



# Instruction Booklet

## Master

Individual Competition

**7th Asian Sudoku Championship 2026**

Bangkok, Thailand

v2.0

# Schedule

Round	Type	Time	Duration	Title	Total Score
1	Individual	09:00 – 09:30	30 mins	Direct Current	300
2	Individual	09:40 – 10:25	45 mins	Alternating Current	450
3	Individual	10:35 – 11:20	45 mins	AND	450
4	Individual	11:30 – 12:15	45 mins	OR	450
Lunch					
5	Individual	13:30 – 14:15	45 mins	NOT	450
6	Individual	14:25 – 15:15	50 mins	Circuit Boards	500
7	Team	15:35 – 16:05	30 mins	Loy Krathong	1200
8	Team	16:30 – 17:30	60 mins	Elephant Park	2400
Break					
		19:00 – 20:30		Dinner and closing ceremony	

# Competition Rules

## Individual Competition

The individual competition is based on 6 rounds. The sum of scores from these rounds will determine the individual ranking of the 7th Asian Sudoku Championship. Points will be awarded only for correctly solved puzzles. If a player finishes all puzzles correctly, a bonus of 10 points per minute will be awarded for each full minute saved. If a single “minor” error (defined as no more than two incorrectly filled cells) is present in a round submitted for bonus, a bonus of 6 points per minute will be awarded for each full minute saved. In case of ties, rankings will be determined by scores in round 2, then 1, 3, 4, 5 and 6.

## Team Competition

The team competition is based on 2 rounds. The sum of scores from these rounds will determine the team ranking of the 7th Asian Sudoku Championship. If a player finishes all puzzles correctly, a bonus of 40 points per minute will be awarded for each full minute saved. If a single “minor” error (defined as no more than two incorrectly filled cells) is present in a round submitted for bonus, a bonus of 24 points per minute will be awarded for each full minute saved. In case of ties, rankings will be determined by scores in round 7, then 8.

## Competition Hall Rules

1. All competitors in both individual and team competitions have to sit at their pre-allocated desks.
2. Competitors must ensure they are at their desks ready for the start of the round. Late arrivals may not be permitted to enter the competition hall to take part in a round (at the discretion of the organizers).
3. Prior to the start of each round, competitors should clearly write their name and team on the front page of their competition booklet in the allocated space. If this information is not complete, then the organizers reserve the right not to award any points to that competitor for that round.
4. Competitors must not open their booklets before the official start of the round. Only when the signal for the start of the round has been given, competitors may open their booklets and begin solving the puzzles.
5. During each individual round, competitors must keep silent, unless declaring completion of a round.
6. Puzzles can be completed in any order within a round. The point value of a puzzle is an indication of its expected difficulty, although individual solving experience

may differ. The difficulty of an example puzzle does not necessarily reflect the difficulty of the corresponding competition puzzle.

7. The official puzzle booklets will not contain puzzle examples. Competitors are allowed (and encouraged) to bring the Instruction Booklet to their desk as it contains examples for almost every puzzle which will be part of the championship.
8. When a competitor believes that there is a problem with a puzzle, they must clearly state that puzzle is wrong by writing "Wrong puzzle" next to it. The competitor must not notify the organizers during the round. This will be investigated upon completion of the round.
9. To declare a round complete, a competitor must close their booklet, clearly state "finished" and raise their arm with the booklet. The competitor's arm must be raised until the booklet is collected. The same rules apply for the team competition.
10. Competitors or teams who complete a round with more than five minutes in advance, are allowed to leave the competition hall quietly. However, competitors or teams who complete a round with five minutes or less left are not allowed to leave their desks as to not disrupt fellow competitors.
11. If a competitor leaves the competition hall for any reason, they may not be allowed to continue in that round (at the discretion of the organizers).
12. When the signal is given that the round is finished, competitors must immediately stop solving, close their booklets, put their pens or pencils down and remain seated until all booklets have been collected. The signal to get up and leave will be given by the supervisor.
13. Mobile phones and electronic devices are not permitted to use in the competition hall. The devices have to be turned off and must not be placed on the competitor's desk.
14. Only official observers and guests equipped with a name tag are allowed to enter the competition hall while either individual or team rounds are taking place. Other non-competing participants may enter the competition hall at the discretion of the organizers.
15. Competitors may not use cameras or other recording devices during rounds. Only official observers and guests may do so, at the discretion of the organizers. They have to respect the competitors and not use flash photography or cameras with excessive sounds.

## Permitted Items

1. Permitted items are pens and pencils (except for red pens), pencil sharpeners, erasers, rulers, and instruction booklets annotated with notes regarding puzzle instructions.
2. Drinks and snacks are permitted as long as they do not disturb other competitors with a strong smell or rustling packet.
3. It is strictly forbidden to use electronic devices such as music players and headphones or any type of calculator. Use of such equipment may lead to the disqualification of the competitor.
4. Any other items brought into the hall must be kept in a bag on the floor and placed under the competitor's desk.

## Marking and Protest

1. When a round has been evaluated, fully marked booklets are returned to each competitor and teams.
2. In case of protests, after a booklet has been evaluated and returned, the protest must be raised to the organizers in the specified time. The booklet will be left with the organizers for investigation.
3. Papers may be photographed during the marking to prevent subsequent alterations.
4. The decision of the 7th Asian Sudoku Competition director (Sinchai Jaturangkhajit) is final.

## Credits

Puzzles and examples of the 7th Asian Sudoku Competition are written by Sakulbuth Ekvittayaniphon, Sinchai Jaturangkhajit, Tawan Sunathvanichkul and Tana Wattanawaroon. We would like to thank the test solvers: Tom Collyer, Tantan Dai, Matúš Demiger and Tiit Vunk.

Some puzzle rules in this Instruction Booklet are borrowed from past World Sudoku Championships.

*The 7th Asian Sudoku Competition director has a degree in Electrical Engineering but never had the opportunity to use that knowledge in his current field of work. The occasion has finally come as we were planning the theme of the Individual Competition.*

**Round 1: Direct Current**  
**09:00–09:30**

**300 points**  
**30 mins**

- |     |                      |           |      |                        |           |
|-----|----------------------|-----------|------|------------------------|-----------|
| 1.1 | 9 × 9 Classic Sudoku | 20 points | 1.6  | 9 × 9 Classic Sudoku   | 30 points |
| 1.2 | 9 × 9 Classic Sudoku | 25 points | 1.7  | 9 × 9 Classic Sudoku   | 30 points |
| 1.3 | 9 × 9 Classic Sudoku | 25 points | 1.8  | 9 × 9 Classic Sudoku   | 50 points |
| 1.4 | 9 × 9 Classic Sudoku | 25 points | 1.9  | 9 × 9 Irregular Sudoku | 25 points |
| 1.5 | 9 × 9 Classic Sudoku | 30 points | 1.10 | 9 × 9 Irregular Sudoku | 40 points |

*This round consists of Classic Sudokus followed by some Irregular Sudokus.*

**1.1 – 1.8** 9 × 9 Classic Sudoku 20 + 25 + 25 + 25 + 30 + 30 + 30 + 50 points

Fill each empty cell with numbers from 1 to 9 so that each row, column, and outlined 3 × 3 box contains each number from 1 to 9 exactly once.

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

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

**1.9 – 1.10** 9 × 9 Irregular Sudoku 25 + 40 points

Fill each empty cell with numbers from 1 to 9 so that each row, column, and outlined region contains each number from 1 to 9 exactly once.

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

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



## Round 2: Alternating Current

09:40–10:25

450 points

45 mins

2.1	9 × 9 Thermo Sudoku	25 points
2.2	9 × 9 Odd Labyrinth Sudoku	30 points
2.3	9 × 9 Blackout Sudoku	30 points
2.4	9 × 9 Diagonal Sudoku	35 points
2.5	9 × 9 Odd/Even Sudoku	45 points
2.6	9 × 9 Renban Sudoku	55 points
2.7	9 × 9 Fortress Sudoku	80 points
2.8	9 × 9 Numbered Rooms Sudoku	150 points

*This round contains a mix of variants. Some are well-known and some are less so.*

### 2.1 9 × 9 Thermo Sudoku

25 points

9 × 9 Classic Sudoku rules apply. Additionally, some thermometer shapes are in the grid. Numbers must be strictly increasing from the bulb to the flat end.

	1					5		
8								7
			4					
9								1
	7							2

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

**2.2 9 × 9 Odd Labyrinth Sudoku****30 points**

9 × 9 Classic Sudoku rules apply. Additionally, there must be at least one path that runs from the left top corner to the right bottom corner over cells that contain odd numbers. This path can only travel horizontally and vertically.

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

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

**2.3 9 × 9 Blackout Sudoku****30 points**

Fill each empty cell with numbers from 1 to 9 so that each row, column, and outlined 3 × 3 box contains distinct numbers.

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

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

## 2.4 9 × 9 Diagonal Sudoku

35 points

9 × 9 Classic Sudoku rules apply. Additionally, each number appears exactly once in the each of the two main diagonals.

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

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

## 2.5 9 × 9 Odd/Even Sudoku

45 points

9 × 9 Classic Sudoku rules apply. Additionally, the numbers in cells marked with circles are odd, and the numbers in cells marked with squares are even.

				5			3	2
							5	4
		○	○		4	7		
		○	○		6	5		
8								7
		1	2		■	■		
		4	3		■	■		
2	3						○	○
7	5			6			○	○

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

**2.6 9 × 9 Renban Sudoku****55 points**

9×9 Classic Sudoku rules apply. Additionally, each marked line contains a set of distinct, consecutive numbers in any order.

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

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

**2.7 9 × 9 Fortress Sudoku****80 points**

9 × 9 Classic Sudoku rules apply. Additionally, each number in a shaded cell must be larger than any number in an unshaded cell that it shares an edge with.

				5			3	2
							5	4
				4	7			
				6	5			
6				4				7
		1	2					
		4	3					
2	3							
7	5			6				

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





## Round 3: AND

10:35–11:20

450 points

45 mins

3.1	9 × 9 Kropki Pairs + Non-consecutive Sudoku	40 points
3.2	9 × 9 Odd Labyrinth + Killer Sudoku	50 points
3.3	9 × 9 Outside + Pencilmark Sudoku	50 points
3.4	9 × 9 Palindrome + Rhombus Sudoku	65 points
3.5	9 × 9 Diagonal + Consecutive Clone Sudoku	75 points
3.6	9 × 9 Anti-knight + David & Goliath Sudoku	80 points
3.7	9 × 9 X-sums + Windoku	90 points

This round consists of hybrids where two variants appear in one grid.

### 3.1 9 × 9 Kropki Pairs + Non-consecutive Sudoku

40 points

9 × 9 Classic Sudoku rules apply. Additionally, the following rules apply.

- **Kropki Pairs:** If a black circle is given between two adjacent cells, then the two numbers must have a ratio of 2; that is, one number must be exactly double the other number. Pairs of cells without black circles may have any ratio.
- **Non-consecutive:** Numbers placed in two cells that share an edge must not be consecutive.

There are no “white circles” because of the **Non-consecutive** rule.

			7	•				
•				5		•		
					3			•
9	•		•			1		
	7						9	
		5		•		•		7
•			4					
	•			1				•
			•	9				

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

### 3.2 9 × 9 Odd Labyrinth + Killer Sudoku

50 points

9 × 9 Classic Sudoku rules apply. Additionally, the following rules apply.

- **Odd Labyrinth:** There must be at least one path that runs from the left top corner to the right bottom corner over cells that contain odd numbers. This path can only travel horizontally and vertically.
- **Killer:** The clue in each cage indicates the sum of all numbers in the corresponding cage. Numbers must not repeat within the same cage.

①		21		4		10		8
	2						3	
25		3		16		5	11	
		4						
4		11		5	12			6
			15	6		17		
12		1				7		
	6	25			11		8	
2				6				⑨

①	5	7	3	4	2	10	6	9	8
9	2	6	5	1	8	4	3	7	
8	4	3	6	9	7	5	2	1	
6	7	8	4	2	9	1	5	3	
4	1	2	8	5	3	9	7	6	
5	3	9	1	7	6	8	4	2	
3	9	1	2	8	4	7	6	5	
7	6	5	9	3	1	2	8	4	
2	8	4	7	6	5	3	1	⑨	

### 3.3 9 × 9 Outside + Pencilmark Sudoku

50 points

9 × 9 Classic Sudoku rules apply. Additionally, the following rules apply.

- **Outside:** The clues outside the grid must appear within the first 3 cells in the corresponding direction.
- **Pencilmark:** Each pencilmark clue includes all possible candidates for the number placed in the corresponding cell. There are no restrictions for cells without pencilmark clues.

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

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

### 3.4 9 × 9 Palindrome + Rhombus Sudoku

65 points

9 × 9 Classic Sudoku rules apply. Additionally, the following rules apply.

- **Palindrome:** Numbers placed along each marked line forms a palindromic sequence –they read the same from both directions.
- **Rhombus:** In each rhombus, the sum of the numbers on the four vertices is divisible by number in the center.

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

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

### 3.5 9 × 9 Diagonal + Consecutive Clone Sudoku

75 points

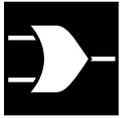
9 × 9 Classic Sudoku rules apply. Additionally, the following rules apply.

- **Diagonal:** Each number appears exactly once in the each of the two main diagonals.
- **Consecutive Clone:** Two regions with identical shapes are marked. Numbers in the corresponding cells from the two regions must be consecutive.

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

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





## Round 4: OR

11:30–12:15

450 points

45 mins

4.1	9 × 9 Point-to-Next or Search 9 Sudoku	30 points
4.2	9 × 9 Anti-knight or No Touch or Neither Sudoku	35 points
4.3	9 × 9 7 or 11 Sudoku	45 points
4.4	9 × 9 Fortress or Anti-fortress Sudoku	65 points
4.5	9 × 9 Skyscrapers (Left or Right) Sudoku	70 points
4.6	9 × 9 Alt-parity or German Whispers or Renban Sudoku	85 points
4.7	9 × 9 Descriptive Pairs Sudoku	120 points

This round consists of puzzles where different rules may apply to elements in the same grid. Solvers have to determine which rule applies to each element.

### 4.1 9 × 9 Point-to-Next or Search 9 Sudoku

30 points

9 × 9 Classic Sudoku rules apply. Additionally, for each number  $X$  in a cell with an arrow, one (or both) of the following applies:

- **Point to Next:** The number  $X + 1$  is in one of the cells in the direction of the arrow.
- **Search 9:** The nearest 9 is  $X$  cells away in the direction of the arrow.

			9					
		5	→	4		↓	2	↘
	3	→	1	→	8		↗	4
		6	→	9			8	
			6		3			
	5			7	←	2		
9	↘		5	←	2	←	4	
↖	7	↑		6	←	5		
					9			

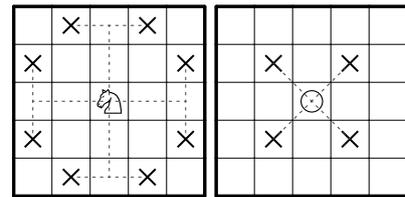
4	2	1	9	5	6	3	7	8
8	9	5	3	4	7	1	2	6
6	3	7	1	2	8	9	5	4
1	4	6	2	9	5	7	8	3
7	8	2	6	1	3	4	9	5
3	5	9	8	7	4	2	6	1
9	1	3	5	8	2	6	4	7
2	7	8	4	6	1	5	3	9
5	6	4	7	3	9	8	1	2

## 4.2 9 × 9 Anti-knight or No Touch or Neither Sudoku

35 points

Define the following properties.

- A number has the **Anti-knight** property if it never appears in a pair of cells that are a chess knight's move away.
- A number has the **No Touch** property if it never appears in a pair of diagonally touching cells.



9 × 9 Classic Sudoku rules apply. Additionally, split the numbers 1 to 9 into three groups of three numbers each.

- Three numbers have the **Anti-knight** property but not the **No Touch** property. (Each number appears in at least one pair of diagonally touching cells).
- Three numbers have the **No Touch** property but not the **Anti-knight** property. (Each number appears in at least one pair of cells that are a chess knight's move away).
- Three numbers have neither the **No Touch** property nor the **Anti-knight** property.

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

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

### 4.3 9 × 9 7 or 11 Sudoku

45 points

9 × 9 Classic Sudoku rules apply. Additionally, orthogonally adjacent cells with numbers summing to 7 or 11 are marked by a black square. All possible squares are given; that is, orthogonally adjacent cells without a black square sum to a number other than 7 and 11.

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

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

### 4.4 9 × 9 Fortress or Anti-fortress Sudoku

65 points

9 × 9 Classic Sudoku rules apply. Additionally, for each orthogonally connected group of shaded cells, one of the following applies:

- **Fortress:** Each number in a shaded cell must be larger than any number in an unshaded cell that it shares an edge with.
- **Anti-fortress:** Each number in a shaded cell must be smaller than any number in an unshaded cell that it shares an edge with.

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

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

#### 4.5 9 × 9 Skyscrapers (Left or Right) Sudoku

70 points

9 × 9 Classic Sudoku rules apply. Additionally, each number inside the grid represents the height of a skyscraper in that cell. A skyscraper clue outside the grid in each row indicates the number of skyscrapers that can be seen in the corresponding row either from the left side or the right side (or both). Taller skyscrapers hide shorter ones.

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

#### 4.6 9 × 9 Alt-parity or German Whispers or Renban Sudoku 85 points

9 × 9 Classic Sudoku rules apply. Additionally, there are three marked lines, one each of the following types:

- **Alt-parity:** Adjacent numbers on the line must not be of the same parity.
- **German Whisper:** Adjacent numbers on the line must differ by 5 or more.
- **Renban:** The line contains a set of distinct, consecutive numbers in any order.

There must be one line of each type. No line can have more than one type.

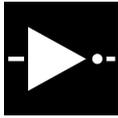
9		8			6		7		9	5	8	3	2	6	4	7	1
	3		7			9		2	4	3	6	7	1	5	9	8	2
1		7						6	1	2	7	9	8	4	3	6	5
	4			7				8	6	4	9	5	7	3	2	1	8
			6		8				5	1	2	6	4	8	7	3	9
7				9				4	7	8	3	2	9	1	5	4	6
	9					1		7	3	9	4	8	6	2	1	5	7
2		5			7			9	2	6	5	1	3	7	8	9	4
	7		4			6		3	8	7	1	4	5	9	6	2	3

## 4.7 9 × 9 Descriptive Pairs Sudoku

120 points

9×9 Classic Sudoku rules apply. Additionally, for each pair of numbers (X and Y) outside the grid, either X is in the Yth position in the corresponding direction or Y is in the Xth position in the corresponding direction (or both).

		1	3	5	7	1	2	4	6	8																																																																																												
		2	4	6	8	9	3	5	7	9																																																																																												
1	2	<table border="1" style="border-collapse: collapse; width: 100%; height: 100%; text-align: center;"> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>																																																																																																			1	4
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		2	2	2	2	2	2	2	7	7																																																																																												
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		1	3	5	7	1	2	4	6	8																																																																																												
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1	3	6	9	1	8	4	3	2	5	7	2	5																																																																																										
1	4	4	5	3	1	2	7	6	8	9	3	6																																																																																										
1	5	5	3	4	2	7	9	8	1	6	4	7																																																																																										
1	6	9	2	6	3	8	1	4	7	5	5	8																																																																																										
1	7	7	1	8	6	5	4	3	9	2	7	9																																																																																										
1	8	8	7	9	4	1	2	5	6	3	4	6																																																																																										
1	9	3	4	5	7	6	8	9	2	1	4	8																																																																																										
2	3	1	6	2	9	3	5	7	4	8	4	5																																																																																										
		2	2	2	2	2	2	2	7	7																																																																																												
		3	4	5	6	7	8	9	8	8																																																																																												



## Round 5: NOT

13:30–14:15

450 points

45 mins

5.1	9 × 9 Anti-renban Sudoku	35 points
5.2	9 × 9 Almost-renban Sudoku	40 points
5.3	9 × 9 Exclusion Sudoku	55 points
5.4	9 × 9 Between (Lockout Liar) Sudoku	55 points
5.5	9 × 9 Classic (Liar) Sudoku	55 points
5.6	9 × 9 Little Killer (Liar) Sudoku	65 points
5.7	9 × 9 Three is a Crowd Sudoku	145 points

*This round consists of variants involving negative constraints and false clues.*

### 5.1 9 × 9 Anti-renban Sudoku

35 points

9 × 9 Classic Sudoku rules apply. Additionally, all numbers on each marked line must be at least 2 apart from every other number on the same line.

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

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

### 5.2 9 × 9 Almost Renban Sudoku

40 points

9 × 9 Classic Sudoku rules apply. Additionally, each marked line contains a set of distinct, consecutive numbers in any order, except for one number which must be at least 2 apart from every other number in that region.

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

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

### 5.3 9 × 9 Exclusion Sudoku

55 points

9 × 9 Classic Sudoku rules apply. Additionally, some clues are given at cell intersections. The 4 cells around the clue must not contain numbers from the clue.

			5					
		12 34		3			45 79	
	2			78 9				
1		2			6		34 5	
	25 6		5		3			
	4		13 4			8		
							12 78	
			7		9			

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

## 5.4 9 × 9 Between (Lockout Liar) Sudoku

55 points

9×9 Classic Sudoku rules apply. Additionally, for each marked line, the following applies:

- **Between:** Every number on the line must have a value which lies between the values of the numbers in the two circle ends.

However, one marked line is a **lockout liar** and the following applies instead:

- **Lockout:** Every number on the line must have a value which do not lie between the values of the numbers in the two circle ends. Numbers on the two circle ends may be equal.

In all cases, every number on the line must be different from the numbers in the two circle ends.

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

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

### 5.5 9 × 9 Classic (Liar) Sudoku

55 points

9 × 9 Classic Sudoku rules apply. **However**, one given number is a **liar** and needs to be replaced with a different number.

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

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

### 5.6 9 × 9 Little Killer (Liar) Sudoku

65 points

9 × 9 Classic Sudoku rules apply. Additionally, each clue outside the grid is the sum of numbers in the direction pointed by its arrow. **However**, one clue outside the grid is a **liar** and provides an incorrect sum.

				8				
			7		9			
		1				6		
			5		3			
				4				

Clues: 4, 6, 8, 10 (top); 6, 15, 18, 10 (right); 33, 15, 5, 1 (left); 6, 24, 9, 4 (bottom)

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

Clues: 4, 6, ~~8~~, 10 (top); 6, 15, 15, 18, 10 (right); 33, 15, 5, 1 (left); 6, 24, 9, 4 (bottom)

## 5.7 9 × 9 Three is a Crowd Sudoku

145 points

9 × 9 Classic Sudoku rules apply. Additionally, For each set of three numbers given outside the grid, two of the three numbers appear within the first box in the corresponding direction, while the third number is a **liar** and must not be in those cells. Moreover, for each of the four sides of the grid, the **liar** numbers are different.

			1	1	3	3	4	6	7	2	3			
			2	2	8	4	5	7	8	5	4			
			3	5	9	5	6	8	9	8	9			
1	3	5	3								4	7	8	9
2	4	8										1	2	3
3	7	9					4					2	5	6
2	4	6				7		3				3	8	9
5	8	9			4				7			3	4	5
5	6	7				8		4				1	2	5
1	2	7					7					3	4	6
3	8	9										5	6	8
7	8	9	6								1	1	2	7
			1	2	1	2	3	4	3	4	7			
			5	3	2	4	5	5	5	6	8			
			9	4	3	6	7	6	7	8	9			
			<del>1</del>	1	<del>8</del>	3	4	<del>6</del>	<del>7</del>	2	3			
			2	<del>2</del>	8	<del>4</del>	<del>5</del>	7	8	5	4			
			3	5	9	5	6	8	9	<del>8</del>	<del>9</del>			
<del>1</del>	3	5	3	5	6	1	2	9	8	7	4	7	8	<del>9</del>
<del>2</del>	4	8	4	1	8	5	6	7	9	2	3	<del>1</del>	2	3
<del>8</del>	7	9	2	7	9	3	4	8	1	5	6	<del>2</del>	5	6
2	<del>4</del>	6	1	6	2	7	5	3	4	8	9	<del>8</del>	8	9
<del>5</del>	8	9	8	9	4	6	1	2	7	3	5	3	<del>4</del>	5
5	<del>6</del>	7	7	3	5	8	9	4	6	1	2	1	2	<del>5</del>
1	2	<del>7</del>	5	2	1	9	7	6	3	4	8	3	4	<del>6</del>
3	<del>8</del>	9	9	4	3	2	8	1	5	6	7	5	6	<del>8</del>
7	8	<del>9</del>	6	8	7	4	3	5	2	9	1	1	2	<del>7</del>
			<del>1</del>	2	1	2	3	<del>4</del>	3	4	7			
			5	<del>8</del>	<del>2</del>	4	<del>5</del>	5	5	6	8			
			9	4	3	<del>6</del>	7	6	<del>7</del>	<del>8</del>	<del>9</del>			



## Round 6: Circuit Boards

500 points

14:25–15:15

50 mins

6.1  $9 \times 9$  Interconnected Sudoku with Meta 500 points

*This round consists of interconnected Sudokus being laid out on a circuit diagram.*

There are nine  $9 \times 9$  Sudoku grids (on separate small sheets of paper), a template where you can place the nine Sudoku grids in a  $3 \times 3$  configuration, and a “placement table.” The center cell of each  $3 \times 3$  box in the Sudoku grids is shaded.

Place all nine grids without rotation or reflection on the template and fill each empty cell with numbers from 1 to 9 so that all these conditions are met.

- Each Sudoku grid follows the  $9 \times 9$  Classic Sudoku rules.
- The shaded cells form another “meta”  $9 \times 9$  Classic Sudoku, where each Sudoku grid is a  $3 \times 3$  box in the “meta” Sudoku.
- If there is a dashed line connecting cells between two Sudoku grids (on the template), then the numbers in these cells must be the same. There are no restrictions for cells without dashed lines between them.

### Submission

The solution can be submitted on small sheets or in the template grid (or both). It is acceptable to submit some grids on small sheets and others on the template. If there are solutions to the same labeled grid on both the small sheet and the template, you need to clearly mark which solution you would like to submit (e.g. by crossing out the unwanted solution). If neither of them is marked, the solution with more filled digits will be considered the submission, and the other will be ignored.

The  $3 \times 3$  “placement table” is **mandatory**—you must write the placement in the “placement table” to receive placement points.

### Scoring

Each correctly completed Sudoku grid is worth 50 points. A correctly completed “placement table” is worth 50 points.

For the purpose of calculating bonus points, the nine Sudoku grids plus the placement table are treated like ten separate puzzles.

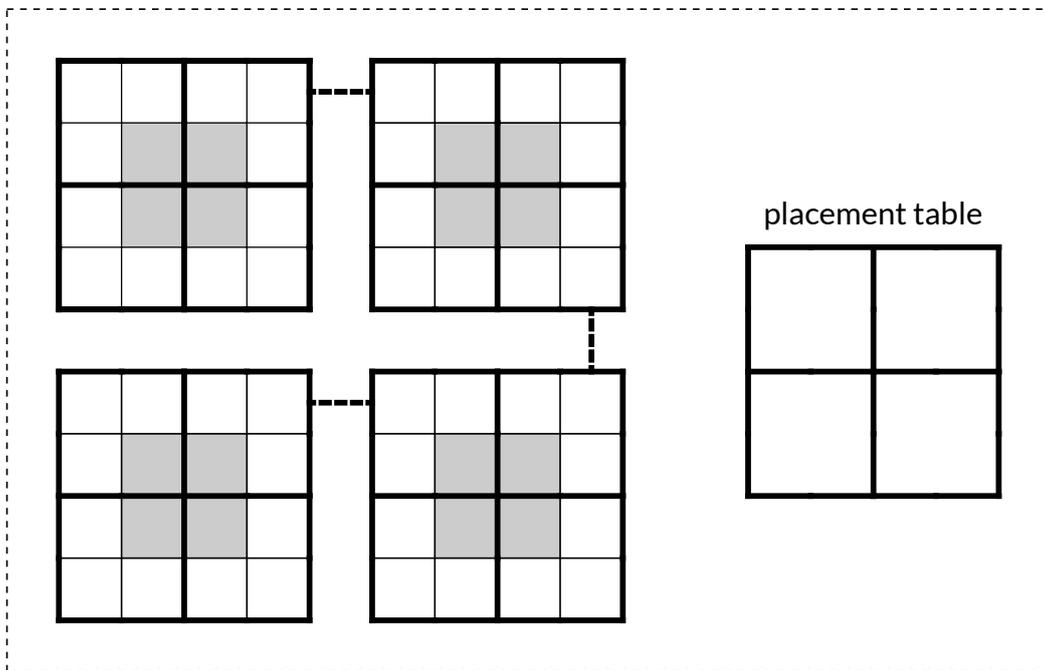
The example is a smaller puzzle, consisting of four  $4 \times 4$  Sudoku grids to be arranged in a  $2 \times 2$  configuration. The shaded cells form another “meta”  $4 \times 4$  Classic Sudoku.

		4	
			3
1		A	
	2		

		1	
			3
4		B	
	3		

		3	
			1
4		C	
	1		

		2	
			4
3		D	
	4		



2	3	4	1
4	1	2	3
1	4	3	2
3	2	1	4

1	4	3	2
2	3	4	1
4	2	1	3
3	1	2	4

4	1	2	3
2	3	1	4
3	2	4	1
1	4	3	2

3	2	1	4
1	4	2	3
4	1	3	2
2	3	4	1

A	C
D	B

placement table