t₃!st

by Deb Mohanty

Dates : 9th and 10th April

Submission Link - http://logicmastersindia.com/M201104P

About Twist

Twist is a set of 12 classic puzzles, each one with a small change in the rules. Each rule change is highlighted in this booklet.

There will be 2 puzzles from each type, one easy and one not-so-easy.

Points Table

Puzzle	Points
Odd Skyscraper	11 + 46
Toroidal Rectangles	13 + 19
2-Loop Masyu	14 + 41
Light Up	17 + 20
No 3 in Minesweeper	18 + 36
3's Fence	19 + 27
Hitori Sum	20 + 30
L&M&I	21 + 34
Double Easy As ABCD	22 + 40
Missing Breakpoints	25 + 60
No-3-Consecutive Sudoku	26 + 68
3 Cells Arrows	27 + 45
Total Points	**233 + 466**

Length of the test – 120 minutes

The 24 puzzles are to be solved in 120 minutes. However, there is a twist here too. After 90 minutes the puzzle points will be reduced by a certain percentage as shown in the table.

Upto 90 minutes	90:01-100:00	100:01-110:00	110:01-120:00
100%	75%	60%	50%

Time Bonus

Players solving <u>all</u> puzzles correctly will get time bonus depending upon number of minutes saved.

> 0.5 * minutes saved till 120 minutes
> +
> 5 * minutes saved till 90 minutes

Submission

There is no interface to solve the puzzles online. Every puzzle has 1 or 2 answer keys. Copy the answer key carefully after solving the puzzle, and submit using LMI flash interface.

Please plan your submissions based on the points-reduction table. For example, since the puzzle points reduce with time after 90 minutes, it makes sense to submit your answers immediately after you complete the puzzle(s) after 90 minutes.

Thanks to Branko Ceranic for pre-testing all puzzles.

Place a digit in each cell so that in each row and column, each digit from the given range occurs exactly once. **Odd digits inside the grid represent the height of the skyscraper in that cell. Even digits do not represent skyscrapers.** The digits outside the grid indicate the number of skyscrapers seen from the corresponding direction.

	↓	1	1	1	
2	3	1	4	5	2
3	1	3	5	2	4
3	2	4	1	3	5
→	5	2	3	4	1
	4	5	2	1	3

Answer key: Enter the digits in the marked row, then in the marked column.

For the example, answer is 52341,13425

1~5

1~7

Divide the grid into rectangles so that each rectangle contains exactly one number, and so that each number represents the number of cells of its corresponding rectangle. **Some of the rectangles may wrap-around the borders.**

*Answer key: Alphabetically for each letter, enter the digit for the corresponding rectangle.*

For the example, answer is 66246

Draw **exactly two loops** using horizontal and vertical segments. A loop may not cross or overlap itself or the other one. All cells may not be visited. The loops make 90° turn at every cell with a black circle, but must not make a turn immediately before or after. The loops go straight at every cell with a white circle, but must make a 90° turn immediately before or after or both.

Answer key: Enter the lengths of horizontal line segments in the marked rows.

For the example, the answer is 22, 21

Place **the given number of** light bulbs in some white cells in the grid so that every white cell in the grid is lit. A cell is illuminated by a light bulb if they are in the same row or column, and if there are no black cells between them. No light bulb may illuminate another light bulb. A number in a black cell indicates the number of light bulbs sharing an edge with that cell.
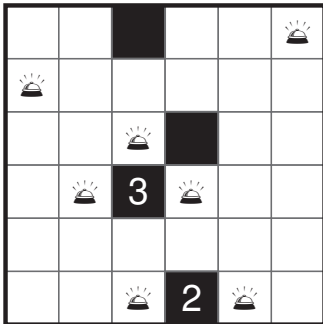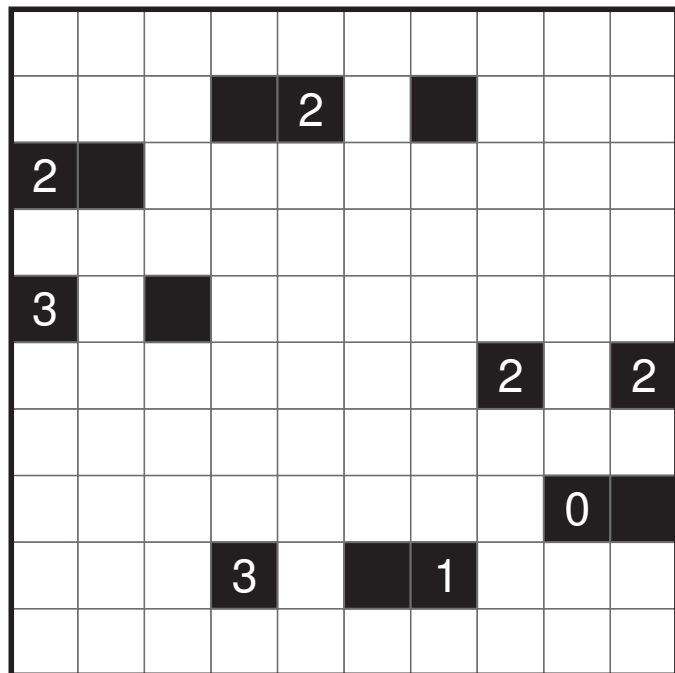
Answer key: Enter the number of light bulbs in each row, starting from top to bottom.

For the example, the answer is 111202

14 bulbs
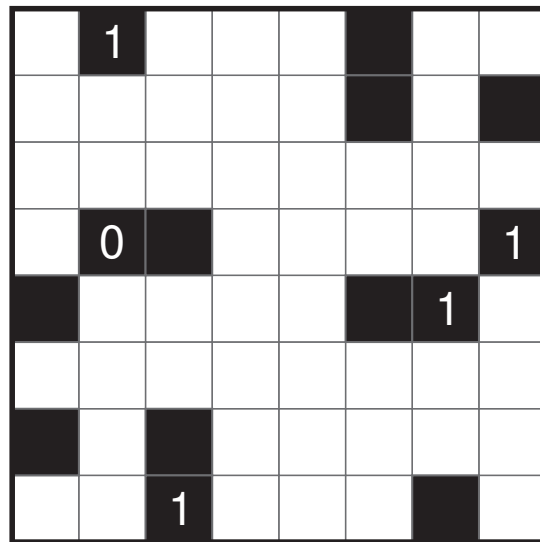
14 bulbs

Place the given number of mines into blank cells so that the numbers in the grid represent the number of mines in the neighboring cells, including diagonal ones. **Cells without numbers and mines cannot have 3 mines around them.**
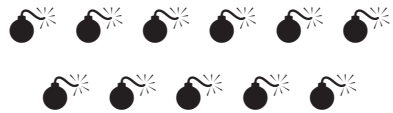
⬇ 9 mines

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

Answer key: Enter the number of consecutive mines in the marked row, then in the marked column. For the example, the answer is 12,3

⬇ 11 mines

		2		1	
		2			
		1		2	
	2			2	
	4	2	1		1
			1		

💣 💣 💣 💣 💣 💣
💣 💣 💣 💣 💣

39 mines ⬇

	2			1			1		
		1	1	2		2			1
1		2				4		1	
	1		4						2
			5			4	2		
	4	4					2		
				7		5		4	2
	5								
	5		6	5	5		4		
						2		1	1

💣 💣 💣 💣 💣 💣 💣 💣 💣 💣
💣 💣 💣 💣 💣 💣 💣 💣 💣 💣
💣 💣 💣 💣 💣 💣 💣 💣 💣 💣
💣 💣 💣 💣 💣 💣 💣 💣 💣

Draw a single continuous loop along the dotted vertical or horizontal line segments. Crossovers or branches are not allowed. Numbers given inside the cell indicate the count of line segments surrounding that cell. **No empty cell can have 3 line segments surrounding it.**
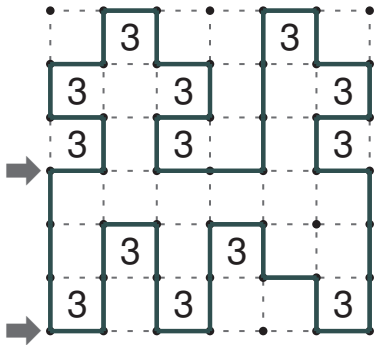
Answer key: Enter the lengths of horizontal line segments along the marked arrows.

For the example, answer is 121,111

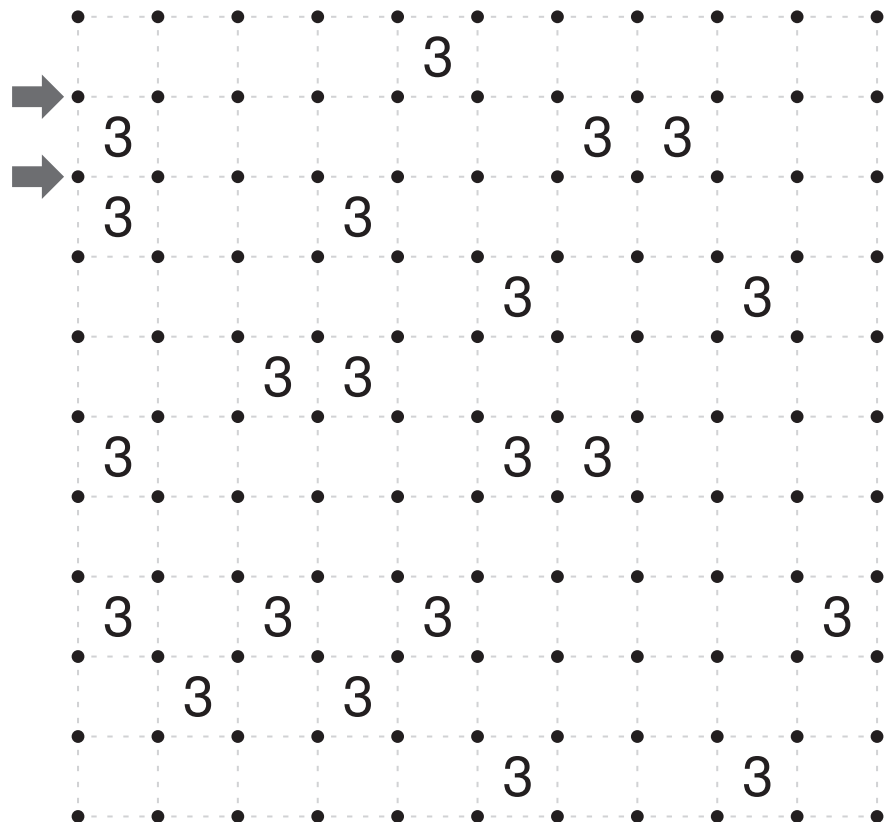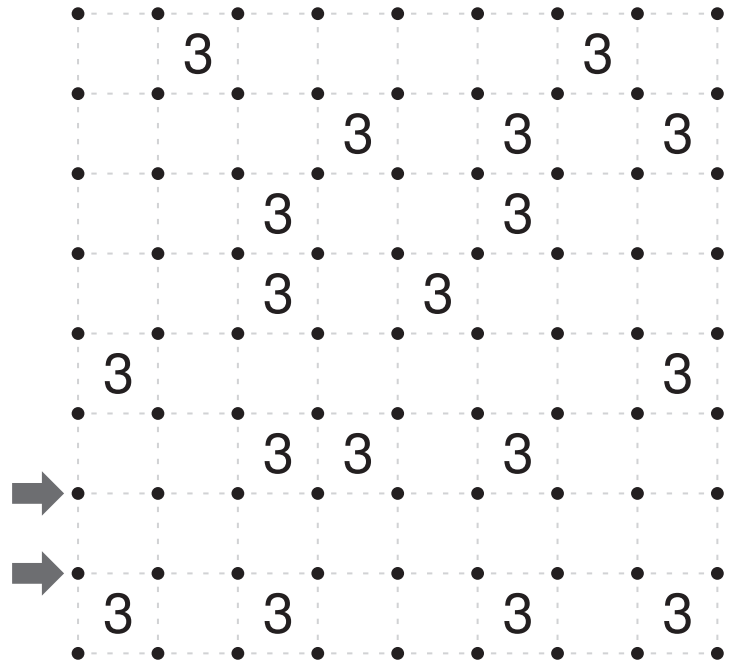Black out some of the digits in the grid so that each row and each column contains distinct digits. Black cells must not touch each other horizontally or vertically. It must be possible to visit any white cell from another white cell using horizontal or vertical paths. **The sum of digits in blackened cells must be same for each row.**

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

Answer key: Enter the number of black cells in each <u>column</u>, starting from left to right

For the example, answer is 220312

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

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

Fill all cells with either L or M or I. All cells with L's must be connected to each other horizontally or vertically. Similar rule for M's and I's. No 2x2 region can contain all same letters.

| I	I	I	I	I	I	I
I	M	M	M	M	M	I
I	M	I	M	L	M	I
I	M	I	M	L	M	I
I	M	I	I	L	M	I
I	M	M	I	L	M	I
I	I	I	I	L	L	L

(arrows mark rows 4, 5, 6)

Answer key: Enter the number of 'M's in each of the marked rows, starting from top to bottom.

For the example, the answer is 323

Puzzle 15:

							L
						L	
	M		L				
			L	M			
	M						
	M		L	L			
M	M	L					

(arrows mark rows 2, 4, 6)

Puzzle 16:

		L							L
		L	M		I	L	I	L	
			L			L	I	L	
		L		M	I			L	
	M		L			L	I		
		M	M			L	I		
	M	I		I				I	
		M		I	M			M	
	I	M		M			M		
M									

(arrows mark rows 2, 4, 6, 8)

Place a letter from the given range in each cell, so that each letter occurs exactly once, in all rows and columns. Some cells will remain empty in each row and column. **The two letters outside the grid show the first two letters that are seen from that direction.**

A~D

AD

|				
B C	-	B	C	A	D
	D	A	-	C	B
A C	A	C	D	B	-
➡	B	D	A	-	C
B C	C	-	B	D	A

A C
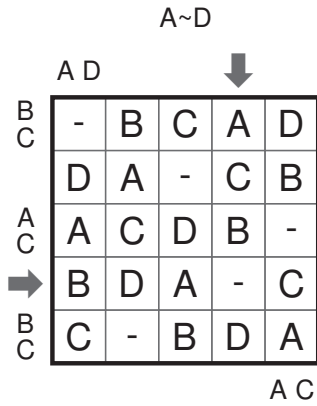
Answer key: Enter the letters in the marked row, and then in the marked column. Enter "-" for empty cells.

For the example, answer is BDA-C, ACB-D

A~D

A D   ⬇ C D   A C

C
D

(empty 5×5 grid)

A
C

A
B

➡

A
B

A~E

B D   B E ⬇ B C   B C

C
E

C
D

➡

C
D

B
D

D
E

B
D

A
B

B D   B C   D B

(empty 7×7 grid)
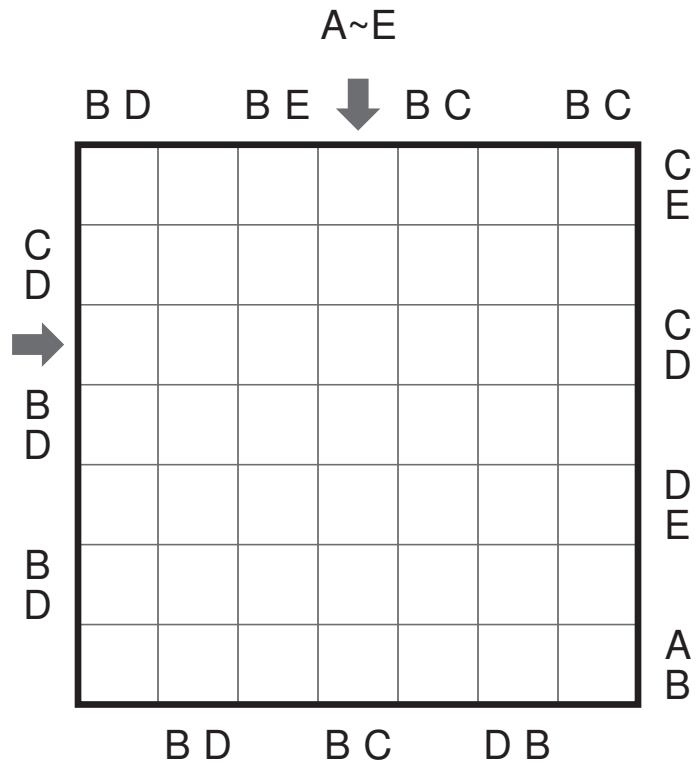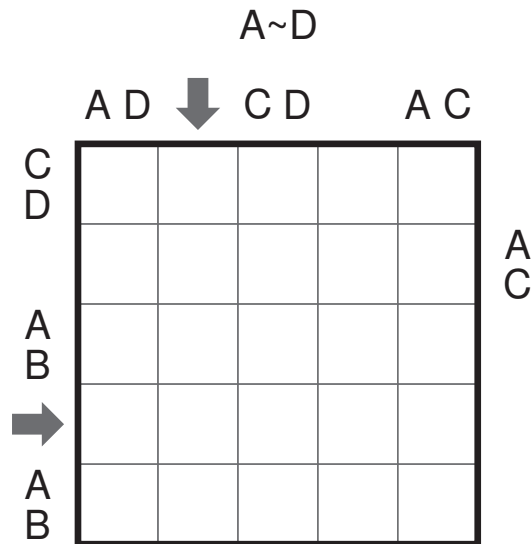
Draw a single closed loop visiting all cells in the grid using horizontal and vertical segments. It does not cross or overlap itself. It makes 90° turn at every cell with a circle. There is also exactly one 90° turn between two consecutive circles that the loop visits. **In each row and each column, a circle is removed from the grid.** Placing the missing circles is part of solving.
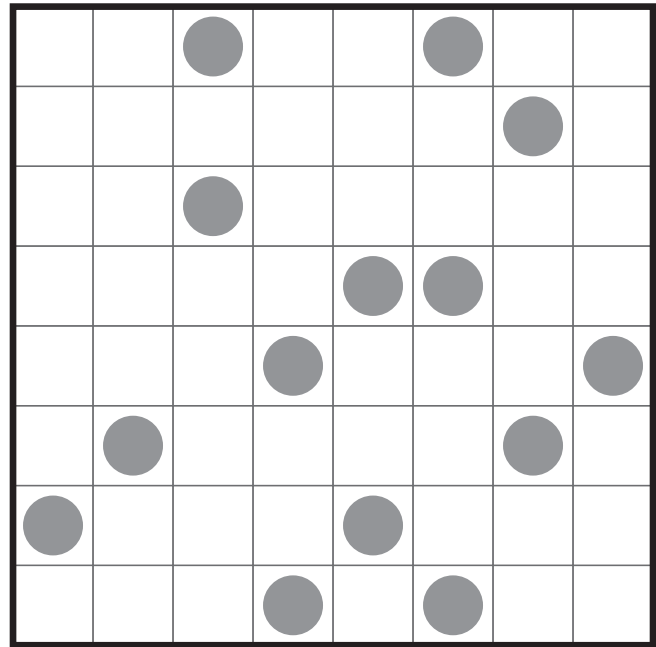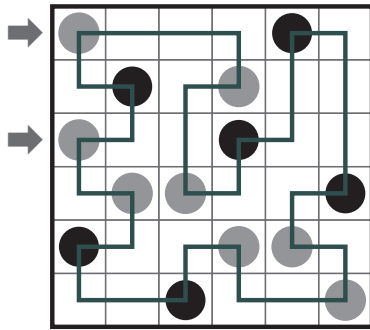
Answer key: Enter the lengths of horizontal line segments in the marked rows.

For the example, the answer is 31, 11
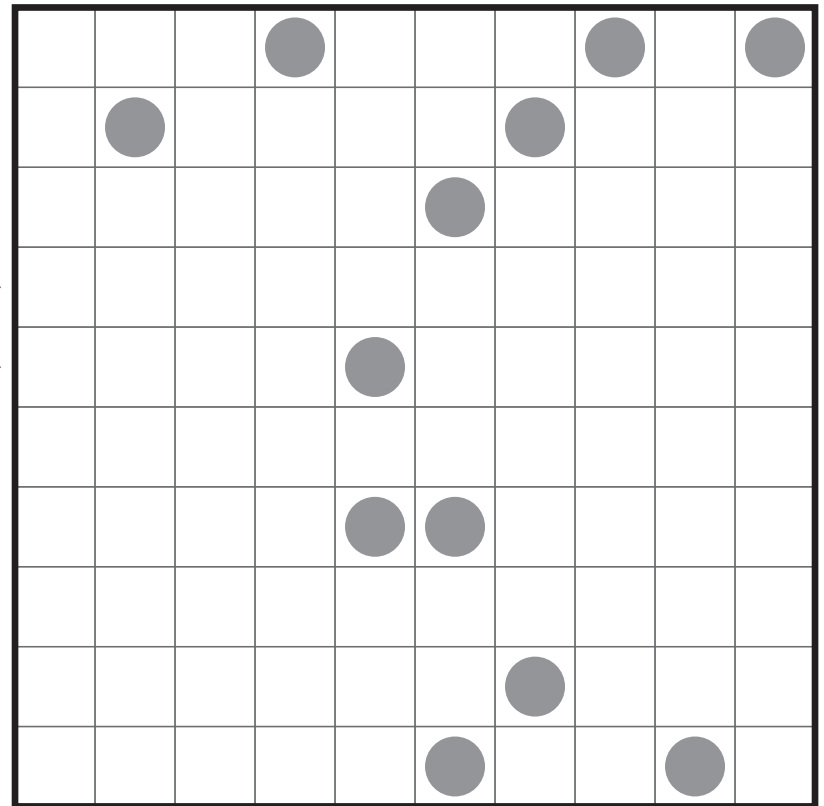
Place digits from 1 to 6 (1 to 9 in the bigger grid) so that each row, each column and each 2X3 box (3X3 box in the bigger grid) contain distinct digits. **No 3 adjacent cells in a row or column can contain a set of 3 consecutive digits.**

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

Answer key: Enter the digits along the marked arrows

For the example, the answer is 526341, 263514

Puzzle 21 (6×6):

	6				3
	3				
		1			
			1		
				2	
2				5	

Puzzle 22 (9×9):

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

Draw arrows in the squares around the large square. Each square has one arrow. Each arrow points to at least one number. The numbers show the total number of arrows pointing towards them. Additionally, **each arrow can point only till 3 cells in the corresponding direction.**

	↘	↓	↘	↙	
→	1	4	3	2	←
↘	1	2	1	1	↙
↘	3	2	1	5	←
→	3	3	4	3	←
	↑	↗	↗	↑	

Answer key: Enter the number of horizontal arrows and the number of vertical arrows.

For the example, the answer is 5, 3

1	1	2	1	2
2	2	2	2	4
4	4	0	2	3
3	2	2	1	3
1	2	2	4	2

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