



SWISS
LOGIC PUZZLE
FEDERATION

INSTRUCTION BOOKLET

Swiss Qualification Tournament
for the
29th World Puzzle Championship

April 09 – 12, 2021

Tournament Details

The tournament will take place on the website of Logic Masters:

<https://logic-masters.de/Wettbewerbe/CE/wettbewerb.php?id=132>

The tournament will be open from **Friday, April 09, 12:00 CEST** to **Monday, April 12, 23:59 CEST**.

To start the tournament, follow the indications on the website. There are two PDF documents involved:

- one is the instruction booklet that you are reading now which contains the rules and examples of the different variants of puzzles appearing in the tournament.
- the second document is an encrypted PDF file of 11 pages containing the actual tournament puzzles. This document will be available for download just before the tournament. Starting the tournament will give the player the password to decrypt the PDF file.

Answer codes:

- Once you start the tournament, you will be given **120 minutes** to submit the answer codes. It is therefore recommended to start not later than on Monday April 12 at 21:59 CEST in order to make it before the end of the tournament time window.
- Answer codes differ between the puzzle types. They are explained next to each puzzle type. It is recommended to study the answer codes carefully before starting the competition.
- If several rows or columns of a puzzle are marked for the answer code, first enter the answer codes of the rows from top to bottom, followed by the answer codes of the columns from left to right.
- The answer codes can be changed and/or entered multiple times without penalty during these 120 minutes.

For each correctly solved puzzle you will be awarded the marked points. Wrong answers will not get any minus points.

The answers are only stored when clicking the submit button. They are **not** submitted automatically when the time is over. You can submit as often as wished in the time limit.

The tournament is destined to evaluate the admission of Swiss players to the World Puzzle Championship 2021. Players from all nations are kindly welcome to compete, too.

The puzzles in this tournament have been created by Roger Kohler. For **questions**, feel free to contact Roger Kohler (email: ropeko@yahoo.de, phone: +41798134273).

International test solvers helped to make sure the puzzles are valid and to synthesize an adapted number of points per puzzle. The number of points gives an indication of the difficulty of the puzzle.

Special thanks to the website Logic-Masters.de by making the online qualification possible, to the test solvers Silke Berendes, Hatice Esra Aydemir, Fatih Kamer Anda, and to Swaroop Guggilam for his recent efforts in adding features to Penpa-edit to simplify digitization of logic puzzles.

List of Puzzles

Updates to version 1:

- Added points
- General instruction: No minus points for wrong answers.

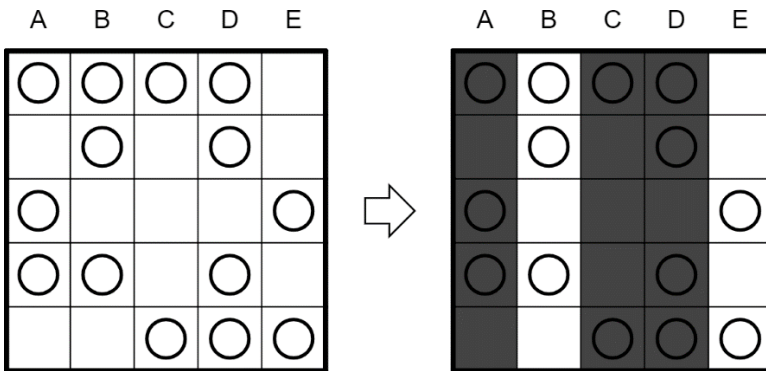
Nr	Puzzle type	Points
1	Column Dance	20
2	Count Shapes (Rectangles)	25
3	Domino Search	15
4	Every Second Turn	25
5	Fillomino (Checkerboard)	190
6	Goats and Wolves	60
7	Hydra	85
8	Kakurasu	90
9	Laser	90
10	Minesweeper	30
11	Neighbors	75
12	Nurikabe	20
13	Pentominous	40
14	Scrabble (Letters)	110
15	Suguru	95
16	Tapa	15
17	Tents	35
18	Tic-Tac-Logic	110
19	Tower Defense	45
20	Yajilin	25
	Total	1200

1 Column Dance – 20 Points

Remove some columns so that there is exactly one symbol in each row.

Answer: Enter the letters above the non-removed columns, from left to right.

Example:



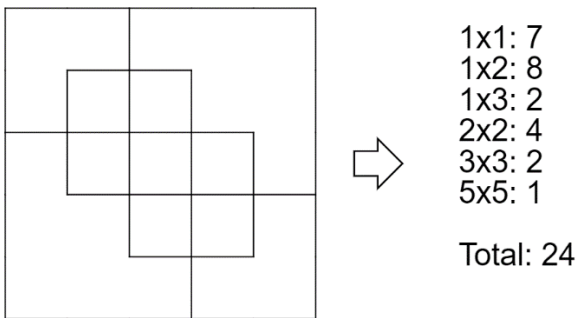
Answer code: BE

2 Count Shapes (Rectangles) – 25 Points

Determine the number of rectangles of any size in the diagram.

Answer: The number of rectangles.

Example:



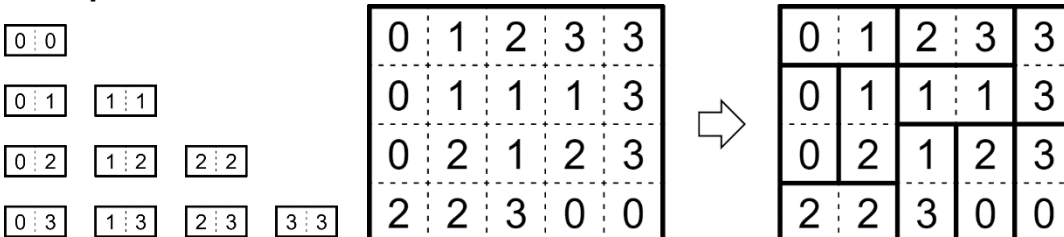
Answer code: 24

3 Domino Search – 15 Points

Divide the grid into a full set of dominoes. Each domino should be used exactly once. The orientation of the digits does not matter. Empty cells are not part of a domino. A checklist of the full set is provided for your convenience.

Answer: For each row from top to bottom, enter the number of horizontal dominoes. If there are no horizontal dominoes in a row, enter the single digit '0'. Use only the last digit for two-digit numbers; e.g. use '0' for 10 horizontal dominoes.

Example:



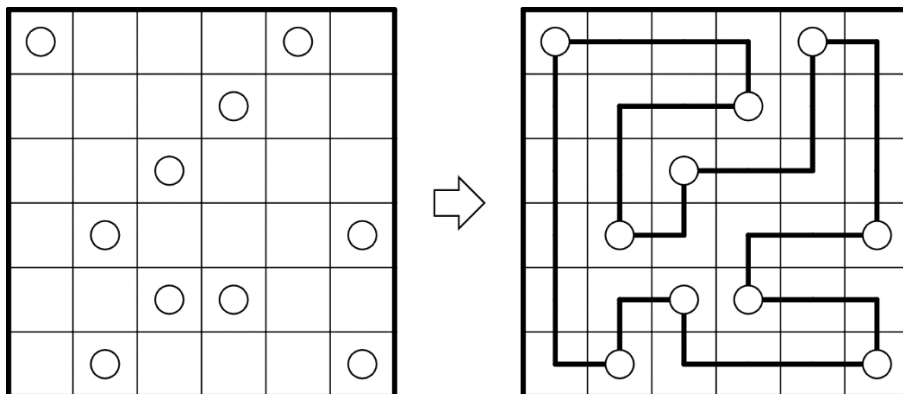
Answer code: 2101

4 Every Second Turn – 25 Points

Draw a single, non-intersecting loop that passes orthogonally through all cells, going straight through some cells and turning in others. The cells in which the loop turns must alternate between cells with white circles and cells without white circles. The loop cannot go straight through white circles.

Answer: For each row from top to bottom, enter the number of turns. If there are no turns in the row, enter the single digit '0'. Use only the last digit for two-digit numbers; e.g. use '0' for 10 turns.

Example:



Answer code: 422444

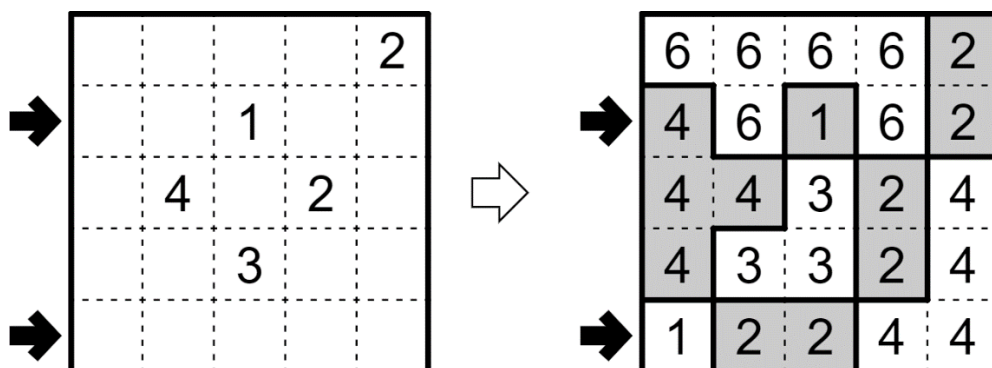
5 Fillomino (Checkerboard) – 190 Points

Divide the grid along the dotted lines into regions (called polyominoes) so that no two polyominoes with the same area share an edge. Inside some cells are numbers; each number must equal the area of the polyomino it belongs to. A polyomino may contain zero, one, or more of the given numbers. (It is possible to have a “hidden” polyomino: a polyomino without any of the given numbers. “Hidden” polyominoes may have any area, including a value not present in the starting grid, such as a 6 in a puzzle with only clues numbered 1-5.)

It must be possible to color each polyomino region either all black or all white, so that black regions never share an edge and white regions never share an edge.

Answer: For each designated row/column, enter its contents, from left to right (or top to bottom). Use only the last digit for two-digit numbers; e.g., use '0' for a cell containing the number 10.

Example:



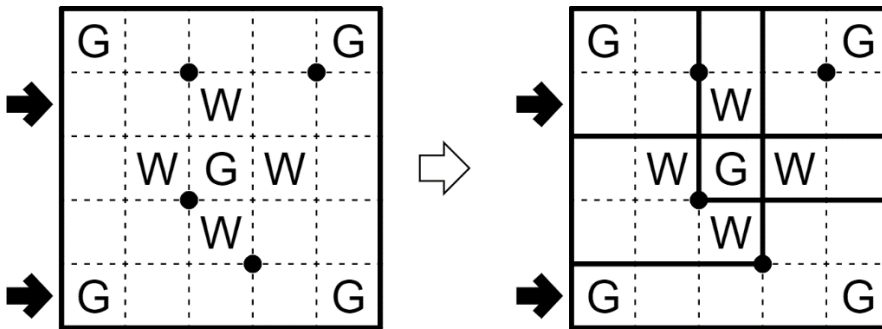
Answer code:
46162 12244

6 Goats and Wolves – 60 Points

Draw paths along the grid lines such that the grid is separated into separate regions. Each region must contain at least one letter, and no region may contain different letters. (Adjacent regions may contain the same letter.) Paths must start and end at the border of the grid (but not necessarily the same edge). Dots are provided on the grid at cell corners; you may not add more dots to the grid. Paths may only turn at dots. Paths may intersect other paths, but they may not do so at a dot. (It is possible for a path to go straight through a dot, or for a dot not to be used at all.)

Answer: For each designated row/column, enter the length in cells of each of the region segments, from left to right (or top to bottom). Use only the last digit for two-digit numbers; e.g., use '0' for a segment of length 10.

Example:



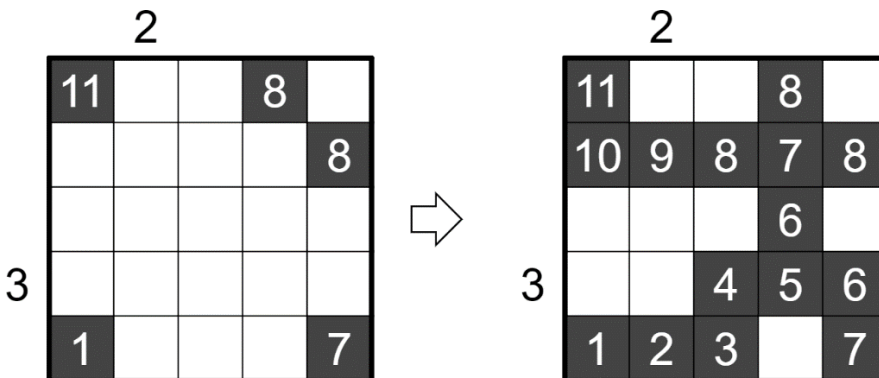
Answer code: 212 5

7 Hydra – 85 Points

Locate a "hydra" in the grid. The hydra is a region of orthogonally-connected cells. No 2x2 group of cells can be entirely shaded black, and all cells that are not part of the hydra must be connected orthogonally (through other non-hydra cells) to the edge of the grid (in other words, the hydra may not loop or touch itself diagonally). All hydra cells that touch only one other hydra cell are provided. One of them is the "tail" of the hydra and labeled with the number 1; the others are the "heads" of the hydra and each one is labeled with the number of hydra cells that are needed to connect the tail of the hydra with that head (including the head and tail cells).

Answer: For each row from top to bottom, enter the number of hydra cells. If there are no hydra cells in a row, enter the single digit '0'. Use only the last digit for two-digit numbers; e.g. use '0' for 10 hydra cells.

Example:



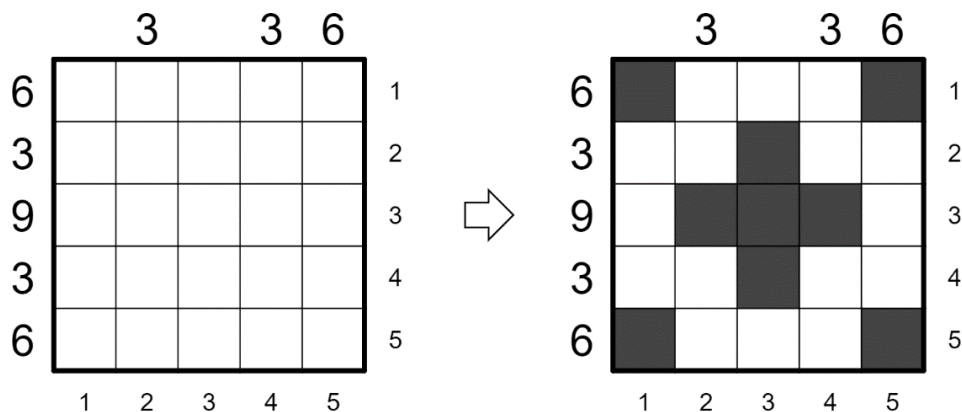
Answer code: 25134

8 Kakurasu – 90 Points

Each cell in the grid has a row number (the small numbers to the right of the grid) and a column number (the small numbers below the grid). Shade in some cells, leaving the other cells empty. Each large number above the grid represents the sums of the column numbers of the shaded cells in that column. Each large number to the left of the grid represents the sum of the row numbers of the shaded cells in that row.

Answer: For each row from top to bottom, enter the number of shaded cells. If there are no shaded cells in a row, enter the single digit '0'. Use only the last digit for two-digit numbers; e.g. use '0' for 10 shaded cells.

Example:



Answer code: 21312

9 Laser – 90 Points

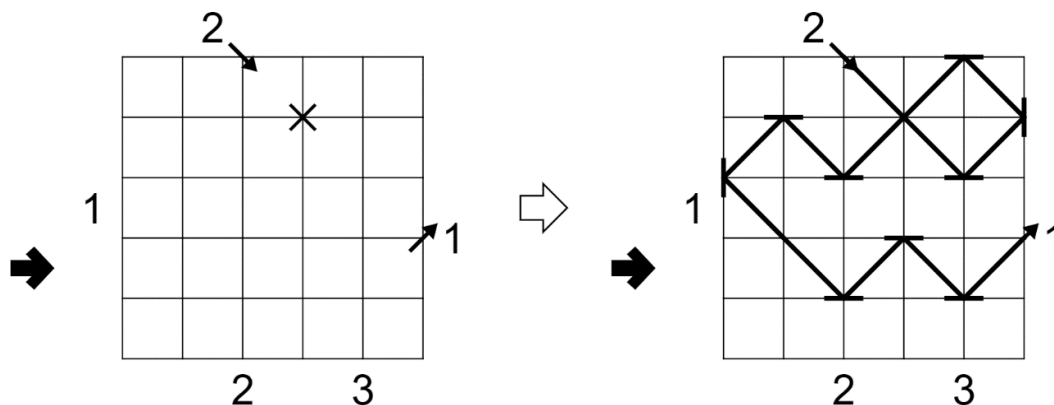
The arrow pointing into the grid tells you where the laser beam enters. Draw horizontal and vertical mirrors on the intersections of the grid, such that the laser leaves the grid as indicated by the other arrow.

The numbers on the left and top tell you how often the laser beam passes through a cell of that row/column. The numbers on the right and bottom tell you how many mirrors you have to put on the corresponding line.

The laser beam crosses itself only at the marked places. It meets each mirror exactly once.

Answer: For each designated row, enter its contents from left-to-right. Use 'N' for a diagonal that connects upper-left to lower-right, 'Z' for a diagonal that connects lower-left to upper-right and 'X' for empty cells.

Example:



Answer code: XNZNZ

10 Minesweeper – 30 Points

Place mines into the un-numbered cells in the grid, at most one mine per cell, so that each number in a cell represents the number of mines adjacent to that cell (including diagonally adjacent cells).

The number of mines is provided.

Answer: For each row from top to bottom, enter the number of mines. If there are no mines in a row, enter the single digit '0'. Use only the last digit for two-digit numbers; e.g. use '0' for 10 mines.

Example:

Mines: 12

	5		5	
	1		3	
		2		



Mines: 12

●	●	●	●	●
●	5	●	5	●
	1		3	●
	●	2	●	●

Answer code: 53013

11 Neighbors – 75 Points

Place one of the digits 1, 2, or 3 into each cell, one digit per cell, so that each digit appears the same number of times in each row and column. Some digits may already be placed for you. After placing all digits, each white cell must touch at least one cell with the same number along an edge, and each gray cell must not touch any cells with the same number along an edge.

Answer: For each designated row/column, enter the contents of each cell, from left to right (or top to bottom).

Example:

		1	3		
			2		
1					2



2	1	1	3	3	2
3	1	2	2	3	1
2	2	3	1	1	3
1	3	2	1	2	3
3	3	1	2	2	1
1	2	3	3	1	2

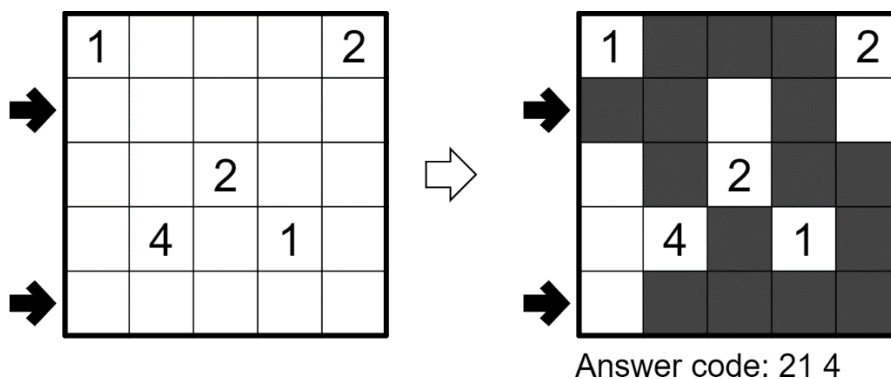
Answer code: 132123

12 Nurikabe – 20 Points

Shade some cells black (leaving the other cells white) so that the grid is divided into non-overlapping regions; cells of the same color are considered in the same region if they are adjacent horizontally or vertically. Each given number must be in a white region that has the same area in cells as that number. Each white region must have exactly one given number. All black cells must be in the same region. No 2×2 group of cells can be entirely shaded black.

Answer: For each designated row/column, enter the length in cells of each of the shaded segments, from left to right (or top to bottom). Use only the last digit for two digit numbers; e.g., use '0' for a segment of length 10. If there are no shaded cells in the row/column, enter a single digit '0'.

Example:



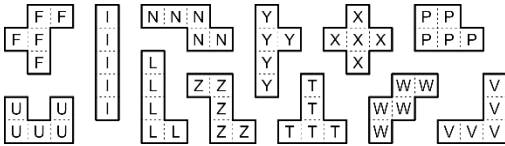
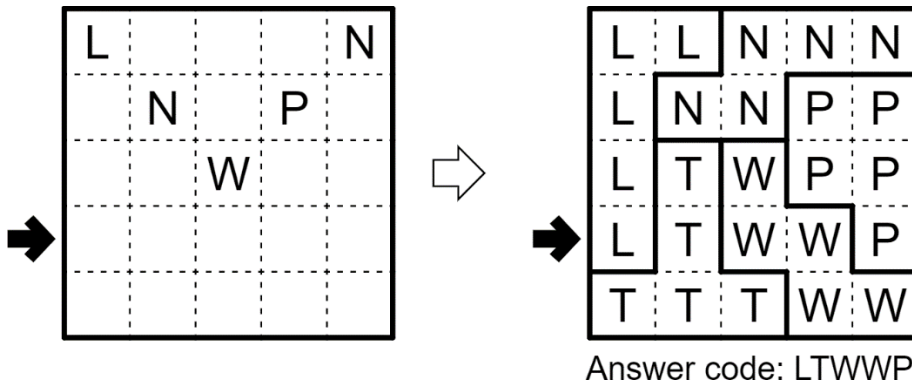
13 Pentominous – 40 Points

Divide the grid into pentominoes such that every cell in the grid is part of exactly one pentomino. Pentominoes of the same shape (rotations and reflections of a pentomino count as the same shape) cannot touch each other along an edge (but they may touch diagonally). Some letters are given in the grid. Each letter must be part of a pentomino with that letter's shape. It is permissible for a pentomino to contain more than one letter. (It is possible for some pentomino shapes to never appear in the grid, or more than once.)

The letter-to-shape correspondence for pentominoes has been supplied for you.

Answer: For each designated row/column, enter the contents of each cell, from left to right (or top to bottom). For each cell, its contents are the letter of the pentomino occupying that cell.

Example:



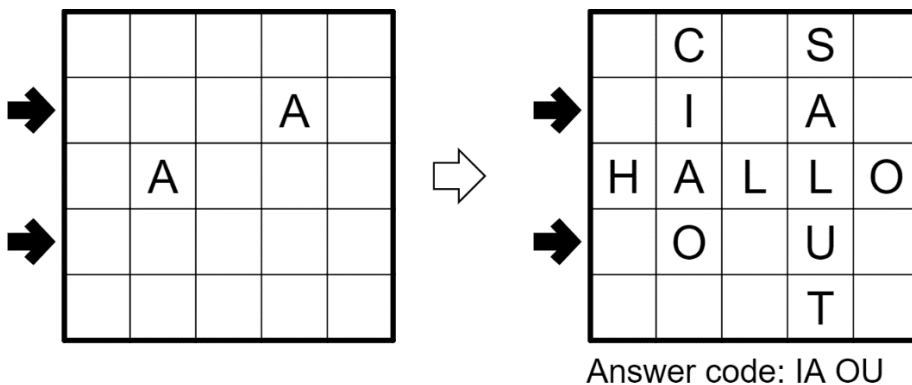
14 Scrabble (Letters) – 110 Points

Put at most one letter into each cell so that the given words can be read either across (left-to-right) or down (top-to-bottom) in consecutive cells in the grid. Every word must appear in the grid exactly once, and no other words may appear in the grid (that is, if two cells are filled and are adjacent, then there must be a word that uses both of them). Every word must have either a blank cell or the edge of the grid before and after it. All letters must be (orthogonally) connected in a single group.

Copies of some letters are already supplied in the grid. All instances of those letters are given.

Answer: For each designated row/column, enter its contents, from left to right (or top to bottom), ignoring any blank cells. If all cells in the row/column are blank, enter a single letter 'X'.

Example:



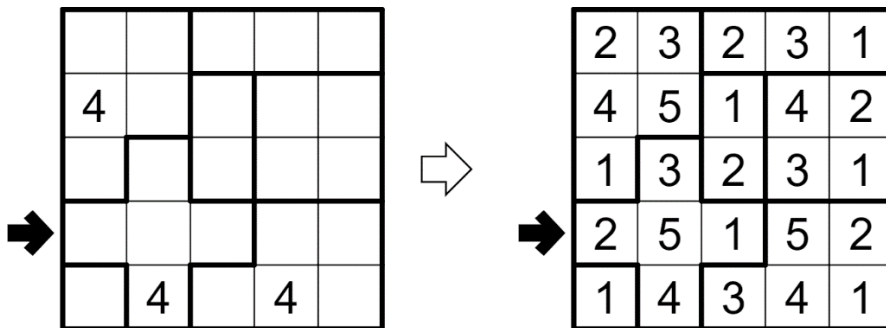
CIAO
HALLO
SALUT

15 Suguru – 95 Points

Place a number into each cell so that each bold region contains the numbers from 1 to N, where N is the number of cells in the region. The same numbers do not touch each other, not even diagonally.

Answer: For each designated row/column, enter its contents, from left to right (or top to bottom). Use only the last digit for two-digit numbers; e.g., use '0' for a cell containing the number 10.

Example:



Answer code: 25152

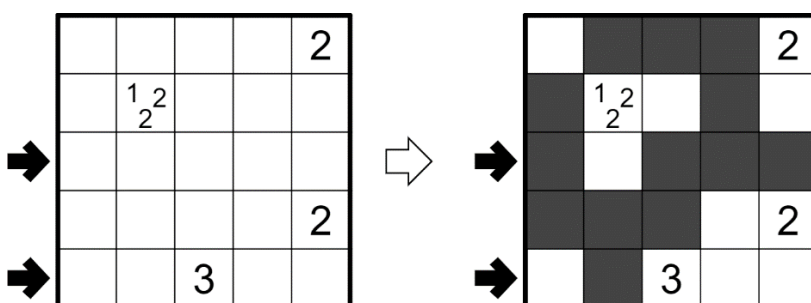
16 Tapa – 15 Points

Shade some empty cells black; cells with numbers cannot be shaded. All black cells connect along edges to create a single connected region. (It is permissible for the region to touch itself at a corner, but touching at a corner does not connect the region.) No 2x2 group of squares can be entirely shaded black.

Numbers in a cell indicate the lengths of contiguous black cell groups along the "ring" of (up to) 8 cells touching that cell. (If there is more than one number in a cell, then there must be at least one white (unshaded) cell between the black cell groups.) The numbers are given in no particular order. As a special case, if the number given in a cell is a zero (0), it means that none of the cells around that cell may be shaded black.

Answer: For each designated row/column, enter the length in cells of each of the shaded segments, from left to right (or top to bottom). Use only the last digit for two-digit numbers; e.g., use '0' for a segment of length 10. If there are no shaded cells in the row/column, enter a single digit '0'.

Example:



Answer code: 13 1

17 Tents – 35 Points

Place tents into the empty cells in the grid, at most one tent per cell. Tents may not be in adjacent cells, not even diagonally. There must be the same number of tents and trees. The tents and trees must match up in such a way that each tent is orthogonally adjacent to its own tree. (It is permissible for a tree to be adjacent to a tent that matches with another tree.)

Some rows and columns may be numbered. A number indicates the number of tents that must be in that row or column.

Answer: For each row from top to bottom, enter the number of tents. If there are no tents in the row, enter the single digit '0'. Use only the last digit for two-digit numbers; e.g. use '0' for 10 tents.

Example:

Answer code: 20301

18 Tic-Tac-Logic – 110 Points

Place a circle or a cross into each empty cell, one symbol per cell, such that each row and column has an equal number of circles and crosses and no row or column has three consecutive cells with the same symbol. (It is permissible for three cells along a diagonal to have the same symbol.) Additionally, all rows must have a different pattern of symbols and all columns must have a different pattern of symbols (it is permissible for a row to have the same pattern as a column).

Answer: For each designated row/column, enter its contents, from left to right (or top to bottom). Use the letter 'O' for a circle and 'X' for a cross.

Example:

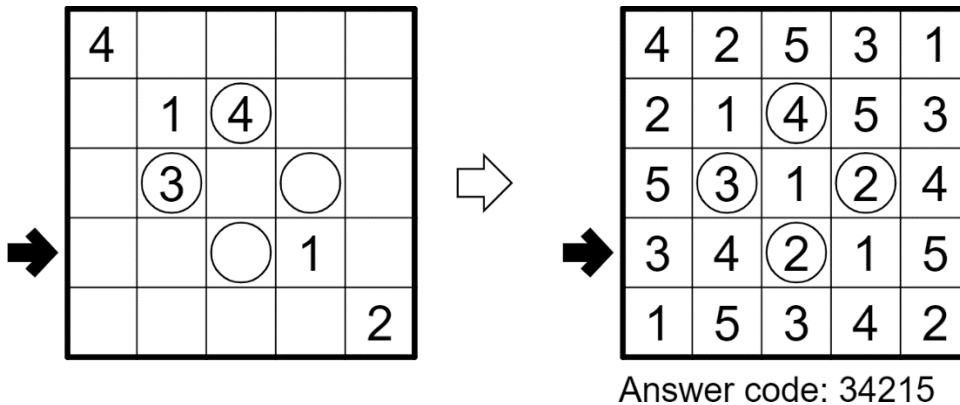
Answer code:
OXXOOX OXOOXX

19 Tower Defense – 45 Points

Place a number from 1 to X (integers only) into each cell so that each number appears exactly once in each row and column. (X is the number of cells in each row.) A cell with an uncircled number "attacks" (up to) four other cells that are at an orthogonal distance equal to that uncircled number. A cell with a circled number does not attack, but must be attacked by at least as many cells as its number. Some numbers may be given to you.

Answer: For each designated row/column, enter its contents, from left to right (or top to bottom). Use only the last digit for two-digit numbers; e.g., use '0' for a cell containing the number 10.

Example:



20 Yajilin – 25 Points

Blacken some white cells and then draw a single closed loop (without intersections or crossings) through all remaining white cells. Loop paths must be orthogonal. Blackened cells cannot share an edge with each other. Some cells are outlined and cannot be part of the loop. Numbered arrows in such cells indicate the total number of blackened cells along the direction of the arrow, starting in the arrowed cell and going along a row or column to the edge of the grid.

Answer: For each row from top to bottom, enter the number of blackened cells. If there are no blackened cells in the row, enter the single digit '0'. Use only the last digit for two-digit numbers; e.g. use '0' for 10 blackened cells.

Example:

