00	0.00	15	45	0	0	19	19	—	—	15	45	0	0	19	19	—	—
23	KBNK	0011.00	4	3-1	0.49	18.10	99.51	81.90	0.00	0.00	138	370	0	0	33	33	—	—	138	370	0	0	33	33	—	—
24	KBPK	0010.10	4	3-1	4.05	16.78	95.95	83.22	0.00	0.00	2	8	0	0	21	21	—	—	1	2	0	0	31	31	—	—
25	KNNK	0002.00	4	3-1	99.99	100 - ε	0.01	ε	0.00	0.00	77	15	0	0	1	0	—	—	77	15	0	0	1	0	—	—
26	KNPK	0001.10	4	3-1	3.70	18.50	96.30	81.50	0.00	0.00	24	32	0	0	22	22	—	—	26	22	0	0	27	28	—	—
27	KPPK	0000.20	4	3-1	1.61	7.91	98.39	92.09	0.00	0.00	62	21	0	0	16	16	—	—	9	10	0	0	32	32	—	—
28	KQBK	1010.00	4	3-1	0.00	9.38	100.00	90.62	0.00	0.00	311	2054	0	0	7	7	—	—	4	8	0	0	8	10	—	—
29	KQNK	1001.00	4	3-1	0.00	9.64	100.00	90.36	0.00	0.00	172	1012	0	0	8	8	—	—	1	8	0	0	9	10	—	—
30	KQPK	1000.10	4	3-1	0.00	2.85	100.00	97.15	0.00	0.00	750	1862	0	0	7	7	—	—	4	22	0	0	10	28	—	—
31	KQQK	2000.00	4	3-1	0.00	2.07	100.00	97.93	0.00	0.00	20	62	0	0	4	4	—	—	118	8	0	0	4	10	—	—
32	KQRK	1100.00	4	3-1	0.00	1.04	100.00	98.96	0.00	0.00	8	42	0	0	5	5	—	—	6	896	0	0	6	16	—	—
33	KRBK	0110.00	4	3-1	0.00	8.80	100.00	91.20	0.00	0.00	3	15	0	0	12	12	—	—	28	906	0	0	16	16	—	—
34	KRNK	0101.00	4	3-1	0.00	9.18	100.00	90.82	0.00	0.00	1427	4568	0	0	12	12	—	—	22	865	0	0	16	16	—	—
35	KRPK	0100.10	4	3-1	0.00	2.46	100.00	97.54	0.00	0.00	1066	4664	0	0	8	8	—	—	45	22	0	0	16	28	—	—
36	KRRK	0200.00	4	3-1	0.00	0.29	100.00	99.71	0.00	0.00	15	76	0	0	6	6	—	—	1444	896	0	0	7	16	—	—

Table 1a. 2-4-man chess endgame statistics.

					% of unbroken positions						maxDTC counts				maxDTC depths, moves				maxDTM counts				maxDTM depths, moves			
					=	=	1-0		0-1		1-0		0-1		1-0		0-1		1-0		0-1		1-0		0-1	
	Force		#	w-b	wtm	btm	wtm	btm	wtm	btm	wtm	btm	wtm	btm	wtm	btm	wtm	btm	wtm	btm	wtm	btm	wtm	btm	wtm	btm
37	KBBKB	0050.00	5	3-2	84.36	98.63	15.64	1.37	0.00	0.01	503	6	141	464	6	6	1	2	111	12	141	464	22	22	1	2
38	KBBKN	0023.00	5	3-2	51.77	66.12	48.23	33.88	ε	ε	32	43	44	222	66	66	0	1	32	43	44	222	78	78	0	1
39	KBBKP	0020.01	5	3-2	50.23	54.13	48.01	34.46	1.76	11.41	34	69	5	11	21	21	8	9	1	15	54	82	74	73	82	83
40	KBBKQ	3020.00	5	3-2	20.15	2.87	15.29	0.64	64.56	96.49	242	58	74	15	4	3	71	71	39	70	74	15	21	20	81	81
41	KBBKR	0320.00	5	3-2	83.43	97.22	16.51	1.51	0.06	1.28	26	7	2	6	7	6	8	9	36	6	1	6	23	22	30	31
42	KBNKB	0041.00	5	3-2	74.46	98.75	25.54	1.25	ε	ε	21	18	133	445	13	12	1	2	9	1	133	445	39	39	1	2
43	KBNKN	0014.00	5	3-2	67.88	96.15	32.12	3.85	ε	ε	2	1	104	533	77	76	0	1	2	1	104	533	107	106	0	1
44	KBNKP	0011.01	5	3-2	5.45	22.98	91.38	62.35	3.16	14.67	1	2	523	535	27	27	8	9	9	9	33	33	104	104	54	55
45	KBNKQ	3011.00	5	3-2	6.44	1.71	24.98	0.70	68.58	97.59	67	1	22	4	5	5	42	42	4	4	22	4	36	35	53	53
46	KBNKR	0311.00	5	3-2	73.81	94.68	26.01	1.58	0.18	3.74	115	23	4	2	6	5	12	13	72	42	3	17	36	35	39	41
47	KBPKB	0040.10	5	3-2	58.70	86.90	41.30	13.09	ε	0.01	14	14	508	1524	40	39	2	3	14	14	508	1524	51	50	2	3
48	KBPKN	0013.10	5	3-2	43.38	73.03	56.62	26.97	ε	ε	16	6	23	86	42	42	3	4	1	1	1	3	100	96	7	8
49	KBPKP	0010.11	5	3-2	9.21	23.93	87.20	58.98	3.59	17.09	92	52	34	30	53	53	6	7	92	52	2	3	67	67	50	51
50	KBPKQ	3010.10	5	3-2	11.49	2.82	21.32	0.36	67.19	96.82	30	30	3	2	4	3	42	42	25	4	3	2	35	34	50	50
51	KBPKR	0310.10	5	3-2	67.26	73.15	30.95	3.46	1.80	23.39	76	53	5	6	13	12	20	21	3	3	5	6	45	44	38	39
52	KNNKB	0032.00	5	3-2	99.98	100 - ε	0.02	ε	ε	ε	251	82	51	109	4	3	0	1	251	82	51	109	4	3	0	1
53	KNNKN	0005.00	5	3-2	99.92	99.99	0.08	0.01	ε	ε	20	10	56	293	7	6	0	1	20	10	56	293	7	6	0	1
54	KNNKP	0002.01	5	3-2	66.40	73.61	31.31	13.56	2.30	12.84	2	4	1	1	114	114	12	13	2	4	11	9	115	114	73	74
55	KNNKQ	3002.00	5	3-2	42.78	6.02	0.01	ε	57.22	93.98	2387	465	10	2	1	0	63	63	2387	465	10	2	1	0	72	72
56	KNNKR	0302.00	5	3-2	99.61	93.76	0.01	ε	0.38	6.24	2	1	6	11	3	2	10	11	2	1	4	18	3	2	40	41
57	KNPKB	0031.10	5	3-2	61.16	88.09	38.84	11.91	ε	ε	11	3	5	18	31	30	8	9	11	3	5	18	43	42	8	9
58	KNPKN	0004.10	5	3-2	50.81	77.22	49.19	22.78	ε	ε	9	2	27	132	48	48	3	4	5	12	27	61	97	97	3	7
59	KNPKP	0001.11	5	3-2	13.24	27.49	79.66	50.15	7.11	22.35	2	6	6	9	33	33	13	14	10	10	3	3	57	57	57	58
60	KNPKQ	3001.10	5	3-2	11.90	2.27	17.86	0.49	70.24	97.24	2	2	1	1	5	4	43	43	1	6	1	2	41	33	62	55
61	KNPKR	0301.10	5	3-2	69.34	68.52	26.68	2.19	3.98	29.29	8	36	7	1	18	18	42	43	3	1	7	1	44	43	66	67
62	KPPKB	0030.20	5	3-2	45.63	75.36	54.37	24.63	ε	0.01	31	34	14	34	18	17	3	4	1	1	14	34	43	43	3	4
63	KPPKN	0003.20	5	3-2	35.30	62.39	64.69	37.59	ε	0.02	3	5	21	12	30	29	13	14	2	1	12	31	50	50	16	17
64	KPPKP	0000.21	5	3-2	9.96	18.89	78.55	52.44	11.48	28.67	2	11	66	58	28	28	11	12	6	7	3	3	127	127	42	43
65	KPPKQ	3000.20	5	3-2	12.62	1.53	16.02	0.07	71.37	98.40	14	15	19	8	6	5	30	30	7	2	12	6	124	100	41	41
66	KPPKR	0300.20	5	3-2	20.05	18.19	35.41	6.59	44.53	75.22	1	1	2	3	25	24	25	25	1	1	1	3	54	53	41	40
67	KQBKB	1040.00	5	3-2	0.26	19.78	99.74	80.22	ε	ε	597	2743	187	645	8	8	1	2	4	11	187	645	17	17	1	2
68	KQBKN	1013.00	5	3-2	0.55	16.73	99.45	83.27	ε	ε	91	454	30	153	7	7	0	1	1	14	30	153	21	21	0	1
69	KQBKP	1010.01	5	3-2	0.01	14.12	99.99	84.90	ε	0.98	2	8	791	789	12	12	1	2	1	34	14	1	32	33	17	24
70	KQBKQ	4010.00	5	3-2	44.04	62.29	55.65	7.19	0.31	30.53	31	1	1	1	30	30	16	17	33	1	1	1	33	33	23	24
71	KQBKR	1310.00	5	3-2	0.62	27.51	99.34	71.81	0.03	0.69	1	6	8848	52298	19	19	1	2	1	6	2	11	40	40	25	30

Table 1b. 5-man chess endgame statistics: 3-2, Part I.

	Force		#	w-b	% of unbroken positions = wtm	= btm	1-0 wtm	1-0 btm	0-1 wtm	0-1 btm	maxDTC counts 1-0 wtm	1-0 btm	0-1 wtm	0-1 btm	depths, moves 1-0 wtm	1-0 btm	0-1 wtm	0-1 btm	maxDTM counts 1-0 wtm	1-0 btm	0-1 wtm	0-1 btm	depths, moves 1-0 wtm	1-0 btm	0-1 wtm	0-1 btm
72	**KQNKB**	103.00	5	3-2	0.24	20.89	99.76	79.11	ε	ε	203	569	28	64	9	9	0	1	98	259	28	64	17	17	0	1
73	**KQNKN**	1004.00	5	3-2	0.61	17.82	99.39	82.18	ε	ε	10	54	31	166	9	9	0	1	1	15	31	166	21	21	0	1
74	**KQNKP**	100.01	5	3-2	0.10	14.97	99.90	83.12	ε	1.91	7	8	928	911	17	17	1	2	2	7	1	31	30	41	22	29
75	**KQNKQ**	400.00	5	3-2	49.57	62.25	50.09	4.29	0.34	33.46	7	1	1	4	35	35	13	14	7	1	2	6	41	41	23	24
76	**KQNKR**	130.00	5	3-2	0.71	27.20	99.24	69.83	0.04	2.97	2	12	15	86	22	22	2	3	1	5	9	17	38	38	38	41
77	**KQPKB**	1030.10	5	3-2	0.12	16.75	99.88	83.25	ε	ε	1271	4925	374	1290	9	9	1	2	16	68	374	1290	28	29	1	2
78	**KQPKN**	1003.10	5	3-2	0.33	12.48	99.67	87.52	ε	ε	1	6	3	9	10	10	1	2	4	24	1	3	30	30	7	8
79	**KQPKP**	1000.11	5	3-2	ε	7.41	100 - ε	89.15	0.00	3.43	17436	59666	16	16	6	6	2	3	1	6	4	3	105	122	14	34
80	**KQPKQ**	4000.10	5	3-2	31.21	51.20	68.39	13.61	0.40	35.19	5	4	2	13	114	103	15	16	5	13	24	268	124	123	28	29
81	**KQPKR**	1300.10	5	3-2	0.29	6.14	99.59	74.15	0.13	19.72	4	20	5177	26128	20	20	2	3	7	11	6	32	37	43	27	33
82	**KQQKB**	2030.00	5	3-2	0.00	0.05	100.00	99.95	0.00	0.00	1031	4239	0	0	4	4	—	—	3	11	0	0	15	17	—	—
83	**KQQKN**	2003.00	5	3-2	ε	0.09	100 - ε	99.91	0.00	0.00	10	50	0	0	5	5	—	—	2	15	0	0	19	21	—	—
84	**KQQKP**	2000.01	5	3-2	ε	0.65	100 - ε	99.34	ε	0.01	35764	49022	140	140	3	3	1	2	1	3	140	4	22	30	2	13
85	**KQQKQ**	5000.00	5	3-2	0.82	32.76	99.10	66.65	0.09	0.59	2	21	25	115	25	25	6	7	4	44	1	35	30	30	12	13
86	**KQQKR**	2300.00	5	3-2	0.01	0.20	99.97	99.68	0.02	0.12	2	12	2383	16681	14	14	1	2	2	100	1017	27	35	35	2	19
87	**KQRKB**	1130.00	5	3-2	0.03	11.63	99.97	88.37	0.00	0.00	1005	3433	0	0	5	5	—	—	18	197	0	0	29	29	—	—
88	**KQRKN**	1103.00	5	3-2	0.11	7.75	99.89	92.25	ε	ε	285	1399	36	149	5	5	0	1	6	35	36	149	40	40	0	1
89	**KQRKP**	1100.01	5	3-2	ε	1.36	100 - ε	98.34	ε	0.30	153744	225124	683	683	3	3	1	2	1	3	2	6	40	67	35	43
90	**KQRKQ**	4100.00	5	3-2	2.76	21.23	97.01	54.34	0.24	24.43	3	31	1	2	60	60	8	9	3	31	11	79	67	67	37	38
91	**KQRKR**	1400.00	5	3-2	0.12	17.66	99.85	82.09	0.03	0.25	4	22	8040	56088	16	16	1	2	5	82	2810	139	34	35	2	20
92	**KRBKB**	0140.00	5	3-2	1.82	31.12	98.18	68.88	ε	ε	25	35	251	836	25	25	1	2	14	9	251	836	30	30	1	2
93	**KRBKN**	0113.00	5	3-2	1.07	24.04	98.93	75.96	ε	ε	10	39	105	476	21	21	0	1	6	30	105	476	40	40	0	1
94	**KRBKP**	0110.01	5	3-2	0.94	17.06	99.06	80.50	ε	2.44	2	12	4	12	11	11	4	5	1	4	1	6	28	36	65	70
95	**KRBKQ**	3110.00	5	3-2	47.94	25.58	38.70	3.21	13.36	71.20	1	3	5	4	7	6	41	42	79	31	3	4	21	20	70	70
96	**KRBKR**	0410.00	5	3-2	58.74	94.08	41.21	5.07	0.05	0.85	28	19	3	11	59	58	3	4	28	19	3	11	65	64	26	30
97	**KRNKB**	0131.00	5	3-2	2.28	32.37	97.72	67.63	ε	ε	3	6	41	89	25	25	0	1	1	1	41	89	31	31	0	1
98	**KRNKN**	0104.00	5	3-2	1.02	24.64	98.98	75.36	ε	ε	5	18	101	468	24	24	0	1	1	3	101	468	37	40	0	1
99	**KRNKP**	0101.01	5	3-2	1.53	17.10	98.45	78.39	0.01	4.51	69	85	2	2	15	15	10	11	2	2	2	7	29	29	63	68
100	**KRNKQ**	310.00	5	3-2	41.12	19.71	35.44	2.10	23.43	78.19	24	5	7	3	9	8	46	46	72	15	3	1	20	19	69	69
101	**KRNKR**	0401.00	5	3-2	63.29	93.60	36.63	3.24	0.07	3.16	1	1	1	3	33	32	4	5	1	1	1	17	37	36	39	41
102	**KRPKB**	0130.10	5	3-2	3.60	32.61	96.40	67.39	ε	ε	11	26	502	1672	62	62	1	2	3	13	502	1672	73	73	1	2
103	**KRPKN**	0103.10	5	3-2	2.51	24.70	97.49	75.30	ε	ε	2	7	4	12	46	46	1	2	6	24	2	6	54	54	7	8
104	**KRPKP**	0100.11	5	3-2	0.33	6.51	99.44	83.26	0.24	10.23	7	8	17	22	10	10	10	11	3	3	5	6	56	68	100	103
105	**KRPKQ**	3100.10	5	3-2	11.84	7.12	37.70	1.83	50.46	91.04	5	5	5	1	9	8	78	79	45	1	3	1	68	59	103	104
106	**KRPKR**	0400.10	5	3-2	33.02	54.39	66.57	25.54	0.41	20.07	33	4	23	80	60	60	6	7	33	4	2	32	74	74	28	33
107	**KRRKB**	0230.00	5	3-2	0.73	22.40	99.27	77.60	0.00	0.00	1	2	0	0	10	10	—	—	39	232	0	0	29	29	—	—
108	**KRRKN**	0203.00	5	3-2	0.28	14.97	99.72	85.03	ε	ε	1	6	45	184	8	8	0	1	6	32	45	184	40	40	0	1
109	**KRRKP**	0200.01	5	3-2	ε	5.71	99.99	93.28	ε	1.01	16	48	988	988	9	9	1	2	1	1	1	1	33	40	40	50
110	**KRRKQ**	3200.00	5	3-2	36.78	36.96	58.13	11.01	5.09	52.03	14	4	2	3	16	15	20	20	14	6	3	5	29	28	49	49
111	**KRRKR**	0500.00	5	3-2	0.71	33.41	99.25	66.17	0.04	0.42	3	15	6150	42805	25	25	1	2	2	10	1980	139	31	31	2	20

Table 1c. 5-man chess endgame statistics: 3-2, Part II.

	Force		#	w-b	% of unbroken positions = wtm	= btm	1-0 wtm	1-0 btm	0-1 wtm	0-1 btm	maxDTC counts 1-0 wtm	1-0 btm	0-1 wtm	0-1 btm	depths, moves 1-0 wtm	1-0 btm	0-1 wtm	0-1 btm	maxDTM counts 1-0 wtm	1-0 btm	0-1 wtm	0-1 btm	depths, moves 1-0 wtm	1-0 btm	0-1 wtm	0-1 btm
112	**KBBBK**	0090.00/30	5	4-1	26.05	31.60	73.95	68.40	0.00	0.00	48	140	0	0	11	11	—	—	2	45	0	0	16	19	—	—
113	**KBBNK**	0021.00	5	4-1	0.02	4.06	99.98	95.94	0.00	0.00	663	1754	0	0	14	14	—	—	4	832	0	0	33	33	—	—
114	**KBBPK**	0020.10	5	4-1	1.67	6.83	98.33	93.17	0.00	0.00	4	3	0	0	16	16	—	—	1	4	0	0	30	31	—	—
115	**KBNNK**	0012.00	5	4-1	0.02	8.41	99.98	91.59	0.00	0.00	21	50	0	0	14	14	—	—	1	3	0	0	34	34	—	—
116	**KBNPK**	0011.10	5	4-1	ε	0.83	100 - ε	99.17	0.00	0.00	1	5	0	0	11	11	—	—	1	2831	0	0	33	33	—	—
117	**KBPPK**	0010.20	5	4-1	0.20	1.27	99.80	98.73	0.00	0.00	56	46	0	0	16	16	—	—	3	63	0	0	25	32	—	—
118	**KNNNK**	0009.00/30	5	4-1	1.27	25.01	98.73	74.99	0.00	0.00	43	163	0	0	21	21	—	—	43	163	0	0	21	21	—	—
119	**KNNPK**	0002.10	5	4-1	1.62	12.01	98.38	87.99	0.00	0.00	20	32	0	0	16	16	—	—	90	198	0	0	28	28	—	—
120	**KNPPK**	0001.20	5	4-1	0.02	1.03	99.98	98.97	0.00	0.00	44	105	0	0	12	12	—	—	1	66	0	0	32	32	—	—
121	**KPPPK**	0000.30	5	4-1	0.06	0.63	99.94	99.37	0.00	0.00	6	6	0	0	12	12	—	—	7	6	0	0	33	33	—	—
122	**KQBBK**	1020.00	5	4-1	0.00	5.03	100.00	94.97	0.00	0.00	10850	61334	0	0	6	6	—	—	36905	105	0	0	6	19	—	—
123	**KQBNK**	1011.00	5	4-1	ε	1.11	100 - ε	98.89	0.00	0.00	16504	69137	0	0	5	5	—	—	1082	849	0	0	7	33	—	—
124	**KQBPK**	1010.10	5	4-1	0.00	1.22	100.00	98.78	0.00	0.00	16724	75101	0	0	6	6	—	—	1	4	0	0	9	31	—	—
125	**KQNNK**	1002.00	5	4-1	0.00	9.07	100.00	90.93	0.00	0.00	12262	58699	0	0	7	7	—	—	59	8	0	0	8	9	—	—
126	**KQNPK**	1001.10	5	4-1	0.00	1.03	100.00	98.97	0.00	0.00	1678	8471	0	0	6	6	—	—	67	197	0	0	9	27	—	—
127	**KQPPK**	1000.20	5	4-1	ε	0.67	100 - ε	99.33	0.00	0.00	9493	28496	0	0	6	6	—	—	14918	63	0	0	9	32	—	—
128	**KQQBK**	2010.00	5	4-1	0.00	2.67	100.00	97.33	0.00	0.00	825	3167	0	0	4	4	—	—	3793	28	0	0	4	8	—	—
129	**KQQNK**	2001.00	5	4-1	0.00	2.39	100.00	97.61	0.00	0.00	2282	7648	0	0	4	4	—	—	7873	8	0	0	4	9	—	—
130	**KQQPK**	2000.10	5	4-1	0.00	2.06	100.00	97.94	0.00	0.00	25977	77812	0	0	4	4	—	—	1E+05	32	0	0	4	10	—	—
131	**KQQQK**	9000.00/30	5	4-1	0.00	3.96	100.00	96.04	0.00	0.00	9854	42894	0	0	3	3	—	—	18820	892	0	0	3	4	—	—
132	**KQQRK**	2100.00	5	4-1	0.00	3.06	100.00	96.94	0.00	0.00	2	12	0	0	4	4	—	—	31	45	0	0	4	6	—	—
133	**KQRBK**	1110.00	5	4-1	0.00	1.68	100.00	98.32	0.00	0.00	13	72	0	0	5	5	—	—	4174	168	0	0	5	16	—	—
134	**KQRNK**	1101.00	5	4-1	0.00	1.42	100.00	98.58	0.00	0.00	678	2930	0	0	5	5	—	—	69499	123	0	0	5	16	—	—
135	**KQRPK**	1100.10	5	4-1	ε	1.08	100 - ε	98.92	0.00	0.00	5217	20520	0	0	5	5	—	—	21	270	0	0	7	16	—	—
136	**KQRRK**	1200.00	5	4-1	0.00	1.97	100.00	98.03	0.00	0.00	2913	13057	0	0	4	4	—	—	7373	10811	0	0	4	7	—	—
137	**KRBBK**	0120.00	5	4-1	ε	4.30	100 - ε	95.70	0.00	0.00	4	12	0	0	11	11	—	—	190	105	0	0	12	19	—	—
138	**KRBNK**	0111.00	5	4-1	ε	0.47	100 - ε	99.53	0.00	0.00	2578	8114	0	0	8	8	—	—	9	849	0	0	29	33	—	—
139	**KRBPK**	0110.10	5	4-1	ε	0.63	100 - ε	99.37	0.00	0.00	2006	6175	0	0	8	8	—	—	1	4	0	0	16	31	—	—
140	**KRNNK**	0102.00	5	4-1	ε	8.52	100 - ε	91.48	0.00	0.00	6	30	0	0	11	11	—	—	1	104	0	0	15	16	—	—
141	**KRNPK**	0101.10	5	4-1	ε	0.54	100 - ε	99.46	0.00	0.00	4494	11986	0	0	8	8	—	—	9	197	0	0	17	27	—	—
142	**KRPPK**	0100.20	5	4-1	ε	0.25	100 - ε	99.75	0.00	0.00	93	284	0	0	8	8	—	—	32	63	0	0	15	32	—	—
143	**KRRBK**	0210.00	5	4-1	ε	0.78	100 - ε	99.22	0.00	0.00	1254	4742	0	0	6	6	—	—	2	168	0	0	10	16	—	—
144	**KRRNK**	0201.00	5	4-1	0.00	0.63	100.00	99.37	0.00	0.00	3273	11652	0	0	6	6	—	—	3	123	0	0	10	16	—	—
145	**KRRPK**	0200.10	5	4-1	ε	0.34	100 - ε	99.66	0.00	0.00	8908	30941	0	0	6	6	—	—	3	270	0	0	14	16	—	—
146	**KRRRK**	0900.00/30	5	4-1	0.00	0.90	100.00	99.10	0.00	0.00	10	49	0	0	5	5	—	—	95	10811	0	0	5	7	—	—

Table 1d. 5-man chess endgame statistics: 4-1.