Competition Puzzles

Puzzles

SUDOKUCUP 12

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Tournament
of HALAS
league
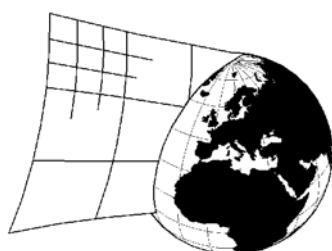
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Number	Puzzle	Points
1	Skyscrapers	15
2	Skyscrapers with voids	10
3	Snake	10
4	Snake	150
5	Japanese sums	180
6	Rotating mirrors	30
7	Every second turn	10
8	Every second turn	60
9	Every second straight	15
10	Every second straight	25
11	Pentominoes	25
12	Tetrominoes	30
13	Kakuro special	120
14	Kakuro	75
15	Pyramid	55
16	Pyramid	60
17	Coded Easy As ABCD	30
18	Coded Easy As ABCD	40
19	Magic path	60

Total   **1000**

Answer keys:

If not specified otherwise the answer key is the content of the rows/columns/diagonals marked by grey arrows. Codes of the individual cells should be written in the direction of the arrow, first for the arrow 1, then for the arrow 2. Cell coding is defined for each puzzle.
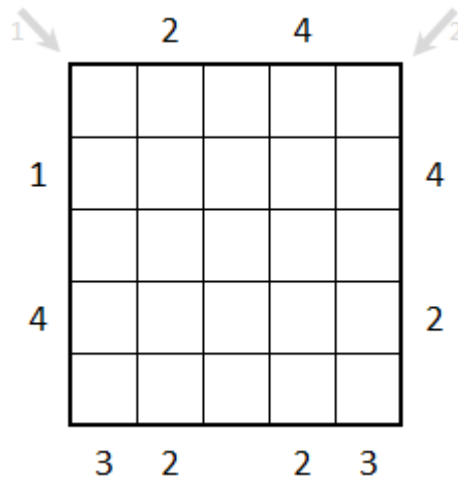
Timing: 90 minut

Author of puzzles: Jiří Hrdina

1. Skyscrapers (15 points)

Fill in each cell of the grid with digits 1-5 so that each digit appears exactly ones in each row and column. Each digit inside the grid represents a building with the height of the digit itself. Numbers outside the grid indicate the number of visible buildings in the given row or column.

Answer key: Digits along the indicated arrows

2. Skyscrapers with voids (10 points)

Fill in each cell of the grid with digits 1-4 so that each digit appears exactly ones in each row and column (one cell remains empty). Each digit inside the grid represents a building with the height of the digit itself. Numbers outside the grid indicate the number of visible buildings in the given row or column.
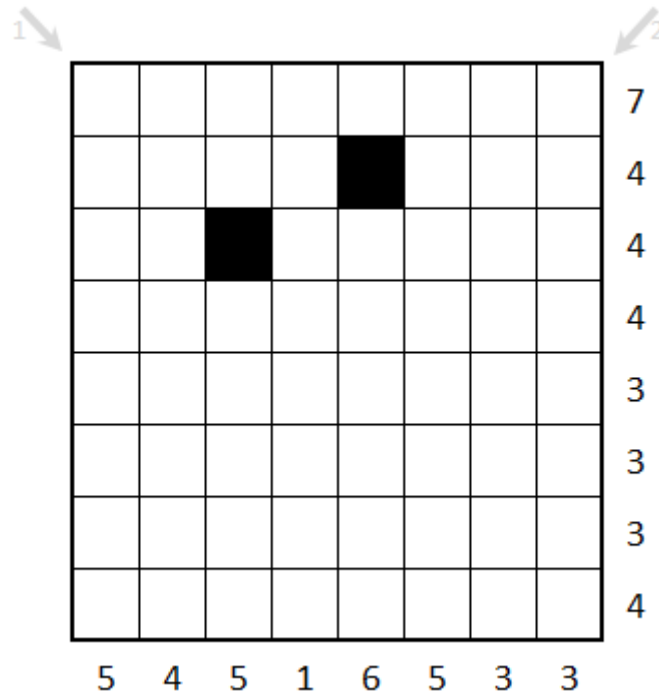
Answer key: Digits along the indicated arrows, '0' for empty cell
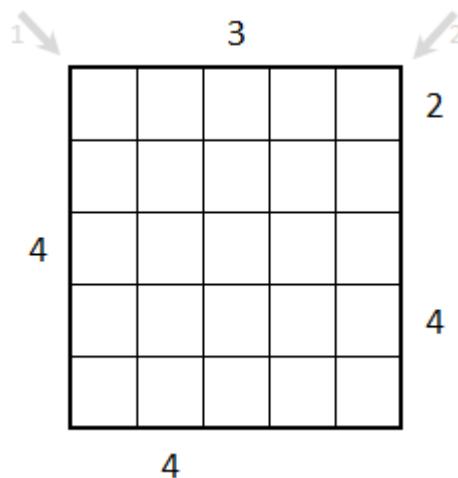
3. Snake (10 points)

Draw a snake in the grid. Snake consists of a series of orthogonally adjacent cells that does not touch itself not even diagonally. Head and tail are already given. Numbers outside the grid indicate the number of cells in the given row or column occupied by the snake.

Answer key: Content of the cells along the indicated arrows, X for snake, '0' for empty cell

4. Snake (150 points)

Draw a snake in the grid. Snake consists of a series of orthogonally adjacent cells that does not touch itself not even diagonally. Head and tail are already given. Numbers outside the grid indicate the number of cells in the given row or column occupied by the snake.
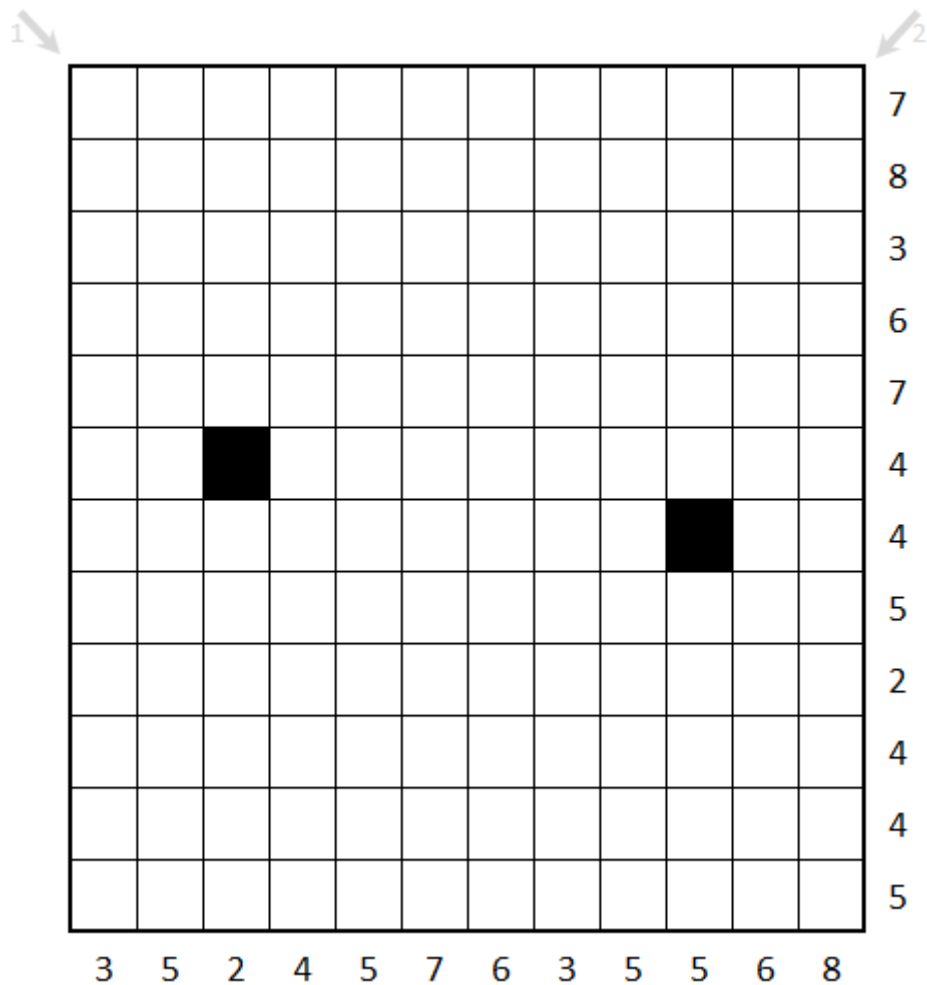
Answer key: Content of the cells along the indicated arrows, X for snake, '0' for empty cell

5. Japanese sums (180 points)

Fill in the grid with numbers from 1-9 and blacken some cells so that no digit is repeated within a row or column. Numbers outside the grid indicate the sums of the digits in the corresponding direction, in order. There must be at least one blackened cell between the sums.

Answer key: Content of the cells along the indicated arrows, '0' for black cell

	1									2			
											7	21	
											12	15	1
											14	11	
											3	18	21
											13	4	16
											14	4	14
											6	5	16
											1	8	14
											39	2	

7	9	15	3	45	9	5	6	5
12	14	10	12		5	36	31	25
7	7	4	10					2

6. Rotating mirrors (30 points)

Fill the empty cells with numbers 1-13. All the other cells are occupied by two-sided mirrors. The two grids differ by the rotation of mirrors only, the numbers in the same positions are identical.

Arrows indicate the entry points of the light beams. The number represents the sum of all the numbers the beam visits before it leaves the grid.
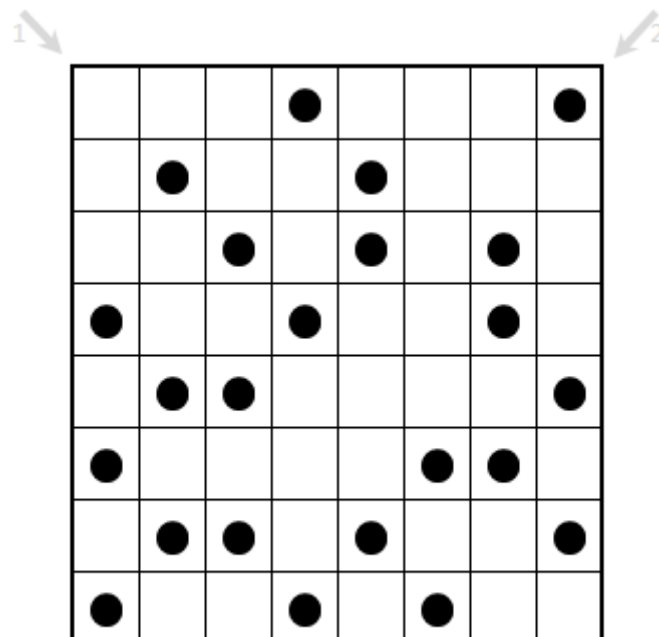
Answer key: The numbers row by row from left to right (ignoring the mirrors)
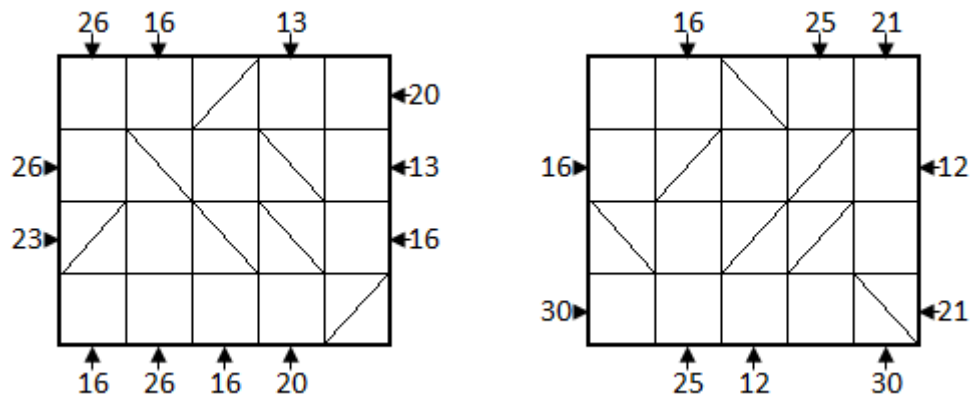
7. Every second turn (10 points)

Draw a single closed path in the grid that travels horizontally or vertically between centers of adjacent cells and visits every cell exactly ones. Every second turn is marked by a circle. It means that in the cell with circle the path turns by 90 degrees and between two circles there is exactly one other turn.
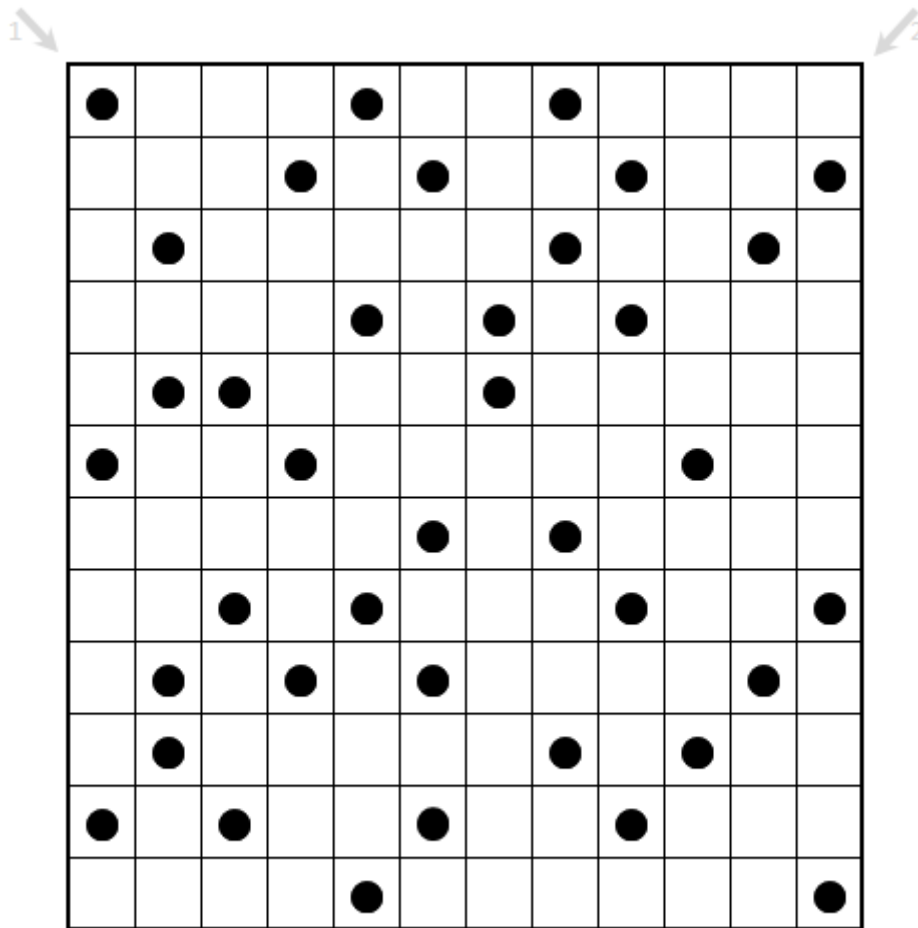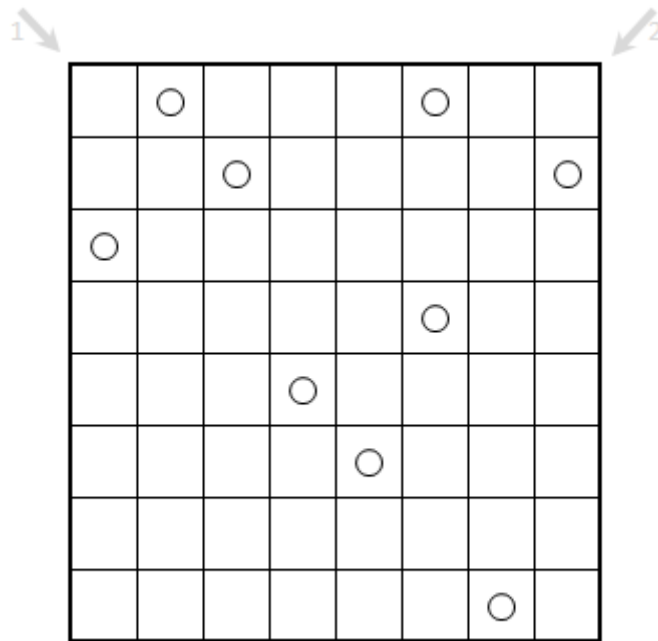
Answer key: Content of the cells along the indicated arrows, L for turn, I for straight

8. Every second turn (60 points)

Draw a single closed path in the grid that travels horizontally or vertically between centers of adjacent cells and visits every cell exactly ones. Every second turn is marked by a circle. It means that in the cell with circle the path turns by 90 degrees and between two circles there is exactly one other turn.

Answer key: Content of the cells along the indicated arrows, L for turn, I for straight

9. Every second straight (15 points)

Draw a single closed path in the grid that travels horizontally or vertically between centers of adjacent cells and visits every cell exactly ones. Every second straight is marked by a circle. It means that in the cell with circle the path goes straight through and between two circles there is exactly one other straight.

Answer key: Content of the cells along the indicated arrows, L for turn, I for straight

10. Every second straight (25 points)

Draw a single closed path in the grid that travels horizontally or vertically between centers of adjacent cells and visits every cell exactly ones. Every second straight is marked by a circle. It means that in the cell with circle the path goes straight through and between two circles there is exactly one other straight.

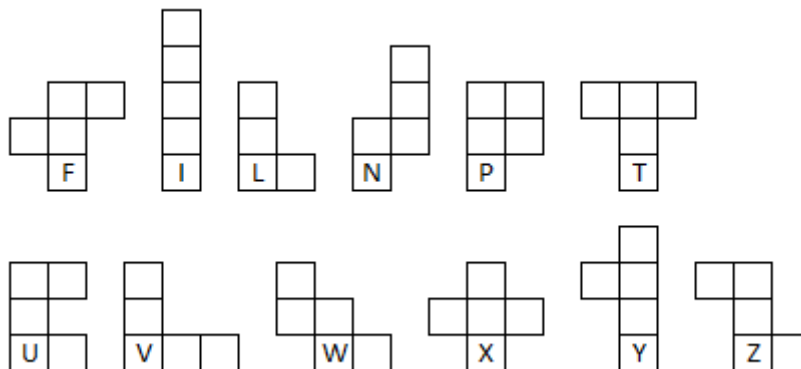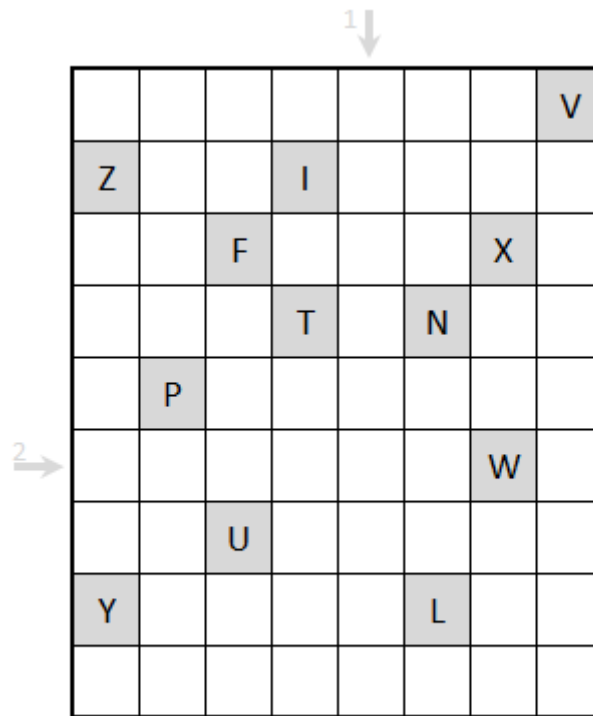**Answer key**: Content of the cells along the indicated arrows, L for turn, I for straight
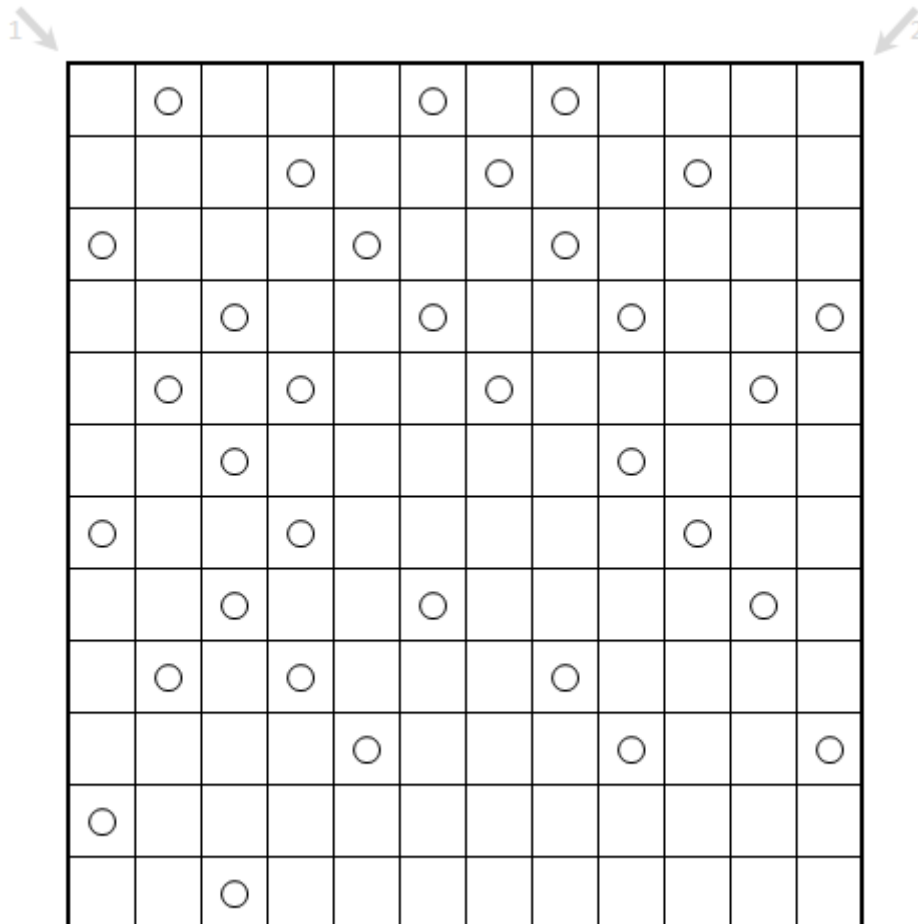
11. Pentominoes (25 points)

Place the twelve different pentominoes in the grid so that they fill all the empty cells. Pentominoes may be rotated and/or reflected.

The pentominoes may not cover any of the grey cells. Letter on the grey cell mean that the corresponding pentomino is touching that cell by side.

Answer key: Content of the cells along the indicated arrows, codes of pentominoes, '0' for grey cell
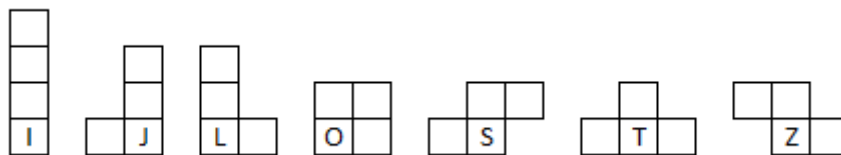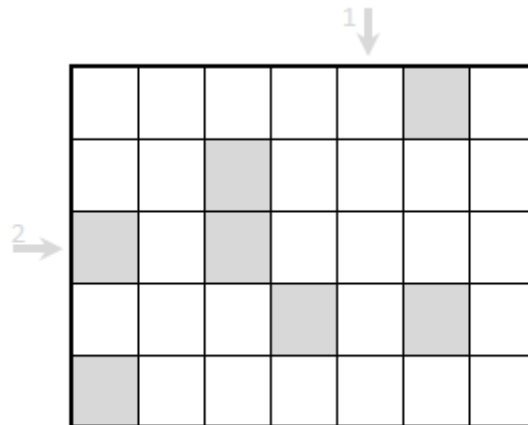
12. Tetrominoes (30 points)

Place the seven different tetrominoes in the grid so that they fill all the empty cells. Tetromiinoes may be rotated but not reflected.
The tetrominoes may not cover any of the grey cells.

Answer key: Content of the cells along the indicated arrows, codes of tetrominoes, '0' for grey cell

13. Kakuro special (120 points)

Fill in the cell with numbers from 1 to 9 so that the numbers do not repeat in the horizontal and vertical groups of cells divided by gray blocks. The numbers in the gray cells indicate the sums of numbers in the horizontal and vertical groups of cells (to the right and down from the given cell).
All the numbers 1 and 2 are already given.

Answer key: Numbers in the cells along the indicated arrows, ignore the grey cells

14. Kakuro (75 points)

Fill in the cell with numbers from 1 to 9 so that the numbers do not repeat in the horizontal and vertical groups of cells divided by gray blocks. The numbers in the gray cells indicate the sums of numbers in the horizontal and vertical groups of cells (to the right and down from the given cell).
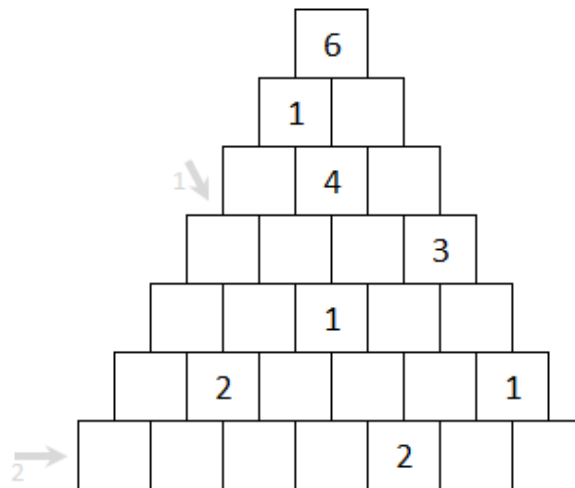
Answer key: Numbers in the cells along the indicated arrows, ignore the grey cells

15. Pyramid (55 points)

Enter numbers from 1 to 7 into all the empty fields of the pyramid, so that each number is either the sum or the difference of the two numbers in the fields below. No number may occur more than once in a row.

Answer key: Numbers in the cells along the indicated arrows

16. Pyramid (60 points)

Enter numbers from 1 to 9 into all the empty fields of the pyramid, so that each number is either the sum or the difference of the two numbers in the fields below. No number may occur more than once in a row.
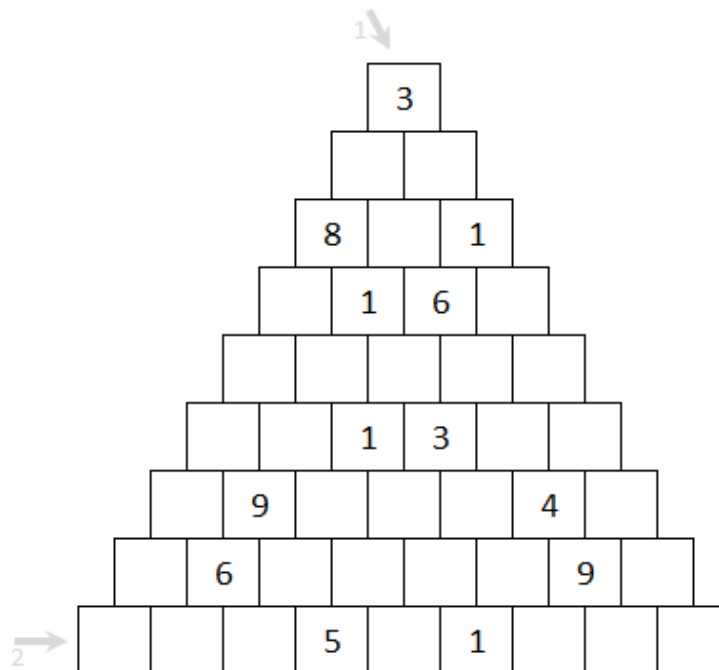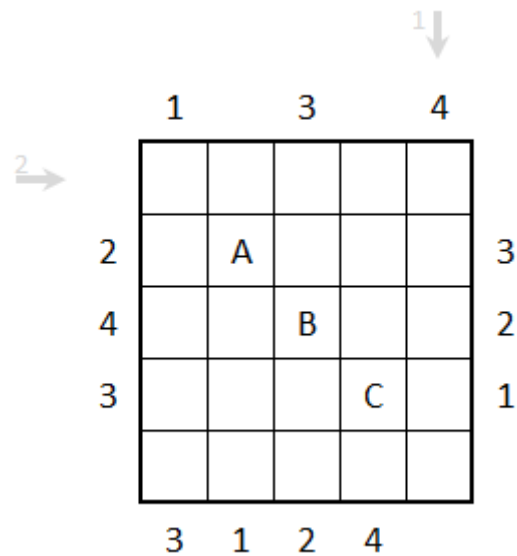
Answer key: Numbers in the cells along the indicated arrows

17. Coded Easy As ABCD (30 points)

Fill the grid with letters A-D so that each letter appears exactly ones in each row and column. Numbers outside the grid represent the letters which are seen first from the given direction. Replace the numbers with the correct letters and solve the Easy As ABC puzzle. The same numbers represent the same letters. But different numbers need not represent different letters.

Answer key: Letters in the cells along the indicated arrows, '0' for empty cell

	1	3	4		
2		A			3
4			B		2
3				C	1
	3	1	2	4	

(column top arrow: 1 ↓; row top arrow: 2 →)

18. Coded Easy As ABCD (40 points)

Fill the grid with letters A-D so that each letter appears exactly ones in each row and column. Numbers outside the grid represent the letters which are seen first from the given direction. Replace the numbers with the correct letters and solve the Easy As ABC puzzle. The same numbers represent the same letters. But different numbers need not represent different letters.
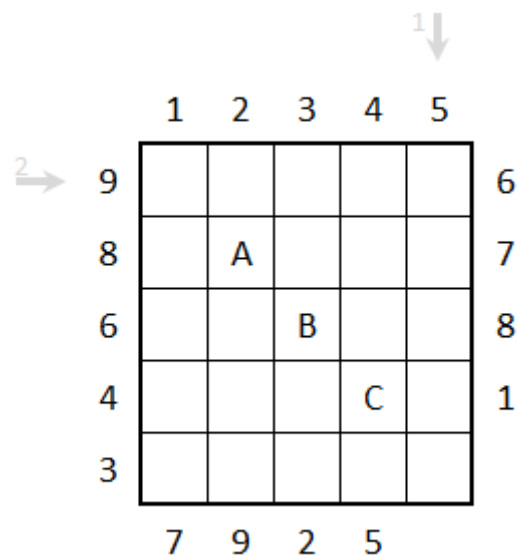
Answer key: Letters in the cells along the indicated arrows, '0' for empty cell

	1	2	3	4	5	
9						6
8		A				7
6			B			8
4				C		1
3						
	7	9	2	5		

(column top arrow: 1 ↓; row top arrow: 2 →)

19. Magic path (60 points)

Draw a single closed path in the grid. The path is one cell wide and does not touch itself not even diagonally. Numbers outside the grid indicate the number of cells in the given row or column occupied by the path.

On the path you can find the numbers 1,2,3 regularly repeating in the given order 1,2,3,1,2,3,1… in one of the directions along the path. Additionally the numbers must be exactly once in every row and column. Some numbers are already given. No numbers may be placed outside the path.

Answer key: Content of the cells along the indicated arrows, 1-3 for numbers, X for path without number, '0' for empty cell