# 15th anniversary

The contest is based on the puzzles of Moscow Cup 2017. Kudos to Olga Shut who came up with a lot of beautiful ideas for this tournament. It consisted of five themed rounds, four of which you'll meet here in the booklet. Enjoy!

INSTRUCTION

BOOKLET

1/Non-integer Kakuro

Fill all empty cells with the numbers from the given set. The sum of numbers in each horizontal and vertical group of cells is given on its left and top respectively. Numbers do not repeat within any set of consecutive empty cells.
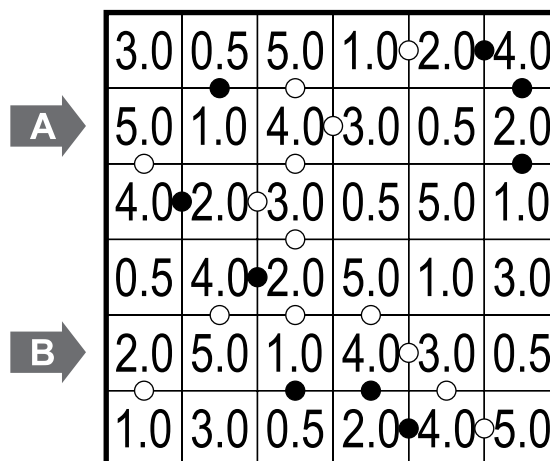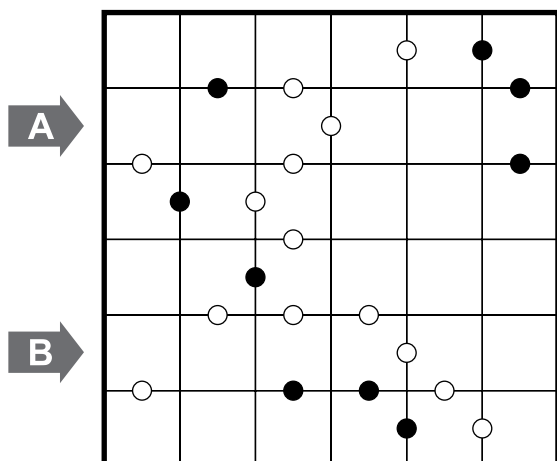
(0.1; 0.2; 0.3; 0.4; 0.5; 0.6; 0.7)
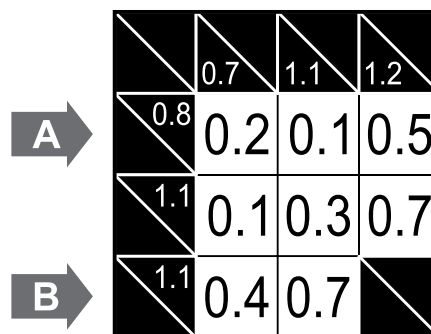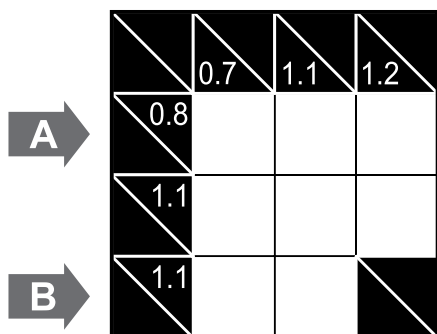
Answer key: For each marked row/column enter its content without dots. For the example the answer would be: A:020105; B:0407.

2/Non-integer Kropki

Fill in the grid with the numbers from the given set. Each row and column contains every number exactly once. A black dot is placed between two digits if one of them is twice the other. A white dot is placed if the difference of neighboring numbers equals 1. Any of those dots can be placed between 1 and 2. All possible dots are given.

(0.5; 1.0; 2.0; 3.0; 4.0; 5.0)

Answer key: For each marked row/column enter its content without dots. For the example the answer would be: A:501040300520; B:205010403005.

3/Cornerless snake

Draw a snake, a 1 cell-wide single continuous path in the grid whose head and tail are given. On every turn half the cell is cut away. After that the snake does not touch itself, even diagonally. There cannot be any 2x2 areas where every cell has the snake's piece. Numbers outside the grid indicate the number of snake cells in that row/column.
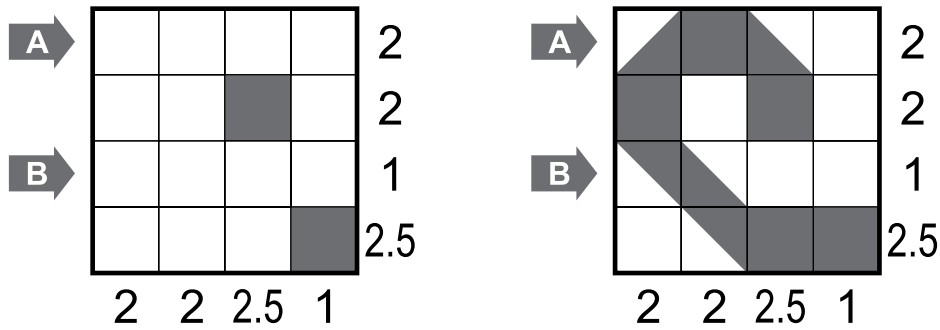
Answer key: For each marked row/column enter its content. Use "H" for half-used cells, "F" for fully used cells and "-" for empty cells. For the example the answer would be: A:HFH-; B:HH--.

4/Triangular minesweeper

Place 15 right-angled triangles into some empty cells in the grid. Each triangle occupies exactly half of a cell. Triangles cannot touch each other, not even at a point. Clues in cells show the number of triangles touching that cell, including only at a point.
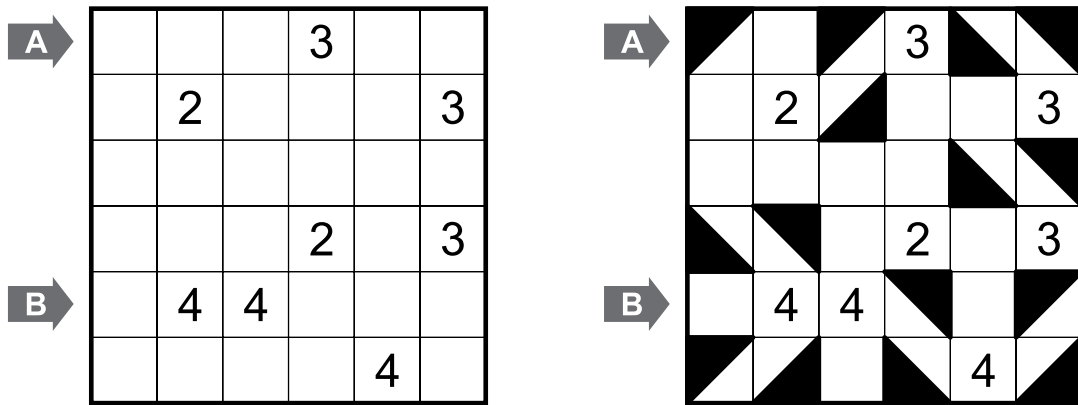
Answer key: For each marked row/column enter its content. Use "M" for the cells with the mines and "-" for empty cells. For the example the answer would be: A:M-M-MM; B:---M-M.

5/Triangular battleships

Place the given set of triangular battleship fleet following the grid lines. The ships can be rotated, but cannot touch each other even at a point. Numbers outside the grid indicate to product of all lengths occupied by the ships in the corresponding rows/columns.
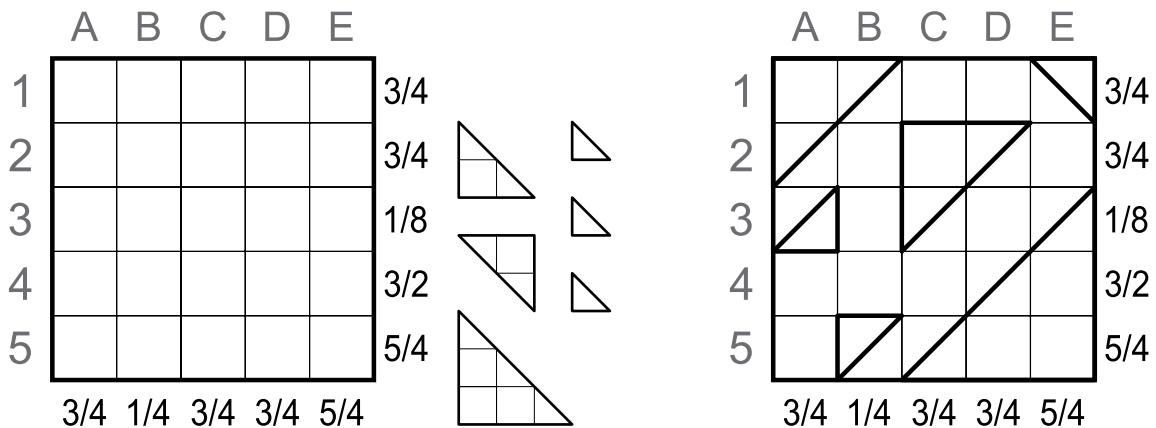
Answer key: Enter the coordinates of the one-unit ships (occupying half-cell) going from top to bottom. For the example the answer would be: E1, A3, B5.

6/Incorrect Easy as ABC

Place the letters A, B, C once each in every row and column. Clues outside the grid indicate the first letter found in that row or column.
Exactly one given clue is incorrect and should be a different one.

	B	A	B	C	B	
A→ A						C
B→ B						A
A						B
B						C
C						A
	A	B	C	B	A	

	B	A	B	C	B	
A→ A		A	B	C		C
B→ B	B	C	A			A
A	A		C		B	B
B		B		A	C	C
C	C			B	A	A
	B	C	B	A		

Answer key: For each marked row/column enter its content. Use "-" for empty cells. For the example the answer would be: A:-ABC-; B:BCA--.

7/Incorrect Products

Fill in the grid with the numbers 1 to 5 so that each number is placed exactly once in every row/column. The givens on intersection of 2x2 square show the product of all four numbers in this square.
Exactly one symbol (a digit of the given number) is incorrect and should be a different one.

A→ grid with clues 32, 8, 8

B→

A→ grid:
1	2	3	4
2	3	4	1
3	4	1	2
4	1	2	3
with circled 12, 8, 8 on intersections

Answer key: For each marked row/column enter its content. For the example the answer would be: A:1234; B:4123.

8/Incorrect Calcudoku

Fill in the grid with the numbers 1 to 5 so that each number is placed exactly once in every row/column. The given number in each outlined area indicates the value of a mathematical operation (addition, subtraction, multiplication, division) applied to all digits in the area. The operation sign may or may not be given in the area.
Exactly one given symbol (may it be a digit or an operation sign) is incorrect and should be a different one.

Left grid clues: 20, 18, 15, 18, 15, 10, 12, 16

A→ (left grid)
B→

Right grid:
20/2	18/3	15/4	18/5	6	1
3	4	5	6	15/1	2
4	5	6	1	2	10/3
5	6	1	2	3	4
6	1	2	12/3	4	5
1	2	18/3	4	5	6

A→ (right grid, row 2)
B→ (right grid, row 5)

Answer key: For each marked row/column enter its content. For the example the answer would be: A:345612; B:612345.

9/Incorrect Spiral Galaxies

Divide the grid into regions of central symmetry along the grid lines, so that each cell is part of only one region. Each region must contain exactly one circle, which represents the central symmetry point of the region. All circles are given and every cell must be part of a region.
Exactly one circle is incorrect and should not be there.
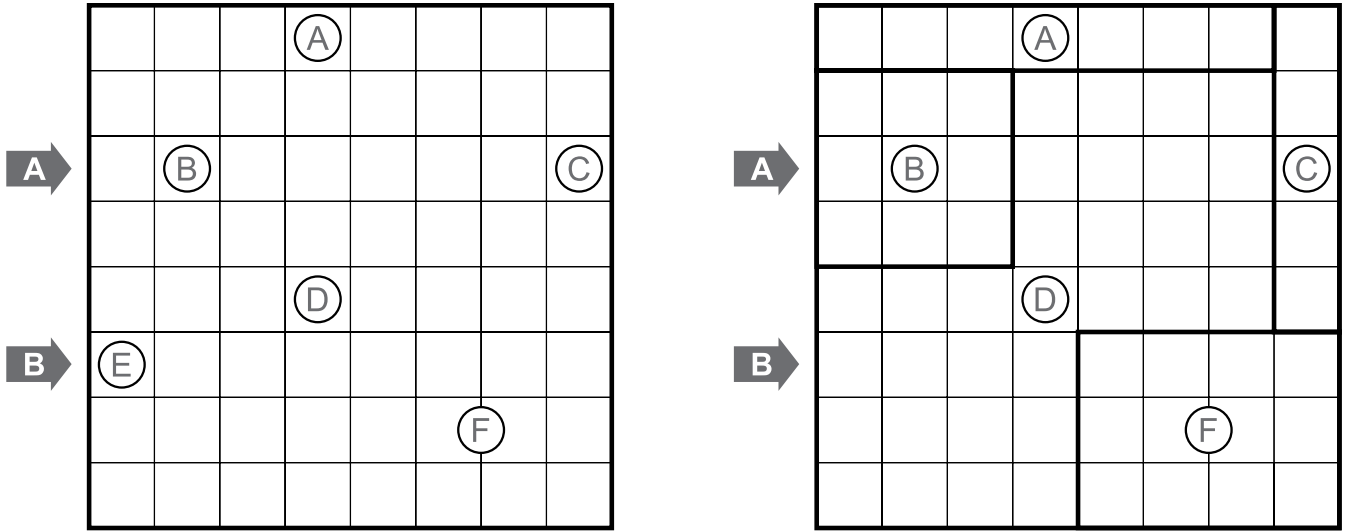
Answer key: For each marked row/column enter its content. For the example the answer would be: A:BBBDDDDC; B:DDDDFFFF.

10/Unknown Calendar

Some outer space planet has very unusual calendar. Each month consists of the days given in the bottom table and their order is very strange:
a) Each pair of consecutive numbers should have at least one digit in common and has to be placed in either same row or same column of the bottom table;
b) Difference of the consecutive numbers cannot be less than 4 (subtract the lesser number from the bigger one);
c) The last day of the month and the first day of the month are considered to be consecutive.
For example, 15 can be followed by 11 or 25, but not by 10 (different rows) or 17 (difference is less than 4). Restore the order of the days.

11	12	13	14	15	16	17	18
21	22	23	24	25	26	27	29
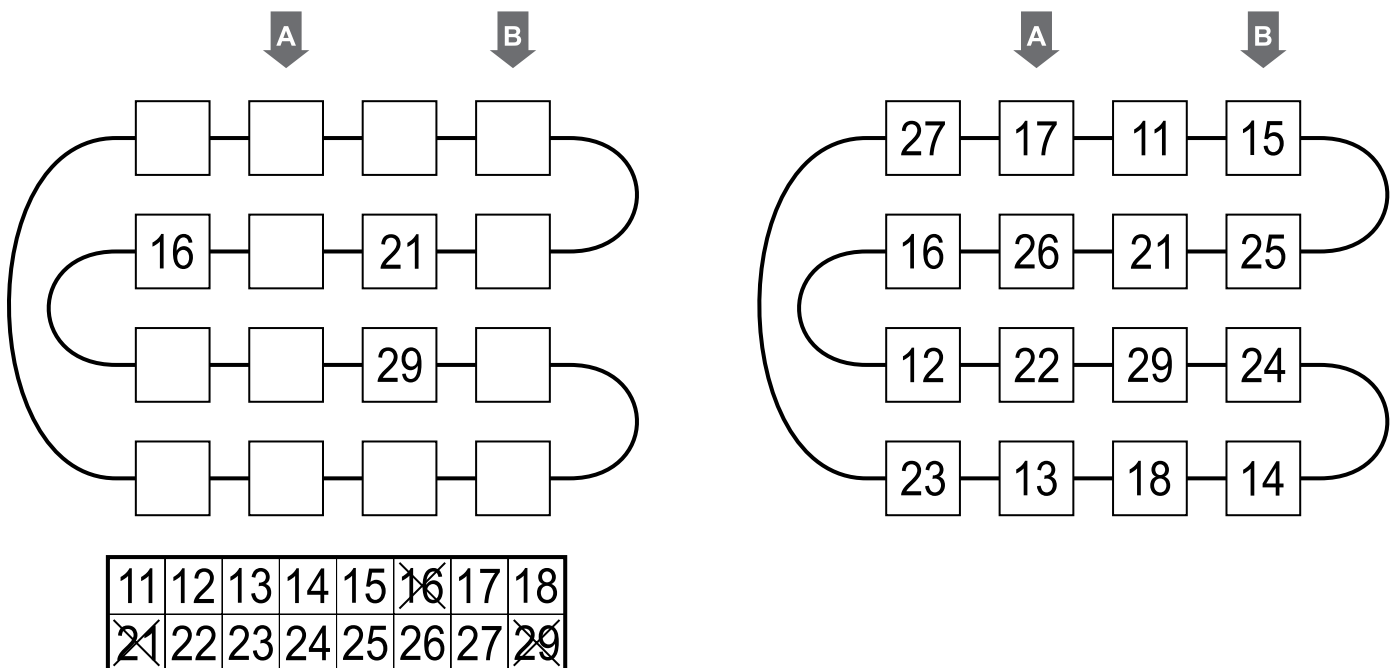
Answer key: For each marked row/column enter its content. For each number use only the unit (last) digit. For the example the answer would be: A:7623; B:5544.

11/Unknown Diginet

People of this planet like to play the following game. The goal is to connect the numbers, evenly distributed along the circle, by the straight lines so that every number is the end of at least one line. Into the every crossing of those lines you have to put different numbers from 1 to 9 so that the sums of numbers on every line are equal. You can see the example of that game played with the sums equal 8 on every line. Your goal is to play that game with the sums equal 13.

$\Sigma=8$
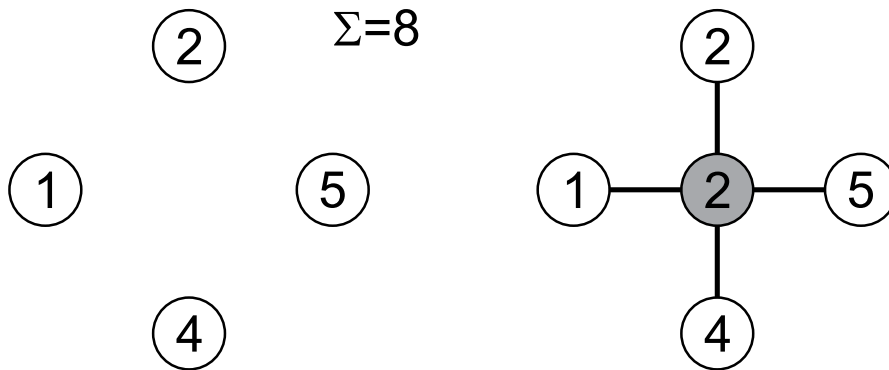
Answer key: Enter all the put numbers in increasing order. For the example the answer would be: 2.

12/Unknown Pentomino

Here's how they play pentomino on this planet. The goal is to place some elements from the full pentomino set (not more than once each) to cover all the grey cells by the pentomino's "dead end cells". The elements can be rotated and/or reflected, but they cannot touch each other even at a point. The unused cells of the grid cannot form 2x2 squares anywhere in the grid.
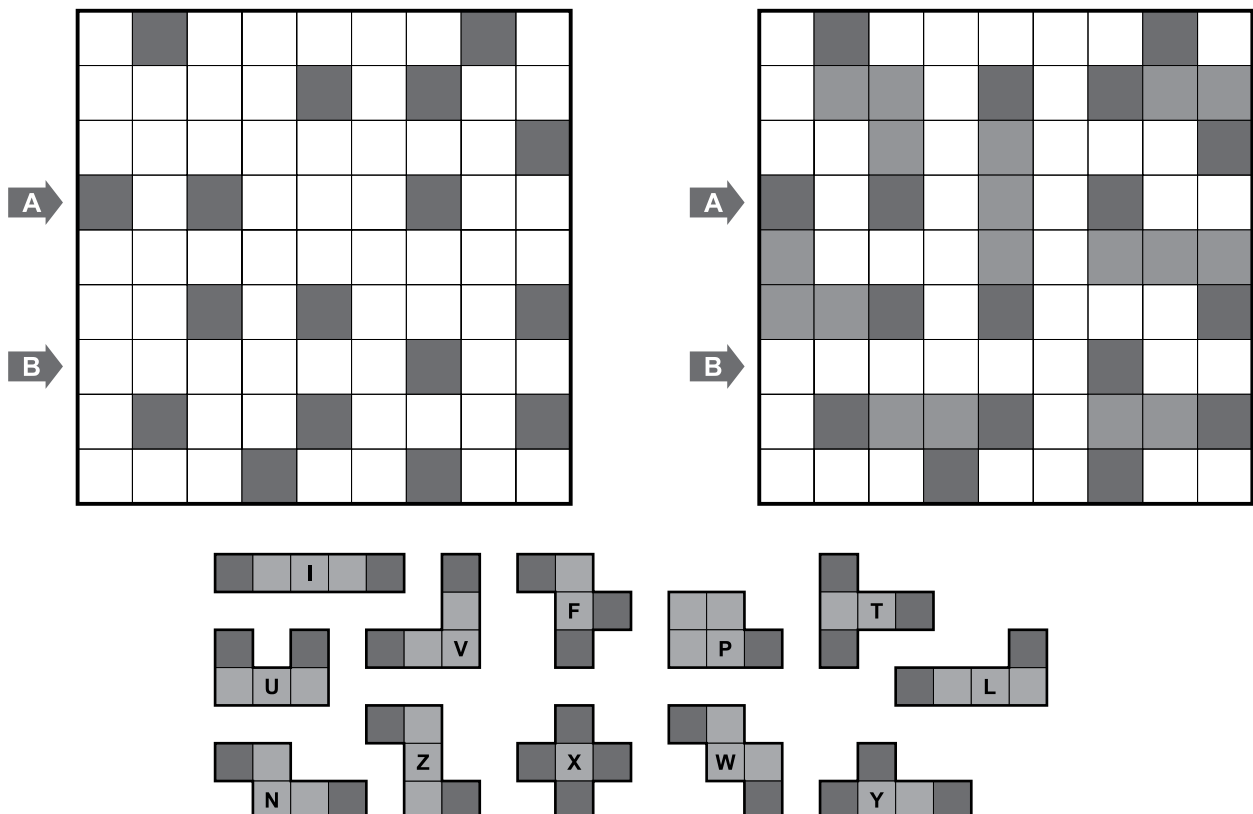
Answer key: For each marked row/column enter first three penotominoes in order of appearance. Use "-" if there's not enough pentominoes. For the example the answer would be: A:VNI; B:T--.

13-15/Instructionless puzzles

Understand the rules of the puzzle from the given examples. Note that if the rules are undestood correctly, example and the grids to solve all have unique solutions. If the example or any of the grids have multiple solutions, it means the rules are not understood correctly.
Answer keys will be given in the puzzle booklets.