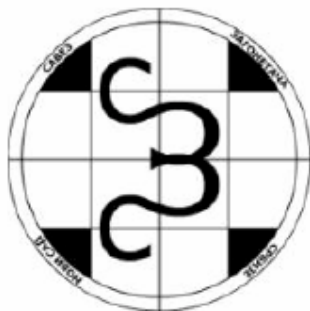


# **THE SECOND SERBIAN OPEN CHAMPIONSHIP IN SOLVING OPTIMIZING PUZZLES**

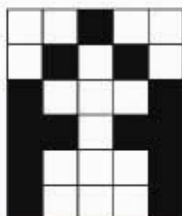
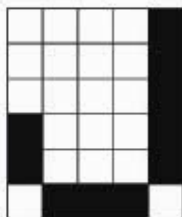
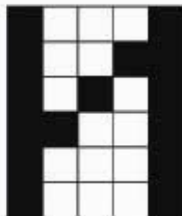
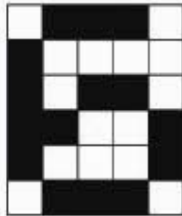
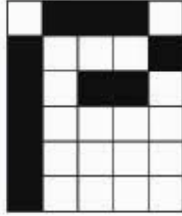
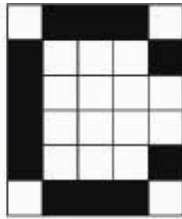
NOVEMBER 30<sup>th</sup> - DECEMBER 13<sup>th</sup> 2009.  
<http://puzzleserbia.com/>



**FIRST WEEK**  
(30.11. - 6.12.)

- 1. PUZZLE SERBIA**
- 2. GEOMATHEMATICS**
- 3. RETROSPECT WORD SEARCH**
- 4. TRIPLETS**
- 5. EUROPEAN FLAGS**
- 6. IN THE MUSEUM**

# 1. PUZZLE SERBIA



Arrange the letters of the word СРБИЈА (Serbia in Serbian cyrillic) given on the left so that as many cells are orthogonally connected to the cells of another letter. The letters may not overlap. They may be rotated, but not reflected.

Scoring: Each square that is connected to one square of another letter is worth 1 point, each square that is connected to two squares of some other letters is worth 3 points, each square that is connected to three squares is worth 5, and each square that is connected to four squares is worth 8 points. Diagonal touching is not counted. Maximize your result.

Example with letters C, P, and B:  
(points are written in each cell)

	0	0	0	3	3	1	0	0	
0		0		3	5	3			0
0			1	3	3	1			0
0			3	5	5	1			0
	0	3	3	3	5	1		0	
		1				0			
			0	0	0				

Answer: Find the grid that contains all the letters. First write your total score, followed by the content of the grid, left to right, top to bottom. For each letter, use the corresponding latin letter (S for C, R for P, B for Б, I for И, J for Ј, A for А), and “x” for blanks. For given example, the answer would be: 56; xBBBBSSSSx, BxBxSBRxxS, BxxBSBRxxS, BxxBSBRxxS, xBBRRSRxSx, xxRxxxRxxx, xxxRRRxxxx.

## 2. GEOMATHEMATICS

Choose 7 different cities from the list below and write them down in the grid (left to right). Then replace all the letters "A" with multiplication sign (x), and all the remaining vowels (E, I, O, U) with 0. Replace the consonants with numbers such that each letter is replaced with the number that shows how many of them are there in the grid (e.g. if letter "T" appears twice in the grid, replace it with number 2). Each column now represents a mathematical expression. Calculate the results and add them together. Maximize the sum.

Remarks: If the column begins or ends with the multiplication sign, or if doesn't contain the multiplication sign at all, or if the multiplication sign appears in two consecutive cells, that column's result is considered 0. If there is a 0 at the beginning of a number, ignore it (e.g. 07x0012=84).



ABU DHABI  
ADELAIDE  
AUGSBURG  
BELGRADE  
BRASILIA  
BUDAPEST  
CALCUTTA

CANBERRA  
CAPE TOWN  
DJIBOUTI  
DUSHANBE  
HELSINKI  
ISTANBUL  
KHARTOUM

LAS VEGAS  
LAUSANNE  
MONROVIA  
NEW DELHI  
PRETORIA  
SALZBURG  
SAN DIEGO

SANTIAGO  
SAO PAULO  
SARAJEVO  
SHANGHAI  
TASHKENT  
VALENCIA  
YOKOHAMA

Example:

B	E	L	G	R	A	D	E
S	A	R	A	J	E	V	O
B	R	A	S	I	L	I	A
V	A	L	E	N	C	I	A



↓	↓	↓	↓	↓	↓	↓	↓
2	0	2	1	3	x	1	0
2	x	3	x	1	0	2	0
2	3	x	2	0	x	0	x
2	x	2	0	1	1	0	x
0	0	46	20	0	0	0	0

=66

Answer: First write down your result, followed by the seven used words. For given example the answer would be: 66; BELGRADE, SARAJEVO, BRASILIA, VALENCIA.

### 3. RETROSPECT WORD SEARCH

Fill in the grid some of the words from the list below (the names of all 33 contestants and some puzzles from the First Serbian championship in Optimizers). The words can be written in any of the eight directions, they can intercept and partially overlap. Each word can be used only once.

Scoring: Each used word is worth 10 points, and each letter that belongs to two or more words is worth 1 point. Maximize your score.

					1												
					2												
					3												
					4												
					5												
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
	a	b	c	d	e	f	g	h	i	j	k	l	m	n			

Example (on smaller grid):

A	I	B	R	E	S		P	1	
A	N	I	D	R	H	E	Z	2	
E	Q	U	A	T	I	O	N	3	
N	A	V	O	B			A	I	4
R	O	E	S	E	L	R	H	5	
	a	b	c	d	e	f	g	h	

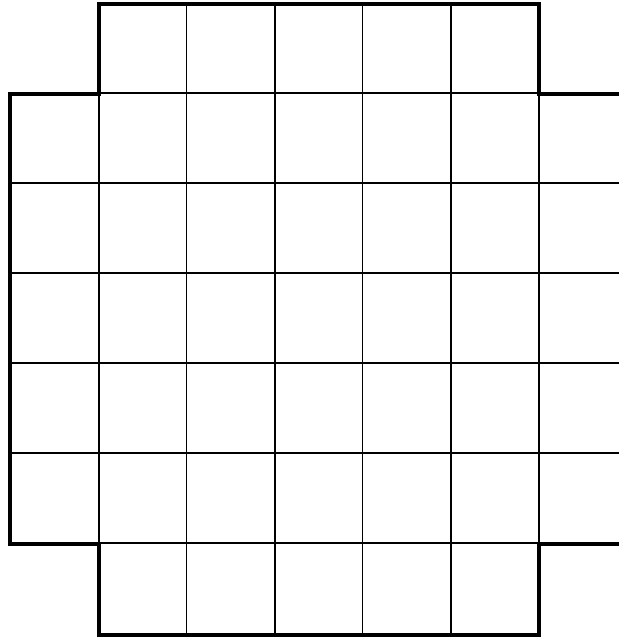
Word list:

ANACONDA, BALLS, BATTLESHIPS, BEARDA, BIEGLER, BOVAN, BUKUMIRIC, CHAIN, CHESS, DIE, DOMINO, EQUATION, ERGAN, ERSHOV, FILSER, GAVRANOVIC, HINZ, HRDINA, KLYACHIN, KOVACEVIC, MACHERLA, MAGIC, MATKOVIC, MILANOVIC, MURTHY, OBRADOVIC, OLYMPIC, PALINDROME, PEI, PENTOMINO, PHATAK, RADISAVLJEVIC, RAO, RAUDE, ROESEL, ROLLING, SABANCI, SAHAY, SAVIC, SCRABBLE, SERBIA, SINGH, SLALOM, STOJANOVIC, SUDOKU, TAKAHISA, TANASIC, TOLOMANOSKI, VODOPIJA, ZOLYNSKI.

Answer: First write down your score, followed by the content of the grid, left to right, top to bottom (use "x" for blanks), followed by the coordinates of the initial letters of the words written. If more than one word share the same initial letter, write its coordinate corresponding number of times. For given example the answer would be: 98; AIBRESxP, ANIDRHEZ, EQUATION, NAVOBxAI, ROESLRH; a3, a5, a5, e4, f1, f2, g5, h1, h5.

## 4. TRIPLETS

Divide the grid into nine regions of different sizes from 1 to 9 squares. Fill in the grid the corresponding numbers. In the region of size one write number 1, in the region of size two, number 2, etc. Add all horizontal and vertical numbers that consist of three consecutive different digits. Maximize your result.



Example:

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

235      789      689 168  
689

427, 786  
328, 287

$$427+786+328+287+235+789+689+168+689=4398$$

*Answer:* First write down your result, followed by the content of the grid, left to right, top to bottom. For given example the answer would be: 4398; 47766, 4477661, 4277866, 3287888, 3388899, 5559999, 55999.

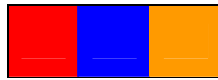
## 5. EUROPEAN FLAGS

Put all given triominoes that represent the flags of some european countries (simplified versions) in the grid below trying to get as many single-colored rectangles. The triominoes may be rotated, but they may not overlap.

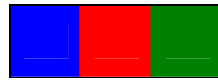
Scoring: Each single-colored rectangle (of area greater than one) is worth 1 point, and each isolated 1x1 square is worth -1 point. The shapes that are not rectangles (L-shapes, for example) are not worth any points. Maximize your score.



Austria



Armenia



Azerbaijan



Belgium



Bulgaria



Estonia



France



Germany



Ireland



Italy



Lithuania



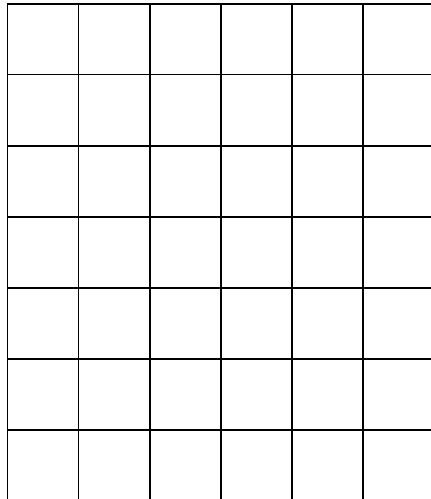
Romania



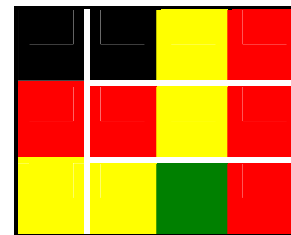
Russia



Spain



Example (with 4 flags)

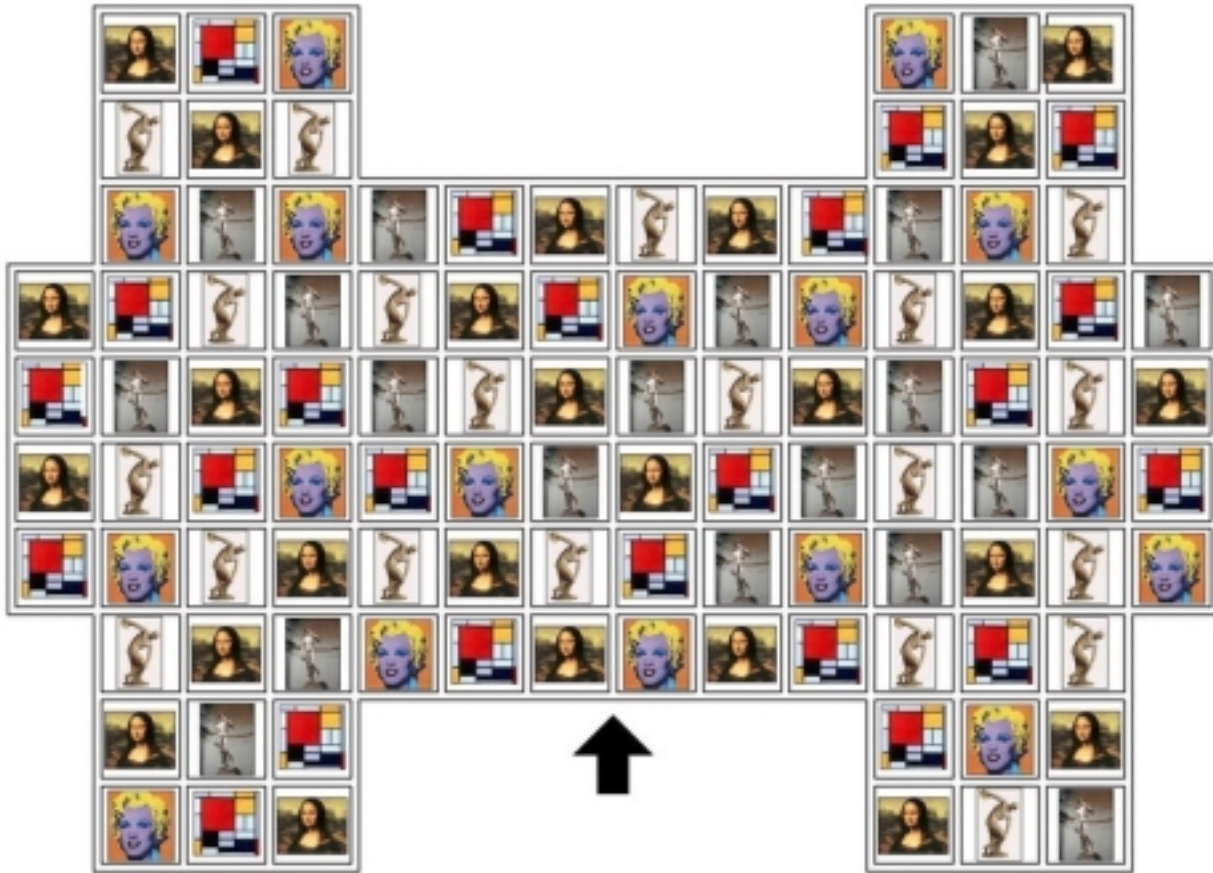


Answer: First write your score, followed by the content of the grid, left to right, top to bottom. Use the following letters (white - W, red - R, green - G, blue - B, yellow - Y, black - N, orange - O). Put horizontal triominoes in the brackets. For given example the answer would be: 4; N(NYR), R(RYR), Y(YGR).

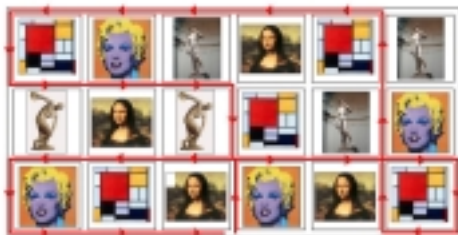
## 6. IN THE MUSEUM

There is a plan of a museum below. A visitor enters the museum at the point marked with the arrow. He moves along the museum's corridors. He may turn (left or right) after odd number of steps, but cannot make three consecutive turns after one step. At the end of visit he must return to the point where he started. He may intercept or touch his path, but he cannot use the same corridor twice. The exhibit is visited if he has passed by at least **two** of its sides. Diagonally touched exhibits are not counted.

Scoring: Each visited exhibit is worth 1 points, and each interception (or touching point) of the path is worth -1 point. Maximize the number of points.



Example (in the smaller museum)



*Answer: First write the total number of points, followed by your path, i.e. number of steps in one direction, then the turn (L for left, R for right), then again the number of steps, the turn, etc. For given example the answer would be: 14; 1,R3,R1,R1,R3,L5,L1,L3,R1,R3,L1,L3.*

Send your answers to [answers@puzzleserbia.com](mailto:answers@puzzleserbia.com) in simple text:

Name:

City, country:

1. 56; *xBBBBSSSSx, BxBxSBRxxS, BxxBSBRxxS, BxxBSBRxxS, xBBRRSRxSx, xxRxxxRxxx, xxxRRRxxxx.*

2. 66; *BELGRADE, SARAJEVO, BRASILIA, VALENCIA.*

3. 98; *AIBRESxP, ANIDRHEZ, EQUATION, NAVOBxAI, ROESLRH; a3, a5, a5, e4, f1, f2, g5, h1, h5.*

4. 4398; *47766, 4477661, 4277866, 3287888, 3388899, 5559999, 55999.*

5. 4; *N(NYR), R(RYR), Y(YGR).*

6. 14; *1,R3,R1,R1,R3,L5,L1,L3,R1,R3,L1,L3.*