SprinTTesT Introduction

3rd-4th September 2011
75 minutes

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With the help of Deb Mohanty

Testers : Sylvain Caudmont, Robert Vollmert, Nikola Zivanovic

→ Contest page : http://logicmastersindia.com/M201109P/
→ Discussion thread : http://logicmastersindia.com/forum/forums/thread-view.asp?tid=377#M5455

WELCOME, PUZZLERS !

I am very pleased to welcome you in the instruction booklet of the first ***Sprint Test***, a new formula being experimented on LogicMasters India. This contest consists of **15** puzzles of various types, most of them being rather easy exemplaries of their particular type. Our main objectives with this test are to catch the interest of potential new players, who may be afraid of standard tests which are usually designed for experienced puzzlers, and also to provide an interesting challenge to average solvers. Indeed, the test has been timed so that an average experienced solver should have a good chance to complete it within the time limit.

Now, let's have a more detailed look at the composition of this contest.

PUZZLE TYPES / POINTS TABLE

The test is composed of **15** puzzles. Most of these puzzle types are common ones or variations of these; a few others are less known. Each puzzle is worth 5 to 25 points, for a total of **200** points.

Akari	**10**	Horse Snake	**10**	Slitherlink	**15**
Fillomino	**20**	LITS	**15**	Snail	**5**
Fortress	**20**	Masyu	**5**	Star battle	**25**
Galaxies	**15**	Nurikabe	**5**	TAPA	**5**
Heyawacky	**20**	Pointing evens sudoku	**15**	Yajilin	**15**

TIMING

The puzzles are to be solved in 75 minutes. However, the particularity of Sprint Tests is that, in order to make them more accessible to less experienced solvers, the timing has not being estimated by considering the best potential players; so, much more players than on an usual test should be able to solve all the puzzles within the time limit. To maintain some challenge, below is an estimation of the time you may try to reach depending on your LMI Rating.

LMI Rating	<500	550	600	650	700	750	800	850	900	950	1000
Target time	75	71	67	63	59	55	51	47	43	39	35

BONUS SYSTEM

UPDATED !

- 3 points per minute saved if 14 or 15 puzzles are solved correctly.
- 25 additional points if 15 puzzles are solved correctly.

ANSWER KEYS

As for Japanese Puzzle Land (LMI August Puzzle Test), beside each puzzle will be a box ; the purpose of this box is for you to write the corresponding answer key into it, in order to gain some time when you will have to copy these answers out to the online form. This is, of course, purely optional.

ADDITIONAL REMARKS

I would like to thank the whole team LMI for the excellent job they do. Their contribution to the development of puzzling in the world is really huge.
Special thanks to Deb Mohanty for his motivation and constant envy to improve every aspects of the LMI competitions, and of course for this excellent idea of "Sprint Tests". I am particularly pleased to have worked with him in order to put into place this new formula.
Puzzles were pre-tested by **Sylvain Caudmont**, **Robert Vollmert** and **Nikola Zivanovic**. Many thanks to them too for their precious help.

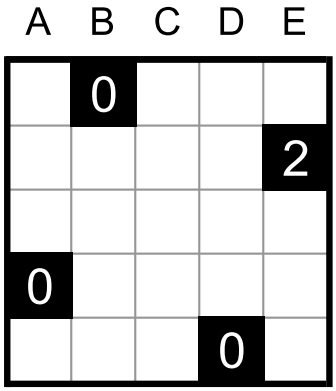
I hope you will enjoy the test and more generally the idea of Sprint Tests, in particular if this is your first experience as a puzzling competition. Please feel free to give us some feedback, so that we can try to improve the formula... If needed, of course.

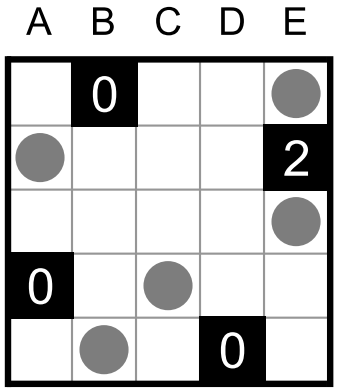
Finally, please note that the results of this test will be used for LMI puzzle ratings.

Have fun ! And I mean it - I will personnally check that everybody had fun.

1. AKARI 10 points

Place some light bulbs in the grid. Each numbered black cell indicates how many light bulbs are orthogonally adjacent to that cell. The light bulbs emit rays that travel horizontally and vertically until they hit a black cell or the edge of the grid. Each white cell must either be illuminated by a light bulb or contain one, and no two light bulbs can illuminate each other.

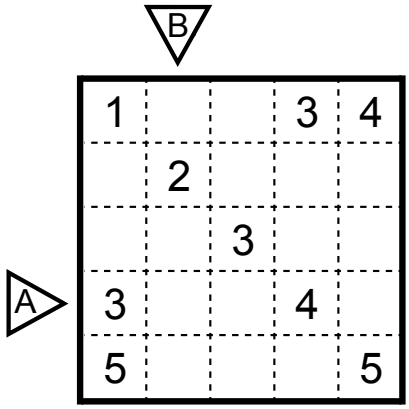


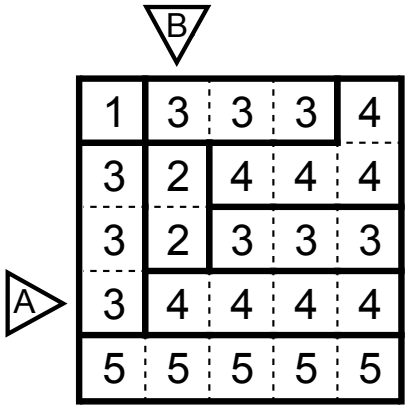


*Answer Key : Write the column position of the left most bulb in each row (write X if there is no bulb in a row). The answer for the example would be **EAECB**.*

2. FILLOMINO 20 points

Place a number in each cell of the grid, so that each number is contained in a polyomino of that size. Polyominoes of the same size cannot touch each other orthogonally. Not all the polyominoes necessarily contain one or more digit(s) amongst the ones given.

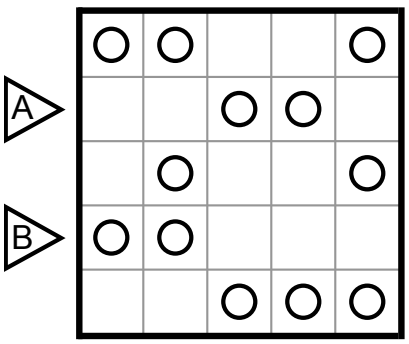


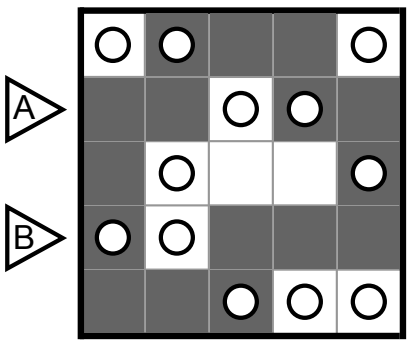


*Answer Key : Write the content of the marked rows and/or columns. Write only the unit digit for numbers bigger than 9. The answer for the example would be **34444, 32245**.*

3. FORTRESS 20 points

Blacken some cells so that they form a single closed loop, one cell width (the wall), which does not touch itself, even at a point.
The wall must contain exactly one circle (guard) in each row and column.





*Answer Key : Write the length of separate white cell blocks in the marked rows and/or columns (write 0 if there is none). The answer for the example would be **1, 1**.*

4. GALAXIES 15 points

Divide the grid into several areas, so that each area contains exactly one circle and that a circle is the center of symmetry of its area.

*Answer Key : Write the length of distinct regions parts in the marked rows and/or columns. The answer for the example would be **131, 212**.*

5. HEYAWACKY 20 points

Blacken some cells so that no two black cells touch orthogonally, and that all the white cells are linked orthogonally.
A number in a region corresponds to the number of black cells within.
White cells must not exceed two *different* regions in length in a straight line.
Careful ! They can cross more than two boundaries if and only if no more than two different regions are crossed.

*Answer Key : Write the length of separate white cell blocks in the marked rows and/or columns. The answer for the example would be **22, 12**.*

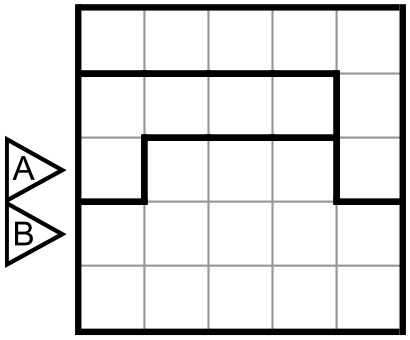
6. HORSE SNAKE 10 points

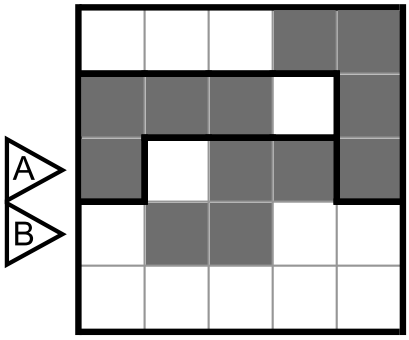
Blacken some cells so that they form a single continuous wall, one cell width (the snake), which head and tail are given. The snake cannot touch itself, even at a point.
A clue in a cell corresponds to the number of snake cells (head and tail included) which can be reached in a knight step from this cell.
There cannot be any snake segment on a cell containing a clue.

*Answer Key : Write the length of separate white cell blocks (clue cells are considered white) in the marked rows and/or columns (write 0 if there is none). The answer for the example would be **11, 2**.*

7. LITS 15 points

In every region, blacken 4 cells so that they form a tetromino (group of 4 cells linked orthogonally).
Two identical tetrominoes (considering rotations/reflexions) cannot touch by an edge.
All the black cells must be linked orthogonally and they can never form a 2x2 square.

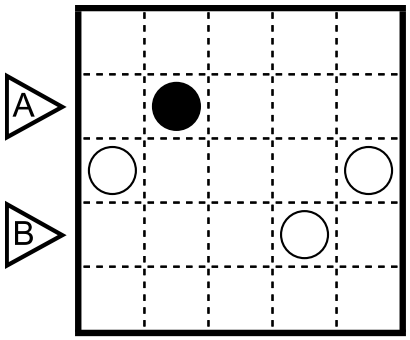


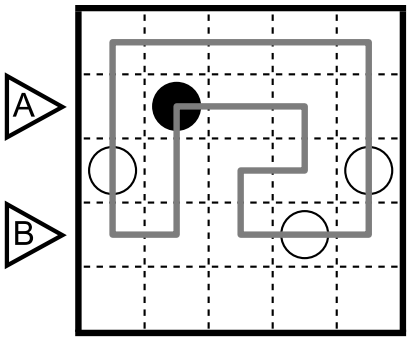


*Answer Key : Write the length of separate white cell blocks in the marked rows and/or columns (write 0 if there is none). The answer for the example would be **1, 12**.*

8. MASYU 5 points

Draw a closed loop passing orthogonally through adjacent cells. The loop must pass through every cell containing a circle.
The loop makes 90° turn at every cell with a black circle, but must not make a turn immediately before or after. It goes straight at every cell with a white circle, but must make a 90° turn immediately before or after, or both.

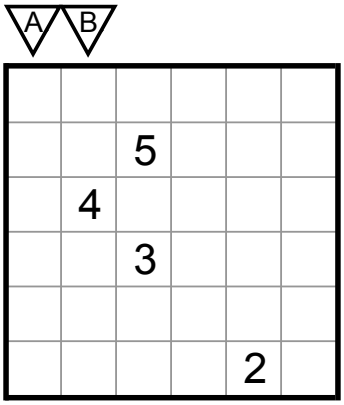


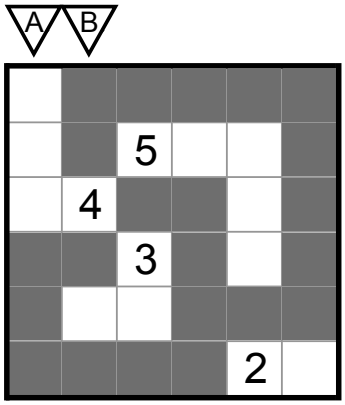


*Answer Key : Write the respective length of the horizontal line segments in the marked rows / of the vertical line segments in the marked columns (write 0 if there is none). The answer for the example would be **2, 12**.*

9. NURIKABE 5 points

Blacken some cells so that all the black cells are linked orthogonally and never form a 2x2 square.
White cells form islands. Each island contains exactly one numbered cell which corresponds to the number of white cells composing this island, itself included. Two islands must not touch orthogonally.

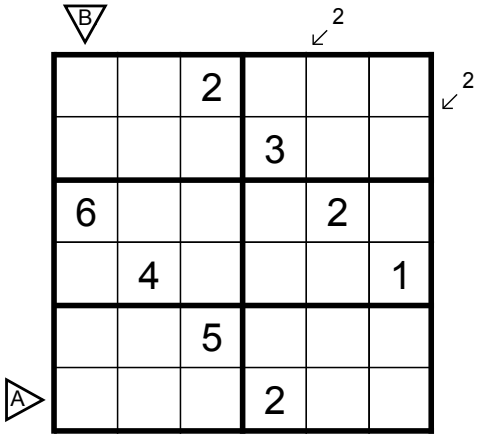


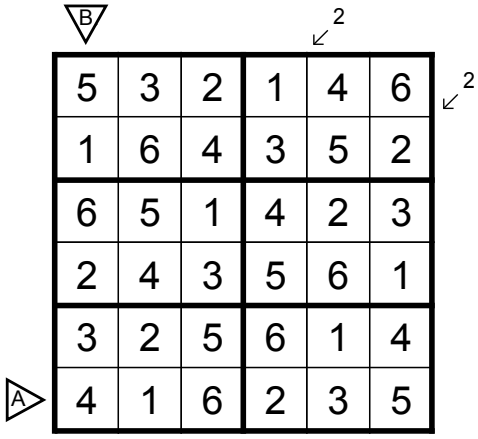


*Answer Key : Write the length of separate white cell blocks (clue cells are considered white) in the marked rows and/or columns (write 0 if there is none). The answer for the example would be **3, 11**.*

10. POINTING EVENS SUDOKU — 15 points

Each row, column and region must contain the digits from 1 to 6. Clues outside the grid correspond to the number of even digits in the diagonal indicated by the arrow.

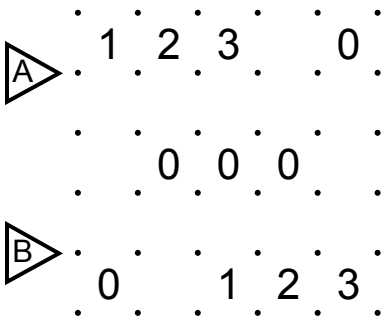


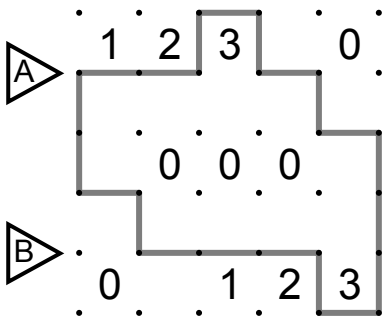


*Answer Key : Write the digits in the marked rows and/or columns. The answer for the example would be **416235, 516234**.*

11. SLITHERLINK — 15 points

Draw a closed loop linking orthogonally adjacent dots. A digit in a cell indicates the number of its sides which belong to the loop.

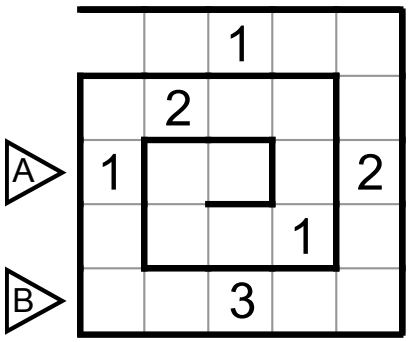


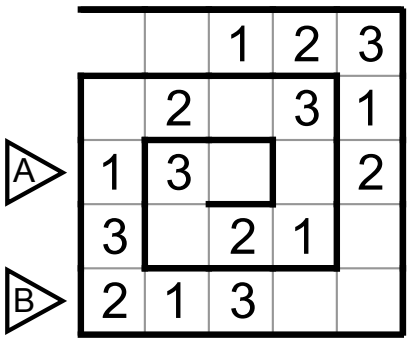


*Answer Key : Write the respective **l**ength of the horizontal line segments in the marked rows / of the vertical line segments in the marked columns (write 0 if there is none). The answer for the example would be **21, 3**.*

12. SNAIL — 5 points

Fill in the grid so that each row and column contains the digits from 1 to 3 exactly once. While reading the digits from outside towards the center, they must form increasing series of consecutive digits (123-123-123...).

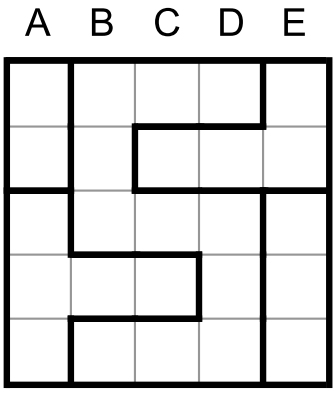


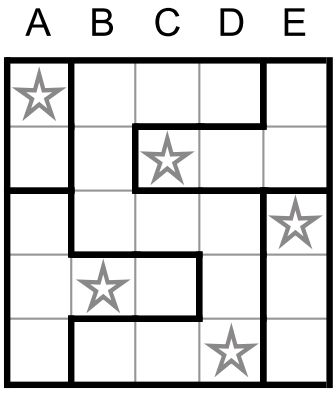


*Answer Key : Write the content of the marked rows and/or columns ; Use X for blank cell. The answer for the example would be **13XX2, 213XX**.*

13. STAR BATTLE — 25 points

Place two stars (one in the example) in each row, column and region so that stars do not touch each other orthogonally nor diagonally.

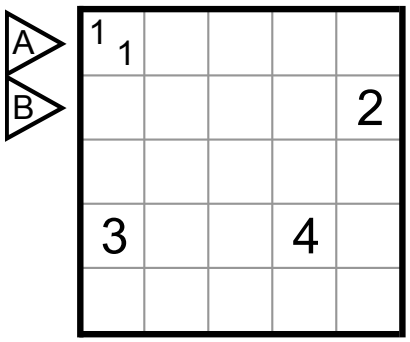


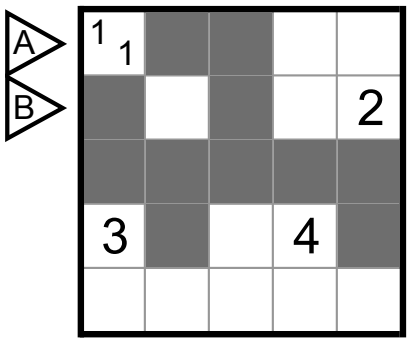


*Answer Key : Write the column position of the left most star in each row. The answer for the example would be **ACEBD**.*

14. TAPA — 5 points

Blacken some cells so that all the black cells are linked orthogonally.
A digit in a cell indicates the number of adjacent black cells among the neighbouring cells (orthogonally and diagonally) of the one which contains the digit. If there is more than one digit in a cell, the black cell blocks must be separated by at least one white cell.
Cells containing digits cannot be blackened. Moreover, blackened cells can never form a 2x2 square.

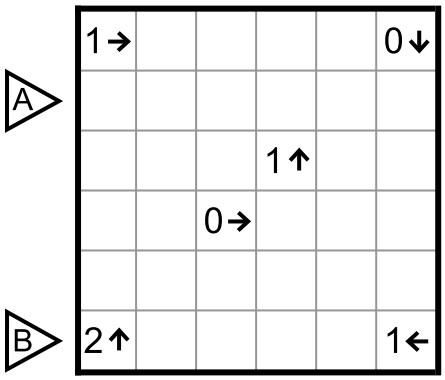


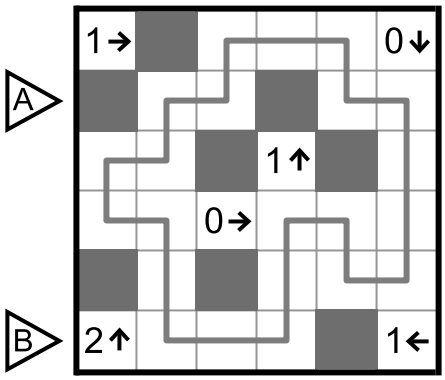


*Answer Key : Write the length of separate white cell blocks (clue cells are considered white) in the marked rows and/or columns (write 0 if there is none). The answer for the example would be **12**, **12**.*

15. YAJILIN — 15 points

Blacken some cells and draw a closed loop passing orthogonally through adjacent cells. The loop must pass through every cell excepted numbered and blackened ones.
A digit corresponds to the number of black cells in the direction of the corresponding arrow; a numbered cell must not be blackened and no two black cells can be orthogonally adjacent.





*Answer Key : Write the respective length of the horizontal line segments in the marked rows / of the vertical line segments in the marked columns (write 0 if there is none). The answer for the example would be **11**, **2**.*

PRACTICE

- Examples for **Akari**, **Fillomino**, **LITS**, **Masyu**, **Nurikabe**, **Slitherlink**, **Star battle**, **Tapa** and **Yajilin** can easily be found on the web. Best sources are the blogs of other authors, as well as previous puzzle contests.
- **Galaxies** and **Snail** are less common but can also be found with a little more research (previous LMI tests, OAPC, etc.).
- **Horse snake** is, to my knowledge, originally from Serkan Yurekli and Gülce Özkütük. You can find puzzles of this type in the files of *Oğuz Atay Puzzle Contest 3*.
- The only other **Fortress** puzzle I know comes from *French WPC Selection 2005* (under the name *Castle Wall*), available at the address http://www.ffjm.org/upload/fichiers/WSC/qualif05.zip.
- **Heyawacky** comes from Thomas Snyder, under the name *Wacky heyawake*. Several puzzles are available on his blog http://motris.livejournal.com and on MellowMelons's one : http://mellowmelon.wordpress.com. Be careful ! The rules I used for this test are slightly different from the ones used by these two authors, as they do not allow white cells to cross more than two boundaries in a straight line, *even if only two regions are concerned*. My own version of the puzzle allows this (see example puzzle).
- Finally, **Pointing evens sudoku** is original to me and no such other puzzle has been published before, excepted in the book *Florilège de variantes de sudoku* : http://ffsudoku.com/livre_florilege_en.html. However, the example given in this instruction booklet is of the same size as the puzzle of the test, so it should suffice as a training.