WPF PUZZLE GP 2022 INSTRUCTION BOOKLET

Host Country: Hungary

Zoltán Horváth, Kartal Nagy, Pál Madarassy, Gyula Slenker

Special Notes: The point values are now finalized.

Points:

|		
1.	Snake (Cipher)	47
2.	Loop	7
3.	Snaky Loop (Nonogram)	48
4.	Loop (Double or Nothing)	58
5.	Tapa	18
6.	Twopa	42
7.	Cross the Streams	25
8.	Kurotto	53
9.	TomTom	36
10.	Skycrapers (Double)	74
11.	Tents (Double)	44
12.	Kropki	99
13.	Magnets	38
14.	Magnets (Double Length)	78
15.	S-Policy (Double)	58
	TOTAL:	725

1. Snake (Cipher) [Kartal Nagy] (47 points)

Locate a "snake" in the grid. The snake is a path that starts in a cell, goes through some number of cells orthogonally, and ends in a cell. Each cell is used at most once by the snake. The snake may not loop around to touch itself, not even diagonally. (In other words, if two cells in the snake touch orthogonally, then they must be exactly one cell apart along the path of the snake, and if two cells in the snake touch diagonally, then they must be exactly two cells apart along the path of the snake.) Numbers outside the grid, if given, indicate how many cells in that row or column are occupied by the snake.

Some numbers in the puzzles have been encoded with letters; the same letter always stands for the same number, and different letters always stand for different numbers. It is possible for some numbers to have not been encoded; it is possible for a letter to stand for a number that appears (unencoded) elsewhere in the puzzle.

A rounded square in a cell (when provided) indicates the end of the snake. A cross in a cell (when provided) indicates that the snake cannot go through the cell.

Answer: For each designated row, enter its contents. Use O for a cell occupied by the snake and X for a cell not occupied by the snake. You may use two other letters or numbers, as long as they are distinct.

Example Answer:
XXOXX , XOOOO

WPF **PUZZLE** GP
ROUND 5

WPF
SUDOKU/PUZZLE
GRAND PRIX
2022

WORLD PUZZLE FEDERATION
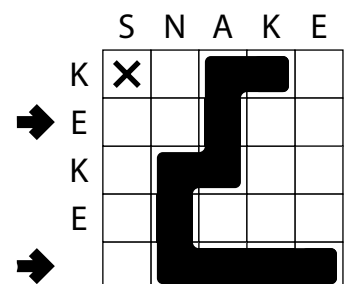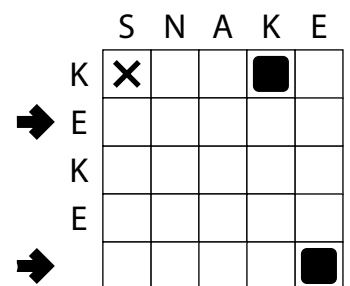
2. Loop [Kartal Nagy] (7 points)

Draw a single closed loop (without intersections or crossings) through the centers of all white cells. Loop paths must be orthogonal.
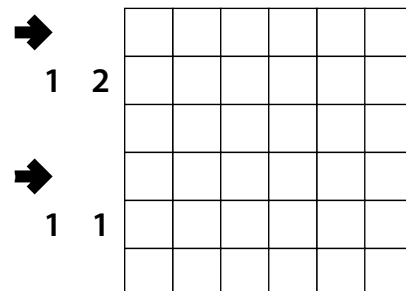
The letters in the grid are for Answer purposes only.

Answer: Starting at the "A" in the upper-left and heading to the right, enter all the letters in the grid in the order in which the loop encounters them, ending at the letter "A" (again). You may leave out the final letter "A", but the answer length checker will mention your answer is too short.

Example Answer: ACEDBA or ACEDB
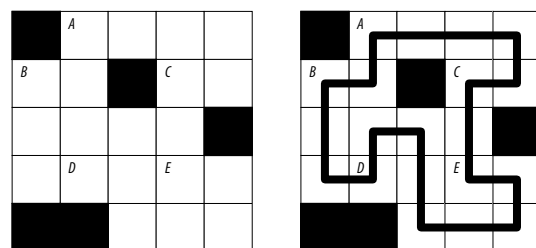
3. Snaky Loop (Nonogram) [Zoltán Horváth] (48 points)

Locate a "snaky loop" in the grid; it goes through some number of cells orthogonally and comes back to itself. Each cell is used at most once by the loop. The loop must occupy more than four cells and may not touch itself, not even diagonally. (In other words, if two cells in the loop touch orthogonally, then they must be exactly one cell apart along the path of the loop, and if two cells in the loop touch diagonally, then they must be exactly two cells apart along the path of the loop.)

The numbers to the left of (and above) the main grid represent the lengths of contiguous empty cell blocks in the corresponding row (or column). The lengths are given in order from left to right (or top to bottom), and cell blocks must contain at least one "snake" cell between them.

Answer: For each designated row, enter its contents. Use 'O' for a cell occupied by the snake and 'X' for a cell not occupied by the snake. You may use two other letters or numbers, as long as they are distinct.

Example Answer: OOOXXX, OOXXXO
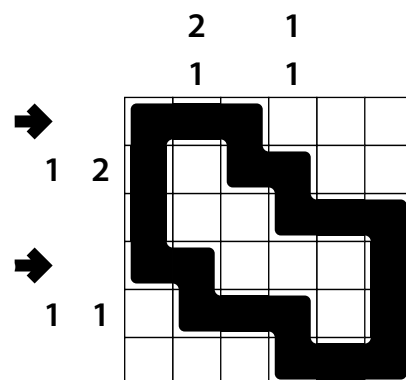
## 4. Loop (Double or Nothing) [Zoltán Horváth] (58 points)

Draw two closed loops through the centers of some cells. Loop paths must be orthogonal.

Some cells are marked with a cross. For each such cell, either both loops cross each other through that cell (while going straight), or neither loop goes through that cell.

The other cells are blank. For each such cell, exactly one loop goes through that cell.

Answer: For each designated row, enter the letter for each cell, from left to right. The letter for a cell is 'I' if one loop goes straight through the cell, 'L' if one loop turns in the cell, 'X' if neither loop goes through the cell, and (also) 'X' if both loops go through the cell. You may use other letters or numbers, as long as they are distinct.

Example Answer: IXLXXL, ILXILI

WPF **PUZZLE** GP
ROUND 5

WPF
SUDOKU/**PUZZLE**
GRAND PRIX
2022

WORLD PUZZLE FEDERATION
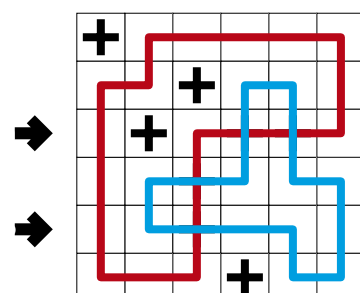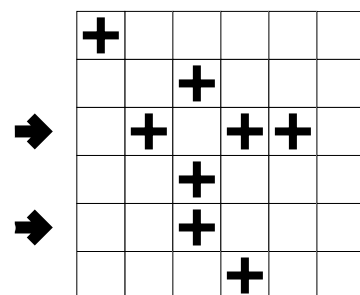
5. Tapa [Kartal Nagy] (18 points)

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 2×2 group of squares can be entirely shaded black.

Tapa Clue Examples
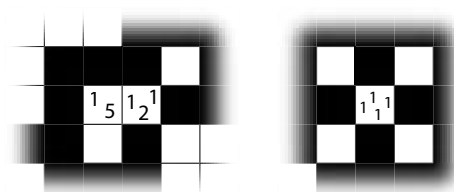
Numbers in a cell indicate the lengths of contiguous black cell groups along the "ring" of 8 cells touching that cell (fewer for cells along the outside edge). If there is more than one number in a cell, then there must be at least one white (unshaded) cell between the black cell groups. The numbers 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 can be shaded black.

Answer: For each designated row, enter its contents from left to right. Use 'x' for an unblackened cell and 'o' for a blackened cell. You may use two other letters or numbers, as long as they are distinct.

Example Answer: XOOXOXOO, OOXOOOXO
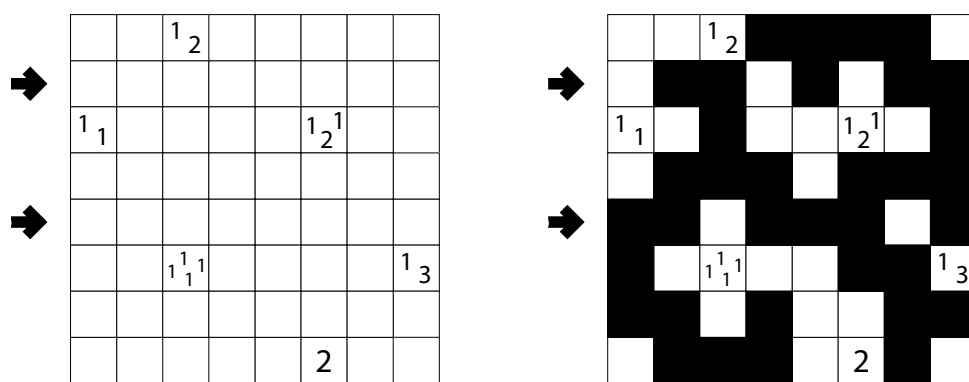
6. Twopa [Zoltán Horváth] (42 points)

The provided grid has multiple Tapa solutions (possibly more than two). Find two solutions such that for each numbered cell, the arrangement of shaded cells around that cell is different in the two solutions.

Answer: For each designated row (spanning *both* grids), enter its contents from left to right. Use 'x' for an unblackened cell and 'o' for a blackened cell. You may use two other letters or numbers, as long as they are distinct.

Example Answer: OXOXXXOOXX, XXXXXOXXXX or XOOXXOXOXX, OXXXXXXXXX

WPF **PUZZLE** GP

ROUND 5

WPF
SUDOKU/PUZZLE
GRAND PRIX
2022

WORLD PUZZLE FEDERATION
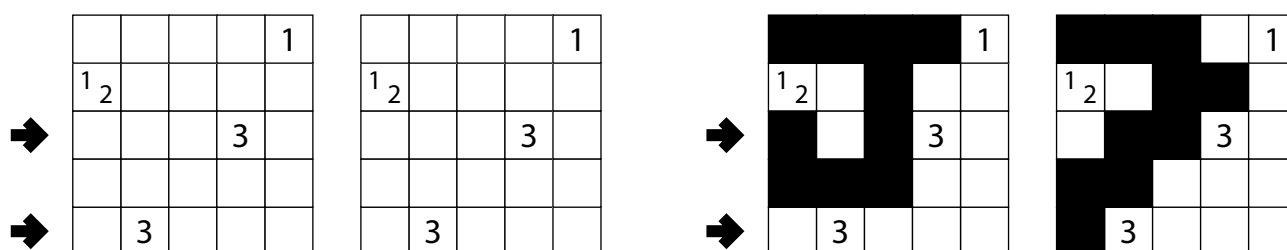
7. Cross the Streams [Zoltán Horváth] (25 points)

Shade some empty cells black. 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 2×2 group of squares can be entirely shaded black.

The numbers to the left of (and above) the main grid represent the lengths of contiguous blackened cell blocks in the corresponding row (or column). The lengths are given in order from left to right (or top to bottom), and cell blocks must contain at least one unblackened cell between them. Some numbers have been replaced with the "?" (question mark) symbol, one symbol per number. Then, groups of "?" symbols have been replaced with the "*" (asterisk) symbol; each "*" might represent multiple "?" symbols, one "?" symbol, or no "?" symbols at all.

For your solving convenience, there is a thicker division line every five cells. These lines have no relevance to the puzzle.

Answer: For each designated row, enter its contents from left to right. Use 'X' for an unblackened cell and 'O' for a blackened cell. You may use two other letters or numbers, as long as they are distinct.

Example Answer: XOXXOXO, XOXOOOO

8. Kurotto [Zoltán Horváth] (53 points)

Shade some empty (non-circled) 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 along edges. For each given number, the total size of all black regions orthogonally adjacent to that number must match the number.

Answer: For each designated row, enter its contents from left to right. Use 'X' for an unblackened cell and 'O' for a blackened cell. You may use two other letters or numbers, as long as they are distinct.

Example Answer: XXXXOO, OXXXOX

9. TomTom [Kartal Nagy] (36 points)

Place a number from 1 to X into each cell so that each number appears exactly once in each row and column. (X is the number of cells in each row.) Numbers may repeat within an outlined region. The number in the upper-left corner of each region indicates the value of one of the four basic operations applied to all numbers in the region, starting with the largest number for subtraction and division (e.g., 1, 2, 4 with division has a clue of 2÷ as 4÷2÷1=2). The operation may or may not be given in the region, but at least one of the four operations must apply.

Answer: For each designated row, enter its contents, from left to right. Use only the last digit for two digit numbers; e.g., use '0' for a cell that contains the number 10.

Example Answer: 45213, 54132

10. Skycrapers (Double) [Zoltán Horváth] (74 points)
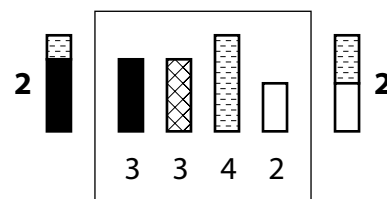
Place a number from 1 to X (integers only) into each cell so that each number appears exactly *twice* in each row and column. (X is *half* the number of cells in each row.) Each number represents a skyscraper of its respective height. The numbers outside the grid indicate how many skyscrapers can be seen in the respective row or column from the respective direction; smaller skyscrapers are hidden behind higher *or equal* ones. Some numbers may already be filled in for you.

Answer: For each designated row, enter its contents from left to right. Do *not* include any numbers outside the grid.

**Example Answer**: 112233,233112

Skyscraper Clue Examples
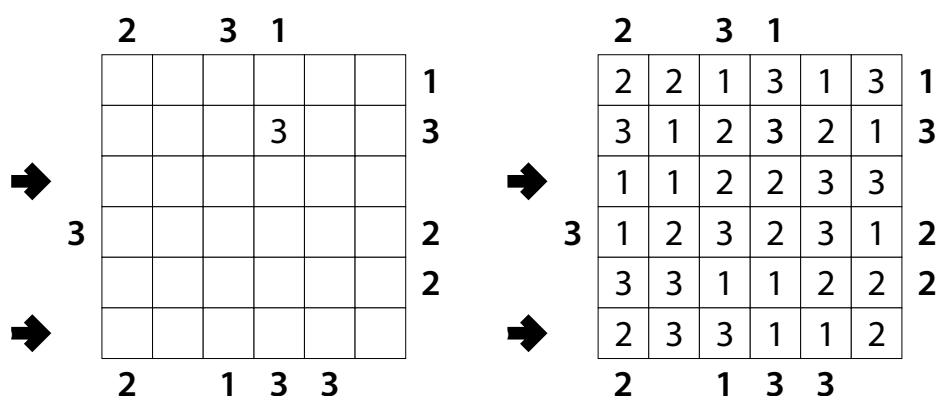
11. Tents (Double) [Zoltán Horváth] (44 points)

Place tents into the empty cells in the grid. Each tent occupies two cells that share an edge. Different tents may not overlap or be in cells that share a corner (or an edge). The tents and trees must match up in such a way that each tent matches one tree. A tent must occupy a cell that shares an edge with the cell of its matching tree. (It is permissible for a tent's cells to share corners or edges with non-matching trees.) Some rows and columns may be numbered. A number indicates the number of tents that occupy cells in that row or column.

The numbers on the far top of the diagram are for Answer purposes only.

Answer: For each row from top to bottom, enter the number of the first column from the left where a tent appears (the number on the far top of that column). Use only the last digit for two-digit numbers; e.g., use '0' if the first tent appears in column 10. If the row has no tents, enter '0'.

Example Answer: 511622

WPF PUZZLE GP

ROUND 5

WPF
SUDOKU/PUZZLE
GRAND PRIX
2022

WORLD PUZZLE FEDERATION
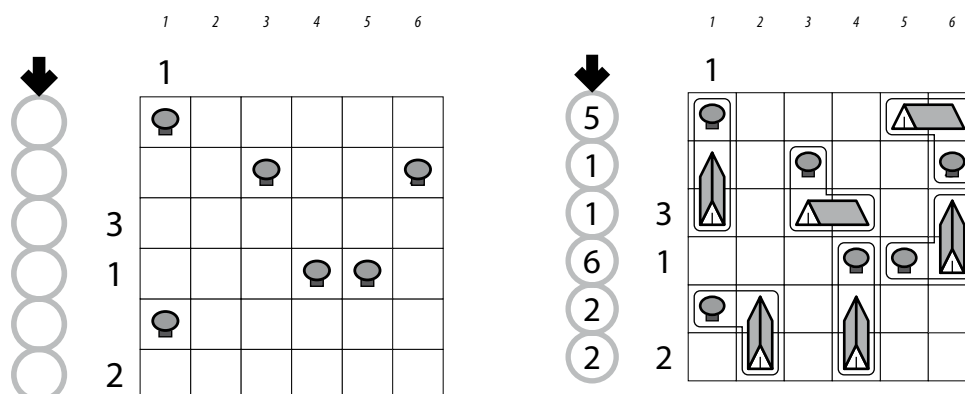
12. Kropki [Gyula Slenker] (99 points)

Place a number from 1 to X (integers only) into each cell so that each number appears at most once in each row and column. (X is the number of cells in each row.) A white dot on the edge of two cells indicates that those two cells must contain consecutive numbers; a black dot on the edge of two cells indicates that a number in one of those cells is double the value of the number in the other cell. If 1 and 2 are in adjacent cells, then the dot between them could be either color. If there is no dot on the edge of two cells, it means neither a black nor a white dot could go there.

Answer: For each designated row, enter its contents from left to right.

Example Answer: 4321,1432
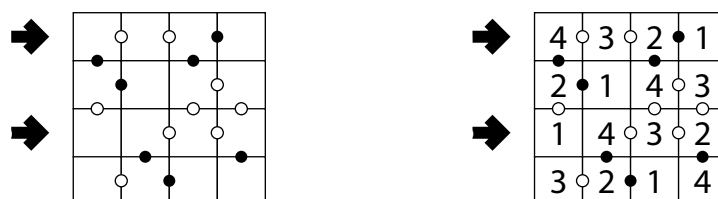
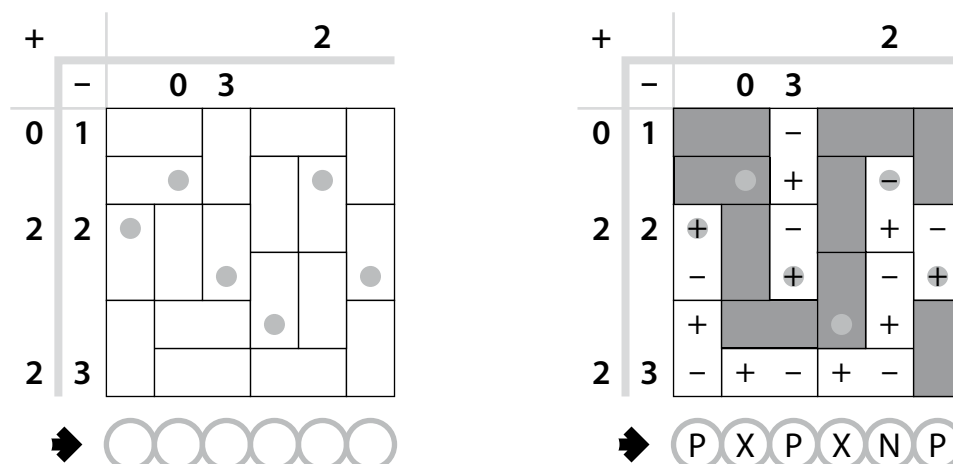## 13. Magnets [Kartal Nagy] (38 points)

The grid is partitioned into regions of two square cells each (note that only region borders are drawn). Put "positive" (+) and "negative" (−) symbols into some cells, at most one symbol per cell, such that each region either has two symbols or no symbols at all. Cells that share an edge (even within a region) cannot contain the same symbol.

The numbers above and to the left of the grid indicate the exact number of symbols of the specified type that must be placed in each column or row, respectively. If a number is not given, there might be any number of symbols of the specified type.

The dots in cells are only used for entering your answer.

Answer: Enter the contents of each dotted cell, reading the dots from left to right. (Ignore which row the dots are in.) Use 'P' for a "positive" (+) symbol, 'N' for a "negative" (−) symbol, and 'X' for an empty cell. Alternatively, you may use any three characters instead of 'PNX', as long as they are distinct.

Example Answer: PXPXNP

## 14. Magnets (Double Length) [Zoltán Horváth] (78 points)

The grid is partitioned into regions; each region consists of two dominoes connected on one of their short ends. (A domino is twice as long as wide, or twice as wide as long. Note that only region borders are drawn.) Put "positive" (+) and "negative" (–) symbols into some dominoes, at most one symbol per domino, such that each region either has two symbols or no symbols at all. Dominoes that share an edge or part of an edge (even within a region) cannot contain the same symbol.

The numbers above and to the left of the grid indicate the exact number of symbols of the specified type that must be placed in each column or row, respectively. If a number is not given, there might be any number of symbols of the specified type. A symbol in a domino that spans two columns (or rows) counts as being in both columns (or rows).

The dots in dominoes are only used for entering your answer.

Answer: Enter the contents of each dotted domino, reading the dots from left to right. (Ignore which row the dots are in.) Use 'P' for a "positive" (+) symbol, 'N' for a "negative" (–) symbol, and 'X' for a domino with no symbol. Alternatively, you may use any three characters instead of 'PNX', as long as they are distinct.

Example Answer: NXPXNXXP
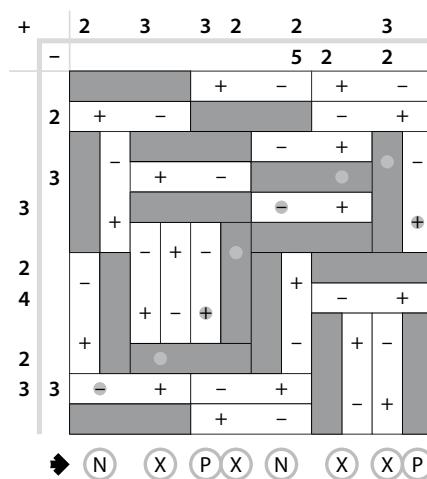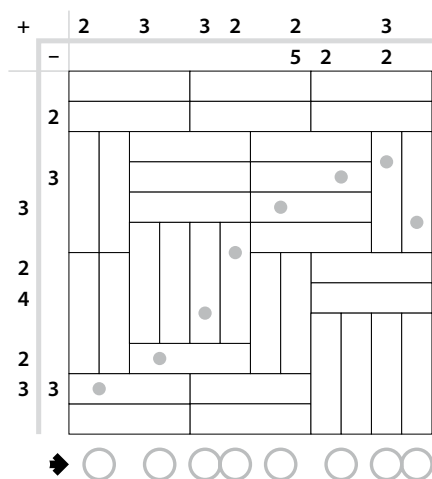
15. S-Policy (Double) [Pál Madarassy] (58 points)

Divide the grid into tetrahexes such that every cell in the grid is part of exactly one tetrahex. Each tetrahex in the provided set must appear exactly *twice*, possibly rotated but *not* reflected. Blackened areas are not part of the grid.

The tetrahexes are also labeled with letters; the letters are only used for entering your answer.

Answer: For each designated row, enter the letter for the tetrahexes that each cell belongs to, from left to right.

Example Answer: SPSOOII, SLLLPYYC