


# Something Is Missing

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by  
*Jakub Hrazdira*

Theme of this Sudoku Test is – Something is missing. Most of the puzzles which you will solve are known sudoku variants, but in each puzzle, some important clue or information will be missing. Time limit for this test is **100 minutes**.

## Puzzle Types and Points

1	Nonconsecutive	40 points
2	Kropki	25 points
3	Jigsaw	35 points
4	Toroidal	45 points
5	Number X Is Alive	65 points
6	Incomplete Sums	60 points
7	Draw A Jigsaw	70 points
8	Which Digit Is Missing?	50 points
9	Hidden Sum Blackout	80 points
10	Instructionless	30 points
	Time Bonus for each saved minute for 10 puzzles solved correctly for 9 puzzles solved correctly	5 points 2
	Total (without Bonus)	500 points

## Important points

- Puzzles 1–3 are normal sudoku variants with no additional rule, Missing Theme is applied only in puzzle design. Instructions to Puzzles 4–9 are provided with usual description of that puzzle type + **What is missing compared to normal puzzle of that type**. Puzzle 10 is Instructionless puzzle.
- **Standard sudoku rules means:** Fill in the grid so that every row, column and 3x3 box contains all different digits from 1 to 9. (Same applies for 6x6 grids in Example puzzles, but with 2x3 size of box and digits 1 to 6 are used)
- The Answer key for each puzzle will be either 2 rows or 2 columns or a combination of row and column, **which will be marked on each grid in Puzzle Booklet**. In puzzle 9 – Hidden Sum Blackout **use 0** for black box in your answer.

## Test solving

Thanks to Maruska Cauchy for test solving the puzzles.

## 1 Nonconsecutive (40 points)

Standard sudoku rules apply. No numbers in vertically or horizontally adjacent cells will be consecutive numbers. (In Example, digits 1–6 are used.)

		2			
				4	
1		3			
			3		1
	6				
			4		2

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

## 2 Kropki (25 points)

Apply standard sudoku rules. The white dots indicate ALL the adjacent cells in which the difference between the two cells is 1. The black dots indicate ALL the adjacent cells in which one digit is the double of the other one. The dot between two cells with digits 1 and 2 has any of these two dots. (In Example, digits 1–6 are used.)

				○	2
	○			○	4
●	○	○			○
○			○	3	○
			○	5	
	○	○			○
1	●			○	

6	4	1	5	3	○	2	
2	○	3	1	4	○	6	
4	6	2	○	3	1	5	
3	1	5	2	6	4	○	
5	3	○	4	6	2	○	1
1	●	2	6	4	○	5	3

## 3 Jigsaw (35 points)

Fill the empty cells with the digits 1–9, such that each row, column and irregular shaped region contains no repeated numbers. (In Example, digits 1–6 are used.)

1					4
	2				
		3			
			4		
				5	
2					6

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

## 4 Toroidal (45 points)

Fill the empty cells with the digits 1–9, such that each row, column and outlined 3x3 region contains no repeated numbers. 3x3 boxes can wrap between the top and bottom edges, and/or the left and right edges of the grid.

**What is missing?: STRAIGHT horizontal and vertical lines, which form toroidal sudoku puzzle with 3x3 regions.**

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

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

## 5 Number X Is Alive (65 points)

Standard sudoku rules apply. Sums in all cages always end with same digit (X). Digits in one cage cannot repeat. (In Example, digits 1–6 are used.)

**What is missing?: Value of the digit X is unknown.**

			3		
					3
	1				
		2			

<sup>16</sup> 1	<sup>16</sup> 6	<sup>16</sup> 4	3	<sup>16</sup> 5	<sup>16</sup> 2
3	2	5	6	1	4
2	5	3	1	4	6
<sup>16</sup> 6	<sup>16</sup> 4	1	<sup>16</sup> 5	2	3
4	1	6	<sup>6</sup> 2	3	<sup>6</sup> 5
5	3	2	4	6	1

X = 6

## 6 Incomplete Sums (60 points)

Apply standard sudoku rules. (In Example, digits 1–6 are used.) Each row is divided into 3 numbers (4-digit + 3-digit + 2-digit). (3+2+1 in Example.) On the right side outside the grid there is the sum of these three numbers in each line.

**What is missing?:** One digit is left out from each total sum.

						44
5	3			4		52
		5				09
				6		20
						41
		4		1		66

4	1	6	2	5	3	444
5	3	2	1	4	6	552
2	6	5	4	3	1	309
1	4	3	5	6	2	201
3	5	1	6	2	4	417
6	2	4	3	1	5	660

## 7 Draw A Jigsaw (70 points)

Fill the empty cells with the digits 1–9, such that each row, column and irregular shaped region contains no repeated numbers. (In Example, digits 1–6 are used.)

**What is missing?:** Only some parts of borders between regions are known. If there is a border line between 2 cells, these cells cannot be in same region!

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

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

## 8 Which Digit Is Missing? (50 points)

Fill the empty cells with the digits 0–9, such that each row, column and marked 3x3 box contains no repeated numbers. (In Example, digits 0–6 are used.) Digits in blue circles are odd. Digits in red squares are even. Cells connected with green line contain different digits and sum of these digits is always same number(X).

**What is missing?: One digit from 0–9 (0–6 in Example) is not used. Value of the number X.**

			0		
		0			
			6	1	
2					

1	3	4	2	0	6
6	2	0	1	3	4
3	0	2	4	6	1
4	6	1	0	2	3
0	1	6	3	4	2
2	4	3	6	1	0

X = 10      Missing digit – 5

## 9 Hidden Sum Blackout (80 points)

Fill the empty cells with the digits 1–9 (In Example, digits 1–6 are used.), such that each row, column and marked 3x3 box contains no repeated numbers. Also, each row, column and 3x3 box will be missing one number, replaced with a blacked out box, and that box will contain the sum of the missing digits for that row, column and 3x3 box.

**What is missing?: Blacked out boxes were removed from the grid and placed to the right side of the grid. You have to reconstruct their positions in the grid. One black box is already placed.**

1					
	2			4	1
		3		1	
	6		4		
		6		5	2
	15				6

3	11
15	15
15	16

1	3	4	2	15	5
15	2	5	6	4	1
2	4	3	5	1	16
5	6	3	4	2	3
3	1	6	11	5	2
4	15	2	1	3	6

## 10 Instructionless (30 points)

For this puzzle, rules are not known. In the test, you will see Example puzzle and its full solution at the right side. Bigger competition puzzle will be placed below. You have to figure out what are the rules from the example and apply that rules to the competition puzzle.