THE THIRD OPEN SERBIAN OPTIMIZING PUZZLE CHAMPIONSHIP
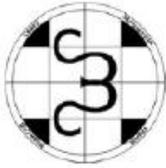
29. NOVEMBER - 12. DECEMBER 2010.
http://puzzleserbia.com/
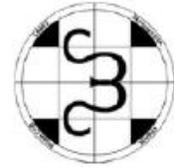
FIRST WEEK
(29.11. - 5.12.)

1. OPERATION 2010

2. ANTI-KROPKI SLIDER PUZZLE

3. A YEAR AGO...

4. PENTOMINO 01234

5. WIND ROSE

6. MENSCH ÄRGERE DICH NICHT

1. OPERATION 2010

(This puzzle is based on the idea from IPST-test on "Diogen")

Choose any **5 consecutive prime numbers** and arrange them in the mathematical expression in the increasing order. With the assistance of four basic mathematical operations try to get the result as close to 2010 as you can. Brackets are allowed, but dividing the numbers into digits or pasting two numbers together is not. You must use all five numbers in your expression.

Scoring: The deviation (absolute difference) from 2010 is multiplied by 7 and is added to the differnce of the last and the first prime number used. **Minimize your score.**

Example:

- 37 - 41 + 43 x 47 + 53 = 1996

> The deviation from 2010 is 14 and multiplied by 7 gives 98. The difference between the last and the first prime number used is 16. So, the final score is 98+16=**114.**

Answer format: First write your score, followed by your expression. For the given example, the answer would be: *114; -37-41+43x47+53=1996.*

2. ANTI-KROPKI SLIDER PUZZLE

Here is a slider puzzle with the numbers from 1 to 24. One square is empty so you can move (slide) the pieces. By sliding the pieces arrange the numbers in such a way that neither consecutive numbers nor numbers whose ratio is 2 are connected horizontally or vertically (i.e. there would be no place to put kropki circles).

Scoring: Add the total number of moves to the sum of the numbers in four corners. In case the empty square ends up in the corner, value it as 0. **Minimize your score.**

1	2	3	4	5
6	7	8	9	10
11	12		13	14
15	16	17	18	19
20	21	22	23	24

Example (on smaller puzzle):

1	2	3
4		5
6	7	8

$\Longrightarrow$

| 1	3	5
4	7	2
6		8
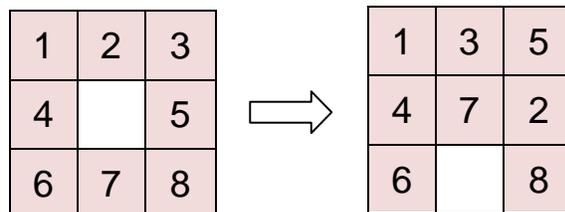
> The order of moves is 2-3-5-2-7. The number of moves is 5. So, the score is: 5+1+5+6+8=**25.**

Answer format: First write your score, followed by all the moves in order of appearance. For the given example, the answer would be: *25; 2-3-5-2-7.*

3. A YEAR AGO...

Fill in the grid below some of the words from the list (the names of the participants of the Second Serbian Open in Optimizers). Each word should form a snake that does not touch itself, not even diagonally. The words must be read going from one end of the snake to the other. Two different snakes must not overlap.

Scoring: Each newly appeared snake in the grid, formed by the sequence of **n** identical letters (at least 2) is worth **2n-3** points. Two different snakes made of the same letter may touch only diagonally, while each snake, as usual, must not touch itself, not even diagonally.

		H	C	
F	E	D	Y	D
O	P	E	E	R	R	E
L	L	Z	O	E	R	B
O	A	D	D	E	R	B
C	A	A	F	E	R	O
N	N				R	R
O	M				E	R
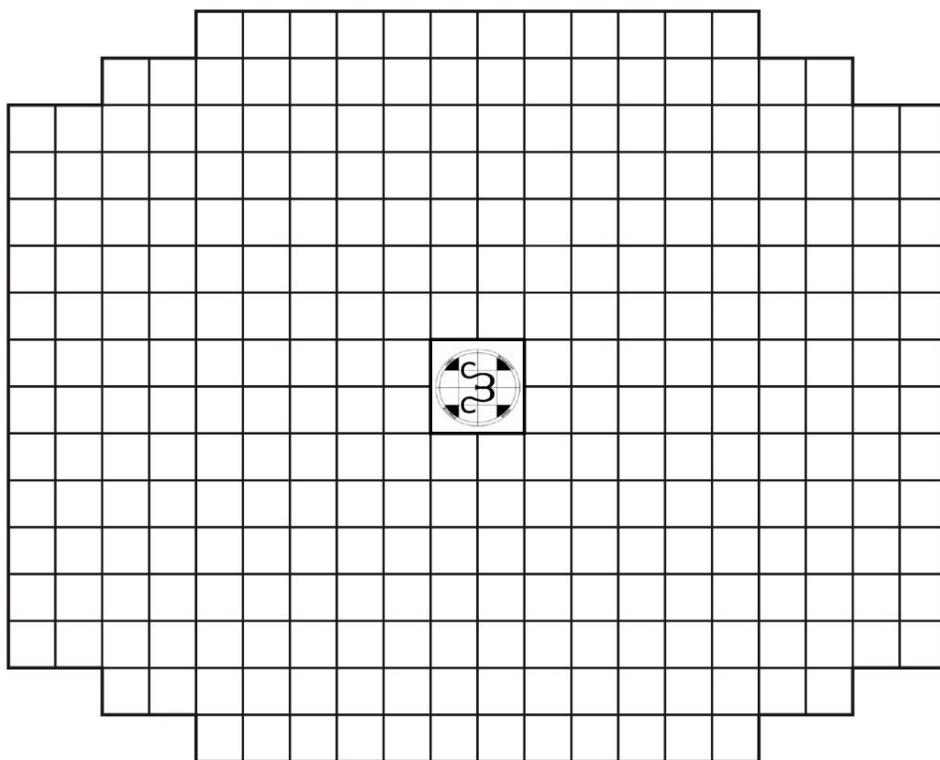
BERDYCH
FEDERER
FERRER
LOPEZ
MONACO
NADAL
ROBREDO

Score:
13+3x3+4x1=26

BEARDA	FILSER	LADISLAV	PAVICIC	SIMANA
BIEGLER	FOLL	LU	RADISAVLJEVIC	TAKAHISA
BIELIKOVA	FORCOLIN	MACHERLA	RANKA	TANASIC
BOJANA	GOLJOVIC	MATSCHKE	RAO	TOKUNAGA
BOVAN	GYURKI	MILOVAN	RAUDE	TOLOMANOSKI
CEDOMIR	HARMEET	MURTHY	RICHTER	VIDAN
CERANIC	HINZ	NOVAKOVIC	ROBINSON	ZANECHAL
DANIJEL	HORVATH	ODDEST	SABANCI	ZIVANOVIC
DAVOR	HRDINA	ODONNELL	SAHAY	ZOLYNSKI
DEMIGER	HROMCOVA	PARLIC	SAMUEL	
DRAGAN	KAZMERCHUK	PARNITS	SAVIC	
ERGAN	KLYACHIN	PATRICK	SERGEY	

Answer format: First write your score, followed by the content of the grid, left to right, top to bottom. Use capitals for the initial letters, lower type for the others, and "x" for empty and the central four squares that, of course, cannot be used. For the given example, the answer would be: *26; xxxhcxx, xFedydx, opeerre, LlzoerB, oadderb, caaFero, xnNxxrR, xoMxxer.*

4. PENTOMINO 01234

Arrange **all 12 different pentomino**es together in one shape. Then fill in each pentomino the numbers from 0 to 4, from left to right, and top to bottom. The pentominoes may be rotated and/or reflected.

Scoring: Add all horizontal and vertical **three digit numbers** that are formed of orthogonally adjacent numbers which belong to three different pentominoes. **Maximize your score.**

Example (6 pentominoes):

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

401, 013, 130
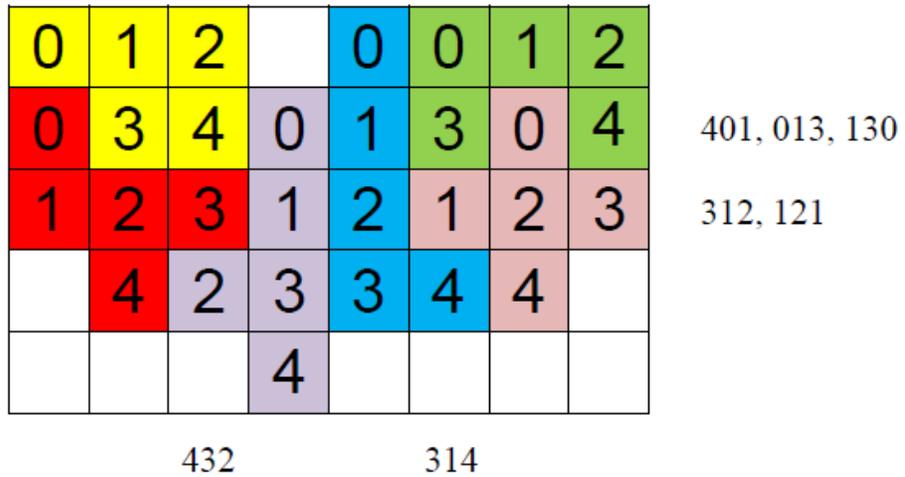
312, 121

432   314

Score: 401+013+130+312+121+432+314=**1723**
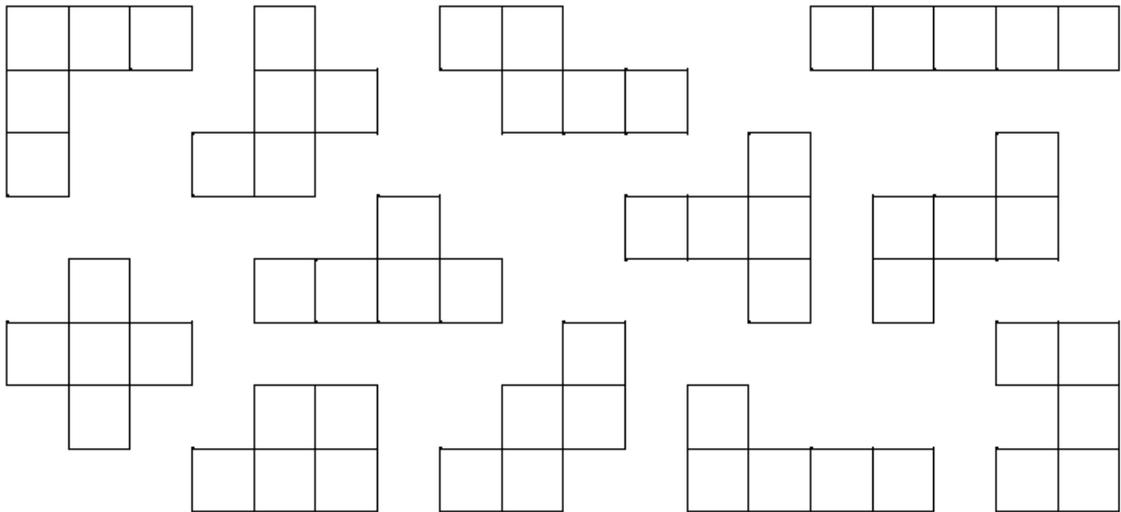
Answer format: First write your score, followed by the content of your shape, left to right, top to bottom. Use "x" for empty squares. For the given example, the answer would be: *1723; 012x0012, 03401304, 12312123, x423344x, xxx4xxxx.*

5. WIND ROSE

Here is a classical puzzle called "fo*ur winds*", "along the lines"... Draw horizontal or vertical lines from each numbered square. The lines pass through the centers of the squares, and do not cross or overlap each other. The number in a square should be equal to the total length of the lines that go from that square.

Scoring: Each number that shows the correct total length of the lines is worth **10** points. For incorrect numbers you lose **2n-1** points, where *n* is the deviation (absolute difference) of the number from the total length of the lines. For each square left empty, you lose **3** points. **Maximize your score**.

Example (on smaller grid):

- 8 correct numbers,
- 1 missed by 1, 1 missed by 2, 1 missed by 3,
- 4 empty squares.

The score is 8x10-1-3-5-4x3=59

Answer format: First write your score, followed by the content of the grid, left to right, top to bottom. Each square that contains part of a line mark with E, W, N or S, depending on the direction of the line. Mark empty squares with "x". For the given example, the answer would be: *59; WWW9EEE5, WW6SNNNS, 4ESSNN2S, NNSSN3SS, NNSSW6SxS, N3SxSxxS, NSWWWWW7, 5EWWW4ES.*

6. MENSCH ÄRGERE DICH NICHT

This is a solitaire version of the board game "**Mensch ärgere dich nicht**" (**Do not get angry**). There is only one player (you) and your goal is to get all four of your pieces (A, B, C and D) in the home row. The piece can move to the starting circle when number 6 appears on the die. Each piece must complete a full route clockwise around the board and turn right to the home row at the end. Make any sequence from the numbers from 1 to 6 that represent rollings of the die. Each time move a piece as many circles as the die shows (i.e. the number in your sequence). When your sequence is finished, start again with the same sequence and repeat the process until you get all four pieces in the home row. The numbers can repeat within the sequence as many times as desired.

During the game you must follow these rules:
- Each circle can be occupied by at most one piece,
- If you cannot make a legal move, you may skip that move and continue. You cannot skip if you can make a legal move.
- Any piece can jump over the other piece outside the home row, but not inside it.
- You may step on coloured square, i.e. they are just as any other.

Remark: Since there exist many different boards for this game, only scores on the given board will be accepted.

Scoring: The length of your sequence is multiplied by the total number of moves (skipped moves included). **Minimize your score.**
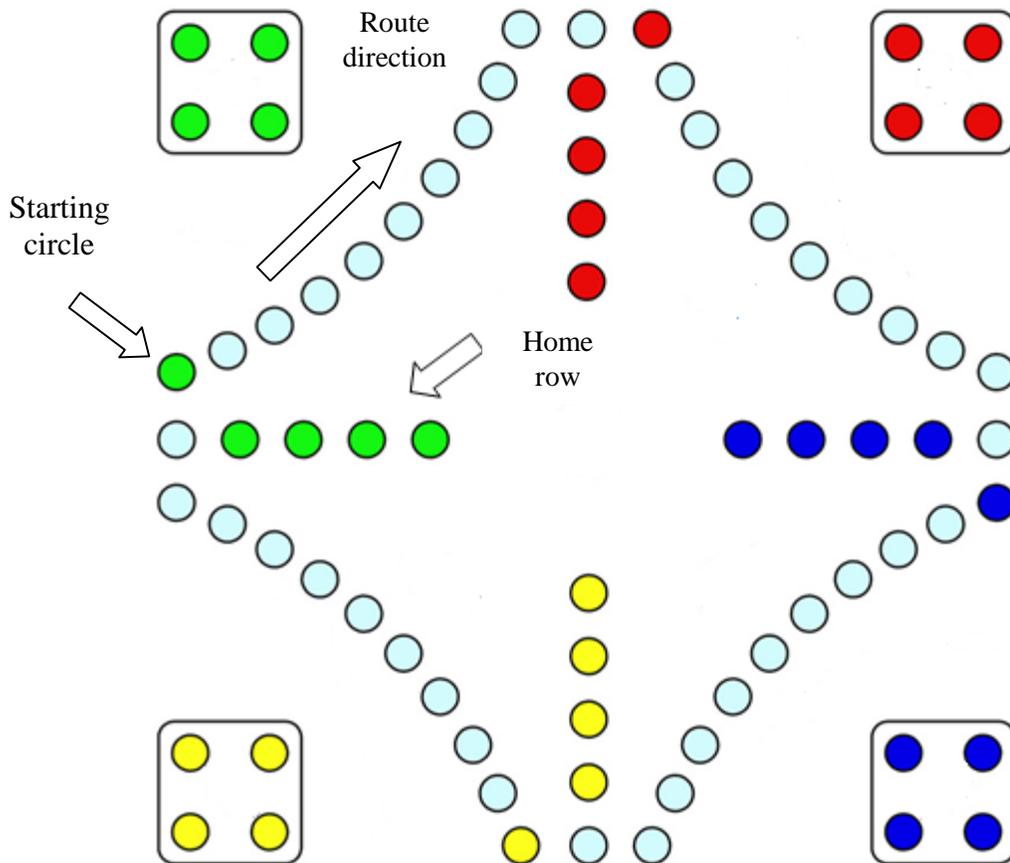
Example:

Say your sequence is 6-3-2. Your first move must be the placement of your first piece "A" on the starting circle. Your next move must be "A" three steps forward, and the next one two steps more. In the fourth move you get a six again. Now you have a choice between moving the piece "A" six steps forward and placing the next piece "B" on the starting circle. Say you choose the latter option. In the following move you can move either "A" or "B" three steps forward.

Answer format: First write your score, followed by your sequence, followed by all your moves. Mark the pieces with A, B, C and D in the order of the appearance. Mark skipped moves with "x". For the given example, the answer would be: ? (we did not get the score in this example, we played only 5 moves); *6-3-2; A-A-A-B-B.*

Please send your answers to the email in the following format:

Name:
Ciy, Country:

1.
114; -37-41+43x47+53=1996
2.
25; 2-3-5-2-7
3.
26; xxxhcxx, xFedydx, opeerre, LlzoerB, oadderb, caaFero, xnNxxrR, xoMxxer
4.
1723; 012x0012, 03401304, 12312123, x423344x, xxx4xxxx
5.
59; WWW9EEE5, WW6SNNNS, 4ESSNN2S, NNSSN3SS, NNSSW6SxS, N3SxSxxS, NSWWWWW7, 5EWWW4ES
6.
6-3-2; A-A-A-B-B