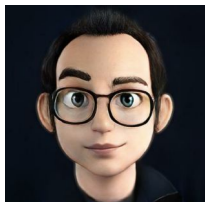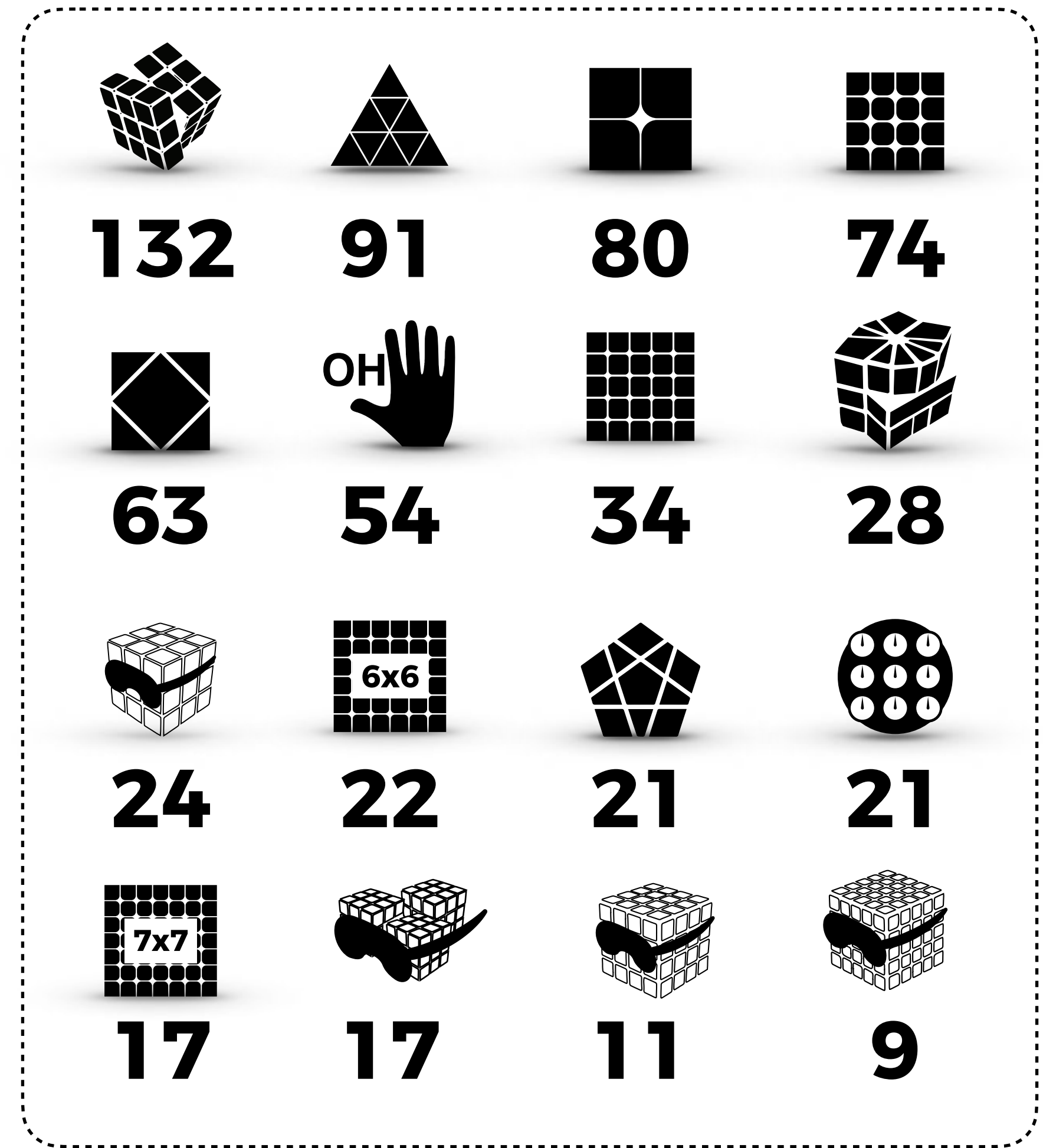# SWISS NATIONALS 2022

Sep 9 - 11, 2022
Sporthalle Muhen (AG)

A quick analysis of the results

PYRAMINX PASSES 2X2 AS THE 2ND MOST POPULAR EVENT, THE BIGGER BLINDS TAILING AT THE END, BUT MOST EVENTS GARNERED ATTENTION

OF PARTICIPANTS TO EACH EVENT

132	91	80	74
63	54	34	28
24	22	21	21
17	17	11	9

CUTOFFS WERE MOSTLY WELL CALIBRATED WITH AT LEAST 2/3 OF PARTICIPANTS PASSING THROUGH. 4X4 A BIT LESS, WITH TWO THIRDS OF "NORMAL SOLVERS" NOT PASSING THE THRESHOLD
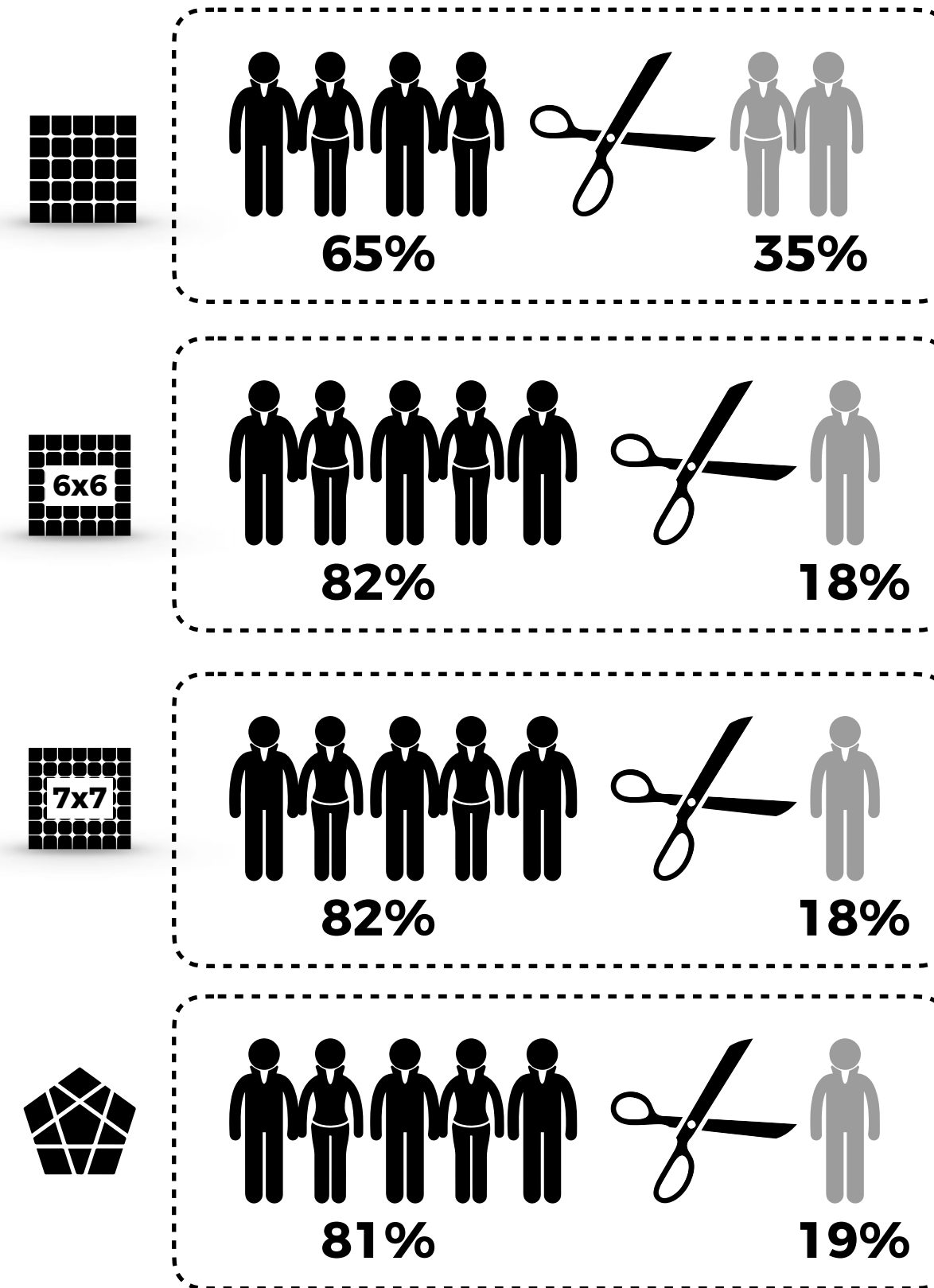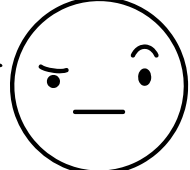
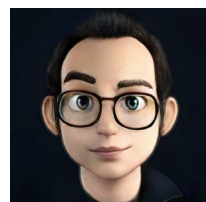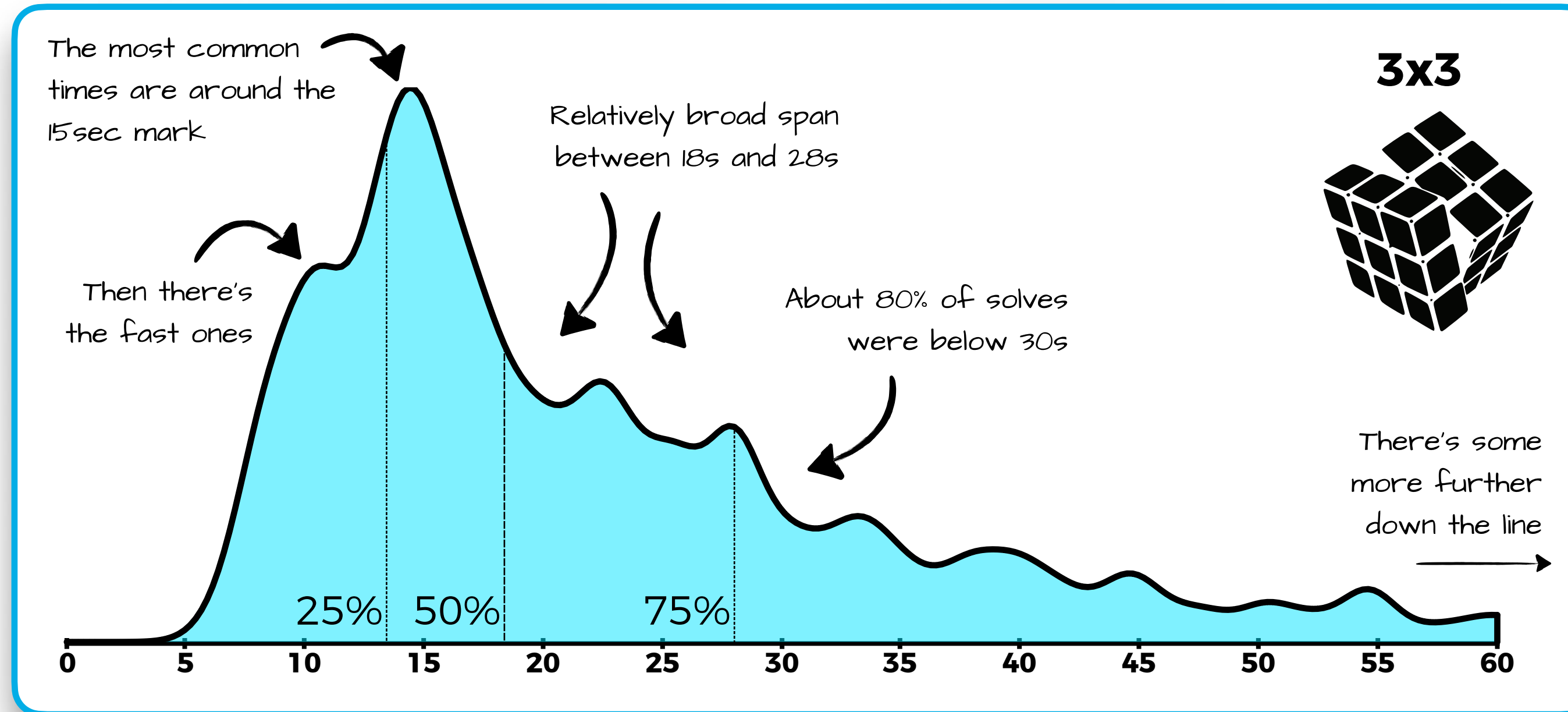CUTOFF RATE

91%   9%

86%   14%

71%   29%

OH   65%   35%

35%   65%

When the cutoff rate was, maybe, a tad harsh...

WITH A QUALIFICATION TIME REQUIREMENT

65%   35%

6x6   82%   18%

7x7   82%   18%

81%   19%

SWISS NATIONALS 2022

3X3 : THE MAIN EVENT WITH A BIG RANGE OF RESULTS, BUT ALSO QUITE A BIT OF SIMILARITIES WITHIN "PERFORMANCE LEVELS"

DISTRIBUTION OF ALL SOLVES FOR FIRST ROUND

The most common times are around the 15sec mark

Then there's the fast ones

Relatively broad span between 18s and 28s

About 80% of solves were below 30s

3x3

There's some more further down the line →

25% 50% 75%

0 5 10 15 20 25 30 35 40 45 50 55 60

2ND ROUND AND FINALS

The time to beat to pass to 2nd round was ⏱ 18.48s

Final

2nd Round

25%50%75% 50% 75%

5 10 15 20 25

TIMES BY SOLVE # IN THE 1ST ROUND

30
25
20 18.2 19.5 18.9 17.9 19.0
15
10
5
0
    1   2   3   4   5

TIMES BY SOLVE # IN THE 2ND ROUND

30
25
20
15 12.7 12.5 13.5 13.3 13.7
10
5
0
    1   2   3   4   5

TIMES BY SOLVE # IN THE FINAL

The spread of results shrinks more and more at each stage

30
25
20
15
10 10.2 9.8 9.2 8.9 9.7
5
0
    1   2   3   4   5

SS NATIONALS 2022

THERE ARE SEVERAL TIERS OF PERFORMANCE IN PYRAMIDS, WITH A GOOD AMOUNT OF SOLVERS WITHIN EACH TIER (~25% PER GROUP)

DISTRIBUTION OF FIRST ROUND AVERAGES

Pyraminx

Three distinct performance peaks

And here come the fastest solvers

The time to beat to get to the final was
⏱ **6.27**

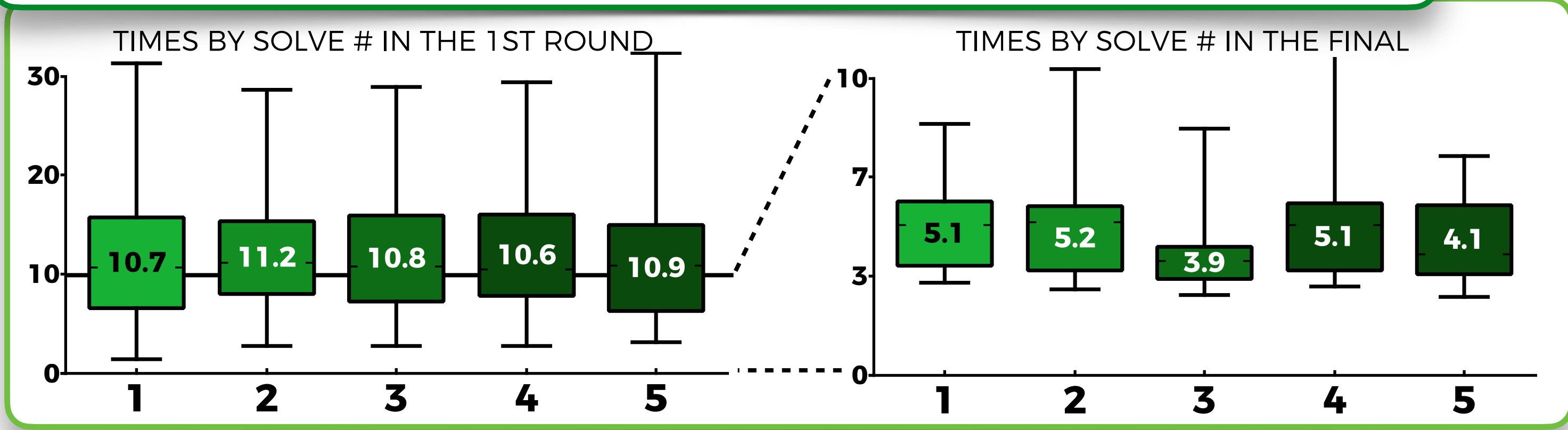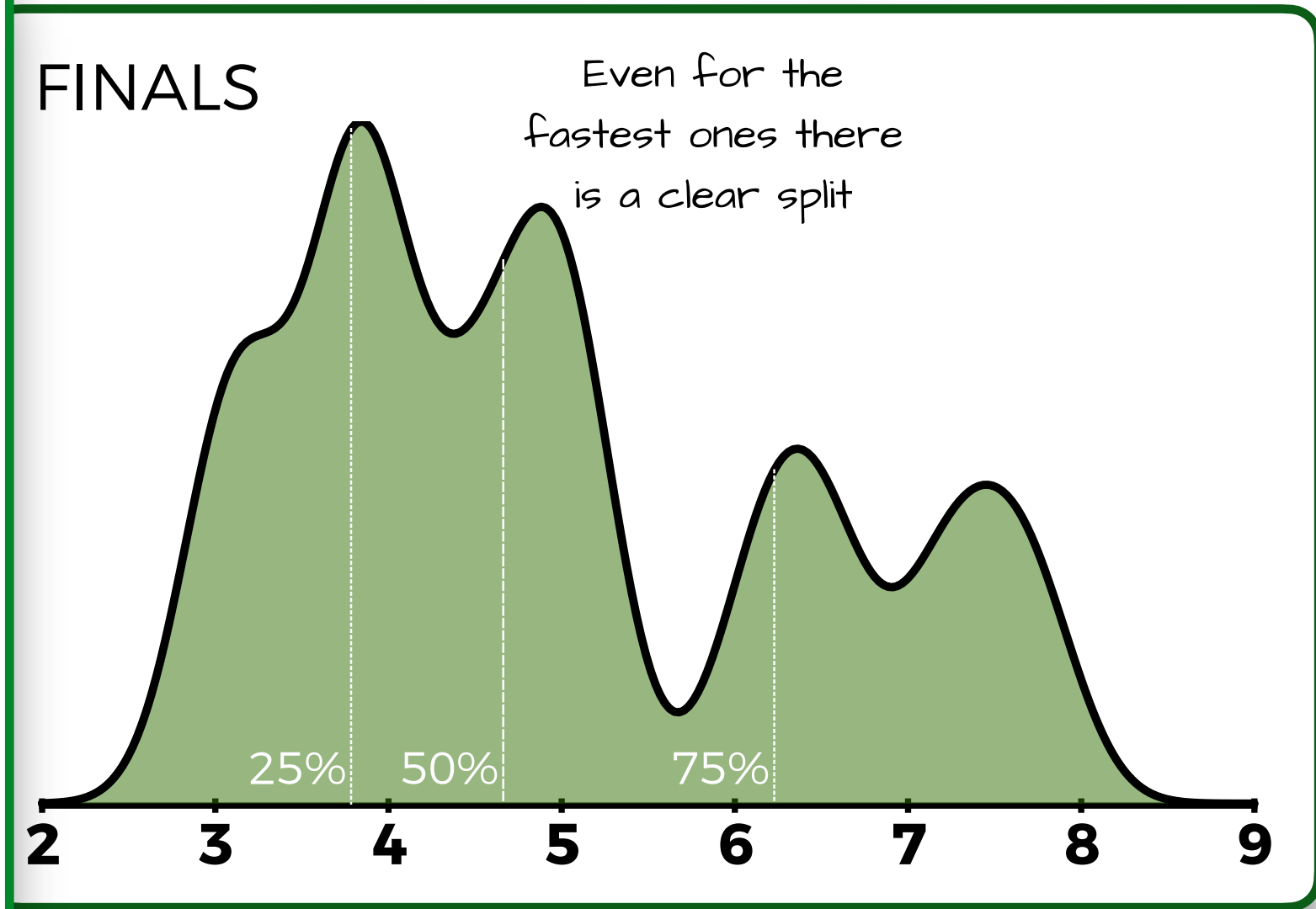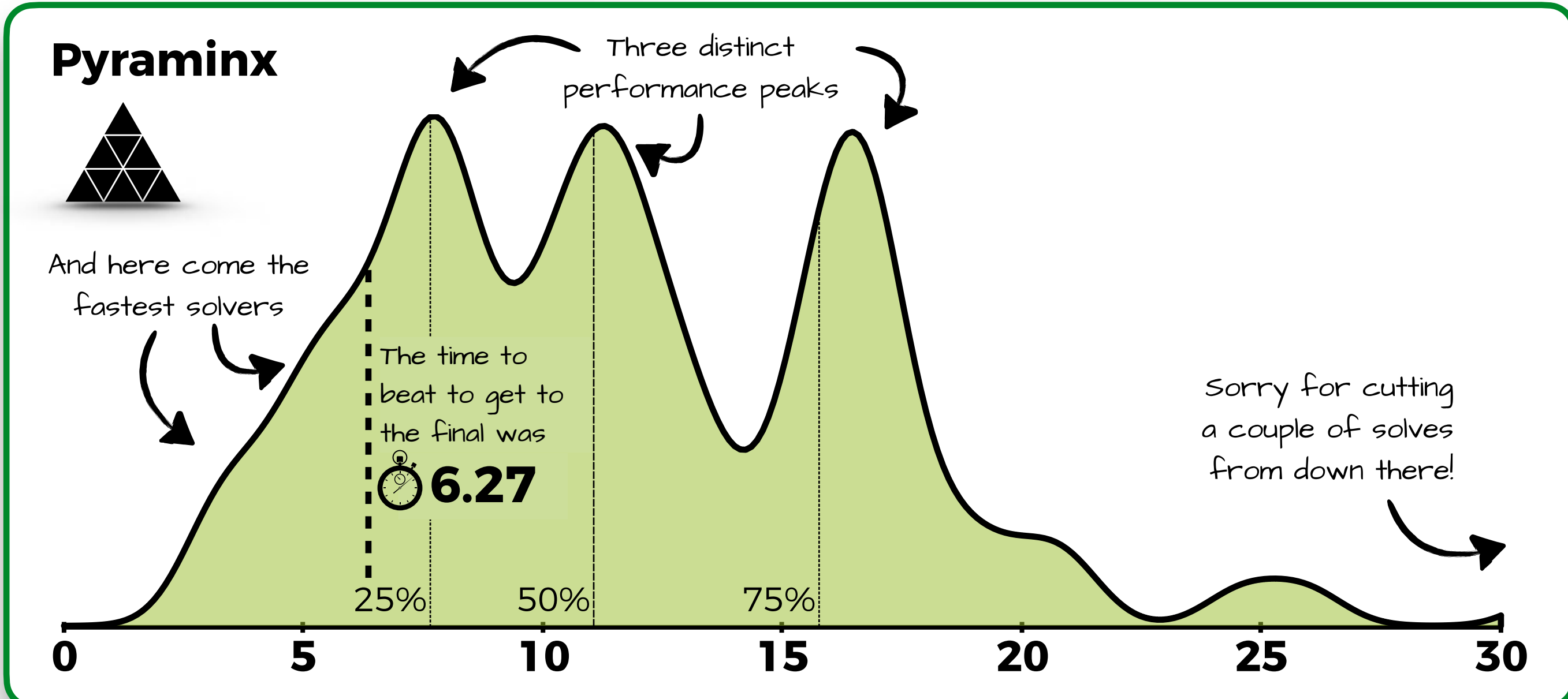25%   50%   75%

Sorry for cutting a couple of solves from down there!

0   5   10   15   20   25   30

FINALS

Even for the fastest ones there is a clear split

25%   50%   75%

2   3   4   5   6   7   8   9

TIMES BY SOLVE # IN THE 1ST ROUND

30
20
10
0

| 10.7 | 11.2 | 10.8 | 10.6 | 10.9 |

1   2   3   4   5

TIMES BY SOLVE # IN THE FINAL

10
7
5
3
0

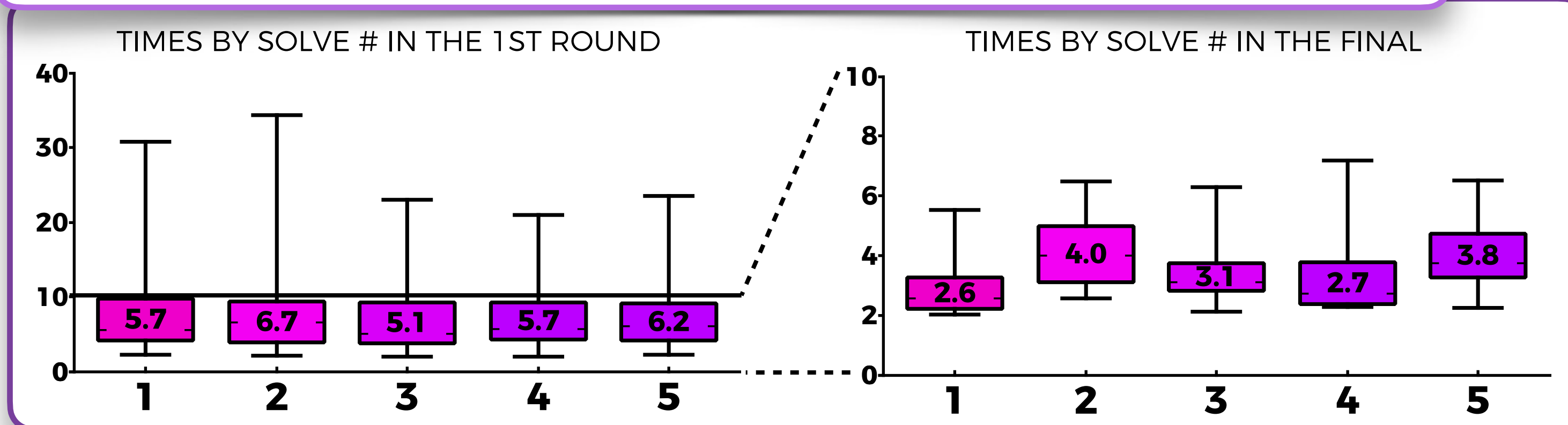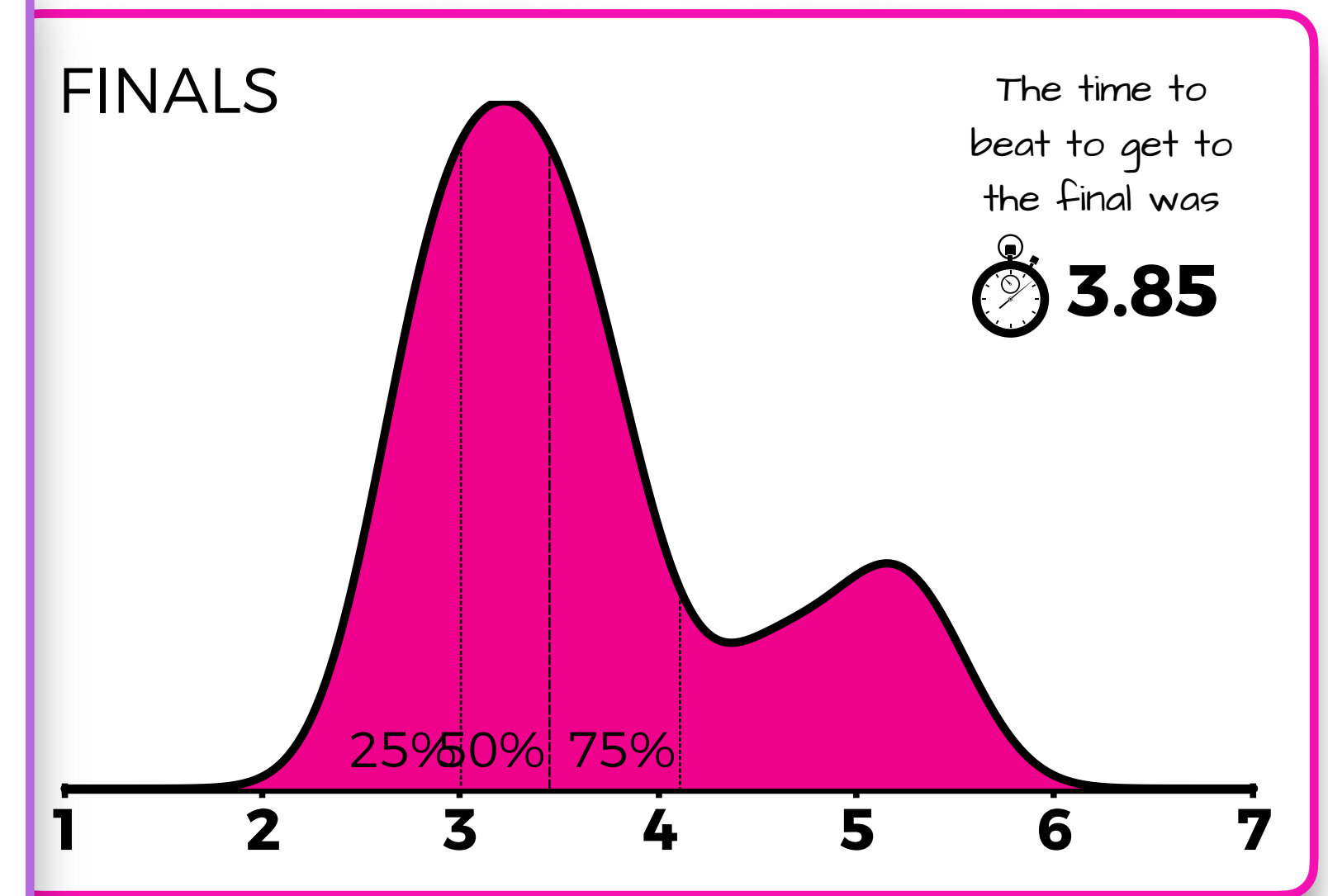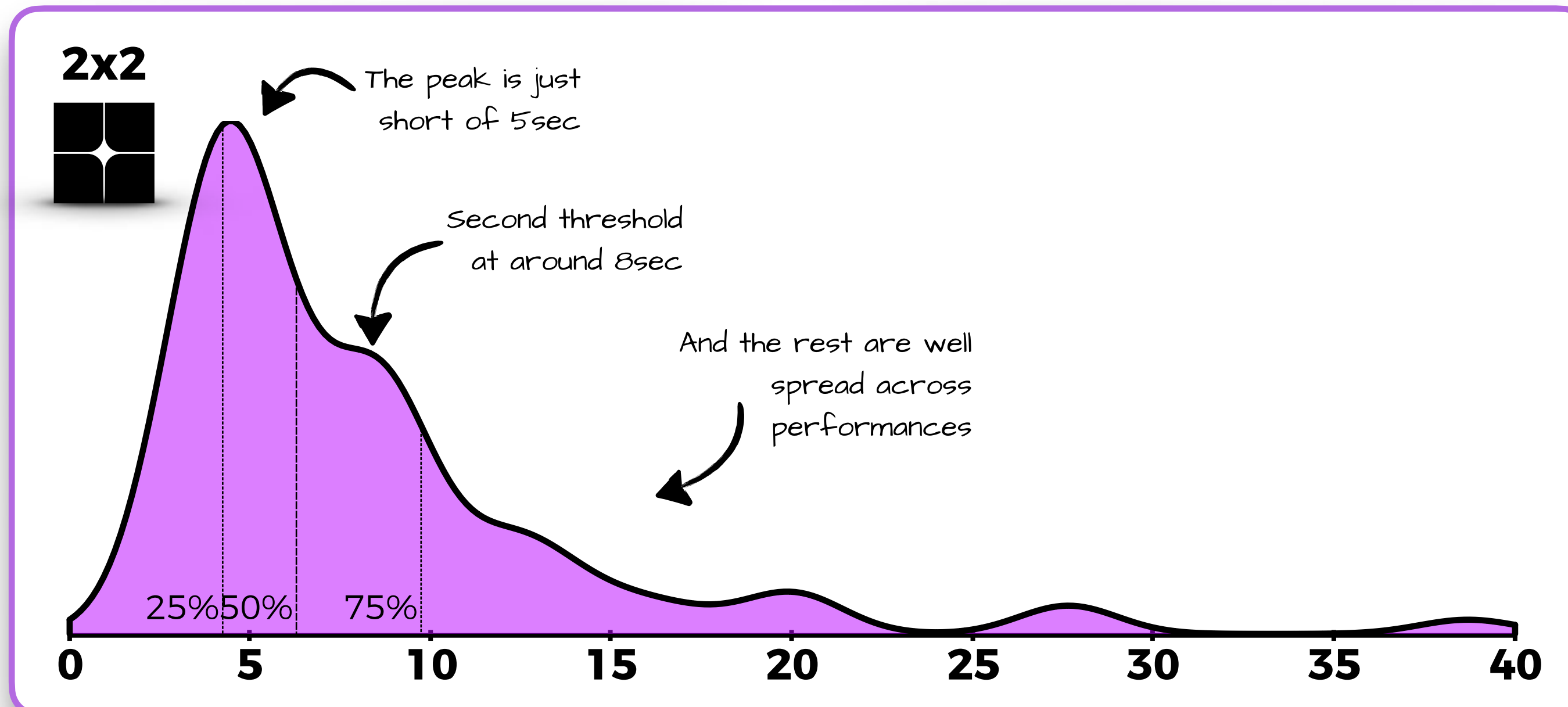| 5.1 | 5.2 | 3.9 | 5.1 | 4.1 |

1   2   3   4   5

The median performance in the first round is very consistent across solves, More variability in the final with a lucky scramble #3!

Brought to you by Bas
https://basilio.dev/cubing

SWISS NATIONALS 2022

2X2 : A COUPLE OF PERFORMANCE THRESHOLDS AT THE 5 AND 8 SECONDS AVERAGES, WITH VERY CONSISTENT MEDIAN TIMES FOR MOST SCRAMBLES

DISTRIBUTION OF FIRST ROUND AVERAGES

2x2

The peak is just short of 5sec

Second threshold at around 8sec

And the rest are well spread across performances

25% 50%   75%

0   5   10   15   20   25   30   35   40

FINALS

The time to beat to get to the final was ⏱ **3.85**

25% 50% 75%

1   2   3   4   5   6   7

TIMES BY SOLVE # IN THE 1ST ROUND

1	2	3	4	5
5.7	6.7	5.1	5.7	6.2

TIMES BY SOLVE # IN THE FINAL

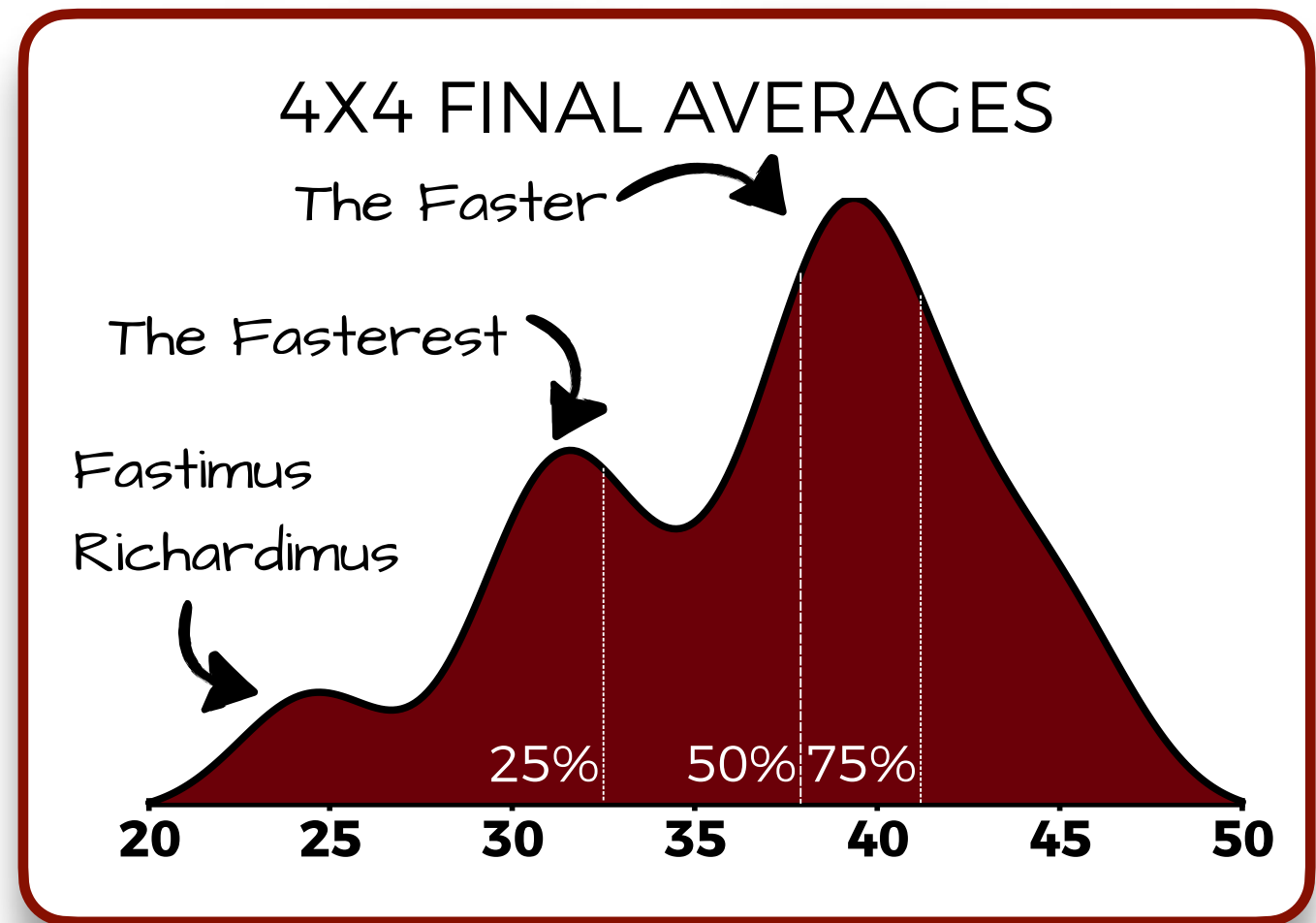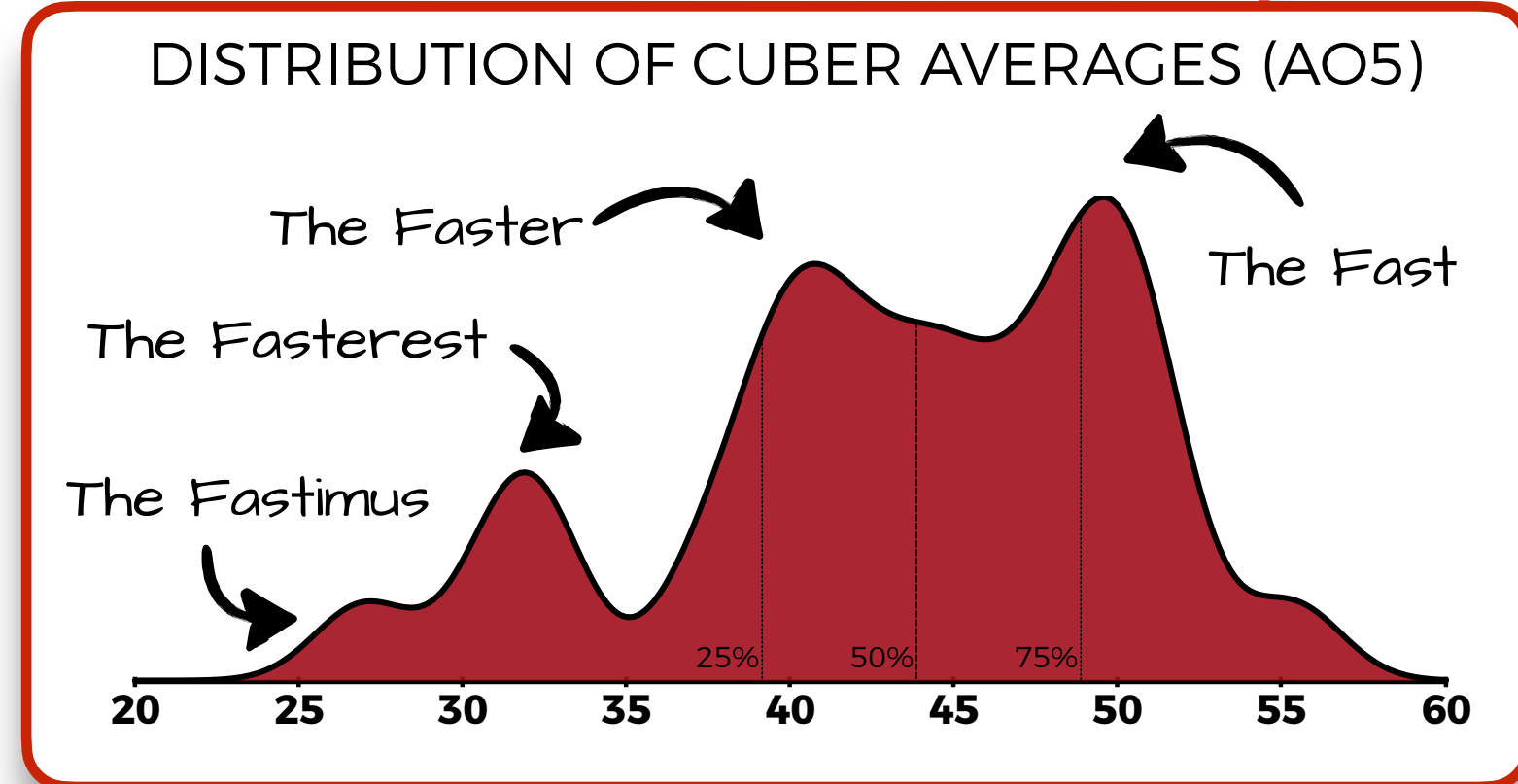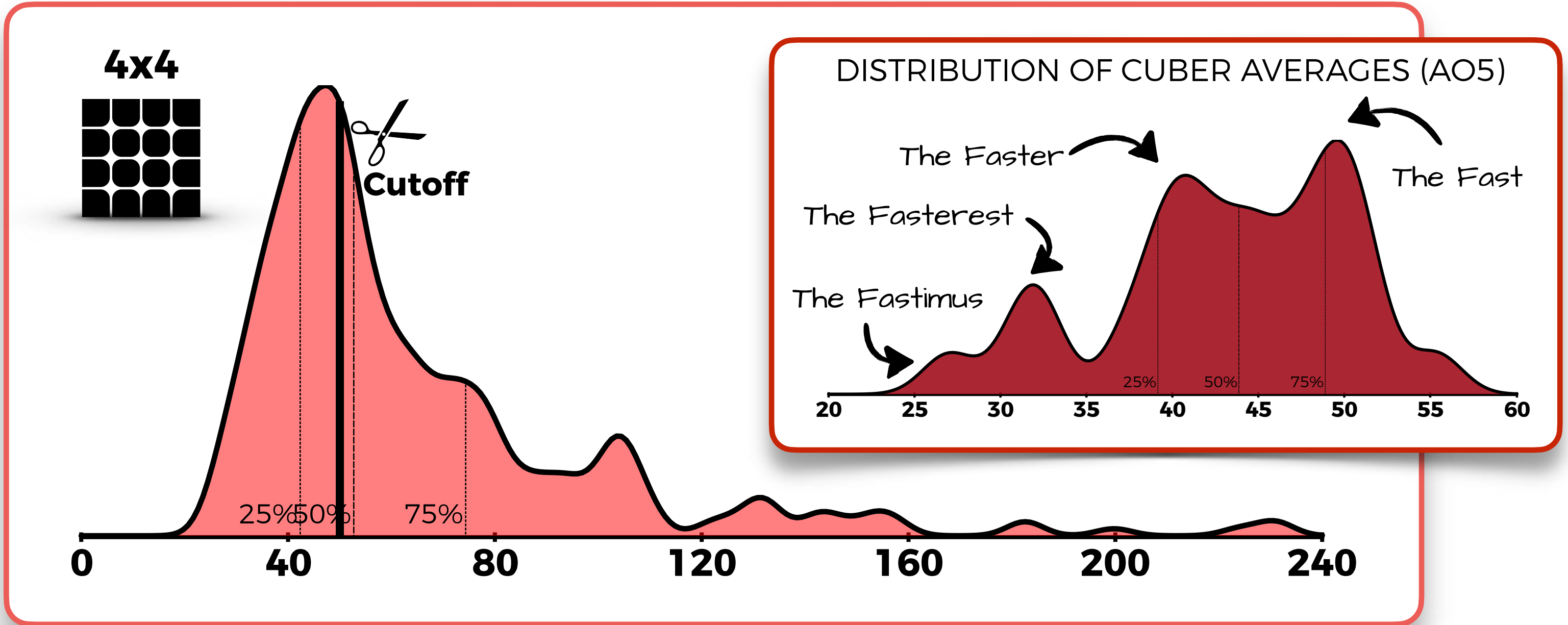| 1	2	3	4	5
2.6	4.0	3.1	2.7	3.8

The median performance in the first round is very consistent across solves, the results start to spread out when you get to the final

SWISS NATIONALS 2022
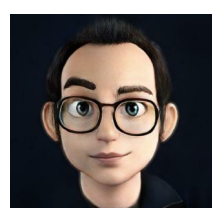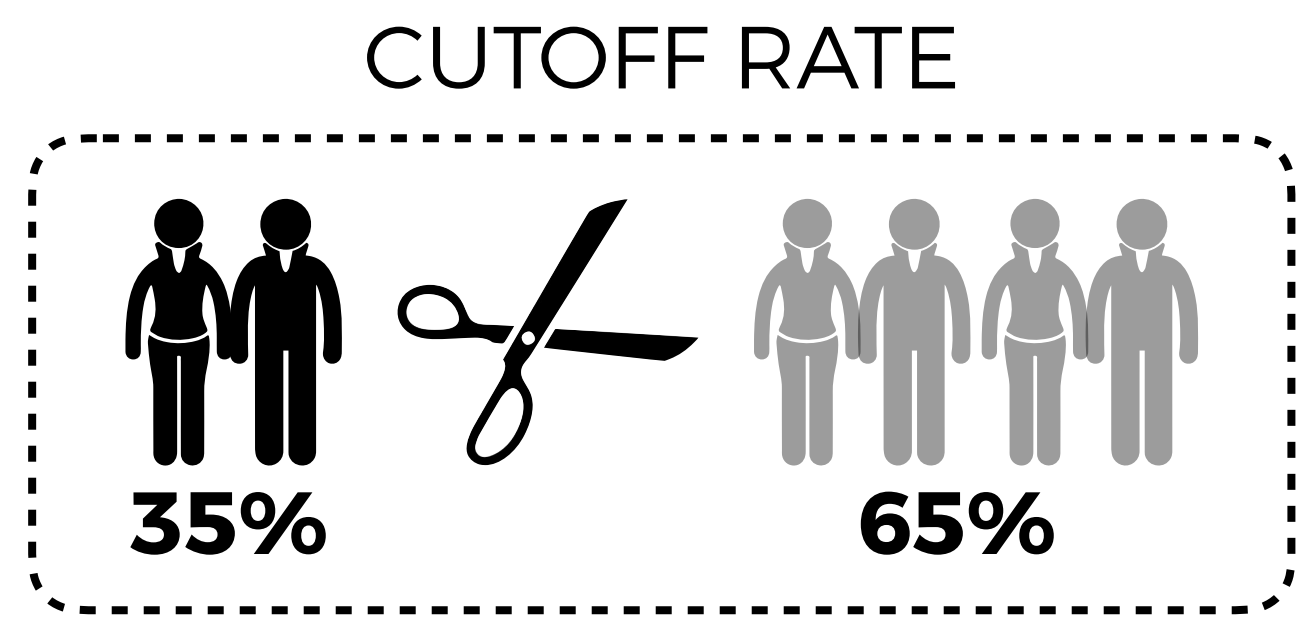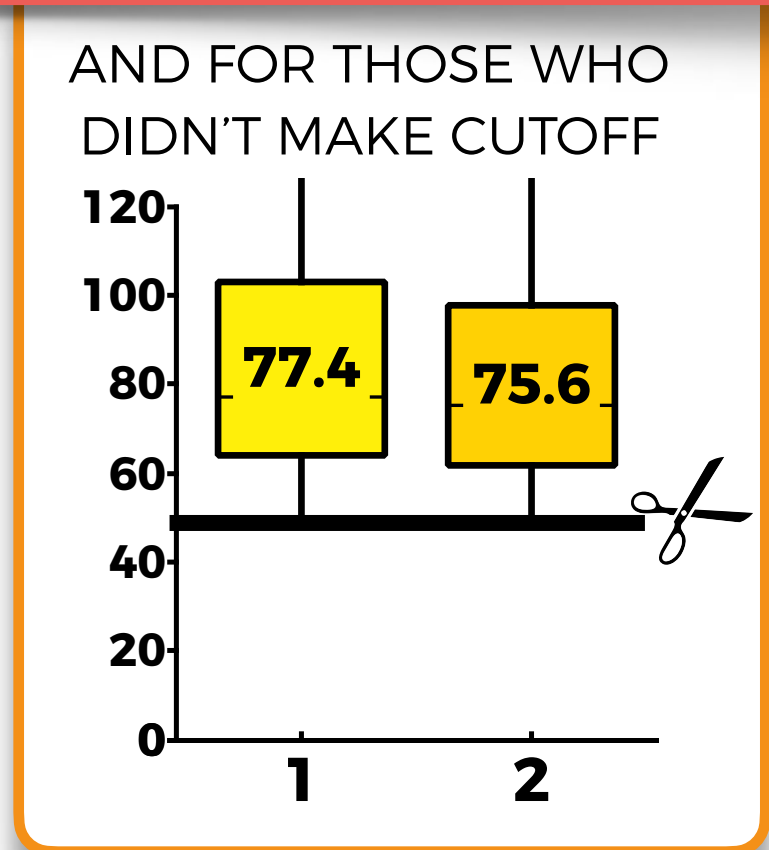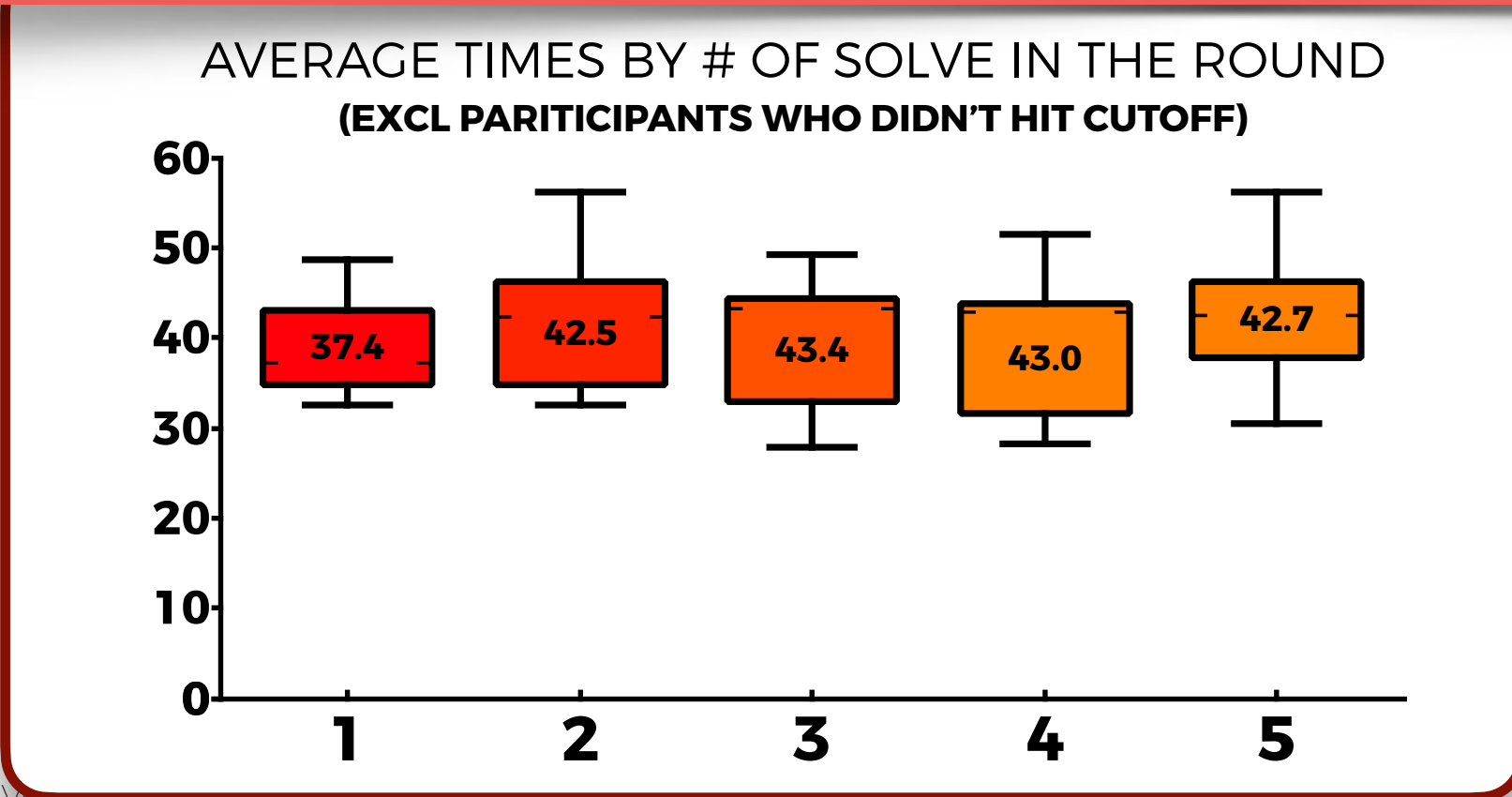
4X4 : CUTOFF WAS MAYBE A BIT BRUTAL, BUT PARTICIPANTS STILL MANAGED TO GET SOME GOOD AND SOME REALLY GOOD RESULTS!

DISTRIBUTION OF ALL SOLVES FROM ALL PARTICIPANTS

4x4

Cutoff

25% 50% 75%

0 40 80 120 160 200 240

DISTRIBUTION OF CUBER AVERAGES (AO5)

The Faster

The Fast

The Fasterest

The Fastimus

25% 50% 75%

20 25 30 35 40 45 50 55 60

4X4 FINAL AVERAGES

The Faster

The Fasterest

Fastimus

Richardimus

25% 50% 75%

20 25 30 35 40 45 50

Final really did showcase
the 3 performance tiers

AVERAGE TIMES BY # OF SOLVE IN THE ROUND
(EXCL PARITICIPANTS WHO DIDN'T HIT CUTOFF)

37.4	42.5	43.4	43.0	42.7
1	2	3	4	5

AND FOR THOSE WHO DIDN'T MAKE CUTOFF

77.4	75.6
1	2

CUTOFF RATE

35%   65%

Totally not salty about the 50s
cutoff time.... for real...

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SWISS
NATIONALS
2022

SKEWB IS POPULAR AND QUICK, AND THE FAST ARE ALL VERY FAST, CLUSTERING AT THE SHORT END OF THE TIME SPREAD

DISTRIBUTION OF ALL SOLVES FROM ALL PARTICIPANTS

Skewb

The peak is very forward

Cutoff

25% 50% 75%

0   10   20   30   40   50

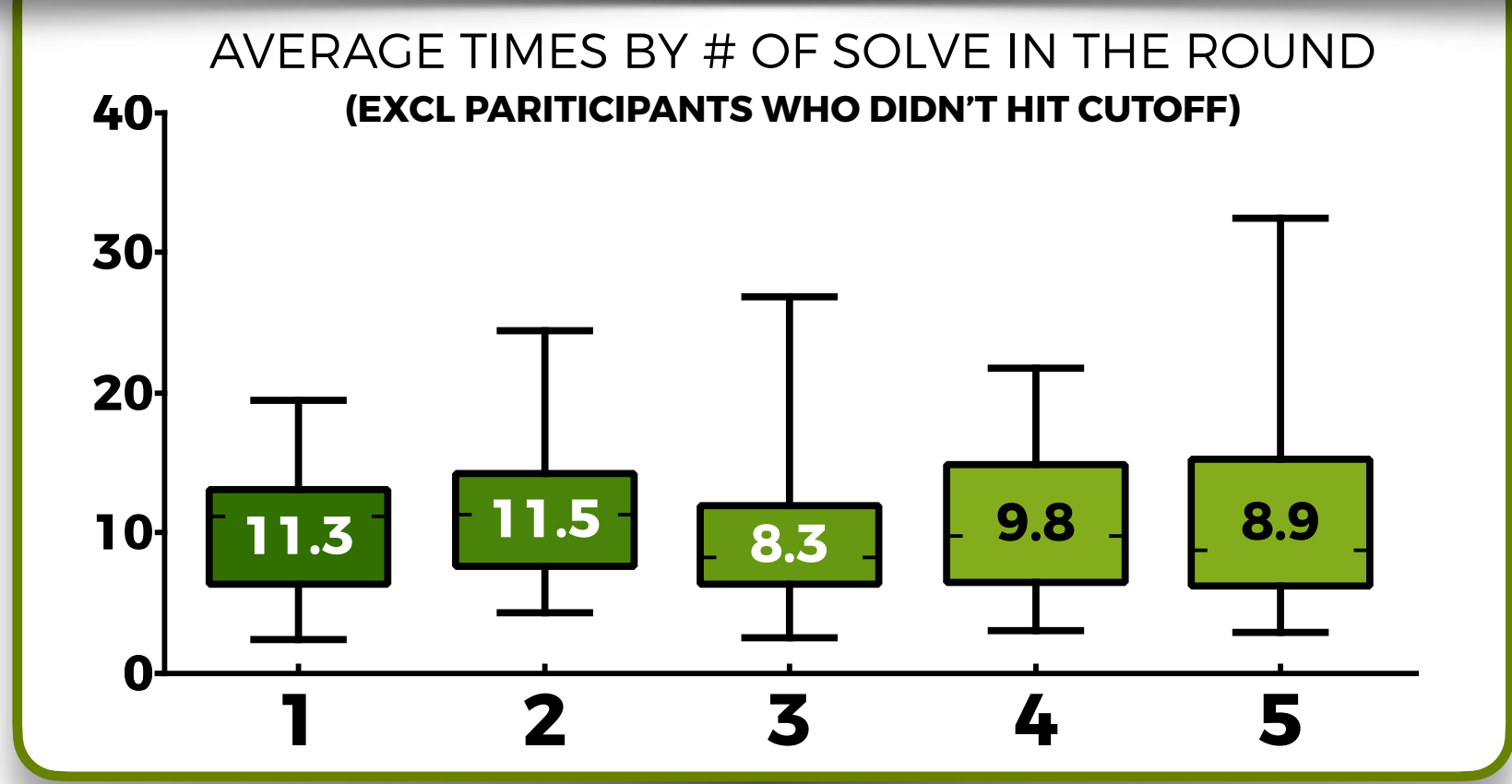### DISTRIBUTION OF CUBER AVERAGES (AO5)

There is a clear split between Fast and Moderate skewbers but the distribution is long tailed

25% 50%   75%

0   5   10   15   20   25   30

SKEWB FINAL AVERAGES

25% 50% 75%

0   2   4   6   8   10   12

AVERAGE TIMES BY # OF SOLVE IN THE ROUND
(EXCL PARITICIPANTS WHO DIDN'T HIT CUTOFF)

1	2	3	4	5
11.3	11.5	8.3	9.8	8.9

CUTOFF RATE

91%   9%
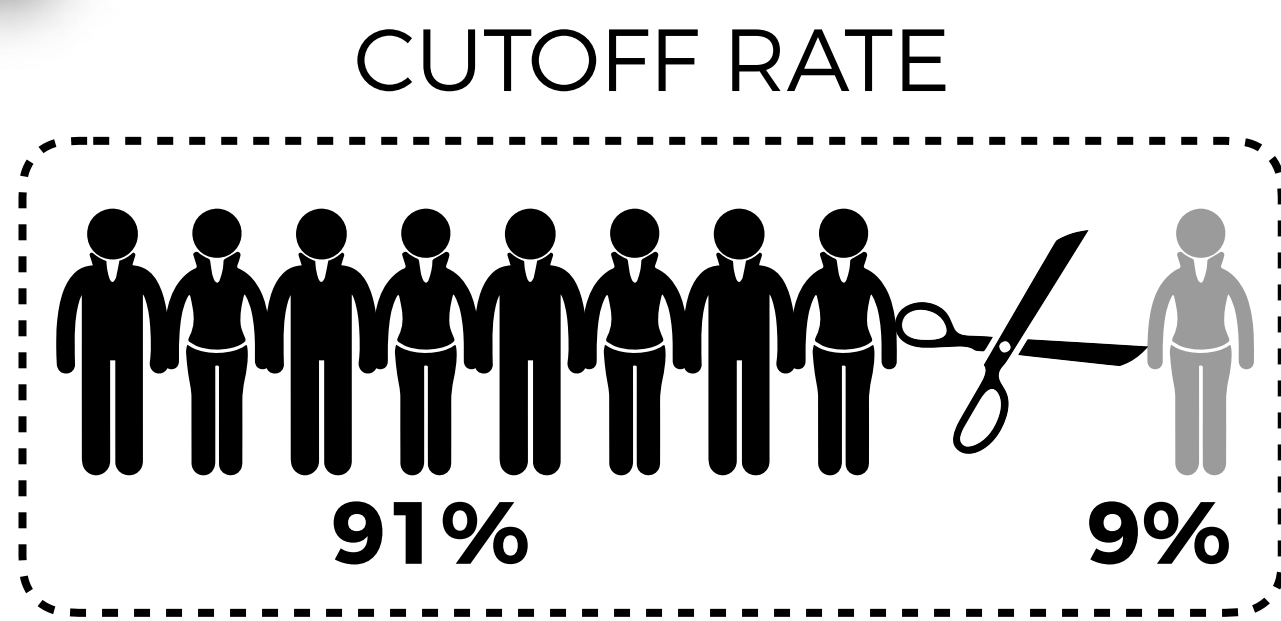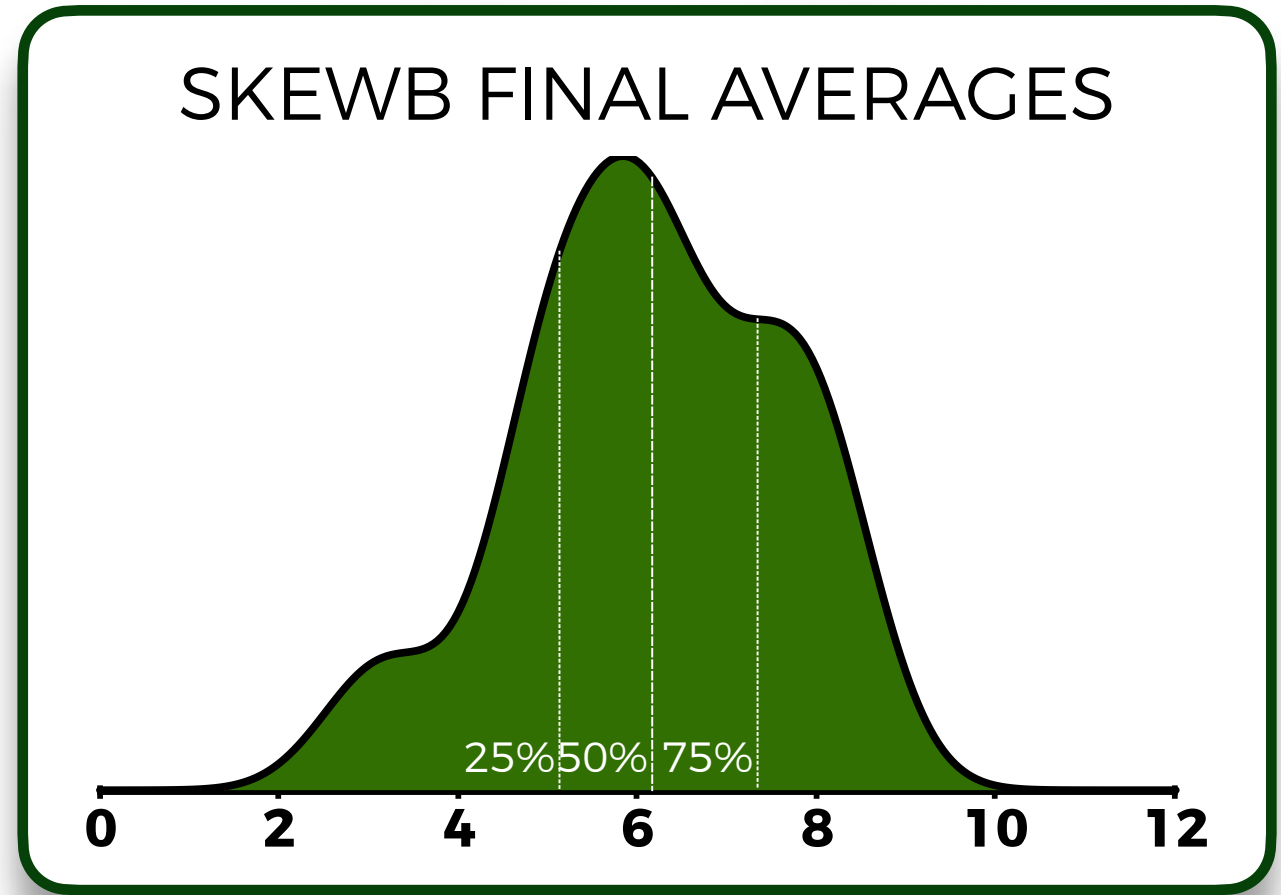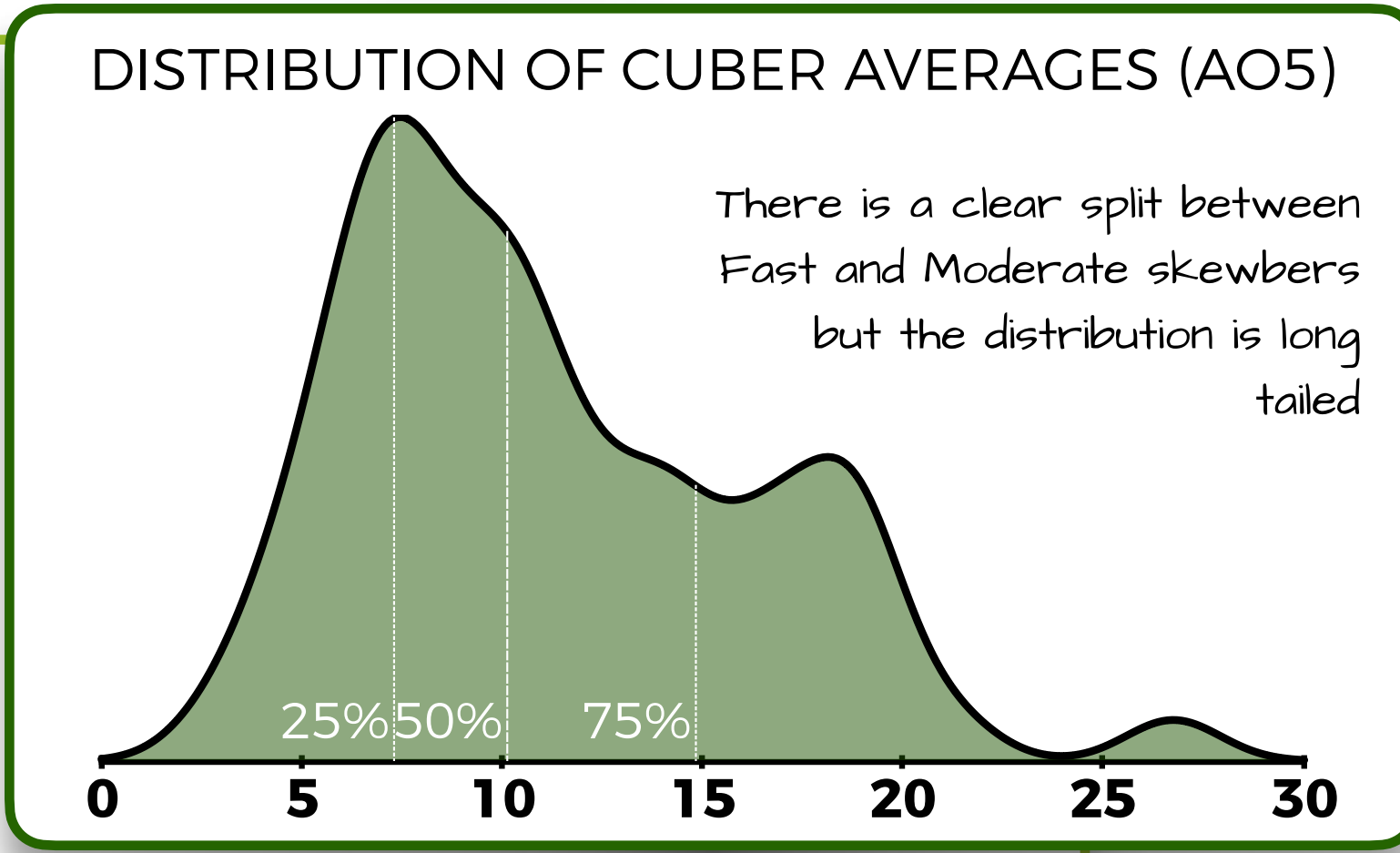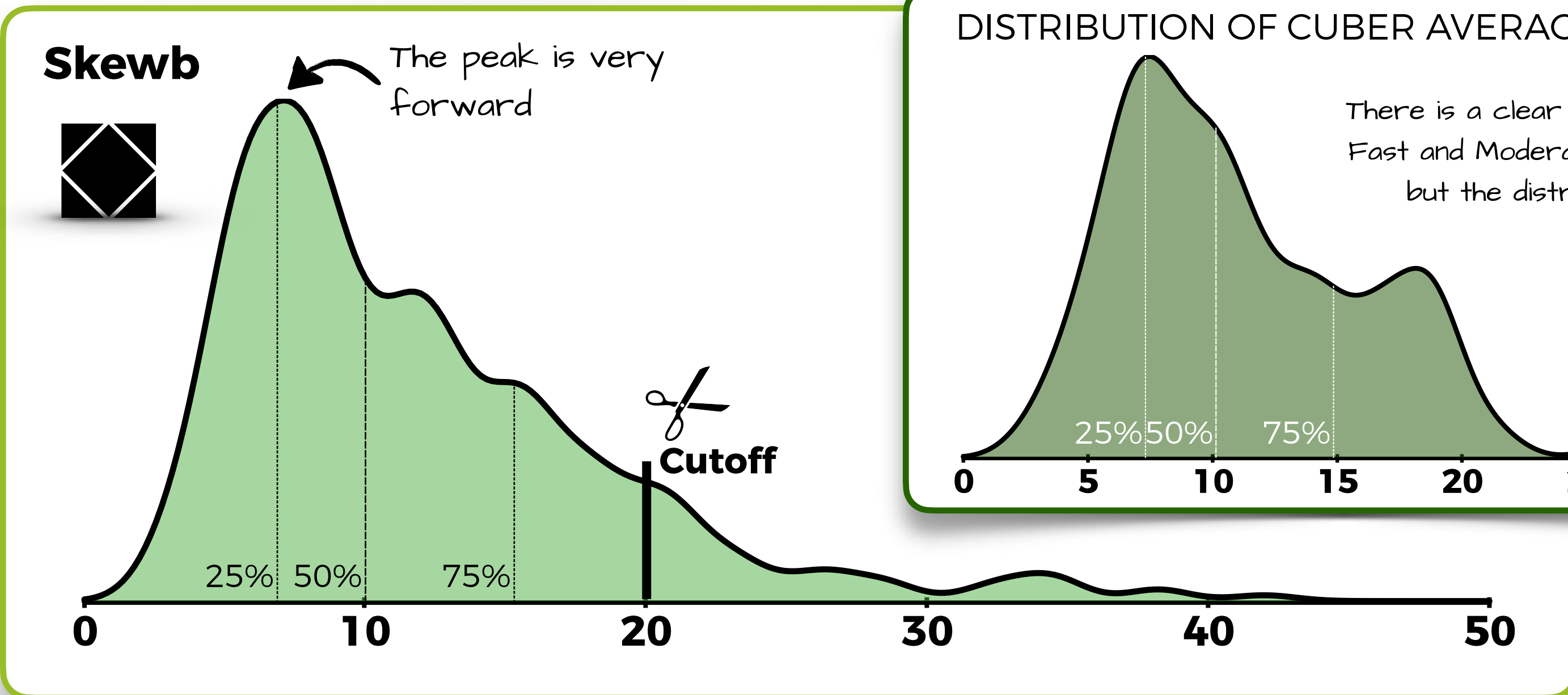
Very generous cutoff, let most people get through

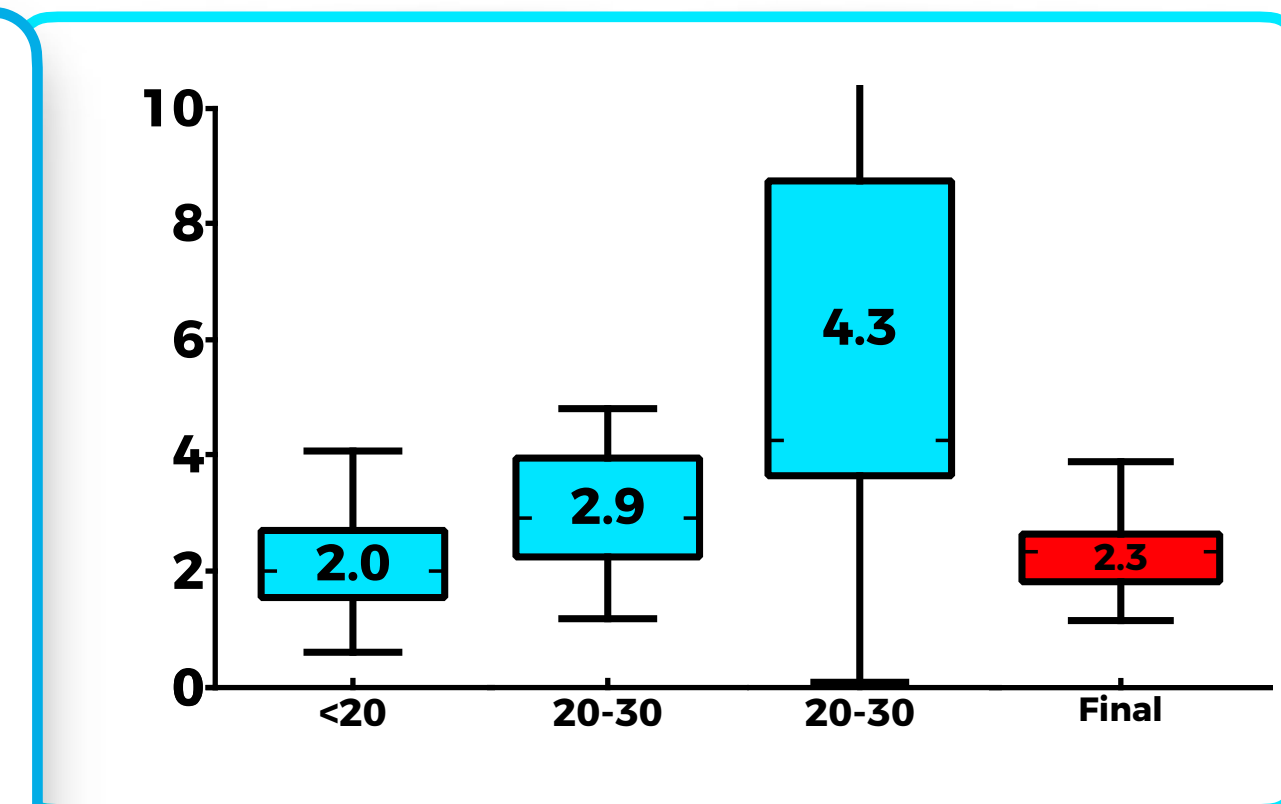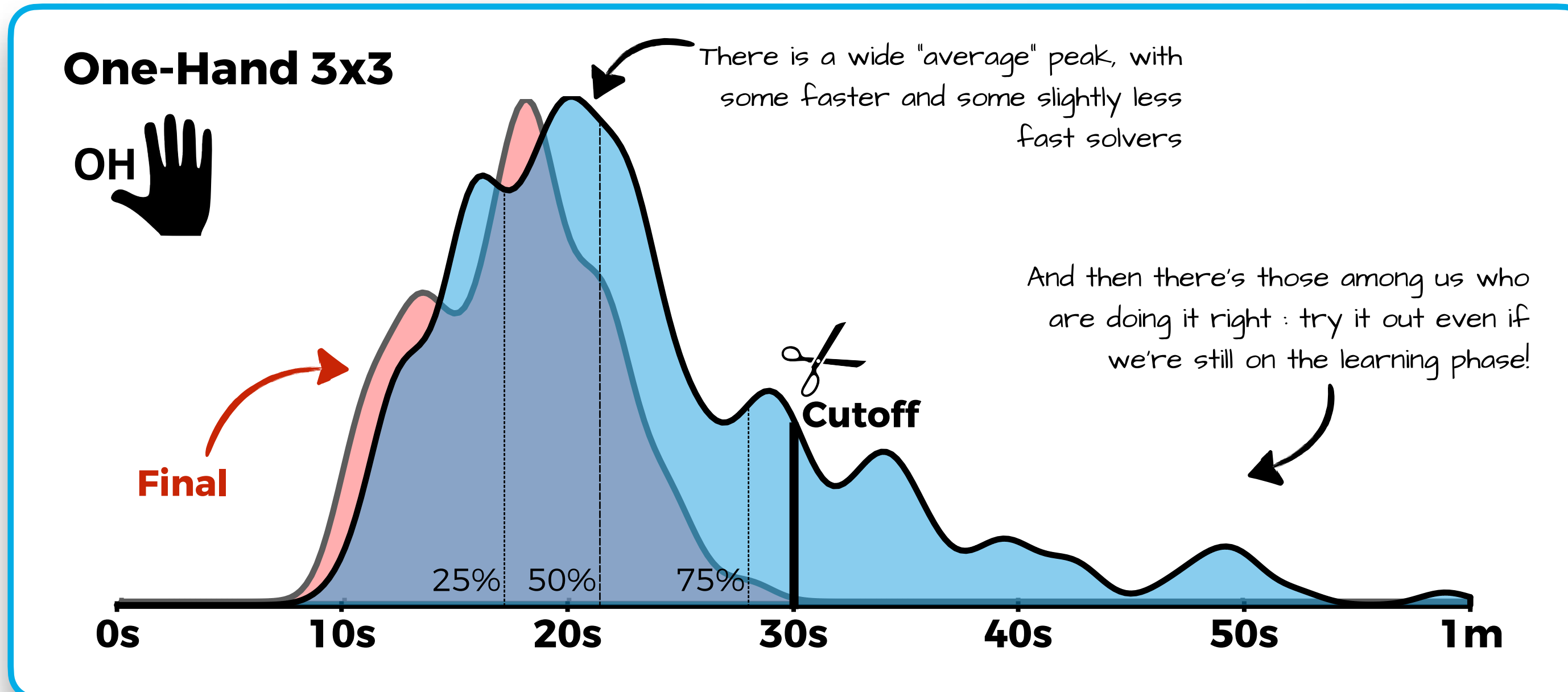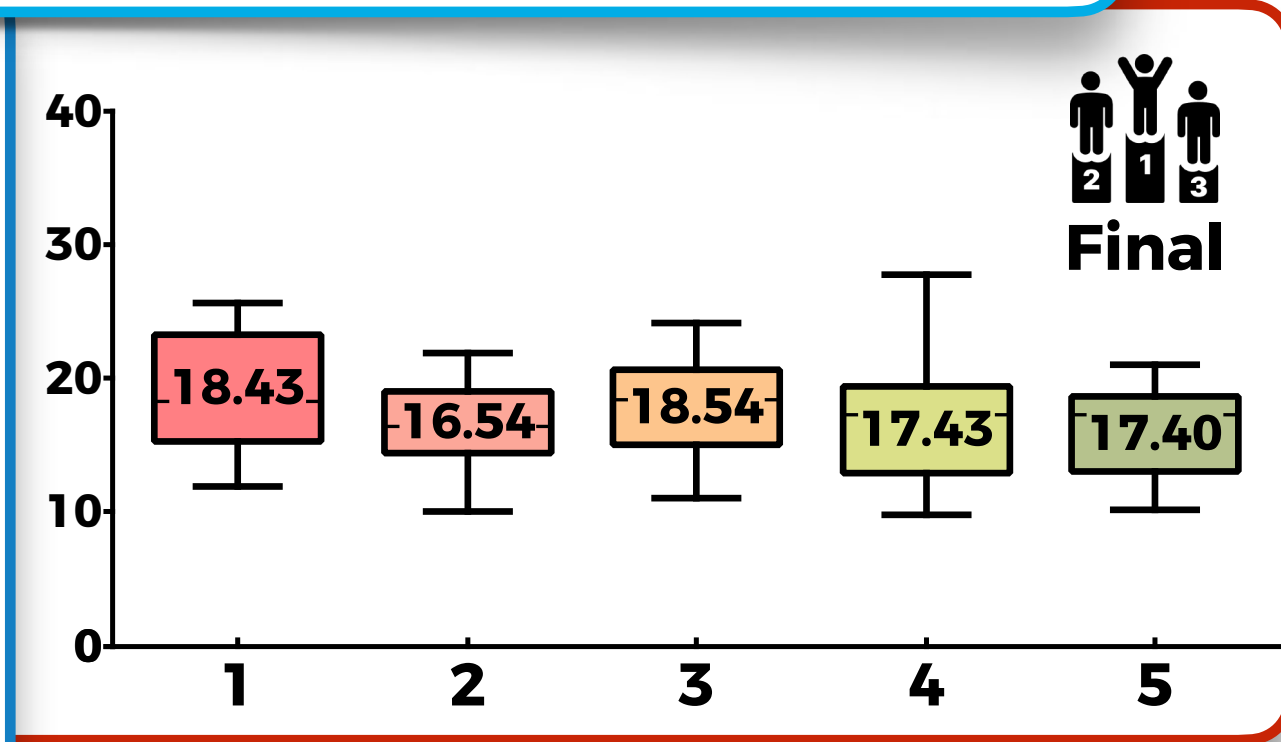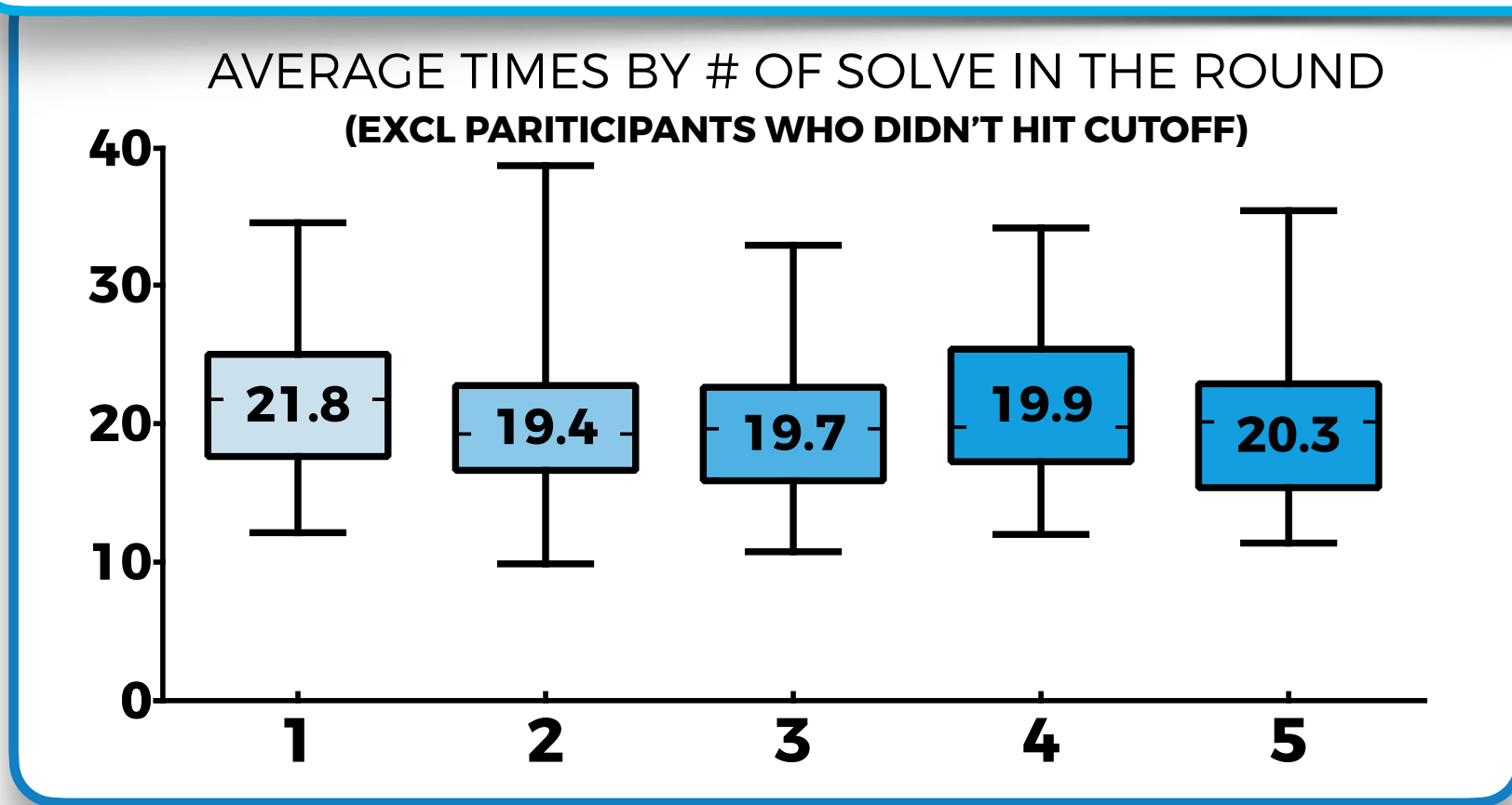# OH SOLVERS ARE WELL DISTRIBUTED AROUND THE 20S MARK, WITH A RELATIVELY TIGHT DEVIATION FOR THE FASTER PARTICIPANTS

## DISTRIBUTION OF ALL SOLVES FROM ALL PARTICIPANTS

One-Hand 3x3

OH

There is a wide "average" peak, with some faster and some slightly less fast solvers

And then there's those among us who are doing it right : try it out even if we're still on the learning phase!

Final

✂ **Cutoff**

25% 50% 75%

0s   10s   20s   30s   40s   50s   1m

STANDARD DEVIATION PER PARTICIPANT

Standard deviation is pretty tight for fast solvers, at about 10% of total solve time

10
8
6   4.3
4
2   2.0   2.9   2.3
0
<20   20-30   20-30   Final

AVERAGE TIMES BY # OF SOLVE IN THE ROUND
(EXCL PARTICIPANTS WHO DIDN'T HIT CUTOFF)

40
30
20   21.8   19.4   19.7   19.9   20.3
10
0
1   2   3   4   5

Final

40
30
20   18.43   16.54   18.54   17.43   17.40
10
0
1   2   3   4   5

The second solve tends to be faster than the others, but overall, solvers are focusing on each solve individually.

CUTOFF RATE
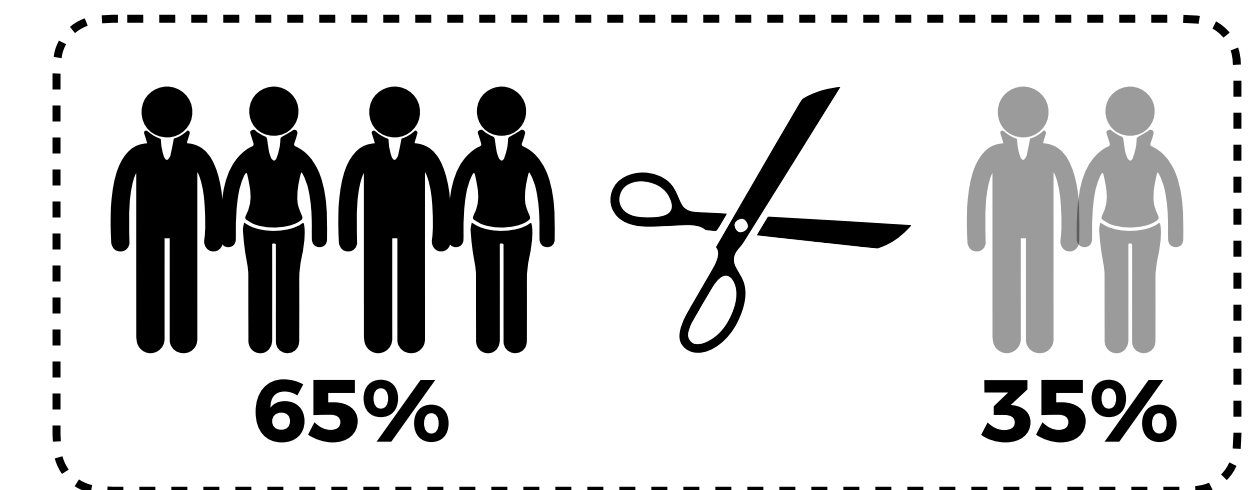
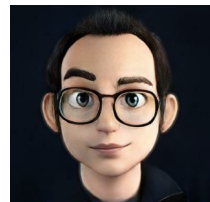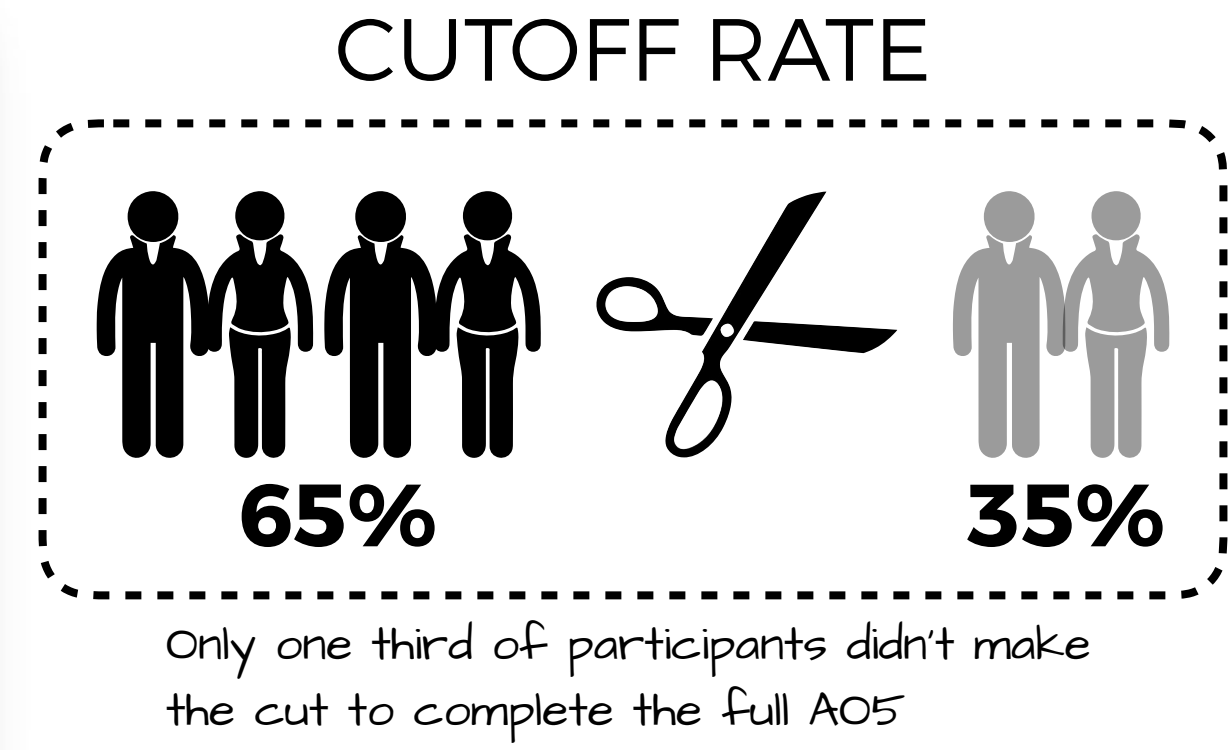65%   35%

Only one third of participants didn't make the cut to complete the full AO5

SWISS NATIONALS 2022

THERE'S A BULK OF 5X5 SOLVERS WITH SIMILAR TIMES; BUT THEN THERE'S THE REALLY FAST LADS

DISTRIBUTION OF FIRST ROUND AVERAGES

5x5

There's a smaller cluster of faster solvers around the minute and a bit mark

The distribution is bottom heavy, meaning there is an overall level (between 1m20 and 1m40) where many solvers cluster together

And then there's the really really fast

25%   50%   75%

25 35 45 55 65 75 85 95 105 115 125

FINALS

The time to beat to get to the final was

⏱ 85.53

25% 50% 75%

45 55 65 75 85 95

TIMES BY SOLVE # IN THE 1ST ROUND

150
125
100
75
50
25
0

80.1 84.1 78.7 79.3 79.6

1 2 3 4 5

TIMES BY SOLVE # IN THE FINAL

150
125
100
75
50
25
0

68.1 68.6 69.8 74.4 66.9

1 2 3 4 5

High consistency across solves for most solves (scrambles were pretty good overall, except for solve #4 in the final round
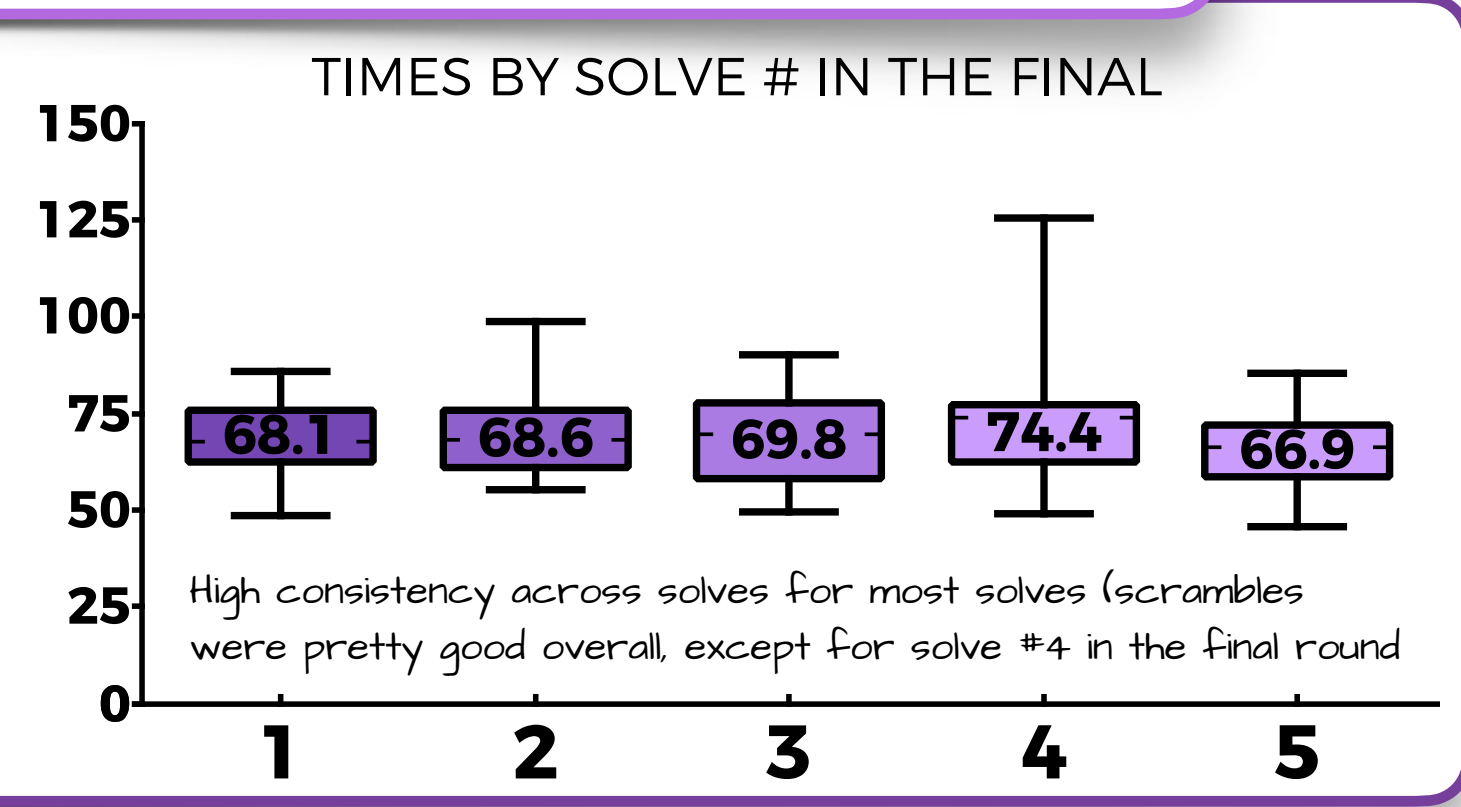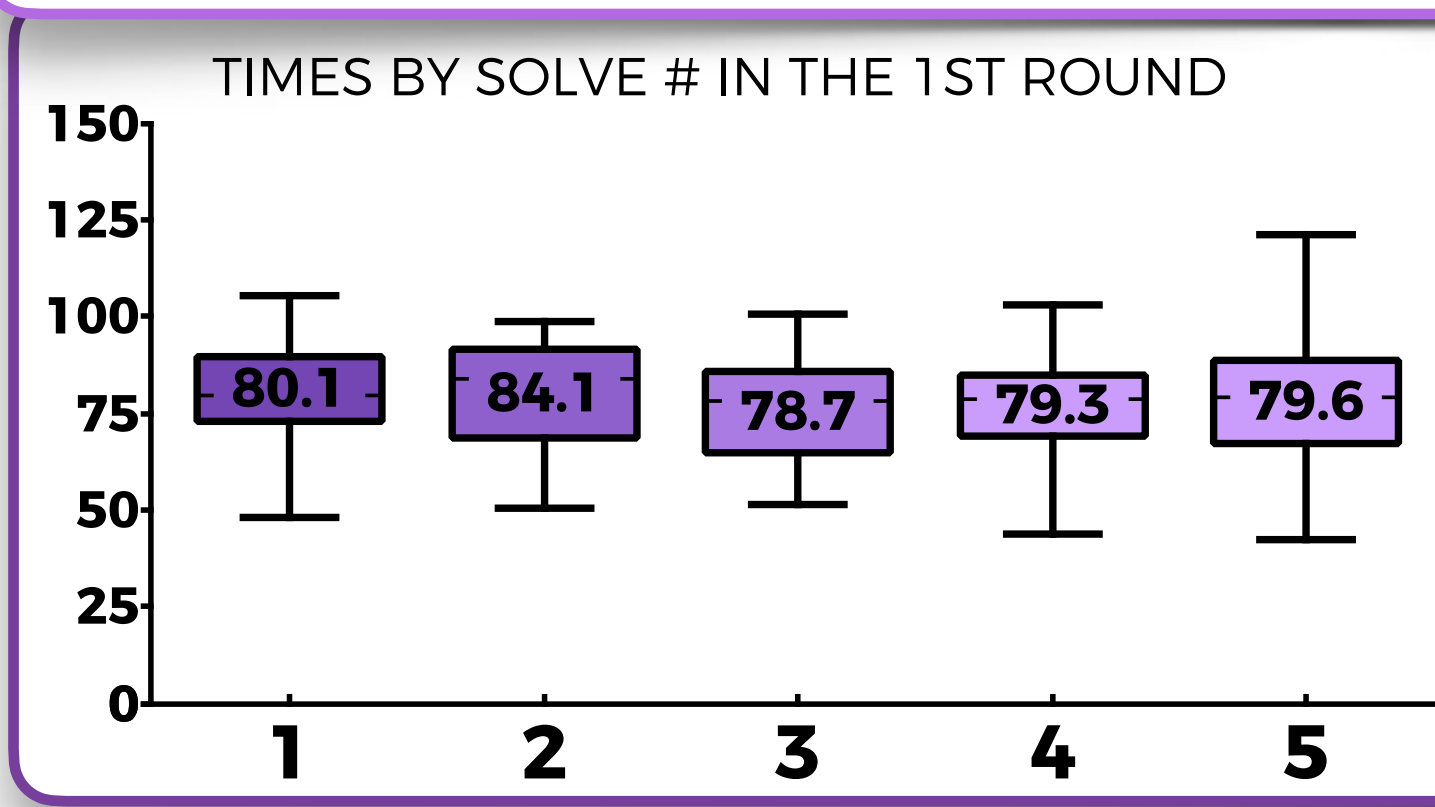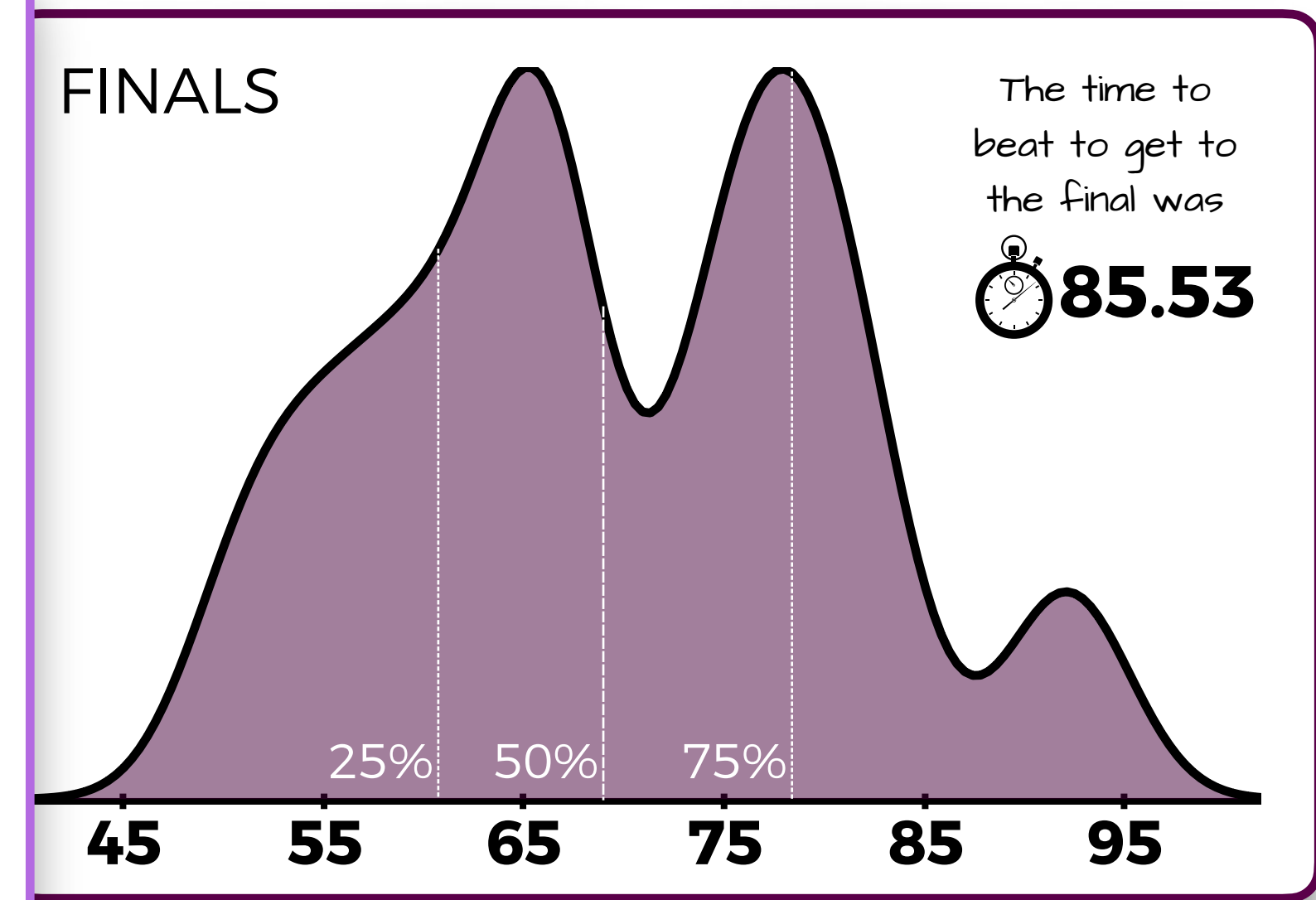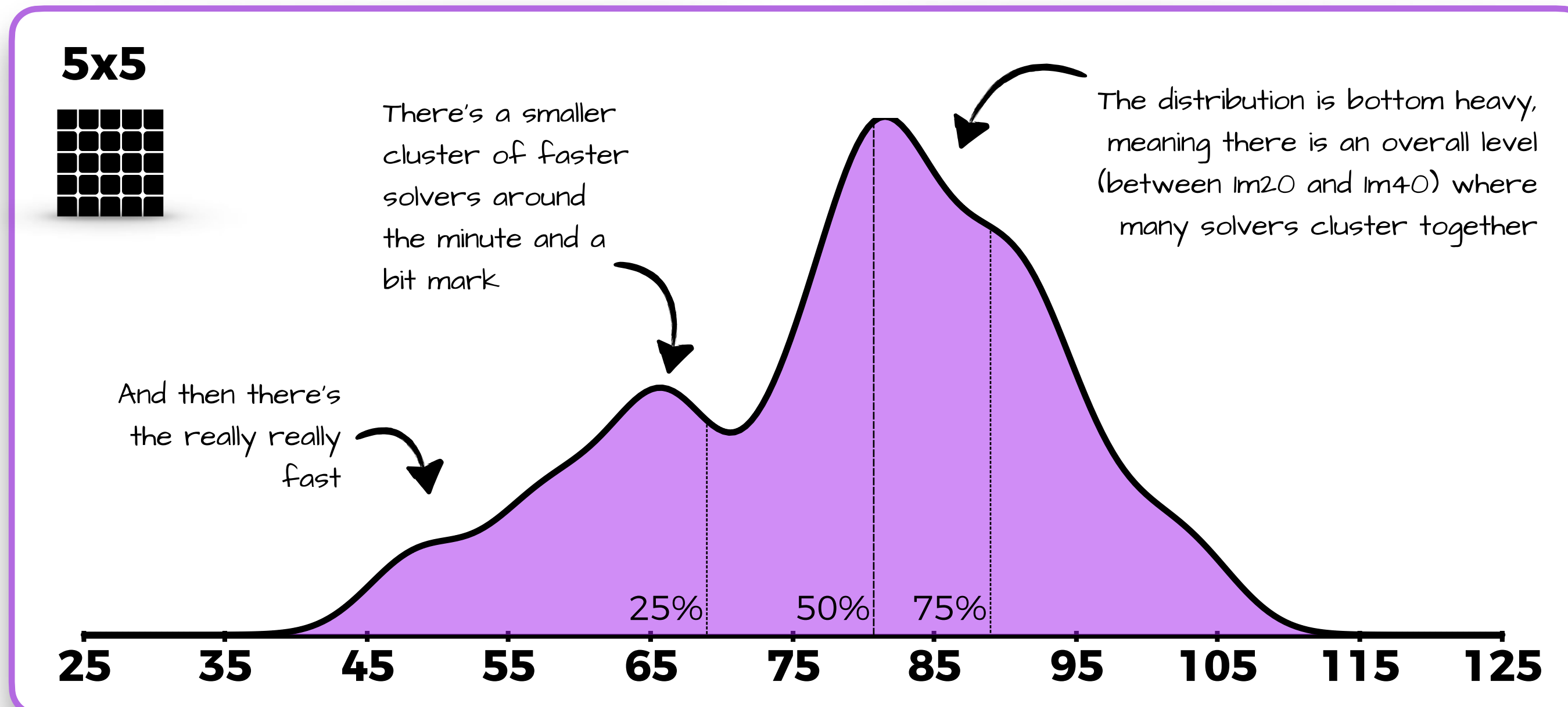
CUTOFF RATE

65%   35%

Only one third of participants didn't make the cut to complete the full AO5

SWISS
NATIONALS
2022

SQUARE ONE : PRETTY SOLIDLY FAST FOR MANY PARTICIPANTS, WITH A SECOND GROUP THAT HOVERS JUST FAST OF THE CUTOFF LINE

DISTRIBUTION OF ALL SOLVES FROM ALL PARTICIPANTS

Square-1

The Fast

The Good

Cutoff

The Brave

Big separation across solves and solvers : Is it luck with parity or is knowing the right algsets such a big divider?

25% 50% 75%

0s 20s 40s 1m 1m 20s 1m 40s 2m

DISTRIBUTION OF CUBER AVERAGES (AO5)

This shows even more clearly the different "tiers" of performance

25% 50% 75%

0 10 20 30 40 50

AVERAGE TIMES BY # OF SOLVE IN THE ROUND
(EXCL PARITICIPANTS WHO DIDN'T HIT CUTOFF)

45

30

15

0

17.35 23.06 16.06 19.53 17.02

1 2 3 4 5

STANDARD DEVIATION PER PARTICIPANT

10
8
6
4
2
0

2.9 4.9

<20 20-30

Standard deviation is pretty tight for fast solvers, at about 15% of total solve time
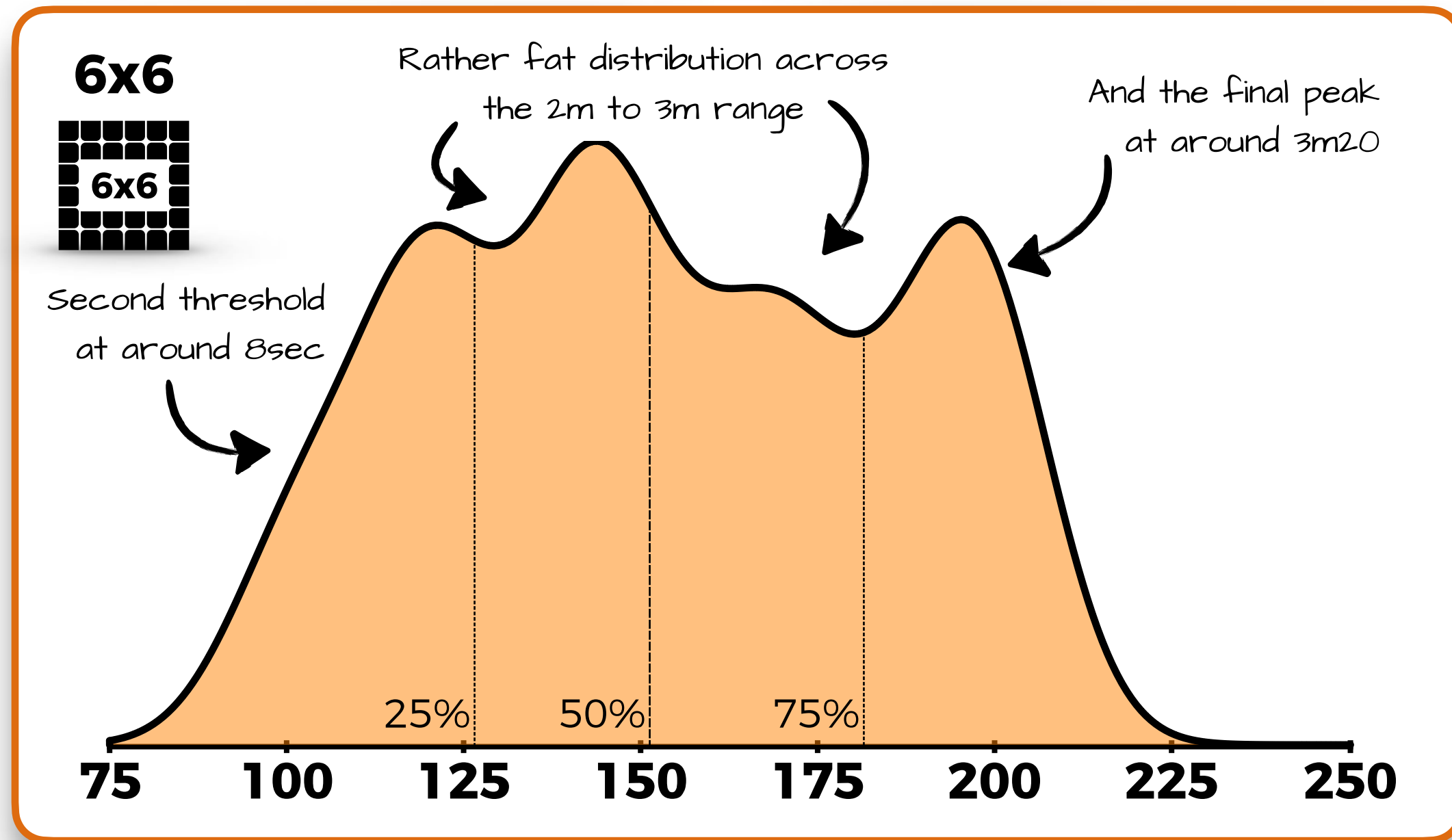
CUTOFF RATE

71% 29%
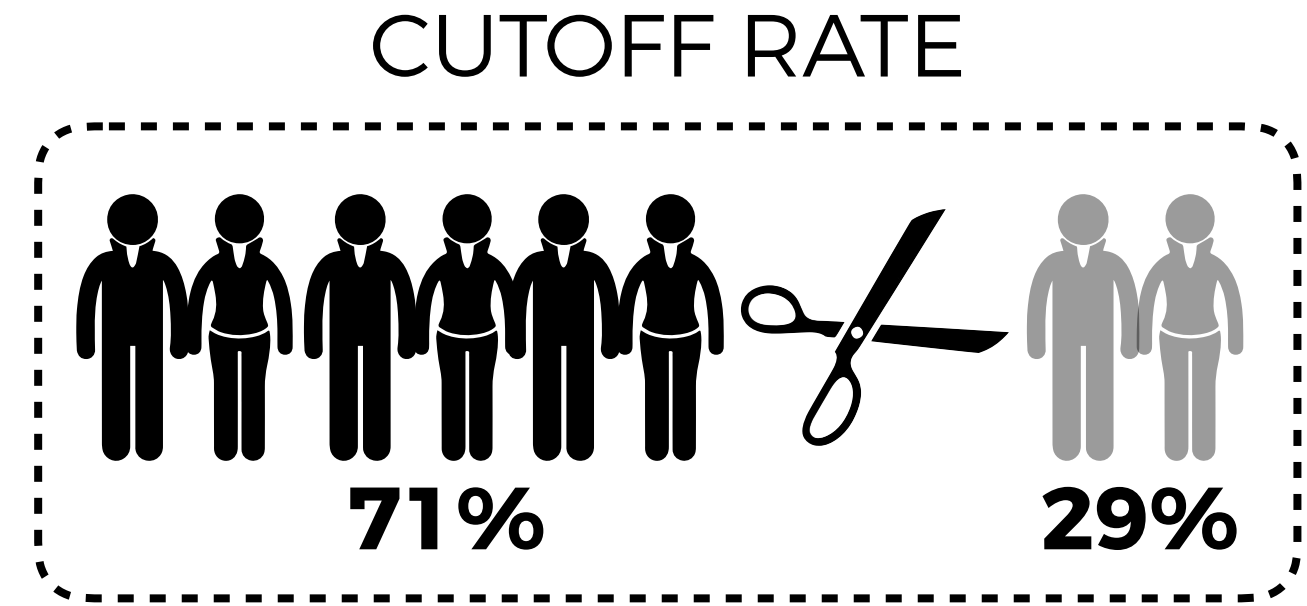
Almost 3/4 of participants made the cut and went on to complete their AO5
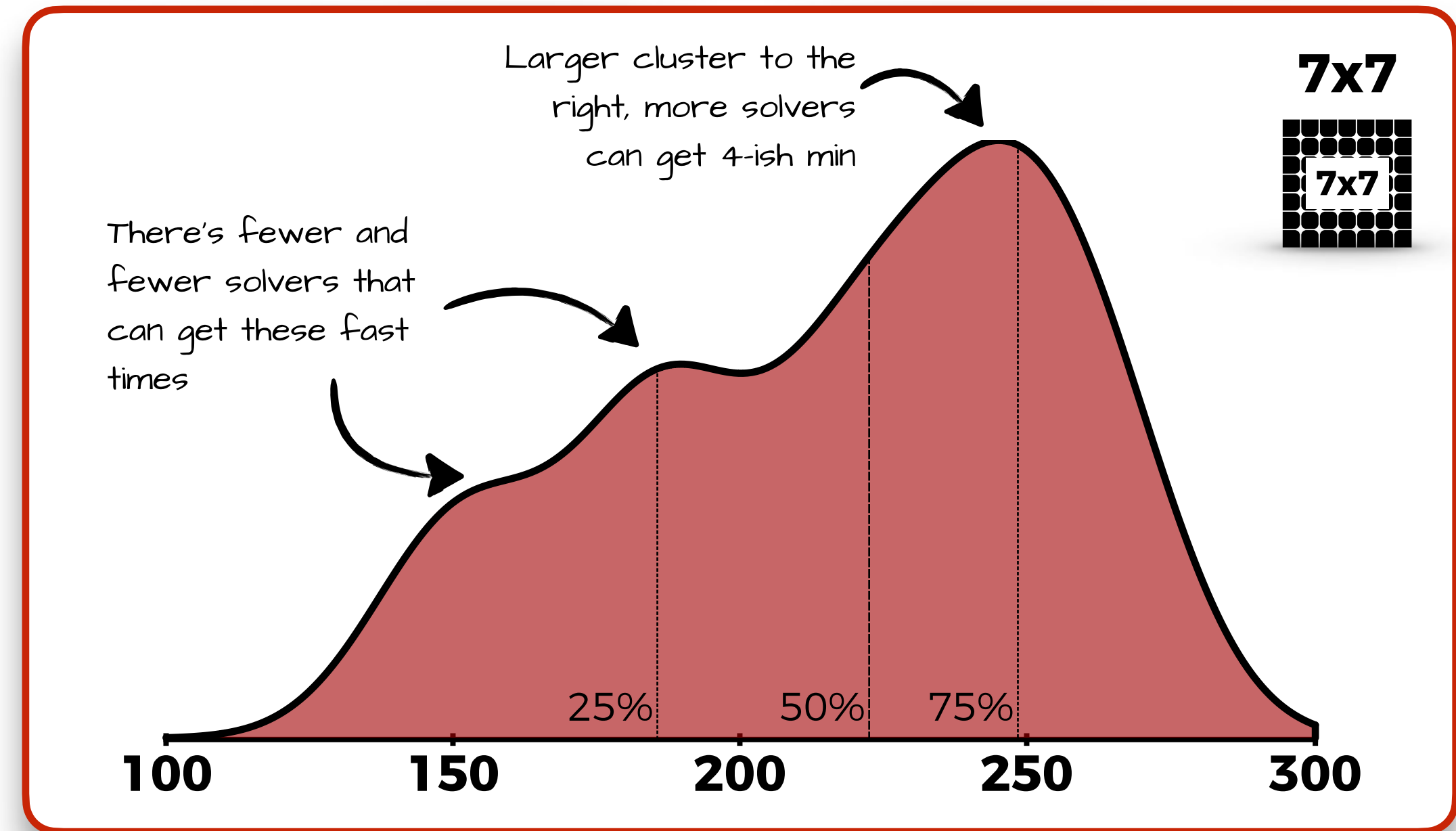
SWISS NATIONALS 2022
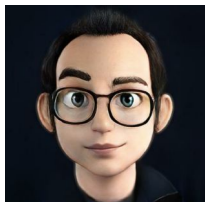
6X6 AND 7X7 BEHAVE DIFFERENTLY : WHILE TIMES ARE SPREAD EVENLY ACROSS THE BOARD FOR 6X6, ITS BIGGER SIBLING IS VERY DIFFICULT TO SOLVE IN LESS THAN 3.5 MINUTES
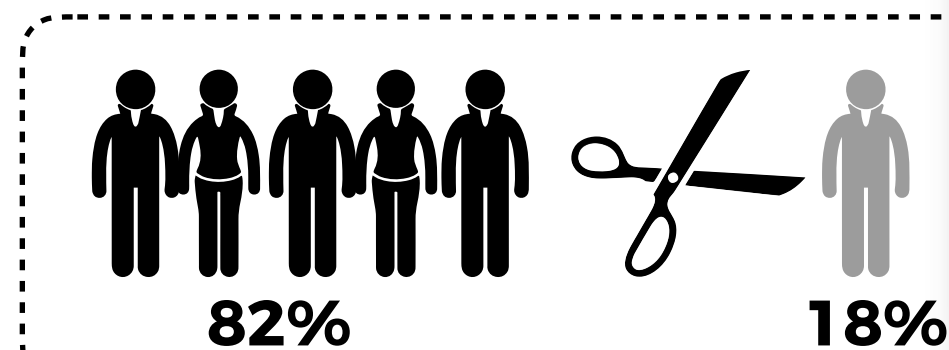
DISTRIBUTION OF 6X6 MEANS

6x6

6x6

Rather fat distribution across the 2m to 3m range

And the final peak at around 3m20

Second threshold at around 8sec

25% 50% 75%

75 100 125 150 175 200 225 250

DISTRIBUTION OF 7X7 MEANS

7x7

7x7

Larger cluster to the right, more solvers can get 4-ish min

There's fewer and fewer solvers that can get these fast times

25% 50% 75%

100 150 200 250 300

TIMES BY SOLVE # IN THE 1ST ROUND

2m 32s 2m 26s 2m 35s

5m
4m
3m
2m
1m
0s

1 2 3

82% 18%

82% 18%

TIMES BY SOLVE # IN THE 1ST ROUND

3m 50s 3m 37s 3m 38s

5m
4m
3m
2m
1m
0s

1 2 3
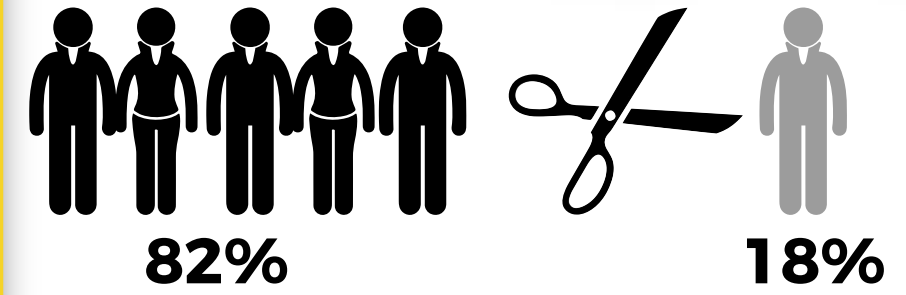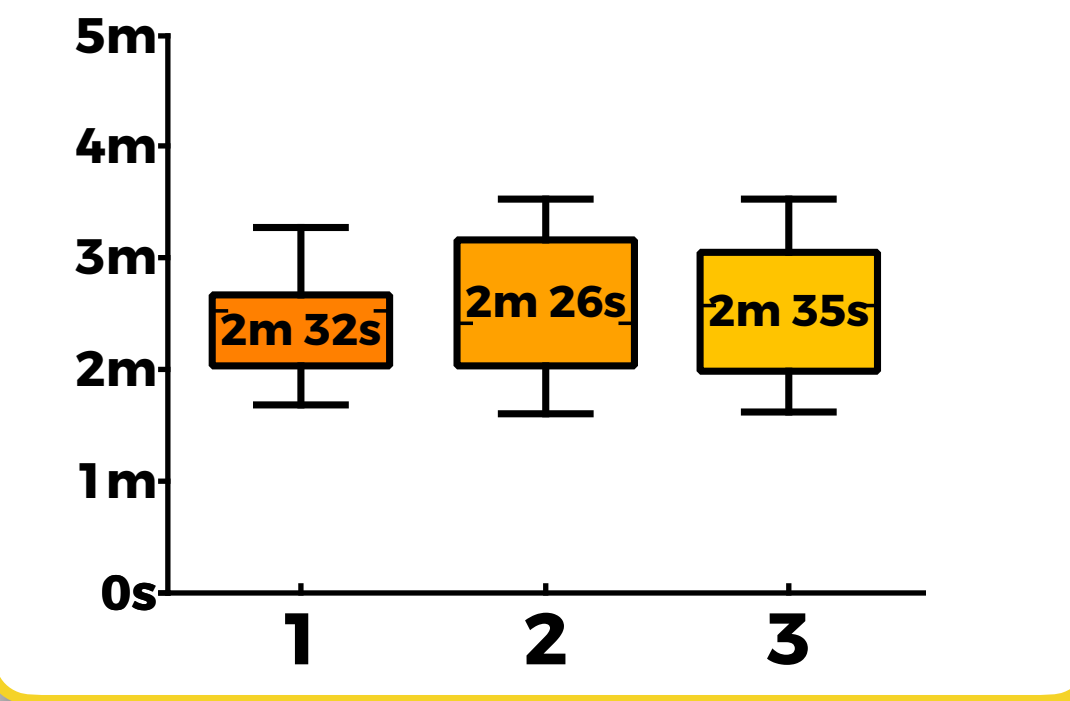
SWISS
NATIONALS
2022
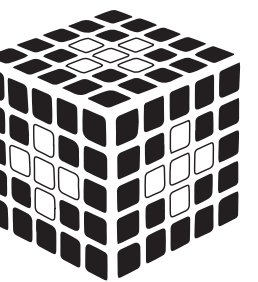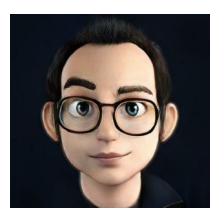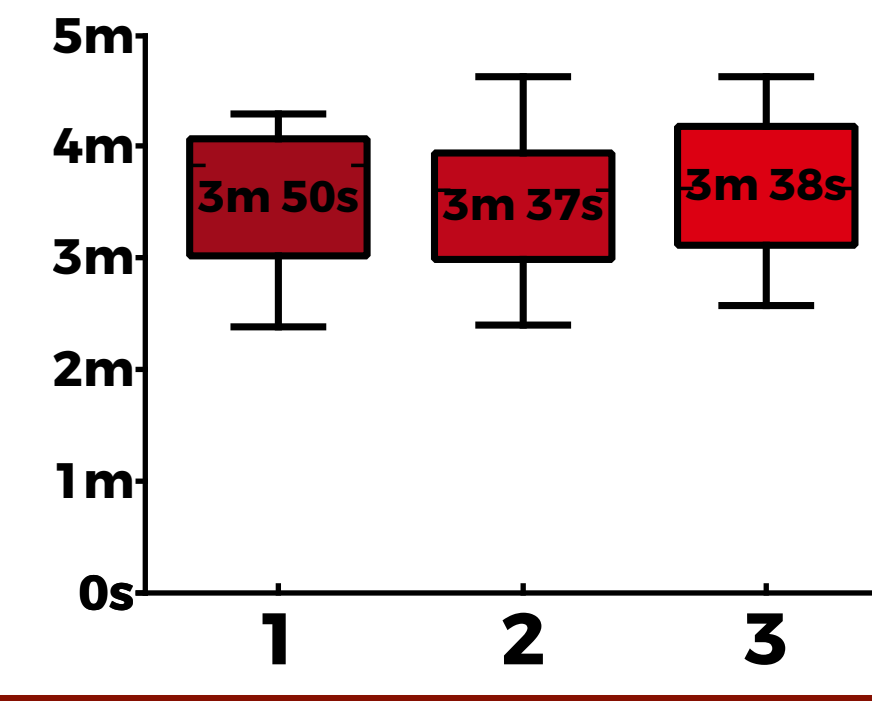
MEGAMINX : THE RESULT DON'T CLUSTER AROUND A SPECIFIC VALUE, SOLVERS ARE JUST VERY INDIVIDUALLY SPREAD

DISTRIBUTION OF ALL SOLVES FROM ALL PARTICIPANTS

Megaminx

The Fast

The Good

The rest

Cutoff

The very long tail of the distribution (starting from around 65-70s) shows that performance is very individual, and not tied to knowing (or NOT knowing) specific algs

25%   50%   75%

20   40   60   80   100   120   140

DISTRIBUTION OF CUBER AVERAGES (AO5)

25%   50%   75%

20   40   60   80   100   120   140

AVERAGE TIMES BY # OF SOLVE IN THE ROUND
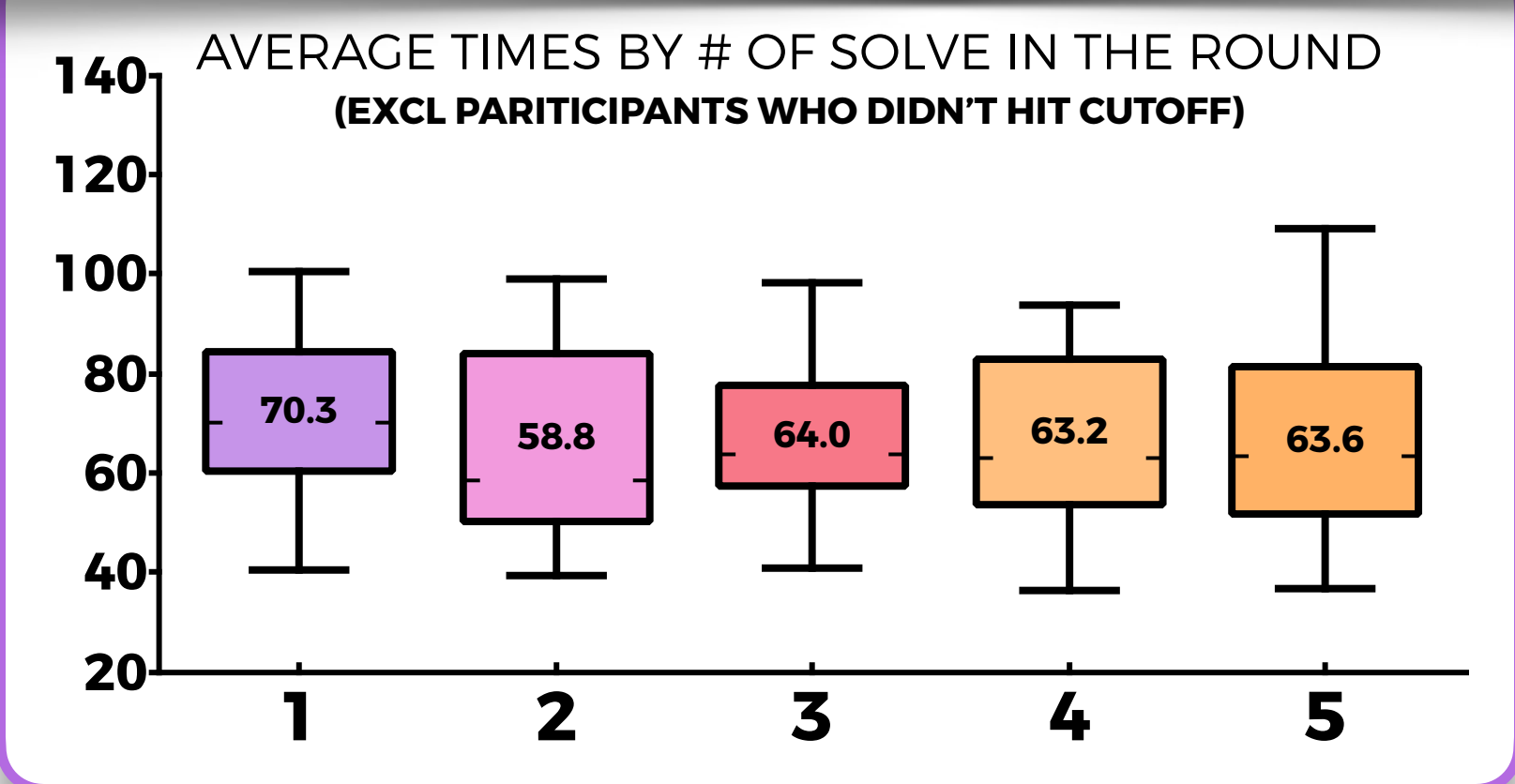**(EXCL PARITICIPANTS WHO DIDN'T HIT CUTOFF)**

140
120
100
80   70.3   58.8   64.0   63.2   63.6
60
40
20
       1   2   3   4   5
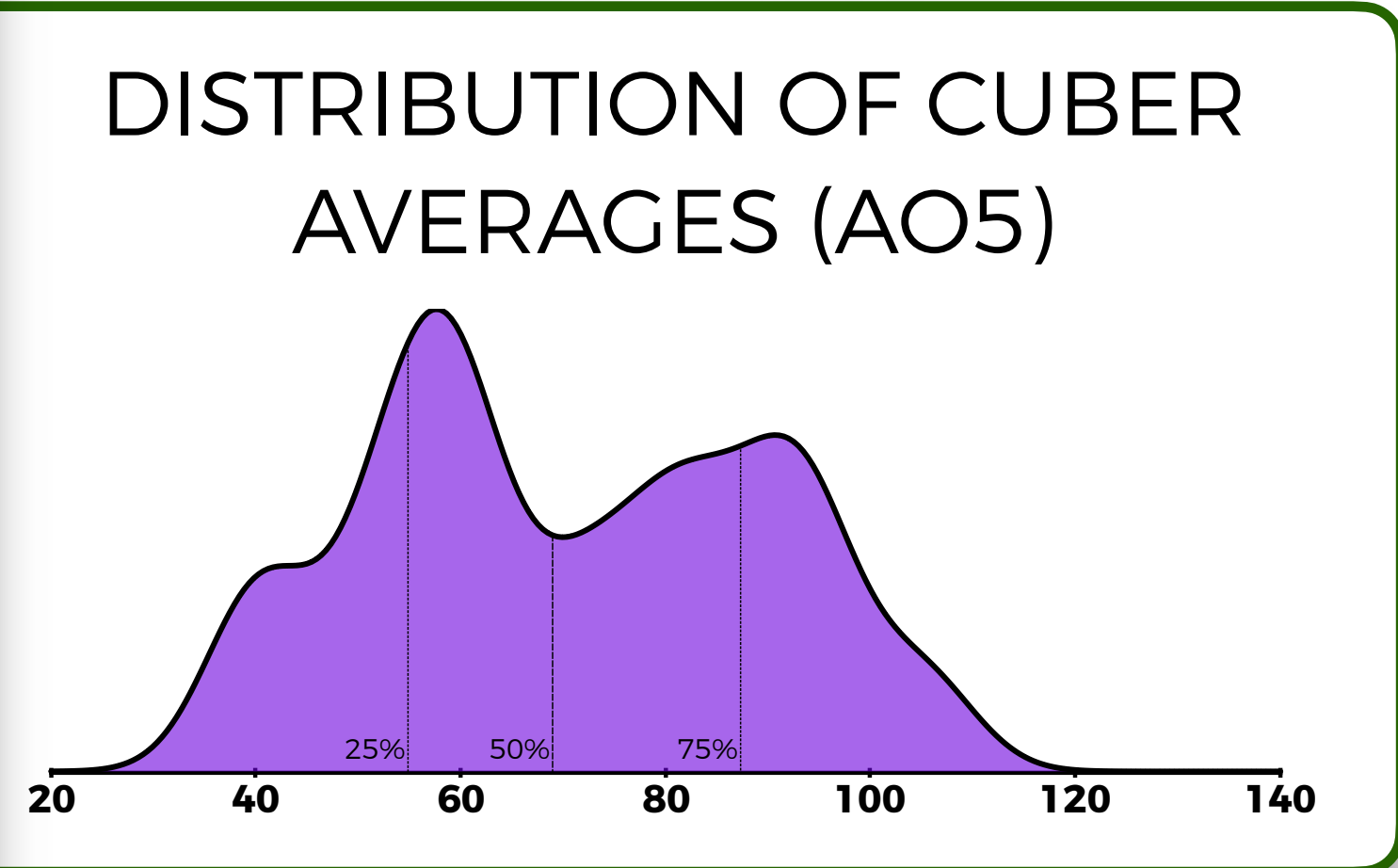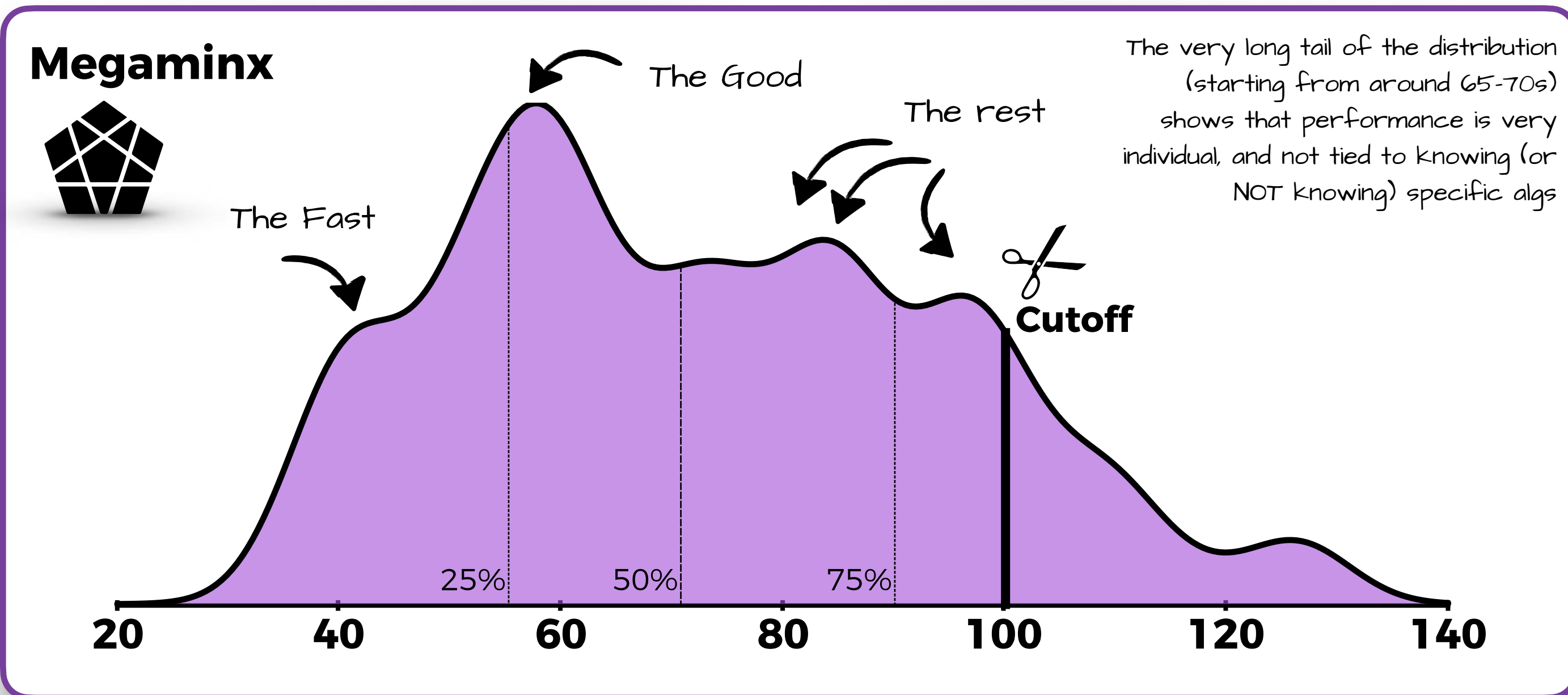
1st solve seems to be the worst : remember to warm up!

2nd solve again seems to be slightly better than the others,

CUTOFF RATE

81%   19%
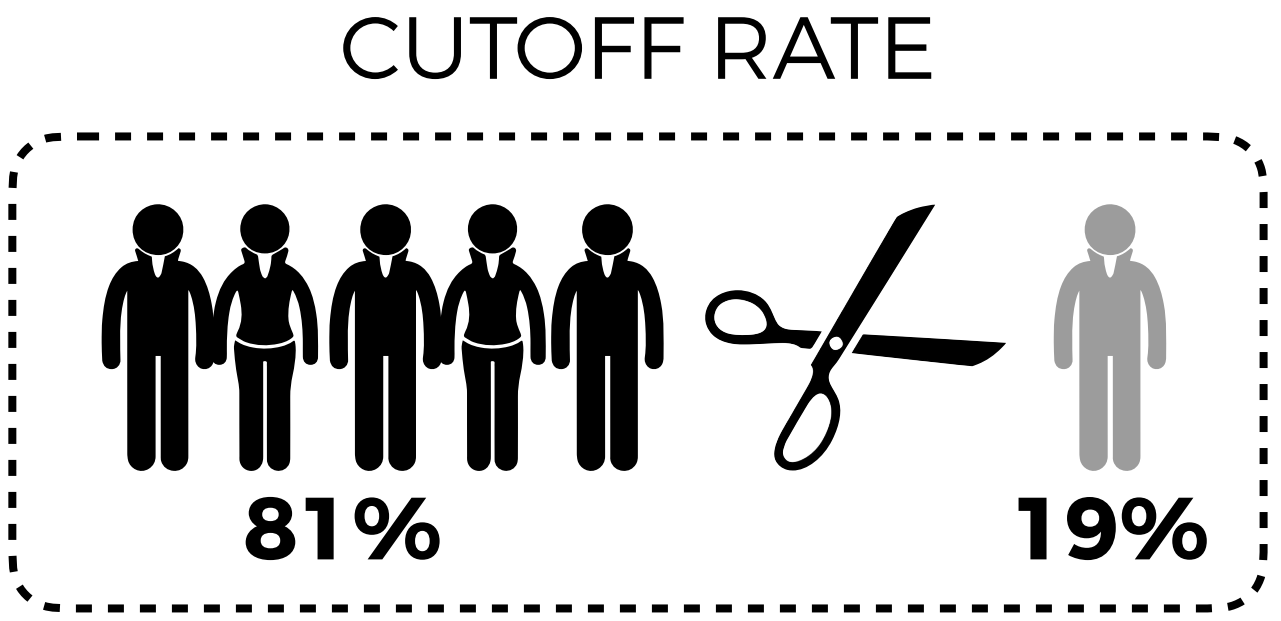
This demonstrates that having a prior comp classification time requirement will significantly cut down the need for harsh cutoffs

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SWISS
NATIONALS
2022

CLOCK HAS A BROAD RANGE OF RESULTS : CUBERS OF ALL EXPERIENCE LEVELS ARE PARTICIPATING, MAKING IT ALL MORE INTERESTING!

DISTRIBUTION OF ALL SOLVES FROM ALL PARTICIPANTS

Clock
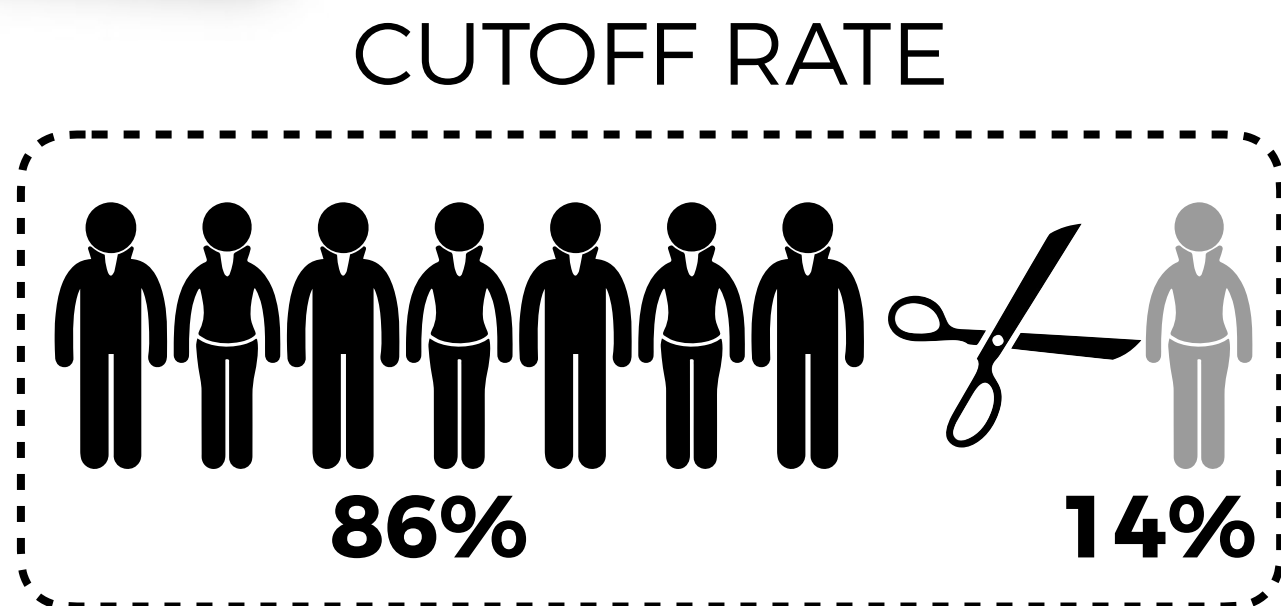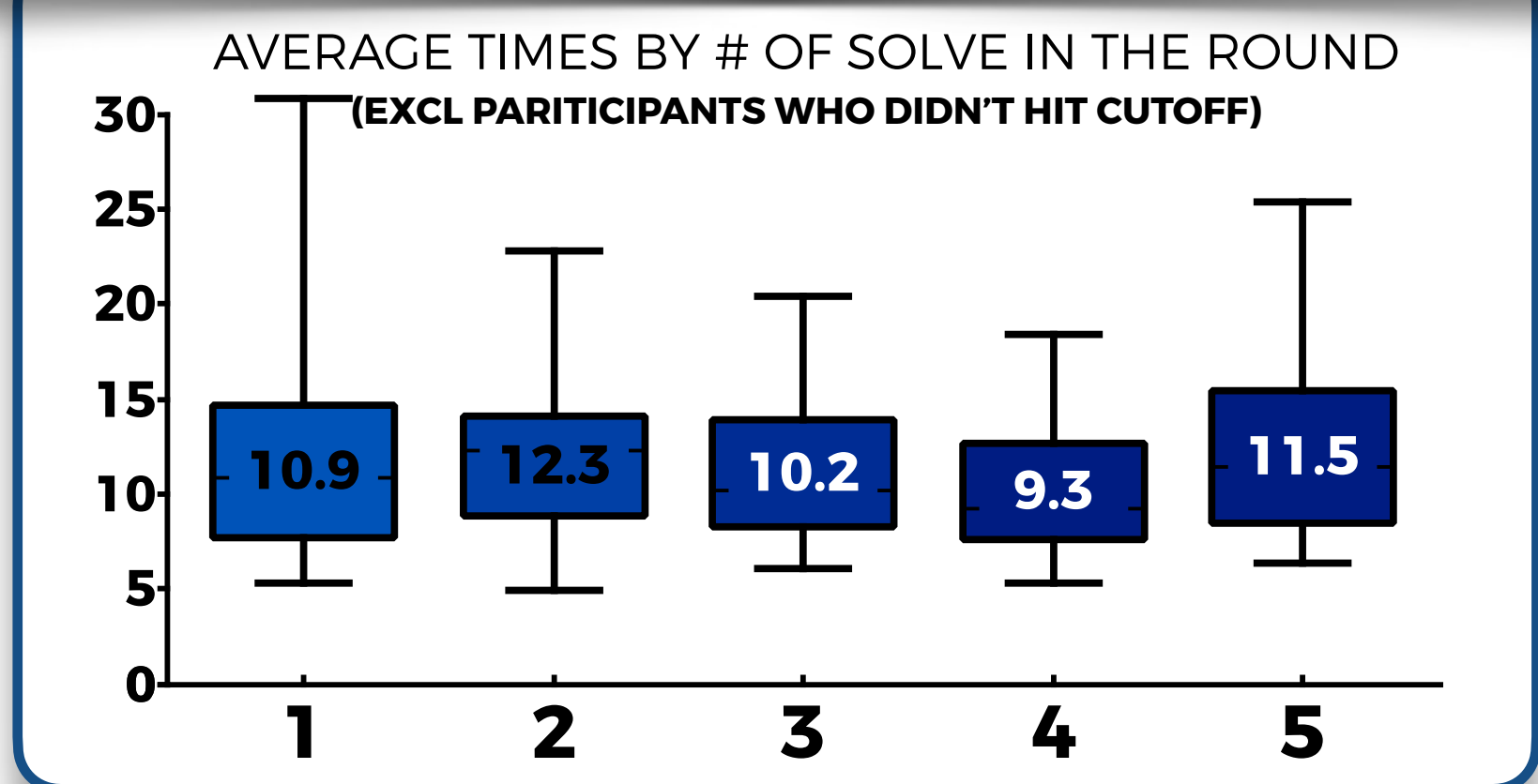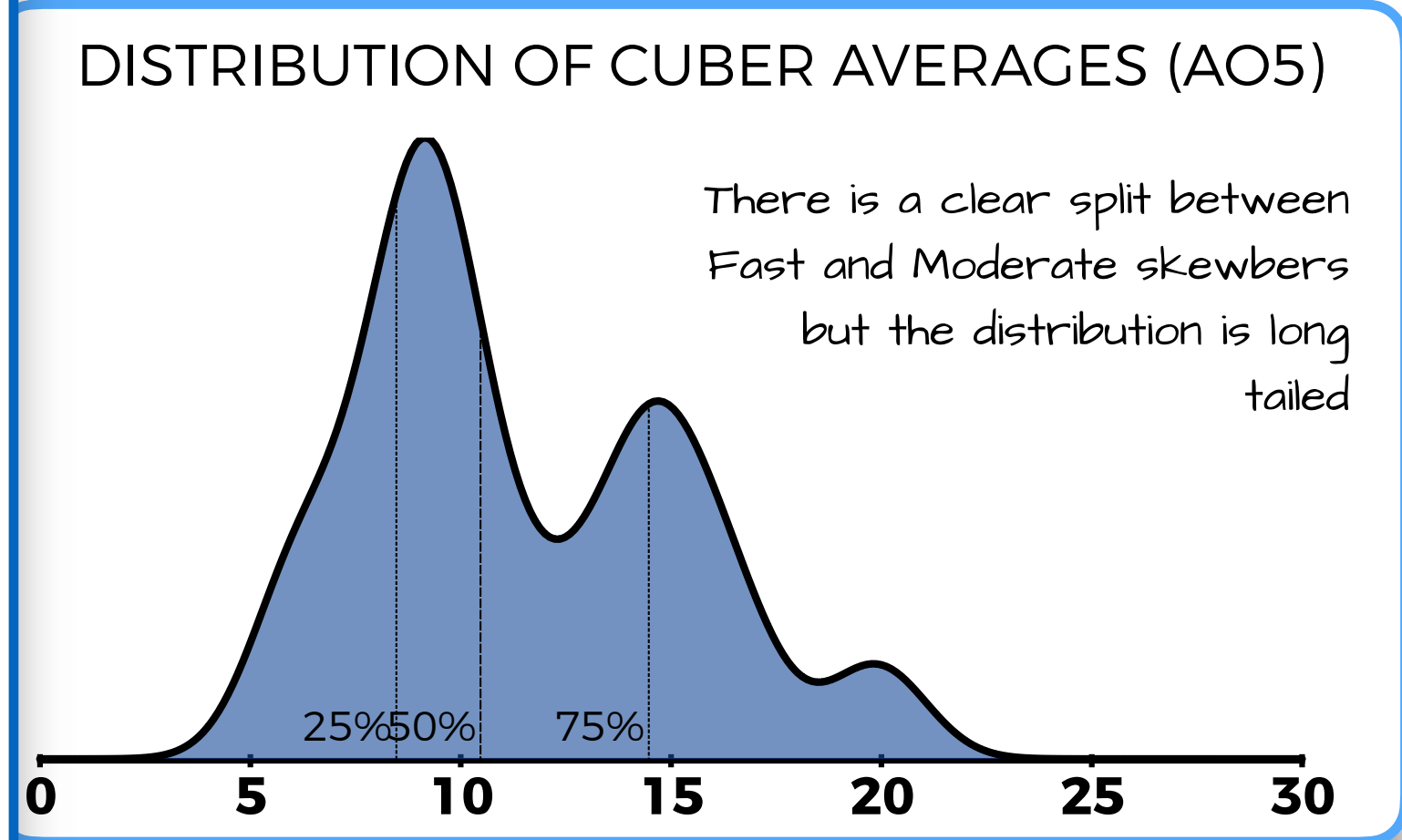
The peak is very forward, meaning fast people all tend to get these times

There's a second threshold at around 14 seconds

And as always, there are the trainees, leaning the ropes and improving with time!

Cutoff

25% 50% 75%

0   5   10   15   20   25   30   35   40

DISTRIBUTION OF CUBER AVERAGES (AO5)

There is a clear split between Fast and Moderate skewbers but the distribution is long tailed

25% 50% 75%

0   5   10   15   20   25   30

AVERAGE TIMES BY # OF SOLVE IN THE ROUND
(EXCL PARITICIPANTS WHO DIDN'T HIT CUTOFF)

	1	2	3	4	5
	10.9	12.3	10.2	9.3	11.5

CUTOFF RATE

86%   14%

Very generous cutoff, let most people get through

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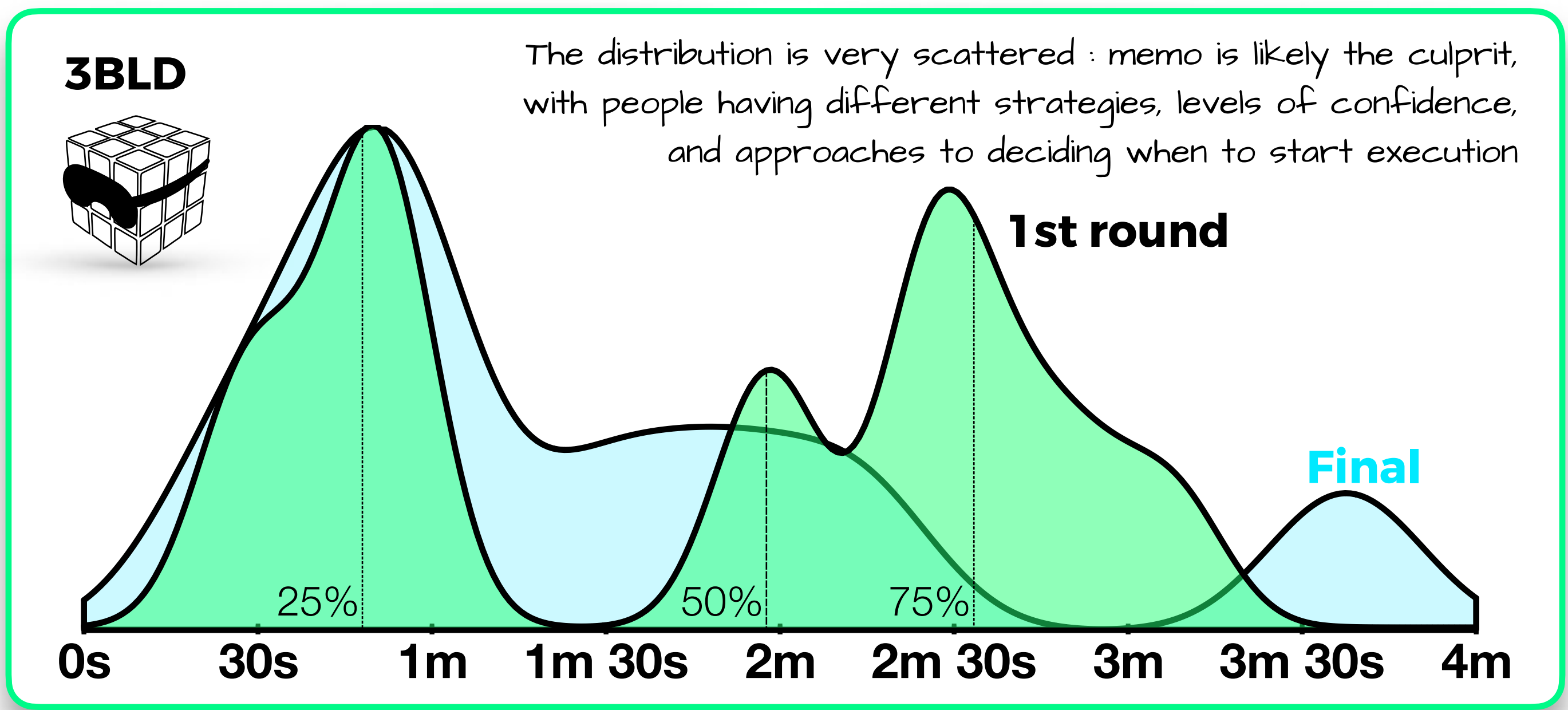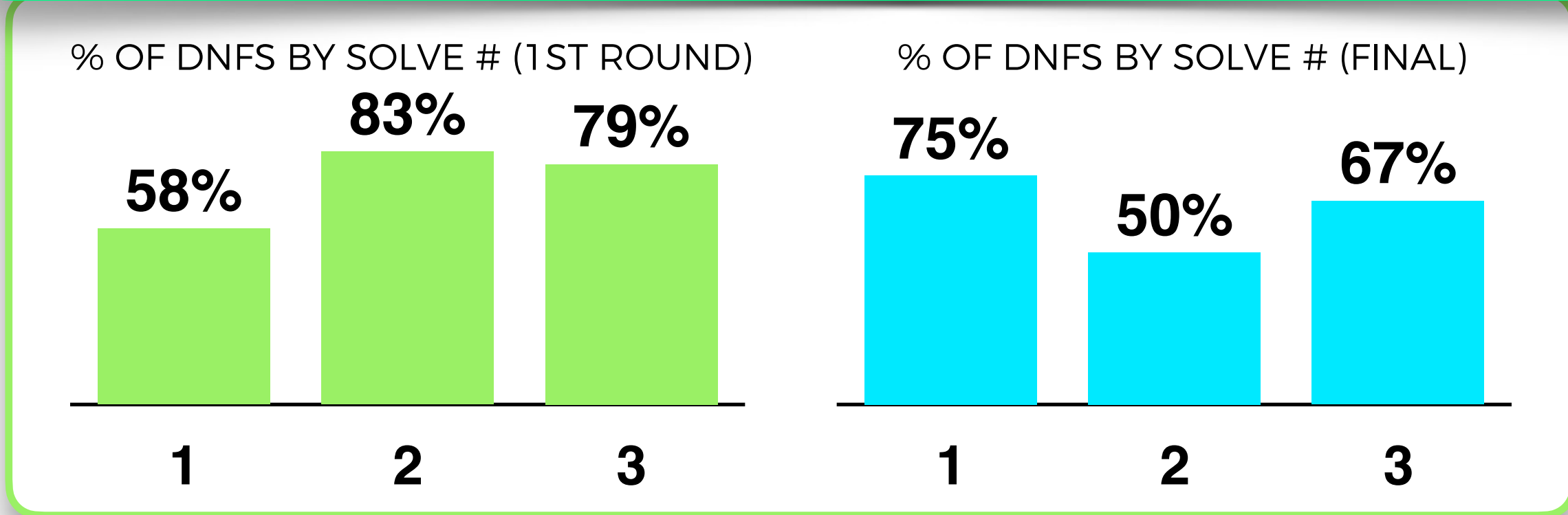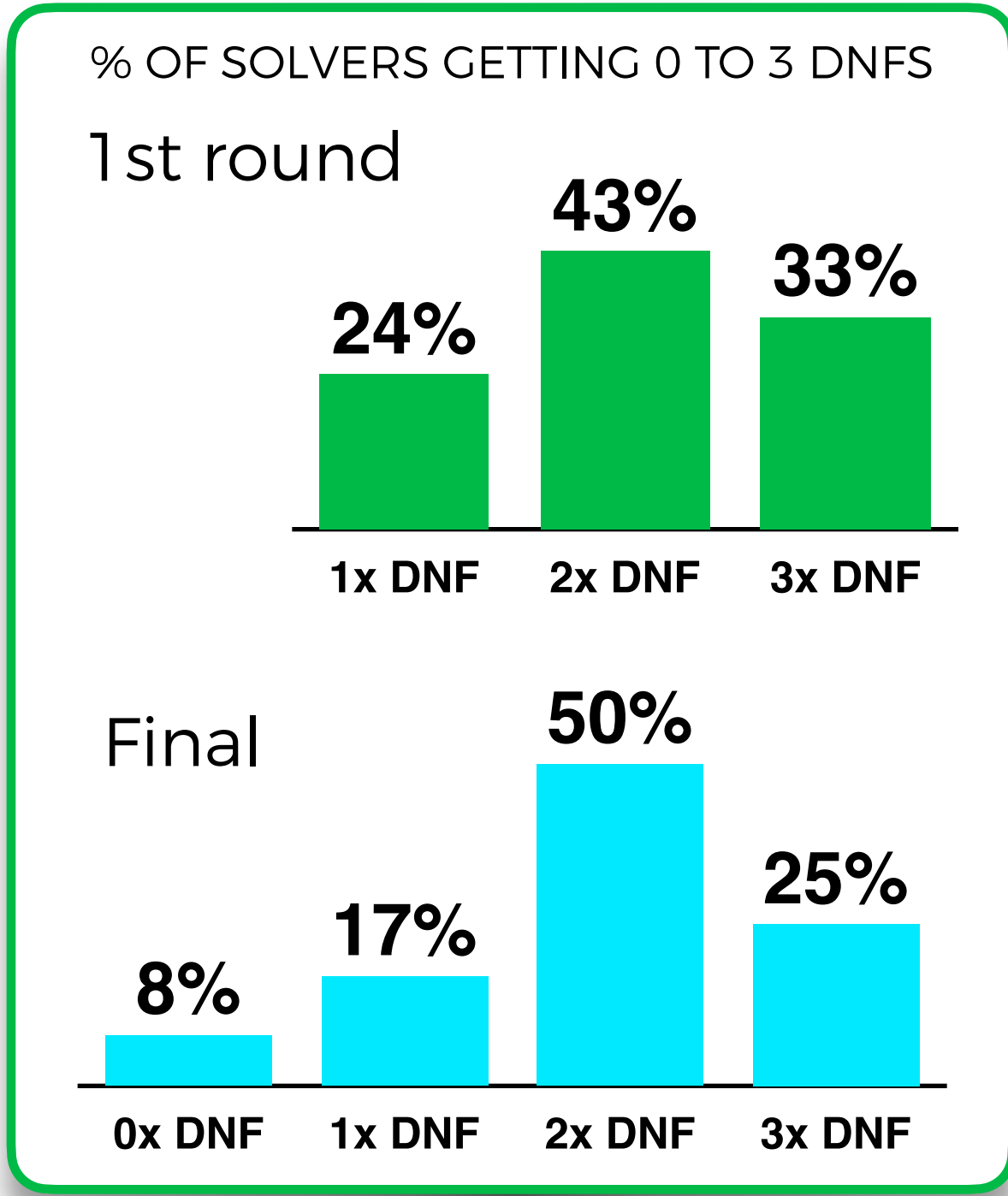# PERFORMANCE IN 3BLD IS VERY DIVERSE : THIS IS AN EVENT THAT CAN PROBABLY EVOLVE AND DEVELOP A LOT IN THE NEXT YEARS, AS MORE AND MORE PEOPLE ENTER THE BREACH

DISTRIBUTION OF BEST SOLVE TIMES

3BLD

The distribution is very scattered : memo is likely the culprit, with people having different strategies, levels of confidence, and approaches to deciding when to start execution

1st round

Final

25%   50%   75%

0s   30s   1m   1m 30s   2m   2m 30s   3m   3m 30s   4m

THE DNF STATISTICS

% OF SOLVERS GETTING 0 TO 3 DNFS

1st round

	24%	43%	33%
	1x DNF	2x DNF	3x DNF

Final

8%	17%	50%	25%
0x DNF	1x DNF	2x DNF	3x DNF

% OF DNFS BY SOLVE # (1ST ROUND)

58%	83%	79%
1	2	3

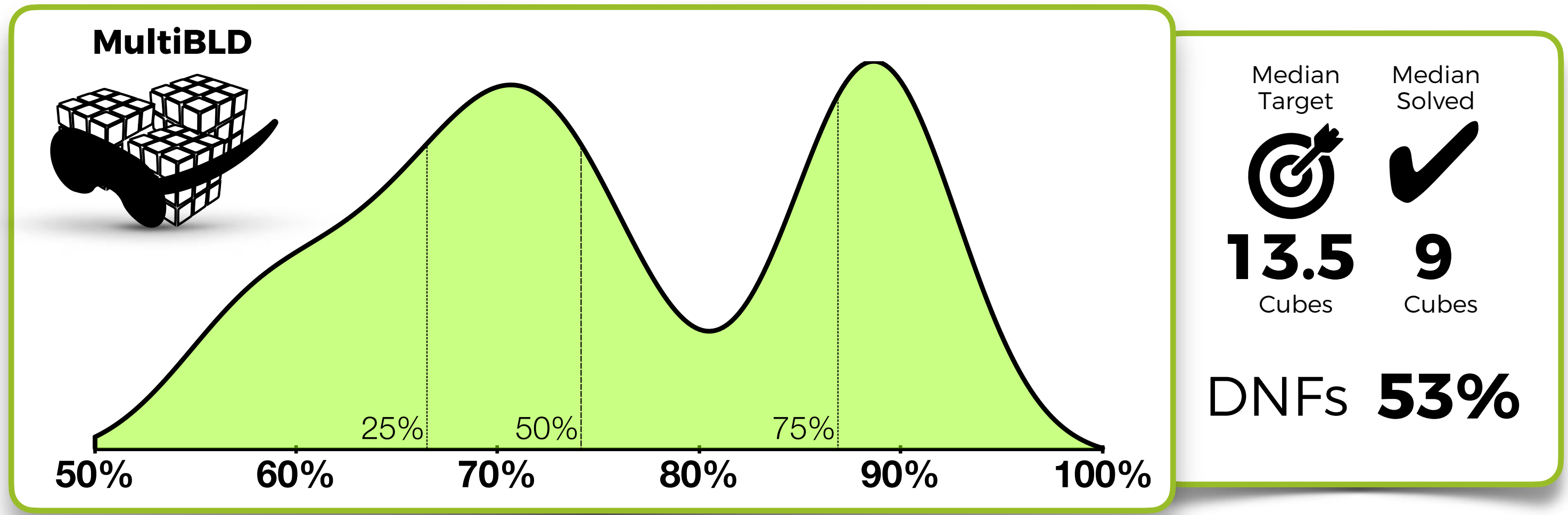% OF DNFS BY SOLVE # (FINAL)

75%	50%	67%
1	2	3

Solve #2 of 1st round was the most brutal one, with almost no-one managing to avoid DNF. Thank you, double flipped edges and parity!

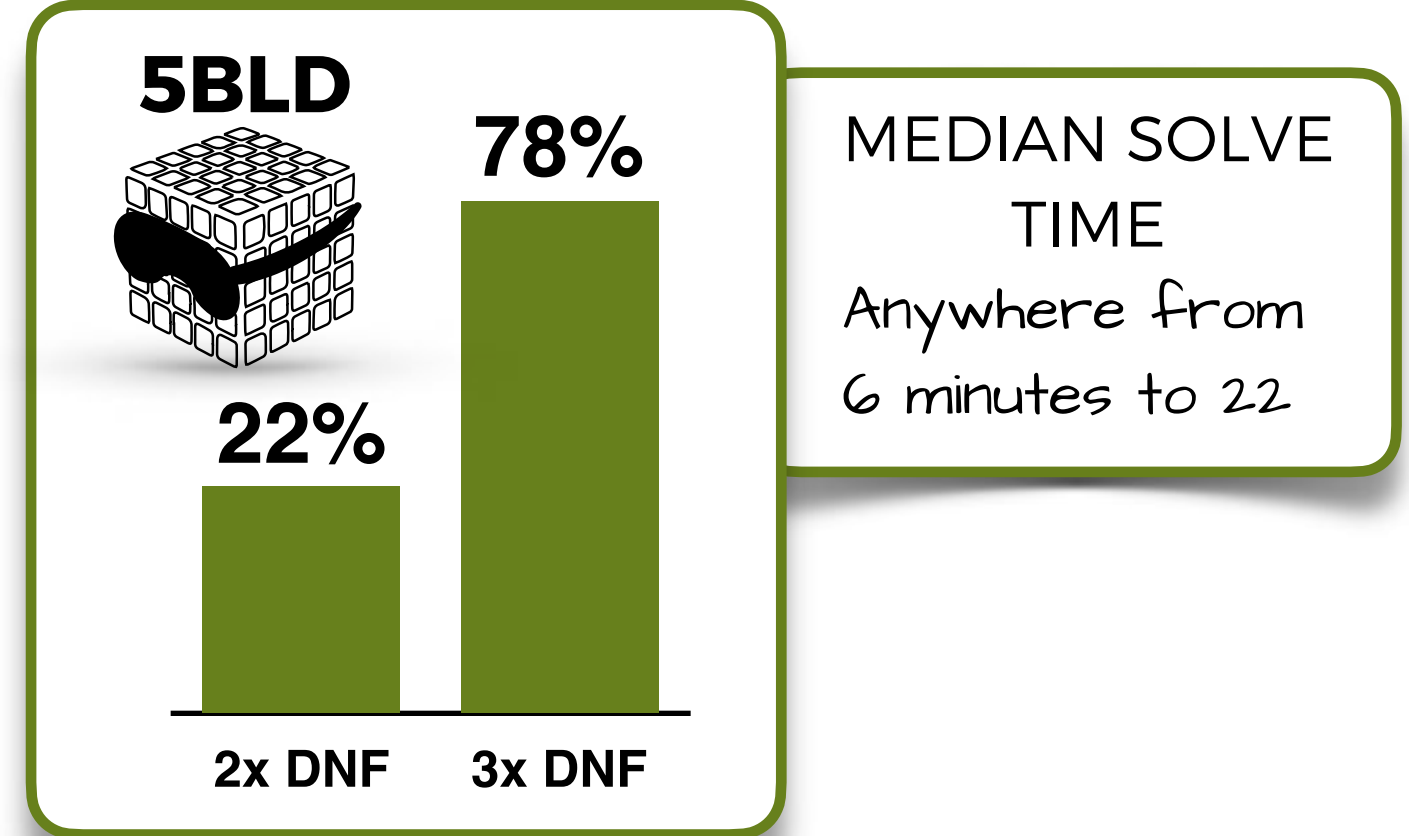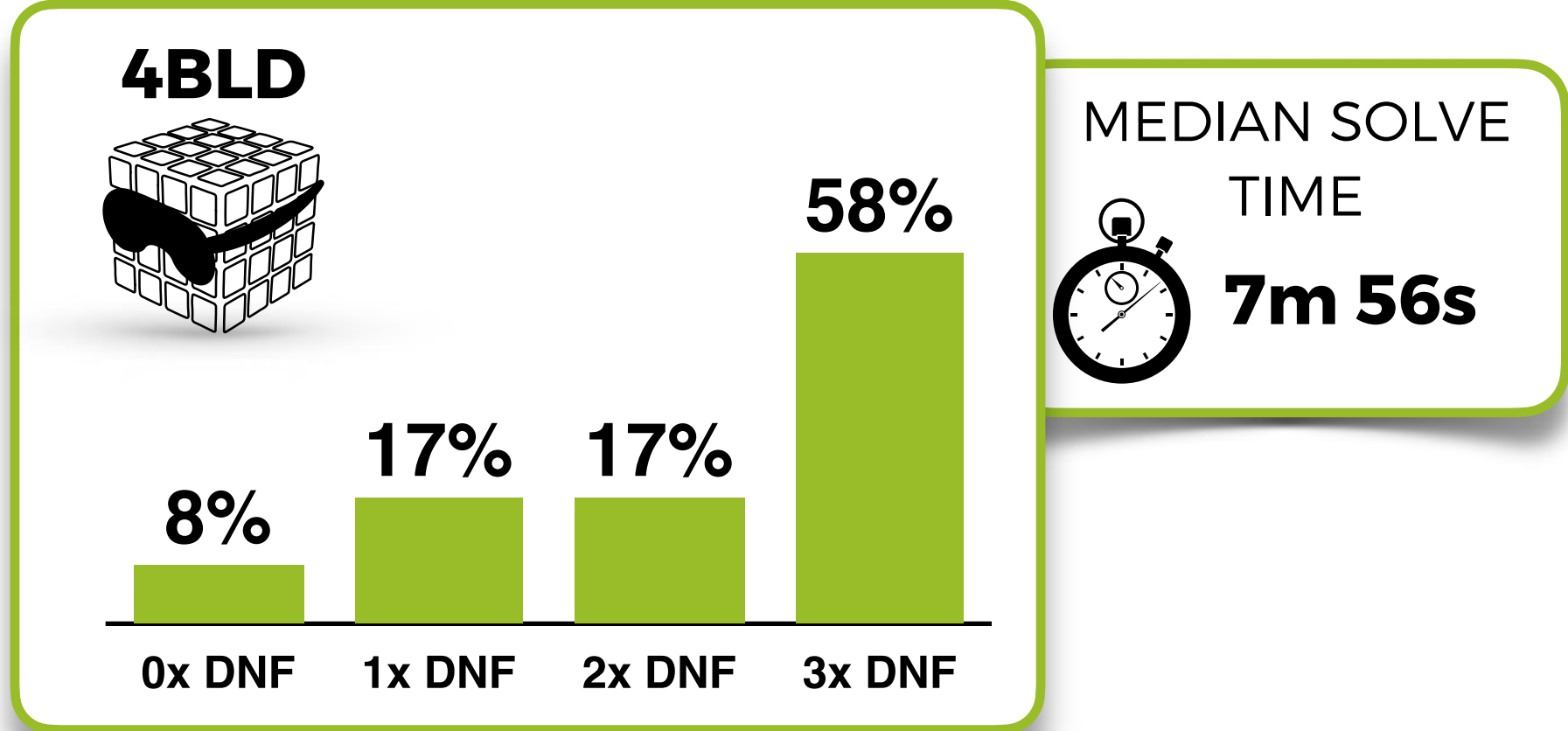Brought to you by Bas
https://basilio.dev/cubing

SWISS NATIONALS 2022
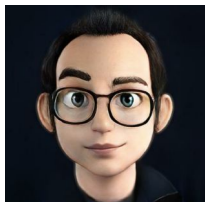
THE HARDER BLD EVENTS ARE... HARDER. HONESTLY, JUST MANAGING TO SOLVE THE THINGS IS PRETTY DAYUM IMPRESSIVE

% OF SOLVED CUBES VS TARGET

MultiBLD

25%   50%   75%

50% 60% 70% 80% 90% 100%

Median Target — 13.5 Cubes

Median Solved — 9 Cubes

DNFs **53%**

Funnily enough, there is NO correlation between target # and % of successes

BIGGER CUBES : IT JUST GETS HARDER!

4BLD

8%   17%   17%   58%

0x DNF   1x DNF   2x DNF   3x DNF

MEDIAN SOLVE TIME
7m 56s

5BLD

22%   78%

2x DNF   3x DNF

MEDIAN SOLVE TIME
Anywhere from 6 minutes to 22

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AND FINALLY, A HUGE THANKS TO OUR DELEGATES SUPERHEROES, TO ALL HELPERS, PARTICIPANTS AND PARENTS AND FRIENDS!

If you want more stuff like this, visit https://basilio.dev/cubing.
Catch me for a chat about this and anything else on/r/cubers (look
for /u/b4sili0) or on the cubers discord https://discord.gg/cubers
(shout for bas and I should be around!)