

NAME

TEAM

NUMBER



12th WSC  
INDIA 2017

# 12

## WHAT IS IT?

500 Points

50 Minutes

10x Bonus

Individual

1. Instructionless Sudoku	30	6. Instructionless Sudoku	65
2. Instructionless Sudoku	40	7. Instructionless Sudoku	70
3. Instructionless Sudoku	40	8. Instructionless Sudoku	75
4. Instructionless Sudoku	45	9. Instructionless Sudoku	80
5. Instructionless Sudoku	55		

M1	M2	Bonus Time	Bonus Points ( = 10x )	Total Points
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# 1. Instructionless Sudoku

30 Points

M1

M2

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

SOLVED  
EXAMPLE

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

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

# 2. Instructionless Sudoku

40 Points

M1

M2

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

SOLVED  
EXAMPLE

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

**D**

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

**C**

# 3. Instructionless Sudoku

40 Points

M1

M2

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

SOLVED EXAMPLE

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



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



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

# 4. Instructionless Sudoku

45 Points

M1

M2

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

S  
O  
L  
V  
E  
D  
  
E  
X  
A  
M  
P  
L  
E

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



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

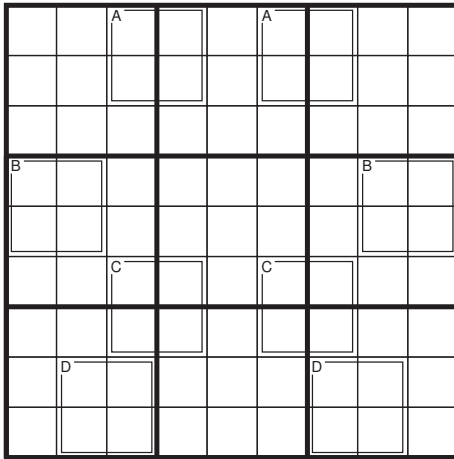


# 5. Instructionless Sudoku

55 Points

M1

M2



A	1	6	A	3	4
	3	4		8	5

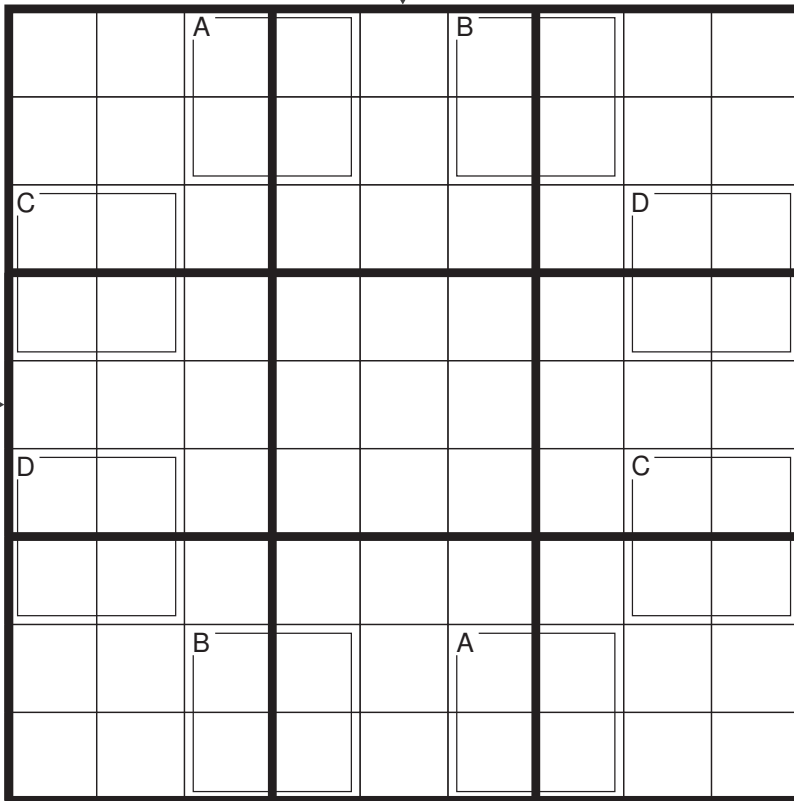
B	6	7	B	8	9
	8	9		2	3

C	1	9	C	8	2
	2	3		5	8

D	3	4	D	5	6
	7	1		8	9

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D  
  
E  
X  
A  
M  
P  
L  
E

9	7	A	3	4	2	A	1	6	5	8
6	2	8	5	9	3	4	7	1		
4	1	5	8	6	7	9	2	3		
B	8	9	4	1	3	2	5	B	6	7
2	3	7	6	5	4	1	8	9		
5	6	C	1	9	7	C	8	2	3	4
7	4	2	3	1	5	8	9	6		
1	D	5	6	7	8	9	D	3	4	2
3	8	9	2	4	6	7	1	5		



A	9	6	A	5	1
	1	4		4	6

B	7	5	B	4	2
	3	2		3	7

C	4	3	C	7	6
	8	1		4	9

D	5	7	D	9	4
	2	4		2	7

# 6. Instructionless Sudoku

65 Points

M1

M2

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

SOLVED  
EXAMPLE

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



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



# 7. Instructionless Sudoku

70 Points

M1

M2

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

2 2 1 5 1 1 2  
2 1 1 4 1 2 2

S  
O  
L  
V  
E  
D  
  
E  
X  
A  
M  
P  
L  
E

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

2 2 1 5 1 1 2  
2 1 1 4 1 2 2

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

1 2 1 2 2 2  
2 2 1 2 1 2  
M N



# 8. Instructionless Sudoku

75 Points

M1

M2

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

S  
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D  
  
E  
X  
A  
M  
P  
L  
E

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

P

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

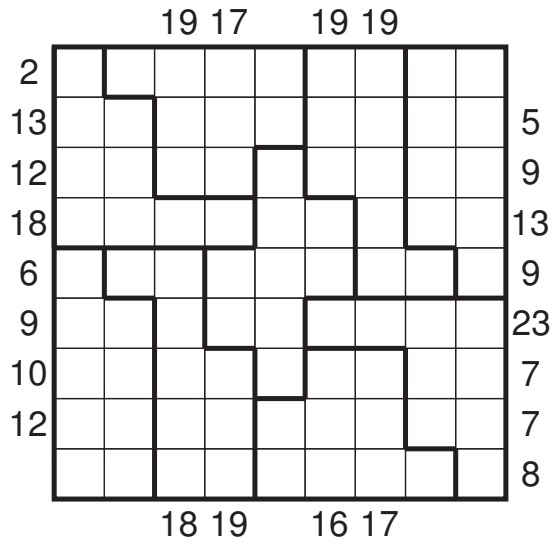
O

# 9. Instructionless Sudoku

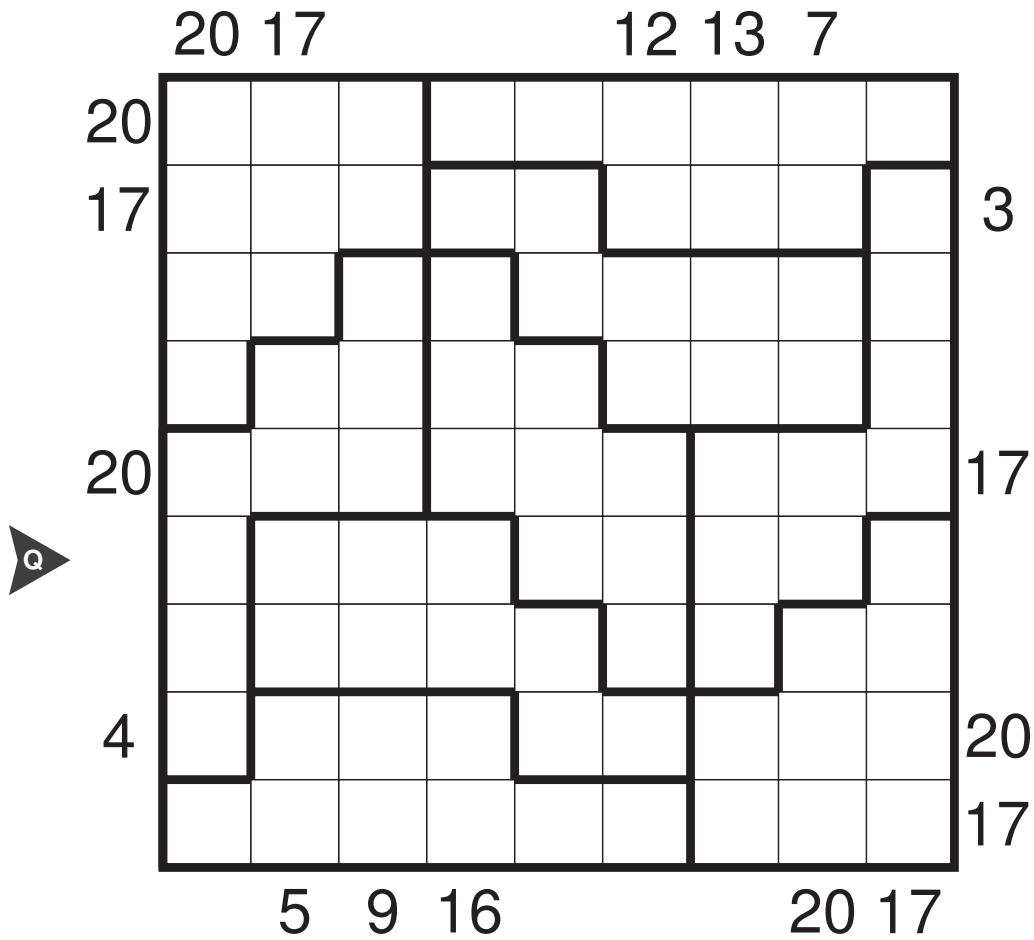
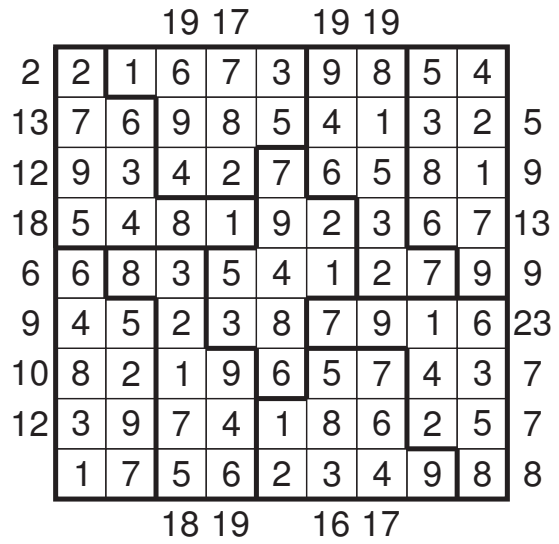
80 Points

M1

M2



SOLVED  
EXAMPLE





### 1. Consecutive In Box Sudoku

In each caged 3x3 box, there is a path from 1 to 9 passing through adjacent cells with each adjacent pair of cells having consecutive digits.

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

Rohan Rao

Theme – Diagonal Boxes

### 2. Clone Loop Sudoku

In each marked loop, the set of digits is the same and in the same order.

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

Deb Mohanty

Theme – Diamond Loops

### 3. Outside 2/3 Sudoku

For each set of digits given outside the grid, exactly two of the three digits appear in the first three cells from the corresponding direction.

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

Deb Mohanty

Theme – Triplets

### 4. Extra Box Sudoku

I Each marked 3x3 group of cells contain the digits 1 to 9.

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

Rohan Rao

Theme - Central Chaos

### 5. Swappable Quads Sudoku

The digits in each 2x2 box with an alphabet must appear in the corresponding marked 2x2 boxes in the grid with the same alphabet in the same position.

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

Rohan Rao

Theme - Opposite Pairs

### 6. Multiples Sudoku

In each marked 2x2 box, the two-digit number at the bottom is an integral product of the two-digit number at the top.

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

Rohan Rao

Theme - Four Circles



### 7. Outside Parity Sudoku

Each number outside the grid is the number of consecutive digits with the same parity from the corresponding direction.

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

Deb Mohanty

Theme – 12

### 8. Nine Pins Sudoku

Each number from 1 to 9 must form a diagonal triplet at least once.

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

Deb Mohanty

Theme – Constrained Centre

### 9. Irregular Frame Sudoku

Each number outside the grid is the sum of all digits from the corresponding direction until the first thick border.

	20	17			12	13	7		
20	9	5	6	3	2	7	4	1	8
17	7	8	2	1	4	5	9	6	3
	1	4	5	6	9	8	3	7	2
	3	1	7	4	8	6	5	2	9
20	8	9	3	5	1	2	7	4	6
	2	6	9	8	7	3	1	5	4
	6	7	4	2	5	9	8	3	1
4	4	2	8	7	3	1	6	9	5
	5	3	1	9	6	4	2	8	7
	5	9	16					20	17

Deb Mohanty

Theme - 2017