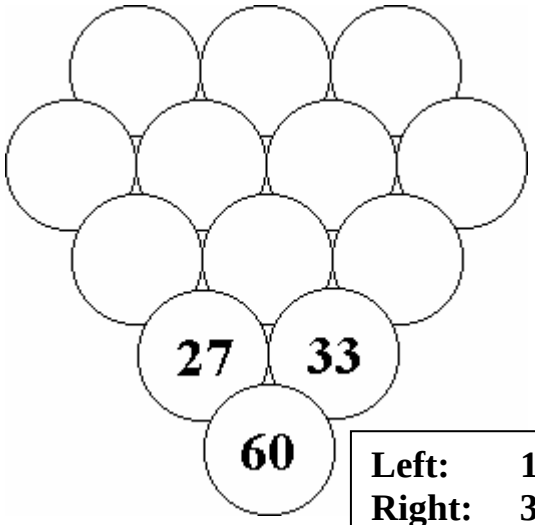
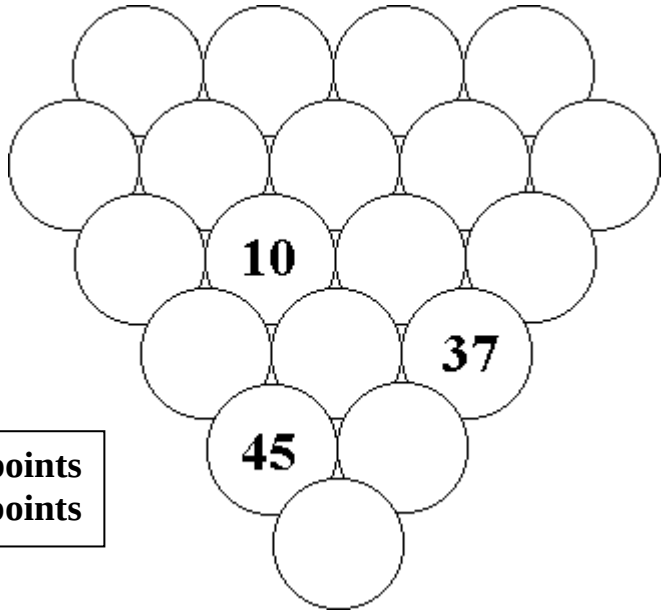
5TH 24 HOURS PUZZLE CHAMPIONSHIP
21-23 MAY, 2004
Budapest

PUZZLES BY
HORVÁTH, ZOLTÁN

Grapes

The number in each grape (circle) is always the total of the neighbouring whole positive numbers from the line above. All numbers in the grapes on the top line (in each task) are one-digit. Fill in the missing numbers.

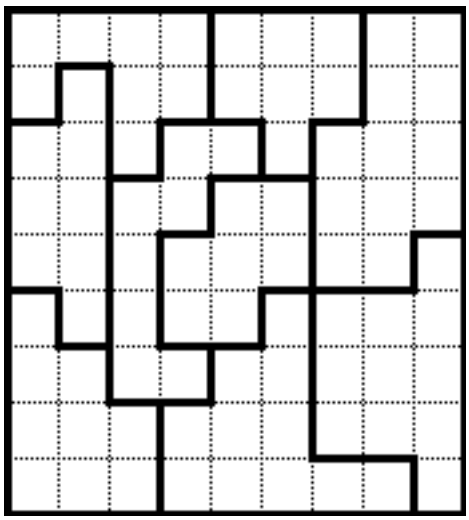




Left: 10points
Right: 35points

Star Battle

Place two stars, the size of one square, in each column, each row and each black-edged part of grid. The stars do not touch each other, not even diagonally.



70points

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BUDAPEST

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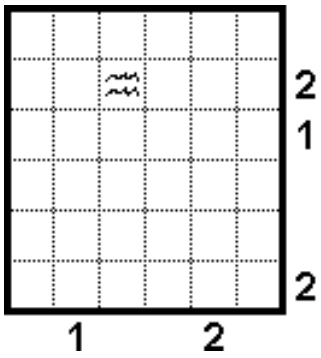
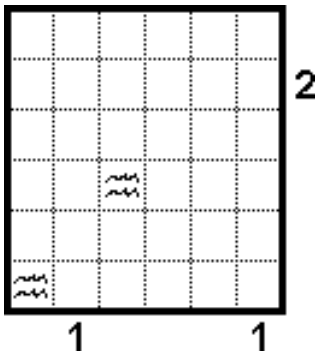
Submarines

Place the 9-9 submarines (1square) into the grid in such a way that they nowhere touch each another, not even diagonally. The numbers outside the diagram indicate how many ships can be found in that row or column. No ship can occupy the waves.

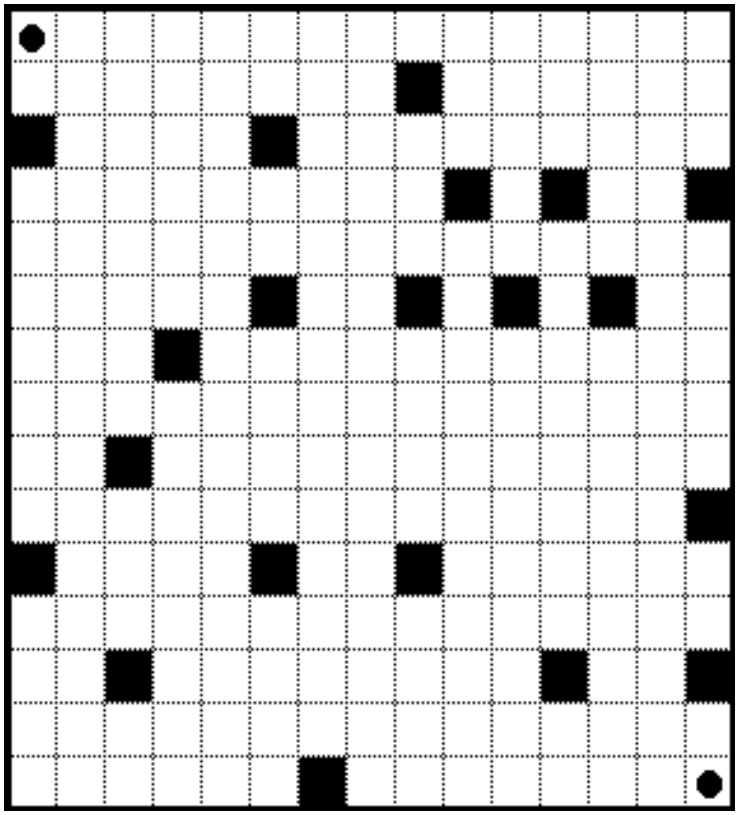




Left: 10points
Right: 25points

Labyrinth

Draw a line into the figure that starts and ends at the fields indicated by the circles, and passes trough all other fields excepting the blackened ones. The line cannot go diagonally and cannot overlap or intersect itself.



50points

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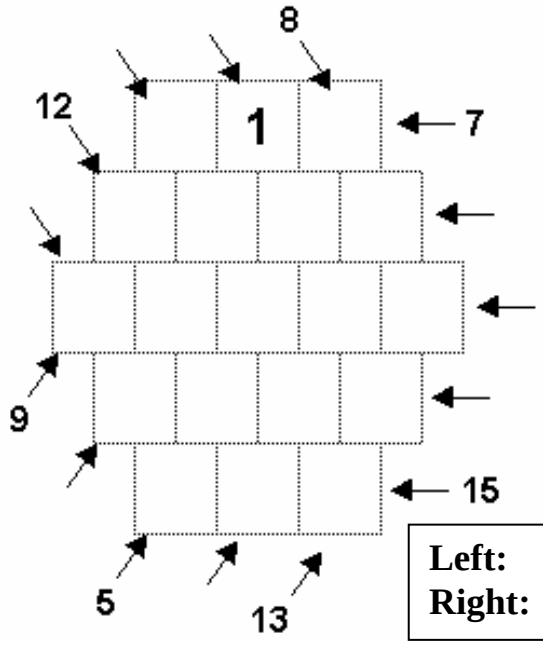
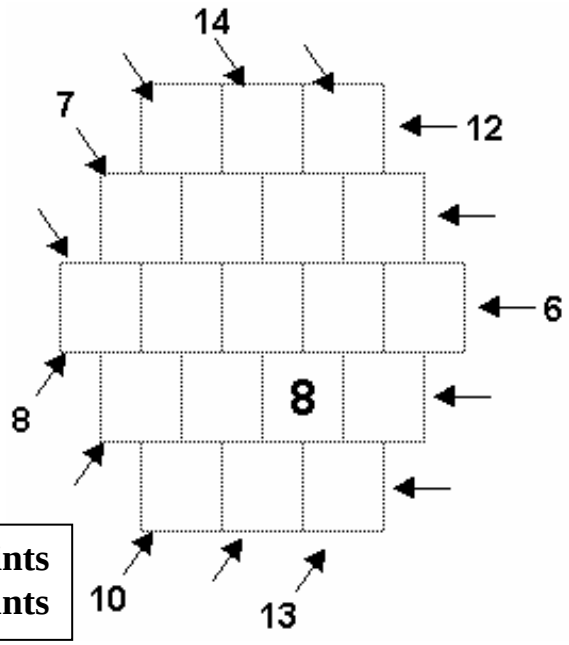
Antimagic hexagons

Place numbers 1 to 10 (each just one) into the diagram made up of hexagons in such a fashion that on each line in all three directions are two numbers (to a total of 15pairs). The sums of all these pairs must not be same. Put the missing sums next to the numbers in the diagram. Some numbers have already been entered in the diagrams.

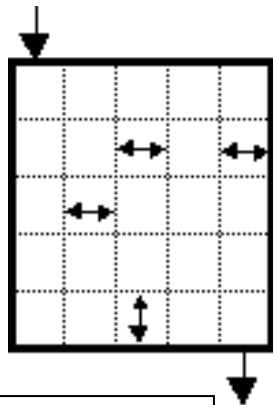


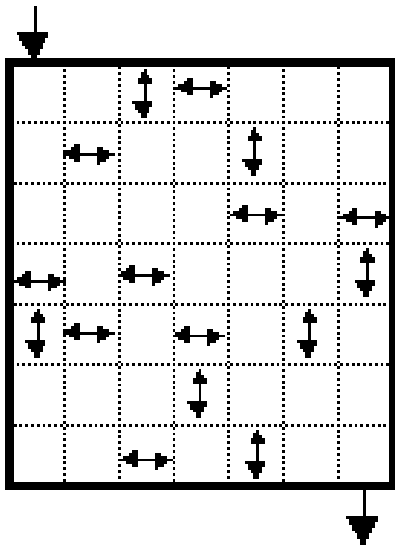


Left:	**30points**
Right:	**50points**

Maze with arrows

The grid represent a maze. Your task is to visit every square of it exactly once so that you can go from a square to another - not diagonally - neighbouring square. You enter and exit at the squares indicated by the simple arrows. You must enter an duble arrows in its middle and exit in either of the two directions that it points.





Left:	**10points**
Right:	**15points**

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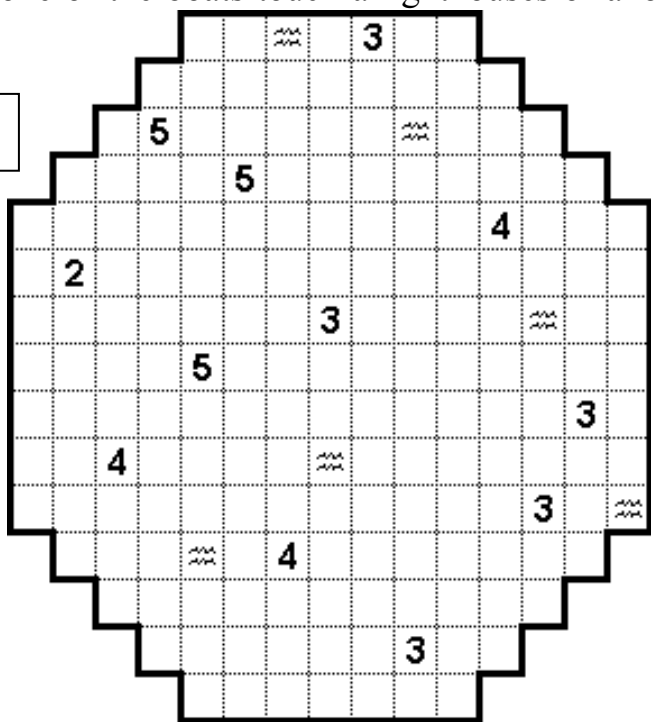
Lighthouses

In the sea, represented by the grid, there are 13 lighthouses, each one lighting up a complete horizontal and a complet vertical strip. 25 boats, the size of one square. The number on each lighthouse represents the number of boats which the lighthouses has in its beams of light. none of the boats touch a lighthouses or another boat. Find out the position of all boat.

150points



The Olympic Games

Fill the grid with the characters of AθHNA 2004 so that all nine characters(2 pieces A, 1piece θ … 2 pieces 0 and 1 piece 4) appear exactly once in each row, colomn, and each of the nine highlighted regions.

35points

			H				2	A
	A			2	0	N		
	4	A						0
			0				H	
4	N			θ				
	0	H				4		A
	θ				N			4
				0			A	
		A			2		N	θ

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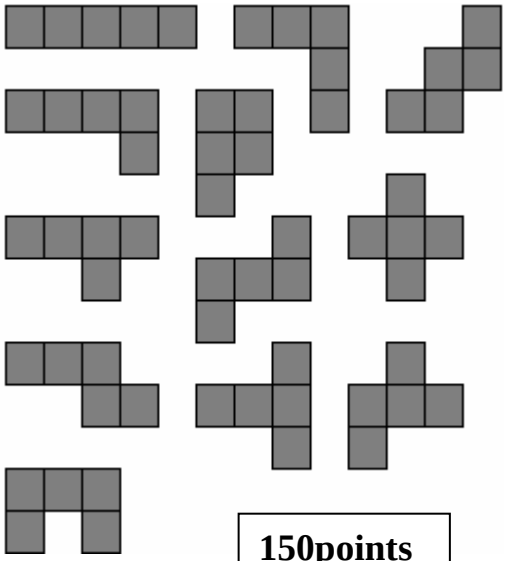
Pentominoes

Place the pieces into the grid is such a way that they nowhere touch one another, not even diagonally. The pieces may be rotated and mirrored. Each number in a cell being part of any pentominoes denote the number of its (edge-wise or diagonally) surrounding cells that contain a pentomino. If a cell is empty then the number may be either true or false.

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

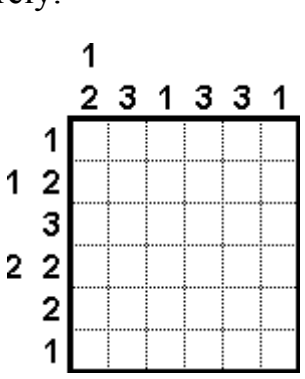


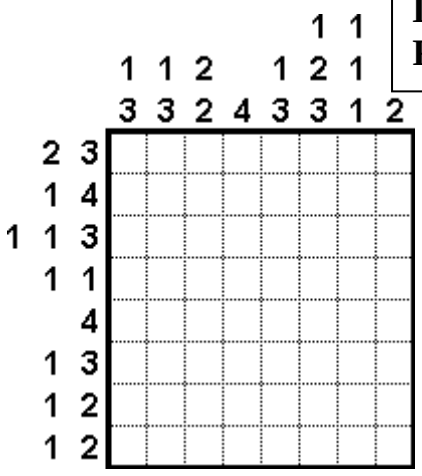
150points

Coral finder

The figure indicates a sea with a coral hinding. The coral consists of continuous fields (diagonal neigborhood is not enough) and cannot touch itself even diagonally. The numbers indicites the continous parts of the coral in the given row or column (similary as in the "Paint it black" puzzles). To make the problem more difficult, the numbers are given in increasing order. Finally, no part of the coral can cover a 2x2 square entirely.

Left: 25points
Right: 40points





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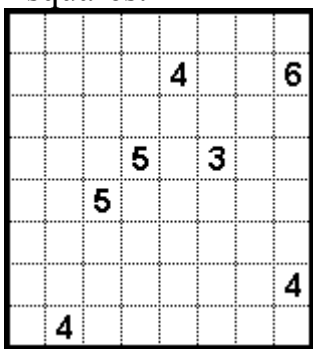
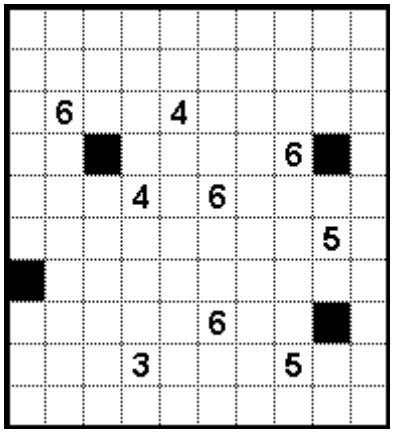
Gardens

The diagram contains small gardens (connected areas containing squares that are left white) separated by one hedge (a connected formation consisting of black squares). Every garden consists of the number of white squares that the given numbers show. Every small garden contains only one number. The small gardens may only touch each other at the vertexes. A 2x2 area may contain only 3 black squares. We are given some black squares.

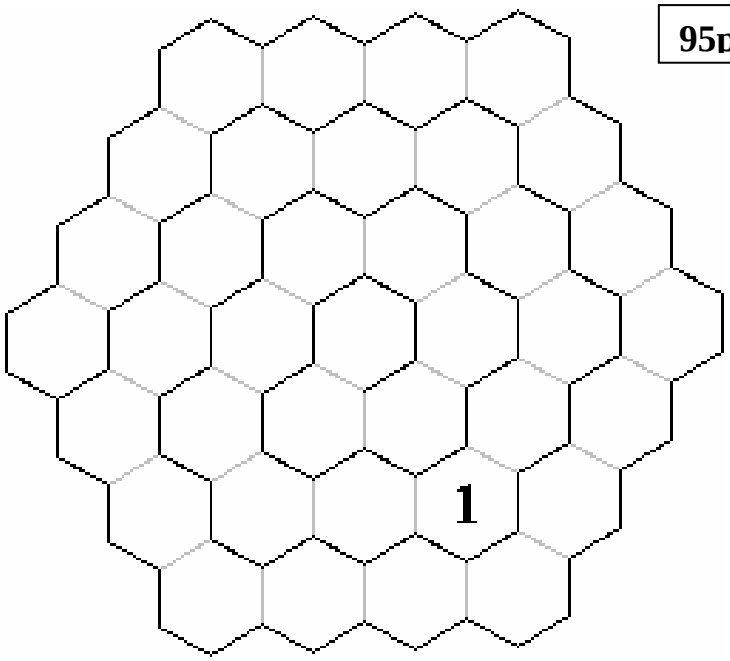




Left: 40points
Right: 60points

Snail in hexagon

Fill the grid with the numbers 1, 2 so that all two numbers appear exactly once in each row and diagonal. If you go in a spiral from the entertance to the center of the snail, the numbers should follow in order 1-2-1-2…-1-2.



95point

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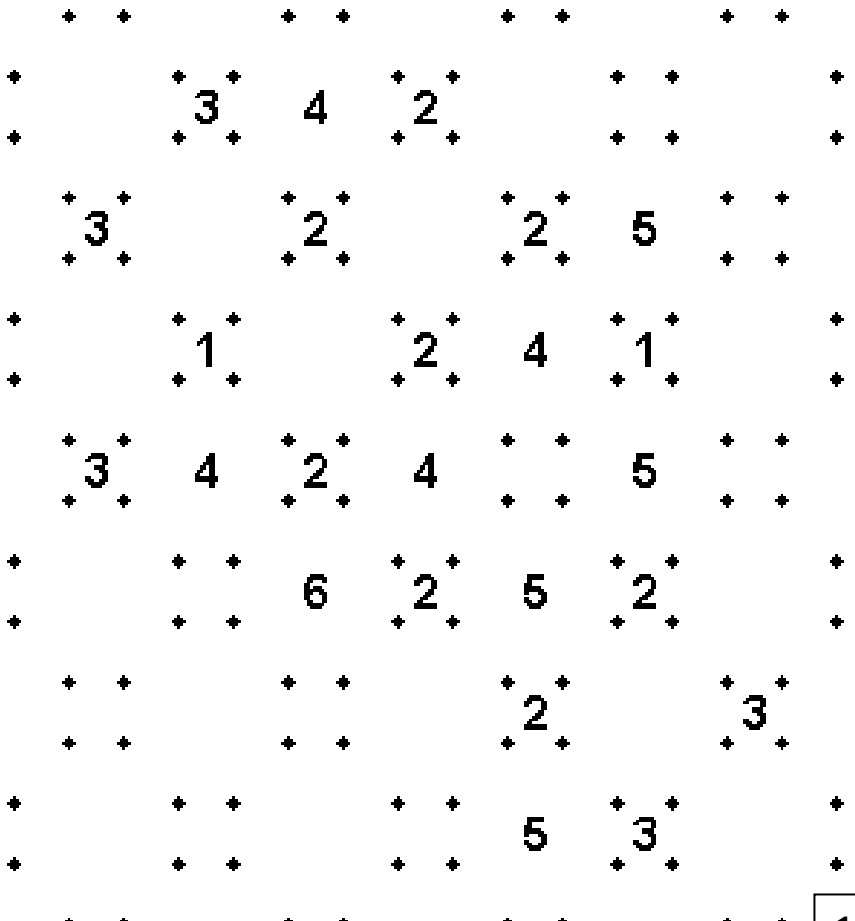
Fences variation

Draw a loop into the figure which has no starting and ending points nor interruptions and does not intersect or overlap itself. The fragments of the loop are going along the perimeter edges of the polygons. The numbers denote the number of edges of a given polygon on which there is a fragment of the loop.



100points