APRIL CONTEST 2025

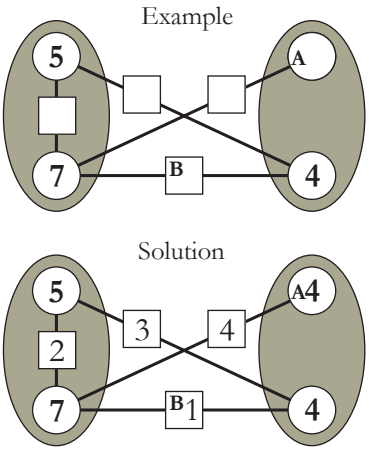
by Riad Khanmagomedov

Submissions should be sent on the answer page at LMI not later than 23:59 (of India time) April 27 2025

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

1. BUTTONS 4 pt

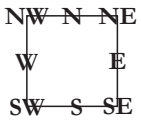
Each thread has its own number from 1 to 20, enter them in the corresponding squares. The number in the circle is equal to the sum of all the numbers on the threads coming from this circle.



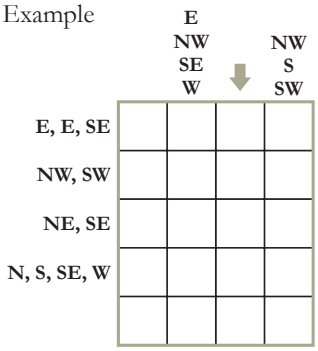
Answer format: Write the numbers in cells A, B, C, D. For the example: 41.

2. TOURIST 3 pt

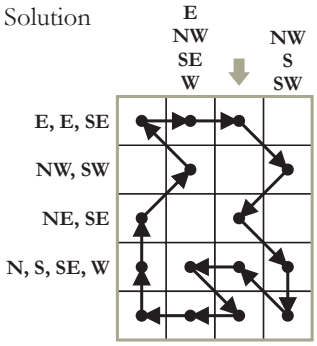
Draw a loop passing through the centers of some white cells. The loop does not touch itself and does not intersect. The loop can turn in 8 directions: N, NE, E, SE, S, SW, W, NW. The directions of the segments that start at the cell centers of the corresponding rows and columns are given outside the grid in alphabetical order. The direction of the loop is to be determined while solving.

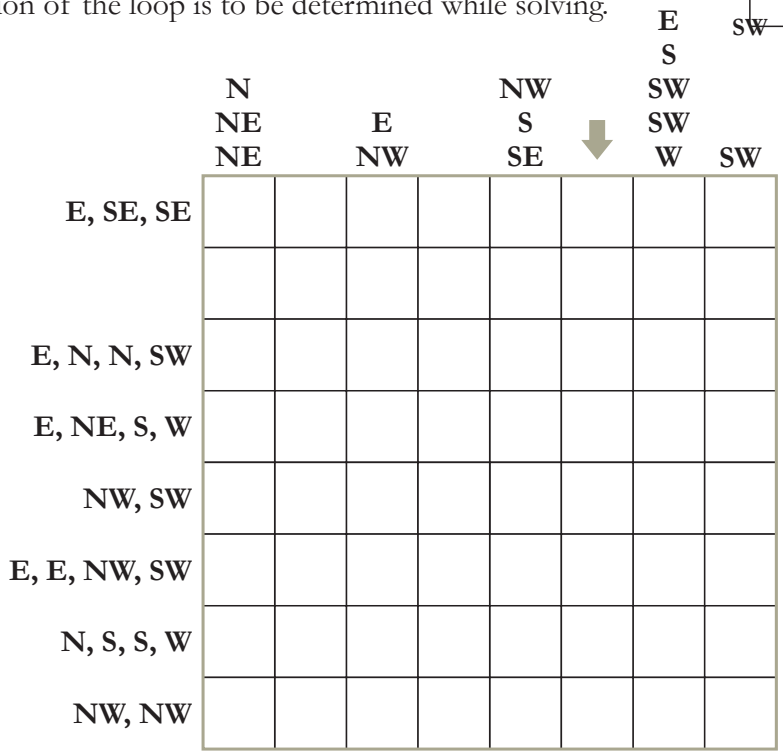


Example



Solution



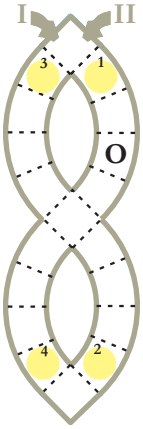


Answer format: Moving from top to bottom, write the directions of the segments starting from the cell centers of the marked column. Use "-" for empty cell. For the example: SE-SEWW.

3. WICKER 6 pt

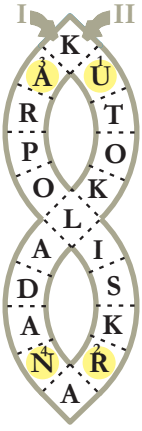
Enter all the given words along the arrow from the corresponding Roman number according to the chainword principle: the last letters (or letter) of the previous word are the first for the next.

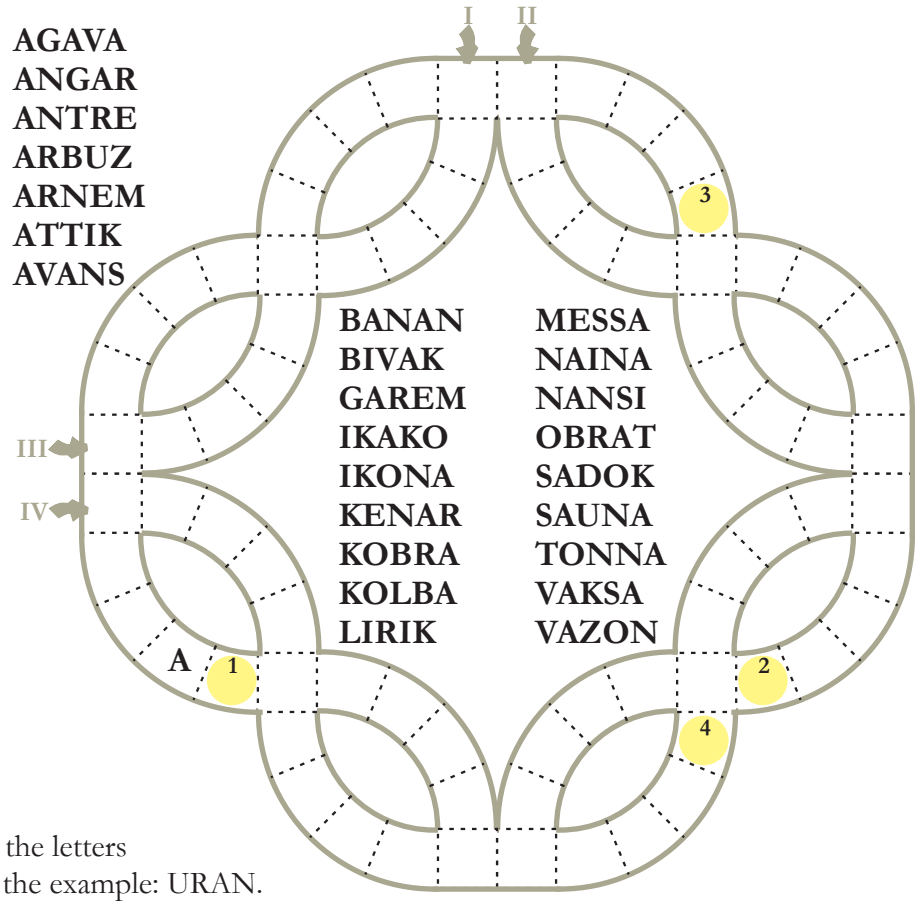
Exanmple



ADANA
ISKRA
KARPO
KUTOK
LADAN
OKLAD
POLIS

Solution





AGAVA
ANGAR
ANTRE
ARBUZ
ARNEM
ATTIK
AVANS

BANAN
BIVAK
GAREM
IKAKO
IKONA
KENAR
KOBRA
KOLBA
LIRIK

MESSA
NAINA
NANSI
OBRAT
SADOK
SAUNA
TONNA
VAKSA
VAZON

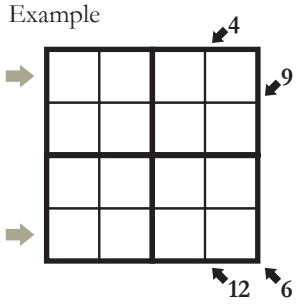
Answer format: Write the letters in circles 1, 2, 3, 4. For the example: URAN.

4. SAMEDOKU

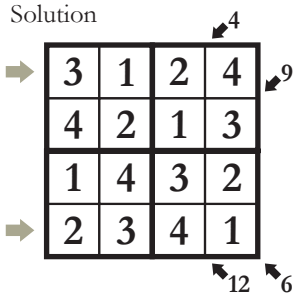
4 pt

Apply classic sudoku rules. The numbers given outside the grid indicate the sum of all instances of the digits that appear at least twice in the corresponding direction.

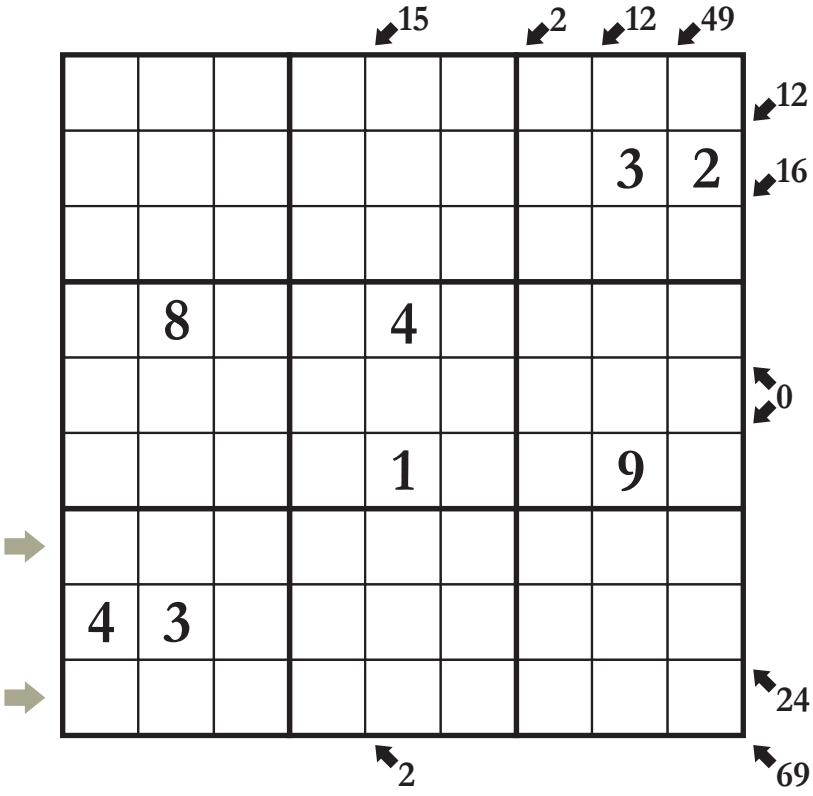
Example



Solution



Answer format: Write the content of the marked rows from left to right. For the example: 3124, 2341.

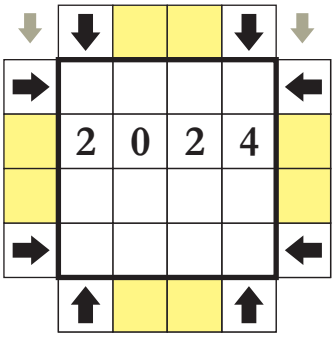


5. X-ARROWS

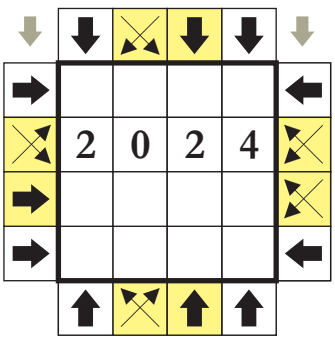
5 pt

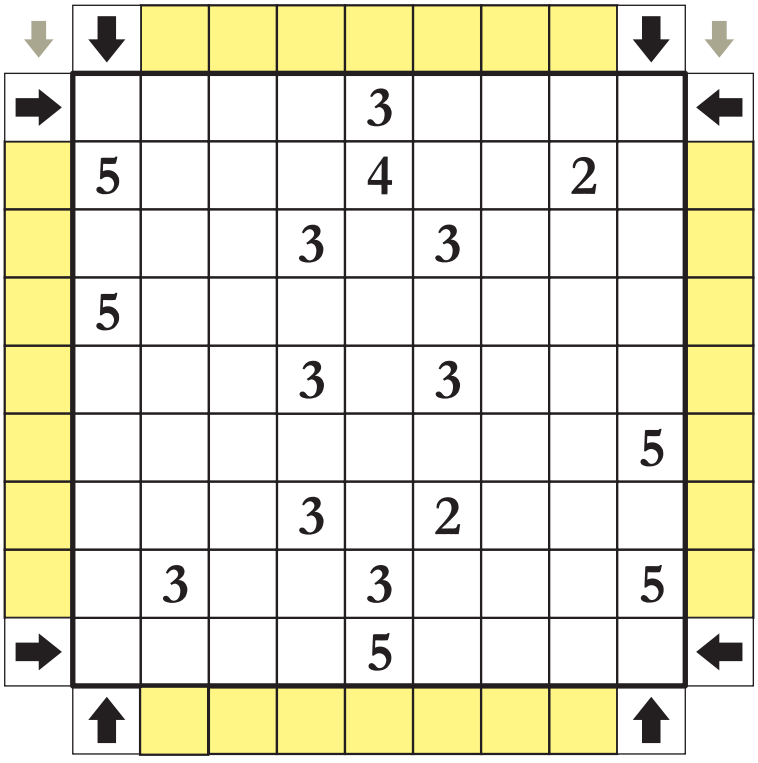
Draw a horizontal, vertical or 2 diagonal arrows into each empty cell bordering the grid. All arrows should point inside the grid and each digit inside the grid shows the number of arrows pointing to the cell with that digit.

Example



Solution



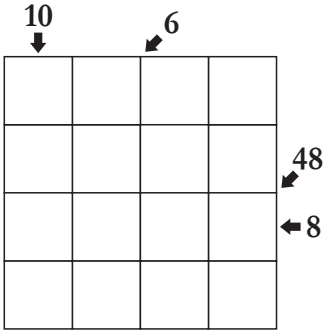


Answer format: Enter the content of marked rows from left to right, using H for horizontal and X for diagonal arrows. Ignore given arrows. For the example: XH, XX.

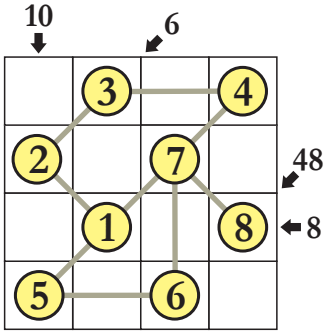
6. THREADS WITH KNOTS 7 pt

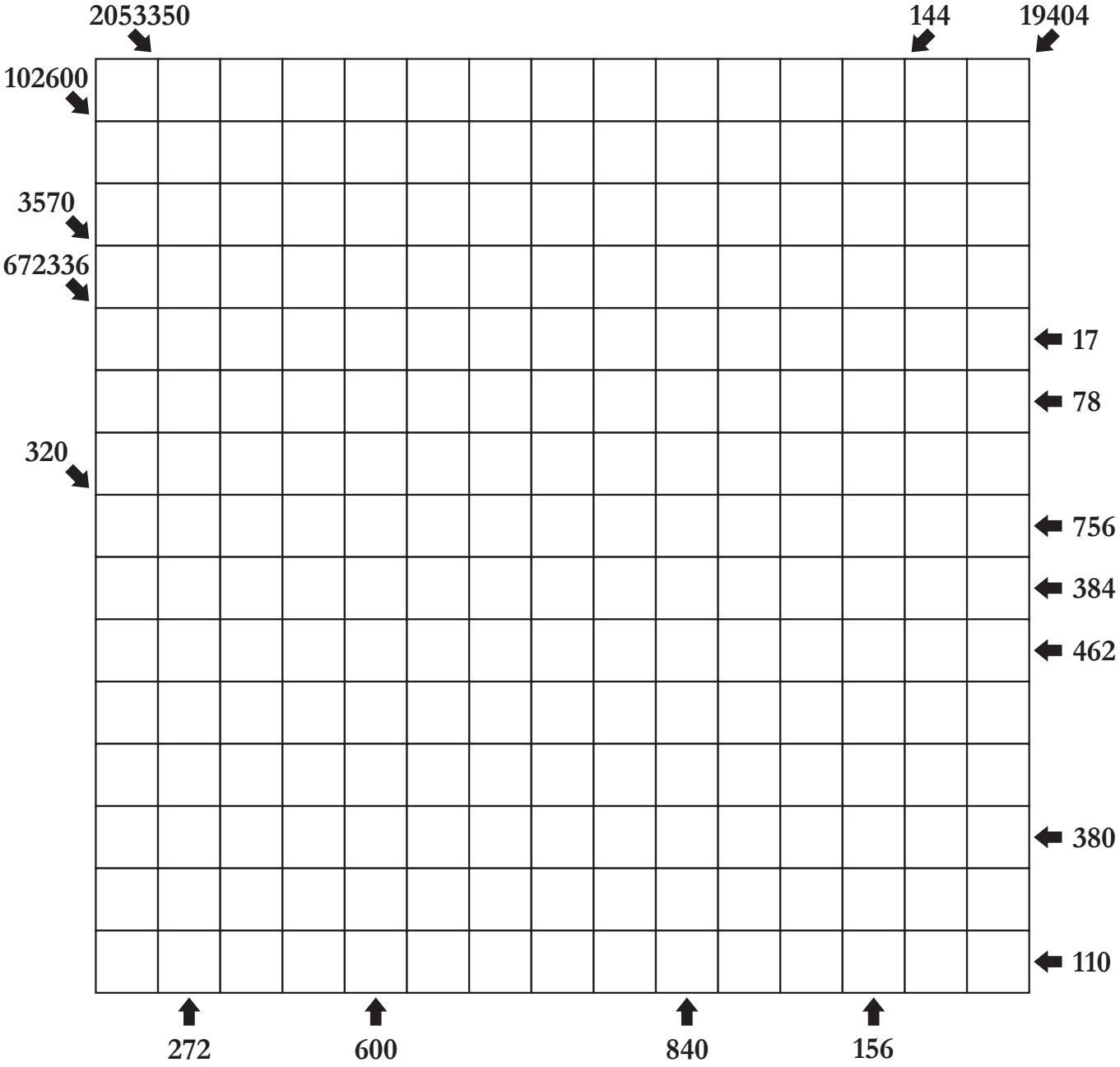
Draw threads connecting knots (circles). A thread passes through the centers of some cells horizontally, vertically and diagonally (at an angle of 45° to the grid boundaries) and cannot overlap any other threads, but may pass through other circles that it isn't connecting. Numbers from 1 to 30 must appear in the circles, sequentially connected by threads. There must be exactly two circles in each row and column. The products of all the numbers are indicated outside the grid in some directions.

Example



Solution

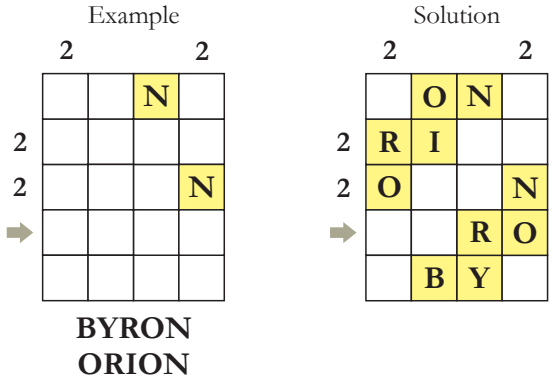


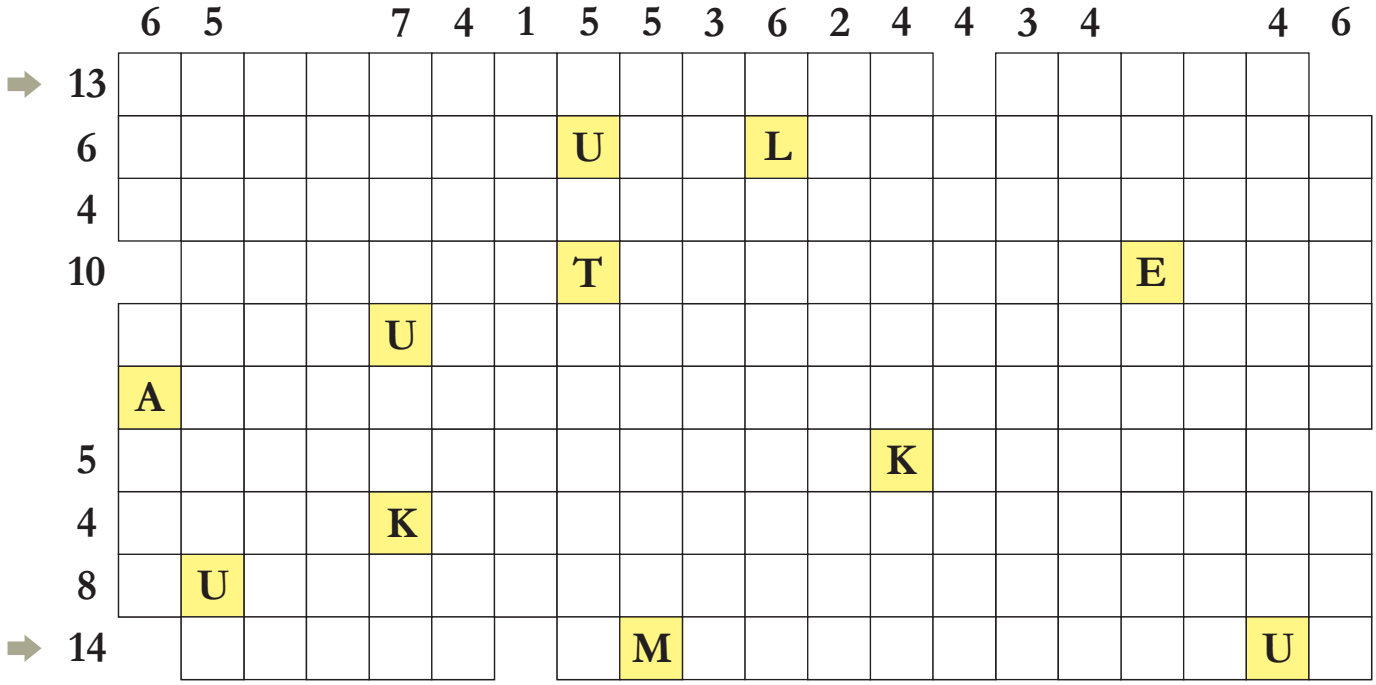


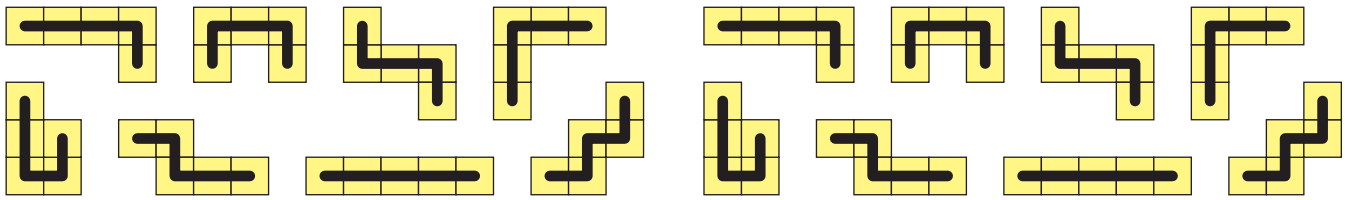
Answer format: Enter the top number in all columns from left to right. For the example: 2374.

7. LANGUAGE PENTOMINOES 12 pt

Place the 16 given pentominoes in the grid. Pentominoes can be rotated and reflected. They cannot touch each other, not even diagonally. Digits outside the grid show the number of cells occupied by pentominoes in the corresponding rows/columns. Enter all the given names into the pentominoes along the drawn lines. The letters in any row/columns are not repeated. Some cells occupied by pentominoes are already given.





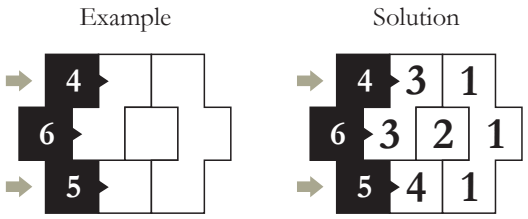


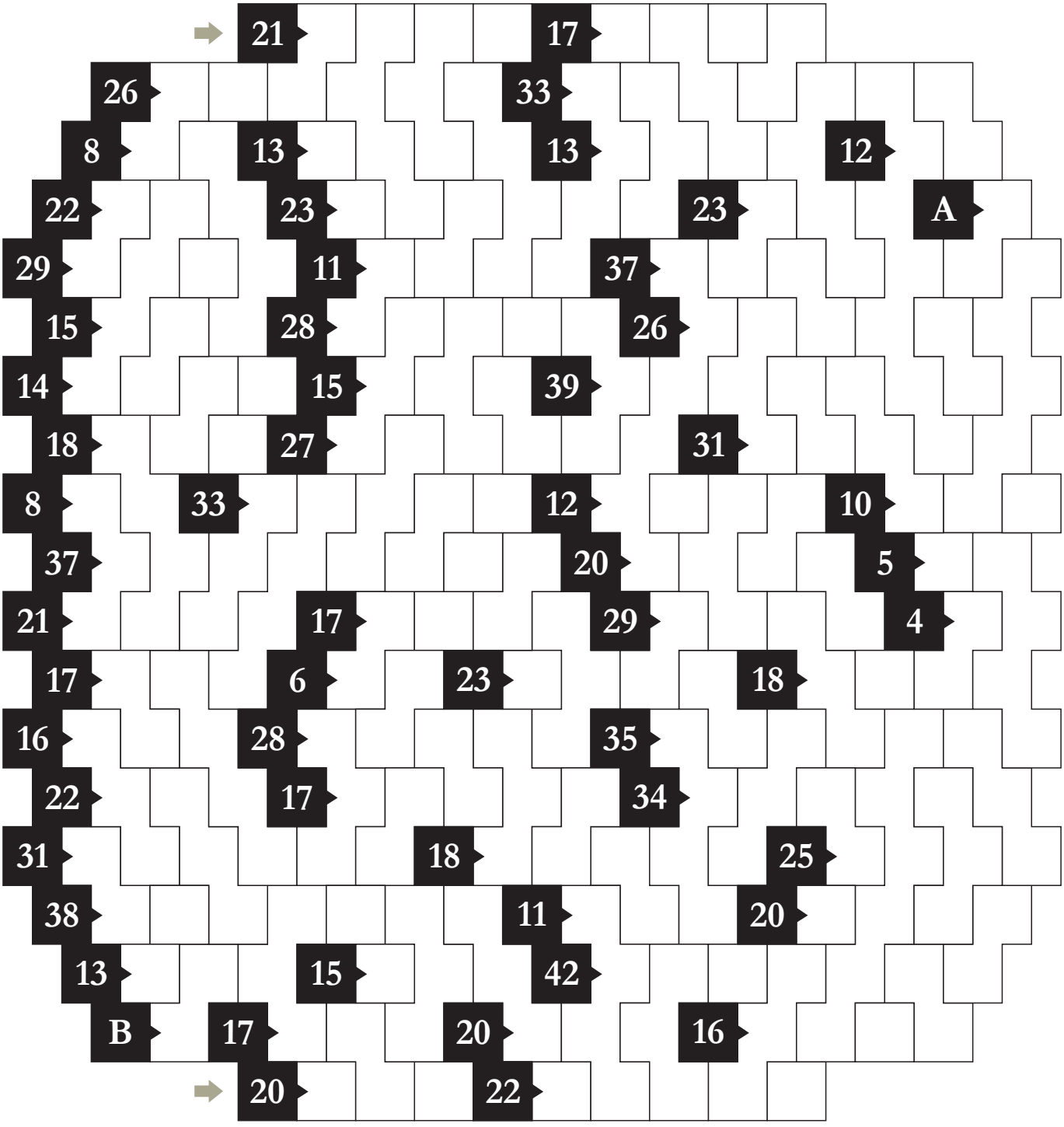
ALANA BARIS CHUYU DAVID
DIANA ELENA HELEN HUBER
KEVIN KOSEI PAOLO PIOTR
ROGER RUBEN TARMO YUNUS

Answer format: Write the content of the marked rows from left to right using "-" for an empty cell. For the example: --RO.

8. CASKURO **7 pt**

Fill the grid with digits from 1 to 9. In each horizontal block of white cells, the numbers are not repeated. The numbers in the black cells show the sum of the digits in the corresponding white blocks. A group of combined cells contain the same digit. If the neighboring cells are not combined, then they have different digits.





Answer format: Write the numerical values A and B, then content of the marked rows from left to right ignoring the black cells. For the example: 31, 41.

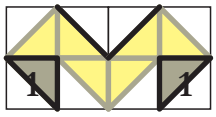
9. MOSAIC WITH DIGITS

7 pt

Divide all cells of the grid diagonally into two triangles. In each case, darken only one of the pair of triangles so that the entire dark area is connected (each dark triangle must have at least one segment in common with another dark triangle). The dark triangle represents an arrow pointing to a diagonal direction, and the number in the cell indicates the number of diagonals parallel to the diagonal in the cell with this number, in the direction away from the arrow.

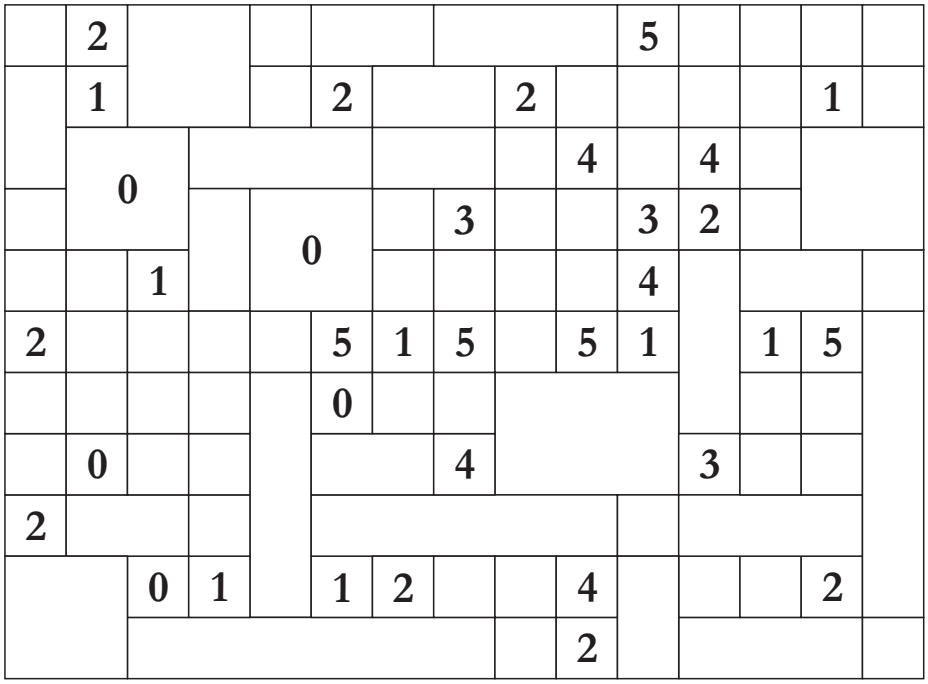
Example

Solution



Types of triangles

Answer format: Write the number of right triangles of the type B. For the example: 2.

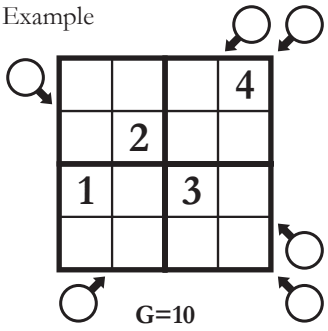


10. OPTI-SUMDOKU

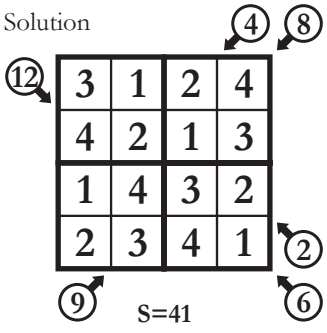
15, 12, 9, 6, 3 pt for best solutions

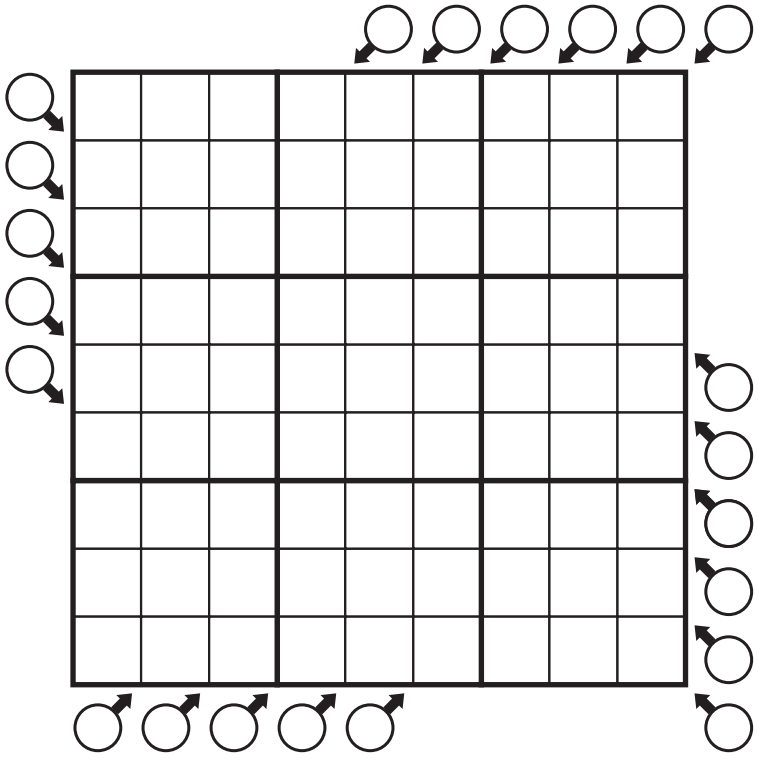
Create a Sudoku (Not a Samedoku) solvable as a Classic Sudoku with a unique solution. G is the sum of all given digits. Write in the circles the sum of all instances of digits that appear at least twice on the indicated diagonals, in the solution. Maximize the expression S – G, where S is the sum of all the numbers in the circles.

Example



Solution





Answer format: Write the values S – G, G, S. Then describe the sudoku grid line by line from left to right, using "-" for an empty cell. Finally, indicate sequentially from left to right the numbers in the upper circles, from top to bottom – in the right circles, from right to left – in the lower circles, from bottom to top – in the left circles. Use "-" for an empty circles. For the example: 31, 10, 41, ---4, -2--, 1-3-, ----, 4, 8, 2, 6, 9, 12.

11. NAME HITORI

15, 12, 9, 6, 3 pt for best solutions

Write in the 9 x 9 grid horizontally from left to right and vertically from top to bottom some of the given names and surnames. Words cannot be repeated. Fill the unused cells with any English letters. Words may follow each other without spaces, but they do not overlap each other in a common row/column. In other words, only horizontal and vertical words can intersect. The resulting grid should form a Hitori puzzle with a unique solution. Its rules: Blacken some cells so that the black cells do not touch each other with sides, and the letters in the white cells of each row and each column are different. The white area must be connected. Maximize the expression 10N + L, where N is the number of words, L is the number of different letters used.

Example

A	P	A	H	X
A	A	H	U	I
R	U	U	D	U
O	L	G	A	L
N	A	O	K	I
A	C	H	H	N

9 words, 14 different letters.

Result 104.

Solution

■	P	A	■	X
A	■	H	U	I
R	U	■	D	■
O	■	G	A	L
N	A	O	K	■
■	C	■	H	N

Horizontally:
APAHX, AAHUI, (RUUD)U, (OLGA)L, (NAOKI), ACHHM.
Vertically:
(AARON)A, (PAUL)AC, A(HUGO)H, (HUDAK)H, (XIU)(LIN).

AARON	CHEN	GIORGIA	KANG	MORINISHI	ROMON	TAKUYA
ADAM	CHERYL	GIULIA	KARTAL	MUIJRES	RUBEN	TANA
ADEM	CHIEN	GLIPERAL	KAZUYA	NAKAZAWA	RUUD	TAWAN
AHIR	CHOI	HARMEET	KEN	NALEKIM	SARAYU	TIM
AIPKIN	CHRIS	HARRISON	KOLVEKOVA	NAOKI	SCOTT	TIPHANIE
ALBERTO	CHRISTIAN	HARSH	KOSWARA	NGUYEN	SEBASTIEN	TIRALMO
ALEX	COLLIN	HE	KOTA	NEETA	SEKIYA	TOMASZ
ANDREA	CONNOR	HENNA	KUAN	NICCOLO	SEOK	VALENTIN
ANDREW	COSSUTTI	HIDEAKI	KUZNETSOV	NICOLAS	SERHII	VALERIE
ANDREY	DANZO	HOWARD	LEBEAU	NIKOLA	SESHADRI	VERENA
ANNE	DEB	HUANG	LEMESH	OLGA	SHENG	VERONIKA
ANTHEA	DENIS	HUBER	LENGAUER	OLIVIER	SHIFU	VIRGI
ANURAG	DESIREE	HUGO	LENNART	PAUL	SHINICHI	VLADIMIR
AOKI	DMITRY	HUDAK	LIN	PERALA	SHU	VOID
ARNAUD	DUMONT	HYUNMO	LIONEL	PHILIPPE	SHUT	WEI
ART	DUC	IGOR	LUKASZ	PODDAR	SIGLER	WILSON
AUBIN	EDOUARD	INDRANEEL	MAILER	PONTIER	SINGH	WOUTER
BALANOVA	ENDER	IVAN	MAN	PRASANNA	SOSTRA	XIAO
BAPTISTE	ENDO	JAMES	MARTIN	PROUVOST	STANLEY	XIU
BEATRICE	EVGENII	JAN	MATHILDE	PUUSEPP	STEFANO	YAMAMOTO
BENASSI	EWELINA	JEAN	MCGOWAN	RAKESH	SUGAI	YONG
BENOIT	FABIEN	JEFFREY	MCMILLAN	REINIER	SUGIMOTO	YOSHIAP
BLECON	FERNANDO	JELENA	MERLIJN	REINTAL	SWAGATAM	YU
BRANKO	FRANCOIS	JO	MEYER	REVENANT	TAIGO	YUNGUOWOO
BURIK	FRIEDHELM	JOERI	MIAKINEN	RIAD	TAINON	ZOLTAN
CALUM	GARANCE	JUDYTA	MICHAEL	RICARDO	TAKEMASA	
CERANIC	GARCONNET	KAJA	MOHANTY	RIDOUARD	TAKERU	

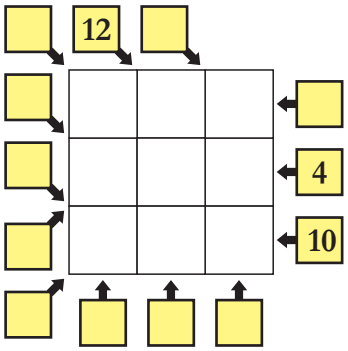
Answer format: Write the values 10N+L, N, L. Then describe sequentially the filling of the grid horizontally from top to bottom and vertically from left to right. Put each word in parentheses. For the example: 104, 9, 14, APAHX, AAHUI, (RUUD)U, (OLGA)L, (NAOKI), ACHHM, (AARON)A, (PAUL)AC, A(HUGO)H, (HUDAK)H, (XIU)(LIN).

12. OPTI-THREADS WITH KNOTS 15, 12, 9, 6, 3 pt for best solutions

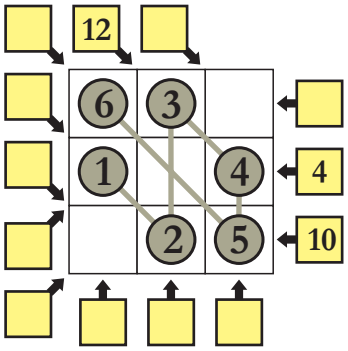
Create a Threads with Knots puzzle with a unique solution in the 9x9 grid. Its rules: Draw threads connecting knots (circles). A thread passes through the centers of some cells horizontally, vertically and diagonally (at an angle of 45° to the grid boundaries) and cannot overlap any other threads, but may pass through other circles that it isn't connecting. Numbers from 1 to 18 must appear in the circles, sequentially connected by threads. There must be exactly two circles in each row and column. The products of all the numbers are indicated outside the grid in some directions.

Minimize the expression S – L, where S is the sum of all given products and L is the total length of the thread. The length of the minimum horizontal and vertical segments is 1, and the length of the minimum diagonal segment is assumed to be 1.4.

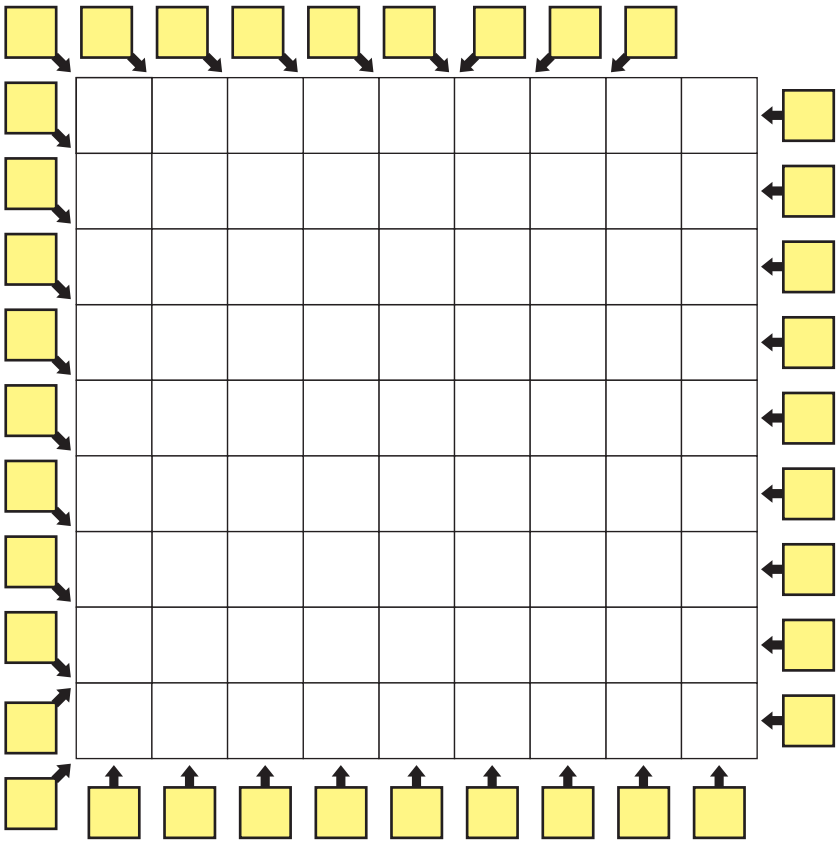
Example



Solution



S = 26, L = 8.6



Answer format: Write the values S – L, S, L. Then describe the grid filled with circles line by line from left to right. Finally, indicate sequentially from left to right the numbers in the upper squares, from top to bottom in the right squares, from right to left in the lower squares, from bottom to top in the left squares. Use "-" for an empty cells. For the example: 18.6, 26, 8.6, 63-, 1-4, -25, -, 12, -, -, 4, 10, -, -, -, -, -, - , -.