THE FIFTH OPEN CHAMPIONSHIP IN SOLVING OPTIMIZING PUZZLES

NOVEMBER 26th - DECEMBER 9th 2012

http://puzzleserbia.rs/
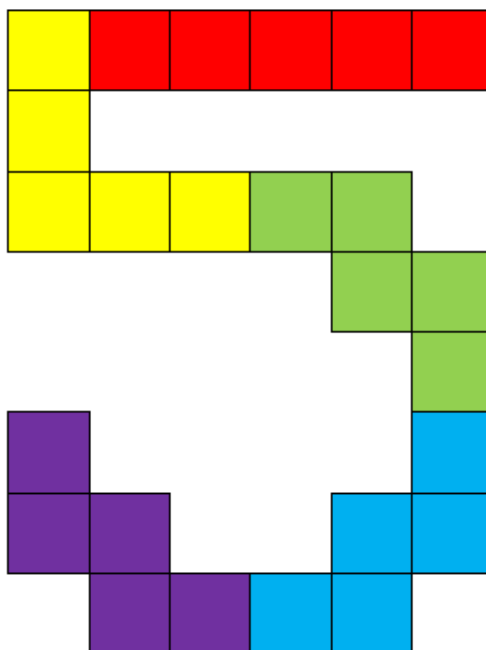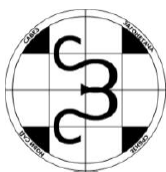
SECOND WEEK
(3-9.12.)

## 4. EIGHT EQUATIONS

5. WORD SEARCH IMPROVMENT

## 6. SUDOKU WITH PERFECT SQUARES

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4. EIGTH EQUATIONS

Place in gray cells of the grid all numbers from 1 to 9 and in 16 white cells place basic operation signs (+, -, x, :), each sign three times, so four cells will be left empty.

Scoring: When you placce all the numbers and signs, you will get eigth equations, three horizontally, three vertically and two diagonally. Multiplication and division are priority operations. Round numbers to two decimal places. If there is no sign between numbers, those should be treated as two or three digit numbers. Minimize the difference of the greatest and smallest equation result.

Example:

9	+	2	:	7	=	9,29
-			+	x		
1	:	6		3	=	0,02
	x	+	-	:		
4	-	5	x	8	=	-36
=	=		=		=	=
31		-5		31		2,63		88
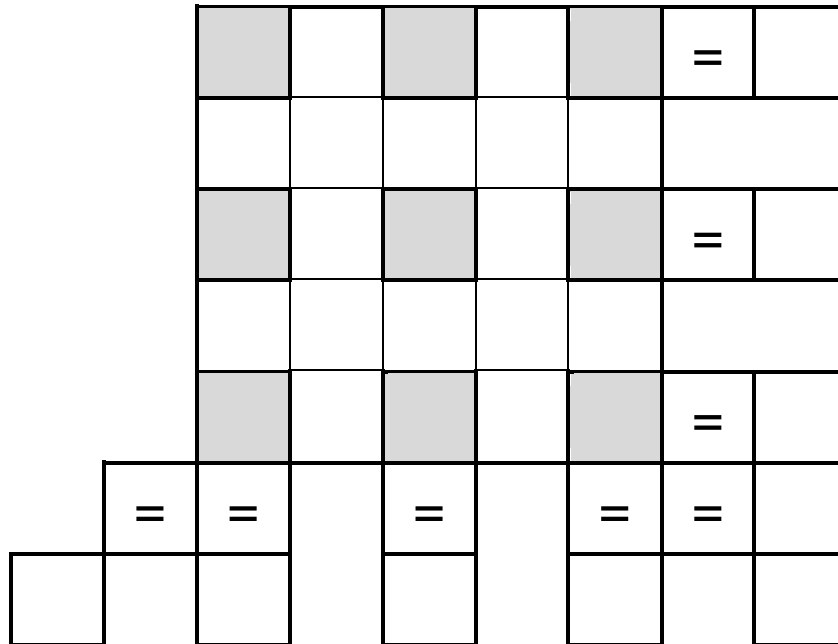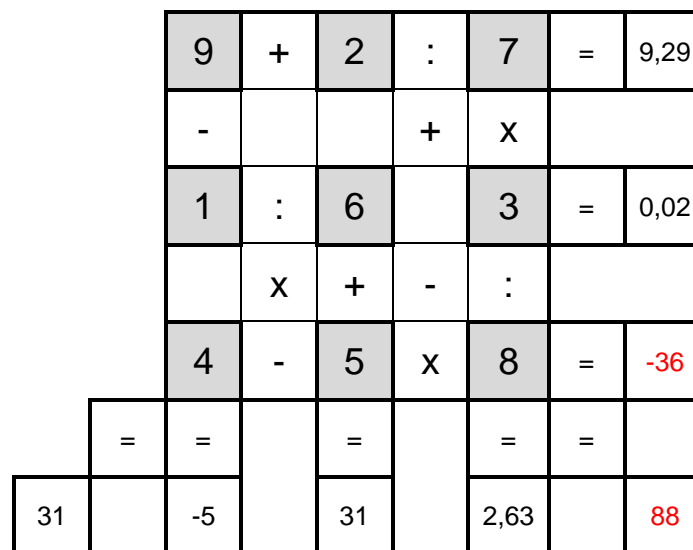
The greatest result is 88, and smallest -36. Your score: **124**.

Answer: First write your score, followed by the content of the grid, left to right, top to bottom. Use "P" for blanks. For the given example, the answer would be: 124; 9+2:7, -PP+x, 1:6P3, Px+-:, 4-5x8.

5. WORD SEARCH IMPROVEMENT

Replace at most 25 letters in the grid in order to get as many as possible words form the list below (names of countries with six or less letters) in one of eight possible directions, horizontally, vertically or diagonaly.

Scoring: For each word you score its length. Each word can be scored only once. Each non replaced letter that is used by at least two words will get you two additional points. Maximize your score.

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	J	Q	O	C	A	N	K	A	S	L	A	A	I
2	O	A	U	A	H	L	D	F	C	Y	U	J	R
3	R	L	P	E	O	I	I	A	S	H	A	E	L
4	I	A	M	N	A	B	A	Q	I	Z	E	R	N
5	F	O	D	W	I	R	D	L	F	A	N	D	E
6	A	S	T	X	O	G	N	L	C	A	P	E	I
7	Y	A	W	I	E	L	A	E	H	O	U	A	O
8	R	H	C	R	A	M	T	I	P	M	T	R	Y
9	C	O	U	P	T	H	N	F	R	E	N	A	I
10	N	M	S	Y	U	I	I	C	Q	A	W	Y	A
11	A	A	L	B	A	C	O	H	I	D	L	C	T
12	P	E	N	A	G	I	T	W	A	H	A	S	G
13	I	O	D	R	V	N	B	N	R	A	M	I	O
14	T	A	U	O	A	C	A	U	F	K	R	A	T
15	I	S	G	A	I	T	T	P	A	R	A	E	Z

ANGOLA	LATVIA
BELIZE	LIBYA
BENIN	MALAWI
BHUTAN	MALI
BRAZIL	MALTA
BRUNEI	MEXICO
CANADA	MONACO
CHAD	NAURU
CHILE	NEPAL
CHINA	NIGER
CONGO	NORWAY
CUBA	OMAN
CYPRUS	PANAMA
EGYPT	PALAU
FIJI	PERU
FRANCE	POLAND
GABON	QATAR
GHANA	RUSSIA
GREECE	RWANDA
GUINEA	SAMOA
GUYANA	SERBIA
HAITI	SPAIN
INDIA	SUDAN
IRAN	SWEDEN
IRAQ	SYRIA
ISRAEL	TOGO
ITALY	TONGA
JAPAN	TURKEY
JORDAN	TUVALU
KENYA	UGANDA
KUWAIT	YEMEN
LAOS	ZAMBIA

Example (on smaller grid with 4 replaced letters):

Four letters have been replaced and four words have been formed: IRAN, TOGO, FIJI, OMAN. In the grid there are circled two non replaced letters (I and O) that are used by two or more words. Your score is 16+4=**20**.	

|	A	B	C	D	E
1	N	A	R	I	T
2	M	U	J	O	L
3	Z	I	G	K	P
4	F	O	M	A	N

Answer: First write your score, followed by the coordinates of the replaced letters, left to right, top to bottom and new letters. For the given example the answer would be: 20; B1A, E1T, C2J, C4M.

6. SUDOKU WITH PERFECT SQUARES

Place the numbers from 1 to 9 in the grid to get a correctly solved sudoku (numbers cannot repeat in row, column or marked 3x3 square). One number 5 has been already placed. In one of the four allowed directions: horizontal (left to right), vertical (top to bottom), and two diagonal top to bottom directions should appear as many as possible three digit square numbers. Numbers in the grid may be used to form more than one square number.

Scoring: Each three digit square number scores 1 point. Maximize your score.

Allowed directions:
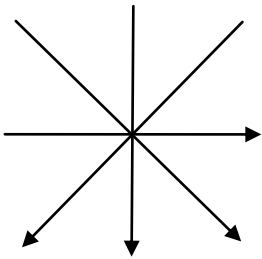
Three digit square
numbers (without 0):
121, 144, 169, 196,
225, 256, 289, 324,
361, 441, 484, 529,
576, 625, 676, 729,
784, 841, 961.

				5				

Example (on smaller grid):

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

In the grid appear 3 square numbers: 361 (twice) and 625 (once). Your score is **3**.

Answer: First write your score, followed by the content of the grid, left to right, top to bottom. For the given example the answer would be: 3; 123456, 456123, 231564, 564231, 312645, 645312.