APRIL CONTEST 2026

by Riad Khanmagomedov

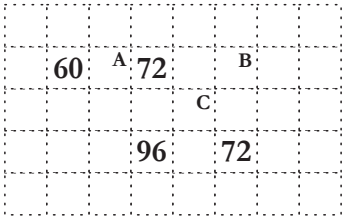
Submissions should be sent on the answer page at LMI not later than 23:59 (of India time) April 28 2026

Thanks to Deb Mohanty, Kota Morinishi and Prasanna Seshadri for support

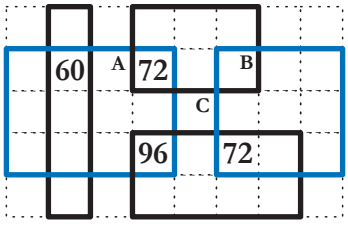
1. ORTHOGONS — 9 pt

Draw orthogons (squares and rectangles) along the grid lines so that no two orthogons have equal areas across the grid. Two different orthogons may intersect but not overlap, and may touch each other only at corners other than that. Given numbers are the products of the areas of two, three or four (but not just one) orthogons containing that cell.

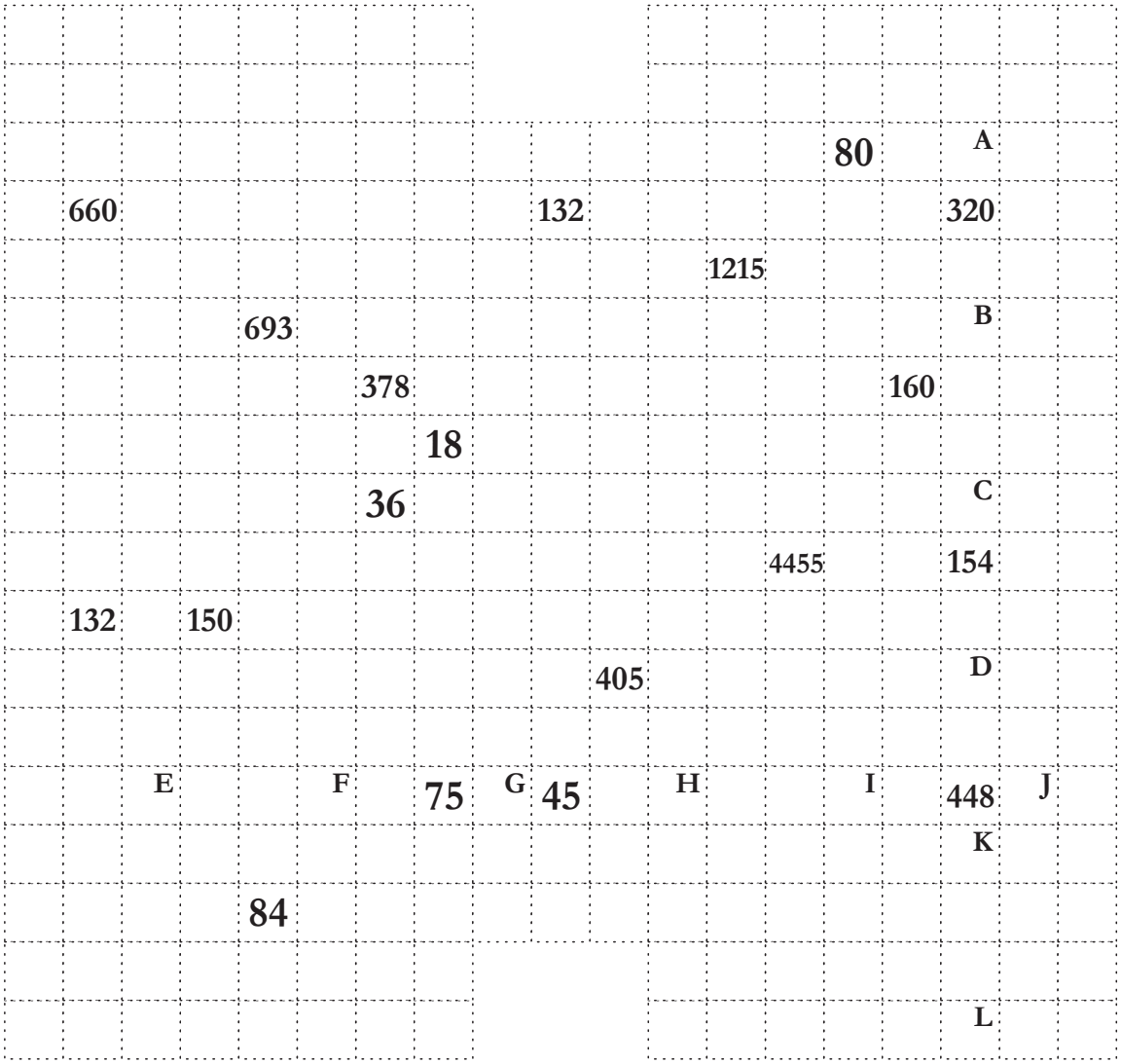
Example



Solution



A = 12
B = 54
C = 0



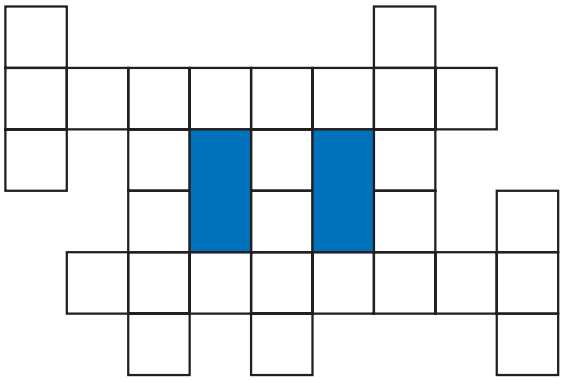
Answer format: Enter the unit's digit of the product of areas of orthogons containing the cells A, B, C etc. in order. Enter 0 if the cell is not a part of any orthogon. For the example: 240.

2. CROSSWORD-LISTOVERT

9 pt

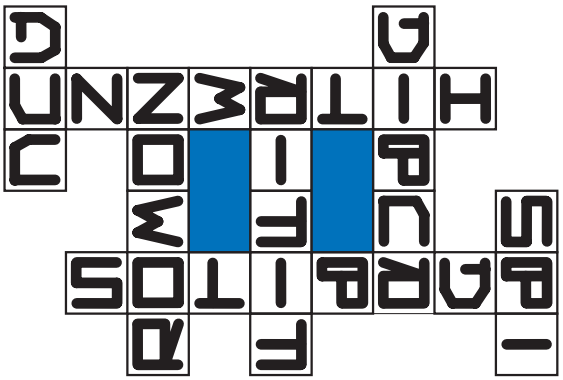
Enter all given words into the crossword. The grid can be rotated 90°, 180° and 270°. Use the given letter and number symbols for the crossword intersections. The same symbol may be used as different letters across rotations, and each letter may appear in the form of any of the options given with it. After rotating the grid as needed, write the chosen word from left to right or from top to bottom.

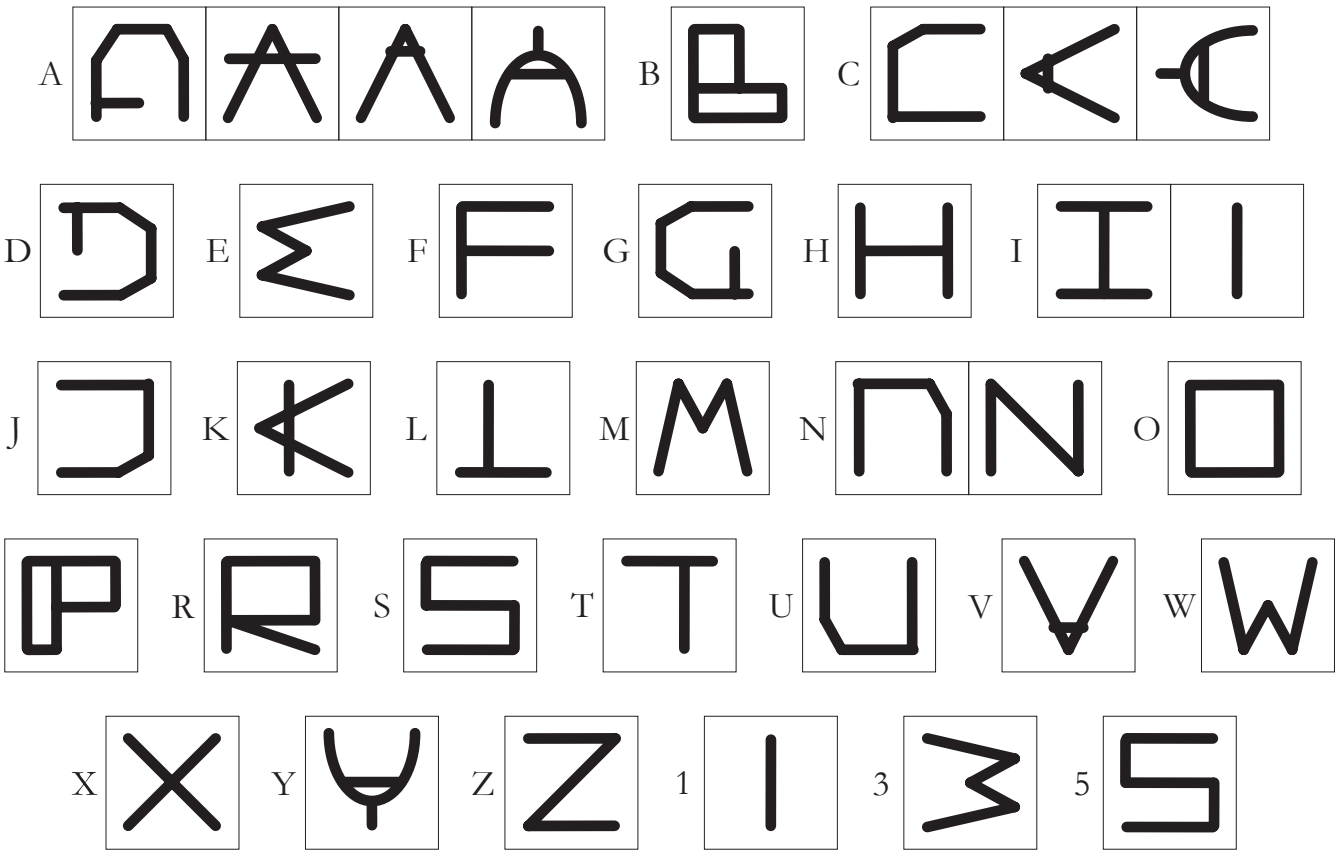
Example



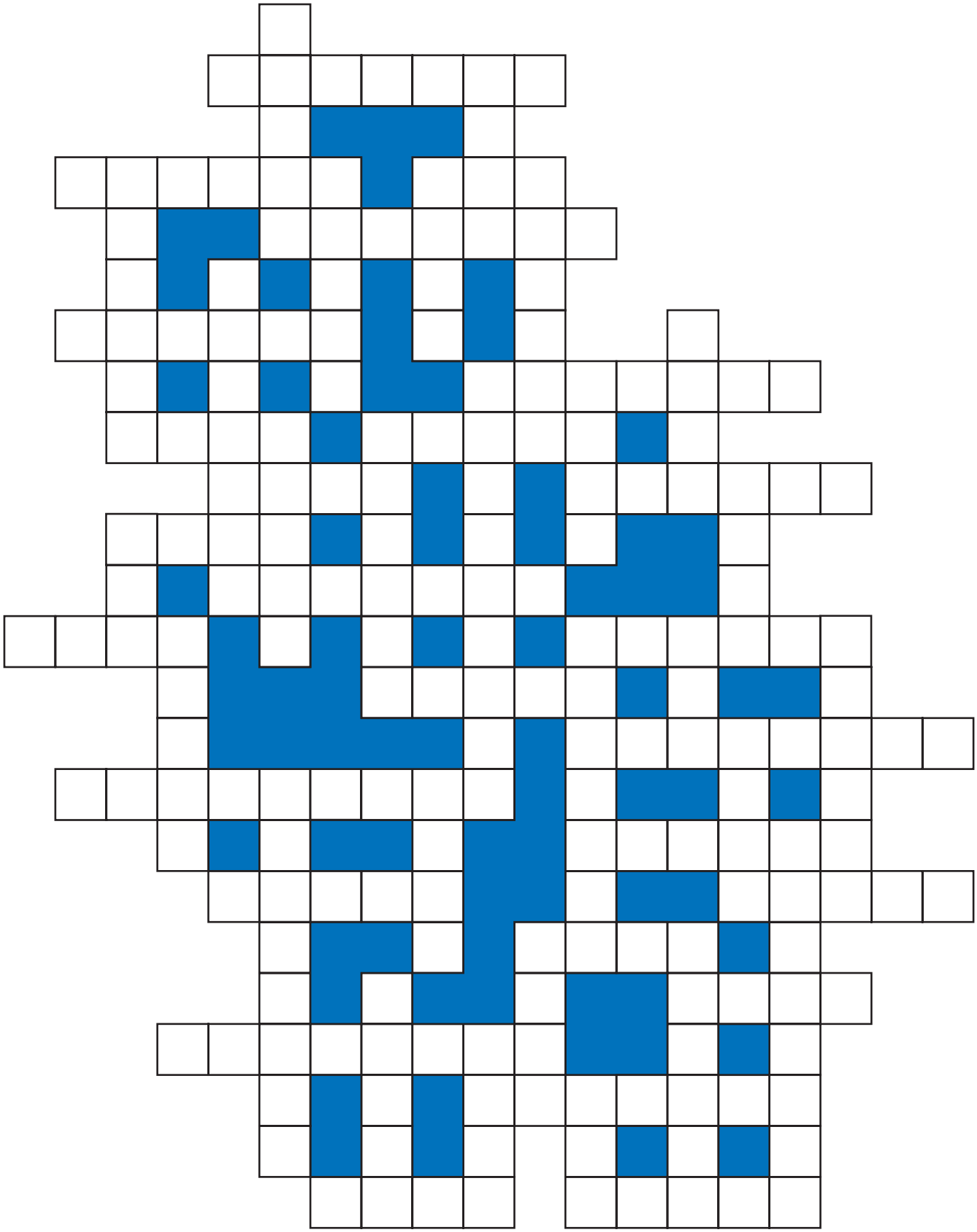
BARBITOS
DUC
FIFIR
HITREZNN
ROMON
RUBIA
SP1

Solution





ADAM
AIPKIN
ALAN
ALEXANDER
AMIT
ANNE
AUROUX
BABA
BLECON
CARLOS
CERANIC
CHANOVA
CHEN
CHOI
CJTAN
EMIL
GRIZIX
HANNAH
HARMEET
HENNA
HOW
HUANG
IBON
JAIPAL
JANKA
KAJA
KEN
KISHAN
KOLVEKOVA
KOTA
LEGRAND
MATHILDE
MCGOWAN
MUIJRES
NAOKI
NGS1535
NICO
NIKOLA
NIKRO
PAVEL
POLISZUK
REDDY
RICKI
SELL
SEOK
SHINICHI
SHUT
SINGH
VACLAV
WEI
XIAO
XIU
YAMAMOTO



Answer format: Enter the total number of words written after turning the sheet clockwise by 90°, 180° and 270°. For the example: 1, 4, 1.

Next, you will have to solve two related puzzles – JIGSAW WITH TIPS into the top grid and PENTOLOOP WITH CIRCLES into the bottom grid.

3. JIGSAW WITH TIPS **9 pt**

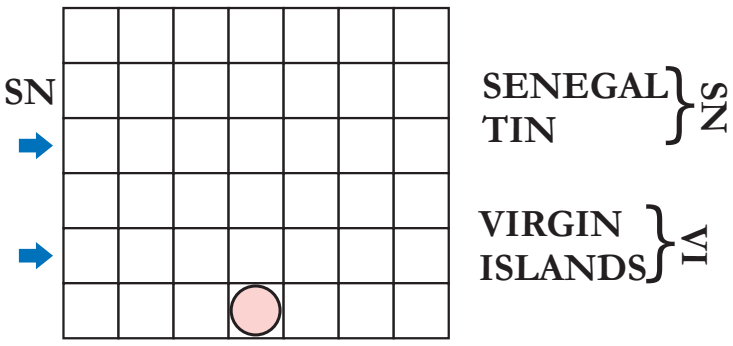
Enter the 18 given words (4 in the example) into the grid to create a single interconnected crossword. Words should read from left to right, or top to bottom. There should be at least one empty cell between words. Each word intersects by at least one other. Words cannot be repeated and no other words should be formed in a crossword. Tips outside the grid describe one of two words as shown in the list – they are either the domain code of the region or the chemical symbol of the element. Exactly one of the two words is entirely located in the corresponding direction. Each circle should be contain a letter.

Transfer the pairs of letters corresponding to the words with circles to the rose circles of the PENTOLOOP WITH CIRCLES puzzle in the same columns.

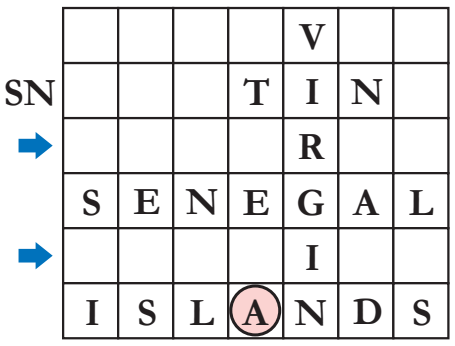
4. PENTOLOOP WITH CIRCLES **5 pt**

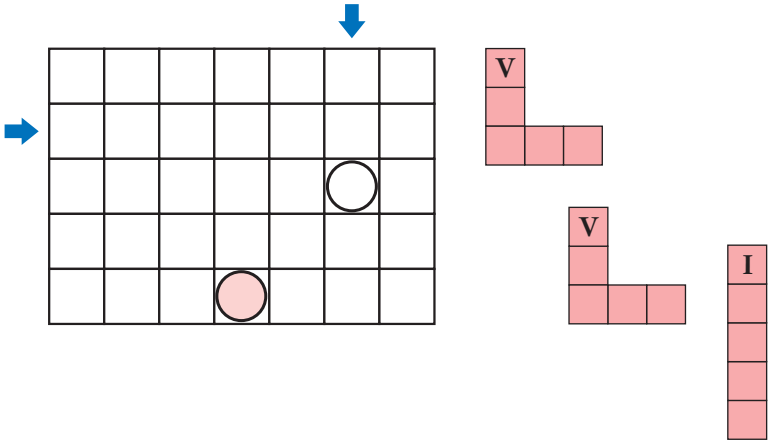
Using all 14 given pentominoes by tiling them piece to piece, draw a 1-cell wide loop that does not touch or intersect itself. Pentominoes can be rotated and reflected. Each pair of adjacent pentominoes has exactly one common cell. Some of these cells are marked with circles. The rose circles will contain letters corresponding to a pair of pentominoes. Each circle belongs to a loop. The pairs of letters in the rose circles of the JIGSAW WITH TIPS puzzle in similar columns should be match.

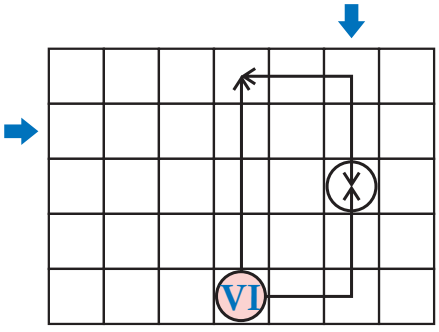
Example

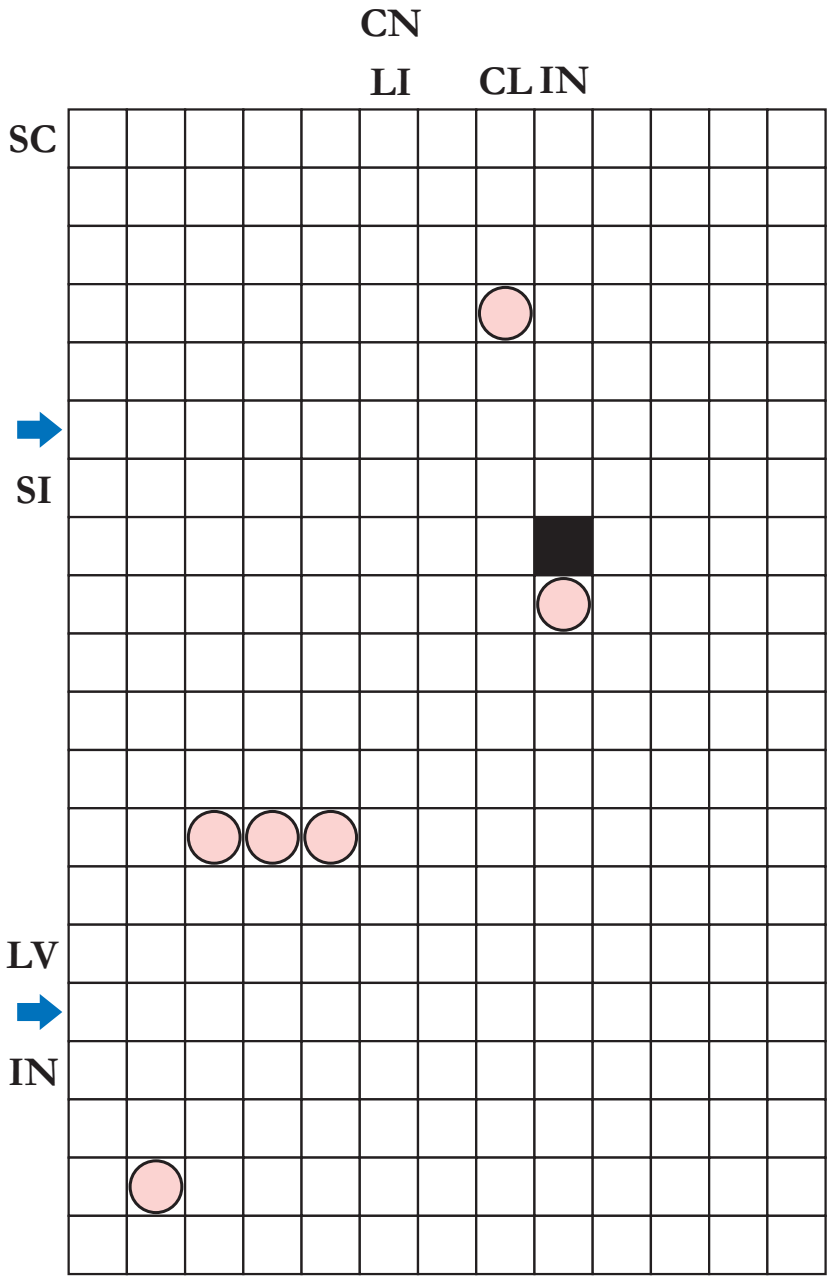


Solutions









CHILE
CHLORINE } CL

CHINA
COPERNICIUM } CN

INDIA
INDIUM } IN

LIECHTENSTEIN
LITHIUM } LI

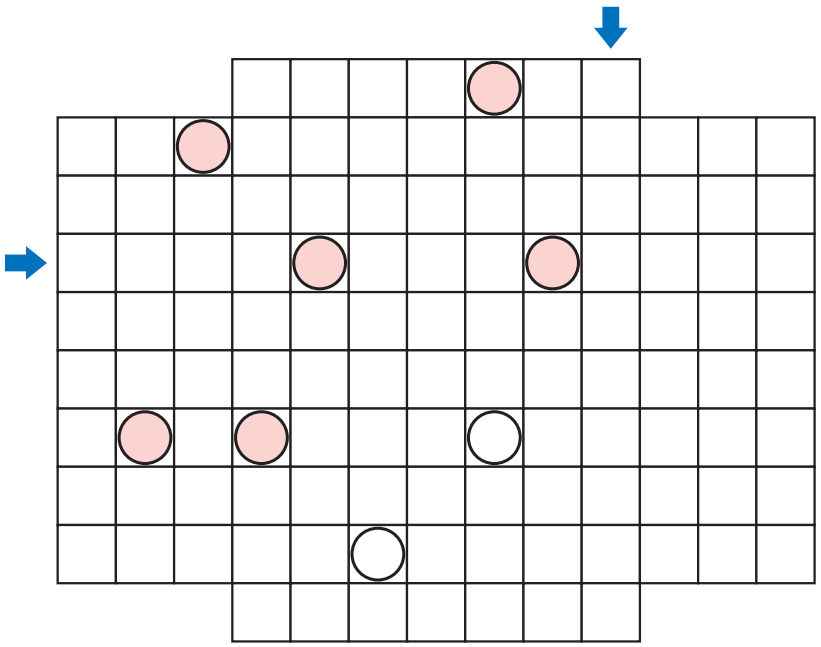
LATVIA
LIVERMORIUM } LV

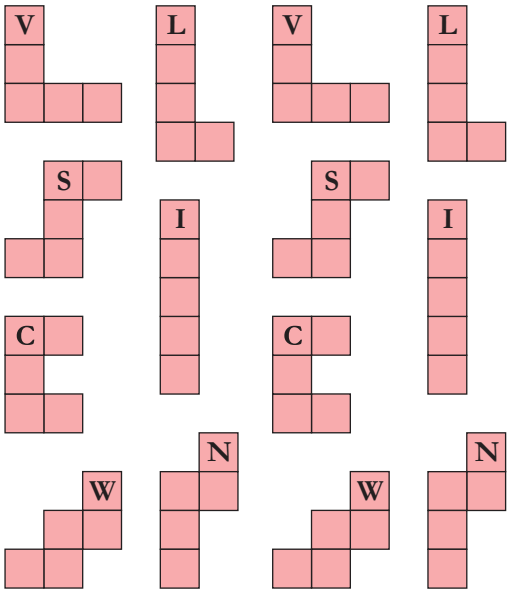
NICARAGUA
NICKEL } NI

SEYCHELLES
SCANDIUM } SC

SLOVENIA
SILICON } SI

SENEGAL
TIN } SN





Answer format: Enter the contents of the marked rows and columns. Use "-" for an empty cell and X wherever there is a pair of letters in the same cell. Write the letters in alphabetical order in the white circles. For the example: ----R--, ----I-- and ---I-V-, VVXVV.

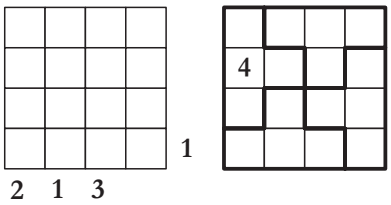
5. FIRST OR SECOND? & SUDOKU 7 pt

Left grid – FIRST OR SECOND?: Enter a digit from 1 to 5 in each cell so that each row and column contains each digit exactly once, leaving some cells blank. All clues outside the grid give the same type of information – either they all give the first seen digit or the second seen digit in the corresponding direction. It is part of solving to determine the information given for the particular grid.

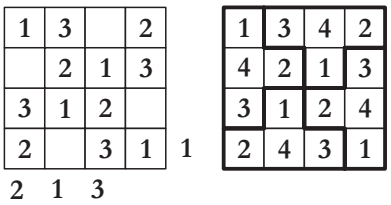
Right grid – SUDOKU: Enter a digit from1 to 8 in each empty cell so that each row, column and outlined region contains each digit exactly once.

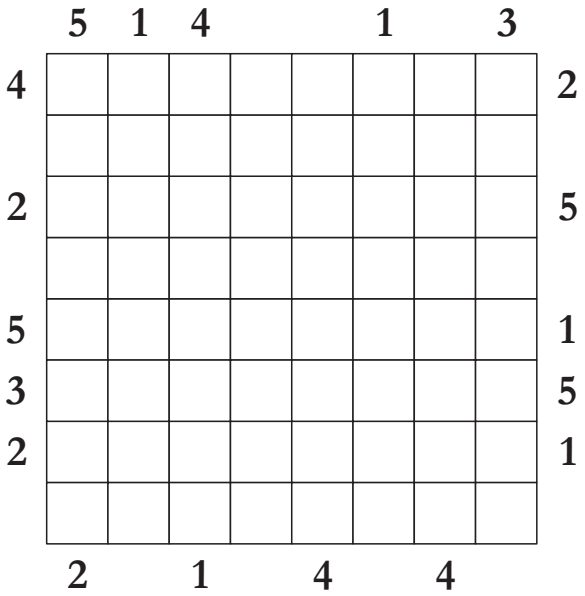
Combined rule: All digits inside the left grid should be in the same positions in the right grid.

Example



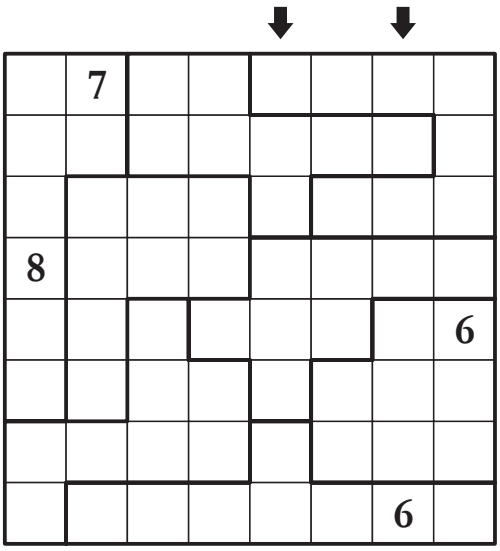
Solutions





Answer format: Enter the content of the marked columns from top to bottom.

For the example: 3214, 4123.

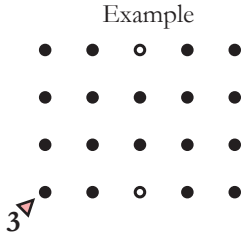


6. AZURE AND ROSE JOURNEY 8 pt

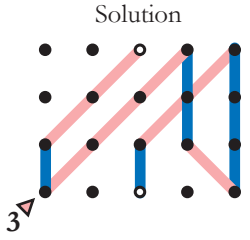
Draw an azure rose line according to the scheme L1 R2 L3 R1 L2 R3 L1..., where the letters L and R indicate the color of the segment, and the digit indicates the length. The start and end of the journey are marked with white circles. The rose segments are diagonal (at an angle of 45°), the azure ones are horizontal and vertical. The length of a single rose segment is the distance between the nearest diagonal grid nodes. Segments of the same color do not intersect or touch each other but segments of different colors may intersect at a point.

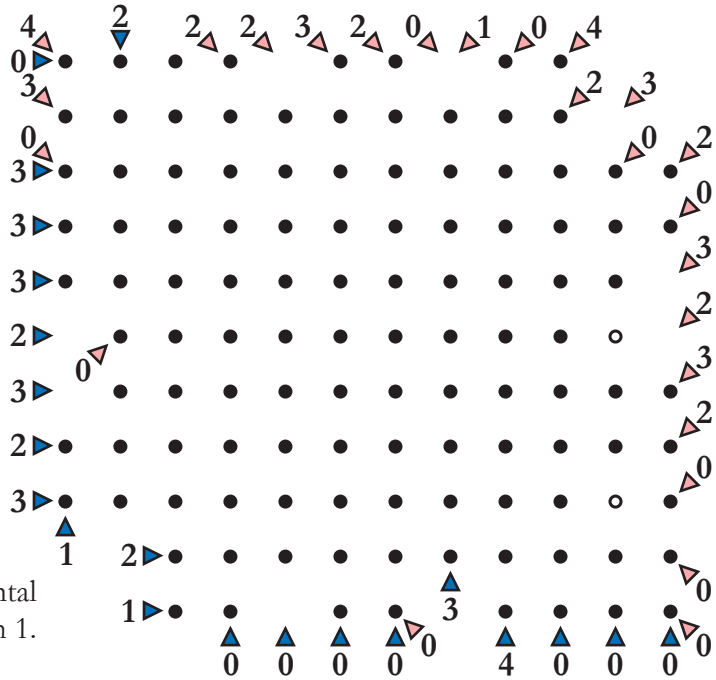
Clues outside the grid show the sums of the lengths of all segments in the corresponding direction.

Example



Solution





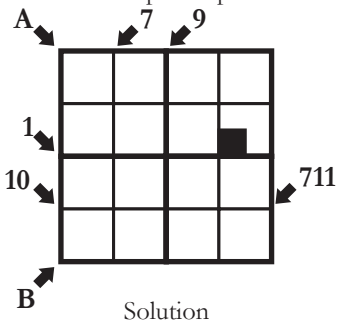
Answer format: Enter the total number of horizontal segments of length 2 and vertical segments of length 1.

For the example: 0, 2.

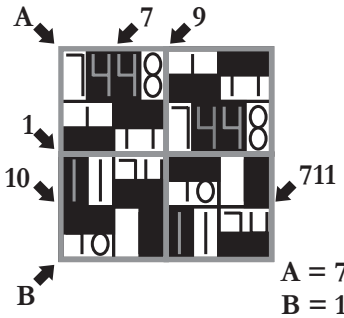
7. BICOLOR SUDOKU 6 pt

Enter the numbers 1, 11, 44, 47, 48, and 74 of the given type in the centers of the cells, so that they appear exactly once in each row, column and box. Color some of the cells in the six specified ways so that all cells in each row, each column and each box are colored differently. The number is visible only in the white part of the cell. The number 1 in a half-painted cell can become 0 (invisible) or 1 (if the black part is horizontal), the number 48 can transform into 4, 8, 10 and 110, the number 74 can become into 7, 4, 11 and 711. Clues outside the grid show the sums of transformed numbers in cells along the diagonals.

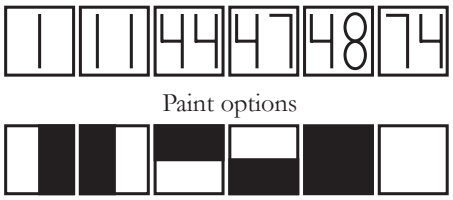
Example
with the numbers 1, 11, 48, 74
and four paint options

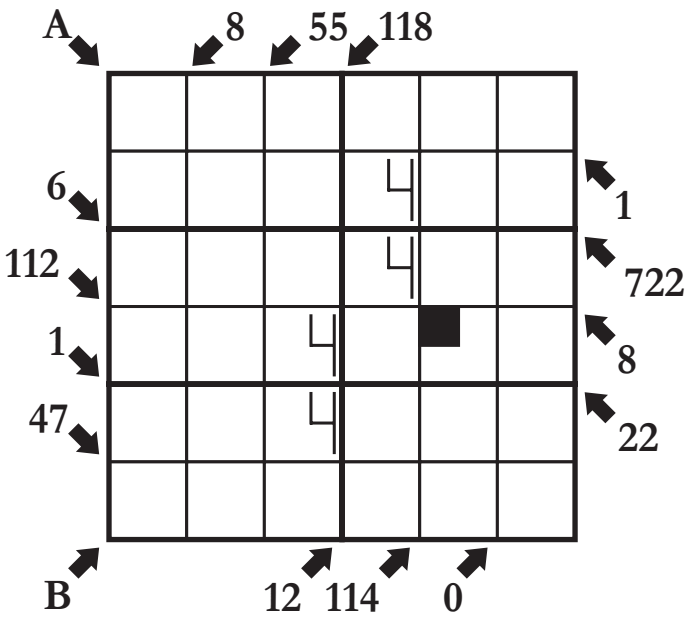


Solution



A = 7 + 11 + 10 + 711
B = 10 + 711 + 7 + 11



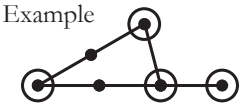


Answer format: Enter the sums corresponding to A and B. For the example: 739, 739.

8. SCHEME 4 pt

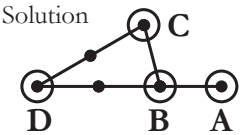
Determine the location of the 12 stations from A to L in the indicated circled spots. There are potential clues for the shortest distances between some pairs of letters in the names of all 12 puzzles in this contest. First, look for adjacent letters in the name belonging to the range A-L, ignoring spaces and punctuation. In puzzle 1, ORTHOGONS, there is no such case. But in puzzle 4, PENTOLOOP WIT**H CIRCLE**S, HC, CI, CL and LE are adjacent letters from the range. Next, assign the shortest distance to one of these possible pairs, as N where N is the number of the puzzle in the set. So in the example for puzzle 4, the shortest distance will be 4 either for HC, CI, CL or LE. At least one of these possibilities is true. The shortest distance may only be measured along the lines given, with each pair of adjacent dots connected by a line having 1 unit distance between them.

Example



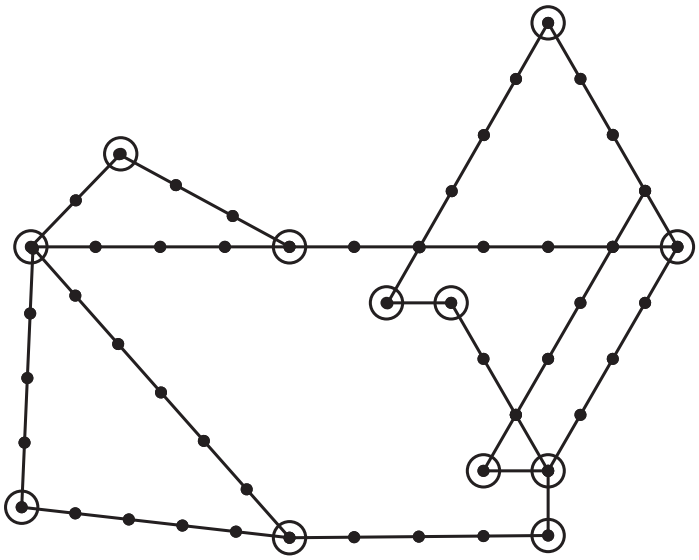
AB = 1
AD = 3

Solution



BC = 1

Table for recording distances



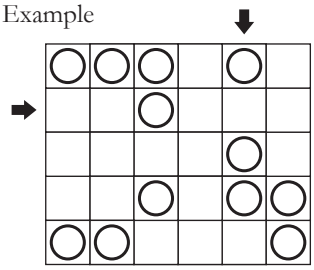
Answer format: Enter the shortest distance BC. For the example: 1.

9. LMI KNITTING

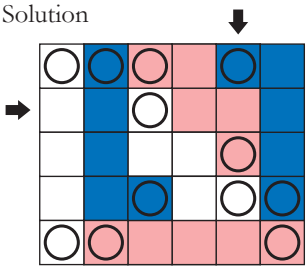
1 pt

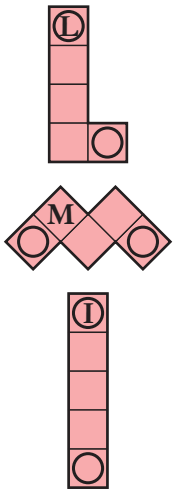
Fill the grid with L, M, I pentominoes by using the circles in the ends of the figures. Pentominoes can be rotated and reflected. Each cell is occupied by exactly one figure. Two L or I pentominoes cannot fit entirely in 2 x 5 and 5 x 2 rectangles.

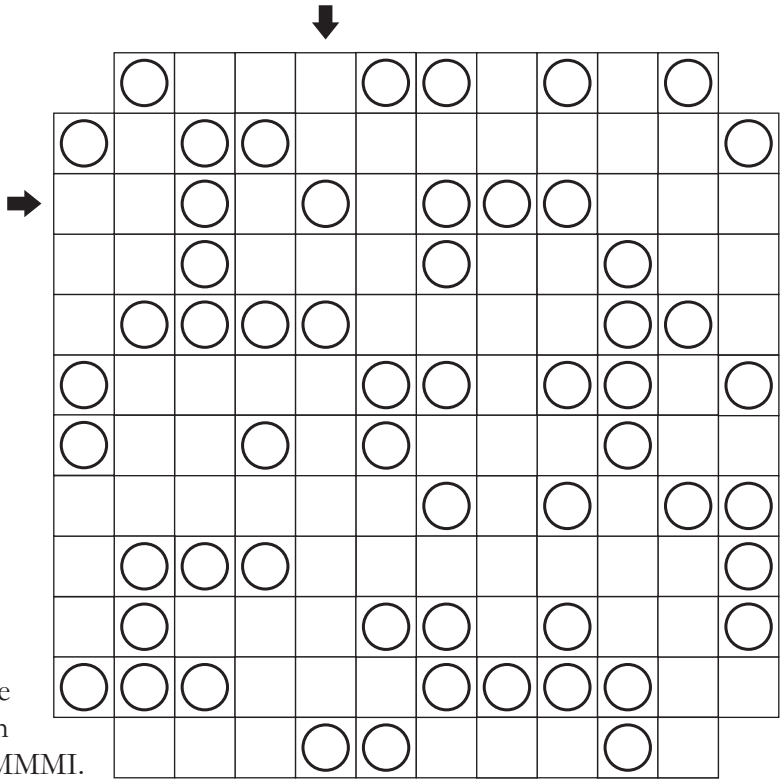
Example



Solution







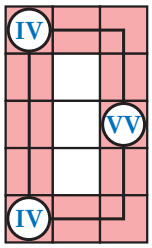
Answer format: Enter the letter content of the marked row from left to right and column from top to bottom. For the example: ILMMML, LMMMI.

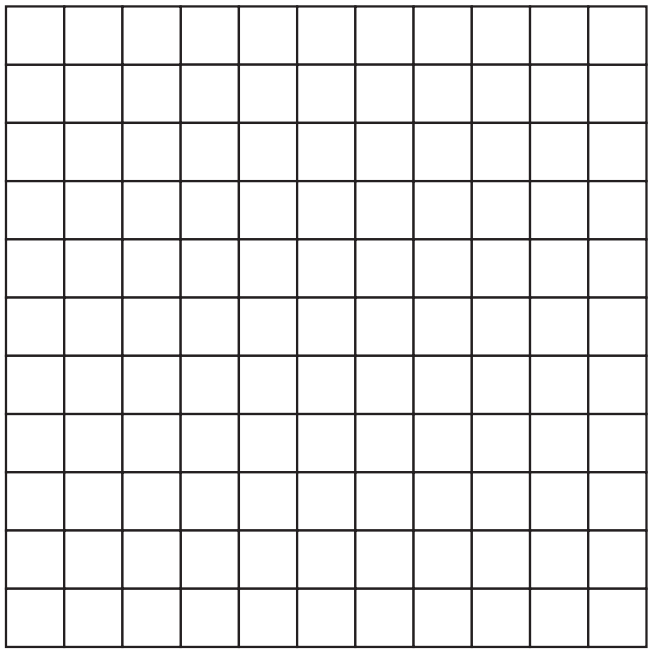
10. PENTOLOOP

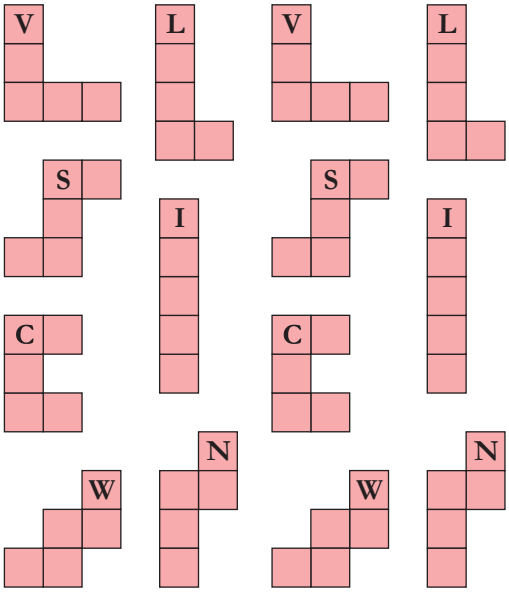
14, 11, 8, 5, 2 pt for best solutions

Using 14 given pentominoes or some of them, draw a 1-cell wide loop that does not touch or intersect itself. Pentominoes can be rotated and reflected. Each pair of adjacent pentominoes has exactly one common cell. Mark all these cells with circles and enter the letters corresponding to a pair of pentominoes. Maximize the number of circles. Among two solutions with equal results, the best will be the one with more circles with doubles (CC, II, LL, NN, SS, VV, WW).

Example







Answer format: Enter the number of circles and doubles, then the content of rows from left to right. Use "-" for an empty cell and brackets for a pair of letters. Write the letters in alphabetical order in the circles. For the example: 3, 1, (IV)VV, I-V, I-(VV), I-V, (IV)VV.

11. CODEWORD 14, 13, 12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1 pt for best solutions

Select some of the given pairs and enter all of these words into the 13 x 13 grid to create a single connected crossword. Words should read from left to right and right to left, or top to bottom and bottom to top. There should be at least one empty cell between words. Each word intersects by at least one other. Words cannot be repeated and no other words should be formed in a crossword. Maximize the number N of pairs used. Among two solutions with the same N, the one with more cells with letters will be the best.

Example

				R		
	N			E		
S	E	N	E	G	A	L
	O			I		
	N			N	I	T

ALBANIA **ALUMINIUM** } AL
ARMENIA **AMERICIUM** } AM
ARGENTINA **ARGON** } AR
AUSTRIA **ASTATINE** } AT
AUSTRALIA **GOLD** } AU
BELGIUM **BERYLLIUM** } BE
BAHRAIN **BOHRIUM** } BH
BURUNDI **BISMUTH** } BI
BRAZIL **BROMINE** } BR
CANADA **CALCIUM** } CA
CONGO **CADMIUM** } CD
CAR **CALIFORNIUM** } CF
CHILE **CHLORINE** } CL
CAMEROON **CURIUM** } CM
CHINA **COPERNICIUM** } CN
COLOMBIA **COBALT** } CO
CUBA **COPPER** } CU
ERITREA **ERBIUM** } ER
SPAIN **EINSTEINIUM** } ES
MICRONESIA **FERMIUM** } FM
GABON **GALLIUM** } GA
GRENADA **GADOLINIUM** } GD
GEORGIA **GERMANIUM** } GE
INDIA **INDIUM** } IN
IRAN **IRIDIUM** } IR
LAOS **LANTHANUM** } LA
LIECHTENSTEIN **LITHIUM** } LI
LIBERIA **LAWRENCIUM** } LR
LATVIA **LIVERMORIUM** } LV
LUXEMBOURG **LUTETIUM** } LU
MONACO **MOSCOVIUM** } MC
MOLDOVA **MENDELEVIUM** } MD
MADAGASCAR **MAGNESIUM** } MG
MONGOLIA **MANGANESE** } MN
MACAU **MOLYBDENUM** } MO
MALTA **MEITNERIUM** } MT
NAMIBIA **SODIUM** } NA
NIGER **NEON** } NE
NICARAGUA **NICKEL** } NI
NORWAY **NOBELIUM** } NO
NEPAL **NEPTUNIUM** } NP
PORTUGAL **PLATINUM** } PT
RUSSIA **RUTHENIUM** } RU
SEYCHELLES **SCANDIUM** } SC
SWEDEN **SELENIUM** } SE
SINGAPORE **SEABORGIUM** } SG
SLOVENIA **SILICON** } SI
SENEGAL **TIN** } SN
SURINAME **STRONTIUM** } SR
THAILAND **THORIUM** } TH
TURKMENISTAN **THULIUM** } TM

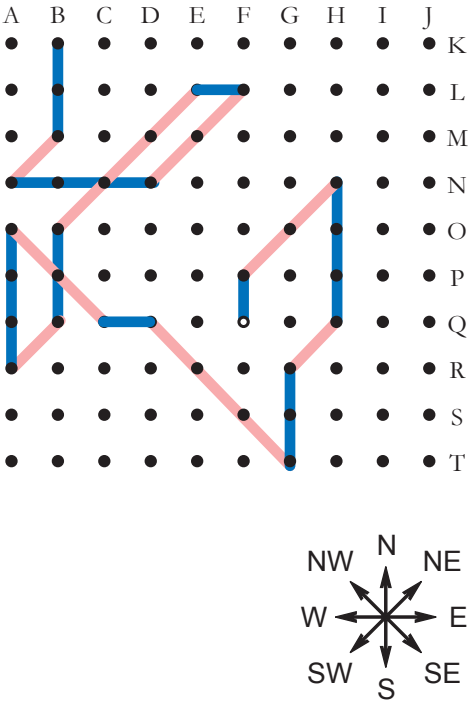
Answer format: Enter the value of N, the number of cells with letters, then the content of rows from left to right. Use "-" for an empty cell. For the example: 2, 16, ----N--, -N--E--, SENEGAL, -O--I--, -N--NIT.

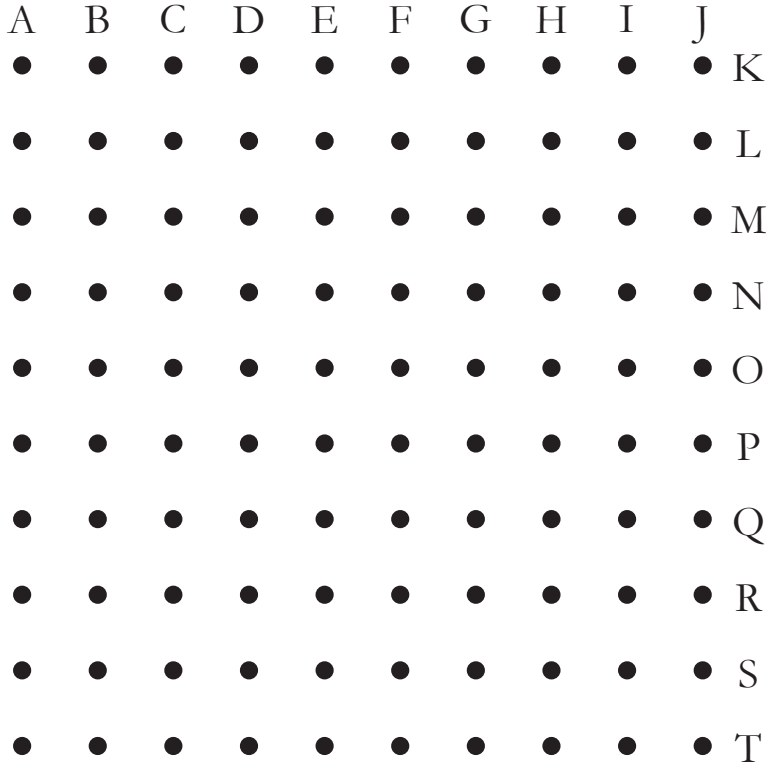
12. AZURE AND ROSE OPTIMUM

14, 12, 10, 8, 6, 4, 2 pt for best solutions

Draw an azure rose line according to the scheme L1 R2 L3 R1 L2 R3 L1..., where the letters L and R indicate the color of the segment, and the digit indicates the length. The rose segments are diagonal (at an angle of 45°), the azure ones are horizontal and vertical. The length of a single rose segment is the distance between the nearest diagonal grid nodes. Segments of the same color do not intersect or touch each other but segments of different colors may intersect at a point.. Maximize line length.

Example





Answer format: Enter the length, start coordinates, and then the directions of the path in sequence. For the example: 33, FQ, N-NE-S-SW-S-NW-W-NW-W-NW-S-NE-N-NE-E-SW-W-NE-N.