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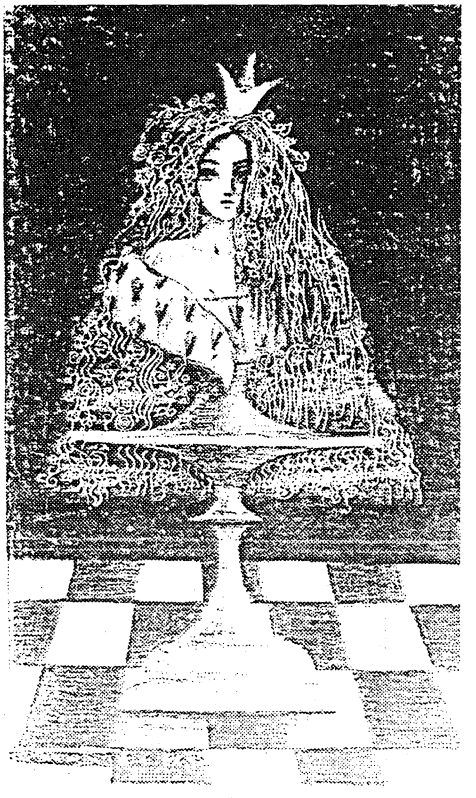

The Queen, drawing by Neiko Neidze

C Lars Rasmussen's computer lists all the reciprocal zugzwangs in the GBR class **4000.10**. Depth figures are 'ultimate', not to 'conversion'.

1: wKa1, Qh7, Pa7; bKc8, Qa8 =/20
2: wKa2, Qb2, Pa7; bKc4, Qf3 =/31
3: wKa3, Qf7, Pa7; bKc8, Qa8 =/20
4: wKa8, Qb7, Pa7; bKh8, Qc3 =/50
5: wKb8, Qa8, Pa7; bKb6, Qa6 =/12
6: wKf1, Qc5, Pa7; bKh4, Qe4 =/32
7: wKg1, Qf2, Pa7; bKb5, Qa3 =/17
8: wKg1, Qd7, Pa7; bKe1, Qe4 =/45
9: wKh6, Qh7, Pa7; bKe6, Qa8 =/37
10: wKh8, Qh7, Pa7; bKg5, Qc6 =/44
11: wKa1, Qe3, Pb7; bKa4, Qa5 =/12
12: wKa8, Qb4, Pb7; bKa6, Qc6 =/17
13: wKa8, Qd7, Pb7; bKa6, Qe4 =/22
14: wKa8, Qa7, Pb7; bKc7, Qd5 =/40
15: wKa8, Qg1, Pb7; bKf4, Qd5 =/30
16: wKb1, Qb6, Pb7; bKd7, Qb8 =/27
17: wKb1, Qc6, Pb7; bKd8, Qb8 =/15
18: wKb3, Qg7, Pb7; bKd8, Qb8 =/16
19: wKb3, Qc3, Pb7; bKh1, Qg3 =/22
20: wKb8, Qg5, Pb7; bKb4, Qe6 =/29
21: wKc8, Qb8, Pb7; bKc6, Qb6 =/20
22: wKd1, Qb6, Pb7; bKd7, Qb8 =/25
23: wKd1, Qc6, Pb7; bKd8, Qb8 =/23
24: wKe1, Qg7, Pb7; bKd8, Qb8 =/20
25: wKe8, Qa6, Pb7; bKb4, Qc7 =/24
26: wKf1, Qf7, Pb7; bKd8, Qb8 =/19
27: wKf3, Qb6, Pb7; bKd7, Qb8 =/28
28: wKg3, Qf3, Pb7; bKa1, Qb3 =/23
29: wKg6, Qa6, Pb7; bKb4, Qc7 =/26
30: wKh1, Qg2, Pb7; bKc5, Qb3 =/17
31: wKh4, Qe7, Pb7; bKh1, Qb1 =/29
32: wKh7, Qg6, Pb7; bKa1, Qc2 =/27
33: wKa2, Qc8, Pc7; bKe1, Qe3 =/34
34: wKa4, Qf4, Pc7; bKc2, Qc5 =/32
35: wKa4, Qc8, Pc7; bKf2, Qc5 =/34
36: wKa4, Qc8, Pc7; bKf4, Qc5 =/31
37: wKa5, Qc8, Pc7; bKc1, Qc6 =/29
38: wKb5, Qc8, Pc7; bKc1, Qd6 =/28
39: wKc3, Qc8, Pc7; bKg7, Qa4 =/33
40: wKc8, Qg6, Pc7; bKa5, Qd5 =/19
41: wKd4, Qc8, Pc7; bKa1, Qc6 =/21
42: wKd4, Qc8, Pc7; bKe1, Qc6 =/34
43: wKd6, Qd8, Pc7; bKb7, Qc8 =/ 7
44: wKd7, Qd3, Pc7; bKa7, Qc5 =/ 7
45: wKd8, Qc8, Pc7; bKd6, Qc6 =/16
46: wKf1, Qf2, Pc7; bKd3, Qg4 =/27
47: wKf8, Qa7, Pc7; bKh6, Qe6 =/33
48: wKf8, Qf7, Pc7; bKh8, Qf5 =/33
49: wKg1, Qd6, Pc7; bKb5, Qf5 =/32
50: wKg1, Qg7, Pc7; bKe8, Qc8 =/22
51: wKg1, Qg2, Pc7; bKf4, Qc3 =/11
52: wKh1, Qd6, Pc7; bKf1, Qc1 =/29
53: wKh1, Qh2, Pc7; bKg4, Qc4 =/37
54: wKh1, Qh2, Pc7; bKg5, Qc3 =/37
55: wKh2, Qd6, Pc7; bKb5, Qg4 =/33
56: wKh7, Qg7, Pc7; bKf5, Qe8 =/21
57: wKa2, Qb5, Pd7; bKa8, Qd8 =/16
58: wKa7, Qg7, Pd7; bKa4, Qd1 =/25
59: wKa8, Qe6, Pd7; bKc5, Qc7 =/13
60: wKb1, Qc6, Pd7; bKb3, Qb8 =/22
61: wKb1, Qc6, Pd7; bKb8, Qd8 =/18
62: wKb1, Qg7, Pd7; bKd3, Qd6 =/37
63: wKc6, Qc2, Pd7; bKf6, Qd4 =/20
64: wKc8, Qe7, Pd7; bKg6, Qf5 =/29
65: wKd1, Qc6, Pd7; bKb8, Qd8 =/20
66: wKd3, Qc6, Pd7; bKb8, Qd8 =/19
67: wKd8, Qb3, Pd7; bKc5, Qe4 =/20
68: wKd8, Qc7, Pd7; bKd5, Qa6 =/20
69: wKe2, Qe5, Pd7; bKa6, Qb6 =/13
70: wKe4, Qe5, Pd7; bKa6, Qb6 =/23
71: wKe8, Qd5, Pd7; bKa7, Qa4 =/16
72: wKe8, Qd8, Pd7; bKe6, Qd6 =/15
73: wKf1, Qd6, Pd7; bKf7, Qd8 =/19
74: wKf1, Qe6, Pd7; bKf8, Qd8 =/21
75: wKf1, Qd4, Pd7; bKg6, Qd8 =/20
76: wKf1, Qc6, Pd7; bKg7, Qd8 =/25
77: wKh1, Qf5, Pd7; bKe1, Qg3 =/23
78: wKh1, Qg1, Pd7; bKe2, Qf6 =/34
79: wKh2, Qh3, Pd7; bKg5, Qd4 =/28
80: wKh7, Qh3, Pd7; bKe5, Qd1 =/18
81: wKa2, Qd6, Pa6; bKe4, Qb5 =/79
82: wKa3, Qd6, Pa6; bKf5, Qb5 =/78
83: wKa4, Qb4, Pa6; bKc2, Qe3 =/43
84: wKa4, Qd3, Pa6; bKe6, Qh8 =/40
85: wKa7, Qb6, Pa6; bKc4, Qc8 =/30
86: wKa7, Qb4, Pa6; bKd5, Qe8 =/36
87: wKa7, Qd5, Pa6; bKf6, Qb4 =/62
88: wKa7, Qe5, Pa6; bKg6, Qb4 =/61
89: wKb1, Qb7, Pa6; bKg8, Qc5 =/77
90: wKb3, Qd3, Pa6; bKe8, Qa5 =/58
91: wKb3, Qd6, Pa6; bKe8, Qe4 =/44
92: wKb5, Qc6, Pa6; bKd1, Qd4 =/70
93: wKc1, Qd3, Pa6; bKa2, Qa7 =/22
94: wKc1, Qc3, Pa6; bKh6, Qe4 =/77
95: wKd5, Qe6, Pa6; bKb3, Qc7 =/67
96: wKd8, Qd6, Pa6; bKh5, Qe3 =/73
97: wKe1, Qf1, Pa6; bKa1, Qa4 =/36
98: wKe4, Qc4, Pa6; bKh4, Qa3 =/41
99: wKe6, Qb5, Pa6; bKa1, Qa7 =/49
100: wKe6, Qc4, Pa6; bKe3, Qa3 =/81
101: wKe7, Qf4, Pa6; bKd3, Qa5 =/55
102: wKe7, Qd3, Pa6; bKf4, Qa4 =/53
103: wKe7, Qh6, Pa6; bKg4, Qd3 =/60
104: wKe8, Qb5, Pa6; bKc3, Qc7 =/72
105: wKf1, Qc4, Pa6; bKg5, Qe3 =/81
106: wKf3, Qc4, Pa6; bKa3, Qa7 =/44
107: wKf4, Qc8, Pa6; bKd4, Qa4 =/59
108: wKf8, Qb5, Pa6; bKd4, Qc7 =/73
109: wKf8, Qb5, Pa6; bKd4, Qe6 =/46
110: wKf8, Qd6, Pa6; bKh5, Qe3 =/74

111: wKg2, Qc4, Pa6; bKh5, Qe3 =/82
112: wKg5, Qg4, Pa6; bKg8, Qc7 =/35
113: wKg8, Qb5, Pa6; bKc3, Qc7 =/74
114: wKh3, Qg3, Pa6; bKf6, Qd2 =/60
115: wKh4, Qd3, Pa6; bKe6, Qc6 =/45
116: wKh8, Qd6, Pa6; bKe4, Qf7 =/60
117: wKa1, Qc2, Pb6; bKd4, Qd6 =/71
118: wKa1, Qd6, Pb6; bKe8, Qc2 =/55
119: wKa1, Qe3, Pb6; bKf5, Qb5 =/67
120: wKa1, Qe3, Pb6; bKf6, Qb4 =/56
121: wKa1, Qe3, Pb6; bKf7, Qb5 =/59
122: wKa2, Qe3, Pb6; bKf6, Qb5 =/55
123: wKa2, Qe3, Pb6; bKf8, Qb5 =/53
124: wKa3, Qc7, Pb6; bKb1, Qb5 =/50
125: wKa3, Qc7, Pb6; bKd1, Qb5 =/57
126: wKa3, Qe3, Pb6; bKf5, Qb5 =/57
127: wKa3, Qe3, Pb6; bKf8, Qc4 =/46
128: wKa4, Qc2, Pb6; bKg3, Qe1 =/54
129: wKa5, Qg6, Pb6; bKf1, Qb3 =/80
130: wKa5, Qe5, Pb6; bKf3, Qb3 =/80
131: wKa6, Qh1, Pb6; bKb8, Qg7 =/12
132: wKa6, Qg2, Pb6; bKe1, Qf6 =/86
133: wKa6, Qg1, Pb6; bKe2, Qf6 =/55
134: wKa7, Qa6, Pb6; bKc6, Qd4 =/51
135: wKb2, Qc2, Pb6; bKd4, Qf3 =/53
136: wKb2, Qc5, Pb6; bKh2, Qa6 =/48
137: wKc2, Qd4, Pb6; bKa3, Qb7 =/25
138: wKc5, Qc6, Pb6; bKa5, Qa6 =/ 5
139: wKd6, Qd8, Pb6; bKd4, Qb7 =/29
140: wKd8, Qa6, Pb6; bKb2, Qc6 =/52
141: wKd8, Qe3, Pb6; bKg4, Qb7 =/51
142: wKe1, Qd6, Pb6; bKe8, Qb5 =/53
143: wKe1, Qc5, Pb6; bKf4, Qd3 =/60
144: wKe1, Qe3, Pb6; bKg4, Qd5 =/69
145: wKe2, Qe3, Pb6; bKf8, Qd6 =/57
146: wKe3, Qb1, Pb6; bKc3, Qa6 =/40
147: wKe5, Qd4, Pb6; bKf1, Qb3 =/76
148: wKe8, Qe3, Pb6; bKf5, Qb7 =/52
149: wKf1, Qe6, Pb6; bKd3, Qb2 =/59
150: wKf2, Qe3, Pb6; bKf7, Qd6 =/58
151: wKf6, Qa6, Pb6; bKh6, Qe8 =/52
152: wKf7, Qg4, Pb6; bKe3, Qb5 =/44
153: wKf8, Qa6, Pb6; bKh6, Qe6 =/59
154: wKg1, Qe2, Pb6; bKf4, Qd7 =/58
155: wKg1, Qe3, Pb6; bKf7, Qd5 =/59
156: wKg1, Qg6, Pb6; bKf8, Qb7 =/62
157: wKg2, Qd4, Pb6; bKf5, Qb3 =/57
158: wKg6, Qf6, Pb6; bKe4, Qd7 =/50
159: wKg7, Qa7, Pb6; bKg5, Qg2 =/57
160: wKh1, Qg1, Pb6; bKa2, Qb5 =/57
161: wKh1, Qf6, Pb6; bKe1, Qg8 =/58
162: wKh1, Qg4, Pb6; bKe3, Qa6 =/54
163: wKh2, Qf6, Pb6; bKe1, Qg4 =/49
164: wKh2, Qg4, Pb6; bKe3, Qb5 =/50
165: wKh2, Qg3, Pb6; bKf8, Qd7 =/57
166: wKh3, Qg4, Pb6; bKe3, Qb1 =/58
167: wKh3, Qb3, Pb6; bKf6, Qe5 =/67
168: wKh4, Qf6, Pb6; bKe4, Qd7 =/51
169: wKh4, Qc6, Pb6; bKf2, Qf5 =/57
170: wKh6, Qg6, Pb6; bKf4, Qe7 =/51
171: wKa1, Qb5, Pc6; bKc2, Qe6 =/41
172: wKa1, Qf3, Pc6; bKg8, Qd2 =/53
173: wKa2, Qe4, Pc6; bKd1, Qc5 =/37
174: wKa2, Qb5, Pc6; bKd4, Qf3 =/34
175: wKa2, Qb5, Pc6; bKd4, Qh7 =/35
176: wKa2, Qc5, Pc6; bKe6, Qh8 =/45
177: wKa3, Qb3, Pc6; bKa1, Qd3 =/34
178: wKa3, Qc7, Pc6; bKc1, Qc4 =/45
179: wKa4, Qe4, Pc6; bKf6, Qc5 =/43
180: wKa4, Qe8, Pc6; bKf6, Qb6 =/45
181: wKa6, Qa3, Pc6; bKa8, Qd8 =/39
182: wKa6, Qf3, Pc6; bKa8, Qd6 =/38
183: wKa6, Qh1, Pc6; bKa8, Qf6 =/13
184: wKa6, Qa8, Pc6; bKe7, Qc7 =/43
185: wKa8, Qd5, Pc6; bKb4, Qb6 =/25
186: wKa8, Qh6, Pc6; bKf5, Qc7 =/45
187: wKa8, Qe4, Pc6; bKf6, Qb6 =/42
188: wKa8, Qe8, Pc6; bKf6, Qc7 =/41
189: wKb1, Qe6, Pc6; bKf8, Qd2 =/45
190: wKb1, Qf3, Pc6; bKg7, Qd2 =/49
191: wKb2, Qd2, Pc6; bKe4, Qe6 =/42
192: wKb2, Qc5, Pc6; bKe6, Qa6 =/43
193: wKb3, Qd2, Pc6; bKe4, Qc7 =/40
194: wKb3, Qc5, Pc6; bKe6, Qa8 =/41
195: wKb3, Qh7, Pc6; bKf6, Qg4 =/43
196: wKb3, Qa6, Pc6; bKg7, Qc5 =/43
197: wKb4, Qc5, Pc6; bKe6, Qa6 =/39
198: wKb5, Qb4, Pc6; bKd5, Qe3 =/40
199: wKb5, Qa5, Pc6; bKe7, Qd6 =/40
200: wKb7, Qc8, Pc6; bKb5, Qe4 =/37
201: wKc1, Qc3, Pc6; bKg6, Qd5 =/54
202: wKc2, Qc5, Pc6; bKe6, Qh8 =/43
203: wKc2, Qc7, Pc6; bKe8, Qh3 =/50
204: wKc4, Qe4, Pc6; bKa4, Qd6 =/31
205: wKc8, Qd8, Pc6; bKa8, Qb4 =/24
206: wKc8, Qe8, Pc6; bKa8, Qf4 =/43
207: wKd1, Qd2, Pc6; bKe4, Qc7 =/44
208: wKd2, Qg4, Pc6; bKf6, Qf1 =/49
209: wKd7, Qc3, Pc6; bKd5, Qa4 =/34
210: wKd7, Qc7, Pc6; bKd5, Qc5 =/24
211: wKe1, Qe4, Pc6; bKc3, Qc5 =/54
212: wKe1, Qa4, Pc6; bKg3, Qd3 =/54
213: wKe1, Qf3, Pc6; bKg6, Qd6 =/49
214: wKe1, Qf3, Pc6; bKg8, Qd6 =/56
215: wKe2, Qe4, Pc6; bKc3, Qd6 =/53
216: wKe2, Qf3, Pc6; bKg7, Qd6 =/57
217: wKe3, Qe4, Pc6; bKf8, Qd6 =/52
218: wKe3, Qf3, Pc6; bKg6, Qd6 =/58
219: wKe3, Qf3, Pc6; bKg8, Qd6 =/58
220: wKe4, Qd1, Pc6; bKe7, Qa7 =/43
221: wKf1, Qf3, Pc6; bKb2, Qd6 =/61
222: wKf1, Qf6, Pc6; bKe8, Qc7 =/47
223: wKf1, Qg6, Pc6; bKf4, Qe7 =/49
224: wKf1, Qe6, Pc6; bKf8, Qc7 =/58
225: wKf1, Qd5, Pc6; bKg4, Qe3 =/41
226: wKf2, Qa4, Pc6; bKh3, Qd3 =/53

227: wKf8, Qb6, Pc6; bKa4, Qe6 =/26
228: wKf8, Qf3, Pc6; bKg5, Qe6 =/42
229: wKg1, Qf3, Pc6; bKb2, Qe5 =/62
230: wKg2, Qb5, Pc6; bKa3, Qc1 =/45
231: wKg2, Qe4, Pc6; bKb3, Qc8 =/37
232: wKg2, Qe6, Pc6; bKf8, Qf4 =/53
233: wKg2, Qe8, Pc6; bKg7, Qf6 =/50
234: wKg4, Qe4, Pc6; bKb3, Qc5 =/41
235: wKg4, Qe4, Pc6; bKf8, Qd6 =/50
236: wKg6, Qg5, Pc6; bKh1, Qg3 =/46
237: wKh1, Qe4, Pc6; bKd1, Qg3 =/44
238: wKh1, Qe6, Pc6; bKd2, Qg3 =/51
239: wKh1, Qf3, Pc6; bKg6, Qd6 =/57
240: wKh4, Qd4, Pc6; bKf3, Qg8 =/38
241: wKh5, Qe4, Pc6; bKc3, Qg3 =/45
242: wKh5, Qg6, Pc6; bKf4, Qd8 =/37
243: wKh5, Qe6, Pc6; bKf8, Qg3 =/49
244: wKh6, Qe4, Pc6; bKb3, Qg3 =/46
245: wKh6, Qg6, Pc6; bKf4, Qe7 =/41
246: wKh7, Qe4, Pc6; bKb3, Qg1 =/47
247: wKh7, Qe4, Pc6; bKc3, Qg3 =/47
248: wKh8, Qe4, Pc6; bKb3, Qg3 =/48
249: wKa5, Qh5, Pd6; bKf4, Qc6 =/36
250: wKa5, Qe6, Pd6; bKg5, Qc6 =/66
251: wKa6, Qb5, Pd6; bKa8, Qe4 =/ 3
252: wKb4, Qc7, Pd6; bKf8, Qf5 =/62
253: wKb4, Qe7, Pd6; bKg8, Qf5 =/45
254: wKb5, Qe3, Pd6; bKf5, Qa8 =/54
255: wKb6, Qb5, Pd6; bKb8, Qc8 =/14
256: wKb6, Qc7, Pd6; bKe8, Qd8 =/16
257: wKb6, Qf8, Pd6; bKg6, Qd7 =/58
258: wKb8, Qe5, Pd6; bKc4, Qc6 =/26
259: wKb8, Qe7, Pd6; bKf5, Qd5 =/68
260: wKc1, Qb6, Pd6; bKa3, Qe2 =/33
261: wKc4, Qf6, Pd6; bKg8, Qa5 =/45
262: wKc5, Qb5, Pd6; bKf7, Qe6 =/67
263: wKc6, Qh3, Pd6; bKd8, Qg7 =/10
264: wKd7, Qa8, Pd6; bKb6, Qe1 =/26
265: wKd7, Qe6, Pd6; bKc5, Qd2 =/46
266: wKe1, Qh6, Pd6; bKg4, Qf7 =/39
267: wKe3, Qa3, Pd6; bKc2, Qc4 =/39
268: wKe5, Qc6, Pd6; bKa5, Qg6 =/32
269: wKe6, Qa6, Pd6; bKc5, Qg7 =/26
270: wKe7, Qd7, Pd6; bKe5, Qd5 =/22
271: wKf1, Qa3, Pd6; bKh2, Qd2 =/47
272: wKf2, Qb6, Pd6; bKa4, Qd3 =/34
273: wKf3, Qb6, Pd6; bKa4, Qe5 =/32
274: wKf4, Qa6, Pd6; bKh4, Qd5 =/56
275: wKf4, Qb6, Pd6; bKh5, Qd5 =/44
276: wKf4, Qd7, Pd6; bKh6, Qd5 =/53
277: wKf5, Qc6, Pd6; bKa5, Qh6 =/31
278: wKf5, Qc6, Pd6; bKd4, Qh6 =/28
279: wKf8, Qc5, Pd6; bKe4, Qe6 =/28
280: wKf8, Qd5, Pd6; bKf6, Qg6 =/64
281: wKf8, Qf4, Pd6; bKg6, Qe6 =/27
282: wKf8, Qf7, Pd6; bKh8, Qf5 =/55
283: wKg1, Qc7, Pd6; bKh3, Qf5 =/44
284: wKg2, Qh2, Pd6; bKa2, Qf5 =/46
285: wKg2, Qh2, Pd6; bKc2, Qf5 =/60
286: wKg3, Qb6, Pd6; bKa4, Qe4 =/33
287: wKg4, Qb6, Pd6; bKa4, Qf6 =/31
288: wKg4, Qf5, Pd6; bKf7, Qf6 =/18
289: wKg8, Qg4, Pd6; bKf6, Qh6 =/17
290: wKh4, Qe7, Pd6; bKh8, Qf5 =/39
291: wKh5, Qb4, Pd6; bKf3, Qg7 =/42
292: wKa7, Qe5, Pa5; bKf7, Qc6 =/80
293: wKa8, Qf5, Pa5; bKh6, Qc7 =/79
294: wKb3, Qd2, Pa5; bKg8, Qa8 =/79
295: wKb4, Qe5, Pa5; bKf7, Qa6 =/73
296: wKb8, Qe5, Pa5; bKg6, Qc6 =/79
297: wKc6, Qc5, Pa5; bKe4, Qd3 =/51
298: wKa3, Qe5, Pb5; bKf7, Qc4 =/59
299: wKa4, Qd4, Pb5; bKh5, Qe8 =/71
300: wKa5, Qc3, Pb5; bKa2, Qd5 =/48
301: wKa5, Qe3, Pb5; bKb2, Qd5 =/49
302: wKa5, Qc6, Pb5; bKb3, Qf5 =/58
303: wKa5, Qf3, Pb5; bKd6, Qc4 =/55
304: wKa5, Qd4, Pb5; bKh5, Qf5 =/74
305: wKa6, Qa5, Pb5; bKc5, Qb2 =/83
306: wKa6, Qa5, Pb5; bKc5, Qd3 =/53
307: wKa6, Qa2, Pb5; bKd6, Qd3 =/60
308: wKb2, Qe2, Pb5; bKf8, Qg3 =/57
309: wKb3, Qc6, Pb5; bKd4, Qc5 =/51
310: wKb6, Qc3, Pb5; bKa2, Qe4 =/49
311: wKb6, Qe3, Pb5; bKa2, Qd5 =/52
312: wKb6, Qe3, Pb5; bKb2, Qc4 =/58
313: wKb6, Qa4, Pb5; bKd5, Qb1 =/90
314: wKb7, Qg5, Pb5; bKd6, Qa1 =/62
315: wKc2, Qd4, Pb5; bKa3, Qh1 =/26
316: wKc2, Qd7, Pb5; bKf8, Qa3 =/54
317: wKc3, Qe8, Pb5; bKf6, Qa4 =/63
318: wKc3, Qe2, Pb5; bKf8, Qa4 =/59
319: wKc4, Qc5, Pb5; bKa4, Qa5 =/ 8
320: wKc4, Qd5, Pb5; bKe7, Qd6 =/53
321: wKc5, Qg3, Pb5; bKh5, Qa5 =/68
322: wKd3, Qe3, Pb5; bKf7, Qc7 =/52
323: wKd3, Qe5, Pb5; bKf7, Qc1 =/51
324: wKd5, Qc3, Pb5; bKa2, Qh6 =/51
325: wKd8, Qd7, Pb5; bKe5, Qc5 =/54
326: wKe2, Qb3, Pb5; bKh4, Qb6 =/72
327: wKe4, Qc4, Pb5; bKh4, Qb6 =/74
328: wKe7, Qe2, Pb5; bKb1, Qd5 =/70
329: wKe7, Qd7, Pb5; bKe5, Qd5 =/55
330: wKe8, Qf7, Pb5; bKh8, Qg6 =/42
331: wKf6, Qf5, Pb5; bKa1, Qc2 =/58
332: wKg3, Qc5, Pb5; bKe2, Qa5 =/65
333: wKg4, Qf5, Pb5; bKg8, Qb7 =/60
334: wKg7, Qd7, Pb5; bKa1, Qa4 =/60
335: wKh1, Qc6, Pb5; bKa1, Qg3 =/62
336: wKh1, Qc6, Pb5; bKh8, Qf2 =/55
337: wKh2, Qd5, Pb5; bKg7, Qa4 =/58
338: wKh6, Qg6, Pb5; bKf3, Qe7 =/57
339: wKa1, Qb4, Pc5; bKe3, Qc2 =/58
340: wKa2, Qf5, Pc5; bKg8, Qe3 =/51
341: wKa3, Qf8, Pc5; bKg6, Qe4 =/50
342: wKa5, Qb8, Pc5; bKc3, Qe4 =/53

343: wKa6, Qb6, Pc5; bKd8, Qc7 =/41
344: wKa8, Qe8, Pc5; bKf5, Qc7 =/46
345: wKb2, Qd1, Pc5; bKe3, Qc6 =/53
346: wKb3, Qc4, Pc5; bKe5, Qa5 =/52
347: wKb3, Qf5, Pc5; bKg7, Qd4 =/45
348: wKb4, Qb5, Pc5; bKd5, Qc8 =/49
349: wKb4, Qh7, Pc5; bKe6, Qc6 =/50
350: wKb4, Qh7, Pc5; bKe6, Qf1 =/46
351: wKb4, Qh7, Pc5; bKe6, Qg3 =/46
352: wKb4, Qd5, Pc5; bKe7, Qa6 =/43
353: wKb5, Qa5, Pc5; bKh5, Qd5 =/48
354: wKb6, Qc6, Pc5; bKb4, Qc4 =/49
355: wKb6, Qd6, Pc5; bKc4, Qe3 =/46
356: wKc2, Qd4, Pc5; bKa3, Qh1 =/62
357: wKc3, Qe3, Pc5; bKa3, Qd5 =/51
358: wKc3, Qb6, Pc5; bKf5, Qa4 =/49
359: wKc3, Qe7, Pc5; bKf5, Qa4 =/45
360: wKd2, Qc3, Pc5; bKa2, Qb5 =/43
361: wKd2, Qe7, Pc5; bKg8, Qb3 =/49
362: wKd3, Qc6, Pc5; bKf5, Qb4 =/49
363: wKd3, Qe7, Pc5; bKf5, Qb4 =/46
364: wKd3, Qf2, Pc5; bKg8, Qb4 =/55
365: wKd4, Qf1, Pc5; bKg6, Qc6 =/52
366: wKd6, Qb5, Pc5; bKd4, Qa3 =/58
367: wKd6, Qc6, Pc5; bKd4, Qc4 =/47
368: wKe2, Qe7, Pc5; bKg8, Qa3 =/50
369: wKe3, Qf5, Pc5; bKg7, Qd1 =/50
370: wKe3, Qe7, Pc5; bKg8, Qc4 =/48
371: wKf2, Qc3, Pc5; bKa2, Qb5 =/49
372: wKf2, Qe3, Pc5; bKh5, Qb8 =/51
373: wKf3, Qf2, Pc5; bKd1, Qc4 =/59
374: wKf7, Qe3, Pc5; bKb2, Qc8 =/59
375: wKg1, Qf2, Pc5; bKa1, Qc3 =/63
376: wKg1, Qd6, Pc5; bKh8, Qf5 =/57
377: wKg2, Qd6, Pc5; bKh8, Qf7 =/56
378: wKg3, Qd6, Pc5; bKh8, Qf5 =/55
379: wKg5, Qb5, Pc5; bKa3, Qf7 =/61
380: wKg5, Qb6, Pc5; bKa4, Qf7 =/57
381: wKg5, Qe3, Pc5; bKb2, Qf1 =/58
382: wKg7, Qe3, Pc5; bKa2, Qc8 =/60
383: wKg8, Qf7, Pc5; bKa1, Qb3 =/46
384: wKg8, Qb5, Pc5; bKa3, Qe7 =/53
385: wKg8, Qb6, Pc5; bKa4, Qe7 =/60
386: wKh2, Qd4, Pc5; bKe1, Qf5 =/56
387: wKh3, Qc2, Pc5; bKe1, Qd4 =/61
388: wKh3, Qf8, Pc5; bKg1, Qg5 =/63
389: wKh3, Qd6, Pc5; bKh8, Qe4 =/56
390: wKh4, Qd6, Pc5; bKh8, Qg6 =/42
391: wKa3, Qb3, Pd5; bKa1, Qd3 =/43
392: wKa4, Qb3, Pd5; bKa1, Qc2 =/38
393: wKa6, Qe5, Pd5; bKd3, Qc5 =/52
394: wKa8, Qd6, Pd5; bKa5, Qc3 =/38
395: wKa8, Qe4, Pd5; bKc3, Qb5 =/50
396: wKb5, Qf7, Pd5; bKg5, Qd6 =/53
397: wKb8, Qb3, Pd5; bKe2, Qc5 =/76
398: wKc2, Qh5, Pd5; bKg3, Qf6 =/48
399: wKc4, Qf8, Pd5; bKg6, Qe3 =/69
400: wKc5, Qb8, Pd5; bKf7, Qd7 =/72
401: wKc5, Qe2, Pd5; bKf7, Qf6 =/72
402: wKc6, Qd6, Pd5; bKc4, Qd4 =/43
403: wKc6, Qe6, Pd5; bKd4, Qf3 =/46
404: wKc8, Qd6, Pd5; bKa5, Qb2 =/31
405: wKd1, Qd4, Pd5; bKb3, Qd6 =/41
406: wKd8, Qg5, Pd5; bKf7, Qe4 =/45
407: wKe2, Qb5, Pd5; bKa3, Qf4 =/43
408: wKe4, Qd8, Pd5; bKg6, Qg7 =/71
409: wKe6, Qc5, Pd5; bKe4, Qb3 =/48
410: wKe6, Qd2, Pd5; bKe4, Qb3 =/69
411: wKe6, Qd6, Pd5; bKe4, Qd4 =/44
412: wKe8, Qf7, Pd5; bKh8, Qg6 =/49
413: wKf1, Qb3, Pd5; bKh2, Qd2 =/52
414: wKf3, Qb5, Pd5; bKa3, Qd4 =/41
415: wKf4, Qc5, Pd5; bKd3, Qh5 =/50
416: wKg1, Qg5, Pd5; bKa1, Qc3 =/65
417: wKg1, Qg5, Pd5; bKb1, Qe4 =/60
418: wKg2, Qd6, Pd5; bKb3, Qb7 =/47
419: wKg4, Qg5, Pd5; bKh8, Qf7 =/73
420: wKg8, Qc5, Pd5; bKa4, Qf5 =/52
421: wKg8, Qc4, Pd5; bKe3, Qf5 =/51
422: wKg8, Qd8, Pd5; bKg6, Qa6 =/67
423: wKh3, Qf7, Pd5; bKg1, Qg5 =/55
424: wKa6, Qe8, Pa4; bKg7, Qa1 =/82
425: wKe6, Qc4, Pa4; bKg7, Qd1 =/84
426: wKe7, Qe3, Pa4; bKh7, Qf5 =/80
427: wKa3, Qc7, Pb4; bKe8, Qb5 =/76
428: wKa3, Qd6, Pb4; bKf7, Qb5 =/59
429: wKa4, Qc5, Pb4; bKd8, Qb8 =/69
430: wKa5, Qc4, Pb4; bKd8, Qd6 =/75
431: wKa5, Qb5, Pb4; bKe6, Qh8 =/78
432: wKa6, Qb5, Pb4; bKd6, Qc3 =/78
433: wKa7, Qb7, Pb4; bKd6, Qb2 =/61
434: wKb2, Qc5, Pb4; bKd3, Qc4 =/73
435: wKb2, Qd6, Pb4; bKf7, Qc4 =/60
436: wKb2, Qd7, Pb4; bKf8, Qe3 =/58
437: wKb3, Qc7, Pb4; bKe8, Qa6 =/66
438: wKb3, Qd5, Pb4; bKe8, Qa6 =/66
439: wKb3, Qd6, Pb4; bKe8, Qb5 =/58
440: wKb5, Qc5, Pb4; bKe6, Qh8 =/75
441: wKb7, Qg4, Pb4; bKh6, Qb2 =/68
442: wKc3, Qc4, Pb4; bKa3, Qa4 =/10
443: wKc7, Qg4, Pb4; bKf6, Qf1 =/93
444: wKc8, Qc5, Pb4; bKa1, Qc2 =/56
445: wKd4, Qc3, Pb4; bKf6, Qe2 =/78
446: wKd7, Qg4, Pb4; bKh6, Qb2 =/73
447: wKf3, Qe7, Pb4; bKg8, Qd4 =/68
448: wKa2, Qe4, Pc4; bKg3, Qc3 =/63
449: wKa5, Qf4, Pc4; bKg6, Qc6 =/54
450: wKa6, Qc3, Pc4; bKe2, Qc5 =/80
451: wKa7, Qb6, Pc4; bKd6, Qc6 =/39
452: wKa7, Qf4, Pc4; bKg6, Qc6 =/48
453: wKb1, Qe4, Pc4; bKg3, Qf2 =/63
454: wKb2, Qc5, Pc4; bKg4, Qd3 =/65
455: wKb2, Qf5, Pc4; bKg8, Qe3 =/54
456: wKb2, Qb5, Pc4; bKh4, Qd3 =/66
457: wKb3, Qb6, Pc4; bKe5, Qd2 =/64
458: wKb3, Qh6, Pc4; bKe5, Qc5 =/65

459: wKb3, Qd6, Pc4; bKe8, Qa5 =/53
460: wKb4, Qf7, Pc4; bKc2, Qe4 =/79
461: wKb4, Qa7, Pc4; bKe6, Qc6 =/52
462: wKb4, Qc8, Pc4; bKe7, Qd3 =/48
463: wKb5, Qd4, Pc4; bKe8, Qe6 =/47
464: wKb7, Qc3, Pc4; bKd1, Qc5 =/79
465: wKb7, Qb3, Pc4; bKe2, Qc5 =/78
466: wKc2, Qe2, Pc4; bKa2, Qf6 =/62
467: wKc2, Qg1, Pc4; bKh6, Qd6 =/63
468: wKc2, Qg5, Pc4; bKh8, Qa3 =/59
469: wKc3, Qc7, Pc4; bKe6, Qb1 =/50
470: wKc3, Qb5, Pc4; bKf4, Qd6 =/65
471: wKc3, Qd7, Pc4; bKf8, Qb6 =/53
472: wKc5, Qc3, Pc4; bKd1, Qb7 =/67
473: wKc5, Qb4, Pc4; bKe7, Qa6 =/48
474: wKc7, Qc1, Pc4; bKf5, Qd3 =/66
475: wKc8, Qe4, Pc4; bKf6, Qd6 =/50
476: wKd1, Qa4, Pc4; bKf1, Qc3 =/84
477: wKd3, Qc6, Pc4; bKf5, Qa5 =/63
478: wKe4, Qe6, Pc4; bKf8, Qc5 =/52
479: wKe8, Qd4, Pc4; bKg6, Qc7 =/61
480: wKf1, Qb3, Pc4; bKh2, Qd2 =/68
481: wKf3, Qb4, Pc4; bKh3, Qd4 =/65
482: wKf3, Qb5, Pc4; bKh4, Qd4 =/63
483: wKf7, Qf6, Pc4; bKh1, Qf2 =/62
484: wKg2, Qd4, Pc4; bKe2, Qb8 =/66
485: wKg6, Qb4, Pc4; bKa2, Qf4 =/65
486: wKg6, Qb5, Pc4; bKa2, Qf1 =/64
487: wKg6, Qe6, Pc4; bKf4, Qf8 =/65
488: wKg7, Qb5, Pc4; bKa3, Qf1 =/63
489: wKg8, Qb5, Pc4; bKa2, Qe7 =/63
490: wKh7, Qe4, Pc4; bKg3, Qg5 =/67
491: wKa2, Qf4, Pd4; bKg2, Qb4 =/72
492: wKa7, Qd7, Pd4; bKa5, Qf8 =/46
493: wKb2, Qc3, Pd4; bKe2, Qe6 =/70
494: wKb4, Qf6, Pd4; bKg4, Qd5 =/70
495: wKb6, Qe5, Pd4; bKf7, Qa2 =/71
496: wKb7, Qe4, Pd4; bKf8, Qa1 =/71
497: wKb7, Qe5, Pd4; bKf8, Qa2 =/70
498: wKb8, Qd6, Pd4; bKb5, Qf2 =/45
499: wKc1, Qf4, Pd4; bKa1, Qd3 =/77
500: wKc3, Qc4, Pd4; bKg3, Qf6 =/78
501: wKc3, Qb5, Pd4; bKg4, Qf6 =/77
502: wKc4, Qd6, Pd4; bKg7, Qa5 =/74
503: wKc5, Qe5, Pd4; bKa5, Qd7 =/42
504: wKc5, Qf6, Pd4; bKc3, Qe3 =/68
505: wKc7, Qd6, Pd4; bKa5, Qb3 =/43
506: wKc8, Qa4, Pd4; bKh8, Qe4 =/70
507: wKd5, Qc4, Pd4; bKf7, Qb6 =/68
508: wKd5, Qc7, Pd4; bKg8, Qa4 =/83
509: wKd6, Qe5, Pd4; bKb8, Qc4 =/20
510: wKd7, Qf6, Pd4; bKb5, Qg1 =/47
511: wKd8, Qd5, Pd4; bKb4, Qa7 =/51
512: wKd8, Qd5, Pd4; bKf4, Qg7 =/52
513: wKe1, Qb4, Pd4; bKg1, Qd3 =/76
514: wKe1, Qf2, Pd4; bKh1, Qg3 =/70
515: wKe4, Qc5, Pd4; bKb3, Qa4 =/63
516: wKf1, Qf2, Pd4; bKh1, Qf4 =/71
517: wKf2, Qd3, Pd4; bKb2, Qd5 =/77
518: wKf3, Qc4, Pd4; bKd2, Qh4 =/72
519: wKf4, Qc4, Pd4; bKa3, Qe1 =/62
520: wKf8, Qb6, Pd4; bKh7, Qd7 =/70
521: wKg1, Qf2, Pd4; bKa1, Qb3 =/78
522: wKh3, Qg3, Pd4; bKh1, Qe3 =/79
523: wKa3, Qd6, Pb3; bKg7, Qb5 =/80
524: wKa4, Qe5, Pb3; bKf7, Qd1 =/90
525: wKa7, Qb6, Pb3; bKd7, Qg8 =/78
526: wKb2, Qf6, Pb3; bKh7, Qc5 =/80
527: wKc2, Qc3, Pb3; bKa2, Qa3 =/ 3
528: wKc5, Qb4, Pb3; bKe7, Qa6 =/81
529: wKd3, Qd5, Pb3; bKh6, Qb4 =/83
530: wKf4, Qb6, Pb3; bKf8, Qe8 =/81
531: wKa3, Qd2, Pc3; bKa1, Qb1 =/16
532: wKa3, Qe5, Pc3; bKf7, Qc4 =/66
533: wKa8, Qf6, Pc3; bKh7, Qc7 =/61
534: wKb1, Qd5, Pc3; bKh4, Qf2 =/75
535: wKb2, Qf5, Pc3; bKd2, Qa4 =/74
536: wKb2, Qg2, Pc3; bKe1, Qc4 =/78
537: wKb2, Qg2, Pc3; bKe1, Qe5 =/77
538: wKb2, Qd5, Pc3; bKe3, Qa4 =/73
539: wKb2, Qg5, Pc3; bKh7, Qc4 =/69
540: wKb3, Qb6, Pc3; bKd5, Qg3 =/58
541: wKb3, Qa6, Pc3; bKe5, Qc5 =/67
542: wKb3, Qc7, Pc3; bKe6, Qd2 =/61
543: wKb3, Qc4, Pc3; bKf6, Qa5 =/63
544: wKb4, Qd8, Pc3; bKf7, Qe1 =/57
545: wKb4, Qd7, Pc3; bKf8, Qe1 =/54
546: wKc1, Qb4, Pc3; bKa1, Qa2 =/15
547: wKc1, Qd1, Pc3; bKa1, Qe4 =/19
548: wKc1, Qf6, Pc3; bKg3, Qd5 =/96
549: wKc1, Qd5, Pc3; bKg4, Qf2 =/74
550: wKc1, Qg2, Pc3; bKh7, Qd7 =/73
551: wKc2, Qa3, Pc3; bKf2, Qd5 =/99
552: wKc2, Qf6, Pc3; bKg4, Qd5 =/95
553: wKc2, Qf7, Pc3; bKg5, Qd6 =/72
554: wKc2, Qc4, Pc3; bKg7, Qa5 =/68
555: wKc2, Qe7, Pc3; bKg8, Qb5 =/71
556: wKc4, Qg4, Pc3; bKe1, Qe3 =/102
557: wKc7, Qd7, Pc3; bKh8, Qf7 =/55
558: wKd2, Qf7, Pc3; bKg5, Qa6 =/78
559: wKd2, Qg5, Pc3; bKh7, Qc4 =/71
560: wKd3, Qf5, Pc3; bKg7, Qa3 =/69
561: wKd3, Qf6, Pc3; bKg8, Qa2 =/77
562: wKd6, Qe5, Pc3; bKb8, Qc4 =/24
563: wKd7, Qd4, Pc3; bKe2, Qa1 =/65
564: wKe3, Qf4, Pc3; bKg6, Qd7 =/72
565: wKe5, Qb4, Pc3; bKa1, Qb3 =/63
566: wKe5, Qa5, Pc3; bKg7, Qc8 =/69
567: wKe6, Qd4, Pc3; bKe2, Qb2 =/61
568: wKe7, Qe5, Pc3; bKf3, Qc4 =/93
569: wKf1, Qf2, Pc3; bKh1, Qf4 =/81
570: wKf2, Qb4, Pc3; bKh3, Qd3 =/85
571: wKf4, Qc7, Pc3; bKg6, Qd3 =/72
572: wKf7, Qd4, Pc3; bKe2, Qa1 =/67
573: wKg8, Qd2, Pc3; bKg1, Qe7 =/85
574: wKa4, Qd6, Pd3; bKf5, Qb7 =/76

575: wKb8, Qd4, Pd3; bKh3, Qc6 =/77
576: wKc2, Qd4, Pd3; bKf1, Qf5 =/79
577: wKc3, Qc6, Pd3; bKe5, Qh3 =/67
578: wKc5, Qd4, Pd3; bKa7, Qe6 =/21
579: wKd1, Qe4, Pd3; bKf2, Qe3 =/72
580: wKd2, Qh4, Pd3; bKg2, Qf8 =/85
581: wKd4, Qf3, Pd3; bKh2, Qc8 =/98
582: wKd5, Qa4, Pd3; bKb1, Qb6 =/77
583: wKd5, Qc4, Pd3; bKf7, Qb8 =/79
584: wKe3, Qa6, Pd3; bKd1, Qb3 =/86
585: wKf7, Qb5, Pd3; bKh6, Qd6 =/86
586: wKf8, Qe7, Pd3; bKh8, Qd4 =/79
587: wKg6, Qd5, Pd3; bKf2, Qc3 =/87
588: wKg6, Qe4, Pd3; bKg3, Qc2 =/84
589: wKh5, Qf5, Pd3; bKg2, Qc2 =/77
590: wKa3, Qe5, Pb2; bKf8, Qd2 =/85
591: wKa6, Qb6, Pb2; bKd7, Qh8 =/81
592: wKd3, Qe5, Pb2; bKf7, Qc1 =/99
593: wKd6, Qe5, Pb2; bKb8, Qc4 =/29
594: wKe4, Qb5, Pb2; bKf7, Qc7 =/94
595: wKe4, Qd3, Pb2; bKg6, Qc5 =/70
596: wKa2, Qe4, Pc2; bKf2, Qc3 =/74
597: wKa3, Qf5, Pc2; bKg7, Qc4 =/73
598: wKa7, Qc3, Pc2; bKg4, Qd6 =/72
599: wKb1, Qc4, Pc2; bKd2, Qf5 =/77
600: wKb1, Qe4, Pc2; bKd2, Qc3 =/70
601: wKb1, Qg4, Pc2; bKe1, Qc3 =/82
602: wKb1, Qb4, Pc2; bKe2, Qd8 =/76
603: wKb1, Qe6, Pc2; bKf2, Qc3 =/81
604: wKb1, Qd4, Pc2; bKf3, Qa3 =/73
605: wKb1, Qe1, Pc2; bKf3, Qa3 =/83
606: wKb1, Qe4, Pc2; bKg3, Qc3 =/75
607: wKb1, Qe5, Pc2; bKg4, Qa3 =/79
608: wKb2, Qb5, Pc2; bKd4, Qh2 =/75
609: wKb2, Qc7, Pc2; bKd4, Qg2 =/72
610: wKb3, Qc3, Pc2; bKb1, Qc1 =/ 3
611: wKb3, Qd7, Pc2; bKf6, Qc5 =/67
612: wKb6, Qd2, Pc2; bKf3, Qc4 =/74
613: wKb7, Qc3, Pc2; bKf4, Qd6 =/71
614: wKc1, Qe4, Pc2; bKf2, Qc3 =/76
615: wKc1, Qd5, Pc2; bKf4, Qb6 =/74
616: wKc1, Qf5, Pc2; bKg3, Qd4 =/85
617: wKc7, Qb6, Pc2; bKe7, Qd5 =/51
618: wKd3, Qc3, Pc2; bKd1, Qc1 =/13
619: wKd8, Qf5, Pc2; bKg2, Qc4 =/92
620: wKe1, Qf2, Pc2; bKh1, Qg3 =/78
621: wKf6, Qc4, Pc2; bKf2, Qe3 =/80
622: wKf7, Qe4, Pc2; bKg5, Qc3 =/70
623: wKg6, Qg5, Pc2; bKh1, Qg3 =/83
624: wKh6, Qc5, Pc2; bKh1, Qe4 =/85
625: wKb4, Qd6, Pd2; bKe4, Qe8 =/89
626: wKb7, Qd3, Pd2; bKh2, Qc5 =/81
627: wKc2, Qd4, Pd2; bKa3, Qh1 =/26
628: wKc2, Qc6, Pd2; bKh2, Qd4 =/86
629: wKc3, Qd3, Pd2; bKa3, Qe6 =/59
630: wKc3, Qd3, Pd2; bKc1, Qd1 =/14
631: wKc4, Qg5, Pd2; bKf1, Qf2 =/99
632: wKd4, Qg5, Pd2; bKh3, Qc8 =/97
633: wKd5, Qd3, Pd2; bKa5, Qe1 =/43
634: wKd8, Qd5, Pd2; bKa3, Qa7 =/66
635: wKd8, Qd5, Pd2; bKg3, Qg7 =/87
636: wKe1, Qf3, Pd2; bKh2, Qb4 =/82
637: wKe3, Qd3, Pd2; bKe1, Qd1 =/12
638: wKe3, Qf4, Pd2; bKh3, Qb5 =/84
639: wKf6, Qe3, Pd2; bKa2, Qc1 =/61
640: wKf7, Qe6, Pd2; bKh7, Qd3 =/66

C Lars Rasmussen's computer lists the reciprocal zugzwangs in the GBR class **3100.10**. Depth figures are 'ultimate', not to 'conversion'.

1: wKa1, Rb2, Pa7; bKh3, Qh8 35/=
2: wKb2, Ra5, Pa7; bKd2, Qa8 26/=
3: wKb6, Ra6, Pa7; bKd6, Qa8 19/=
4: wKc1, Rc5, Pa7; bKa1, Qd8 39/=
5: wKc2, Rc5, Pa7; bKa2, Qd8 38/=
6: wKc4, Rb5, Pa7; bKc6, Qd8 37/=
7: wKc5, Rc7, Pa7; bKa8, Qe6 35/=
8: wKd6, Rb6, Pa7; bKd3, Qc8 36/=
9: wKd6, Rb6, Pa7; bKf7, Qc8 34/=
10: wKd7, Rc7, Pa7; bKa8, Qb6 37/=
11: wKd7, Rc7, Pa7; bKd5, Qf8 33/=
12: wKd8, Rc7, Pa7; bKa8, Qa5 38/=
13: wKe2, Re3, Pa7; bKc2, Qd8 33/=
14: wKe2, Re3, Pa7; bKg2, Qf8 34/=
15: wKe2, Re3, Pa7; bKg4, Qf8 36/=
16: wKe5, Re4, Pa7; bKe7, Qc6 38/=
17: wKe7, Rd7, Pa7; bKa8, Qc6 39/=
18: wKe8, Rd7, Pa7; bKc6, Qa4 41/=
19: wKe8, Rc7, Pa7; bKf6, Qd5 24/=
20: wKf6, Rf4, Pa7; bKf8, Qd5 37/=
21: wKf6, Rf4, Pa7; bKf8, Qe8 38/=
22: wKf7, Re7, Pa7; bKh7, Qc6 43/=
23: wKf8, Re6, Pa7; bKh7, Qa4 45/=
24: wKf8, Re7, Pa7; bKh8, Qc6 44/=
25: wKg6, Rc7, Pa7; bKe6, Qd5 34/=
26: wKh5, Rh7, Pa7; bKa8, Qf6 29/=
27: wKh7, Rc7, Pa7; bKf8, Qa6 33/=
28: wKa4, Rd7, Pb7; bKe4, Qb6 42/=
29: wKb1, Rh7, Pb7; bKd2, Qe5 44/=
30: wKb1, Rd7, Pb7; bKe3, Qh2 47/=
31: wKb3, Rb4, Pb7; bKb8, Qc5 44/=
32: wKb5, Ra5, Pb7; bKd5, Qd6 27/=
33: wKc2, Rd7, Pb7; bKe4, Qg3 50/=
34: wKc4, Rd4, Pb7; bKa4, Qf8 60/=
35: wKd1, Rb1, Pb7; bKb8, Qc3 27/=
36: wKd2, Rg7, Pb7; bKf1, Qb3 58/=
37: wKd2, Rd7, Pb7; bKf2, Qb3 52/=
38: wKd2, Rd5, Pb7; bKg2, Qe8 54/=
39: wKd3, Rg7, Pb7; bKf2, Qb4 53/=
40: wKd3, Rd7, Pb7; bKf3, Qb4 51/=
41: wKd4, Rb4, Pb7; bKb8, Qc2 52/=
42: wKd7, Rc7, Pb7; bKd5, Qb8 18/=
43: wKe3, Rd7, Pb7; bKg3, Qb4 52/=

44: wKe3, Rd7, Pb7; bKg4, Qb5 54/=
45: wKe4, Re7, Pb7; bKg4, Qb5 53/=
46: wKe6, Rc6, Pb7; bKg7, Qd8 36/=
47: wKe8, Rd7, Pb7; bKg8, Qb6 42/=
48: wKe8, Ra7, Pb7; bKh8, Qd5 31/=
49: wKf5, Rh7, Pb7; bKf3, Qe8 55/=
50: wKf7, Rd7, Pb7; bKh7, Qe5 45/=
51: wKf8, Rd7, Pb7; bKh8, Qb6 46/=
52: wKf8, Rd7, Pb7; bKh8, Qe5 46/=
53: wKf8, Re7, Pb7; bKh8, Qd6 45/=
54: wKg1, Rb2, Pb7; bKg4, Qb8 37/=
55: wKg4, Rd7, Pb7; bKg2, Qf8 57/=
56: wKh7, Rd7, Pb7; bKf8, Qb6 16/=
57: wKa6, Rc5, Pc7; bKc8, Qb4 26/=
58: wKa7, Rc2, Pc7; bKd6, Qf7 13/=
59: wKb1, Rd3, Pc7; bKe1, Qh8 52/=
60: wKc1, Rd2, Pc7; bKa3, Qe6 54/=
61: wKc5, Rd5, Pc7; bKa5, Qe6 35/=
62: wKc5, Re7, Pc7; bKa5, Qb7 44/=
63: wKc5, Ra7, Pc7; bKe5, Qd7 35/=
64: wKc5, Rb5, Pc7; bKe5, Qa6 30/=
65: wKc6, Rd7, Pc7; bKa8, Qe8 36/=
66: wKc6, Rb7, Pc7; bKe8, Qa8 31/=
67: wKd2, Rd1, Pc7; bKd4, Qf5 45/=
68: wKd2, Re7, Pc7; bKg6, Qh3 42/=
69: wKd2, Rf7, Pc7; bKh6, Qh3 43/=
70: wKd3, Re7, Pc7; bKf1, Qc5 51/=
71: wKd3, Rg7, Pc7; bKf2, Qc5 49/=
72: wKd3, Re7, Pc7; bKf3, Qc5 44/=
73: wKd4, Re7, Pc7; bKf1, Qc6 52/=
74: wKd8, Ra7, Pc7; bKd6, Qb6 23/=
75: wKe1, Rc1, Pc7; bKc8, Qd3 27/=
76: wKe2, Re5, Pc7; bKh2, Qf8 46/=
77: wKe5, Rc5, Pc7; bKc8, Qd3 35/=
78: wKe5, Rc6, Pc7; bKc8, Qd2 36/=
79: wKe7, Rc3, Pc7; bKa8, Qa7 =/ 9
80: wKe7, Rd7, Pc7; bKe5, Qc8 17/=
81: wKf7, Rc2, Pc7; bKa8, Qa7 =/12
82: wKf7, Re7, Pc7; bKh7, Qc6 43/=
83: wKf8, Rd7, Pc7; bKg6, Qe5 30/=
84: wKf8, Re7, Pc7; bKh8, Qc6 45/=
85: wKg3, Rg4, Pc7; bKg1, Qf8 54/=
86: wKg5, Rh7, Pc7; bKg3, Qf8 45/=
87: wKg6, Re7, Pc7; bKg8, Qf8 34/=
88: wKg7, Rc2, Pc7; bKe6, Qb7 42/=
89: wKh3, Rh6, Pc7; bKh1, Qg8 44/=
90: wKa6, Rc6, Pd7; bKa3, Qb8 37/=
91: wKa7, Rd2, Pd7; bKe5, Qf7 39/=
92: wKb1, Rd1, Pd7; bKd8, Qc3 25/=
93: wKb5, Rd5, Pd7; bKd8, Qc3 35/=
94: wKb7, Rc7, Pd7; bKb5, Qd8 15/=
95: wKd2, Rf5, Pd7; bKb2, Qg8 40/=
96: wKd2, Rg5, Pd7; bKb2, Qa8 41/=
97: wKd2, Ra5, Pd7; bKf2, Qg8 41/=
98: wKd2, Rb5, Pd7; bKf2, Qa8 38/=
99: wKd5, Re5, Pd7; bKb5, Qf6 35/=
100: wKd5, Rf7, Pd7; bKb5, Qc7 39/=
101: wKd5, Rb7, Pd7; bKf5, Qe7 35/=
102: wKd5, Rc5, Pd7; bKf5, Qb6 32/=
103: wKd6, Re7, Pd7; bKb8, Qf8 34/=
104: wKd6, Rb5, Pd7; bKf6, Qd8 36/=
105: wKd6, Rc7, Pd7; bKf8, Qb8 33/=
106: wKd8, Rf7, Pd7; bKe6, Qc2 34/=
107: wKe3, Rg7, Pd7; bKh2, Qd5 44/=
108: wKe4, Rb7, Pd7; bKg4, Qa5 39/=
109: wKe8, Rb7, Pd7; bKe6, Qc6 22/=
110: wKf1, Rd1, Pd7; bKd8, Qe3 25/=
111: wKf3, Rf7, Pd7; bKg1, Qh4 51/=
112: wKf4, Rg7, Pd7; bKh3, Qd5 43/=
113: wKf5, Rd5, Pd7; bKd8, Qe3 34/=
114: wKf5, Rd6, Pd7; bKd8, Qe2 35/=
115: wKf7, Re7, Pd7; bKf5, Qd8 17/=
116: wKh1, Rd2, Pd7; bKh5, Qd8 39/=
117: wKh3, Rh6, Pd7; bKh1, Qg8 48/=
118: wKa7, Re6, Pa6; bKc5, Qb4 12/=
119: wKa7, Rf6, Pa6; bKc5, Qb3 9/=
120: wKa7, Rg6, Pa6; bKc5, Qb2 9/=
121: wKa7, Rh6, Pa6; bKc5, Qb1 10/=
122: wKb5, Rb6, Pa6; bKa3, Qa7 56/=
123: wKb5, Rb7, Pa6; bKe6, Qa8 32/=
124: wKb5, Rh5, Pa6; bKf8, Qd4 53/=
125: wKb6, Rb2, Pa6; bKc4, Qh7 38/=
126: wKb6, Rb7, Pa6; bKd6, Qa8 27/=
127: wKe6, Rc6, Pa6; bKh8, Qd8 49/=
128: wKe7, Rd6, Pa6; bKg7, Qc8 38/=
129: wKa4, Rb4, Pb6; bKa2, Qc5 34/=
130: wKa4, Rf8, Pb6; bKh3, Qh5 32/=
131: wKb4, Ra4, Pb6; bKb2, Qd5 38/=
132: wKb4, Rb5, Pb6; bKd6, Qb7 42/=
133: wKc1, Rb2, Pb6; bKb7, Qd3 30/=
134: wKc2, Ra7, Pb6; bKh1, Qh8 36/=
135: wKc3, Rb2, Pb6; bKb8, Qd1 37/=
136: wKc4, Rd5, Pb6; bKc2, Qf7 39/=
137: wKc4, Rd4, Pb6; bKe7, Qe3 46/=
138: wKc4, Rf2, Pb6; bKg7, Qa3 36/=
139: wKc4, Rf2, Pb6; bKg8, Qe5 34/=
140: wKc5, Rg1, Pb6; bKh8, Qd7 42/=
141: wKc6, Rb5, Pb6; bKe6, Qe7 32/=
142: wKc6, Rc5, Pb6; bKe6, Qa3 32/=
143: wKc7, Rb1, Pb6; bKc5, Qa5 33/=
144: wKd3, Rb3, Pb6; bKb7, Qc1 35/=
145: wKd4, Rd5, Pb6; bKd2, Qf7 60/=
146: wKd6, Rd4, Pb6; bKf5, Qc8 46/=
147: wKe6, Rc7, Pb6; bKe8, Qd8 32/=
148: wKe6, Rc6, Pb6; bKf8, Qd8 39/=
149: wKe6, Rc7, Pb6; bKg8, Qd8 40/=
150: wKa6, Rc3, Pc6; bKe5, Qd6 35/=
151: wKa6, Rc4, Pc6; bKe5, Qg6 36/=
152: wKa6, Rb7, Pc6; bKe6, Qc5 39/=
153: wKc4, Rc3, Pc6; bKa2, Qe5 45/=
154: wKc4, Rf3, Pc6; bKa2, Qa5 47/=
155: wKc4, Rf6, Pc6; bKd1, Qd2 33/=
156: wKc4, Rd3, Pc6; bKe1, Qf1 37/=
157: wKc5, Rd5, Pc6; bKa4, Qe6 44/=
158: wKc5, Rb7, Pc6; bKa5, Qa6 40/=
159: wKd1, Rc2, Pc6; bKc7, Qe3 30/=

160: wKd2, Rc1, Pc6; bKb4, Qc7 32/=
161: wKd4, Re3, Pc6; bKh4, Qg1 33/=
162: wKd4, Rf1, Pc6; bKh6, Qg5 41/=
163: wKd5, Re8, Pc6; bKf5, Qb4 44/=
164: wKe3, Rc3, Pc6; bKc7, Qd1 38/=
165: wKe5, Rd6, Pc6; bKg5, Qc4 31/=
166: wKe6, Re4, Pc6; bKb3, Qd8 40/=
167: wKe6, Rd6, Pc6; bKg6, Qc7 35/=
168: wKf6, Re6, Pc6; bKh6, Qc7 39/=
169: wKf7, Re5, Pc6; bKh6, Qb6 39/=
170: wKa6, Rc7, Pd6; bKa8, Qb8 34/=
171: wKc1, Rd2, Pd6; bKd7, Qb3 28/=
172: wKc2, Rd1, Pd6; bKe4, Qd7 29/=
173: wKc4, Rd4, Pd6; bKd7, Qa3 34/=
174: wKc4, Rd2, Pd6; bKd8, Qa3 40/=
175: wKc6, Re2, Pd6; bKf5, Qg6 53/=
176: wKc6, Re2, Pd6; bKf7, Qg6 55/=
177: wKc6, Re3, Pd6; bKf7, Qf6 39/=
178: wKc7, Ra4, Pd6; bKc3, Qh2 54/=
179: wKc7, Rf5, Pd6; bKd4, Qg3 44/=
180: wKc7, Rg5, Pd6; bKd4, Qh2 50/=
181: wKc8, Rf3, Pd6; bKe8, Qh8 36/=
182: wKd7, Rd5, Pd6; bKe3, Qh8 56/=
183: wKd8, Rh6, Pd6; bKc5, Qc6 36/=
184: wKe1, Rd2, Pd6; bKd7, Qf3 28/=
185: wKe2, Rd1, Pd6; bKc4, Qd7 31/=
186: wKe4, Rc7, Pd6; bKg1, Qg5 60/=
187: wKe6, Rc2, Pd6; bKb5, Qa6 44/=
188: wKe6, Rc2, Pd6; bKb7, Qa6 46/=
189: wKe6, Rc3, Pd6; bKb7, Qb6 43/=
190: wKe7, Rh5, Pd6; bKc4, Qa3 45/=
191: wKe7, Rb5, Pd6; bKd4, Qa3 46/=
192: wKf3, Rd3, Pd6; bKd7, Qe1 36/=
193: wKg6, Re7, Pd6; bKg8, Qf8 34/=
194: wKa8, Rb6, Pa5; bKc8, Qc7 3/=
195: wKa6, Rc6, Pb5; bKa8, Qd8 43/=
196: wKa6, Rb8, Pb5; bKf5, Qc4 48/=
197: wKb6, Re8, Pb5; bKf6, Qh3 48/=
198: wKb8, Rc6, Pb5; bKd8, Qd7 26/=
199: wKc5, Rc6, Pb5; bKe5, Qa5 30/=
200: wKd3, Rb4, Pb5; bKf3, Qb6 40/=
201: wKd5, Rc5, Pb5; bKf5, Qb4 37/=
202: wKa5, Re7, Pc5; bKa2, Qb2 51/=
203: wKb5, Rd8, Pc5; bKe3, Qg4 69/=
204: wKb6, Rb4, Pc5; bKf3, Qg1 73/=
205: wKc8, Rd6, Pc5; bKe8, Qe7 23/=
206: wKb6, Rc4, Pb4; bKd6, Qa4 44/=
207: wKb7, Rc5, Pb4; bKd7, Qd6 19/=
208: wKc4, Rh6, Pb4; bKf8, Qb7 52/=
209: wKc7, Rb5, Pc4; bKa7, Qa6 34/=
210: wKa3, Rc4, Pb3; bKb5, Qd2 51/=
211: wKa3, Rc8, Pb3; bKb6, Qd2 52/=
212: wKb1, Rb5, Pb3; bKa7, Qa3 39/=
213: wKb1, Rb6, Pb3; bKa8, Qa3 40/=
214: wKa3, Rb8, Pb2; bKa5, Qd5 46/=
215: wKa4, Rb4, Pb2; bKa6, Qd3 22/=
216: wKa5, Rc3, Pb2; bKb7, Qb1 44/=
217: wKa5, Rc4, Pb2; bKb8, Qb1 46/=
218: wKb3, Rh4, Pb2; bKf2, Qb1 69/=
219: wKb4, Rb3, Pb2; bKb6, Qa1 47/=
220: wKb5, Rc3, Pb2; bKd5, Qd4 23/=
221: wKc1, Rc3, Pb2; bKe1, Qe4 34/=
222: wKc2, Re7, Pb2; bKg4, Qh1 64/=
223: wKc3, Rb4, Pb2; bKd5, Qd1 44/=
224: wKc4, Rb4, Pb2; bKc6, Qe3 30/=
225: wKc5, Rb3, Pb2; bKa6, Qf4 48/=
226: wKc5, Rc3, Pb2; bKa6, Qe4 49/=
227: wKd4, Rb4, Pb2; bKc6, Qa6 91/=
228: wKa1, Rh7, Pc2; bKa5, Qb5 62/=
229: wKa1, Rg8, Pc2; bKe7, Qb4 59/=
230: wKa1, Ra8, Pc2; bKf7, Qb4 58/=
231: wKa2, Ra1, Pc2; bKa4, Qb5 64/=
232: wKb2, Re6, Pc2; bKd4, Qc5 38/=
233: wKb3, Rc8, Pc2; bKb5, Qa1 50/=
234: wKb4, Rc3, Pc2; bKb6, Qa2 29/=
235: wKb5, Rc3, Pc2; bKb7, Qa2 65/=
236: wKc1, Rf7, Pc2; bKd4, Qh3 43/=
237: wKc1, Rh2, Pc2; bKe3, Qd7 56/=
238: wKc4, Rc3, Pc2; bKc6, Qb1 48/=
239: wKd1, Ra4, Pc2; bKc5, Qe3 66/=
240: wKd2, Rc3, Pc2; bKb5, Qb4 60/=
241: wKd3, Rb3, Pc2; bKa4, Qe1 41/=
242: wKb2, Rb3, Pd2; bKd4, Qa4 26/=
243: wKd1, Ra4, Pd2; bKf5, Qc5 52/=

C Lars Rasmussen's computer lists reciprocal zugzwangs in the GBR ending **3010.10**. Depth figures are 'ultimate', not to 'conversion'.

1: wKa7, Bd6, Pb7; bKd8, Qd7 18/=
2: wKc7, Bb4, Pb7; bKd5, Qa7 12/=
3: wKd7, Bc6, Pb7; bKf6, Qb6 26/=
4: wKd7, Bc6, Pb7; bKf8, Qb6 28/=
5: wKa5, Bb5, Pc7; bKa3, Qe6 14/=
6: wKb7, Bb6, Pc7; bKd6, Qe7 11/=
7: wKb7, Ba5, Pc7; bKe6, Qe7 15/=
8: wKd8, Ba6, Pc7; bKf6, Qa7 17/=
9: wKd8, Ba6, Pc7; bKf6, Qe6 11/=
10: wKd8, Bc6, Pc7; bKf6, Qb4 26/=
11: wKe6, Ba4, Pc7; bKd4, Qa3 17/=
12: wKe6, Bf7, Pc7; bKg5, Qf8 14/=
13: wKe7, Bd6, Pc7; bKg6, Qc6 24/=
14: wKe7, Bd6, Pc7; bKg8, Qc6 26/=
15: wKb5, Bc5, Pd7; bKb3, Qf6 14/=
16: wKf5, Bf4, Pd7; bKh5, Qb6 18/=

C Lars Rasmussen's computer lists the reciprocal zugzwangs in the GBR class **3001.10**. Depth figures are 'ultimate', not to 'conversion'.

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 1: wKb5, Sa5, Pa7; bKa2, Qc8 28/=
 2: wKb6, Sc6, Pa7; bKa4, Qc8 25/=
 3: wKa6, Sd5, Pb7; bKa4, Qb8 24/=
 4: wKa6, Sd5, Pb7; bKb3, Qd8 37/=
 5: wKa6, Se7, Pb7; bKg5, Qe8 38/=
 6: wKb6, Sc5, Pb7; bKd6, Qf8 23/=
 7: wKc6, Sd6, Pb7; bKd4, Qd8 28/=
 8: wKc7, Sa4, Pb7; bKd5, Qa7 21/=
 9: wKc7, Sd7, Pb7; bKd5, Qa7 24/=
10: wKb6, Sf8, Pc7; bKb4, Qc8 31/=
11: wKb7, Sa7, Pc7; bKa5, Qd7 25/=
12: wKb7, Sd4, Pc7; bKa5, Qd7 25/=
13: wKc5, Se3, Pc7; bKa4, Qa6 22/=
14: wKc5, Sb5, Pc7; bKd3, Qb7 26/=
15: wKc5, Se8, Pc7; bKg6, Qb7 18/=
16: wKc6, Sb8, Pc7; bKa5, Qc8 23/=
17: wKd5, Sc5, Pc7; bKg4, Qe8 26/=
18: wKd6, Sa3, Pc7; bKd4, Qb7 26/=
19: wKd6, Sf4, Pc7; bKd4, Qc8 29/=
20: wKd6, Sc5, Pc7; bKf5, Qe8 25/=
21: wKd7, Sb4, Pc7; bKe5, Qb7 25/=
22: wKd7, Se7, Pc7; bKe5, Qb7 25/=
23: wKd7, Sc3, Pc7; bKf5, Qb7 19/=
24: wKd7, Sc5, Pc7; bKf7, Qa7 30/=
25: wKe5, Sd5, Pc7; bKd3, Qc5 17/=
26: wKe7, Sb5, Pc7; bKd3, Qc8 26/=
27: wKf6, Sd5, Pc7; bKb3, Qb7 26/=
28: wKb6, Se5, Pd7; bKh5, Qd5 19/=
29: wKc5, Sb3, Pd7; bKd1, Qf6 30/=
30: wKc6, Se4, Pd7; bKb4, Qa5 24/=
31: wKc6, Se5, Pd7; bKb4, Qd4 20/=
32: wKc6, Se8, Pd7; bKb4, Qa5 45/=
33: wKc6, Sh5, Pd7; bKf3, Qd4 22/=
34: wKc6, Sg7, Pd7; bKg4, Qe7 18/=
35: wKc7, Se6, Pd7; bKg8, Qe7 23/=
36: wKc8, Sd3, Pd7; bKa4, Qf5 24/=
37: wKd5, Se5, Pd7; bKe3, Qe7 19/=
38: wKd8, Sf3, Pd7; bKh1, Qc5 29/=
39: wKe6, Sa7, Pd7; bKa4, Qc7 21/=
40: wKe7, Sc6, Pd7; bKa4, Qc7 26/=
41: wKe7, Sd5, Pd7; bKa5, Qb7 36/=
42: wKe7, Sc6, Pd7; bKa8, Qc7 23/=
43: wKe7, Sd8, Pd7; bKc5, Qa7 18/=
44: wKe7, Se6, Pd7; bKd5, Qa7 17/=
45: wKe7, Sf7, Pd7; bKf5, Qc7 22/=
46: wKe8, Sd4, Pd7; bKf6, Qa4  9/=
47: wKf7, Se7, Pd7; bKh7, Qb6 28/=
48: wKf7, Sf8, Pd7; bKh8, Qd8 23/=
49: wKb6, Sf4, Pc6; bKd2, Qh6 29/=
50: wKc5, Sb5, Pc6; bKd3, Qb8 27/=
51: wKc7, Sc5, Pd6; bKf5, Qf8 17/=
52: wKc8, Se5, Pd6; bKe8, Qh8 12/=
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C Lars Rasmussen's computer serves up the one reciprocal zugzwang in the GBR class **1300.10**. The depth is to mate, not conversion.

1: wKa6, Qb6, Pa5; bKa8, Rd6 =/11

C This list consists of statistics relating to 5-man endings with a single pawn supplied by Lars Rasmussen with the help of his computer. Under the headings WTM and BTM, the first line for each ending shows the number of positions with White to win, and the *minimum* and *maximum* distance to mate. The next line shows draws with the number of stalemates between parentheses. The last line shows the same data for wins for Black. The total of zugzwangs is to the far right. All numbers are totals for the a-d files. Note that knight is represented here by 'N', not 'S', and that instead of GBR classes the endings are described in 4-character form: White first (two characters, such as PQ), separated from Black by the undersore character '_'.

	WTM		BTM		Zugzwangs	
PQ_Q	136304160	1-124	27920273	0-123	=/-	640
	62203047	(0)	105076448	(0)	-/=	0
	794206	0-28	72213935	1-29		
PQ_R	198475639	1-37	181699611	0-43	=/-	1
	574474	(0)	15033862	(118)	-/=	0
	251300	0-27	48314301	1-33		
PQ_B	199055264	1-28	222823314	0-29	=/-	0
	245443	(0)	44820762	(2487)	-/=	0
	706	0-1	2726	1-2		
PQ_N	198643044	1-30	247022866	0-30	=/-	0
	658228	(0)	35232123	(1528)	-/=	0
	141	0-7	971	1-8		
PR_Q	89834601	1-68	3763248	0-59	=/-	2
	28220184	(188)	14618068	(0)	-/=	241
	120249909	0-103	186829340	1-104		
PR_R	158650355	1-74	62586644	0-74	=/-	209
	78681546	(28)	133273976	(0)	-/=	0
	972793	0-28	49187154	1-33		
PR_B	229728765	1-73	180368695	0-73	=/-	225
	8574923	(61)	87274275	(2306)	-/=	0
	1006	0-1	3832	1-2		
PR_N	232323986	1-54	212530119	0-54	=/-	413
	5980316	(12)	69723827	(1195)	-/=	0
	392	0-7	2014	1-8		
PB_Q	55420196	1-35	730153	0-34	=/-	0
	29858657	(377)	5790311	(0)	-/=	16
	174608106	0-50	198690192	1-50		
PB_R	80426479	1-45	8489390	0-44	=/-	4
	174791451	(138)	179248228	(118)	-/=	302
	4669029	0-38	57310156	1-39		
PB_B	107325666	1-51	35043709	0-50	=/-	160
	152555761	(33)	232583827	(0)	-/=	0
	5532	0-2	19266	1-3		
PB_N	147148759	1-100	76130262	0-96	=/-	2112
	112737515	(9)	206121309	(149)	-/=	13
	685	0-7	4389	1-8		
PN_Q	49019559	1-41	1010472	0-33	=/-	0
	32662156	(165)	4663263	(0)	-/=	52
	192801785	0-62	199536921	1-55		
PN_R	73238890	1-44	5376196	0-43	=/-	23
	190315279	(57)	167907194	(0)	-/=	1158
	10929331	0-66	71764384	1-67		
PN_B	106600147	1-43	31873106	0-42	=/-	640
	167879965	(38)	235762830	(0)	-/=	2
	3388	0-8	10866	1-9		
PN_N	135028146	1-97	64286727	0-97	=/-	4128
	139454038	(0)	217962174	(0)	-/=	63
	1316	0-3	7059	1-7		

(after Guy/Blandford/Roycroft) concisely denotes chessboard force in at most 6 digits. Examples: two white knights and one black pawn codes into **0002.01**; wQ bQ wR codes as **4100**; wBB vs bN codes as **0023**; the full complement of 32 chessmen codes as **4888.88**. The key to encoding is to compute the sum '*1-for-W-and-3-for-Bl*' for each piece type in QRBN sequence, with white pawns and black pawns uncoded following the 'decimal point'. The key for decoding is to divide each QRBN digit by 3, when the quotient and remainder are in each of the 4 cases the numbers of Bl and W pieces respectively.

The *GBR* code permits unique sequencing, which, together with the fact that a computer sort of several thousand codes and the reference attached to each is a matter of a second or two, enormously facilitates the construction of look-up directories.

A consequence of the foregoing is the code's greatest overall advantage: its user-friendliness. The *GBR* code has the unique characteristic of equally suiting humans and computers. No special skill or translation process is required whether the code is encountered on a computer printout or whether it is to be created (for any purpose, including input to a computer) from a chess diagram.

A natural extension of the *GBR* code is to use it to represent a complete position. A good convention is to precede the *GBR* code with the squares of the kings, and follow the code with the squares of the pieces, in W-before-Bl within code digit sequence, preserving the 'decimal point' to separate the pieces from the pawns, if any (where all W pawns precede all Bl).

The 223-move optimal play solution position in the endgame wR wB bN bN would be represented: a7d3 **0116.00** b2b3c6d6 3/3+. The '3/3' is a control indicating 3 W and 3 Bl men, with '+' meaning W wins, while '=' would mean White draws. The win/draw indicators are optional. Note that although in this example there are no pawns the *GBR* code decimal point and immediately following pair of zeroes are obligatory (enabling a scan of a text file searching for encoded chess positions) but the absence of a decimal point in the list of squares confirms that there are no pawns. A position with pawns but no pieces would be coded in this manner: a2c4 **0000.32** .d4e3f2e4f3 4/3 WTM. To indicate Black to move (but still with the implied win or draw for White) it is suggested that '-+' and '-=' be employed. Where the position result is unknown or undecided or unknowable it is suggested that the computer chess convention 'WTM' (White to move) and 'BTM' be followed. The redundancy check piece-count (including the '/' separator) and terminating full stop are both obligatory.