

Nov 15th– 18th 2013
<http://logicmastersindia.com/ST/ST4.asp>

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 will have a time limit of **5 minutes**, and has to be solved within its 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.
- ★ The sudokus are split in 3 groups. **A** – All players will find these types accessible and familiar. **B** – Bonus group having not so common variants, but expectedly not hard solves. **E** – **Extra** group, expected to challenge the best players, regardless of variant familiarity.

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.

Points and Scoring

- ★ Each sudoku is worth points varying from 25 to 200.
- ★ The exact point will be computed after the test is completed as “average of 30 best times (in seconds) for that sudoku”, subject to the minimum and maximum values.
- ★ If the sudoku is not completely correct, but at least 6 cells are filled correctly, partial points will be awarded.
- ★ Partial points are computed 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 partial scoring for the “Just One Cell” sudokus
- ★ 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 except the five Just One Cell Sudokus.
- ★ For the Just One Cell Sudoku, the standard rule that a digit cannot repeat in any row, column or bold region applies, but it is not necessary to fill the grid. The grid has multiple solutions, but exactly one cell can be solved logically. The player must locate the cell and fill it with the correct number. All “Just One Cell” sudokus have “JOC” in the name.

Demo Page

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

Note about online solving: if you are familiar with LMI’s flash online solving, please note that “Pencil Marking” is disabled in this test. This is done because a Screen Test’s purpose is to test visualization skills. These skills are believed to be useful across other more difficult Sudokus as well.

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

Players will get bonus as *(seconds saved) * (points earned) / 3600 – points for wrong JOCs*, if all conditions below are met.

1. All 30 sudokus are submitted within 60 minutes.
2. 3. The remaining sudokus should not have any blank cells.
4. Maximum 10 wrong cells. (10 is approximately 1% of total cells to be filled)

Important Information

After some study of last year's statistics, and also feedback from this year's test solvers, we have decided firstly to categorize by familiarity mostly, instead of difficulty, because at that size, there will always be more margin for error as far as difficulty assessments go. However, in general, we do feel that this year's set is easier than last year's.

Therefore, it is important to factor in the possibility of finishing the test, even for above average players, and therefore skipping should be done carefully. Otherwise, there is a chance of being left with time remaining and incomplete Sudokus in the middle.

A1. Classic Sudoku

		5			
			5		
4				1	
	2				3
		3			
			4		

A2. Classic Sudoku

		5			
			5		
4				1	
	2				3
		3			
			4		

A3. Even

Shaded cells contain even digits.

1					
	2				
		3			
			4		
				5	
					6

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	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

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

A4. Diagonal

Digits don't repeat across main diagonals.

1					6
	2			4	
	3			1	
4					5
		5	2		

A5. Untouch

Same numbers cannot touch diagonally.

4	1				2
					1
6					
5				4	6

A6. Either Or

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

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

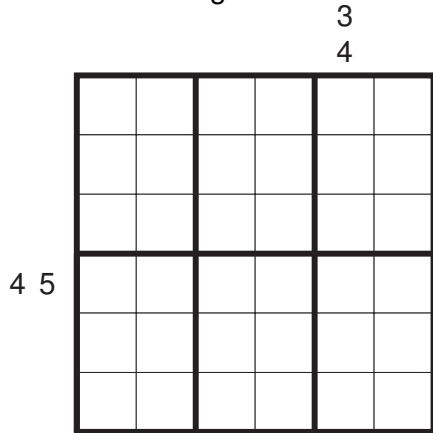
2	4	6	3	5	1
1	5	3	4	2	6
6	2	1	5	4	3
5	3	4	6	1	2
4	6	2	1	3	5
3	1	5	2	6	4

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

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

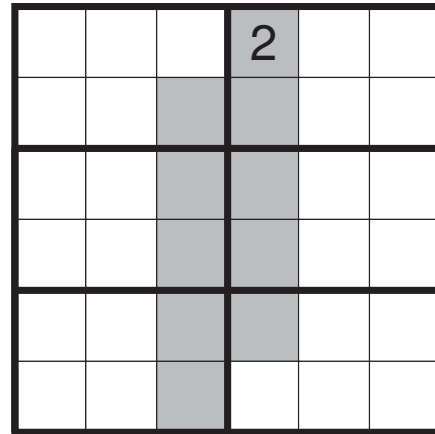
B1. JOC3 – Descriptive Pairs

Each pair of digits A and B on the outside means at least one of the following 1) digit A is at the Bth cell from the edge. 2) digit B is at the Ath cell from the edge.



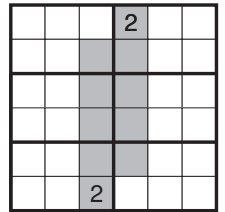
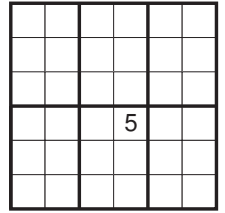
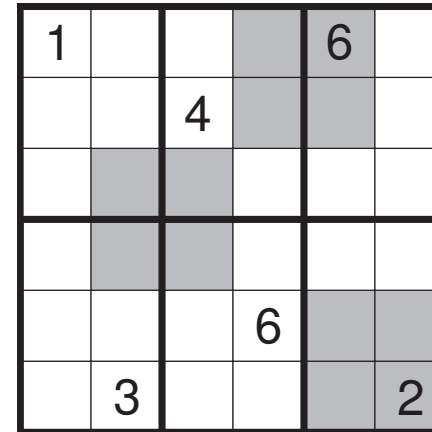
B2. JOC4 - Repeated Neighbours

Each shaded cell must have repeating orthogonal neighbours (neighbours sharing an edge). White cells must have distinct orthogonal neighbours.



B3. Product

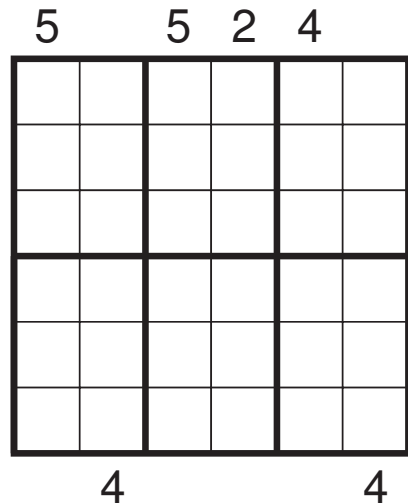
In each gray square of four cells, the two bottom cells make up a two-digit number which is the product of the two digits in the upper cells.



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

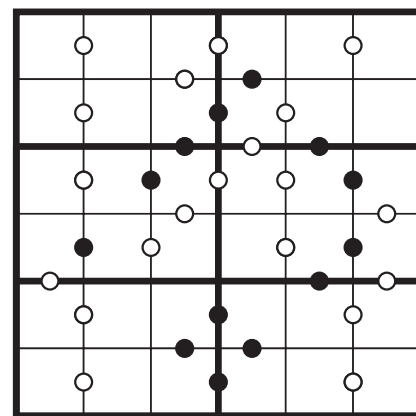
B4. Skyscrapers

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.



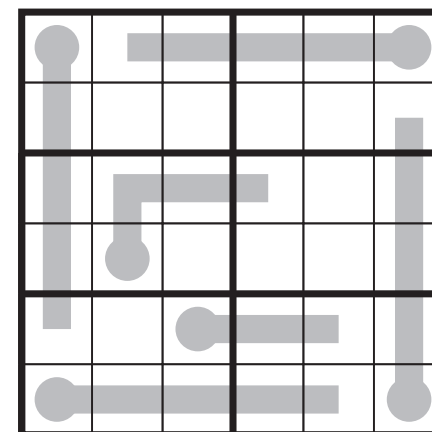
B5. Kropki

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.



B6. Thermo

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



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

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

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

B7. Disjoint Groups

All digits have to be in a different position in each 2x3 box.

		6	3		
1					6
	2			5	
		3	4		

B8. Slot Machine

The 6 numbers each that the 2 shaded columns contain will be in exactly the same order/sequence. (The strips wrap around the grid for the ordering)

			5		2
3		6			
			3		5
1		2			

B9. Sequences

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

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

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

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

E1. Classic Sudoku

E2. Search 6

E3. Palindrome

Each arrow points to the 6 in the respective row or column. The number in the cell with the arrow is the distance from the cell to the 6 in this row or column. Converse does not apply.

The digits along a line form a palindrome, i.e. they read the same from both the directions.

		5			
			5		
4				1	
	2				3
		3			
			4		

→		→			←
	→	1			
			1	↑	
↑			↑		←

	5				2
				4	
1					
		3			

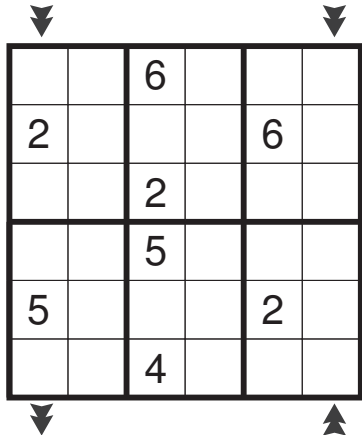
2	1	5	3	6	4
3	6	4	5	2	1
4	3	6	2	1	5
5	2	1	6	4	3
6	4	3	1	5	2
1	5	2	4	3	6

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

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

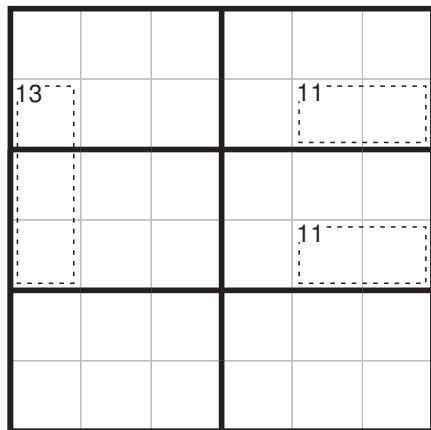
E4. Rossini

Arrow outside the grid means first 3 digits form increasing sequence in the direction of the arrow. Converse rule applies. Apply only in directions where first 3 cells are within the same region.



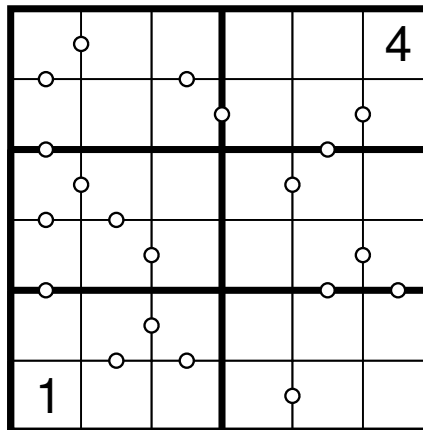
E5. JOC5 - Killer

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



E6. Consecutive

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



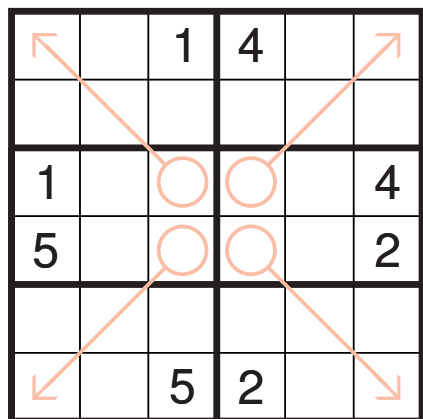
1	5	6	3	4	2
2	4	1	5	6	3
3	6	2	4	1	5
4	2	5	1	3	6
5	1	3	6	2	4
6	3	4	2	5	1

13				11	
6				11	

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

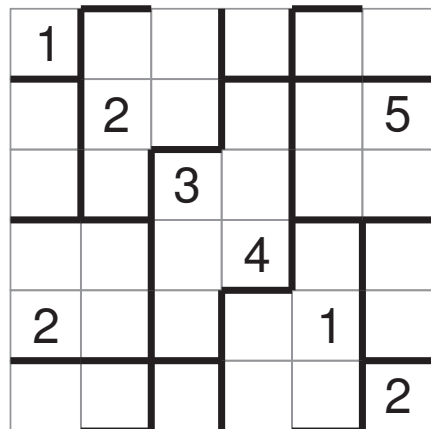
E7. Arrow

The number in a circle is the sum of the digits along its arrow.



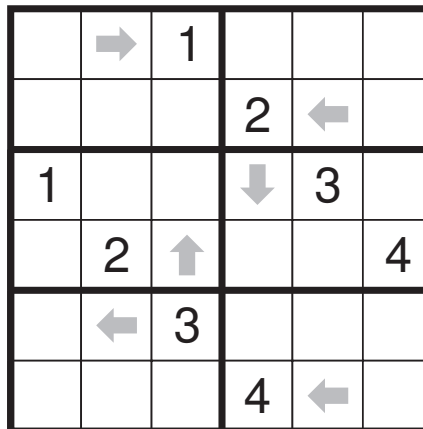
E8. Toroidal

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



E9. 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.



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