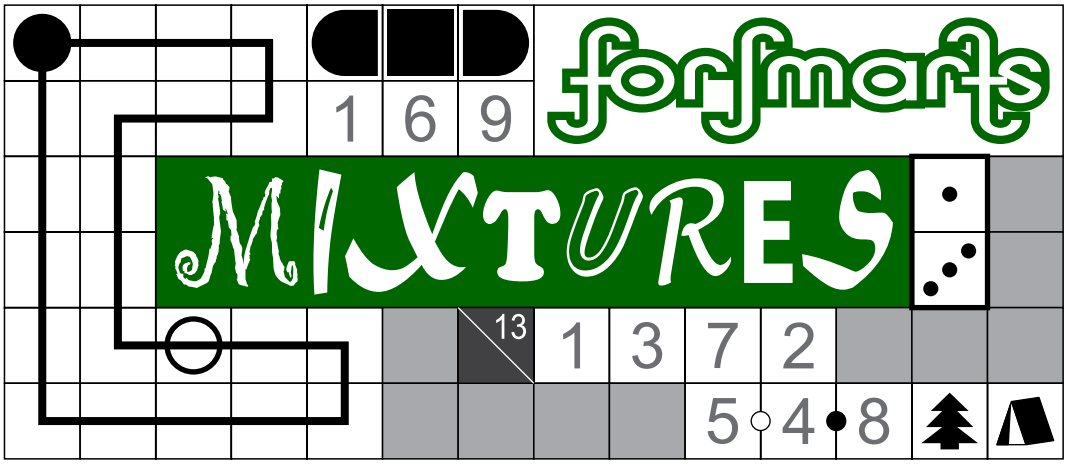


Instruction Booklet

All puzzles in this contest are either the classics or the mixtures of two/three classic types. *Duration of the contest is 150 minutes. 0.1 bonus points for each saved second (6 points per minute) will be added for solving everything ahead of time.*

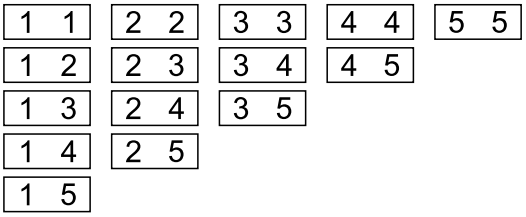
A1. Domino	24 points
A2. Coral	48 points
A3. Domino + Coral	**60 points**
A4. Japanese Sums	36 points
A5. Domino + Coral + Japanese Sums	**75 points**
B1. Kakuro	30 points
B2. Kropki	32 points
B3. Kakuro + Kropki	**52 points**
B4. Loopfinder	10 points
B5. Kakuro + Kropki + Loopfinder	**56 points**
C1. Pentomino	39 points
C2. Masyu	10 points
C3. Pentomino + Masyu	**68 points**
C4. Latin Square	20 points
C5. Pentomino + Masyu + Latin Square	**105 points**
D1. Snake	15 points
D2. Battleships	10 points
D3. Snake + Battleships	**35 points**
D4. Tents	20 points
D5. Snake + Battleships + Tents	**45 points**
E1. Sudoku	15 points
E2. Skyscrapers	36 points
E3. Sudoku + Skyscrapers	**48 points**
E4. Star Battle	16 points
E5. Sudoku + Skyscrapers + Star Battle	**95 points**
Total	1000 points

My sincere thanks go to: **Andrey Bogdanov** for testing the puzzles and **LMI** for hosting the contest

A1. Domino

Divide the grid to a given set of domino tiles.

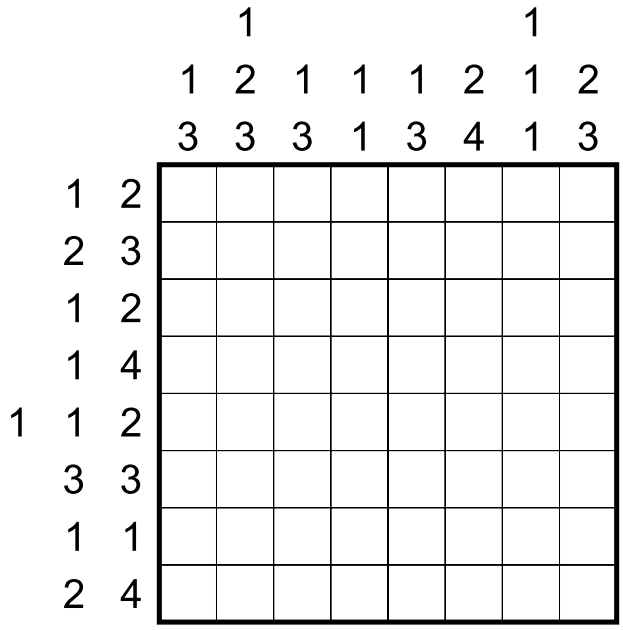
2	3	2	2	5	4
5	3	5	3	3	1
5	3	1	5	2	2
1	3	4	5	1	2
4	4	1	1	4	4

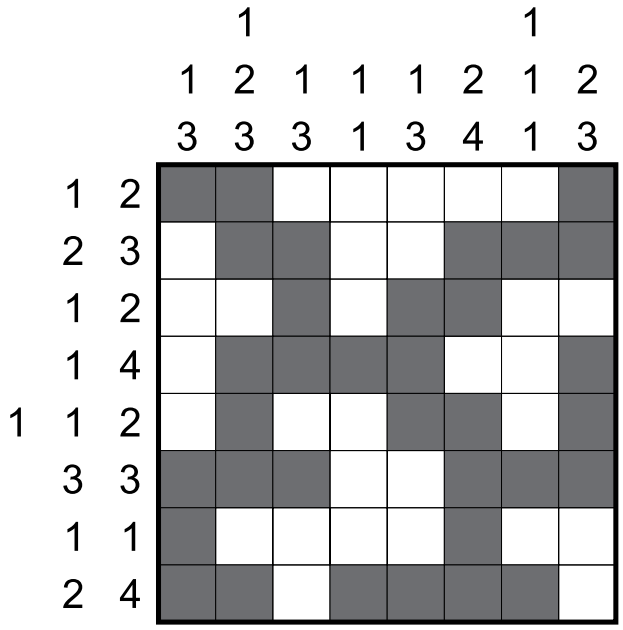


*Answer key: the **second** horizontal tile for every row going from top to bottom, "--" if there's less than two horizontal tiles in that row (54------11).*

A2. Coral

Shade some cells to form a coral. The coral must be contiguous, must not completely fill any 2x2 block, and must not touch itself even diagonally. The numbers around the border give the lengths of consecutive blocks of coral in a given row or column, though not necessarily in the order in which they occur. Between any two blocks there must be at least one blank square.



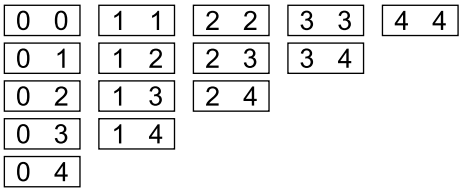


*Answer key: the lengths of the longest **unshaded** blocks for every row going from top to bottom (52222241).*

A3. Domino + Coral

Find the given set of domino tiles in the grid, so that it forms a coral.

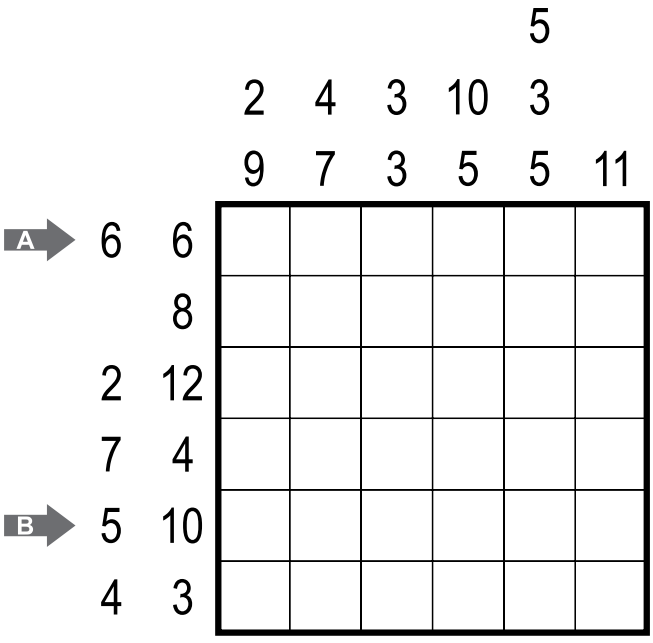
0	1	4	0	2	4	4
0	4	4	3	0	4	2
2	2	2	1	4	2	2
3	4	4	1	1	1	0
5	3	1	5	0	0	3
3	0	0	5	4	5	4
3	1	1	1	0	2	1

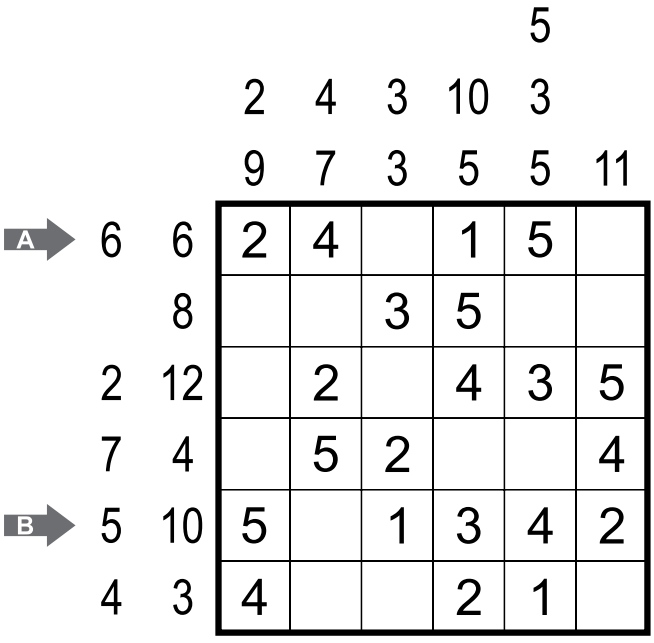


*Answer key: the **first** horizontal tile for every row going from top to bottom, "--" if there's no horizontal tiles in that row (01------030011).*

A4. Japanese Sums

Place the digits 1 to 7 (1 to 5 in the example) in some cells, so that no digit is repeated in any row or column. Numbers on the outside indicate the sums of consecutive digits in that row or column. Each sum is separated by at least one empty square.

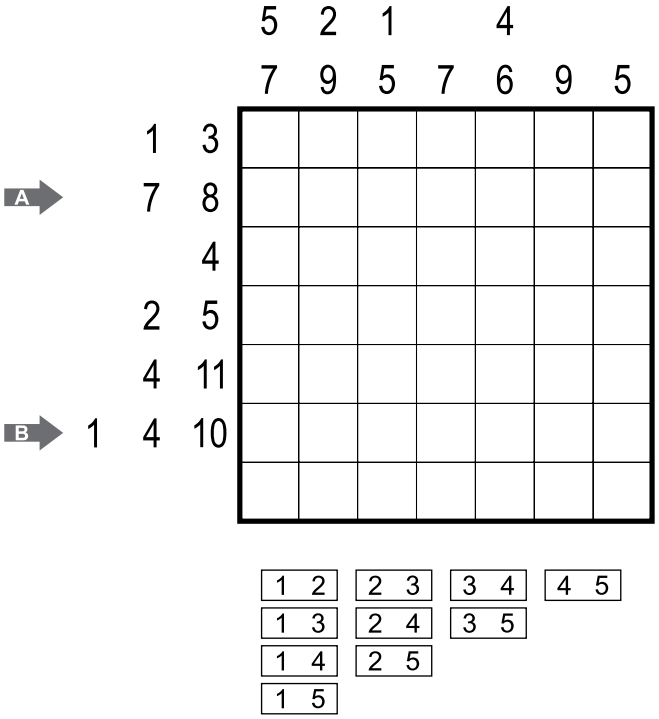


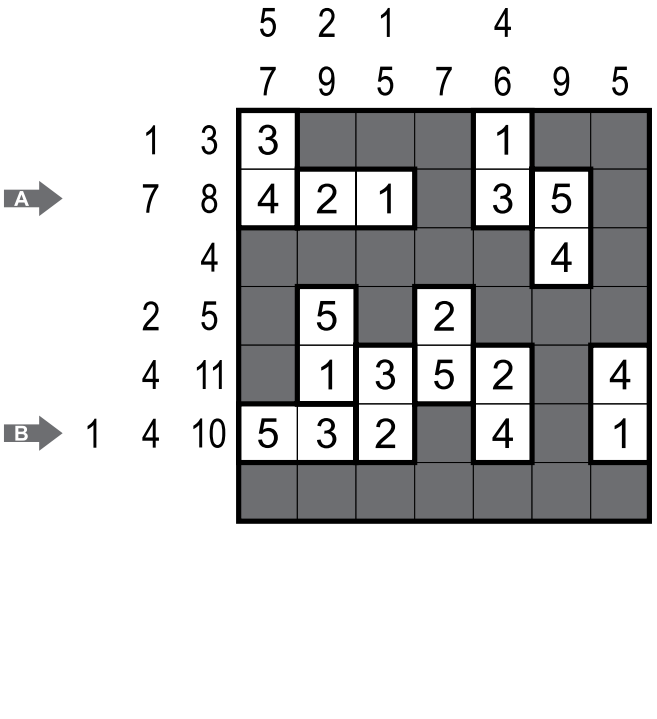


Answer key: the content of the marked rows, "-" for empty cells (A:24-15-; B:5-1342).

A5. Domino + Coral + Japanese Sums

- Place the digits 1 to 7 (1 to 5 in the example) in some cells, so that no digit is repeated in any row or column. Numbers on the outside indicate the sums of consecutive digits in that row or column. Numbers are given in the increasing order. Each sum is separated by at least one empty square.
- All empty cells should form a coral.
- Divide all the written numbers to a given set of domino tiles.

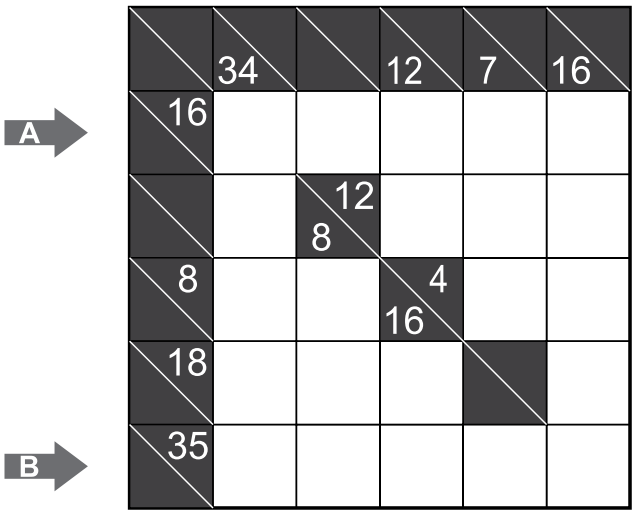


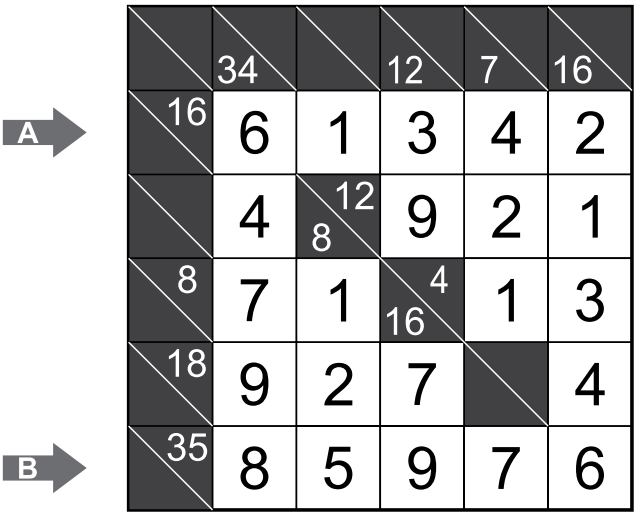


Answer key: the content of the marked rows,"-" for the empty (coral) cells (A:421-35-; B:532-4-1).

B1. Kakuro

Place a single digit from 1 to 9 in each white cell so that the horizontal sums of the digits will equal the number given on the left, and the vertical sums of the digits will equal the number given above. No digit can be repeated within sums.

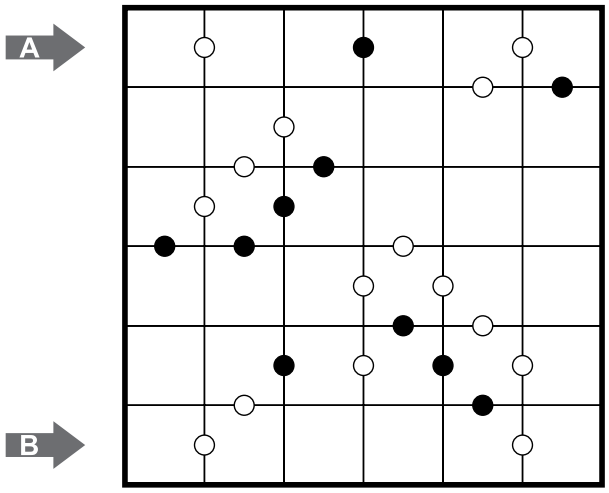


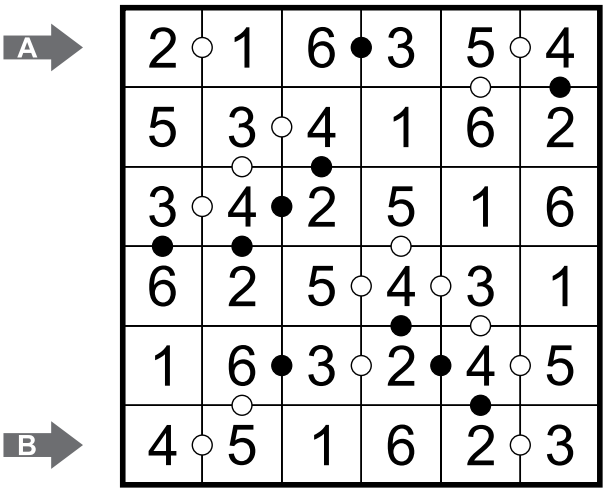


Answer key: the content of the marked rows ignoring the clue cells (A:61342; B:85976).

B2. Kropki

Place the digits 1-8 (1-6 in the example) once each into every row and column. Cells separated by a white dot must contain digits whose values differ by exactly 1. Cells separated by a black dot must contain digits where one cell is twice the value of the other. All possible dots are shown. Neighbouring cells containing the digits 1 and 2 can be separated by either a black or a white dot.



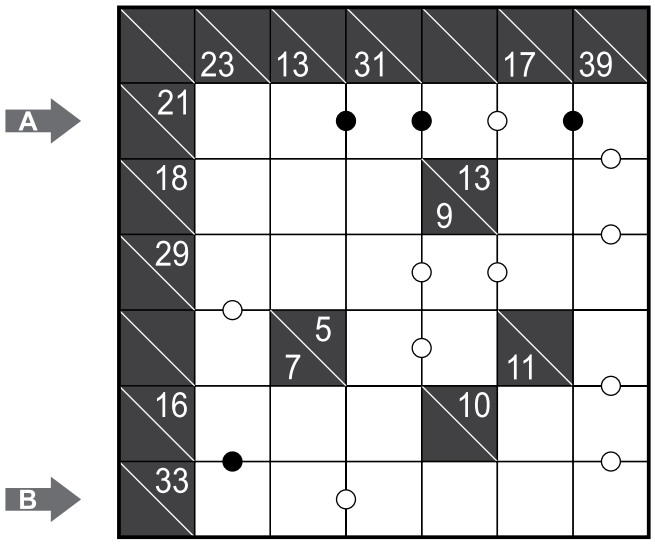


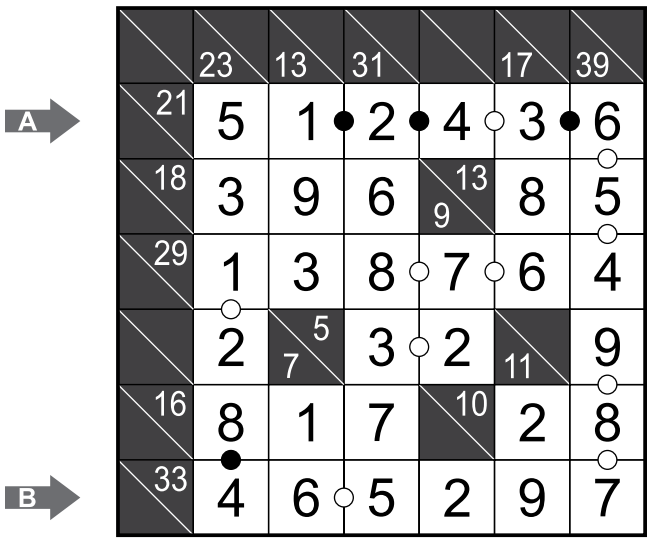
Answer key: the content of the marked rows (A:216354; B:451623).

B3. Kakuro + Kropki

- Place a single digit from 1 to 9 in each white cell so that the horizontal sums of the digits will equal the number given on the left, and the vertical sums of the digits will equal the number given above. No digit can be repeated within sums.

- Cells separated by a white dot must contain digits whose values differ by exactly 1. Cells separated by a black dot must contain digits where one cell is twice the value of the other. All possible dots are shown. Neighbouring cells containing the digits 1 and 2 can be separated by either a black or a white dot.

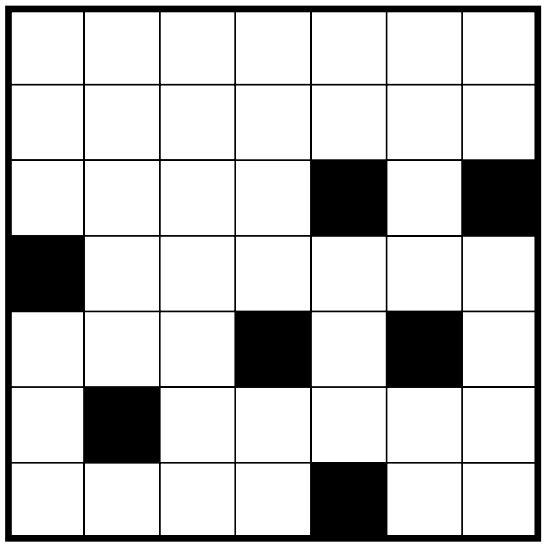


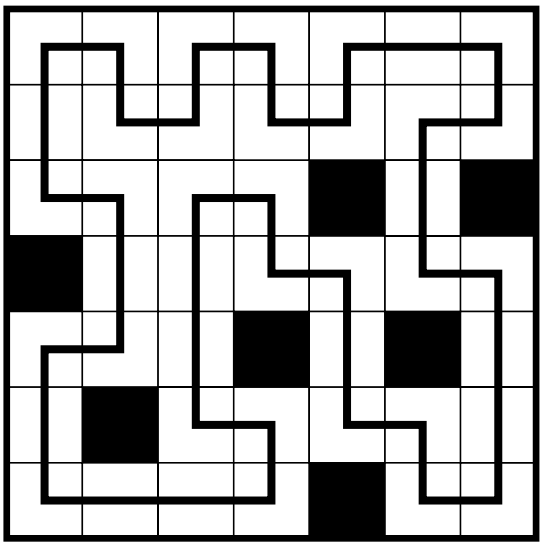


Answer key: the content of the marked rows ignoring the clue cells (A:512436; B:465297).

B4. Loopfinder

Draw a single closed loop using only horizontal and vertical lines such that the loop visits all white cells exactly once.





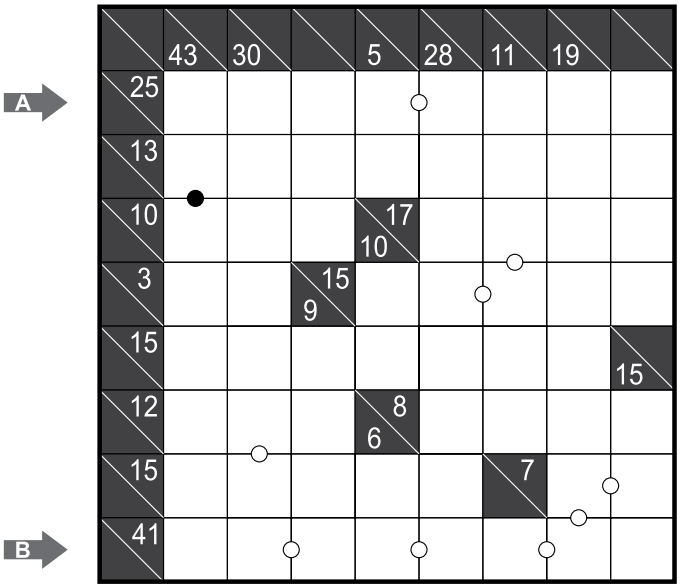
Answer key: the number of the horizontal segments for every row going from top to bottom (3322122).

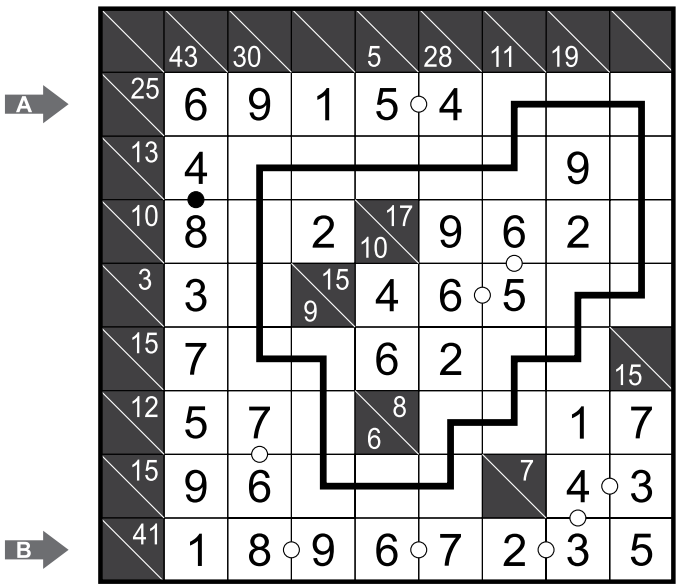
B5. Kakuro + Kropki + Loopfinder

- Place a single digit from 1 to 9 in some of the white cells so that the horizontal sums of the digits will equal the number given on the left, and the vertical sums of the digits will equal the number given above. No digit can be repeated within sums.

- Cells separated by a white dot must contain digits whose values differ by exactly 1. Cells separated by a black dot must contain digits where one cell is twice the value of the other. All possible dots are shown. Neighbouring cells containing the digits 1 and 2 can be separated by either a black or a white dot.

- Draw a single closed loop using only horizontal and vertical lines such that the loop visits all the unused white cells exactly once.

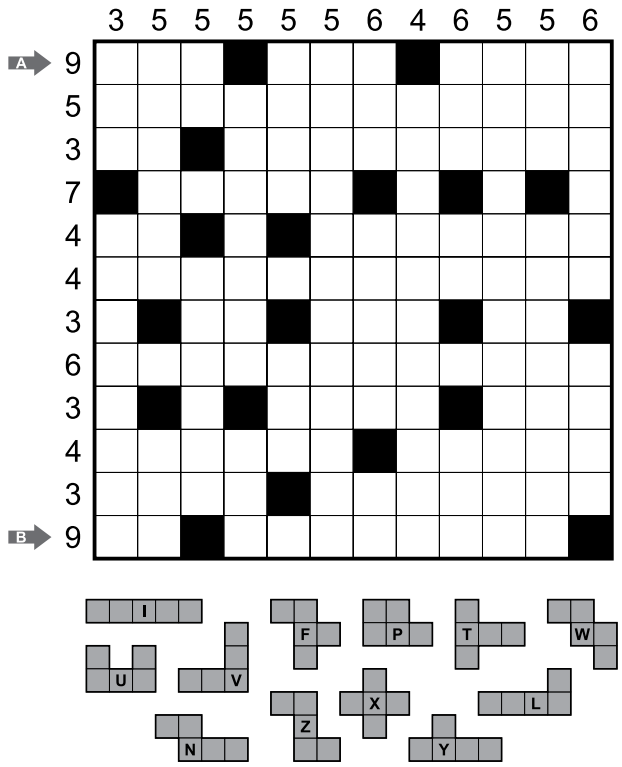


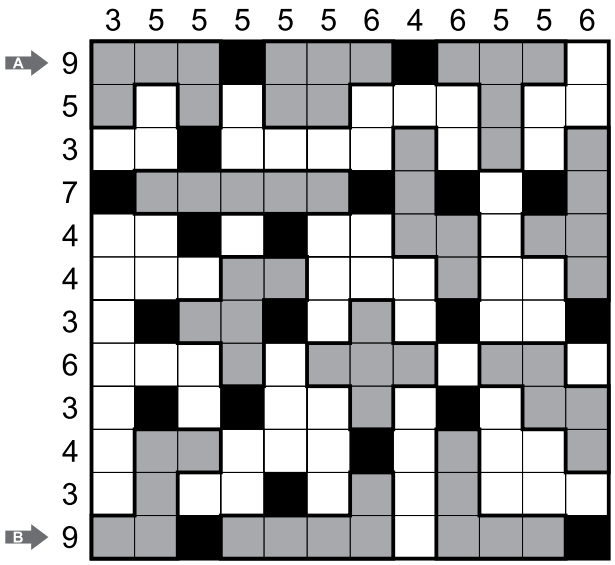


Answer key: the content of the marked rows ignoring the clue cells, "-" for the empty (loop) cells (A:69154---; B:18967235).

C1. Pentomino

Place the given pentomino set in the grid. Pentomino can be rotated and reflected, but cannot touch each other even in a point. Clues outside the grid show the amount of cells occupied by the pentominoes in the corresponding row/column. Black cells cannot be covered by the pentominoes.

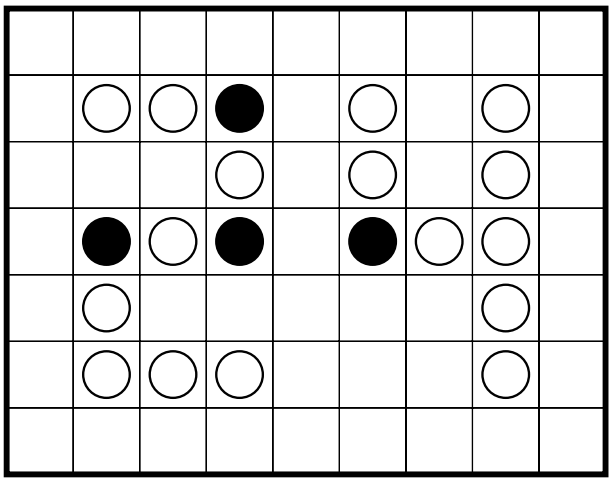


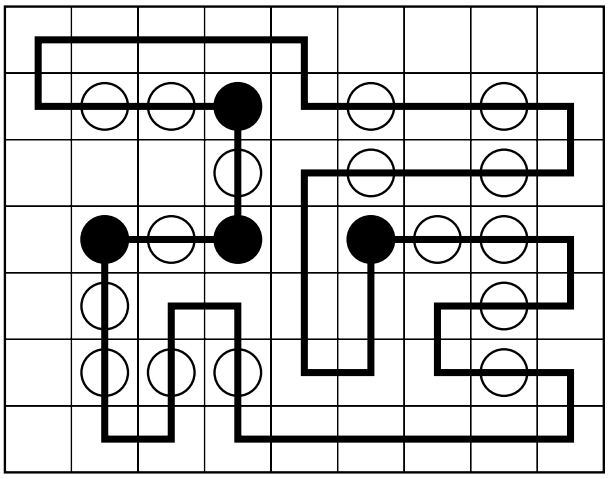


Answer key: the content of the marked rows: corresponding letters for the pentominoes, "-" for the empty cells (A:UUU-PPP-TTT-; B:ZZ-LLLL-VVV-).

C2. Masyu

Draw a single loop using only horizontal and vertical lines between the centres of some cells such that the loop does not visit any cell more than once. At every cell containing a white circle the loop must pass straight through that circle and make a 90 degree turn in at least one of the cells adjacent to the circle. At every cell containing a black circle the loop must make a 90 degree turn and travel straight through both cells adjacent to the circle.



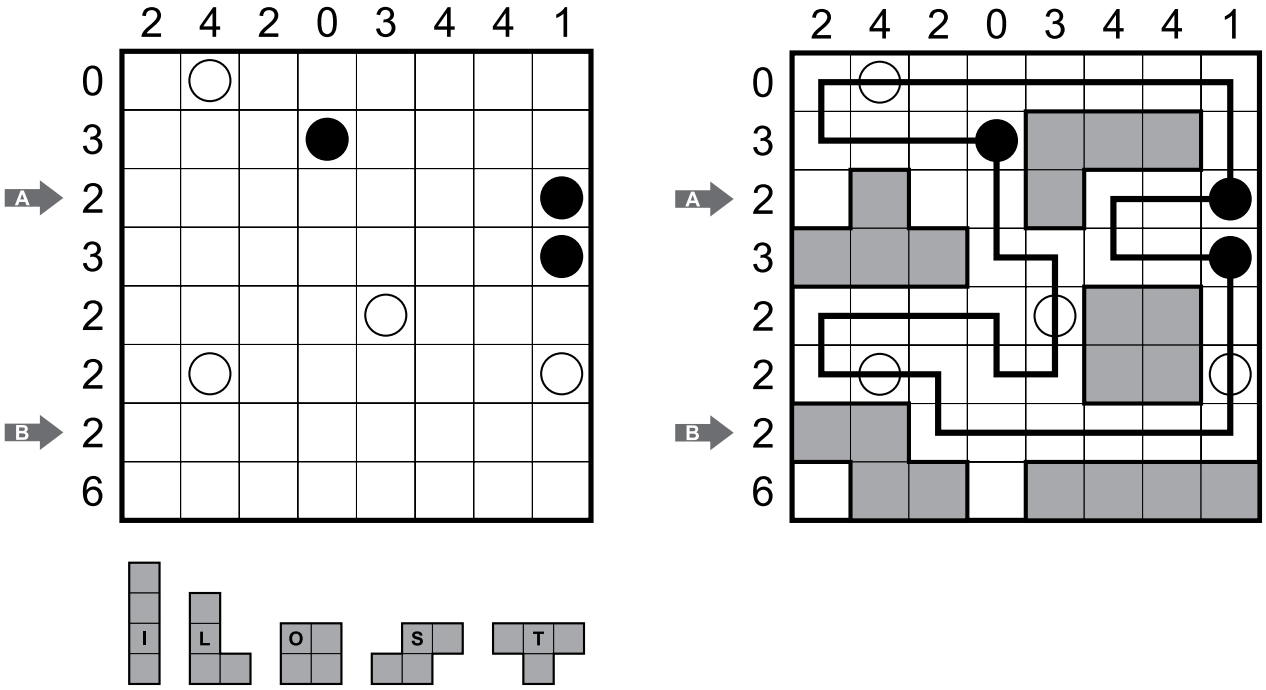


*Answer key: the lengths of the **longest** horizontal lines for every row going from top to bottom (4443225)*

C3. Pentomino + Masyu

- Draw a single closed loop using only horizontal and vertical lines between the centres of some cells such that the loop does not visit any cell more than once. At every cell containing a white circle the loop must pass straight through that circle and make a 90 degree turn in at least one of the cells adjacent to the circle. At every cell containing a black circle the loop must make a 90 degree turn and travel straight through both cells adjacent to the circle.

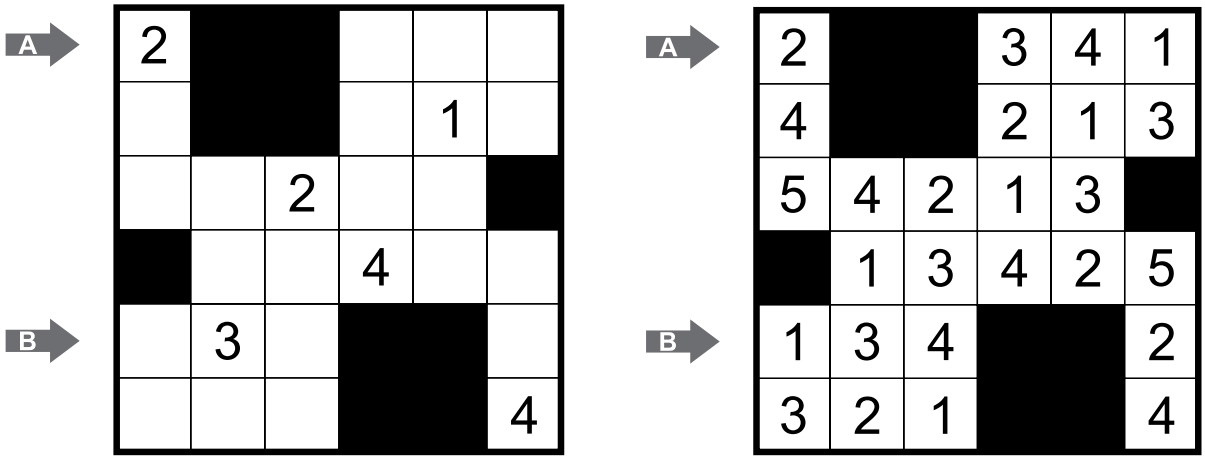
- Place the given pentomino set (tetromino in the example) into the cells which are not occupied by the loop. Pentomino can be rotated and reflected, but cannot touch each other even in a point. Numbers outside show the number of cells occupied by pentominoes in the corresponding row or column.



Answer key: the content of the marked rows: corresponding letter for the pentominoes, "M" for the loop cells, "-" for the empty cells (A:-T-MLMMM; B:SSMMMMMM).

C4. Latin Square

Place a single digit from 1 to n (n - the number of white cells in the row/column) in each empty cell so that each row and column contains each digit exactly once.

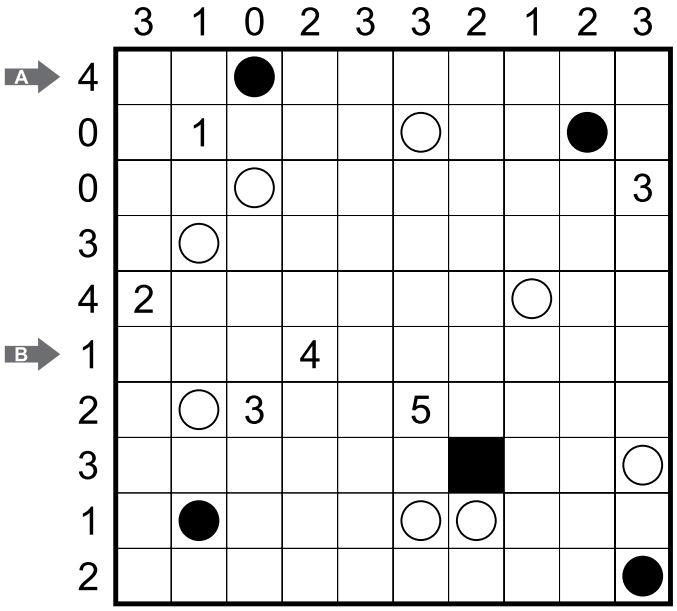


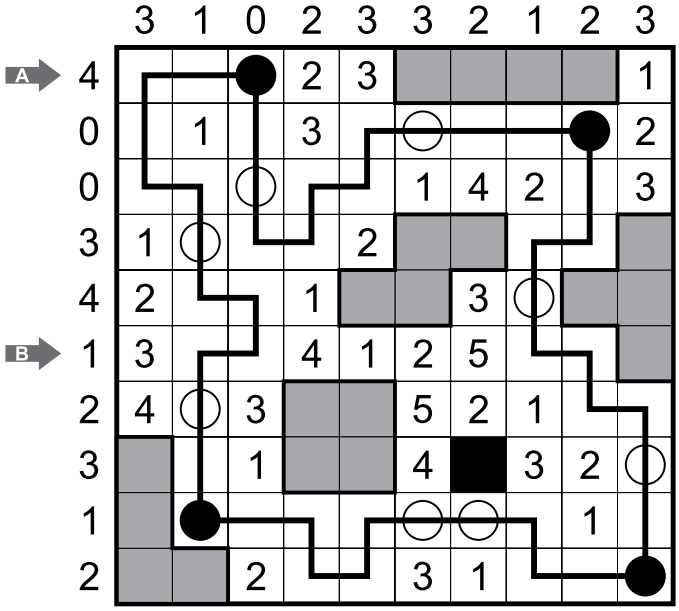
Answer key: the content of the marked rows ignoring the empty cells (A:2341; B:1342).

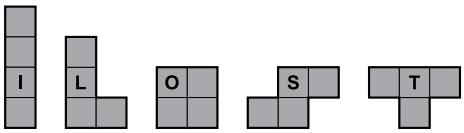
C5. Pentomino + Masyu + Latin Square

- Apply “C3. Pentomino + Masyu” rules.

- Place a single digit from 1 to n (n - the number of remaining cells in the row/column) in each empty cell so that each row and column contains each digit exactly once.



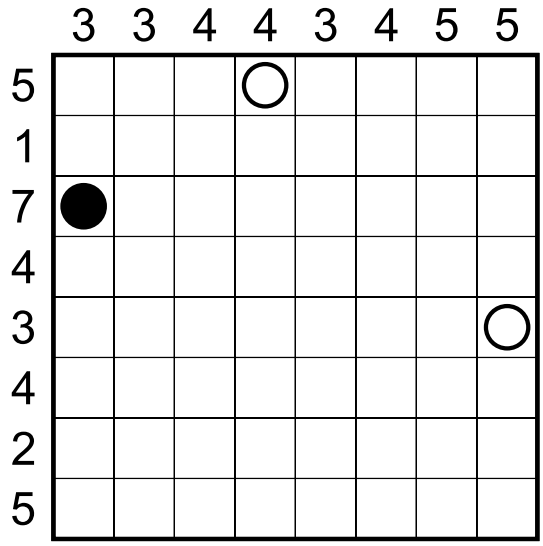


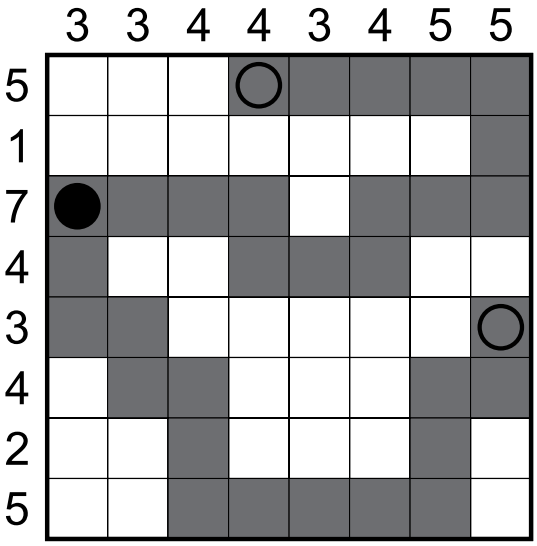


Answer key: the content of the marked rows: corresponding letter for the pentominoes, “M” for the loop cells (A:MMM23IIII1; B:3MM4125MMT).

D1. Snake

Draw a 45-cell long snake (31-cell long in the example) which cannot touch itself, not even diagonally. Clues outside the grid show the amount of cells occupied by the snake in the corresponding row/column. The head, tail and the center of the snake are given.

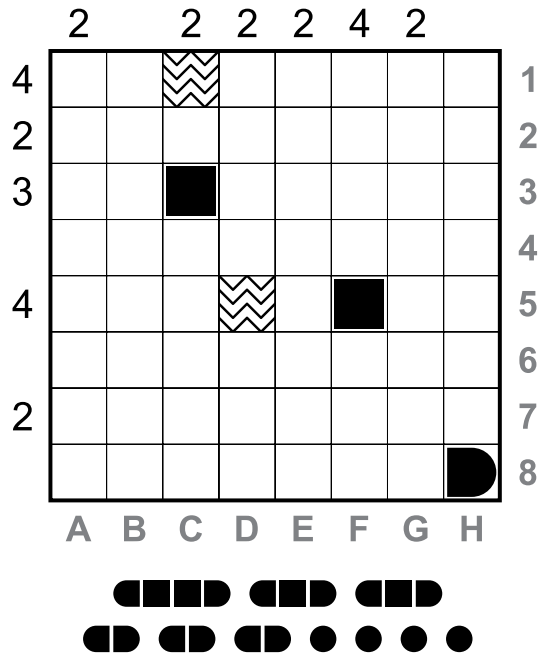


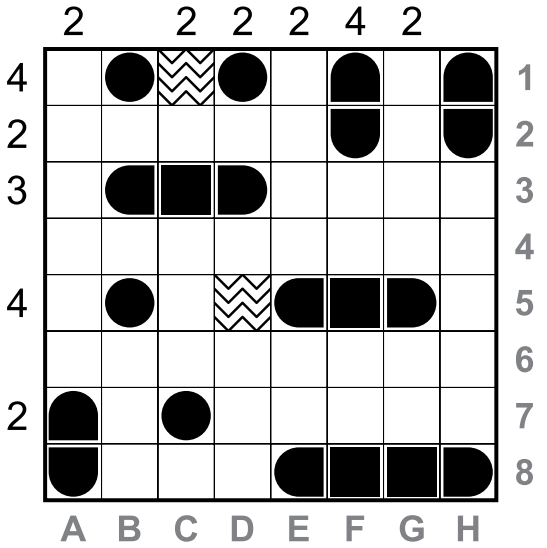


*Answer key: the lengths of the longest **unshaded** blocks for every row going from top to bottom (37125332).*

D2. Battleships

Place the given set of ships into the grid. Ships cannot touch each other, not even diagonally. Waved cells cannot be occupied. Clues outside the grid show the amount of cells occupied by the ships in the corresponding row/column.



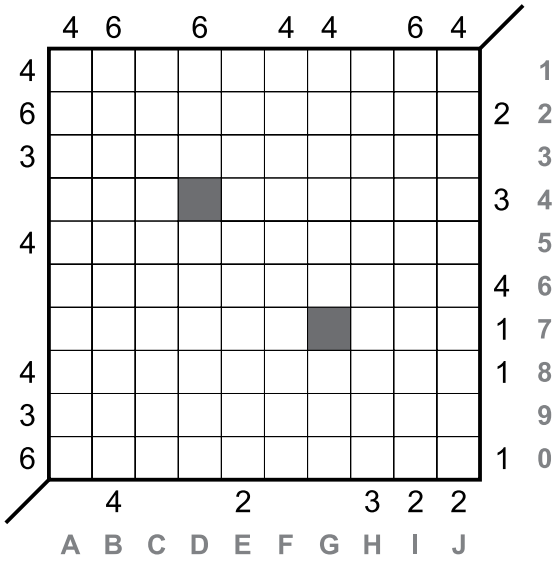


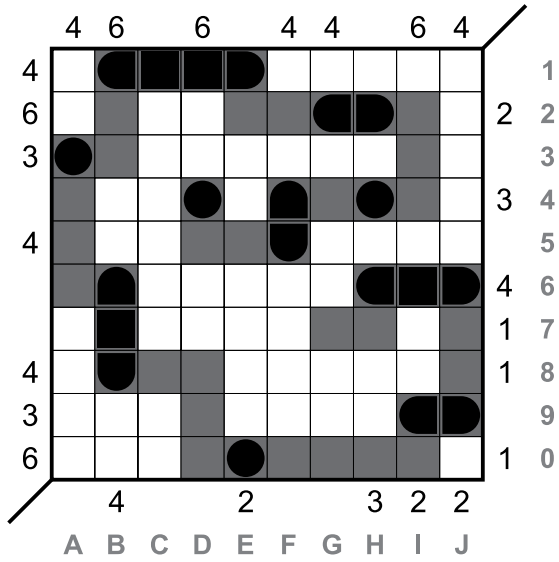
Answer key: the coordinates of 1-unit ships from top to bottom (B1D1B5C7).

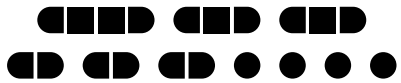
D3. Snake + Battleships

- Draw in the grid a snake, 45 cells long, not touching itself. Its head and tail are marked by gray cells. Digits on top and left of the grid show the number of cells occupied by the snake in corresponding rows and columns.

- Place the given fleet on the snake. Ships can not bend and touch each other. Ships of the same size can not follow each other along the snake. Every row and column of the grid must have at least one cell occupied by ship. and digits at bottom and right show the number of cells occupied by the ships.



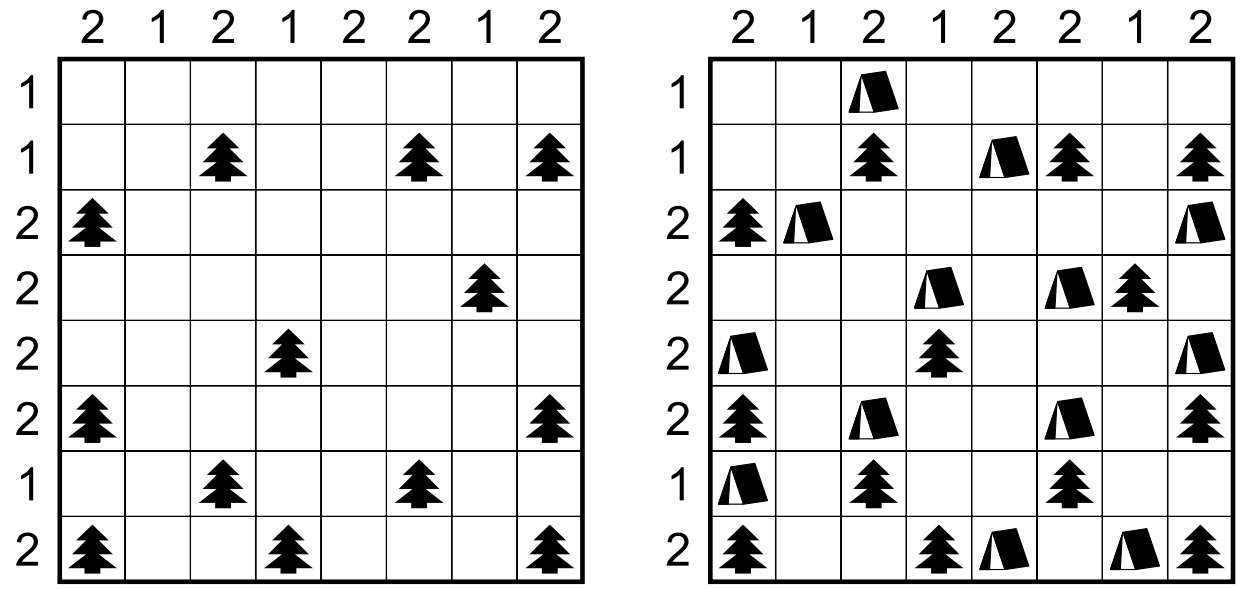




Answer key: the coordinates of 1-unit ships from top to bottom (A3D4H4E0).

D4. Tents

Attach a tent to each tree, in a horizontally or vertically adjacent cell. Cells with tents do not touch each other, not even diagonally. Numbers outside the grid indicate the number of tents in that row or column.



Answer key: the lengths of the longest horizontal blocks of cells that do not contain tents (though they can contain trees) for every row going from top to bottom (54536274)

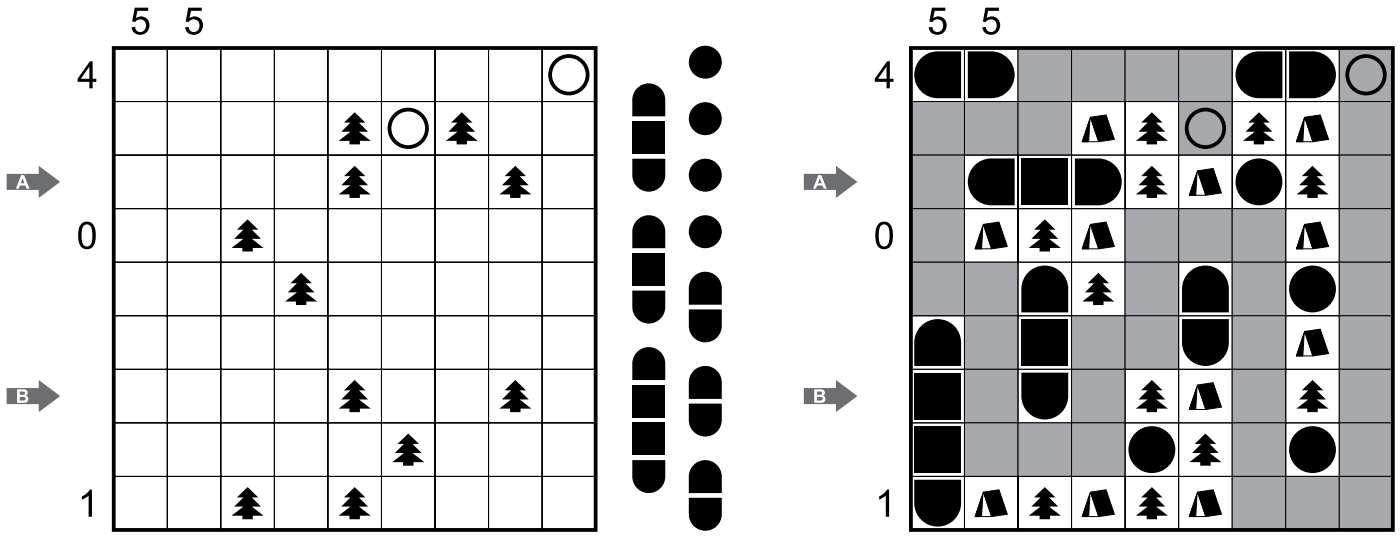
D5. Snake + Battleships + Tents

1. Attach a tent to each tree, in a horizontally or vertically adjacent cell. Cells with tents do not touch each other, not even diagonally.

2. Place the given set of ships into the empty cells of the grid. Ships cannot touch each other, not even diagonally.

3. Draw the snake throught all the cells that are left empty. Its head and tail are shown by the circles. Snake is 1-cell wide and doesn't touch itself even at a point.

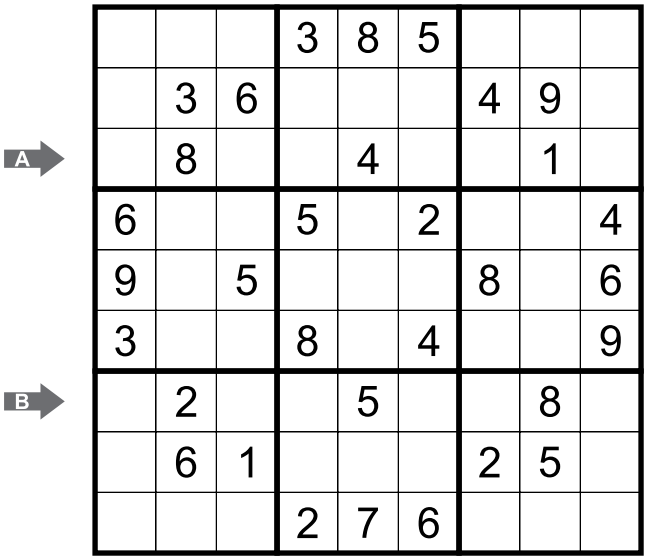
4. Clues outside the grid show the number of occupied cells either by ships or by the snake in the corresponding row or column.



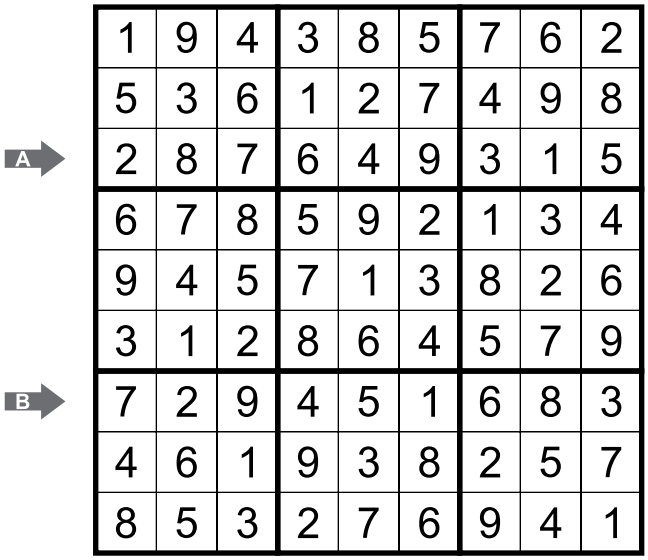
Answer key: the content of the marked rows: numbers 1 to 4 for the ships of such length, "S" for snake cells, "T" for tents and trees (A:S333TT1TS; B:4S3STTSTS).

E1. Sudoku

Place a single digit from 1 to 9 in each empty cell so that each row, column and outlined area contains each digit exactly once.



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

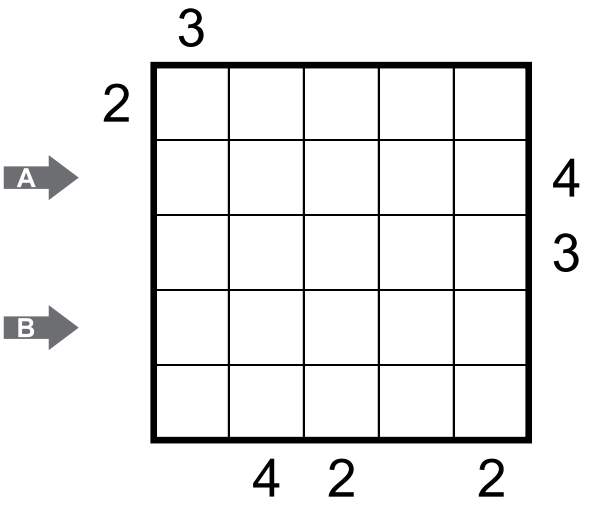


1	9	4	3	8	5	7	6	2
5	3	6	1	2	7	4	9	8
A 2	8	7	6	4	9	3	1	5
6	7	8	5	9	2	1	3	4
9	4	5	7	1	3	8	2	6
3	1	2	8	6	4	5	7	9
B 7	2	9	4	5	1	6	8	3
4	6	1	9	3	8	2	5	7
8	5	3	2	7	6	9	4	1

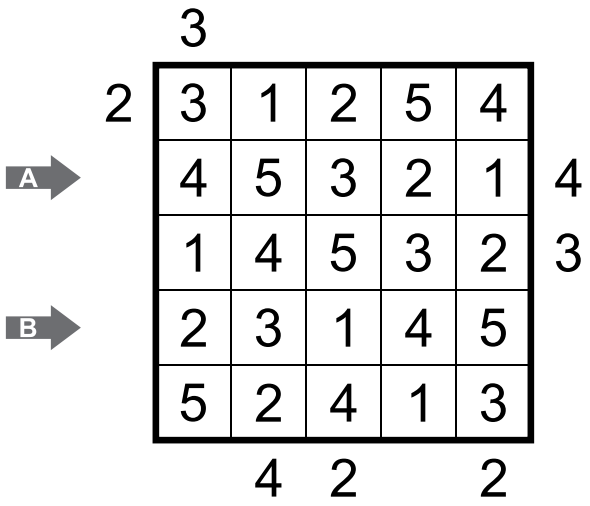
Answer key: the content of the marked rows (A:287649315; B:729451683).

E2. Skyscrapers

Place a single digit from 1 to 6 (from 1 to 5 in the example) in each empty cell so that each row and column contains each digit exactly once. Each digit represents a skyscraper with a height equal to the digit. Digits outside the outlined area represent the number of skyscrapers that are visible from that side. Higher skyscrapers hide shorter skyscrapers.



	3					
2						
A						4
						3
B						
		4	2		2	



	3					
2	3	1	2	5	4	
A	4	5	3	2	1	4
	1	4	5	3	2	3
B	2	3	1	4	5	
	5	2	4	1	3	
		4	2		2	

Answer key: the content of the marked rows (A:45321; B:23145).

E3. Sudoku + Skyscrapers

Place a single digit from 1 to 9 in each empty cell so that each row, column and outlined area contains each digit exactly once. Each digit represents a skyscraper with a height equal to the digit. Digits outside the outlined area represent the number of skyscrapers that are visible from that side. Higher skyscrapers hide shorter skyscrapers.

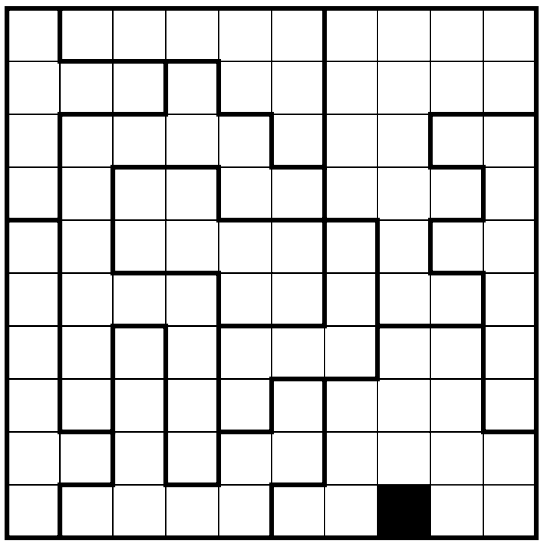
	3	1	2	2	3	3	3	3	2	
2		9						3		3
2	6								1	6
A 8				3		6				1
2			9				3			2
3					1					2
4			6				9			2
B 1				1		2				4
4	4								3	2
3		8						5		4
	3	2	6	3	1	3	3	2	6	

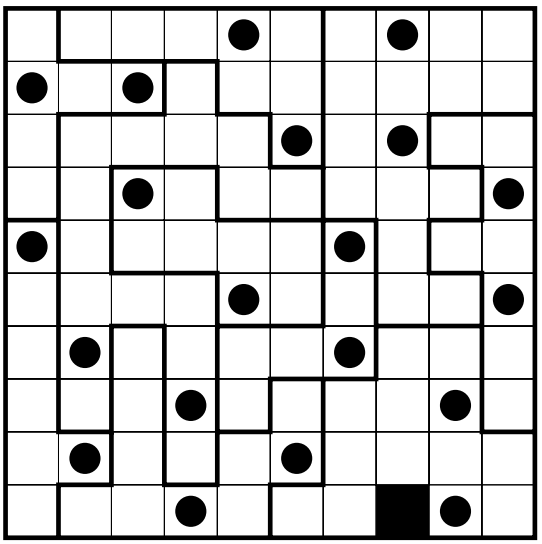
	3	1	2	2	3	3	3	3	2	
2	7	9	8	2	4	1	5	3	6	3
2	6	5	3	9	8	7	4	2	1	6
A 8	1	2	4	3	5	6	7	8	9	1
2	8	4	9	6	2	5	3	1	7	2
3	5	3	7	4	1	9	2	6	8	2
4	2	1	6	8	7	3	9	4	5	2
B 1	9	6	5	1	3	2	8	7	4	4
4	4	7	2	5	6	8	1	9	3	2
3	3	8	1	7	9	4	6	5	2	4
	3	2	6	3	1	3	3	2	6	

Answer key: the content of the marked rows (A:124356789; B:965132874).

E4. Star Battle

Place two stars in every row, column and outlined area so that they don't touch each other, not even diagonally. Black cells do not contain stars.



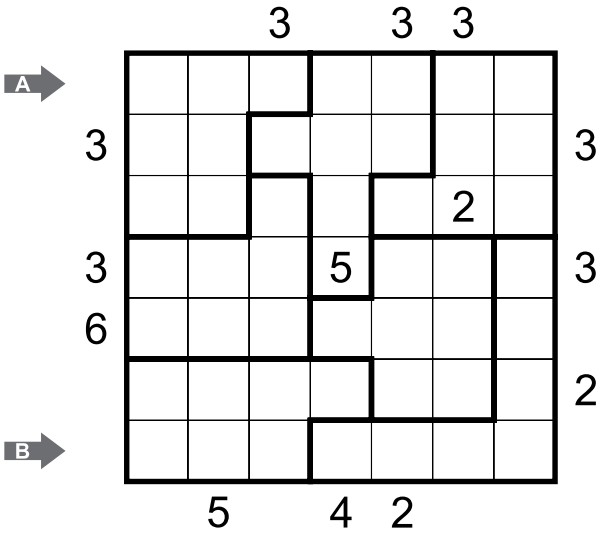


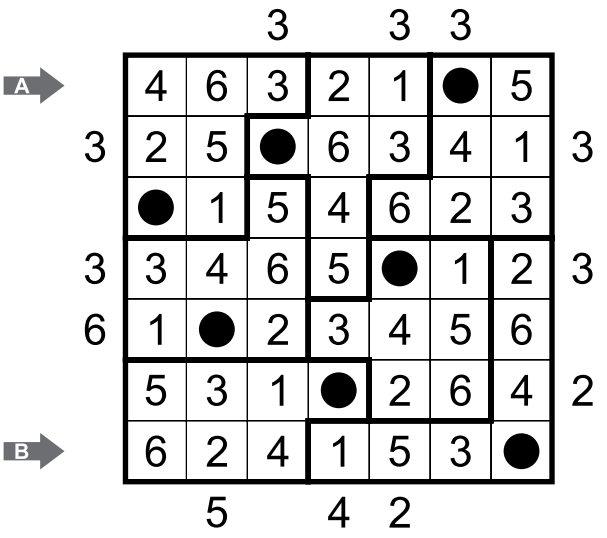
Answer key: the number of cells between the stars for every row going from top to bottom (2116544434).

E5. Sudoku + Skyscrapers + Star Battle

- Place a single digit from 1 to 9 (from 1 to 6 in the example) in some of the empty cell so that each row, column and outlined area contains each digit exactly once. Each digit represents a skyscraper with a height equal to the digit. Digits outside the outlined area represent the number of skyscrapers that are visible from that side. Higher skyscrapers hide shorter skyscrapers.

- Place the stars in all the cells that are left empty. They should not touch each other, not even diagonally. There should be exactly two stars (one star in the example) in every row, column and outlined area. Stars have no height.





Answer key: the content of the marked rows, "-" for empty (star) cells (A:46321-5; B:624153-).