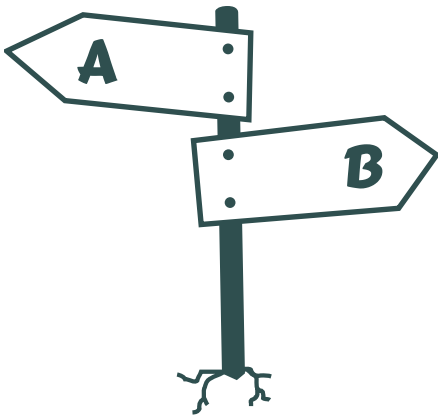


by Deb Mohanty

Dates : 1st and 2nd October

Link - http://logicmastersindia.com/M201110S/

Instructions booklet

About "A or B"

"A or B" is a set of 12 sudoku variants with mostly well-known rules. There will be two rules specified along with each grid. It is part of solving to figure out what is the correct rule for the specified grid.

Note that if the incorrect rule is applied, the grid will yield zero solutions (i.e. the grid is not solvable using the incorrect rule).

Classic Sudoku rule (**Every digit from 1 through 9 has to appear exactly once in every row, every column, and every 3X3 box**) applies to all grids.

Length of the test and Time bonus

The length of this test is 120 minutes.

It is expected that top players will be able to solve all sudokus earlier than 120 minutes. Players submitting all 12 sudokus correctly will get 1 bonus point for each minute saved. (Details about partial bonus will be posted in forum.)

Answer key

Each Sudoku will be marked with a row and a column.

Test solvers

I am thankful to Branko Ceranic and Rakesh Rai for test-solving the sudokus and providing much advice.

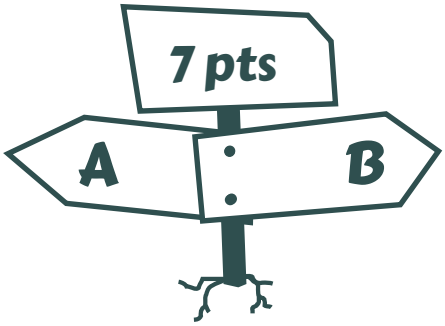
I have used their timings as a guidance to point distribution. Points are generally indicative of the difficulty of the sudokus and time required to solve it. However, your personal experience and preference might differ.

Points Table

#	Rule A	Rule B	Points
1	Odd	Extra Region	7
2	Greater	Lesser	8
3	Even	Small Neighbours	9
4	Sequence	Palindrome	6
5	Marked Quadro	Multiplication Table	7
6	Odd	Neighbouring	9
7	Sum 10	Multiple	6
8	Touchy	Anti-knight	13
9	XV	Kropki	6
10	Consecutive	Fiver	8
11	Skyscraper	Outside	13
12	Odd Even View	Outside	17
Total Points			**109**

About the test

Odd
Sudoku



Extra Region
Sudoku

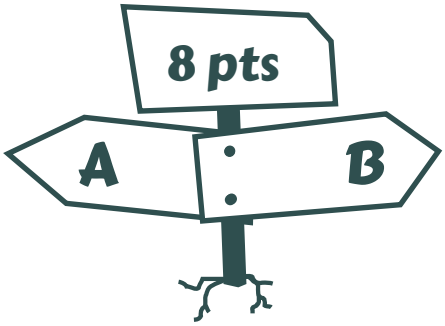
Shaded cells contain odd digits (1 3 5 7 9).

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

Shaded cells contain distinct digits i.e. no digit can repeat across shaded cells.

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

Greater
Sudoku



Lesser
Sudoku

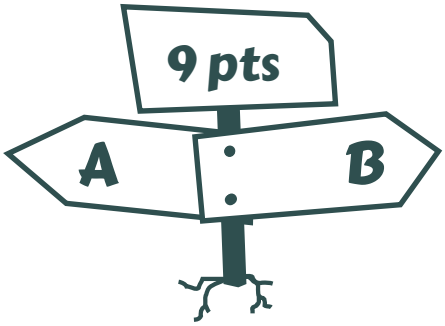
Each digit clue between two cells must be the greater of the digits in the two cells.

Each digit clue between two cells must be the lesser of the digits in the two cells.

1				9				
	5				1			
		4				1		
			9				6	
				8				4
			4				1	
		2				9		
	1				4			
4				1				

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

Even
Sudoku



Small Neighbours
Sudoku

Shaded cells contain even digits (2 4 6 8).

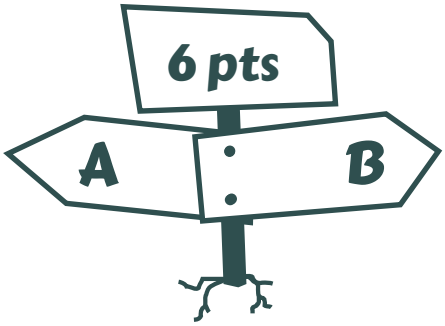
Digits in shaded cells must be greater than digits in orthogonally neighbouring cells.

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

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

Sequence

Sudoku



Palindrome

Sudoku

The digits in the squares with the grey line form arithmetic progression i.e. the difference between every two digits is a constant.

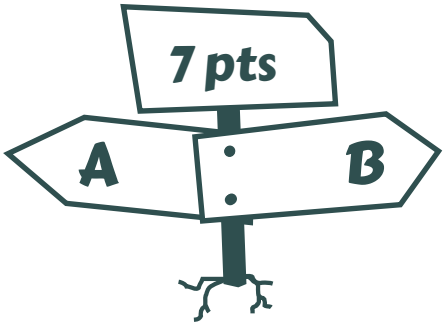
			4	6	5			
		6	3	7				
	5	3	2					
9	3	8						4
2	1						9	5
6						2	1	3
					9	4	2	
				2	6	3		
			1	4	3			

The digits in the squares with the grey line form palindromes i.e. they read the same from both the directions.

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

Marked Quadro

Sudoku



Multiplication Table

Sudoku

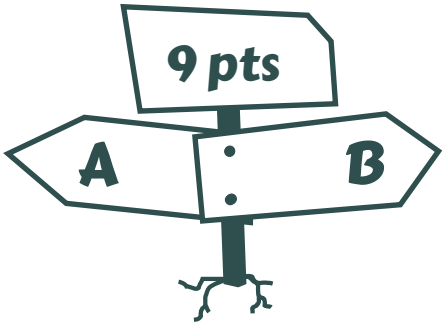
Digits in marked 2X2 square must have same parity (i.e. all of them must be odd or all of them must be even). No other 2X2 square can have all digits of same parity.

The two-digit number in the second line of a cage is always product of the two one-digit numbers in the first line of the cage. Not all cages are marked.

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

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

Odd
Sudoku



Neigbouring
Sudoku

Shaded cells contain odd digits (1 3 5 7 9).

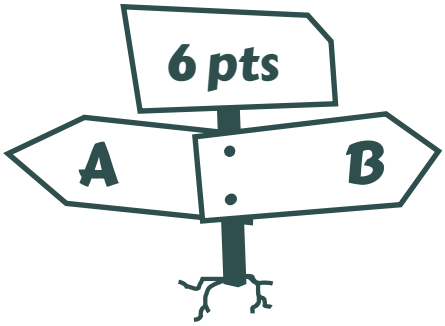
9			3	1	2			7
			8	5				
			4					
4	6	2						9
7	9						5	1
5						7	6	4
					5			
				6	8			
1			7	2	4			8

For shaded cells, sum of digits in horizontal neighbouring cells is equal to sum of digits in vertical neighbouring cells.

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

Sum 10

Sudoku



Multiple

Sudoku

A mark between two cells means the sum of digits in the two cells is 10.

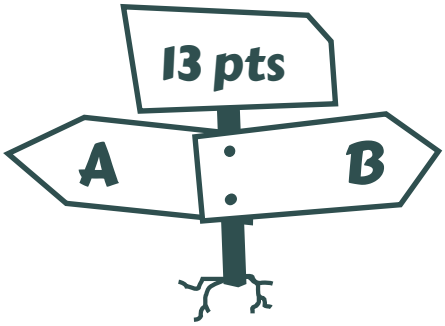
6			1					
		7		8				
	3				5			
9				3		7		
	8		5		1		6	
		6		4				8
			8				5	
				9		4		
					3			6

A mark between two cells means one digit is multiple of another. (Note that every digit is multiple of 1)

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

Touchy

Sudoku



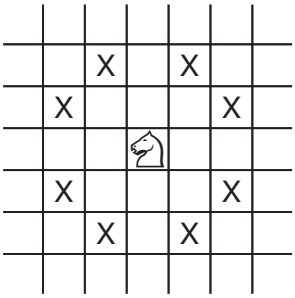
Anti-Knight

Sudoku

Each digit touches (vertically or horizontally) at least one consecutive digit. (e.g. every 3 touches at least a 2 or a 4)

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

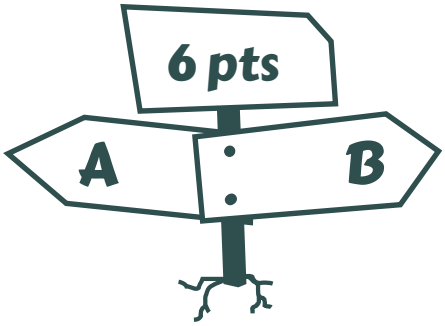
No cell that is a knight-step away will contain the same digit.



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

XV

Sudoku



Kropki

Sudoku

All adjacent cells with two digits summing to 5 are marked by white squares.
All adjacent cells with two digits summing to 10 are marked by black squares.
The cells edges which do not contain any square cannot have digits summing to 5 or 10.

4	6	5
1	2	3
9	8	7

	7	1						
9	5							
6				9				
				1				8
							7	1
						9	5	

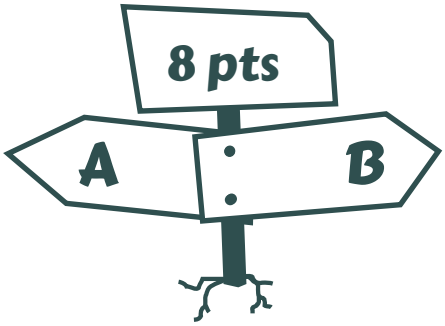
If the absolute difference between two digits in adjacent cells equals 1, then they're separated by a white square.
If the digit in a cell is half of the digit in adjacent cell, then they're separated by a black square.
The square between '1' and '2' can be of any color.

1	2	9
7	3	8
5	6	4

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

Consecutive

Sudoku

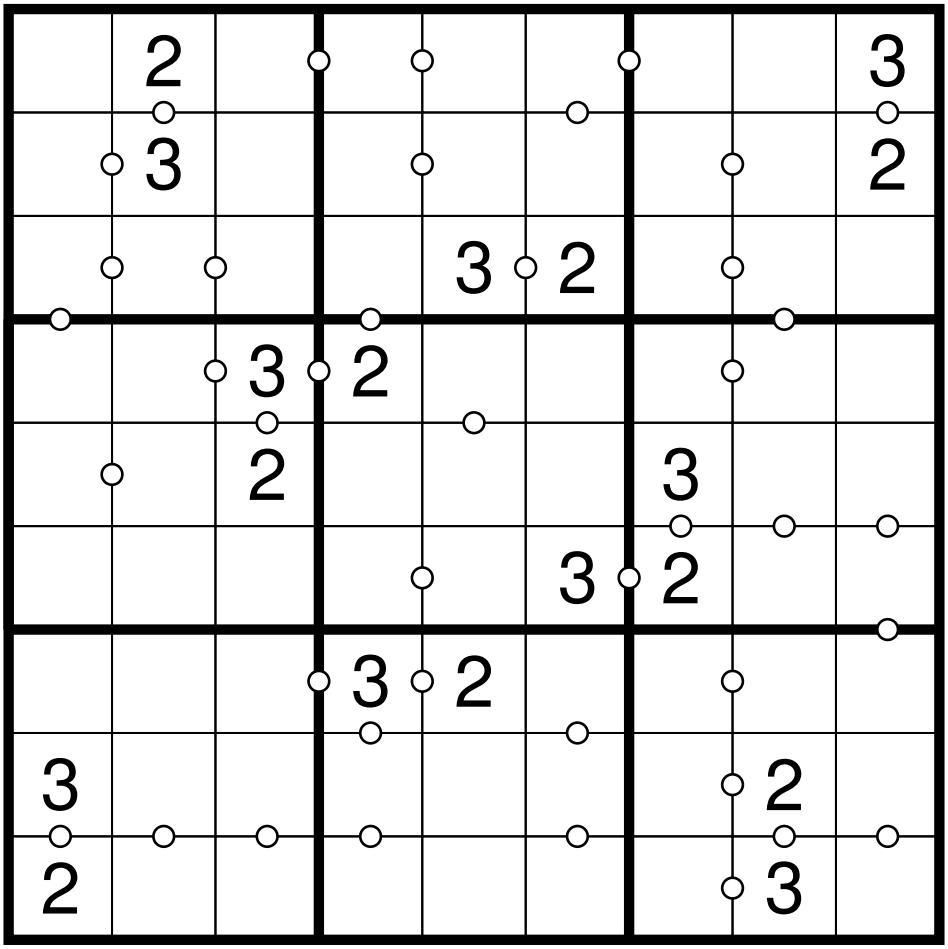


Fiver

Sudoku

There is a dot between two cells if the difference between the corresponding digits is 1. If there is no dot, the difference cannot be 1.

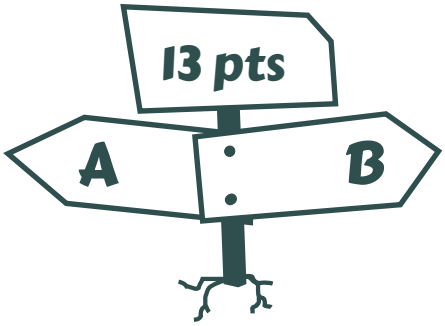
There is a dot between two cells if the sum or difference between the corresponding digits is 5. If there is no dot, the sum or difference cannot be 5.



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

Skyscraper

Sudoku



Outside

Sudoku

Each digit inside the grid represents the height of the skyscraper. The digits outside the grid indicate the number of skyscrapers seen from the corresponding direction.

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

2 5

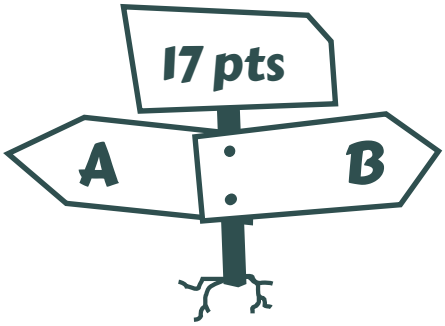
Digit given outside of the grid must appear in the first region (three cells) in that row/column.

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

Odd Even View

Sudoku

An odd digit outside the grid represents the first odd digit seen from that direction. An even digit outside the grid represents the first even digit seen from that direction.



Outside

Sudoku

Digits given outside of the grid must appear in the first region (three cells) in that row/column.

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

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