

Repeats = 3
6/23 new stu

trial	Boxes:	1	2	3	4	5	6	7	8	9	10	11	12
cn	1												
	2												
	3												
	4												
	5												
	6												
	7												
	8												
	9												
	10												
	11												
	12												
	13												
	14												
	15												
	16												
	17												
	18												
	19												
	20												
	21												
	22												
	23												
	24												
	25												
	26												
	27												
	28												
	29												
	30												
	31												
	32												
	33												
	34												
	35												
cn	36												
	37												
	38												
	39												
	40												
	41												
	42												
	43												
	44												
	45												
	46												
	47												
	48												
	49												
	50												
sums:		0	0	0	0	0	0	0	0	0	0	0	0

1cn 3cn 3cn 4cn 0 5cn 3off 3cn 3cn
2off 3off 2cn

23cn
8off

$$\frac{31}{50 \times 10} = 6.2\%$$

4 Reports

Fairness:

trial Boxes: *slow*

trial	1	2	3	4	5	6	7	8	9	10	11	12
ON	1	-										
	2	-										
	3	-										
OFF	4							1				
	5	-										
	6	-										
	7	-										
	8	-										
	9	-										
OFF	10		1									
	11	-										
OFF	12		1									
	13	-										
OFF	14								1			
	15	-										
OFF	16					1		1		1		
	17	-										
	18	-										
	19	-										
	20	-										
	21	-										
	22	-										
	23	-										
	24	-										
	25	-										
	26	-										
ON	27					1						
	28	-										
	29	-										
	30	-										
	31	-										
	32	-										
	33	-										
OFF	34		1	1								
	35	-										
OFF	36		1									
ON	37							1				
	38	-										
	39	-										
	40	-										
	41	-										
	42	-										
	43	-										
	44	-										
	45	-										
	46	-										
	47	-										
OFF	48		1									
	49	-										
OFF	50		1									

- #1 1 T
- #2 11 S
- #3 5 S
- #4 2 S
- #5 0 S
- #6 3 S
- #7 3 T
- #8 3 S
- #9 3 T
- #10 2 T

ON's 2
OFF's 27

ON's 0.2%
OFF's 27%

OFF's

ON's: 2
OFF's 12

14/10x50

29
10x100

Tops Side = 11
Top = 3

For 100 Trials:

Sides	23	3.0%
Tops	6	1.5%
Total	29	2.9%

sums: 0 0 0 0 0 0 0 0 0 0 0 0 0

T 6 1 1 1 1 1 1 1 1 1 1 1

S 5 5 5 5 5 5 5 5 5 5 5 5 5

ON's: 2 / 10x100
OFF's: 27 / 10x100

4 Repeats

trial	Boxes:											
	1	2	3	4	5	6	7	8	9	10	11	12
01	1											
	2					1						
	3											
	4						1	1				
	5											
	6		1			1						
	7											
	8											
	9	1	1				1			1		
	10											
	11											
	12											
	13											
	14											
	15											
	16											
	17											
	18											
	19											
	20	1										
	21											
	22											
	23											
	24											
	25											
	26	1										
	27											
	28											
	29											
	30											
	31											
	32											
	33											
	34											
	35											
	36											
	37											
	38					1		1				
	39											
	40											
	41											
	42											
	43											
	44					1						
	45											
	46									1		
	47											
	48	1										
	49											
	50									1		
sums:	0	0	0	0	0	0	0	0	0	0	0	0
		4	2			4		3	1	3		

17/10x15

5 Repeats

trial	Boxes:											
	1	2	3	4	5	6	7	8	9	10	11	12
1	—	—										
2	—	—										
3		1										
4	—											
5			1									
6	—											
7	—											
8	—											
9	—											
10	—											
11	—											
12	—											
13	—											
14	—											
15	—											
16	—											
17		1										
18	—											
19	—											
20	—											
21	—											
22	—											
23	—											
24	—											
25	—											
26	—											
27	—											
28	—											
29		1	1									
30	—											
31			1	1								
32	—											
33	—											
34	—											
35	—											
36	—											
37	—											
38	—											
39	—											
40	—											
41	—											
42	—											
43	—											
44	—											
45	—											
46	—											
47	—											
48	—											
49	—											
50	—											
sums:	0	0	0	0	0	0	0	0	0	0	0	0
		3	3	1								

7/10x50

6 Repeats

trial

Boxes:

	1	2	3	4	5	6	7	8	9	10	11	12
01	1											
	2											
	3											
	4											
	5											
	6											
	7											
	8											
	9											
	10											
	11											
	12											
	13											
	14											
	15											
	16											
	17											
	18											
	19											
	20											
	21											
	22											
	23											
	24							1	1			
	25											
	26											
	27											
	28											
	29											
	30											
	31											
	32											
	33											
	34											
	35											
	36											
	37											
	38											
	39											
	40											
	41											
	42											
	43											
	44											
	45											
	46		1	1								
	47											
	48											
	49											
	50											

sums: 0 0 0 0 0 0 0 0 0 0 0 0 0

4/10x50

7 Repeats

trial

Boxes:

	1	2	3	4	5	6	7	8	9	10	11	12
ON 1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
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37												
38												
39												
40												
41												
42												
43												
44												
45												
46												
47												
48												
49												
50												
sums:	0	0	0	0	0	0	0	0	0	0	0	0

$\frac{2}{10 \times 100}$

4 Repeats

retest #2
after cable ties

For 100 repeats:

trial	Boxes:	T 1	S 2	S 3	S 4	S 5	S 6	T 7	S 8	T 9	T 10	11	12
ON 1		-										-	-
2		-										1	-
3		-										-	-
4		-										-	-
5		-										-	-
6		-										1	-
7		-										-	-
8		-										-	-
9		-										-	-
10		-										-	-
11		-										-	1
12		-										1	-
13		-										-	-
OFF 14			1									-	-
15		-										-	-
OFF 16			1	1								-	-
ON 17		-										-	-
18		-										1	-
19		-										-	-
OFF 20								1	1			-	1
21		-										-	-
22		-										-	-
23		-										-	-
24		-										-	-
25		-										-	-
26		-										-	-
27		-										-	-
OFF 28			1									-	-
29		-										-	-
30		-										-	-
31		-										-	-
32		-										-	-
33		-										-	-
OFF 34		1	1	1	1			1		1		-	-
35		-						1		1		-	-
OFF 36							1					1	1
37		-										-	-
OFF 38			1	1	1							1	-
39		-										-	-
40		-										-	-
41		-										-	-
42		-										1	-
43		-										-	-
44		-										-	-
45		-										-	-
OFF 46			1					1				-	-
47		-										-	-
48		-										-	1
49		-										-	-
50		-										-	-

Total: ~~30~~ ³² Fails = ~~30~~ ³² / 1000 = ~~3.0%~~ ^{3.2%}

Sides: $\frac{24 \text{ Fails}}{6 \times 100} = 4\%$

Tops: $\frac{8 \text{ Fails}}{4 \times 100} = 2\%$

ON's: $\frac{2}{10 \times 100} = 0.2\%$

OFF's: $\frac{30}{10 \times 100} = 3\%$

Failure rate #2:

$\frac{11}{100} = 11\%$

After cable ties to #2:

$\frac{7}{50} = 14\% \text{ error}$

all off's

$\frac{11}{100} = 11\%$

Before cable ties:

$\frac{11}{100} = 11\%$

so we off's!?

15 OFF's
0 ON's

~~18~~ 18 (all off's)

10x50
Boxer Trials

Tops: Sides

= 12

Tops: 3

sums: 2 0 0 0 0 0 0 0 0 0 0 0 0 0
T 5 4 2 1 2 1 2
S S S S S T S T T

3 Repeats

trial	Boxes:											
	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5	—											
6												
7	—											
8												
9												
10												
11	—											
12	—											
13	—											
14												
15												
16												
17	—											
18	—											
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21	—											
22	—											
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24	—											
25												
26												
27	—											
28												
29	—											
30												
31	—											
32												
33												
34												
35	—											
36												
37												
38												
39	—											
40	—											
41												
42												
43												
44	—											
45												
46	—											
47												
48	—											
49												
50	—											

72/10x50

sums: 0 0 0 0 0 0 0 0 0 0 0 0 0

5 17 9 7 1 6 9 6 5 7

7/6/25 ①

15 16 17 18 19 20

 All boxes late
 version of US
 software
 135'
 Tx2 oval US
 layout = 3

	15s	16s	17s	18s	19s	20s	15t	16t	17t	18t	19t	20t
Trial	1	2	3	4	5	6	7	8	9	10	11	12
11	1		1									
11	2	1		1	1	11				1		
11	3			1	1		11					
11	4					1						
11	5						1		1	1		
11	6	1		1	11					1		
11	7											
11	8				1		1		1	11		
11	9											
11	10				1	1	1		11	11		
11	11											
11	12											
11	13	1				1	1	1				1
11	14	1										
11	15				1							
11	16									1		
11	17	1	1	1	1		1		1			
11	18				1	1						
11	19									1		
11	20		1		1	1	11					
11	21			1	1	1			1	1		
11	22						1					
11	23								1	1		
11	24											
11	25	1	1		1	1			11	1		
11	26	1			1	1						
11	27				1	1			1			
11	28				1	1						
11	29											
11	30	1	1	1	1	1	1		1	11		
11	31											
11	32				1		1		1	11		
11	33											
11	34								1	1		
11	35											
11	36				1	1		1		1	1	
11	37						1		1			
11	38											
11	39											
11	40				1		1			1		
11	41											
11	42	1							1			
11	43											
11	44					1	1					
11	45				1	1			1	1		
11	46					1						
11	47								1	1		
11	48											
11	49				1							
11	50	1	1	1			1					

3on 2on 3on 8on 3on 3on 6on 1on 10on 7on 1on
 6off 9off 3off 13off 5off 10off 9off 1off 7off 14off 1off
 9% 6% 6% 21% 8% 13% 15% 2% 17% 21% 1% 1%

57 4.75%
 73 6.08%
 10.8% OA

7/6/25 (2)

Same Setup as (1)

Trial	1	2	3	4	5	6	7	8	9	10	11	12
11	1											
11	2											
11	3											
11	4											
11	5											
11	6											
11	7											
11	8											
11	9				1							
11	10											
11	11											
11	12											
11	13											
11	14											
11	15								1			
11	16											
11	17	1							1			
11	18											
11	19								1			
11	20											
11	21	1			1				1			
11	22											
11	23											
11	24											
11	25											
11	26											
11	27											
11	28											
11	29											
11	30											
11	31											
11	32				1							
11	33											
11	34											
11	35											
11	36											
11	37								1	1		
11	38											
11	39											
11	40											
11	41											
11	42											
11	43											
11	44											
11	45											
11	46											
11	47											
11	48								1			
11	49				#					#		
11	50				1					1		

13.5'

Tr2 vs late
repeat = 4

Zon 0 0 Zon 0 0 0 0 5on 1off 1off 0 0

0.58%
0.25%
1.08% OA

7/6/25 (3)

Same sety as ① + ②

13.5 FG.
Repeats = 5

Trial	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
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37												
38												
39												
40												
41												
42												
43												
44												
45												
46												
47												
48												
49												
50												

0 0 0
1cm 0 0 3cm 0
left left 1cm 2cm 0 0
↑ ↑ ↑

0.58%
0.58%
1.16%

7/6/25 (4)

Repeat of Trial # 3
5 repeats @ 13.5'

Trial	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
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16												
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36												
37												
38												
39												
40												
41												
42												
43												
44												
45												
46												
47												
48												
49												
50												

left left left left left left left left left left
 0 0 left 2on 0 1on 0 0 2on 2on 1on
 left left left left left left left left left left
 ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑

0.41% OA
 0.33% OA
 0.29% OA 0.625% OA

7/6/25 (5)

Same Sety as 1-4

13.5'

Repeats = 6

7x2

Trial	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
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37												
38												
39												
40												
41												
42												
43												
44												
45												
46												
47												
48												
49												
50												

0 0 0 0 0 0 0 0 0 0 0 0 0

1 off

2 on
3 off 1 off

0.29% OA

7/6/25 (6)

Same set as 1-5

13.5'

Repeats = 7

Trial	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
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13												
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41												
42												
43												
44												
45												
46												
47												
48												
49												
50												

lan

30R

↑

0.33%

7/7/25 (7)

Same set as 1-6

↑ 13.5'
Repeats = 4

ON

Row

Trial	1	2	3	4	5	6	7	8	9	10	11	12
11	1											
11	2											
11	3											
11	4											
11	5											
11	6											
11	7											
11	8											
11	9											
11	10											
11	11											
11	12											
11	13											
11	14											
11	15											
11	16											
11	17											
11	18											
11	19											
11	20											
11	21											
11	22											
11	23											
11	24											
11	25											
11	26											
11	27											
11	28											
11	29											
11	30											
11	31											
11	32											
11	33											
11	34											
11	35											
11	36											
11	37											
11	38											
11	39											
11	40											
11	41											
11	42											
11	43											
11	44											
11	45											
11	46											
11	47											
11	48											
11	49											
11	50											

Ball Ball 1st 1st

1st
2nd
↑ ↑

$$\frac{9}{1200} = 0.75\% \text{ OA}$$

~~7/7/25~~ 7/7/25 (8)

Same as (7)
except

25'
Repeats = 4

Trial	1	2	3	4	5	6	7	8	9	10	11	12
1												
2		1										
3												
4												
5		1										
6												
7												
8												
9										1		
10												
11												
12												
13												
14												
15												
16												
17		1										
18												
19												
20												
21												
22												
23												
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40												
41												
42												
43												
44												
45												
46												
47												
48												
49												
50												

Zon
1 off

1 off

$$\frac{4}{1200} = 0.25\%$$

7/7/25 (9)

same as 7-8

↓ 50'
K-not - 4

Trial	1	2	3	4	5	6	7	8	9	10	11	12
1					/							
2				/						/	/	
3												
4	/	/	/									
5					/						/	
6		/	/						/	/		/
7												
8				/			/			/	/	
9		/										
10				/	/	/				/	/	
11												
12											/	
13				/								
14		/	/							/		
15				/	/						/	
16		/	/									/
17		+	+								/	
18		/	/	/							/	/
19				/	/			/			/	
20		/	/		/				/	/		
21												
22										/		
23												
24										/	/	
25												
26				/							/	
27												
28				/	/			/	/			
29									/			
30				/	/						/	/
31			/	+							+	+
32	/	/		/							/	/
33			/	/								
34				/						/	/	
35				/								
36	/									/	/	
37				/			/					/
38	/			/						/	/	
39				/			/					/
40	/			/	/	/				/	/	
41				/								/
42	/			/							/	
43		/		/				/		/		/
44											/	
45		/		/	/					/		/
46	/						/	/		/		/
47		/		/	/					/		/
48											/	
49	/			/						/		
50				/				/			/	/

1 14 11 19 16 2 3 2 7 17 20 13

$\frac{115}{600} = 19.1\%$

7/7/25

(10)

Same as (9)

1.50'
Repeat = 5

OP

Trial	1	2	3	4	5	6	7	8	9	10	11	12
1				/							/	
2		/	/				/					
3												
4												
5												
6												
7												
8										/		
9												
10							/					
11												
12							/					
13												
14												
15												
16							/					
17												
18	/			/								
19												
20										/	/	
21												
22										/		
23												
24												
25				/	/					/		
26												
27												
28												
29												
30												
31												
32										/		
33												
34										/		
35												
36												
37				/			/				/	
38										/		
39												
40												
41										/		
42												
43										/		
44				/								
45												
46												
47												
48												
49												
50				/								

2 1 5 1 1 4 9 3

$\frac{26}{600} = 4.3\%$

7/7/25

(11)

Same as 10

7 50'

Repeats = 6

Trial	1	2	3	4	5	6	7	8	9	10	11	12
1												
2											1	
3												
4				1						1	1	
5												
6				1						1	1	
7												
8											1	
9												
10												
11												
12											1	
13												
14				1						1	1	
15												
16												
17										1		
18											1	
19												
20											1	
21												
22											1	
23										1	1	
24											1	
25										1		
26											1	
27												
28										1	1	
29												
30										1	1	
31												
32											1	
33												
34											1	
35												
36											1	
37										1		
38											1	
39												
40											1	
41												
42											1	
43		1										
44										1	1	
45												
46											1	
47										1		
48				1							1	
49										1		
50											1	

1

4

12 25

$$\frac{70}{600} = 6.6\%$$

7/7/15

(12)

Saw as (11)

Repeats = 7

Trial	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
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25												
26												
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29												
30												
31												
32												
33												
34												
35												
36												
37												
38												
39												
40												
41												
42												
43												
44												
45												
46												
47												
48												
49												
50												

4 15 22 25 1 2 11 9 6

7/7/25

(14)

Sum as 13

but repeats = 4

Trial	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5												
6												
7												
8	2	2										
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20	4	4										
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
32												
33												
34												
35												
36												
37												
38												
39												
40												
41												
42												
43												
44												
45												
46												
47												
48												
49												
50												

2 5 6 6 4 1 7 9 6 11 4 1

$$\frac{62}{25 \times 12} = 20.7\%$$

7/7/25 (15)

Same as 13-14
Repeat = 5

Trial	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3		1								1		
4												
5												
6												
7												
8												
9										1		
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31										1		
32												
33												
34		1										
35												
36												
37												
38												
39												
40				1			1			1		
41												
42										1		
43												
44												
45												
46												
47												
48												
49												
50												

$$\frac{8}{1200} = 0.67\%$$

5
3%

7/7/25 (16)

Same as 15

Repeats = 6

13.5'

Trial	1	2	3	4	5	6	7	8	9	10	11	12
11	1											
11	2											
11	3											
11	4											
11	5											
11	6											
11	7											
11	8											
11	9											
11	10											
11	11											
11	12											
11	13											
11	14											
11	15											
11	16											
11	17											
11	18											
11	19											
11	20											
11	21											
11	22											
11	23											
11	24											
11	25											
11	26											
11	27											
11	28											
11	29											
11	30											
11	31											
11	32											
11	33											
11	34											
11	35											
11	36											
11	37											
11	38											
11	39											
11	40											
11	41											
11	42											
11	43											
11	44											
11	45											
11	46											
11	47											
11	48											
11	49											
11	50											

$$\frac{1}{1200} = 0.08\%$$

7/8/25 (1)

Repeats = 6

L = 25'

Trial	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4		1										
5												
6												
7												
8												
9		1										
10	1											
11												
12												
13												
14												
15												
16		1										
17												
18												
19												
20												
21												
22												
23												
24		1										
25												
26		1										
27												
28												
29												
30												
31												
32												
33												
34												
35												
36												
37												
38												
39												
40												
41												
42			1									
43												
44												
45												
46												
47												
48			1									
49												
50												

1 5 2

$$\frac{8}{12.0} = 0.6\%$$

7/8/25 (2)

Repeats = 4
Dist = 25'

Trial	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
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30												
31												
32												
33												
34												
35												
36												
37												
38												
39												
40												
41												
42												
43												
44												
45												
46												
47												
48												
49												
50												

$$\frac{54}{25 \times 12} = \frac{54}{300} = 18\%$$

5 4 8 9 2 2 3 6 7 8 7 1

7/2/25 (3)

$R_{recalls} = 5$
 $L = 25'$

Trial	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5												
6					1							
7												
8												
9												
10												
11												
12												
13	1											
14												
15												
16												
17												
18									1			
19												
20												
21												
22												
23												
24									1			
25												
26												
27			1									
28	1											
29												
30												
31												
32												
33												
34												
35		1										
36												
37												
38												
39												
40												
41												
42	1											
43												
44												
45												
46												
47												
48												
49												
50												

3 1 1 1 1 2

$$\frac{8}{600} = 1.3\%$$

7/8/15

(4)

Repeats = 7
L = 25'

Trial	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3			1									
4												
5												
6									*10			
7												
8												
9			1									
10												
11												
12												
13												
14									0			
15												
16									0			
17	1		1									
18												
19												
20												
21									0			
22												
23												
24												
25												
26									*			
27												
28												
29									0			
30												
31									0			
32												
33												
34									0			
35												
36												
37									0			
38												
39									0			
40												
41			1						0			
42									*			
43									0			
44												
45									0			
46			1									
47									0			
48												
49												
50									0			

1

5

14

$$\frac{6}{600} = 1\%$$

0's: moved far away from vx's

$$\frac{14}{600} = 2.3\%$$

$$\frac{3}{600} = 0.5\%$$

7/8/25 (5)

L = ~~25~~ 25'
R = 7

Trial	1	2	3	4	5	6	7	8	9	10	11	12
711	1											1
111	2											
111	3										1	1
111	4											
111	5											
111	6		1									1
111	7											
111	8											
111	9											
111	10											
111	11											
111	12		-									
111	13											
111	14											
111	15											
111	16											
111	17											
111	18											
111	19		1									
111	20											
111	21											
111	22											
111	23											
111	24											
111	25											
111	26											
711	27											
111	28											
111	29	-										
111	30											
111	31											
111	32											
111	33											
111	34											
111	35											1
111	36											
111	37											
111	38											
111	39											
111	40											
111	41											
111	42											
111	43											
111	44											
111	45											
111	46											
111	47											
111	48											
111	49											
111	50											

$$\frac{1}{600} = 0.16\% \text{ 50S}$$

$$\frac{2}{600} = 0.32\% \text{ 50S}$$