

NAME:

COUNTRY:

POINTS:



# 13<sup>TH</sup> 24 HOURS PUZZLE CHAMPIONSHIP

9-11, NOVEMBER, 2012

HOTEL AMADEUS

BUDAPEST

PUZZLES BY:  
**TAMÁS ANTAL**

IDENTITY	40 POINTS
HALF DOMINOES	100 POINTS (25 + 25 + 25 + 25)
PENTA WALK	80 POINTS
SUDOKU	110 POINTS (40 + 70)
CROSS MATH 2X2	10 POINTS
CROSS MATH 3X3	30 POINTS
CROSS MATH 4X4	70 POINTS
CROSS MATH 5X5	100 POINTS
LOOPFINDER	40 POINTS (20 + 20)
DOUBLE LOOP	60 POINTS (30 + 30)
BATTLESHIPS	50 POINTS (25 + 25)
SKYSCRAPERS	50 POINTS (25 + 25)
SWEET VALERIA	80 POINTS
PAINT IT BLACK	100 POINTS
PAINT IT ...BLACK?	80 POINTS

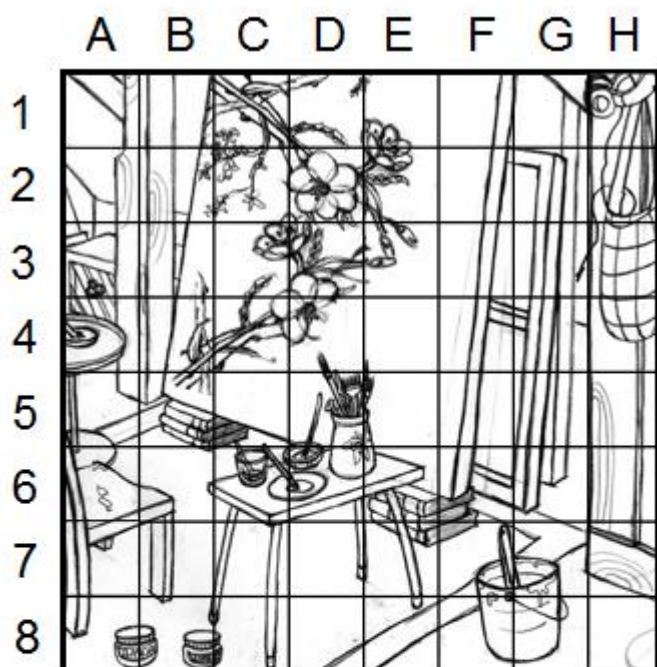
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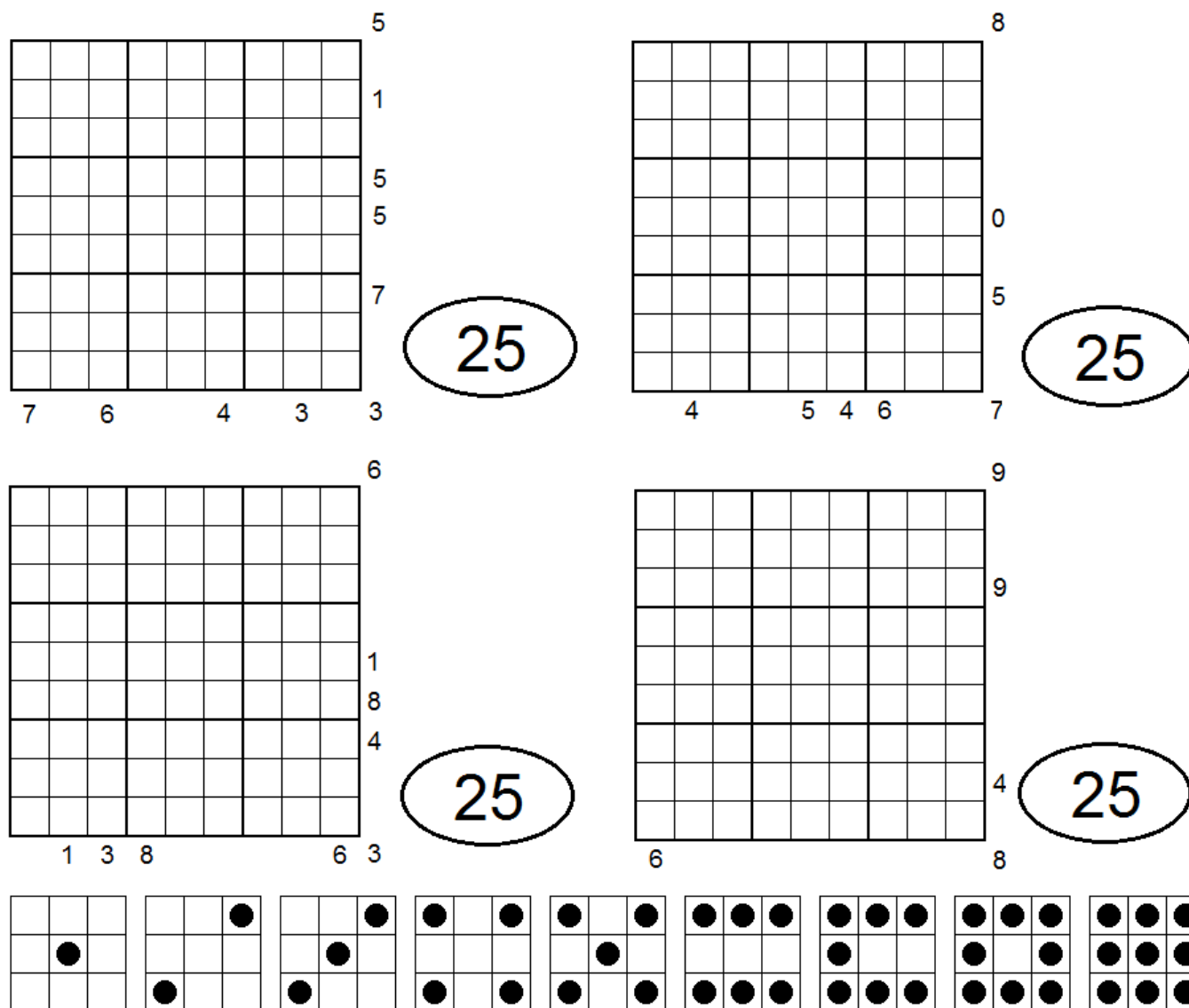
**TOTAL 1000 POINTS**



## Identity

There are 6 frames in the first picture, which can be found in the second image as well. Frame cells can be be rotated, but cannot be reflected. You get 5 points for every frame found, and 10 bonus points for the complete solution.



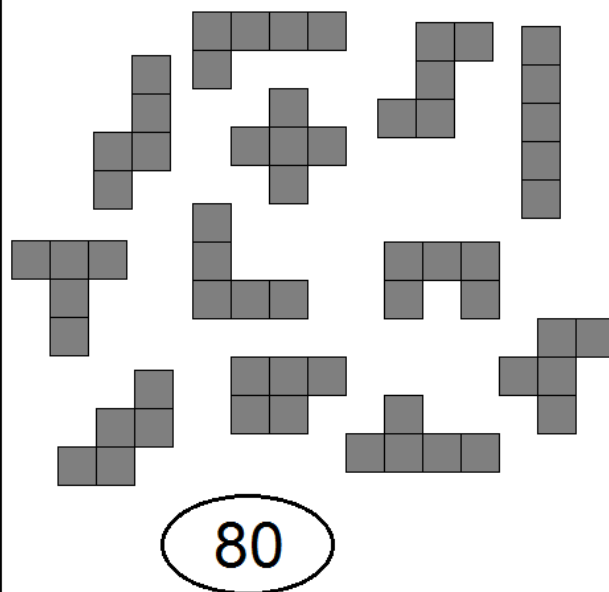




# Penta Walk

Place 13 pentominos into the grid. Each pentomino must be used at least once. Pentominos may be rotated and/or reflected. Pentominos can not touch each other even diagonally. All remaining cells should be travelled by a path moving horizontally or vertically. Numbers outside the grid indicate the lengths of the black cells blocks, in order. If there is more than one number in a row/column, there must be at least one path segment between the black cell blocks.

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





# Sudoku

Fill the grid with numbers 1-9 so that no number repeats in any row, column or 3x3 bolded region.

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

40

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

70



## Cross Math 2x2

Write numbers from 1 to 4 in all empty cells of the diagram, using each number exactly once, so that all equations are correct. The calculations must be done strictly from left to right and from top to bottom, there is no operator precedence. X represent a non-negative integer.

	+		=	x+1
X		+		
	X		=	x
=		=		
x-1		?		

10



## Cross Math 3x3

Write numbers from 1 to 9 in all empty cells of the diagram, using each number exactly once, so that all equations are correct. The calculations must be done strictly from left to right and from top to bottom, there is no operator precedence.

	+		X		=	18
+		X		X		
	X		X		=	60
X		+		+		
	+		-		=	8
=		=		=		
54		30		15		

30



## Cross Math 4x4

Write numbers from 1 to 16 in all empty cells of the diagram, using each number exactly once, so that all equations are correct. The calculations must be done strictly from left to right and from top to bottom, there is no operator precedence.

	:		+		X		=	5
X		+		+		-		
	X		X		+		=	3122
-		+		+		+		
	+		X		X		=	966
-		+		:		:		
	X		X		X		=	2200
=		=		=		=		
100		52		4		2		

70





## Cross Math 5x5

Write numbers from 1 to 5 in all empty cells of the diagram so that all equations are correct. Numbers cannot repeat in any row or column. The calculations must be done strictly from left to right and from top to bottom, there is no operator precedence. Some operators are missing, they are marked with a question mark.

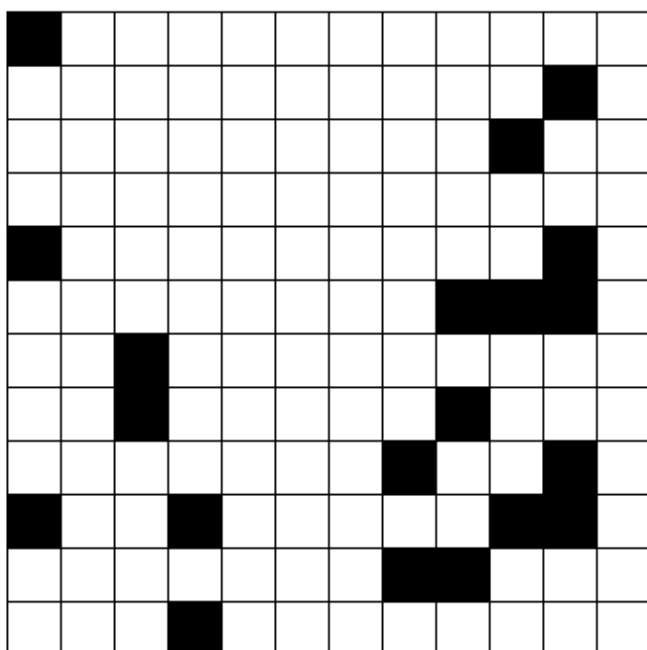
	?		?		?		?		=	60
?		?		?		?		?		
	?		?		?		?		=	83
?		?		?		?		?		
	?		?		?		?		=	0
?		?		?		?		?		
	?		?		?		?		=	93
?		?		?		?		?		
	?		?		?		?		=	5
=		=		=		=		=		
45		45		49		104		58		

100

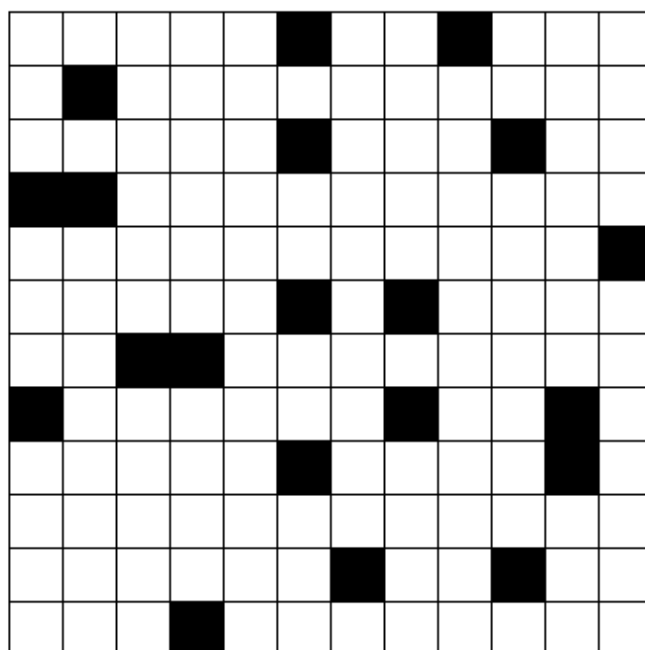


## Loopfinder

Draw a single closed loop in the grid, connect all of the empty cells. The loop cannot touch or cross itself.



20

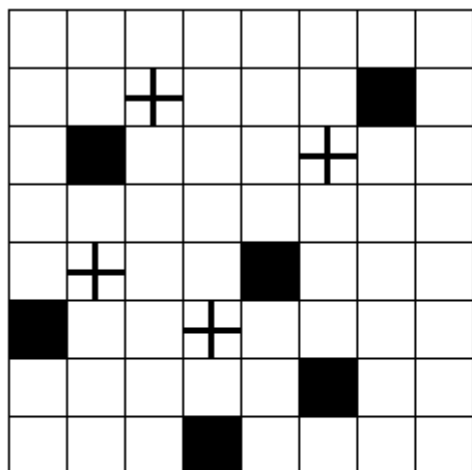


20

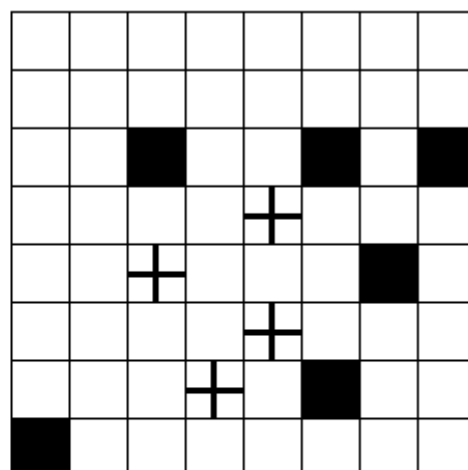


## Double loop

Draw two closed loop in the grid using all of empty cells. The loops cannot touch or cross themselves. All of the cells where the two loop cross each other are already given.



30

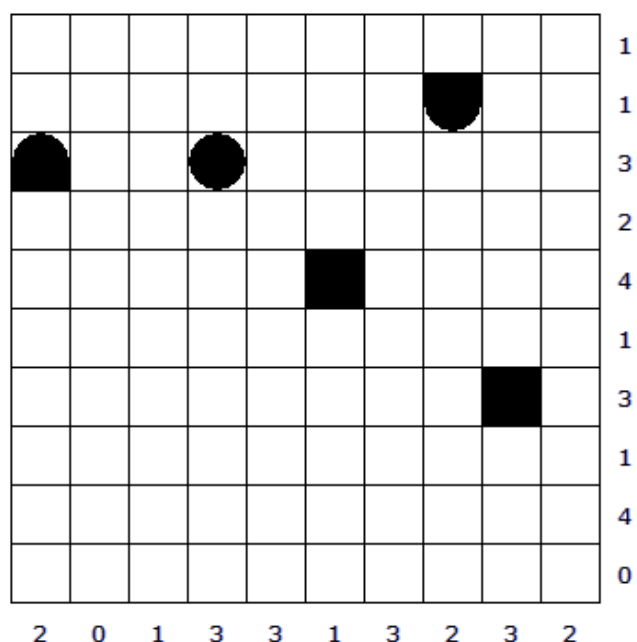


30

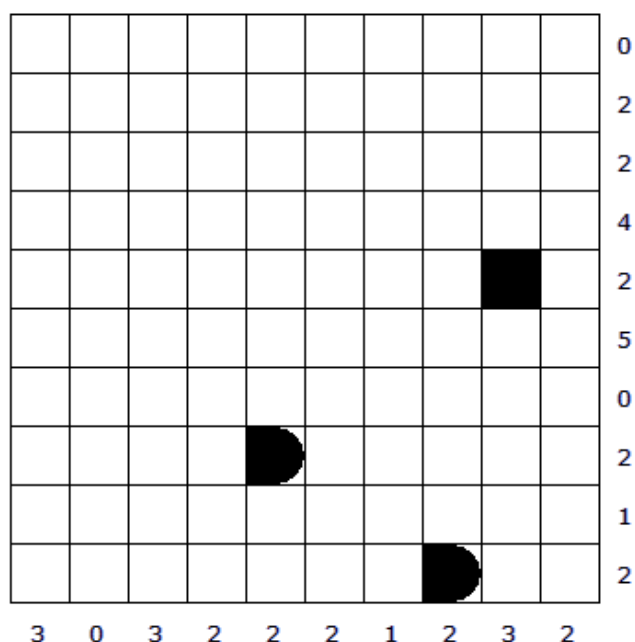


# Battleships

Put the given fleet into the grid. Ships can not touch each other even diagonally. The numbers on the right and on the bottom of the grid show how many squares in the corresponding row and column are occupied by ship segments.



25



25



# Skyscrapers

Fill in each cell of the grid with digits 1-6, so that each digit appears exactly once in each row and in each column. Each digit inside the grid represents a building with the height of the digit itself. Numbers outside the grid indicate the number of buildings that can be seen by an observer looking into the grid in the corresponding direction, taking into account that higher buildings block the view of lower buildings from the observer.

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

25

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

25



## Sweet Valeria

Draw a single line from the top left cell to the bottom left cell. The line must visit all 4 region. Each region has a different rule, however we don't know which rule which region refer to. The rules are:

**Zigzag:** The line must visit all of the cells. The letters must follow the ...-V-A-L-E-R-I-A-V... in order along the line.

**Wordsearch:** Paint the word "VALERIA" 6 times in the grid, heading only horizontally and/or vertically. The remaining cells form the line. The line cannot touch itself, not even diagonally.

**Linefinder:** Two letter in the grid represents black cells. The line must visit all remaining cells.

**Simple path:** The letters must follow the ...-V-A-L-E-R-I-A-V... order along the line. The line must head only horizontally and/or vertically.

V	E	L	A	I	A	V	A	V	A	L	A	V	A	L	E
A	E	V	A	E	I	R	V	A	L	A	E	I	V	A	R
A	L	A	I	R	E	E	I	I	E	V	R	A	I	A	I
E	R	L	I	A	A	L	R	R	A	L	A	V	R	L	E
A	R	V	A	E	R	E	V	V	A	I	E	E	A	I	R
V	L	E	L	I	R	V	A	R	L	R	L	A	V	L	E
E	A	A	V	A	E	L	A	I	E	A	E	L	A	R	I
R	V	I	I	L	I	A	V	A	V	R	I	A	V	V	A
V	R	E	L	L	I	I	E	A	V	L	E	L	A	V	V
E	I	R	E	L	E	A	V	I	A	A	I	R	E	L	A
V	V	E	L	A	V	V	A	R	E	E	I	R	V	A	V
I	I	R	A	A	A	V	A	E	L	A	V	A	R	L	A
E	A	A	V	E	I	I	I	R	E	L	A	V	A	E	L
A	V	I	A	E	R	E	A	I	A	I	R	L	A	R	E
L	E	R	L	E	L	L	L	I	V	A	E	R	A	I	R
A	I	R	E	A	V	A	V	V	V	A	L	I	A	A	I



## Paint it black

Paint some cells in the grid. Numbers outside the grid indicate the lengths of the black cells blocks, in order. If there is more than one number in a row/column, there must be at least one empty cell between the black cell blocks.

								3	3	3	3	3	3							
			3	4	3	2	2	3	3	2	3	3	3	2	2	3	3	4		
			1	4	5	5	3	2	2	3	3	2	2	4	4	5	3	2		
	8	13	3	3	2	2	2	2	1	1	1	1	1	2	2	2	3	4	9	5
6																				
8																				
13																				
3 3																				
4 3																				
3 2 3 2																				
2 6 2																				
2 6 2																				
2 2 2 2																				
2 2 5																				
6 6																				
2 3 3 2																				
2 3 3 2																				
2 10 1																				
2 9 2																				
2 2 1																				
3 2																				
3 3																				
5 4																				
10																				

100



## Paint it ...black?

Paint some cells in the grid. Numbers outside the grid indicate the lengths of the black cells blocks or the lengths of the white cells blocks, in order. If there is more than one number in a row/column, there must be at least one empty(or black) cell between the black(or empty) cell blocks.

			1	1								
		3	1	1	1	3		5	1	6		
	6	1	5	6	1	1	2	1	5	1	3	
3 1 1												
4 1 1 2												
3 3												
2 5 2												
2 3 2												
11												
1 1 1												
1 1 1 1 2												
3 3 1												
1 1 1 1												
1 1 1 3												

80