

# LMI-MONTHLY TEST JUN 2010 'SPEED SIXES'

**6/6/2010**

**166 MINUTES  
1666 POINTS**

## INSTRUCTION BOOKLET

(Sudokus by Tejal Phatak / Rohan Rao)

<http://rohanrao.blogspot.com/>

**WEBPAGE:** <http://logicmastersindia.com/forum/forums/thread-view.asp?tid=55>

**SUBMISSION:** <http://logicmastersindia.com/M201006>

## IMPORTANT INSTRUCTIONS:

1. Answers will be accepted using the website <http://logicmastersindia.com/M201006>
2. The test will be open from 00:00 GMT (5<sup>th</sup> June) to midnight 24:00 (6<sup>th</sup> June). During the 48hrs, you can participate in the test anytime but at a single stretch of 166 minutes.
3. Before the test starts, a password protected pdf file will be available to download. This will contain the test puzzles.
4. After you start the test, the password will be shown to you. You can either solve online OR print the pdf and enter the answer keys.
5. After you start the test, submission is allowed upto 166 minutes. A Timer will be available for you on the test page. Don't refresh/reload the test page before submitting.
6. You may submit as many times as you want. Only your last submission will be considered for scoring.
7. You don't need to enter full grid. Click on "Show Cells to Fill". Enter the marked cells. "Show cells to Fill" will be activated 66 minutes after you start the test.
8. For each set of seven puzzles, you will be awarded bonus points ONLY if ALL seven Sudokus have been solved correctly.
9. Time bonus of 6 points per minute saved will be awarded only if all Sudokus are solved correctly.

## **PUZZLE AUTHORS:**

All puzzles have been created by Tejal Phatak and Rohan Rao. Special thanks to Deb Mohanty for helping to create the puzzle images.

Some of the new puzzles are:

<b>PUZZLE</b>	<b>IDEA</b>
Kid Sudoku	Rakesh Rai
Knight Sudoku	Tejal Phatak/Rohan Rao
Outside Consecutive Sudoku	Krtek's Cup (Fed-Sudoku)
Perfect Cube Neighbours Sudoku	Tejal Phatak/Rohan Rao
Perfect Square Sudoku	Tejal Phatak/Rohan Rao
Symmetric Unequal Sudoku	Mock Test 12 (Deb Mohanty)
Surprise Sudoku	Mock Test 17 (Gotroch & Cauchy)

## GROUP 1: SIMPLE VARIATIONS

**BONUS POINTS: 36**

No.	Puzzle	Points
1	Classic Sudoku	10
2	Consecutive Sudoku	15
3	Diagonal Sudoku	35
4	Extra Region Sudoku	35
5	Irregular Sudoku	50
6	Odd-Even Sudoku	10
	Surprise Sudoku	45
	Total	200

## GROUP 2: COMMON VARIATIONS

**BONUS POINTS: 36**

No.	Puzzle	Points
1	Equal Sum Sudoku	25
2	Inequality Sudoku	60
3	No Touch Sudoku	20
4	Quadruple Sudoku	30
5	Sequence Sudoku	25
6	Trio Sudoku	10
	Surprise Sudoku	30
	Total	200

## **GROUP 3: FUN VARIATIONS**

**BONUS POINTS: 36**

<b>No.</b>	<b>Puzzle</b>	<b>Points</b>
1	Anti Knight Sudoku	15
2	Equal Product Sudoku	50
3	Even Sudoku	10
4	Mirror Sudoku	25
5	Odd Sudoku	10
6	Triple Sum Sudoku	30
	Surprise Sudoku	60
	Total	200

## **GROUP 4: PUZZLE VARIATIONS**

**BONUS POINTS: 66**

<b>No.</b>	<b>Puzzle</b>	<b>Points</b>
1	Battleship Sudoku	80
2	Coded Sudoku	30
3	Distances Sudoku	35
4	Kropki Sudoku	20
5	Minesweeper Sudoku	55
6	Skyscraper Sudoku	40
	Surprise Sudoku	20
	Total	280

## **GROUP 5: NEW VARIATIONS**

**BONUS POINTS: 56**

<b>No.</b>	<b>Puzzle</b>	<b>Points</b>
1	Kid Sudoku	15
2	Knight Sudoku	30
3	Outside Consecutive Sudoku	40
4	Perfect Cube Neighbours Sudoku	50
5	Perfect Square Sudoku	35
6	Symmetric Unequal Sudoku	30
	Surprise Sudoku	50
	Total	250

## **GROUP 6: MIXED VARIATIONS**

**BONUS POINTS: 56**

<b>No.</b>	<b>Puzzle</b>	<b>Points</b>
1	Cross Sumdoku	40
2	Descriptive Pairs Sudoku	40
3	Distance Sudoku	60
4	Edge Difference Sudoku	15
5	Palindrome Sudoku	35
6	Quadmax Sudoku	40
	Surprise Sudoku	20
	Total	250

## **PUZZLE INSTRUCTIONS:**

1. All puzzles in the test are 6x6 grids.
2. All puzzles follow the basic rule: Every row, column and 3x2 box (or thick outlined region) contain the numbers 1 to 6 (In Minesweeper Sudoku, numbers 1 to 4 and two mines).
3. The examples given below only explain the rule of the puzzle and is not a puzzle by itself.
4. The instructions and explanation of the Surprise Sudokus will be given in the Puzzle Booklet.
5. The Puzzle Booklet will contain the instructions of puzzles but not the examples.

## CLASSIC SUDOKU

Every row, column and 3x2 box contain the numbers 1 to 6.

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

## CONSECUTIVE SUDOKU

If two adjacent numbers are consecutive, there is a bar. If there is no bar, then the two numbers cannot be consecutive.

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

## DIAGONAL SUDOKU

The two main diagonals contain the numbers 1 to 6.

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

## EXTRA REGION SUDOKU

The six shaded cells must contain the numbers 1 to 6.

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

## IRREGULAR SUDOKU

Every row, column and thick-outlined region must contain the numbers 1 to 6.

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

## ODD-EVEN SUDOKU

Shaded cells contain even numbers and white cells contain odd numbers.

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

## EQUAL SUM SUDOKU

Every 2x2 region where the sum of the diagonally opposite cells is equal is marked 'X'.

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

## INEQUALITY SUDOKU

The grid should satisfy '>' (greater than) and '<' (less than) signs.

1	<	2	<	5	>	6	>	4	>	3
6	>	3	>	4	>	2	>	1	<	5
5	>	1	<	6	>	4	>	3	>	2
3	<	4	>	2	<	1	<	5	<	6
4	<	6	>	3	>	5	>	2	>	1
2	<	5	>	1	<	3	<	6	<	4

## NO TOUCH SUDOKU

Same numbers cannot touch diagonally.

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

## QUADRUPLE SUDOKU

The four numbers in a circle have to be placed in the four cells touching the circle in any order.

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

## SEQUENCE SUDOKU

The numbers along the shaded lines are different and in arithmetic sequence.

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

## TRIO SUDOKU

Circles contain numbers 1 and 2. Boxes contain numbers 3 and 4. White cells contain numbers 5 and 6.

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

## ANTI KNIGHT SUDOKU

Same numbers cannot be placed in a (chess) knight's step away.

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

## EQUAL PRODUCT SUDOKU

Every 2x2 region where the product of the diagonally opposite cells is equal is marked 'X'.

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

## EVEN SUDOKU

Shaded cells contain even numbers.

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

## MIRROR SUDOKU

The top-left 3x2 box and the bottom-right 3x2 box are mirror images of each other.

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

## ODD SUDOKU

Shaded cells contain odd numbers.

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

## TRIPLE SUM SUDOKU

Each row is divided into three parts. The numbers outside the grid indicate the sum of the 3-digit number, the 2-digit number and the single-digit number of the corresponding row.

192	1	2	5	6	4	3
660	6	3	4	2	1	5
561	5	1	6	4	3	2
363	3	4	2	1	5	6
516	4	6	3	5	2	1
291	2	5	1	3	6	4

## BATTLESHIP SUDOKU

The one 3x1 ship, the two 2x1 ships and the three 1x1 ships need to be placed in the grid such that the numbers outside the grid indicate the number of cells that contain a ship in the corresponding row/column. Ships do not touch each other horizontally, vertically and diagonally.

	5	0	1	2	0	2
4	1	2	5	6	4	3
1	6	3	4	2	1	5
0	5	1	6	4	3	2
1	3	4	2	1	5	6
1	4	6	3	5	2	1
3	2	5	1	3	6	4

2	4	3	
1	6	5	6
3	3	4	

## CODED SUDOKU

Cells with the same letter contain the same number.  
Cells with different letters contain different numbers.

1	<sup>A</sup> 2	5	3	4	6
3	6	4	2	1	<sup>C</sup> 5
<sup>C</sup> 5	4	3	1	6	2
6	1	2	4	5	3
4	3	6	5	<sup>A</sup> 2	1
2	<sup>C</sup> 5	1	6	3	4

## DISTANCES SUDOKU

Fill in the shaded cells with numbers 1 to 6 such that the distance between the numbers 'x' and 'x+1' is always greater than the distance between numbers 'x-1' and 'x'. Distances between numbers are measured from the centres of the cells.

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

## KROPKI SUDOKU

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

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

## MINESWEEPER SUDOKU

If the number in a cell indicates the amount of mines touching it horizontally, vertically and diagonally, the cell is shaded.

1	2	●	●	4	3
●	3	4	2	1	●
●	1	●	4	3	2
3	4	2	1	●	●
4	●	3	●	2	1
2	●	1	3	●	4

## SKYSCRAPER SUDOKU

Each number represents the height of the skyscraper in each cell. The digits outside the grid indicate the number of skyscrapers seen from the corresponding direction.

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

## KID SUDOKU

The clues to the left of each row have been provided by a kid who can't count or add beyond 6. Each digit in the clue indicates the sums of one or more continuous numbers in the row from the left to the right, with the additional constraint that no sum can exceed 6.

35643	1	2	5	6	4	3
6366	6	3	4	2	1	5
6645	5	1	6	4	3	2
3666	3	4	2	1	5	6
46353	4	6	3	5	2	1
26364	2	5	1	3	6	4

## KNIGHT SUDOKU

One of the six numbers is a (chess) knight. A number is a knight if all its six positions can be connected by knight moves. You have to find out the knight. (In example, number '1' is the knight)

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

## OUTSIDE CONSECUTIVE SUDOKU

Numbers outside the grid indicate the number of consecutive pairs in the corresponding row/column.

	2	2	2	0	0	0
3	1	2	5	6	4	3
2	6	3	4	2	1	5
2	5	1	6	4	3	2
3	3	4	2	1	5	6
1	4	6	3	5	2	1
0	2	5	1	3	6	4

## PERFECT CUBE NEIGHBOURS SUDOKU

A cell is shaded if the cube of the number in the cell is placed in its neighbouring cells in the correct order (clockwise or anticlockwise), not necessarily in a straight line.

(In example, '5' is shaded as its cube 125 is present in its neighbouring cells in order. Similarly, '6' is shaded and so on)

(R5C1 is '6' is not shaded because it contains '2', '1' and '6' in its neighbouring cells but it can be read in order as '162' or '261' and not '216')

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

## PERFECT SQUARE SUDOKU

If two adjacent cells (read from top-to-bottom or left-to-right) is a perfect square, it is marked by a dot.

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

## SYMMETRIC UNEQUAL SUDOKU

$R(m)C(n)$  and  $R(7-m)C(7-n)$  cannot contain the same number for all values of  $m$  and  $n$ .

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

## CROSS SUMDOKU

Numbers at the right of grid give the sum of the two 3-digit numbers of the corresponding row. Numbers at the bottom of the grid give the sum of the three 2-digit numbers of the corresponding column.

1	2	5	6	4	3	768
6	3	4	2	1	5	849
5	1	6	4	3	2	948
3	4	2	1	5	6	498
4	6	3	5	2	1	984
2	5	1	3	6	4	615

111 102 147 156 102 75

## DESCRIPTIVE PAIRS SUDOKU

Each pair of digits 'A' and 'B' on the outside means that at least one of the following are true in the row/column:

There is a digit A in the Bth cell from the edge; There is a digit B in the Ath cell from the edge.

						34	13	16	16	14	23	
45	1	2	5	6	4	3	24					
23	6	3	4	2	1	5	35					
36	5	1	6	4	3	2	46					
14	3	4	2	1	5	6	45					
45	4	6	3	5	2	1	35					
34	2	5	1	3	6	4	14					
							12	15	23	13	46	24

## DISTANCE SUDOKU

The distance between two digits in each row and column is specified. The order of these digits is from left to right or from top to bottom.

1-5:2											
4-5:3											
5-6:4											
2-5:3											
4-1:1											
2-1:2											
	1	2	5	3	4	6	2-5:1				
	3	6	4	2	1	5	2-5:2				
	5	4	3	1	6	2	5-3:2				
	6	1	2	4	5	3	6-3:5				
	4	3	6	5	2	1	4-2:5				
	2	5	1	6	3	4	2-6:3				

## EDGE DIFFERENCE SUDOKU

The numbers outside the grid indicate the difference between the first and the last number of the corresponding row/column.

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

## PALINDROME SUDOKU

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

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

## QUADMAX SUDOKU

Every arrow in a circle points to the cell with the highest number among the four cells touching the circle. Numbers can repeat in the four cells but the highest number cannot repeat.

(For example: The four cells CAN BE 1,4,4,6 but CANNOT BE 2,3,5,5)

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