

Contemporary Computer Shogi (May 2024)

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Almost fifty years have passed since the author and a research group developed the first computer shogi in late 1974. It has been steadily improved by researchers and other programmers using both traditional means, e.g., game-tree making and pruning methods and opening- and middle-game databases, and recent means, e.g., deep-learning methods and NNUE (Efficiently Updatable Neural Networks). Its capabilities have now far exceeded the strength of the top professional players. In this paper, the author discusses contemporary computer shogi, in particular, how the programs behaved at the 34th World Computer Shogi Championship, where 48 teams applied and 45 teams entered, held in May 2024.

0. Introduction

The 34th World Computer Shogi Championship (WCSC) was held in Kawasaki, Japan, May 3-5, 2024. “Hey, you wanna be a CSA member?” won the tournament for the first time. The runner-up was the champion of the 32nd and the 33rd championships, “dl-shogi with HEROZ.” Third was “Toyoko Shogi,” fourth was “koron,” made by a 16-year-old programmer, the youngest finalist in WCSC history, fifth was “Gikou,” the runner-up of the 26th WCSC, sixth was “YaneuraOu featuring Ryfamate,” seventh was “16 Shiki Iroha KIRAMEKI,” and eighth was “Polonaise,” created by professional shogi player Hiroki Taniai 4-dan.

Here, the author discusses contemporary computer shogi and computer shogi in the near future through the game records of the 34th World Computer Shogi Championship.

1. 34th World Computer Shogi Championship

The 34th World Computer Shogi Championship was held at the Kawasaki Industrial Promotion Hall in Kawasaki, Japan, May 3-5, 2024. The championship was managed by the Computer Shogi Association (CSA), co-managed by the Game Sciences Laboratory of Waseda University (GSL-WU), with special help from the Nihon Shogi Renmei (the Japan Shogi Association, JSA), financially supported by Heroz, Inc., Axis’s broadcast of shogi games by Kidachi Ryuu, Shota Chida, Keiko Suwa, Komafont, TMOQ, Seiji Shiba, Go Yamashita, Keikikai, Astra SHOGI, Ada Tsugamachi and Listeners, Tokin Idea Company, Keita Mizutani, Hitoshi Matsubara, Takenobu Takizawa, Takeshi Ito, and supported by the Digital Agency (DA), Kawasaki City, the Information Processing Society of Japan (IPSJ), the Japan Information Technology Services Industry Association (JISA), the National Institute of Technology, Kisarazu College, (NIT-KC), and

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Table 1. Recent Results of the World Computer Shogi Championships

No.	Date	Number of Participants	Winner	Runner-Up	Second Runner-Up	Non-Japanese Participants
24	2014.5.3-5	38	Apery	ponanza	YSS	1
25	2015.5.3-5	39	ponanza	NineDayFever	AWAKE	2
26	2016.5.3-5	51	ponanza	Gikou	taishogun	1
27	2017.5.3-5	50	elmo	Ponanza Chainer	Gikou	1
28	2018.5.3-5	56	Hefeweizen	PAL	Apery	2
29	2019.5.3-5	56	YaneuraO	Kristallweizen	Tanu-king	2
30	2020.5.3-5	canceled				
*	2020.5.3-4	39	Suisho	Hefeweizen-2020	elmo	0
31	2021.5.3-5	53	elmo	PAL	Ryfamate	0
32	2022.5.3-5	51	dlshogi with HEROZ	Niban Shibori	YaneuraO	1
33	2023.5.3-5	46	dlshogi with HEROZ	YaneuraO	W@nderER	1*
34	2024.5.3-5	45	Hey, you wanna be a CSA member?	dlshogi with HEROZ	Toyoko Shogi	2*

Kristalweizen is the successor to Hefeweizen. An asterisk (*) in the No. column means the World Computer Shogi Online Open Swiss Tournament, the alternative to the 30th World Computer Shogi Championship, canceled because of COVID-19. 1* and 2* each in the Number of Non-Japanese Participants column means there were one or two non-Japanese participant(s) and another participant where some non-principal members were not Japanese.

the Cognitive Science and Entertainment Research Station of the University of Electro-Communication (CERS-UEC).

For this championship, 48 teams applied, of which 45 entered the tournament. As mentioned above, the tournament lasted for three days. The first and second days were for the preliminary contests, with the third day reserved for the final. Three newcomers applied and entered. Five teams applied and returned to the championship.

There were two prizes sponsored by CERS-UEC:

koron was given the young newcomer award, as it achieved the highest result (fourth) among first- and second-time young participants (that is to say, less than 25 years old). Honey Wuffle received the Good Idea award.

There were two foreign teams in the tournament: wizodds 2024, from the U.S.A. and JHBR, from the Republic of Korea. There was one other team of which some members were from outside Japan.

To satisfy Clause 3 of WCSC policies and make the Q&A better, the CSA added a special regulation

Table 2. Results of the First Preliminary Contest

		1	2	3	4	5	6	7	8	Pt	Sol	SB	MD
1*	Suisho	2+	6+	7+	13+	5+	11+	3+	4=	7.5	41.5	36.0	25.0
2*	Gikou	1-	12+	16+	24+	3+	4+	5+	7+	7.0	40.0	32.5	23.5
3*	Ari Shogi and Friends	4+	18+	11+	14+	2-	5+	1-	6+	6.0	42.0	27.5	18.0
4*	nshogi	3-	28+	17+	6+	7+	2-	14+	1=	5.5	38.5	18.0	13.0
5*	NENE Shogi	23+	19+	9+	10+	1-	3-	2-	13+	5.0	40.5	20.0	12.0
6*	Shueso	12+	1-	19+	4-	15+	8+	10+	3-	5.0	40.0	21.0	13.0
7*	HoneyWaffle	16+	25+	1-	9+	4-	18+	11+	2-	5.0	40.0	20.0	12.0
8*	Tango	9-	13+	23-	16+	10+	6-	15+	11+	5.0	34.0	21.0	12.0
9*	kyosuke	8+	26+	5-	7-	12+	10-	17+	14+	5.0	34.0	19.0	12.0
10*	Nanoha	21+	15+	22+	5-	8-	9+	6-	12+	5.0	34.0	19.0	11.0
11*	Argo	17+	27+	3-	21+	14+	1-	7-	8-	4.0	35.5	12.0	7.0
12	tenuki	6-	2-	20+	23+	9-	22+	18+	10-	4.0	35.0	13.0	6.0
13	Genki Morimori Ninniku Power	26+	8-	15+	1-	18-	25+	19+	5-	4.0	33.5	12.0	6.0
14	CGP	27+	17+	18+	3-	11-	19+	4-	9-	4.0	32.5	12.0	7.0
15	Jinsei Okuribunt Shippai	24+	10-	13-	20+	6-	21+	8-	22+	4.0	31.0	12.0	6.0
16	Hisui-5th	7-	22+	2-	8-	24+	17-	27+	20+	4.0	31.0	10.0	6.0
17	QinoaShogi	11-	14-	4-	28+	20+	16+	9-	21+	4.0	28.5	10.0	6.0
18	katsudonshogi	28+	3-	14-	27+	13+	7-	12-	19+	4.0	27.0	8.0	4.0
19	Yamada Shogi	20+	5-	6-	22+	21+	14-	13-	18-	3.0	31.0	9.0	3.0
20	AUAU Shogi	19-	23+	12-	15-	17-	24+	25+	16-	3.0	28.0	9.0	3.0
21	wizodds 2024	10-	24+	25+	11-	19-	15-	26+	17-	3.0	28.0	8.0	3.0
22	Bakuretsu Komahiroi Taro	25+	16-	10-	19-	27+	12-	23+	15-	3.0	27.0	7.0	3.0
23	Haruka	5-	20-	8+	12-	25-	28+	22-	26+	3.0	25.0	7.0	2.0
24	narikin shogi	15-	21-	26+	2-	16-	20-	28+	27+	3.0	24.0	3.0	1.0
25	Komaasobi	22-	7-	21-	26+	23+	13-	20-	28+	3.0	23.0	5.0	2.0
26	JHBR	13-	9-	24-	25-	28+	27+	21-	23-	2.0	22.0	1.0	0.0
27	Gravitaional field Calculation method	14-	11-	28+	18-	22-	26-	16-	24-	1.0	24.0	0.0	0.0
28	Kifuwarabe using cshogi	18-	4-	27-	17-	26-	23-	24-	25-	0.0	25.5	0.0	0.0

*Qualified for the second preliminary contest.

stating that the finalist must attend the final at the venue itself.

Ari Shogi and Friends (6 wins, 2 losses), nshogi , NENE Shogi, Shueso, Honey Waffle, Tango, Nanoha, and Argo.

1.1. First Preliminary Contest

The first preliminary contest was held on the first day. There were eight Swiss-style games. The top eleven (11) programs joined the second preliminary contest. Twenty-four (24) programs entered the first preliminary contest. As shown in Table 2, one newcomer, kyosuke, with 5 wins 3 losses, proceeded to the second day. Other programs that qualified were Suisho (7 wins, 1 draw), Gikou (7 wins, 1 loss),

1.2 Second Preliminary Contest

The second preliminary contest was held on the second day. There were nine Swiss-style games. The top eight programs proceeded to the third day of the competition. There were 17 seeded and 11 qualifying programs in the second preliminary contest. The candidates expected to proceed to the final were former finalists dlshogi with HEROZ, YaneuraO, W@nderER, Niban-Shibori, Toyoko

Table 3. Results of the Second Preliminary Contest

	1	2	3	4	5	6	7	8	9	Pt	Sol	SB	MD
1* Hey, you wanna be a CSA member?	19+	8+	10=	3=	7+	14+	5+	2+	9+	8.0	49.0	38.0	26.5
2* Toyoko Shogi	17+	21+	7+	15+	6+	5+	3+	1-	10+	8.0	48.0	40.0	30.5
3* 16 Shiki Iroha KIRAMEKI	11+	23+	5=	1=	15+	10+	2-	9-	6+	6.0	50.5	23.5	14.5
4* Polonaise	10-	15-	19+	20+	18+	6=	14=	5+	12+	6.0	41.0	21.5	12.5
5* koron	20+	9+	3=	10+	12+	2-	1-	4-	16+	5.5	51.5	23.5	14.5
6* Gikou	21+	17+	8=	14+	2-	4=	12=	7+	3-	5.5	48.5	18.0	9.0
7* YaneuraOu featuring Ryfamate	27+	24+	2-	18+	1-	8=	13+	6-	15+	5.5	44.5	17.5	11.5
8- Astra Shogi	26+	1-	6=	19=	11+	7=	9-	24+	14+	5.5	43.5	15.5	7.5
9* dlshogi with HEROZ	28+	5-	16+	13=	14-	24+	8+	3+	1-	5.5	43.0	20.0	13.0
10 Suisho	4+	22+	1=	5-	13+	3-	16+	12=	2-	5.0	51.5	19.0	9.5
11 Daogorilla	3-	25+	20+	12-	8-	22+	17=	13=	18+	5.0	40.0	14.0	7.0
12 AobaZero	24+	27+	14-	11+	5-	17+	6=	10=	4-	5.0	40.0	13.5	7.5
13 ponkotsu	16=	14=	28+	9=	10-	25+	7-	11=	20+	5.0	37.5	7.5	3.0
14 Meijin Cobra	18+	13=	12+	6-	9+	1-	4=	15=	8-	4.5	49.0	14.5	5.0
15 Niban Shibori	22+	4+	25+	2-	3-	16-	19+	14=	7-	4.5	44.5	16.0	7.0
16 nshogi	13=	18-	9-	26+	19+	15+	10-	17+	5-	4.5	40.5	15.5	8.0
17 HoneyWaffle	2-	6-	27+	22+	25+	12-	11=	16-	19+	4.5	39.0	11.0	6.5
18 NENE Shogi	14-	16+	24+	7-	4-	19-	27+	23+	11-	4.0	36.5	12.0	6.5
19 Ari Shogi and Friends	1-	26+	4-	8=	16-	18+	15-	28+	17-	3.5	41.0	8.0	3.0
20 TMOQ	5-	28+	11-	4-	22-	26+	23=	21+	13-	3.5	36.0	7.5	3.0
21 ichibin	6-	2-	26+	25-	23-	28+	22=	20-	24+	3.5	34.0	7.0	3.0
22 Tango	15-	10-	23+	17-	20+	11-	21=	26-	27+	3.5	33.5	8.0	3.5
23 kyosuke	25-	3-	22-	24-	21+	27+	20=	18-	28+	3.5	28.5	5.5	1.0
24 Novice	12-	7-	18-	23+	28+	9-	25+	8-	21-	3.0	36.5	7.5	3.0
25 W@ndre7	23+	11-	15-	21+	17-	13-	24-	27+	26-	3.0	33.0	8.0	3.5
26 Shueso	8-	19-	21-	16-	27-	20-	28+	22+	25+	3.0	29.0	7.5	3.0
27 Nanoha	7-	12-	17-	28-	26+	23-	18-	25-	22-	1.0	33.0	3.0	0.0
28 Argo	9-	20-	13-	27+	24-	21-	26-	19-	23-	1.0	31.5	1.0	0.0

* qualified for the final.

-: qualified, but quit the final as no primary members could come to the venue on the last day.

Shogi, Astra Shogi, and Meijin Cobra.

As shown in Table 3, Hey, you wanna be a CSA member? (7 wins, 2 draws), Toyoko Shogi (8 wins, 1 loss), 16 Shiki Iroha KIRAMEKI, Polonaise (5 wins, 2 draws, 2 losses), koron (5 wins, 1 draw, 3 losses), Gikou (4 wins, 3 draws, 2 losses), YaneuraOu featuring Ryfamate (5 wins, 1 draw, 3 losses), and Astra Shogi (4 wins, 3 draws, 2 losses) qualified for the final. However, because of the special regulation that the finalist must attend at the venue itself and none of the Astra Shogi members could attend on the last day, dlshogi with HEROZ (5 wins, 1 draw, 3 losses) was promoted and invited

to attend on the last day.

If the rules remain unchanged, the 18th and upper programs will each be seeded for the second preliminary contest in the 35th WCSC, to be held in 2025.

1.3. The Final

The final was held on the third day. There was a round robin of eight programs, with each program playing each other once.

After the 6th round, there were three programs, dlshogi with HEROZ (dlshogi for short), Hey, you

wanna be a CSA member? (CSA for short), and Toyoko Shogi (Toyoko for short) that could win the championship. If dlshogi won the last game, then dlshogi would win the championship. As it happens, it drew the last game before the game between CSA and Toyoko, so the championship result was decided by the last game, dlshogi vs CSA.

If CSA won, then it would win the championship, but if Toyoko won, then Toyoko would win the championship. If the game were drawn, dlshogi would win the championship. In the event, CSA won the last game and thereby won the championship.

Table 4. Results of the Final

	1	2	3	4	5	6	7	Pt	SB	MD
1 Hey, you wanna be a CSA member?	2-	6+	5+	4+	8=	7+	3+	5.5	16.5	10.0
2 dlshogi with HEROZ	1+	3-	7+	8+	4+	5+	6=	5.5	15.0	9.0
3 Toyoko Shogi	6=	2+	4-	5+	7+	8+	1-	4.5	11.0	5.0
4 koron	8+	7+	3+	1-	2-	6-	5+	4.0	10.0	5.0
5 Gikou	7+	8+	1-	3-	6+	2-	4-	3.0	5.5	2.0
6 YaneuraOu featuring Ryfamate	3=	1-	8+	7-	5-	4+	2=	3.0	4.5	0.0
7 16 Shiki Iroha KIRAMEKI	5-	4-	2-	6+	3-	1-	8+	2.0	3.5	0.0
8 Polonaise	4-	5-	6-	2-	1=	3-	7-	0.5	0.0	0.0

WCSC Policies

January 23, 2012

World Computer Shogi Championship Policies

Computer Shogi Association

These are the policies for the World Computer Shogi Championships (WCSCs) hosted by the Computer Shogi Association (CSA).

1. The WCSCs are for deciding the current strongest computer shogi under fair and impartial operation.
2. The CSA does not restrict the hardware of any entrant for the WCSCs.

Table 5. First Player's Winning Ratio and Drawing Ratio

Table 5 Five championships 1st player's winning ratio and drawing ratio		2013	2014	2015	2016	2017	2018	2019	2021	2022	2023	2024
5 championships through games	A	140	140	140	140	140	140	140	140	140	140	140
#1st-p-wins	B	68	68	69	71	81	75	74	75	74	74	73
#2nd-p-wins	C	71	71	69	68	58	62	61	58	55	55	53
#draws	D	1	1	2	1	1	3	5	7	11	11	14
1st-p w.r.	B/(B+C)	0.489	0.489	0.500	0.511	0.583	0.547	0.548	0.564	0.574	0.574	0.579
draw r.	D/A	0.007	0.007	0.014	0.007	0.007	0.021	0.036	0.050	0.079	0.079	0.100

championsips → championships

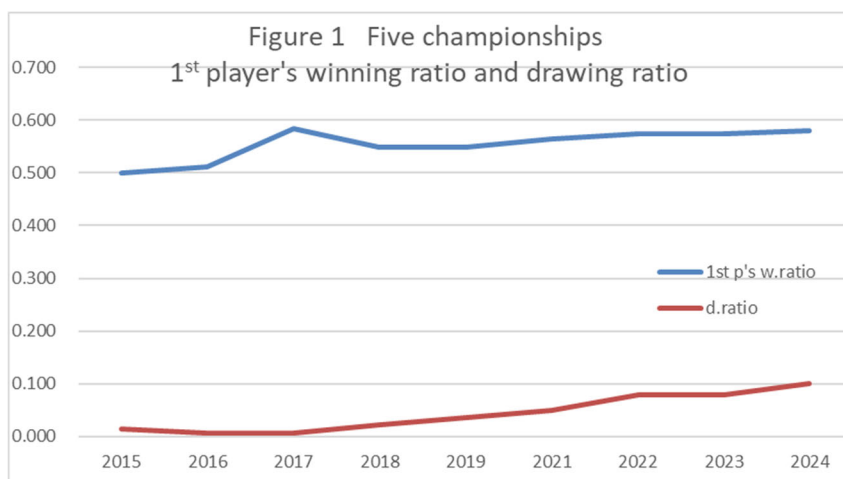
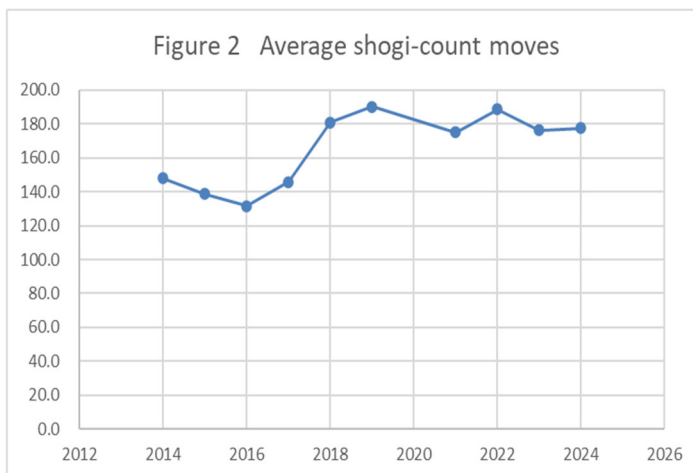


Table 6 Average shogi-count moves

year	average	std. dev.
2014	148.0	27.4
2015	138.6	31.6
2016	131.6	30.6
2017	145.8	32.2
2018	180.8	50.0
2019	190.3	58.0
2021	175.1	56.4
2022	188.5	55.9
2023	176.3	60.0
2024	177.5	62.2



2. First player's winning ratio and drawing ratio, and average number of moves

The first player's winning ratio was usually over but close to 50%. Table 5 and Figure 1 indicate the first player's winning ratio and drawing ratio for periods of five championships. For the five-championship-moving-average, the highest ratio for the 1st player was over 58% (2013-2017), while the lowest was 49% (2010-2014). The highest drawing ratio was 10% (2019-2024), while the lowest was less than 1% (2012-2016, 2013-2017, etc.). Recently, the number of average moves has increased. Table 6 and Figure 2 indicate the

number of average moves (finals, shogi-counting moves, or plies). The average moves through 2017 were around 140, but 181, 190, 175, 189, 176, and 178 moves in 2018, 2019, 2021, 2022, 2023, and 2024, respectively.

3. Computer Shogi in the Near Future

Professional players who watched the 2024 WCSC declared that the top programs had already gone beyond top professional level. What is more, it seems highly likely that computer shogi will

continue to grow even stronger.

Most human shogi players do not properly understand the moves of computer shogi. For the purpose of watching (and enjoying) a game between computer shogi programs, computer shogi programs should disclose why a particular move was chosen, disclosing the thinking tree behind it, with evaluation.

We seem to be at a stage that is close to solving shogi, but in truth it will still take a very long time to provide a complete solution. “Hey, you wanna be a CSA member?” won the latest WCSC, using NNUE, but NNUE is not perfect. We are lucky to be able to study computer shogi in greater and greater depth without being afraid of solving shogi perfectly.

4. Conclusion and Acknowledgments

Here, we have considered contemporary computer shogi, in particular, how competitors performed at the 34th World Computer Shogi Championship. The strength of the top programs is clearly stronger than that of the top human players. This means that the stage computer shogi has now reached is able at last to show us a new world.

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References

- [1] Computer Shogi Association: “The Annals of CSA,” vol. 1-35, Computer Shogi Association, 1987-2024.
- [2] Takenobu Takizawa: “Contemporary Computer Shogi (May 2023),” Proceedings of Game Informatics 38-1, 2017.
- [3] Junichi Takada: “CSA Home Page,” <http://www2.computer-shogi.org/>, August 16, 2024.

Final

5/5/2024

1st player: dlshogi with HEROZ

2nd player: Hey, you wanna be a CSA member?

1.P-2f 2.P-8d 3.P-2e 4.G-3b 5.P-9f 6.P-8e 7.S-3h 8.S-7b
 9.G-7h 10.K-4b 11.K-5h 12.P-8f 13.Px8f 14.Rx8f 15.P*8g 16.R-8d
 17.P-3f 18.P-3d 19.P-2d 20.Px2d 21.Rx2d 22.P*2c 23.R-2e 24.P-7d
 25.P-7f 26.N-7c 27.N-3g 28.P-1d 29.P*2d 30.Px2d 31.Rx2d 32.P*8f
 33.Bx2b+ 34.Sx2b 35.B*6f 36.B*3c 37.Bx8d 38.Bx2d 39.Px8f 40.B-3c
 41.B-6f 42.P-3e 43.N-4e 44.Bx6f 45.Px6f 46.P*8h 47.B*2d 48.K-5b
 49.Bx3e 50.R*5e 51.Nx5c= 52.Rx5c 53.Bx5c+ 54.Kx5c 55.Gx8h 56.K-4b
 57.N-7g 58.B*2c 59.S-6h 60.B*5e 61.P-7e 62.N*7f 63.P*2d 64.B-1b
 65.Px7d 66.Bx1i+ 67.Px7c+ 68.+Bx7c 69.N-6e 70.+B-5e 71.G-5i 72.P*3g
 73.R*3e 74.+B-4d 75.Sx3g 76.P-6d 77.P*7c 78.S-6c 79.R*8a 80.G-5b
 81.Rx9a+ 82.+Bx3e 83.Px3e 84.R*3h 85.B*4h 86.Nx6h+ 87.Gx6h 88.Px6e
 89.L*5f 90.N*2e 91.Lx5b+ 92.Kx5b 93.S-4f 94.S*3g 95.N*4e 96.Rx4h+
 97.K-6i 98.+R-3i 99.N*5i 100.B*4d 101.G*3d 102.Bx3d 103.Px3d 104.L*6a
 105.B*8c 106.G*7a 107.Sx3g 108.Nx3g+ 109.S*5c 110.Bx5c 111.Nx5c+ 112.Kx5c
 113.+Rx7a 114.K-4d 115.+Rx6a 116.N*6g 117.B*7a 118.L*5c 119.Gx6g 120.S*5h
 121.K-7h 122.+Rx5i 123.+Rx6c 124.K-3e 125.G6g-7g 126.S*7i 127.Bx5c+ 128.K-3f
 129.Bx6e+ 130.K-2g 131.G-9h 132.S-6h= 133.S*8h 134.+R-6i 135.K-8g 136.Sx7g=
 137.Sx7g 138.S-6g+ 139.G*8h 140.G*7h 141.K-7f 142.+Sx7g 143.Gx7g 144.Gx7g
 145.K-7e 146.N*5a 147.+R-7b 148.G*6c 149.+Bx6c 150.Nx6c 151.K-8d 152.B*7f
 153.Kx9c 154.Bx6e 155.Px6e 156.G-3a 157.K-8b 158.N-7e 159.L*2c 160.G-8g
 161.Lx2b+ 162.Gx2b 163.+Rx2b 164.Gx9h 165.+Rx2a 166.B*5d 167.S*7b 168.Bx6e
 169.G*8c 170.+Rx9i 171.P-2c+ 172.P-4d 173.+P-3b 174.K-3h 175.P-3c+ 176.B-8g+
 177.+Rx1a 178.+Bx9f 179.K-9a 180.S*7d 181.G-9b 182.N-6g+ 183.S*8b 184.G*8c
 185.L*8e 186.Gx8b 187.Lx8b+ 188.G-8h 189.B*7a 190.S*6d 191.G*8d 192.P*2g
 193.S*6b 194.S-6c 195.Sx6c+ 196.+Bx6c 197.S*7b 198.+Bx6b 199.Bx6b+ 200.S*5c
 201.+B-5b 202.S*6b 203.G*8c 204.L*5a 205.+B-6a 206.P*7a 207.+Lx7a 208.S6dx7c
 209.G8dx7c 210.Sx7c 211.Gx7c 212.G*9c 213.Gx9c 214.+Rx9c 215.G*9b 216.+Rx7c
 217.S*8b 218.+R-6b 219.L*6c 220.+Rx6a 221.Lx6a+ 222.G*6b 223.+Lx6b 224.Sx6b
 225.R*6a 226.Sx7a 227.Rx7a+ 228.L*8a 229.+Rx8a 230.G*6b 231.S-8c+ 232.K-2h
 233.+R8ax5a 234.P-1e 235.+Rx6b 236.+Nx4g 237.B*7c 238.L*3g 239.S*2b 240.B*4f
 241.Bx4f+ 242.+Nx4f 243.B*8a 244.B*6e 245.+Rx6e 246.+N-3f 247.B*7c 248.P*3a
 249.L*1b 250.Px3b 251.S*6c 252.Px3c 253.L*6b 254.P*5h 255. Declares a win.