WPF SUDOKU/PUZZLE **GRAND PRIX** 2021

ROUND 4

WPF PUZZLE GP 2021 INSTRUCTION BOOKLET

Host Country: Switzerland

Roger Kohler, Esther Naef, Markus Roth

Special Notes: Point values are approximate and subject to change.

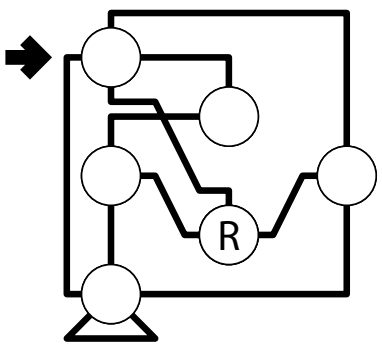
Points:		
1.	**Elastic Words**	**19**
2.	**Elastic Words**	**60**
3.	**Find 5 Pairs**	**30**
4.	**Post-Its**	**4**
5.	**Post-Its**	**2**
6.	**Post-Its**	**4**
7.	**Gaps (No Touch)**	**18**
8.	**Gaps (No Touch)**	**75**
9.	**Myopia**	**25**
10.	**Myopia**	**65**
11.	**Suguru**	**18**
12.	**Suguru**	**55**
13.	**Pento-Blokus**	**29**
14.	**Pento-Blokus**	**34**
15.	**Yin-Yang (No Swiss)**	**11**
16.	**Yin-Yang (No Swiss)**	**19**
17.	**Slitherlink (No Swiss)**	**30**
18.	**Slitherlink (No Swiss)**	**86**
19.	**Swiss Crosses (2-color)**	**27**
20.	**Swiss Crosses (2-color)**	**31**
21.	**Swiss Crosses (Sum)**	**27**
22.	**Swiss Crosses (Sum)**	**31**
23.	**Magnets (Horseshoes)**	**42**
24.	**Magnets (Horseshoes)**	**47**
TOTAL:		XXX

1-2. Elastic Words [Markus Roth] (19, 60 points)

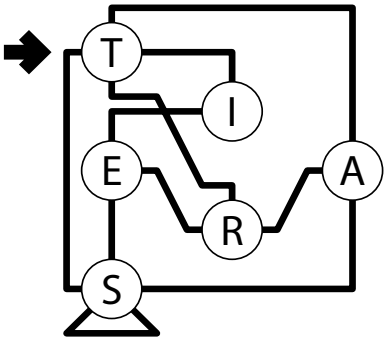
Fill in each circle with a distinct letter so that the given set of words can be read by traversing lines in the network. (In other words, if two letters are adjacent within a word, there must be a line connecting the circles with those two letters.)

Answer: Enter all the letters in the network, starting at the top node (as pointed at by an arrow) and proceeding clockwise (ignoring connecting lines) around the rough shape formed by the nodes. Include all given letters in your answer.

Example Answer: TIARSE



TASTIER
STRASSE



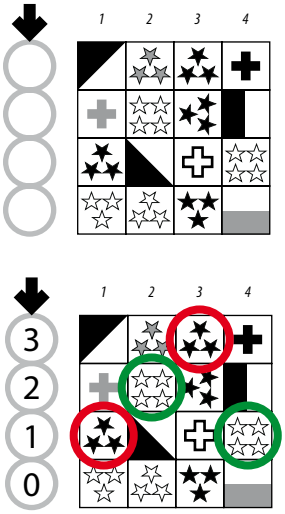
3. Find 5 Pairs [Esther Naef] (30 points)

Five pairs (two pairs in the example) of images (all parts of the coats-of-arms of Swiss cantons) are identical (rotations and reflections are not considered identical). Where are those ten images?

The numbers on the far top of the diagram are for Answer purposes only.

Answer: For each row from top to bottom, enter the number of the first column from the left where one of the ten images appears (the number on the far top of that column). Use only the last digit for two-digit numbers; e.g., use '0' if the first such image appears in column 10. If none of the ten images are in the row, enter '0'.

Example Answer: 3210

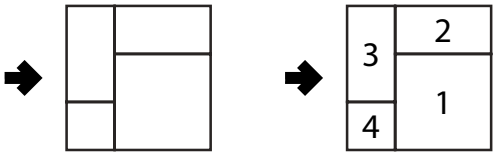


4-6. Post-Its [Markus Roth] (4, 2, 4 points)

The regions in the grid represent multiple overlapping 2×2 squares numbered from 1 to *N*, in order from top to bottom. (*N* is the number of regions in the grid.) Determine the number for each region.

Answer: For the designated row, enter the numbers for all regions in that row from left to right. Use only the last digit for two digit numbers; e.g., use '0' for the number 10.

Example Answer: 31



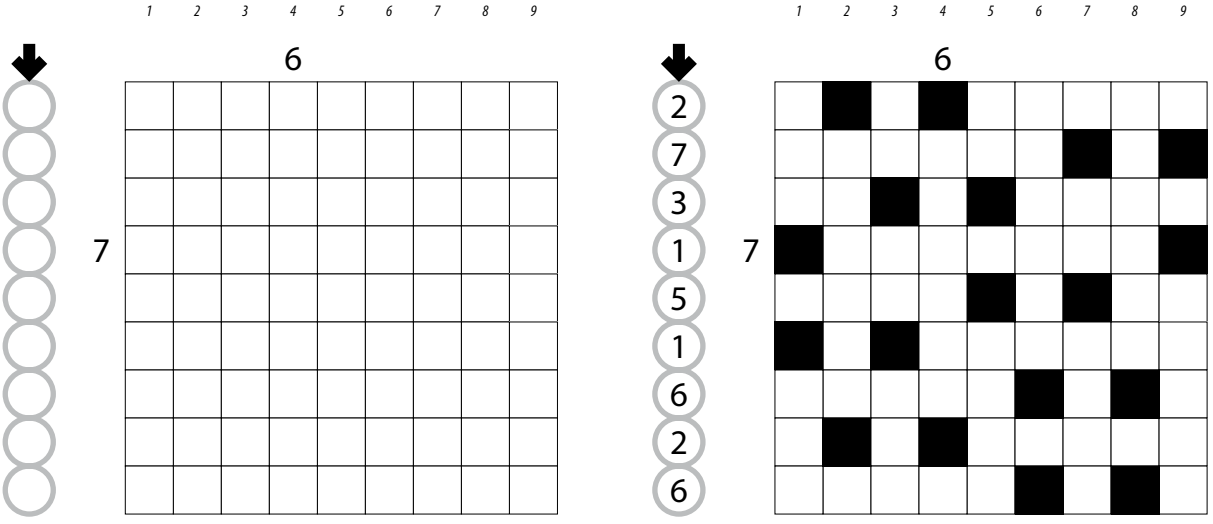
7-8. Gaps (No Touch) [Markus Roth] (18, 75 points)

Blacken some cells in the grid such that each row and each column contains exactly two blackened cells. The numbers to the left of (or above) the grid indicate the number of unblackened cells between the blackened cells in that row (or column). Blackened cells may not touch each other, not even diagonally.

The numbers on the far top of the diagram are for Answer purposes only.

Answer: For each row from top to bottom, enter the number of the first column from the left where a blackened cell appears (the number on the far top of that column). Use only the last digit for two-digit numbers; e.g., use '0' if the first blackened cell appears in column 10.

Example Answer: 273151626

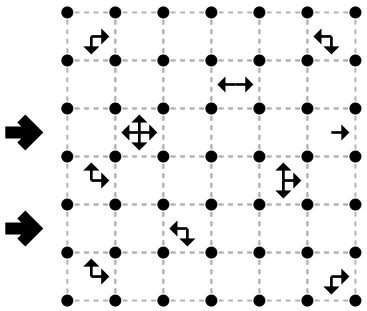


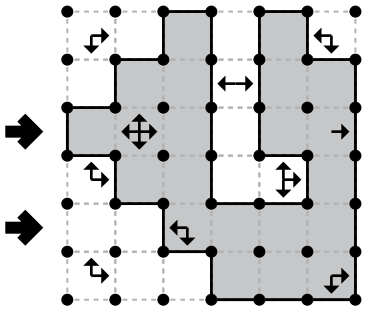
9-10. Myopia [Markus Roth] (25, 65 points)

Draw a single, non-intersecting loop that only consists of orthogonal line segments between the dots. Arrows in a cell indicate *all* closest loop edges to that cell along the four orthogonal directions (if there are multiple loop edges of the same closest distance to the cell, there will be multiple arrows).

Answer: For each designated row, enter its contents from left-to-right. Use 'O' for a cell inside the loop and 'X' for a cell outside the loop. You may use two other characters, as long as they are distinct.

Example Answer: OOOXOO, XXOOOO



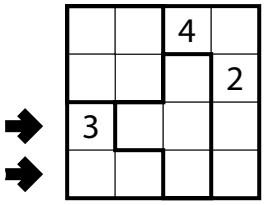


11-12. Suguru [Roger Kohler] (18, 55 points)

Place a number into each cell so that each bold region contains the numbers from 1 to *N*, where *N* is the number of cells in the region. Cells containing the same number must not touch along an edge or a corner. Some numbers may be already filled in the grid.

Answer: For each designated row, enter its contents (including any given numbers).

Example Answer: 3435, 2121



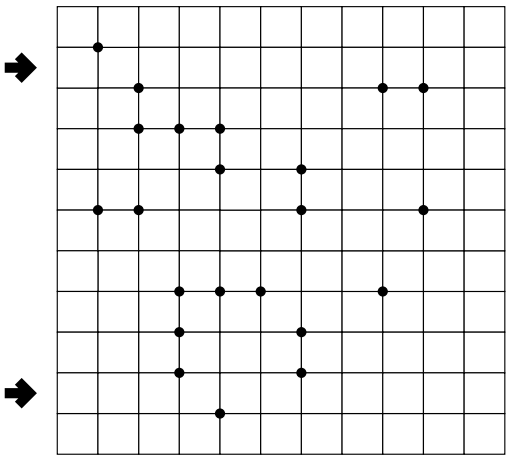
4	3	4	3
1	2	1	2
3	4	3	5
2	1	2	1

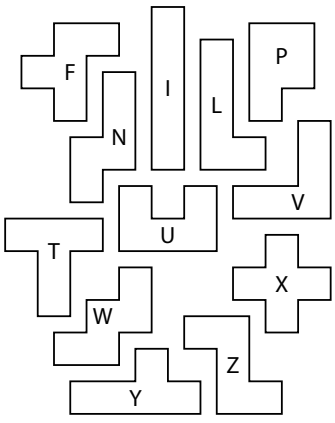
13-14. Pento-Blokus [Markus Roth] (29, 34 points)

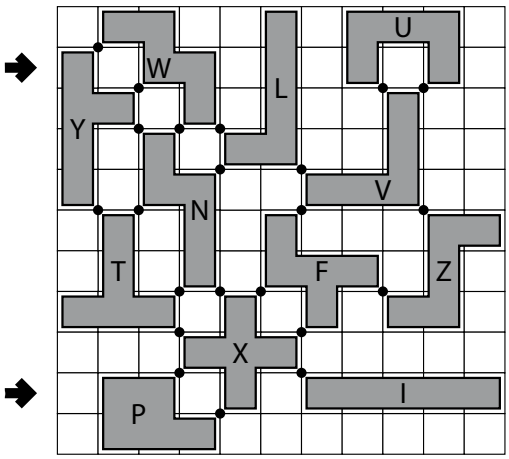
Shade some cells black so that the black cells form the shapes of twelve different pentominoes. Each pentomino shape is used exactly once, but can be rotated or reflected. Pentominoes cannot touch along edges, but can touch at corners. If a corner is marked with a dot, then two pentominoes touch at that corner. If a corner is not marked with a dot, then two pentominoes do not touch at that corner.

Answer: For each designated row, enter the letter for each pentomino that appears in that row, from left to right. Within a row, if a pentomino occupies more than one cell, only enter that pentomino's letter once. If there are no pentominoes in that row, enter a single letter 'A'.

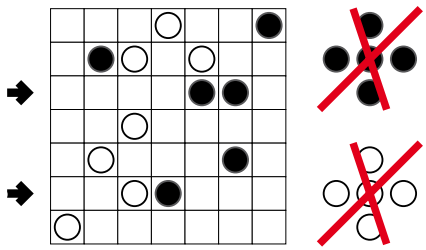
Example Answer: YWLU, PXI





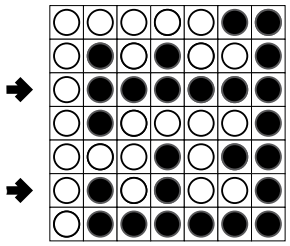


15-16. Yin-Yang (No Swiss) [Esther Naef] (11, 19 points)



Fill each cell with either a black or a white circle. All cells with black circles must be connected orthogonally, and all cells with white circles must be connected orthogonally. Every 2×2 group of cells must contain at least one black circle and at least one white circle. Some cells are already filled in for you.

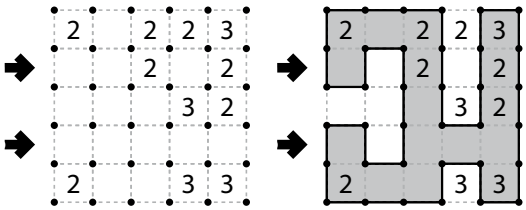
Every Swiss cross-shaped arrangement of five cells must contain at least one black circle and at least one white circle.



Answer: For each designated row, enter its contents from left to right. Use 'O' for a white cell and 'X' for a black cell. You may use two other characters, as long as they are distinct.

Example Answer: OXXXXXX, OXOXOOX

17-18. Slitherlink (No Swiss) [Markus Roth] (30, 86 points)



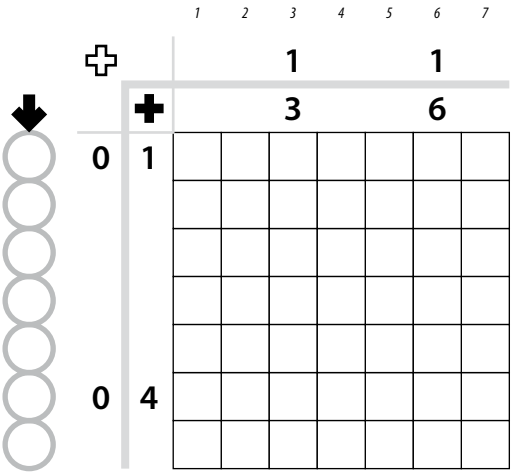
Draw a single, non-intersecting loop that only consists of line segments between the dots along the dotted lines. A number inside a cell indicates how many of the edges of that cell are part of the loop.

Every Swiss cross-shaped arrangement of five cells must contain at least one cell inside the loop and one cell outside the loop.

Answer: For each designated row, enter its contents from left-to-right. Use 'O' for a cell inside the loop and 'X' for a cell outside the loop. You may use two other characters, as long as they are distinct.

Example Answer: OXOXO, OXOOO

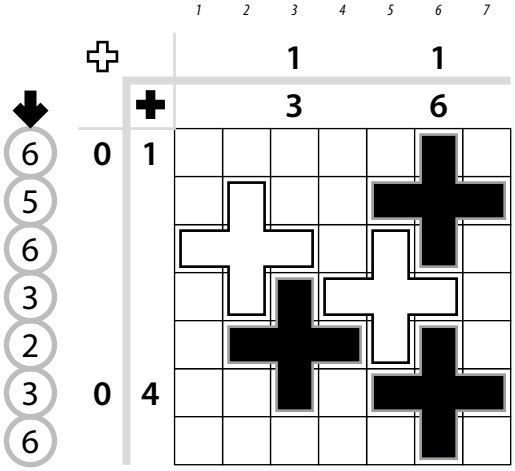
19-20. Swiss Crosses (2-color) [Esther Naef] (27, 31 points)



Locate some black Swiss crosses and some white Swiss crosses in the grid. Swiss crosses of the same color may not touch along an edge of a cell.

The numbers to the top and left of the grid reveals the number of cells of that color that are part of a Swiss cross in that row or column.

The numbers on the far top of the diagram are for Answer purposes only.



Answer: For each row from top to bottom, enter the number of the first column from the left where a black Swiss cross appears (the number on the far top of that column). Use only the last digit for two-digit numbers; e.g., use '0' if the first black Swiss cross appears in column 10. If the row has no black Swiss crosses, enter '0'.

Example Answer: 6563236

21-22. Swiss Crosses (Sum) [Esther Naef] (27, 31 points)

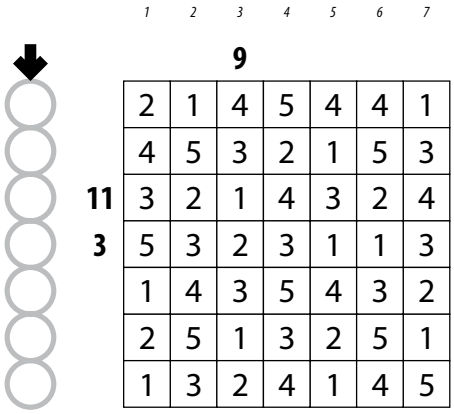
Locate some Swiss crosses in the grid. Each Swiss cross must overlap five distinct numbers from 1 to 5. Swiss crosses may not touch along an edge of a cell.

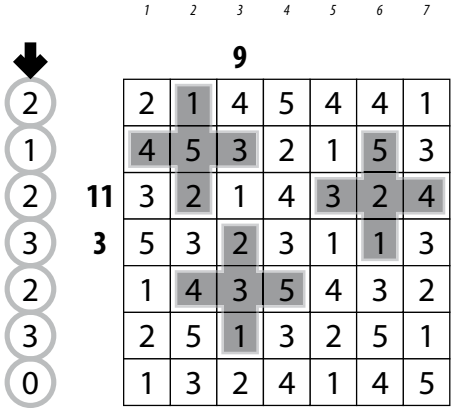
Each number to the left and top of the grid reveals the sum of the numbers in the cells that contain part of a Swiss cross in that row or column.

The numbers on the far top of the diagram are for Answer purposes only.

Answer: For each row from top to bottom, enter the number of the first column from the left where a Swiss cross appears (the number on the far top of that column). Use only the last digit for two-digit numbers; e.g., use '0' if the first Swiss cross appears in column 10. If the row has no Swiss crosses, enter '0'.

Example Answer: 2123230





23-24. Magnets (Horseshoes) [Roger Kohler] (42, 47 points)

The grid is partitioned into some regions of two square cells each and some 2×2 regions of four square cells each (note that only region borders are drawn). Put "positive" (+) and "negative" (–) symbols into some cells, at most one symbol per cell, such that each region either is completely filled with symbols or no symbols at all. If a 2×2 region is filled with symbols, it must contain two "positive" symbols that touch along an edge and two "negative" symbols that touch along an edge. In all other cases, adjacent cells must not contain the same symbol.

The numbers above and to the left of the grid indicate the exact number of symbols of the specified type that must be placed in each column or row, respectively. If a number is not given, there might be any number of symbols of the specified type.

The dots in cells are only used for entering your answer.

Answer: Enter the contents of each dotted cell, reading the dots from left to right. (Ignore which row the dots are in.) Use 'P' for a "positive" (+) symbol, 'N' for a "negative" (–) symbol, and 'X' for an empty cell. Alternatively, you may use any three characters instead of 'PNX', as long as they are distinct.

Example Answer: PXPXNP