

UKPA Hybrid Sudoku Contest

Friday 28 February – Monday 2 March

Duration: 90 minutes

INSTRUCTION BOOKLET

This contest contains 8 puzzles, each combining a mathematical constraint and a shading constraint. There are no given digits in any of the puzzles. The round is partly inspired by the *Double Dutch* and *All 81* rounds in the 2019 World Sudoku Championship in Kirchheim, Germany.

The constraints are combined as shown in the following table.

Puzzle	Mathematical Constraint	Shading Constraint
1	Frame	Renban
2		Clone
3	Killer	
4		
5	Little Killer	Even
6		
7	X-Sums	Renban
8		

The provisional points distribution for the contest is as follows.

Puzzle	Description	Points
1	Frame and Renban	85
2	Frame and Clone	60
3	Killer and Clone	65
4	Killer and Thermo	45
5	Little Killer and Thermo	65
6	Little Killer and Even	45
7	X-Sums and Even	35
8	X-Sums and Renban	50
Total		450

All puzzles and examples have been set by David McNeill. If you enjoy the contest, there will be a round of the same design at the forthcoming UK Open Tournament where places are still available. Contact liane@ukpuzzles.org for details.

Participant Details

To participate, you will need to register online with the UK Puzzle Association at <http://forum.ukpuzzles.org/ucp.php?mode=register> . Any questions related to the instructions should be raised in the discussion thread at <http://forum.ukpuzzles.org/viewtopic.php?f=5&t=2071> . The contest is designed to be printed out and solved on paper. The competition booklet will consist of 8 pages with one puzzle on each page.

Shortly before the contest starts, the password protected pdf file will be made available at <https://ukpuzzles.org/contests.php?contestid=56> . It is recommended that you download this file before retrieving the password. The contest will start at 14:00 GMT on Friday 28 February 2020, when the password will be made available. Upon retrieving the password, you will have 90 minutes to solve the puzzles and submit your answers via the entry page at <https://ukpuzzles.org/answers.php?contestid=56> . The contest will end at 01:00 GMT on Tuesday 3 March 2020, so it is highly recommended that you retrieve the password and start solving before 23:30 GMT on Monday 2 March 2020.

For answer submission, you will need to enter the contents of 2 rows (labelled A and B) in each puzzle. Please enter in the format 123456789,234567891 (i.e. with a comma between the two rows but no space).

Rules and Examples

General

Complete the grid so that each row, column and 3x3 box contains the digits 1-9.

Mathematical Constraints

Frame: The clues outside the grid give the sum of the first 3 digits in the corresponding row or column.

Killer: The clue in the top left corner of each cage gives the sum of the digits in that cage. Digits cannot repeat in these cages. (Cages will not overlap with shading.)

Little Killer: The clues outside the grid give the sum of the digits in the corresponding diagonal. Digits can repeat on these diagonals.

X-Sums: Outside clues give the sum of the first X digits in the corresponding row or column where X is the first digit.

Shading Constraints

Renban: Each group of grey shaded cells must contain a set of consecutive digits.

Clone: Each identical group of grey shaded cells must contain the same digits in the same positions. Digits can repeat within a group.

Thermo: Digits in each grey shaded thermometer must increase from the bulb.

Even: All cells containing an even digit are shaded grey.

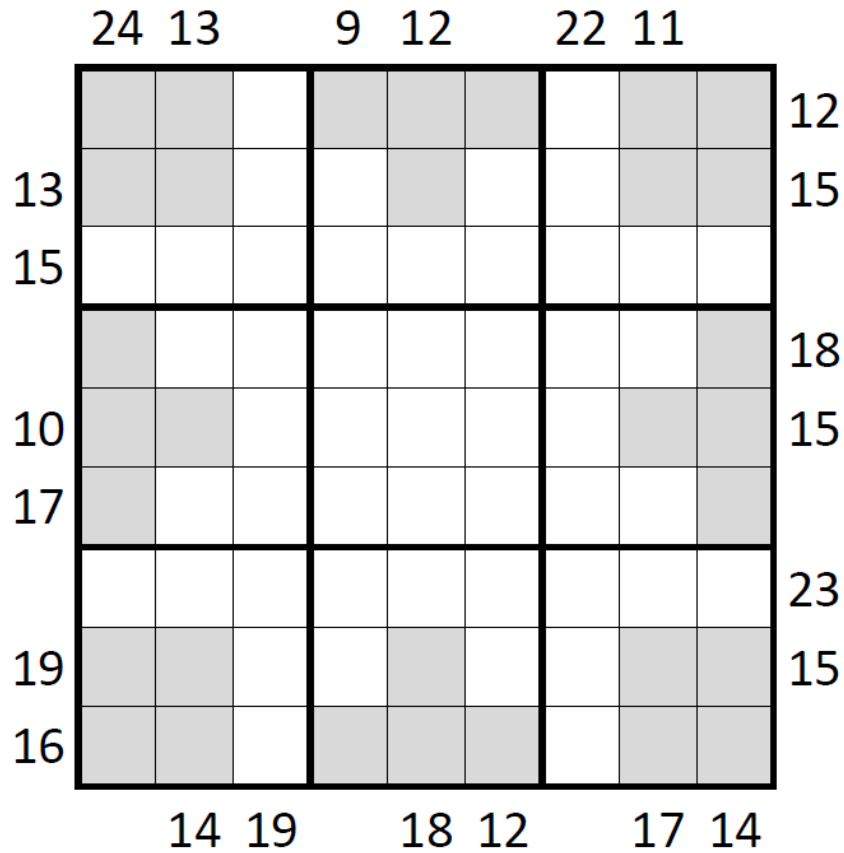
Examples

Examples are provided for 4 of the constraint combinations, corresponding to puzzles 1, 3, 5 and 7 in the contest. Each of the 8 constraints, therefore, features in one of the examples.

The examples are presented two per page. In the actual competition, the puzzles will be presented one per page.

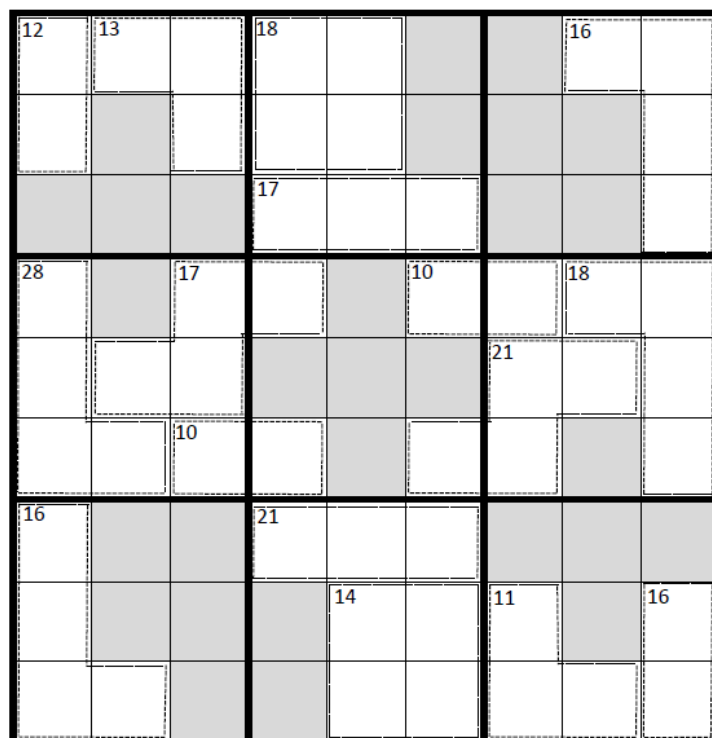
Puzzle 1: Frame and Renban

Complete the grid so that each row, column and 3x3 box contains the digits 1-9. The clues outside the grid give the sum of the first 3 digits in the corresponding row or column. Each group of grey shaded cells must contain a set of consecutive digits.



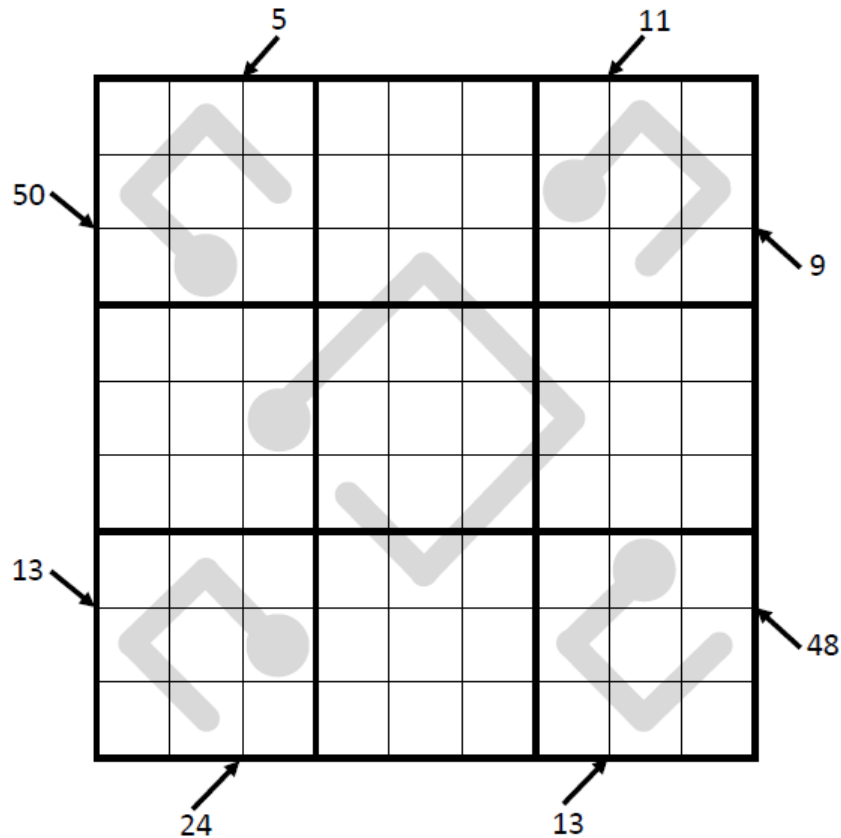
Puzzle 3: Killer and Clone

Complete the grid so that each row, column and 3x3 box contains the digits 1-9. The clue in the top left corner of each cage gives the sum of the digits in that cage. Digits cannot repeat in these cages. Each identical group of grey shaded cells must contain the same digits in the same positions. Digits can repeat within a group.



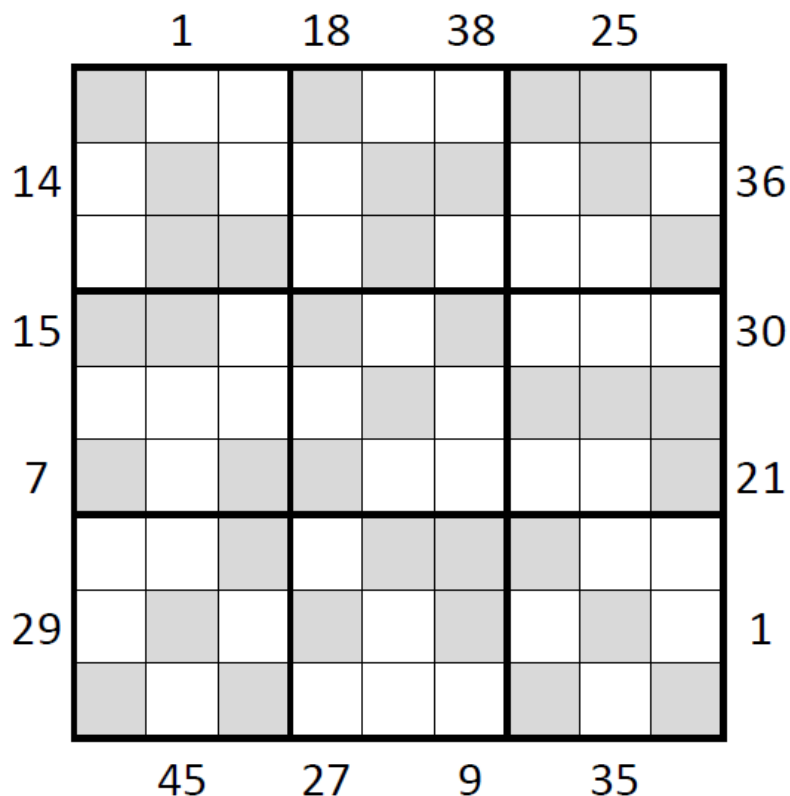
Puzzle 5: Little Killer and Thermo

Complete the grid so that each row, column and 3x3 box contains the digits 1-9. The clues outside the grid give the sum of the digits in the corresponding diagonal. Digits can repeat on these diagonals. Digits in each grey shaded thermometer must increase from the bulb.



Puzzle 7: X-Sums and Even

Complete the grid so that each row, column and 3x3 box contains the digits 1-9. Outside clues give the sum of the first X digits in the corresponding row or column where X is the first digit. All cells containing an even digit are shaded grey.



Solutions

	24	13		9	12		22	11		
	8	6	3	4	5	7	9	2	1	12
13	7	5	1	2	6	9	8	3	4	15
15	9	2	4	3	1	8	5	6	7	
	3	8	7	6	2	1	4	9	5	18
10	4	1	5	8	9	3	2	7	6	15
17	2	9	6	7	4	5	3	1	8	
	1	7	2	5	3	4	6	8	9	23
19	6	4	9	1	8	2	7	5	3	15
16	5	3	8	9	7	6	1	4	2	
		14	19		18	12		17	14	

¹² 9	¹³ 7	2	¹⁸ 1	8	4	3	¹⁶ 6	5
3	5	4	7	2	6	9	8	1
6	1	8	¹⁷ 3	9	5	7	2	4
²⁸ 4	3	¹⁷ 1	9	5	¹⁰ 2	8	¹⁸ 7	6
7	2	5	6	1	8	²¹ 4	9	3
8	9	¹⁰ 6	4	3	7	1	5	2
¹⁶ 2	4	3	²¹ 5	7	9	6	1	8
5	6	9	8	¹⁴ 4	1	¹¹ 2	3	¹⁶ 7
1	8	7	2	6	3	5	4	9

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

				1		18		38		25			
				8	1	9	4	5	7	2	6	3	
14				3	6	5	9	2	8	1	4	7	36
				7	4	2	3	6	1	5	9	8	
15				4	8	1	2	7	6	9	3	5	30
				9	7	3	1	4	5	8	2	6	
7				2	5	6	8	3	9	7	1	4	21
				1	3	4	7	8	2	6	5	9	
29				5	2	7	6	9	4	3	8	1	1
				6	9	8	5	1	3	4	7	2	