Classics vs. Innovatives
Instruction Booklet

4-6 August 2012
120 minutes

(1) About this test

This test contains 16 sudokus — 6 classic types (2 classic sudokus and 4well-known variants) and 10 innovative variants. 3 of the innovative types (Quad max-min, Coordinates, Sum of Them) are invented by Shinichi Aoki for this test. You have 120 minutes to solve them.

(2) Answer Key

Unlike usual Sudoku tests, we adopt 4-digits answer key system in this test. Enter the digits in lettered cells in alphabetical order. Because of this simple system, we will not give any partial points for wrong submissions. Be careful!

(3) Points Table

Classics (130 points) + Innovatives (173 points) + Genre Bonus (30 points) = 333 points

Classics (130)		Points
C1	Classic	10
C2	Irregular	15
C3	Non-consecutive	24
C4	Classic	25
C5	Inequality	26
C6	Killer	30

Innovatives (173)		Points
I1	Rank	11
I2	Odd Labyrinth	12
I3	Between	13
I4	Even Sandwich	14
I5	Search 9	14
I6	Capsule	16
I7	Clone	17
I8	Quad max-min	23
I9	Coordinates	23
I10	Sum of Them	30

Genre Bonus (30)
If you solve x puzzles from C part and y puzzles from I part, you will get additional xy/2 points.

(4) Time Bonus

If you submitted all answers and there is at most 1 wrong answer (with at most 2 wrong digits), you will get time bonus. Your total score is calculated by the following formula:

Total Score = (Earned Points) / (Claim Bonus Time) * (120 minutes)

(5) We are grateful to LMI for giving us such an opportunity and hosting this test.

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Test Solver: Hideaki Jo
Atsumi Hirose

(C1/C4) Classic Sudoku

10 points
25 points

Rule: Place a digit from 1 to 9 in each empty cell so that each digit appears exactly once in each row, column and outlined 3x3 region.

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

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

(C2) Irregular Sudoku

15 points

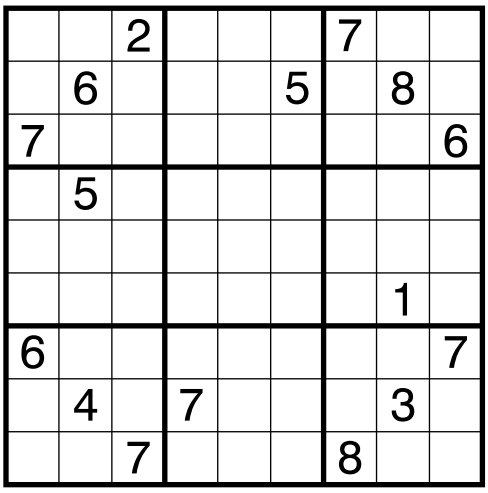
Rule: Apply classic Sudoku rules (Each outlined region is not necessarily a 3x3 square).

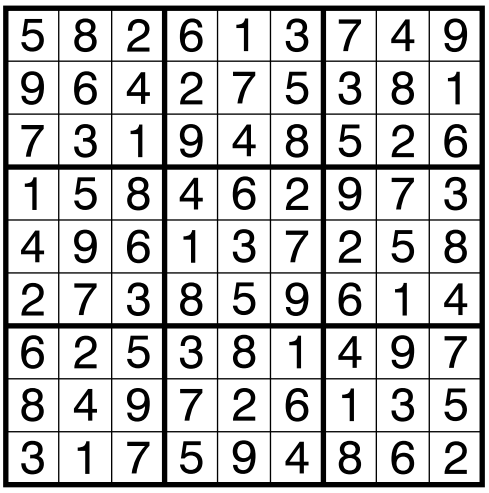
9		5		2		3		1
3		4		8		9		5
2		6				7		3
8		2		9		5		6
1		7		5		4		8

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

(C3) Non-consecutive Sudoku | 24 points

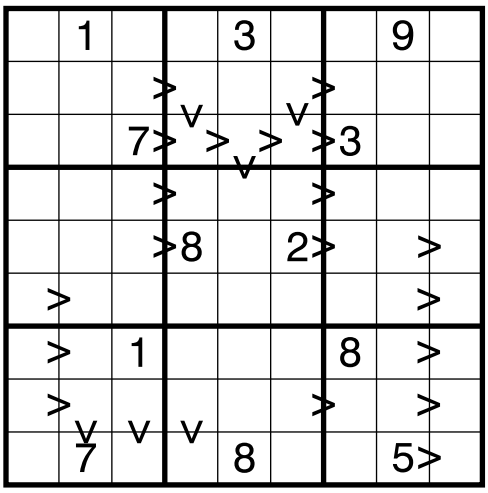
Rule: Apply classic Sudoku rules. Consecutive digits (i.e. digits with difference 1) cannot touch vertically or horizontally.

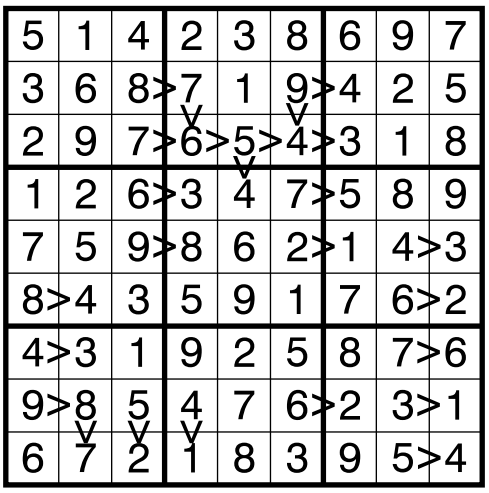




(C5) Inequality Sudoku | 26 points

Rule: Apply classic Sudoku rules. All inequality signs must be correct.

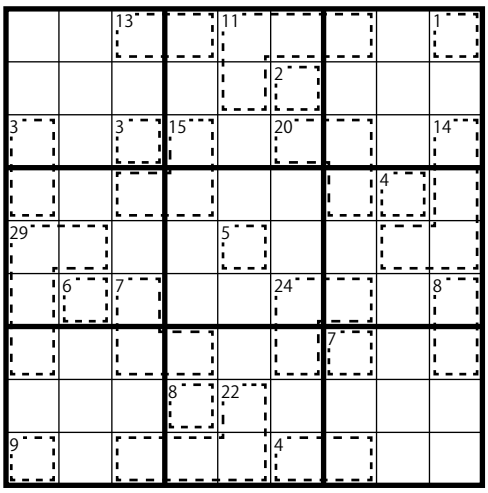


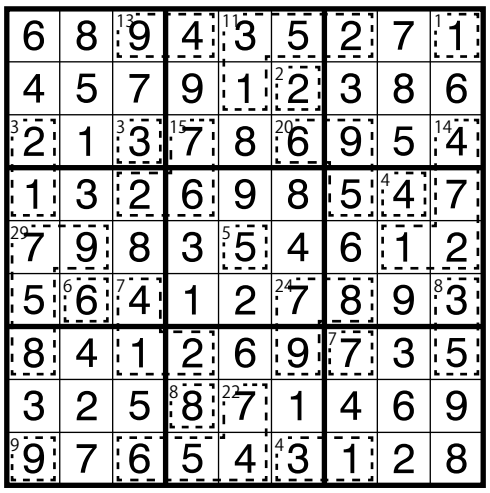


(C6) Killer Sudoku

30 points

Rule: Apply classic Sudoku rules. The number on the top left of each cage denotes the sum of the digit(s) in the cage. Digits cannot repeat in a single cage.

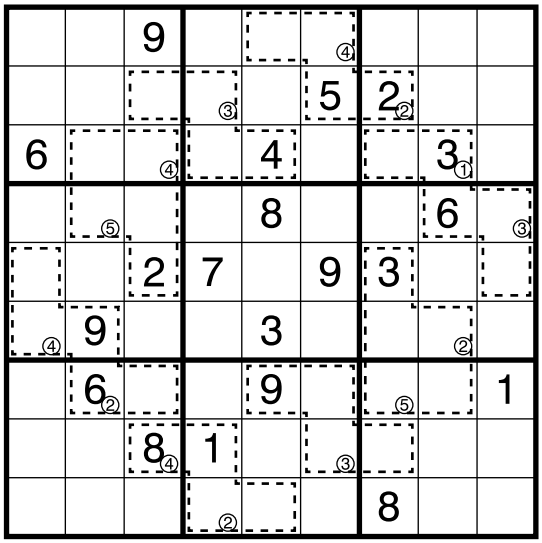


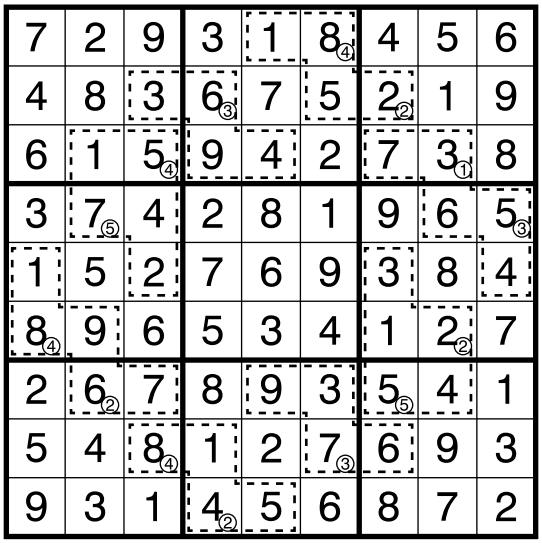


(I1) Rank Sudoku

11 points

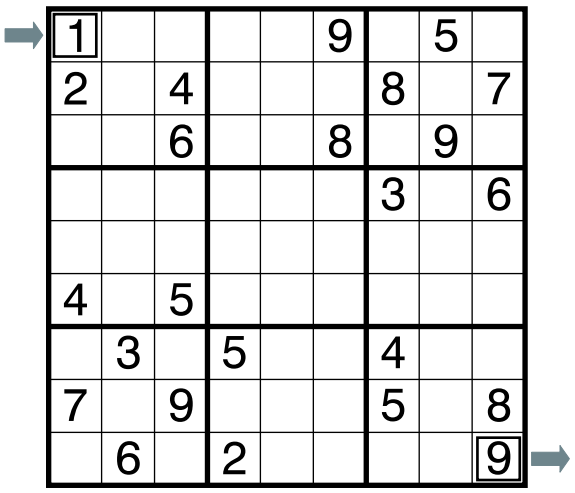
Rule: Apply classic Sudoku rules. (N) means that the digit in the cell is the N-th smallest number in the corresponding cage. Digits cannot repeat in a single cage.

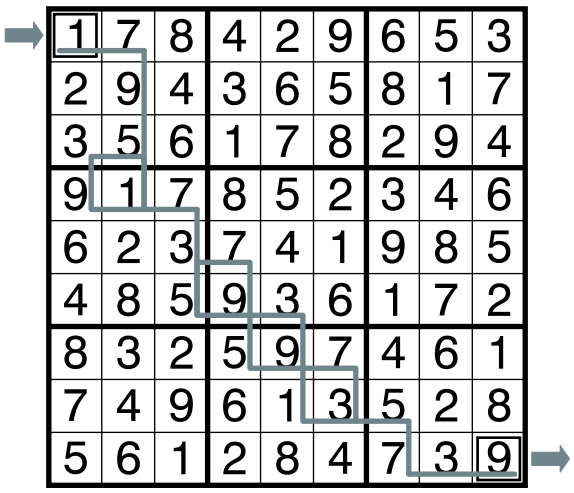




(I2) Odd Labyrinth Sudoku | 12 points

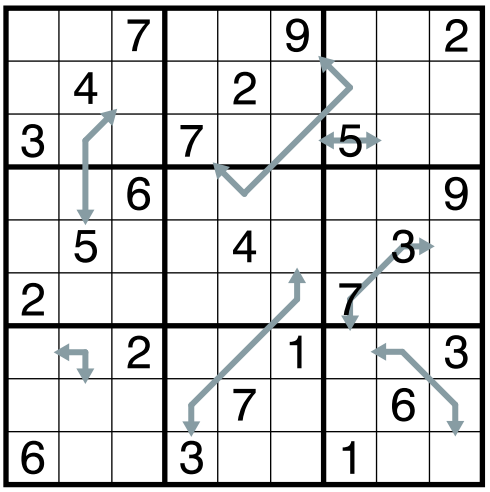
Rule: Apply classic Sudoku rules. There must be at least one paths from the top left cell to the bottom right cell which pass through only odd digits.Diagonal movement is not allowed.

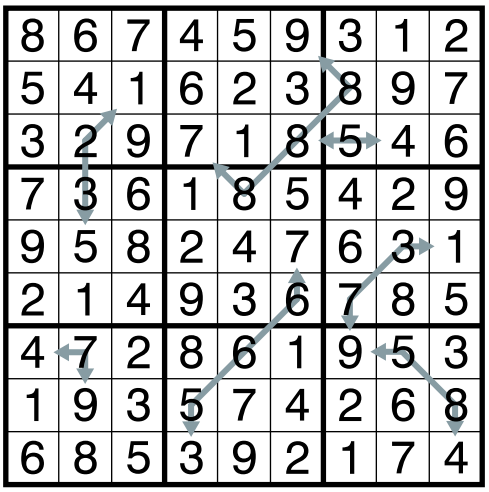




(I3) Between Sudoku | 13 points

Rule: Apply classic Sudoku rules. Digit(s) on each arrow must be between two digits pointed by the arrow.





(I4) Even Sandwich Sudoku | 14 points

Rule: Apply classic Sudoku rules. Numbers on the top show the digits sandwiched by even numbers (i.e. digits whose vertically adjacent cells are both even) in the corresponding column in any order. Numbers on the left show the digits sandwiched by even numbers in the corresponding row in any order. All possible numbers are given. In particular, no digits are sandwiched by even numbers in clueless rows/columns.

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

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

(I5) Search 9 Sudoku | 14 points

Rule: Apply classic Sudoku rules. The number in an arrow denotes the distance (with respect to the number of cells) between the cell and the first seen 9 in the direction.

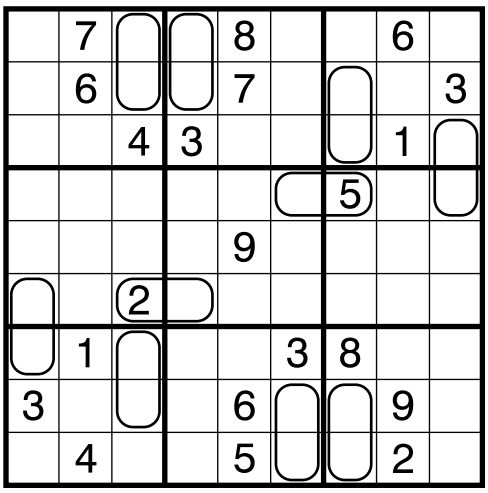
→			9					←
		9		↓			6	
	7				8	1		
8			↑		7	2		
→		↘		6		←		
		6	5					9
		1	7	←			5	←
	3					6		↖
	↑			↑	3			

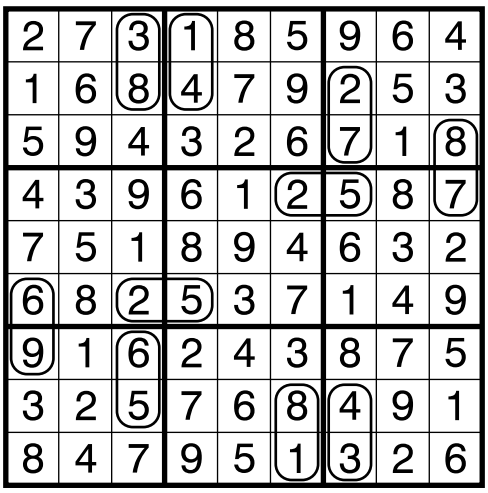
→ 3	1	2	9	7	6	8	4	← 5
4	8	9	1	↓ 2	5	7	6	3
6	7	5	4	3	8	1	9	2
8	5	4	↑ 3	9	7	2	1	6
→ 1	9	↘ 3	2	6	4	← 5	8	7
7	2	6	5	8	1	4	3	9
9	6	1	7	← 4	2	3	5	← 8
5	3	7	8	1	9	6	2	↖ 4
2	↑ 4	8	6	↑ 5	3	9	7	1

(I6) Capsule Sudoku

16 points

Rule: Apply classic Sudoku rules. Each capsule contains one odd number and one even number.



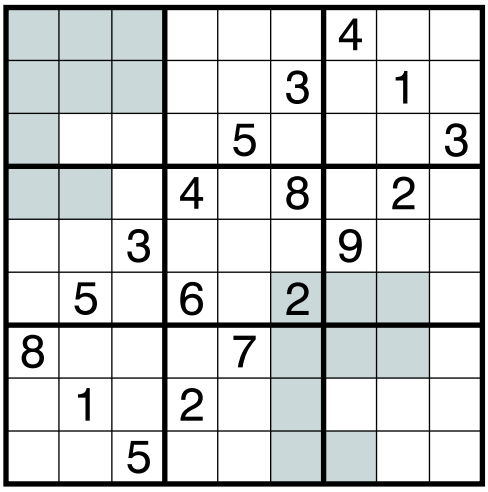


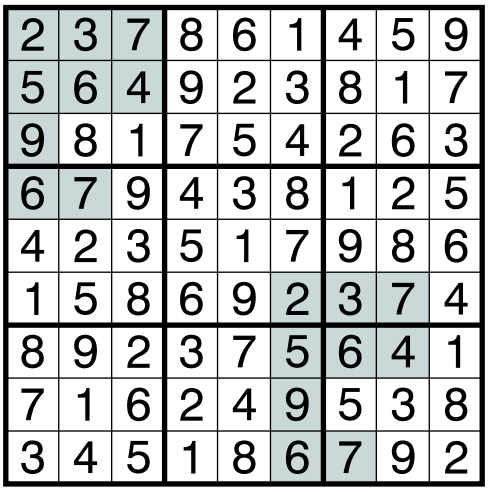
(I7) Clone Sudoku

17 points

Rule: Apply classic Sudoku rules. In two congruent gray shapes, numbers are arranged in the same way.

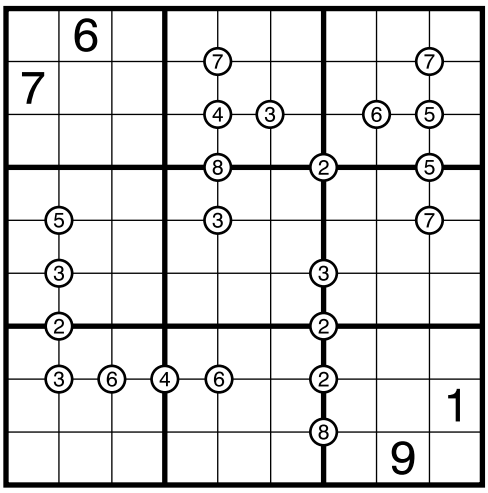
Note: Gray shapes do not have any symmetry in the actual test, as well as in the example puzzle. There is no need to think about rotation/reflection.

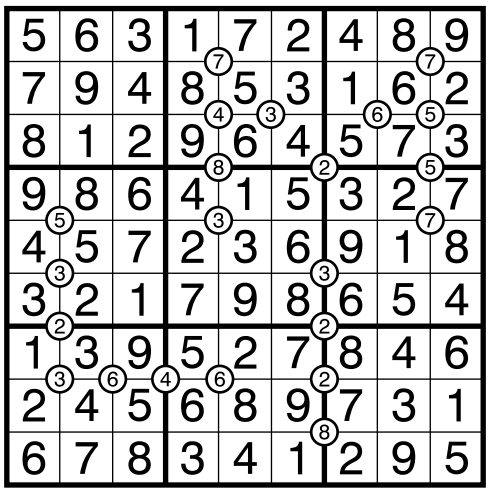




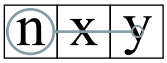
(I8) Quad max - min Sudoku | 23 points

Rule: Apply classic Sudoku rules. Each circled number denotes the difference of maximum digit and minimum digit in its neighboring 4 cells. Digits can repeat around each circle.

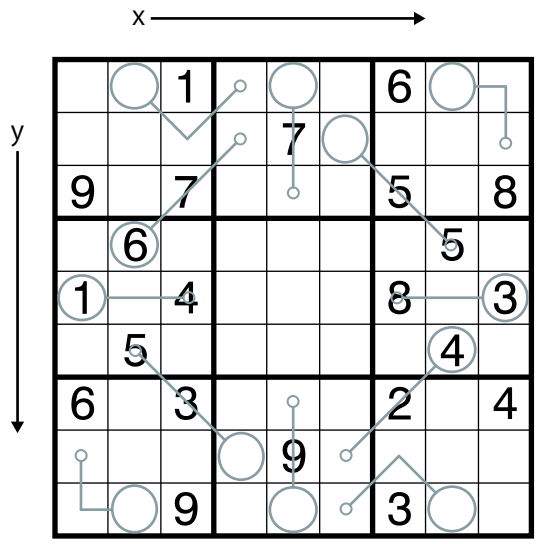


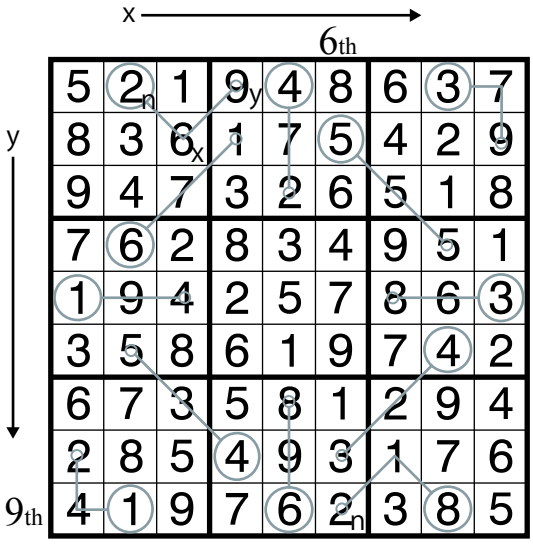


(I9) Coordinates Sudoku | 23 points

Rule: Apply classic Sudoku rules. A coordinate system is given in the grid.  indicates that the digit in (x, y) is n. In other words, the digit in Column x, Row y is n.

Note: If you are familiar with Row-Column notation, you can avoid any confusion by reading backward. That is,  indicates that the digit in Row r, Column c is n.





(I10) Sum of Them Sudoku | 30 points

Rule: Apply classic Sudoku rules. A cell is marked if and only if the digit in the cell can be represented as the sum of some digits in its vertically or horizontally adjacent cells.

Example: 3 in R1C2 is marked because 3 = 2 + 1 (R1C2 = R1C3 + R2C2) holds.
On the other hand, 8 in R2C5 is not marked because 8 cannot be represented as the sum of some digits from 4, 9, 3, 6.