Indian Puzzle Championship 2012

03-Jun-2012

http://logicmastersindia.com/IPC2012/

Important Links

Submission: http://logicmastersindia.com/IPC2012/

Discussion: http://logicmastersindia.com/forum/forums/thread-view.asp?tid=464

Results: http://logicmastersindia.com/IPC2012/score.asp

Registration, if required: http://logicmastersindia.com/forum/register.asp

About Indian Puzzle Championship (IPC) 2012

The Indian Puzzle Championship 2012 will be held online on 3rd June, 2012. Participation is free of cost and everyone is invited to participate in the event irrespective of age. There are no prerequisites/requirements for participation. All you will need to do is register at Logic Masters India (LMI).

Top competitors will represent India at the World Puzzle Championship 2012 which will be held in Croatia in October, 2012.

Participation

This instruction booklet lists all the puzzle types that will appear in IPC. It is important to read and understand rules of all the puzzles. There will not be any interface / applet to solve the puzzles on web browser. The puzzle booklet should be downloaded, printed and solved on paper. Each puzzle has 1 or 2 answer keys. After solving the puzzle, you need to submit the puzzle using the answer keys.

On 3rd June at 14:00 hours, you need to login on the IPC webpage at LMI using your id and password. Once you click on 'Start', you will be shown the password for the puzzle booklet. Your timer will start at this point.

The puzzle booklet will have approximately 17 pages. Most of the puzzles are designed to be solved faster on paper. We advise you to have a printer accessible with enough paper.

Timings

The length of the championship is 150 minutes. So, after getting the password, you have 150 minutes to print the puzzles, solve them, find the answer keys and submit your answers. Submissions will not be accepted after 150 minutes.

IPC 2012 will start on 3rd June at 14:00 hours IST. Answer submissions will not be accepted after 16:45 hours. You must start accordingly to allow yourself full solving time.

Scoring and Points Table

Each puzzle is allotted points. You will get full points if you enter the correct answer key. No partial points will be allotted for any puzzle.

Points typically indicate difficulty of the puzzles and time required to solve them. However, your personal experience may differ.

There is no penalty for incorrect submission.

There are 30 puzzles, worth 1000 points.

Puzzle	Classic	Variant
As Easy As ABC	30	25
Slitherlink	25	50
Kakuro	20	40
Loop Finder	25	65
Hitori	15	40
Masyu	45	25
Tapa	30	35
Sudoku	30	45
Skyscraper	30	45
TomTom	30	50
Snake	35	40
Square Division	10	10
Mastermind	5	30
Star Battle	20	80
Battleships	25	45
Total Points	**375**	**625**

Ranking

Ranking will be based on following rules in order:

1. Most total points
2. Most points from variant puzzles
3. Earliest final submission time, upto seconds (ignoring incorrect submissions)

About answer keys and Submission

1. You may submit the answer keys anytime during the test duration of 150 minutes. You may consider submitting a puzzle as soon as you solve it.
2. You may submit an answer multiple times, only the latest submission will be taken into consideration.
3. Answer keys are always to be entered from left to right or top to bottom
4. Don't enter any separator unless specified in the answer key
5. If one row and one column is marked, enter the row first and then the column
6. If multiple rows are marked, enter from top to bottom for marked rows
7. If multiple columns are marked, enter from left to right for marked columns
8. If horizontal and vertical keys are needed, first enter the horizontal and then the vertical
9. Uppercase or lower case of answer key does not matter
10. Characters other than alphabets, numbers and comma will be removed while checking the answer

Outside Help

Outside solving help of any kind is not permitted. This includes but is not limited to: assistance of any kind from any other person; prepared notes, books, calculators, computers, or tools other than items explicitly permitted.

You are allowed to use writing implements, eraser, blank paper (including commercial graph paper), ruler, scissors, and tape.

Judging

All entries and scores are subject to review for rules compliance. Winners may be asked to sign an affidavit confirming that they did, in fact, abide by the rules of the competition. The organizers reserve the right to disqualify any contestant if, in their sole judgment, they believe the rules have been violated.

In case of a dispute, protest, or other judgment, the decision of the judges is final.

Acknowledgements

Logic Masters India thanks the following puzzle solvers and makers for helping us organize Indian Puzzle Championship 2012.

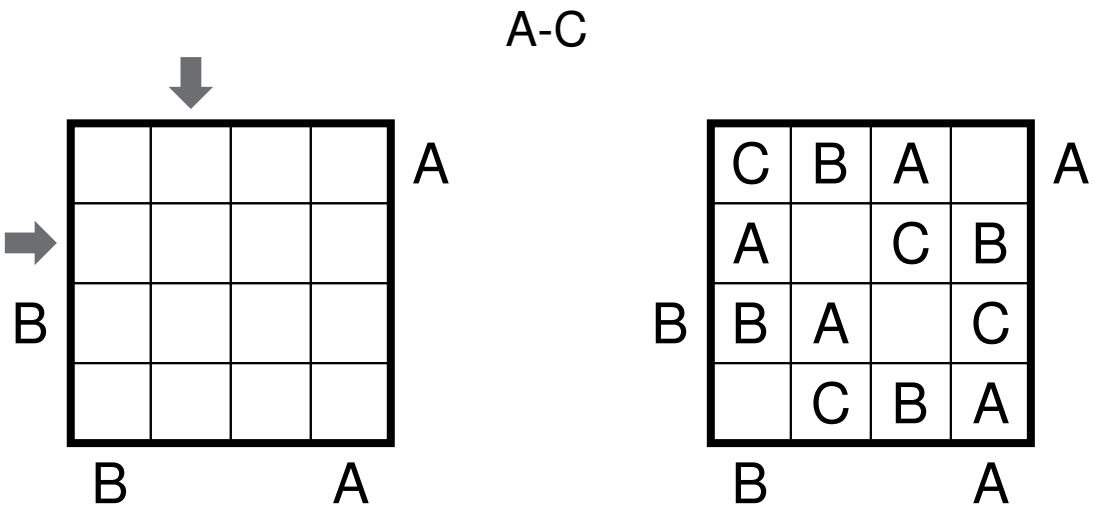
Branko Ceranic
Nikola Zivanovic (http://logika-nikola.blogspot.com)
Palmer Mebane (http://mellowmelon.wordpress.com)
Serkan Yurekli (http://akil-oyunlari.livejournal.com)
Thomas Snyder (http://motris.livejournal.com)

A1 – As Easy As ABC

Enter the letters from the given range, so that each letter exactly once in all the rows and columns.

Some cells will remain empty in each row and column.

The letters outside the grid show the first seen letter from that direction.

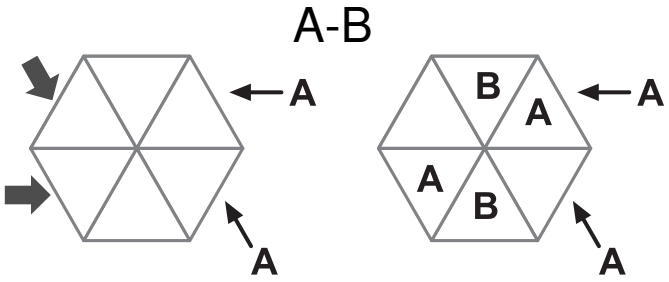


Answer Key: Enter the alphabets in the marked directions. Enter X for blank cells. For the example, the answer key is AXCB,BXAC

A2 – As Easy As ABC

Same rules as "A1 - *As Easy As ABC"*, except that triangles are used.

Letters appear exactly once in all the diagonals.

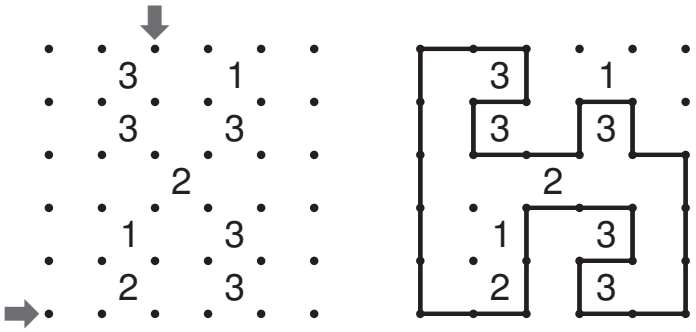


Answer Key: Enter the alphabets in the marked directions. Enter X for blank cells. For the example, the answer key is ABX,XAB

B1 – Slitherlink

Draw a single continuous loop along the dotted vertical or horizontal line segments. Crossovers or branches are not allowed.

Clues given inside the cell indicate the count of line segments surrounding that cell those are part of the loop.

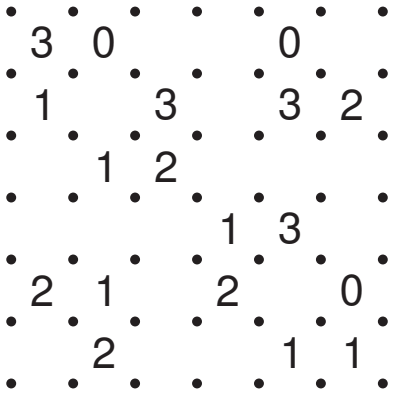


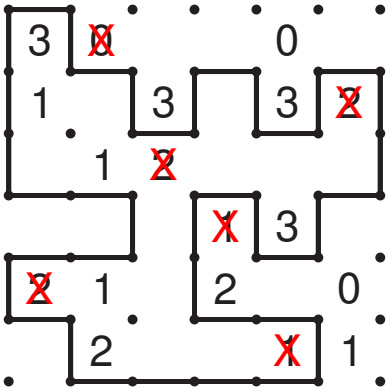
Answer Key: Enter the lengths of line segments in the marked directions. For the example, the answer key is 22,12

B2 – Liar Slitherlink

Same rules as B1 – Slitherlink.

But exactly one clue in each row and each column is false. It is part of solving to determine the liar clues.



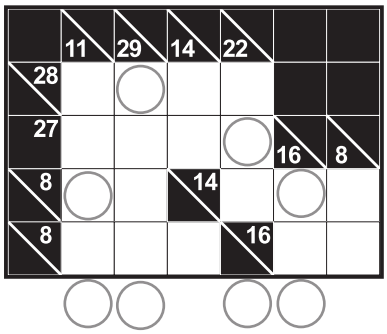


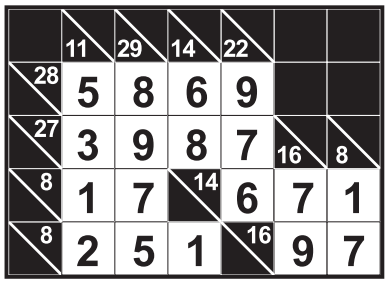
Answer Key: Same as B1 – Slitherlink

C1 – Kakuro

Place a digit from 1 to 9 in each cell so that the sum of each horizontal/vertical group of cells equals the number given on its left/top. Digits must not repeat within any sum.

(Ignore the circles while solving. They are used for answer key purposes only.)

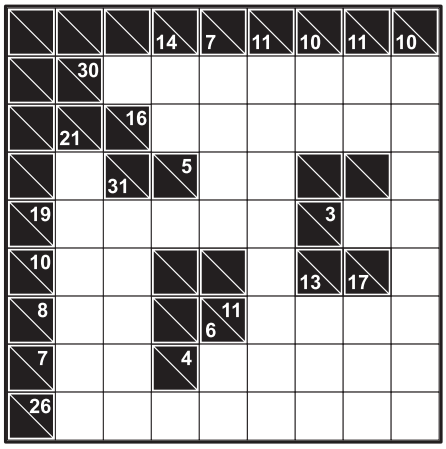


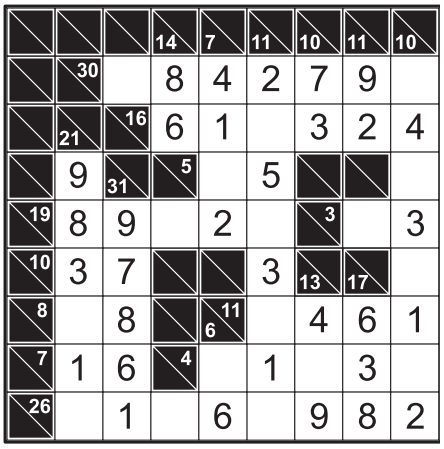


Answer key: Some columns have one circled cell. Enter the digits in circled cells from left to right. For the example, answer key is 1877

C2 – Gapped Kakuro

Same rules as C1 – Kakuro. But some cells may remain blank in this puzzle. Also, blank cells cannot be orthogonally adjacent to each other.

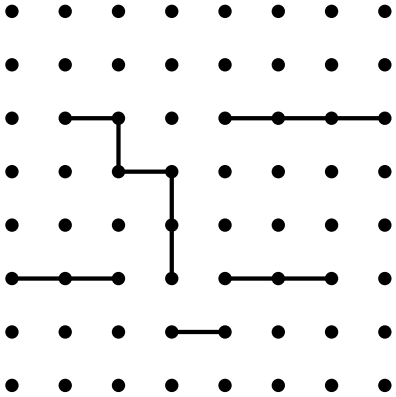


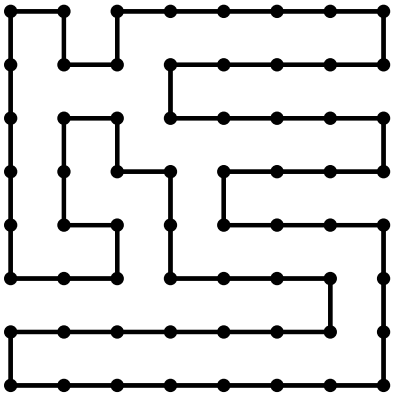


Answer Key: Same as C1 – Kakuro. Enter X if the circled cell is empty.

D1 - Loop Finder

Draw a single continuous loop that visits all dots. The loop has only horizontal and vertical line segments. Some line segments are already drawn.



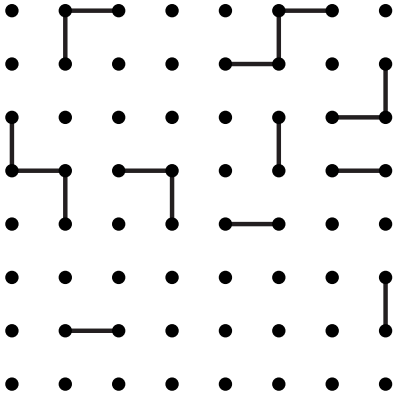


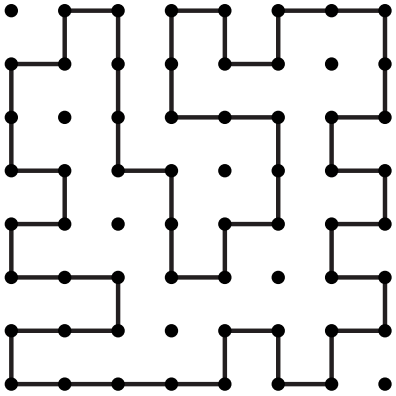
Answer Key : Same as B1 – Slitherlink

D2 – Around the Black

Same rules as D1 – Loop Finder.

But exactly, one dot in each row and each column is not visited by the loop.

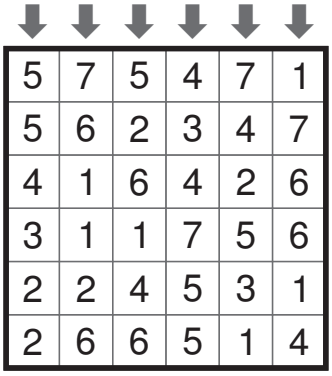




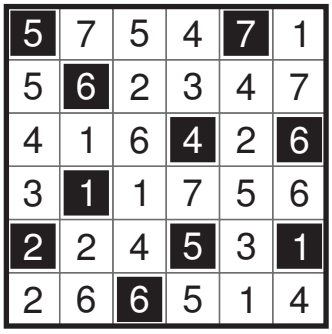
Answer Key : Same as B1 – Slitherlink

E1 - Hitori

Shade some of the digits in the grid so that each row and each column contains distinct digits in remaining cells.
Shaded 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.



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



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

Answer key: Enter the number of black cells in each column, starting from left to right
For the example, answer is 221212

E2 – Hitori Row Sum

Same rules as E1 – Hitori.

Additionally, the sum of digits in shaded cells must be same for each row.

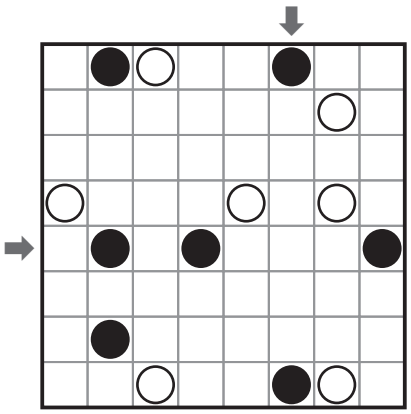
2	5	1	6	2	5
1	2	2	5	3	4
3	1	4	5	7	7
2	3	6	7	1	5
5	4	7	2	6	3
4	4	3	3	7	1

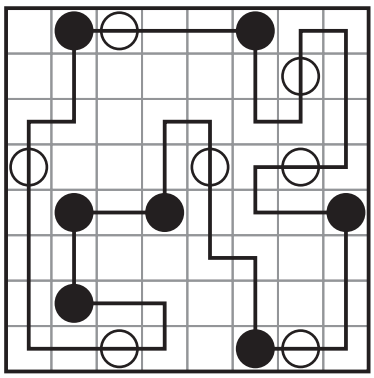
2	5	1	6	2	**5**
1	**2**	2	**5**	3	4
3	1	4	5	**7**	7
2	3	6	**7**	1	5
5	**4**	7	2	6	**3**
4	4	3	**3**	7	1

Answer Key : Same as E1 – Hitori

F1 – Masyu

Draw a single closed loop using horizontal and vertical segments. It does not cross or overlap itself, and it may not visit all cells.
The loop makes 90° turn at every cell with a black circle, but does not make a turn immediately before or after.
The loop goes straight at every cell with a white circle, but makes a 90° turn immediately before or after or both.



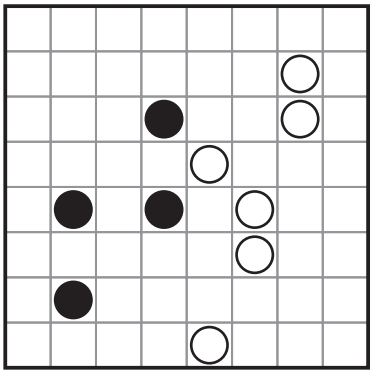


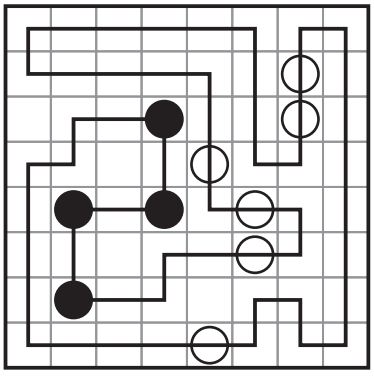
Answer Key: Enter the lengths of line segments in the marked directions. For the example, the answer key is 22,212

F2 – Masyu No Touch

Same rules as F1 – Masyu.

Additionally, cells unvisited by the loop cannot be orthogonally adjacent to each other.

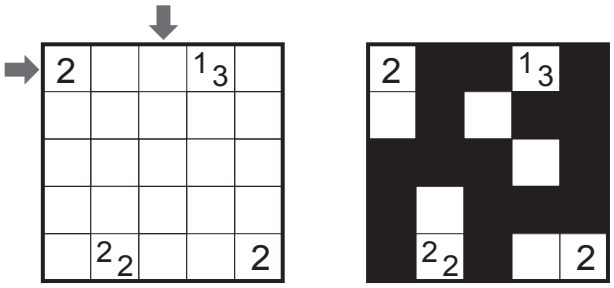




Answer Key : Same as F1 – Masyu

G1 – Tapa

Paint some empty cells black to create a continuous wall. Number/s in a cell indicate the length of black blocks on its neighbouring cells.
If a cell has more than one number, there must be at least one white cell between the black blocks.
No 2X2 square can contain only painted cells.

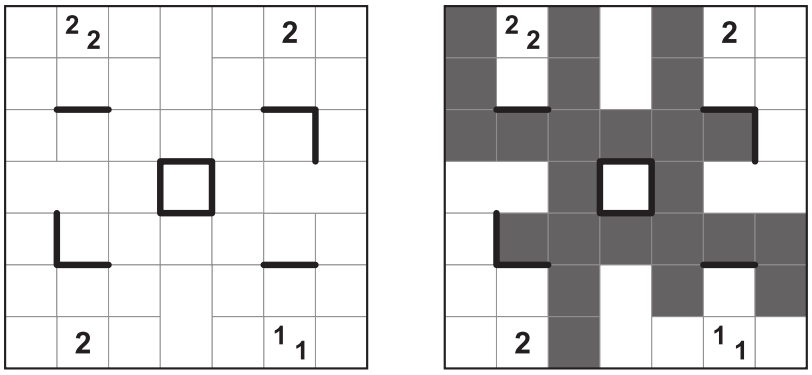


Answer Key: Enter the lengths of separate blackened cell blocks in the marked directions.
For the example, the answer key is 21,13

G2 – Tapa Borders

Same rules as G1 – Tapa.

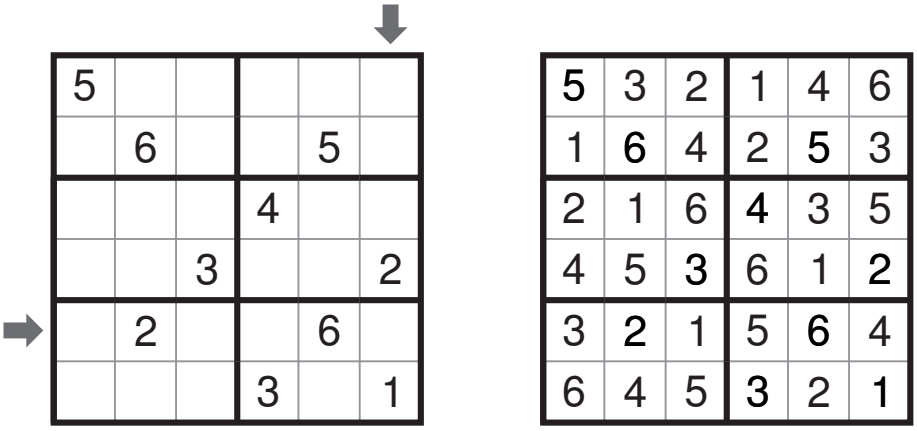
The borders between some cells may be either thick or nonexistent. A thick border separating two cells means one is painted and the other is not. A lack of a border means the two cells are both painted or both white.



Answer Key: Same as G1 – Tapa

H1 – Sudoku

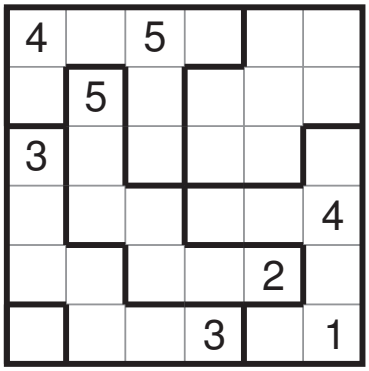
Place a digit from 1 to N in each cell of the N by N grid such that each digit appears exactly once in each row, and column, and outlined region.

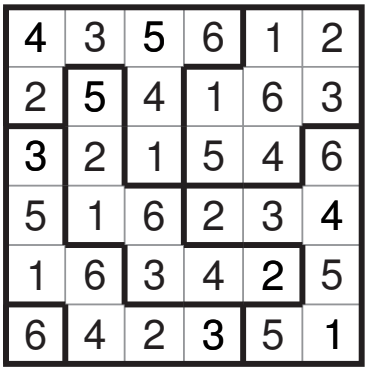


Answer Key: Enter the digits in the marked directions.
For the example, the answer key is 321564,635241

H2 – Surplus Sudoku

Place a digit 1 to N in each cell of the N by N grid such that each digit appears exactly once in each row and column. Each digit appears at least once in outlined regions, except single cell regions.

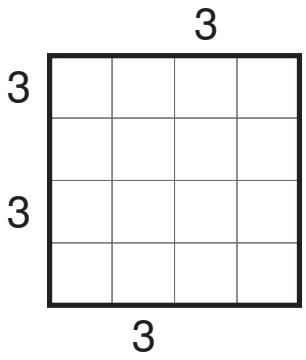


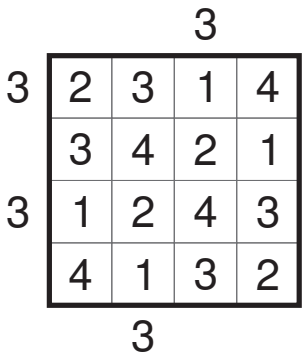


Answer Key: Same as H1 – Sudoku

I1 – Skyscraper

Place a digit from 1 to N in each cell of the N by N grid such that each digit appears exactly once in each row and column.
Digits in the cell represent height of skyscraper.
Digits outside the grid represent the number of skyscrapers seen (not blocked by a taller skyscraper) from the corresponding direction.



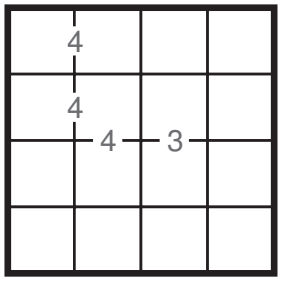


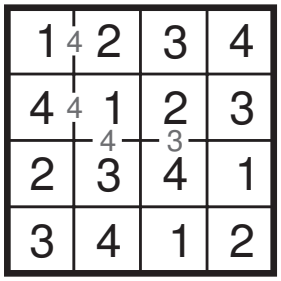
Answer Key: Same as H1 – Sudoku

I2 – Inside Skyscraper

Same rules as I1 – Skyscraper.

The numbers along the grid lines represent number of skyscrapers visible from that vintage point.

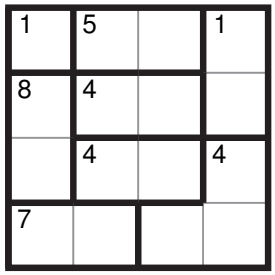


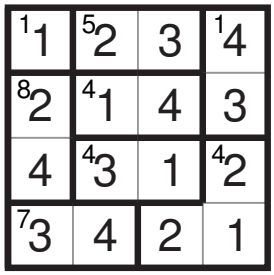


Answer Key: Same as H1 – Sudoku

J1 – TomTom

Place a digit from 1 to N in each cell of the N by N grid such that each digit appears exactly once in each row and column.
The value in the upper-left of each bold region indicates the value after some mathematical operation (addition, subtraction, multiplication, or division) is applied to the numbers in that region. For division and subtraction, start from the largest number.



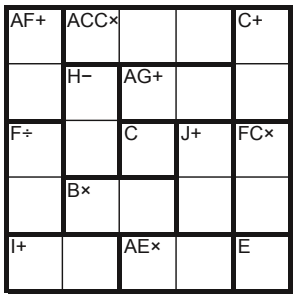


Answer Key: Same as H1 – Sudoku

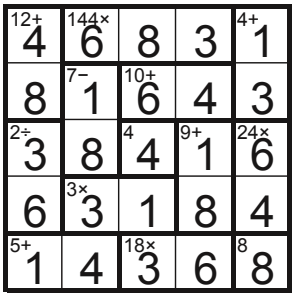
J2 – Coded TomTom

In this TomTom puzzle, 0-9 have been replaced with A-J with each letter representing a unique digit. Zero cannot be the first digit of a multi-digit number. The mathematical operation to be used in each region is already given.

The grids are to be filled with A-F where A < B < C < D < E < F.



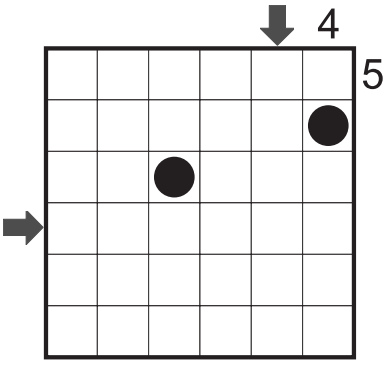
Fill grid with the 5 digits A-E where A < B < C < D < E

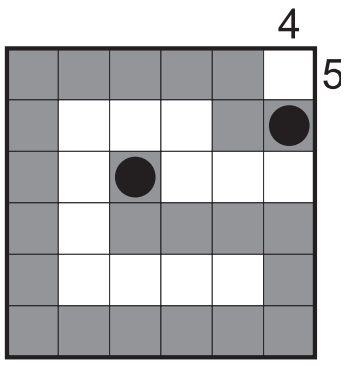


Answer Key: Same as H1 – Sudoku

K1 – Snake

Locate a snake in the grid, whose head and tail are given. The snake does not touch itself even at a point. Numbers outside the grid indicate lengths of snake segments in the corresponding direction.

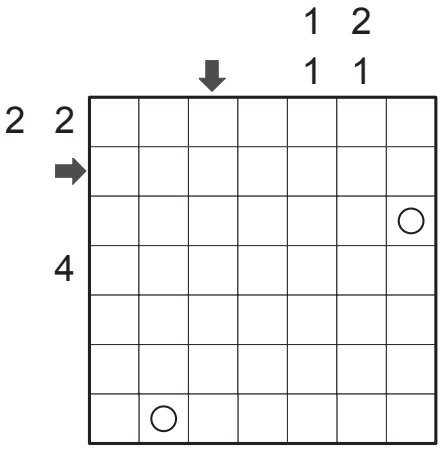


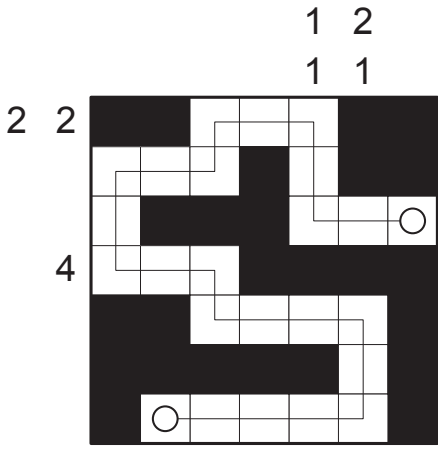


Answer Key: Enter the lengths of separate snake segments in the marked directions. For the example, the answer key is 14,211

K2 – Graffiti Snake

Paint some cells to create black walls. The numbers outside the grid indicate lengths of blackened cell blocks in the corresponding directions, in order. If there are more than one blacked blocks in a row or column, there must be a white cell between the blocks.
A snake travels through all the white cells, moving horizontally or vertically, without touching itself, even at a point. The head and tail of the snake is given.

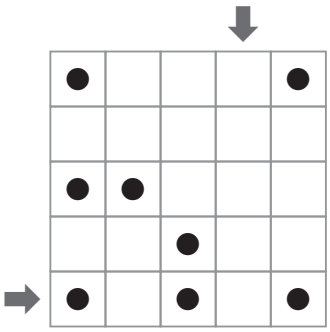


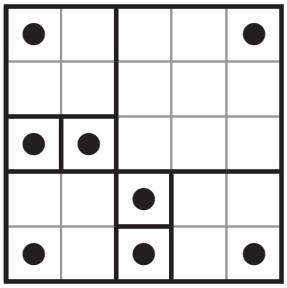


Answer Key: Enter the lengths of separate blocks of cells that the snake passes through in the marked directions.
For the example, the answer key is 31,221

L1 – Square Division

Divide the grid area into several square sub-areas. Each square must contain exactly one circle.

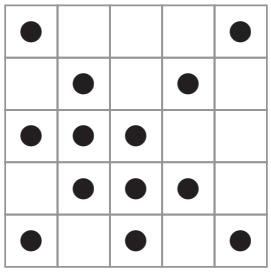


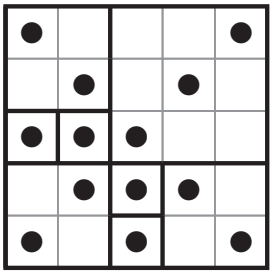


Answer Key: Enter the number of squares along the marked directions.
For the example, the answer key is 3,2

L2 – Square Division

Divide the grid area into several square sub-areas. Each square of length N must contain exactly N circles.

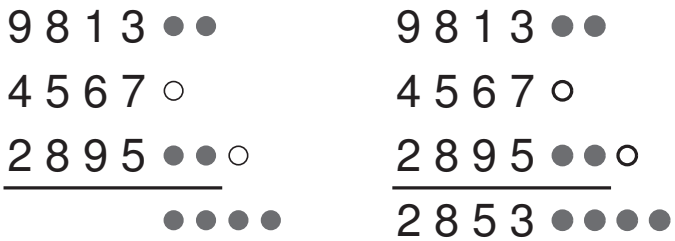




Answer Key: Same as L1 – Square Division

M1 – Mastermind

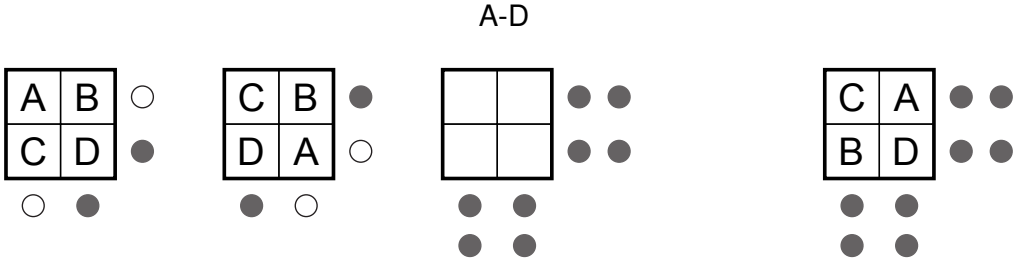
Find out the correct series of symbols with the help of the information given by the black and white markers. Black markers indicate correct symbols in the right position, while the white ones mark correct symbols in the wrong place. Each symbol can occur only once in the solution.



Answer Key: Enter the correct sequence of symbols.
For the example, the answer key is 2853

M2 – 2D Mastermind

Same rules as M1 – Mastermind, except that the 2-dimensional grid has to be filled in. The range of symbols to be used is given.

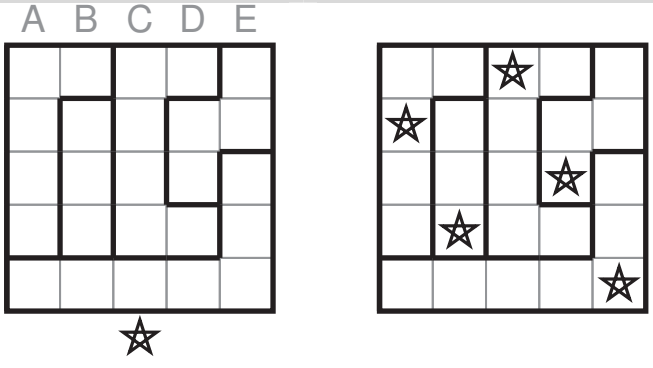


Answer Key: Enter the symbols in the grid in each row, starting from top.
For the example, the answer key is CABD

N1 – Star Battle

Place the given number of stars in each row, each column and each region.

Stars do not touch each other, even diagonally.



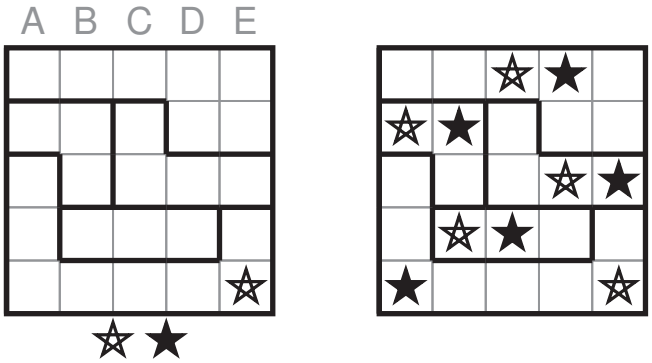
Answer Key: For each row from top to bottom, enter the column position of left most star.
For the example, the answer key is CADBE

N2 – Colored Star Battle

Place the given number of stars in each row, each column and each region.

Similarly colored stars do not touch each other, even diagonally.

Some stars may be given.

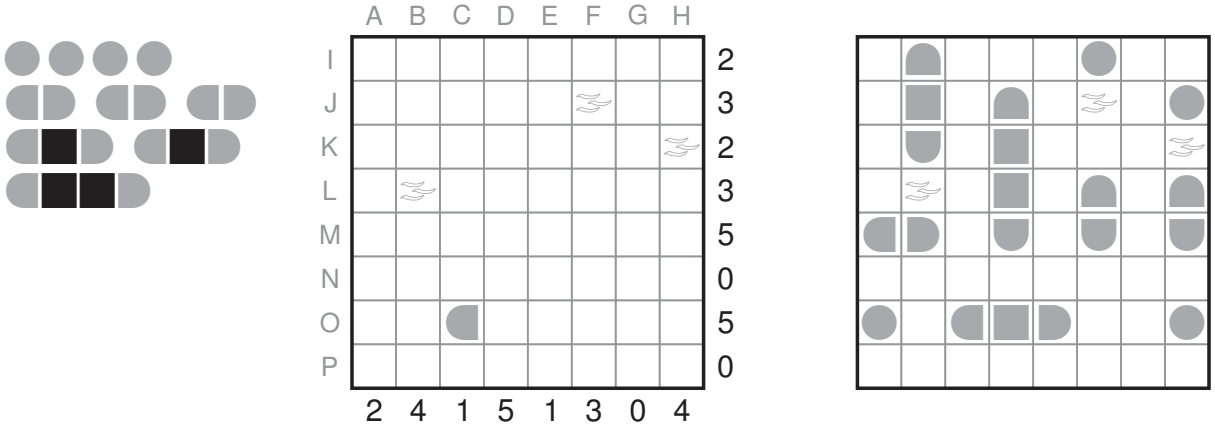


Answer Key: For each row from top to bottom, enter the column position of left most star.
For the example, the answer key is CADBA

O1, O2 – Battleships

Locate the indicated fleet in the grid. Each segment of a ship occupies a single cell. Ships can be rotated, but cannot be reflected. Ships do not touch each other, even diagonally. Some ship segments, or sea cells without any ship segments, are given in the grid. The numbers on the right and bottom edges of the grid reveal the number of ship segments in that row or column.

[Ignore the different shading in some ship segments. They are used for answer key purpose.]



Answer Key: Enter the locations of marked segments using the given coordinate system.
For the example, the answer key is BJ,DK,DL,DO