

Dec 22nd – 24th 2012
<http://logicmastersindia.com/lmitests/?test=LMIST3>

by
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About the Screen Test

The screen test is a slightly differently designed test than regular LMI monthly tests. Here are the key rules of the test

- ★ There will be **30 sudokus**. Each sudoku has a time limit of **5 minutes**, and it has to be solved within that time limit.
- ★ Official length of the test is **60 minutes**. Players will be awarded points based on what they solve within that time.
- ★ All sudokus are to be solved online. There will not be any pdf booklet to be downloaded.
- ★ The sudokus are to be solved in the same order as in the IB. Once submitted, revisiting the sudoku is not possible.
- ★ Sudokus are sorted based on perceived difficulty, i.e. relatively easier sudokus at the beginning, and they get difficult towards the end.

Note about online solving: if you are familiar with LMI's flash online solving, please note that "Pencil Marking" is disabled in this test.

How does the Submission Page Work?

- ★ After you start the test, the instruction for the first Sudoku and a solved example will be displayed for 15 seconds.
- ★ After 15 seconds, the first sudoku will appear.
- ★ You must solve it as soon as you can and then click on "Submit and Next"
- ★ Strictly speaking, there are no bonus points for submitting a sudoku early, but you must submit as early as you can, which will enable you to solve more sudokus in the official period.
- ★ If you are still working on a sudoku and the timer ends (at 5 minutes), it will be submitted automatically.
- ★ After you click on "Submit and Next" or after your timer ends, the instructions and a solved example for the next sudoku will be displayed for 15 seconds and the cycle will repeat.

It is possible to manually end this 15 seconds waiting period. Also, please note that 60 minutes does not include "instructions viewing time".

Points and Scoring

- ★ Each sudoku is worth points varying from 50 to 200.
- ★ The exact point will be computed after the test is completed as "average of 10 best times (in seconds) for that sudoku", subject to the minimum and maximum values.
- ★ If the sudoku is not completely correct, partial points are available based on number of correct cells. If only one cell is wrong or is unfilled, you get 80% of the puzzle points. Otherwise, you get "number of correct cells / number of cells to be filled * 70% of the puzzle points".
- ★ No negative points for wrong or unfilled cells, and No Instant Grading

About the Sudokus

- ★ All sudokus will be of size 6X6. Standard rule "Place a single digit from 1 to 6 into each empty cell so that no digit repeats in any row, column, or bold region" applies to all sudokus.
- ★ The sudokus are split in 3 groups. A – All players will get to solve these sudokus. B – Most players will get at various stages of this **Bonus** group. E – Only top players are expected to reach at various stages of this **Extra bonus** group.

Demo Page

- ★ A demo page is available for practice with lesser number of sudokus.
- ★ The demo page works exactly same as the final submission page.

A1. Classic Sudoku

		5			
			5		
4				1	
	2				3
		3			
			4		

A2. Diagonal

Digits don't repeat across main diagonals.

1					6
	2			4	
	3			1	
4					5
		5	2		

A3. Consecutive

If difference between two adjacent digits is 1, a dot will be marked between them. Converse rule applies.

					4
o		o			
o			o	o	
o	o			o	
o		o			o
o	o			o	o
1				o	

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

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

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

A4. Knight Step

If two identical digits are at Knight-step away, a line will be drawn between the corresponding cells. Converse rule applies.

					6
4				1	
3					
	4				
6			5	4	

A5. Wheel

The 4 digits on each "wheel" must be placed on those 4 cells, in the given order. The "wheel" may be rotated by $0^\circ / 90^\circ / 180^\circ / 270^\circ$.

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

A6. XV

If sum of two adjacent digits is 5 or 10, a symbol V or X will be marked. Converse rule applies.

					X
-v					-v
		X			
		X		2	
			1	X	
	X				-v
			-v	-v	

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

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

2	1	5	3	6	X
3	6	X	4	5	-v
4	3	6	2	1	5
5	2	1	6	X	3
6	X	3	1	5	2
1	5	2	4	3	6

A7. Difference

The digit given between two cells is the difference between the digits in the corresponding cells.

			2		
5					
	5		5		
		4			
	3				
2		1			5

A8. Toroidal

Each row, column, outlined regions contain 1 through 6 exactly once. Some outlined regions wrap around the grid.

1					
	2				5
		3			
			4		
2				1	
					2

A9. Quad Max Min

The arrow at the corner points to a digit that is either greater than or the less than other 3 digits.

2	3				
1	4				
				3	4
				6	5

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

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

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

A10. Extra Region

Each extra region must contain digits from 1-6. The extra regions are of 6 cells each and are shaded with different colors in the grid

1	2				
					5
5					
				4	3

A11. Glasses

The center of each glass is the difference of the outer two digits.

4	5	6	1		
3					
2					
1					

A12. Kropki

If two adjacent cells are consecutive, a white dot is marked. If one is double of another, a black dot is marked. Dot between 1 and 2 can be of any color. Converse rule applies.

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

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

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

B1. Classic Sudoku

B2. Diagonal Consecutive

B3. Touchy

All diagonally adjacent cells having consecutive digits are marked by a line. Converse rule applies.

Each digit touches, vertically or horizontally at least one consecutive digit.

		6			
	4			2	
1			3		
		5			6
				5	
			4		

2	1				4
		/	/	X	
		/	/		1
			/	/	
				/	
6		/	/		
1			X	/	3
				X	6

2				3	
	3				5
		3			
			2		
3				5	
	5				2

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

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

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

B4. Incomplete Arrow

B5. Skyscrapers

B6. Killer

The number in a circle is the sum of the first 'n' digits along its arrow where 'n' is less than or equal to the length of the arrow.

Digits inside the grid represent height of skyscrapers. Digits outside the grid represent number of skyscrapers that can be seen from that direction. Taller ones hide shorter ones.

The clue given in each cage must equal the sum of the digits inside the cage. Digits don't repeat in a cage.

○	6	↖		5	
3					4
↖					○
		↘			
2					6
	1	○		3	

5					
5					
2					
4					
					4
					4

3			11			4
			5			
		11			8	
8			3			
			5		5	

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

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

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

B7. Point To Next

If digit "n" is placed in a cell with arrow, digit "n+1" must be placed in the direction shown by arrow.

	→	1			
			2	←	
1			↓	3	
	2	↑			4
	←	3			
			4	←	

B8. Irregular

5					4
		1	2		
		4	3		
3					1

B9. Symmetric Unequal

Cells that are 180° symmetric to each other cannot have identical digits.

		3	5		
		4	3		
1	5	2			
3	4				

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

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

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

E1. Copy

Each labeled area has a twin in which digits occur in exactly the same position.

A	1			B		
				4	6	
B						
	3	2		A		
						3

E2. Renban

Cells connected with a gray line must contain distinct consecutive digits.

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

E3. 4 In a Row

The straight line passing through 4 cells contain the same digits in same order. However, the directions could be different.

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

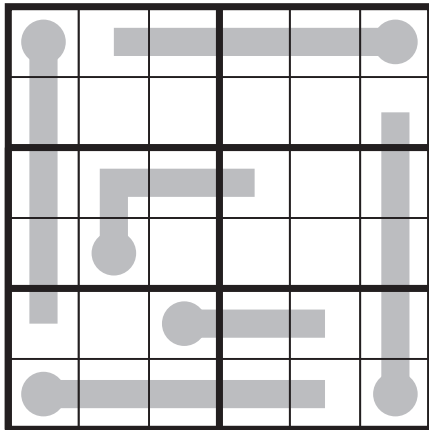
A	1	4	6	B	3	2	5
	2	5	3		4	6	1
B	3	2	5		6	1	4
	4	6	1		5	3	2
	5	3	2	A	1	4	6
	6	1	4		2	5	3

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

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

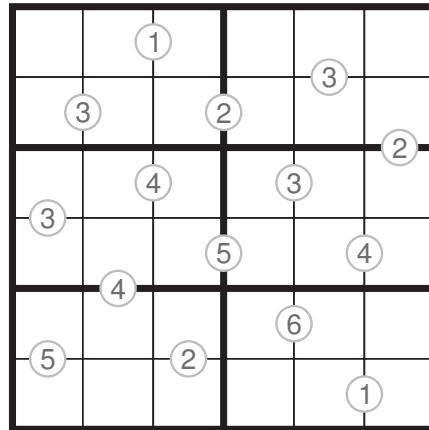
E4. Thermo

The digits in the thermometer shapes must be strictly increasing in each cell from the round bulb to the flat end



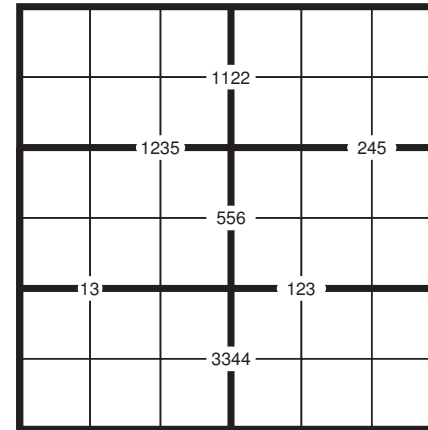
E5. Either Or

A digit between 2 cells must appear in one of those 2 cells.



E6. Corner

The digits given at the corner must appear in the 4 adjoining cells. If any digit is given twice, it must appear twice.



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

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

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

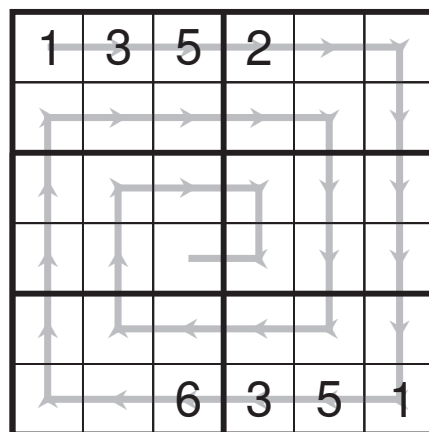
E7. Kid

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

6546					
6465					
5565		2			
5655			5		
46353					
5646					

E8. Snail

Along the path of the snail, no 2 digits can be consecutive.



E9. Descriptive Pair

Each pair of digits A and B on the outside means that at least one of the following are true in the row/column: 1) digit A is at the Bth cell from the edge. 2) digit B is at the Ath cell from the edge.

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

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

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

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