

NAME:

POINTS:



8TH 24 HOURS PUZZLE CHAMPIONSHIP

17-18 NOVEMBER 2007

HOTEL BENTA

BUDAPEST

PUZZLES BY:

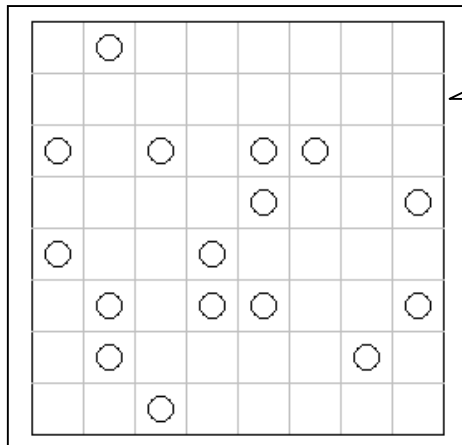
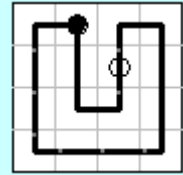
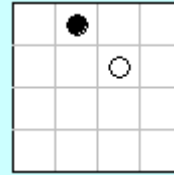
GYULA SLENKER

Dutch loop	100	points (20+20+20+40)
Magic hexagon	40	points (10+30)
Easy as Magic snail	80	points (40+40)
Gaps	100	points (20+30+50)
Tria six	30	points (10+20)
Multiplication table	80	points (30+50)
City panorama with empty places	100	points (25+25+50)
Loopfinder with given fragments	60	points (15+15+30)
Relation even-odd magic square	170	points (30+40+100)
Paint the shapes	120	points (30+40+50)
Sunspots	120	points (20+30+30+40)

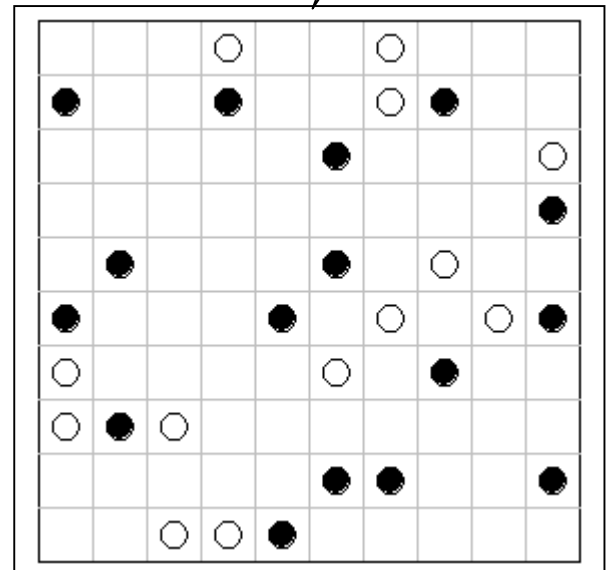
Total **1000** points

1. Dutch loop (100 = 20+20+20+40)

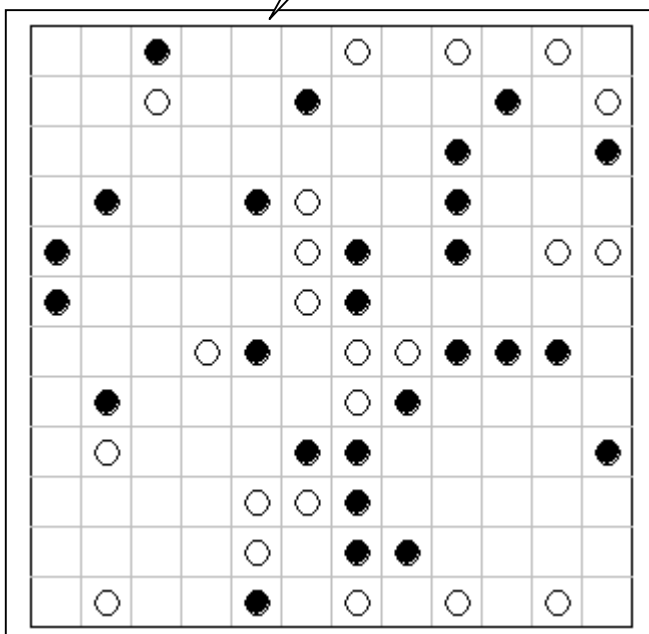
Find a single closed loop that passes through every square exactly once and never crosses itself. The path travels horizontally and vertically, but never diagonally. The loop's line turns at the black circles and passes straight at the white circles.



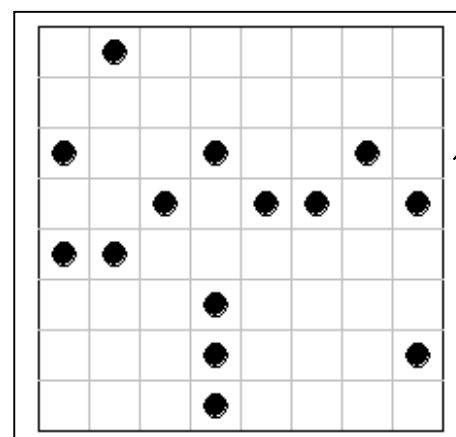
20
points



20
points



40
points

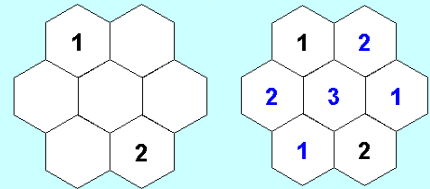


20
points

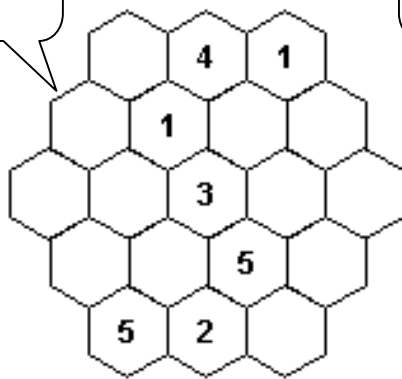
2. Magic hexagon (40 = 10+30)

Fill the grid with numbers between 1 and N so that each row and diagonal contains only different numbers.

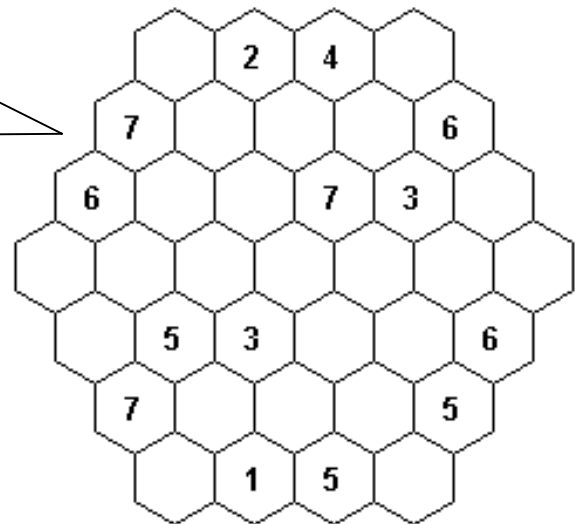
(Note: „N” means the length of the longest row)



10
points



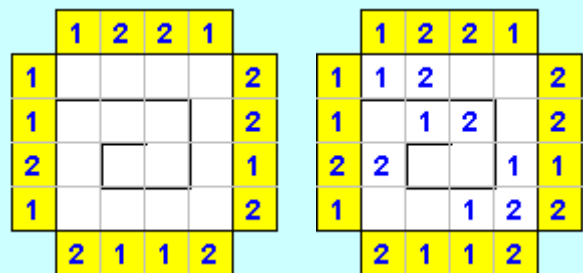
30
points



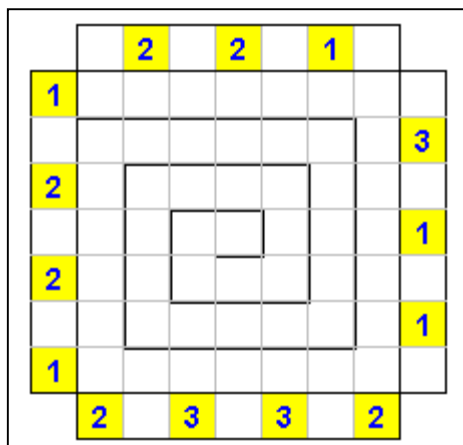
3. Easy as Magic snail (80 = 40+40)

Fill the grid with the numbers 1, 2 and 3 so that all three numbers appear exactly once in each row and column. If you go in a spiral from the entrance to the center of the snail, the numbers should follow in order 1-2-3-1-...-3.

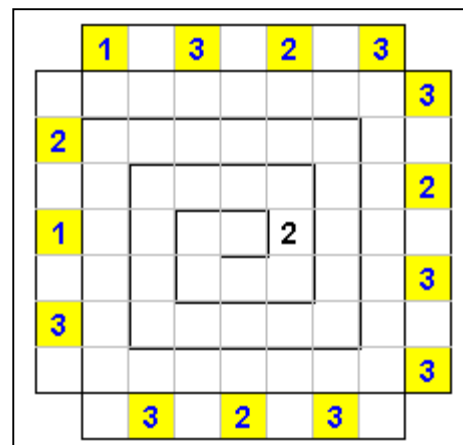
The numbers outside the diagram indicate the numbers you come across first from that direction (In the sample only 1 and 2)



40
points

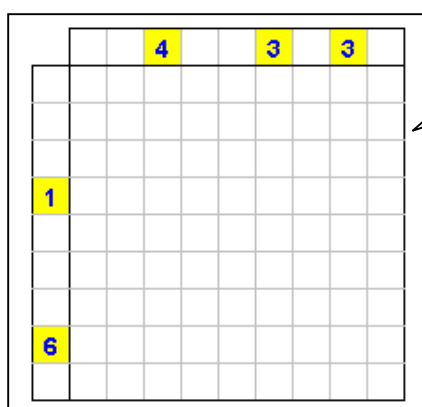
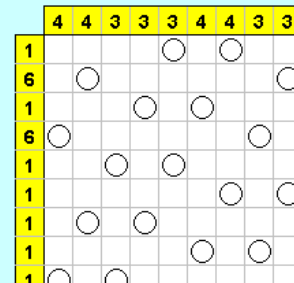
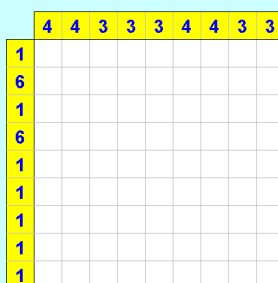


40
points

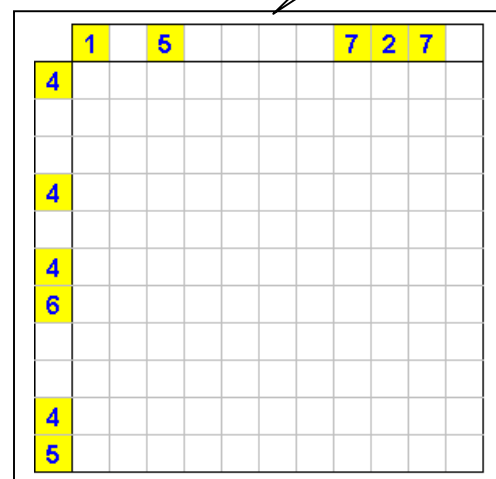


4. Gaps (100 = 20+30+50)

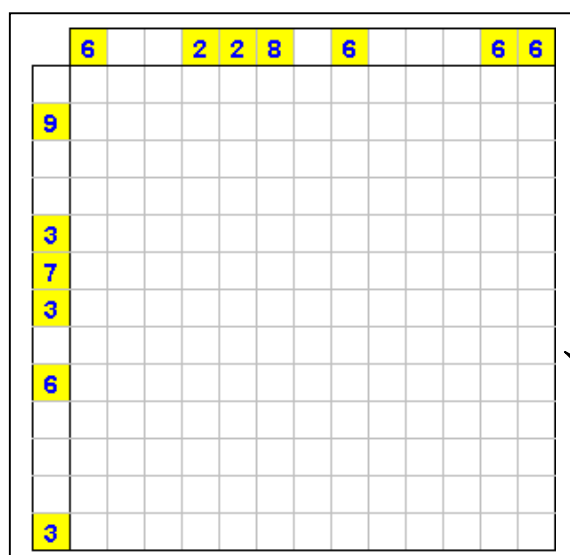
Place two circles in each column and each row. The circles don't touch each other, not even diagonally. The numbers outside the diagram indicate how many empty fields are between two circles.



20
points



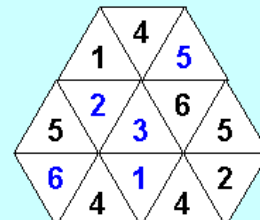
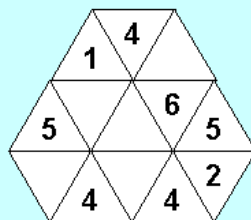
30
points



50
points

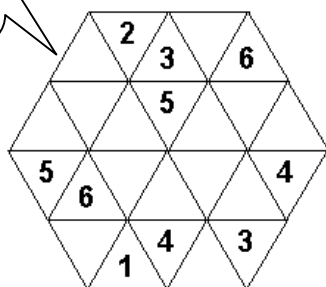
5. Tria six (30 = 10+20)

Write numbers 1-6 into the triangles so that every **full** hexagon of side 1 (consisting of six small triangles) contains different numbers.



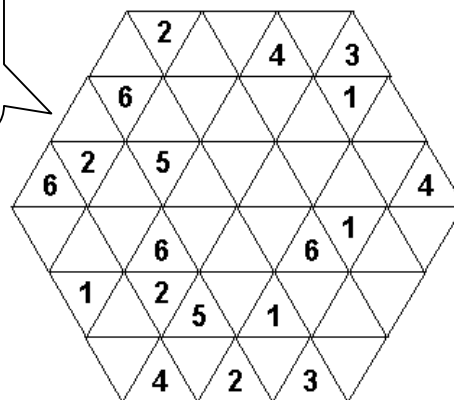
10

points



20

points



6. Multiplication table (80 = 30+50)

Mark some of the cells such that the following two properties hold: (1) the column headers of the marked cells in each row sum up to the number that is at the right of the row (2) the row headers of the marked cells in each column sum up to the number that is at the bottom of the column.

	1	2	3	4	
1					6
2					4
3					9
4					3
	7	8	6	3	

	1	2	3	4	
1	1	1	1	1	6
2	1		1		4
3		1	1	1	9
4	1	1			3
	7	8	6	3	

30

points

	1	2	3	4	5	6	7	
1								16
2								19
3								16
4								15
5								12
6								6
7								9
	18	16	8	1	13	11	16	

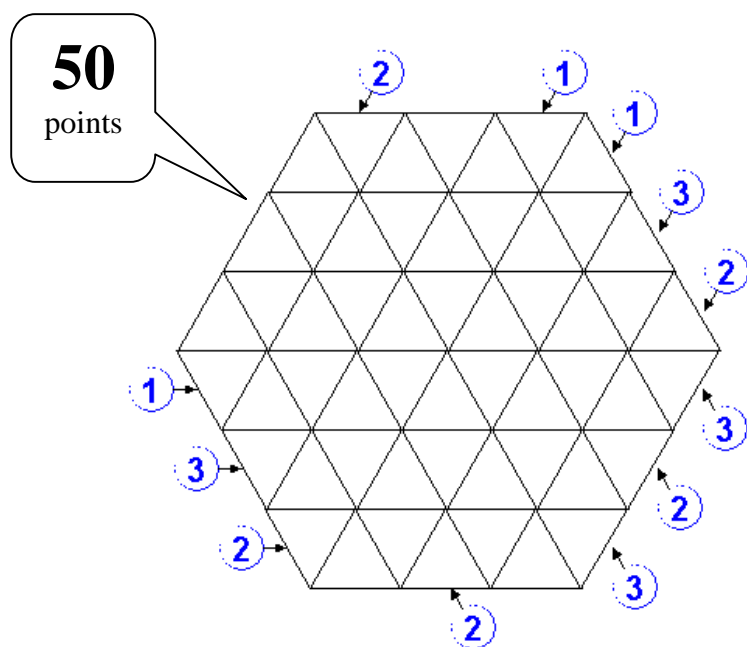
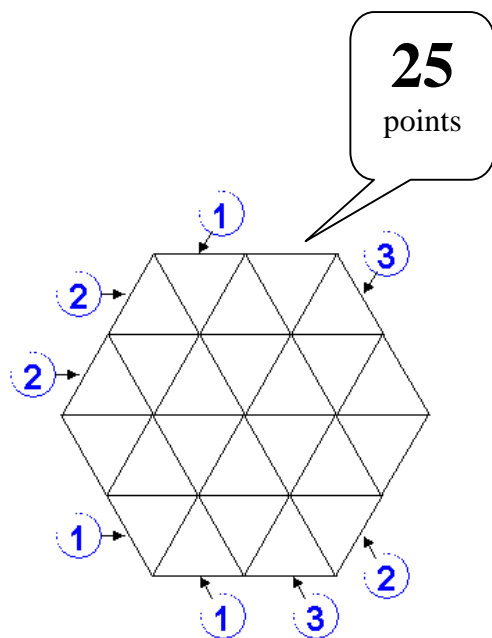
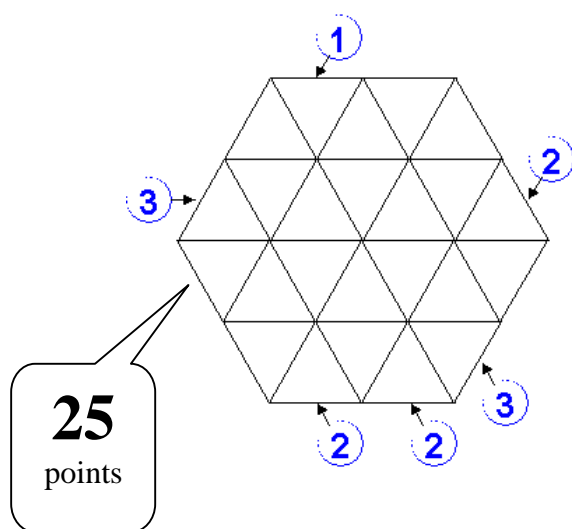
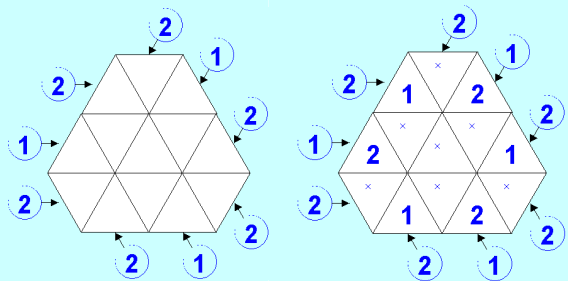
50

points

	1	2	3	4	5	6	7	8	9	
1										6
2										9
3										33
4										33
5										23
6										5
7										25
8										23
9										26
	6	16	9	8	22	34	16	34	22	

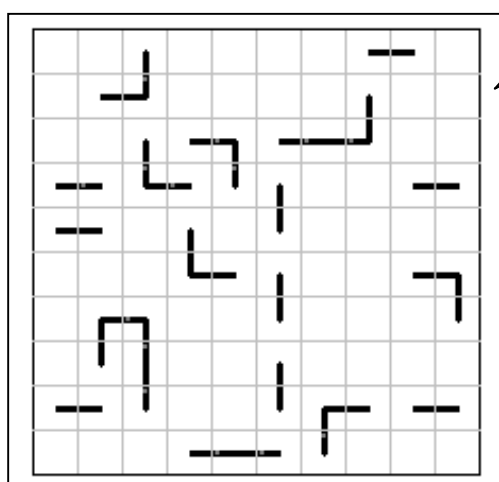
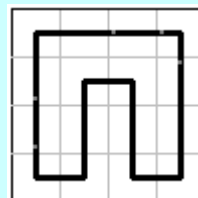
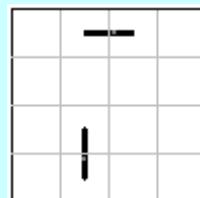
7. City panorama with empty places (100 = 25+25+50)

Reconstruct the height of the houses in this city. Each cell has either a building of height between 1 and 4 or is empty. All buildings in a horizontal or 60/120 degrees diagonal straight line are of different height. Numbers aside the figure indicate the number of buildings seen in that direction (with taller building hiding smaller ones).

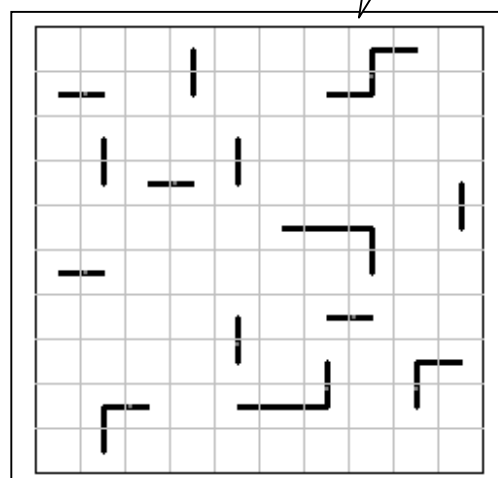


8. Loopfinder with given fragments (60 = 15+15+30)

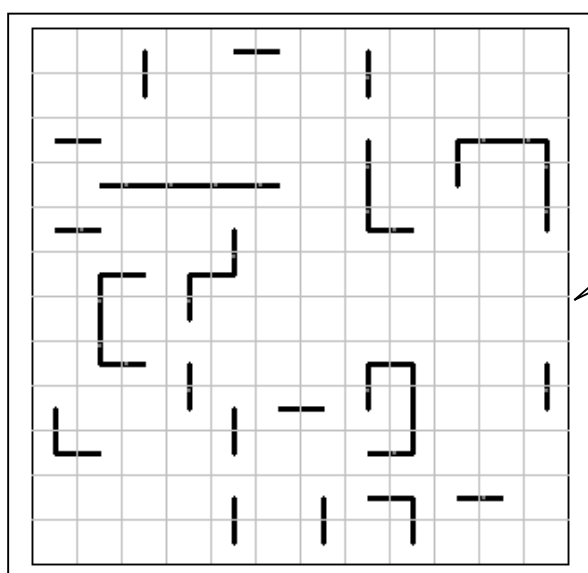
Find a single closed loop that passes through every square exactly once and never crosses itself. The path travels horizontally and vertically, but never diagonally. The loop must contain the given fragments.



15
points



15
points

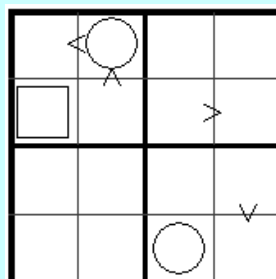


30
points

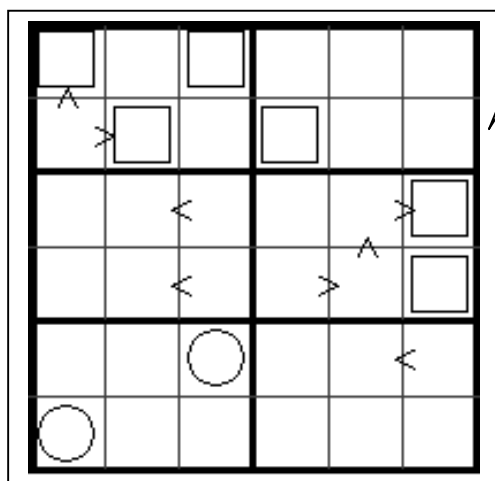
9. Relation even-odd magic square (170 = 30+40+100)

Fill the grid with numbers so that each row, column and area contains only different numbers. Relation signs between adjacent squares must be satisfied.

The fields signed circles contain only odd and the fields signed squares contain only even numbers.

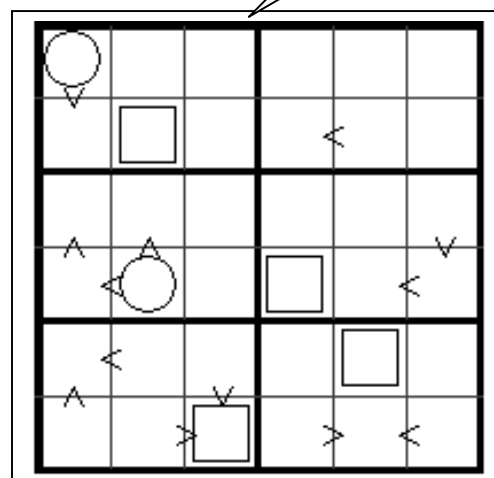


1	3	4	2
2	4	3	1
3	1	2	4
4	2	1	3



30

points

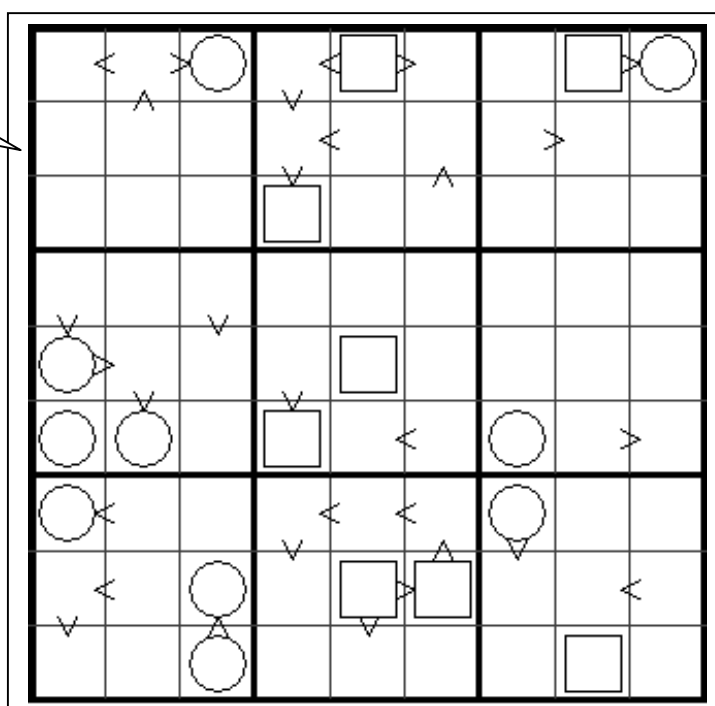


40

points

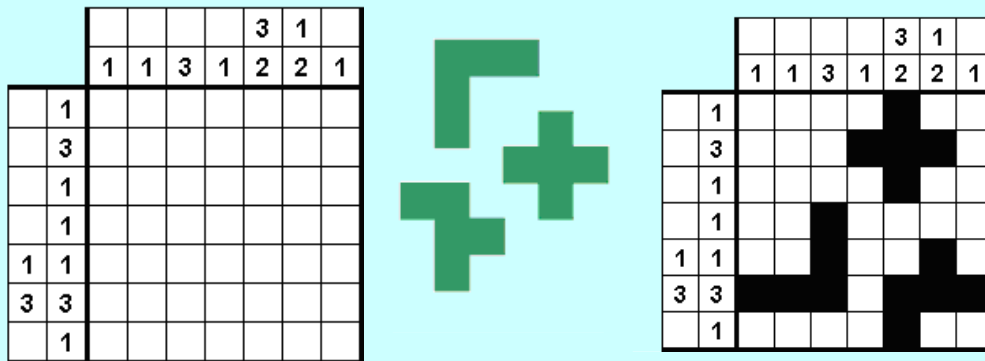
100

points

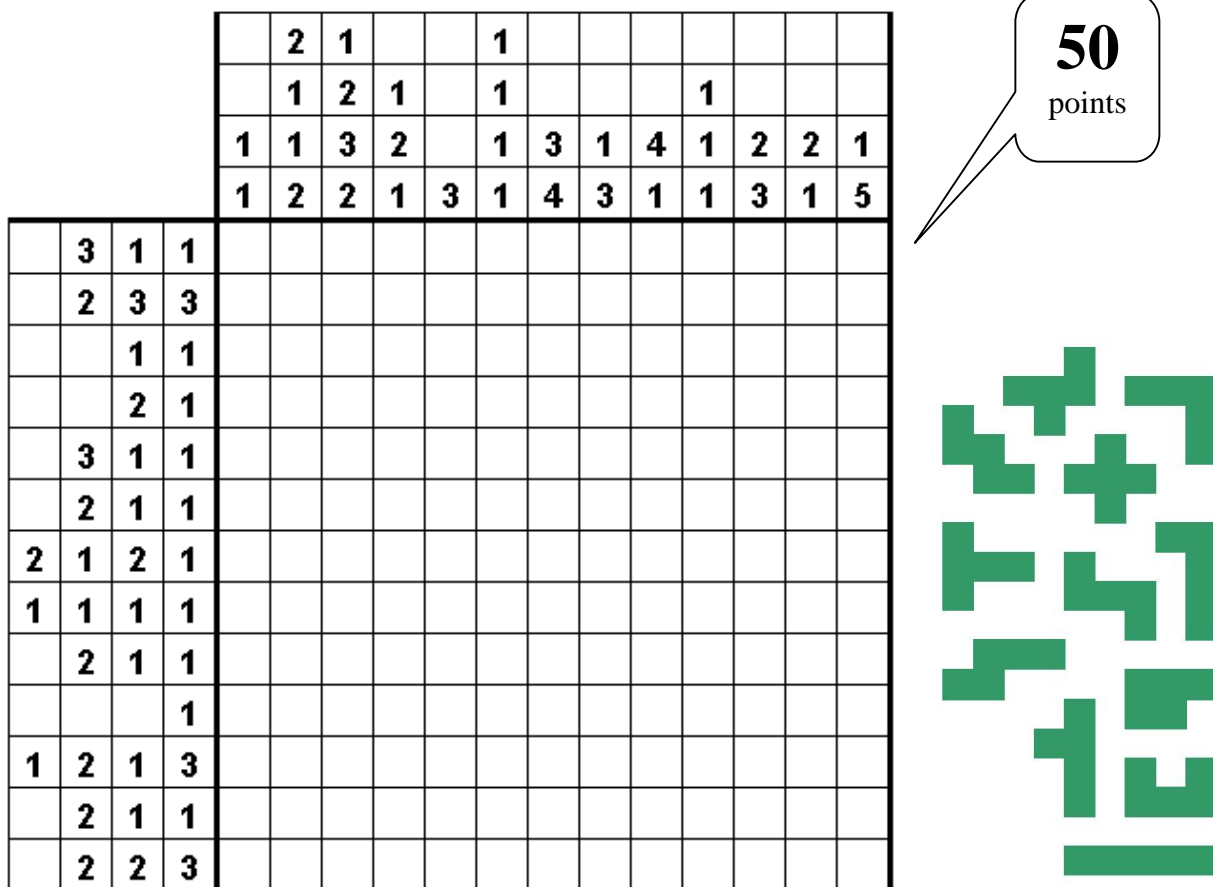


10. Paint the shapes ($120 = 50+40+30$)

Place the pieces inside the diagram in such a way that they don't touch each other anywhere, not even diagonally. Individual pieces **may be turned but not mirrored**. The numbers outside the diagram indicate in order, how many parts of the pieces each row or column contains.



A.) Classic Japanese Pentomino



Paint the shapes (continue)

B.) **9 pieces** of PENTOMINO-T:

[illegible]

40
points



C.) **9 pieces** of PENTOMINO-F:

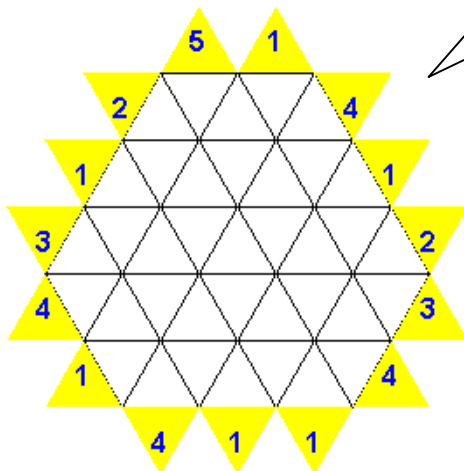
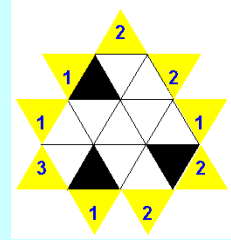
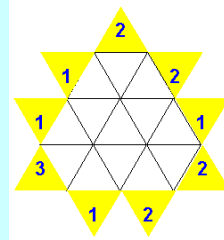
[illegible]

30
points

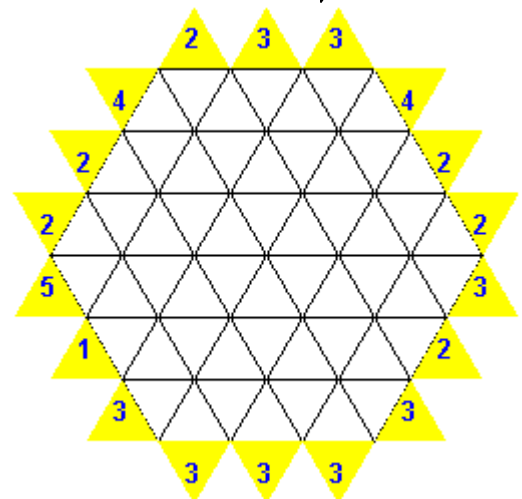


11. Sunspots (120 = 20+30+30+40)

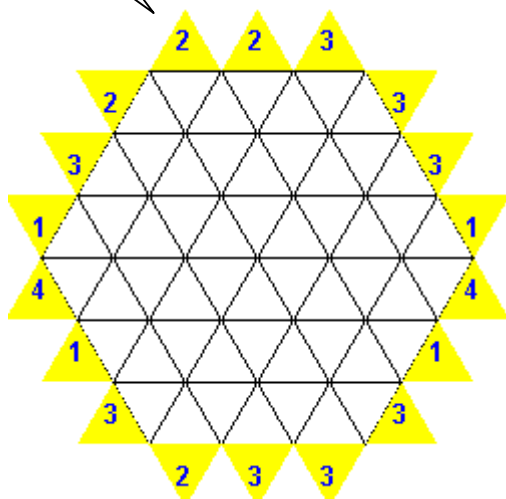
Paint a few triangles black, these will represent sunspots. Numbers around the grid reveal how many sunspots are visible combined in the two directions from the given number. No two sunspots can touch each other, not even at their corner points. A sunspot is counted only once even if it is visible in two directions from a number. Sunspots do not block numbers from seeing other sunspots beyond them



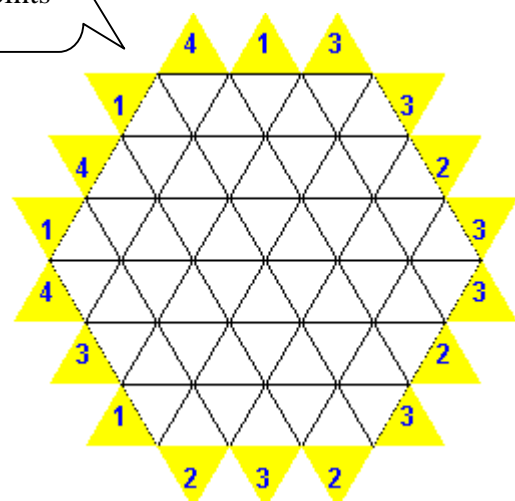
20
points



30
points



30
points



40
points