WPF SUDOKU/PUZZLE **GRAND PRIX** 2021

ROUND 7

WPF PUZZLE GP 2021 INSTRUCTION BOOKLET

Host Country: Slovakia

Matej Uher

Special Notes: None.

Points:

1.	**Kuromasu**	**39**
2.	**Criss-Cross**	**42**
3.	**Fillomino**	**14**
4.	**Easy As**	**11**
5.	**Battleships**	**150**
6.	**Kuromasu (Product)**	**52**
7.	**Kuromasu (Star Battle)**	**54**
8.	**Criss-Cross (TomTom)**	**33**
9.	**Criss-Cross (Crowded)**	**71**
10.	**Fillomino (123)**	**38**
11.	**Fillomino (Futoshiki)**	**70**
12.	**Easy As (no 2×2)**	**54**
13.	**Easy As (Loop)**	**61**
14.	**Battleships (Different Fleet)**	**89**
15.	**Battleships (Index Sums)**	**21**
TOTAL:		799

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1. Kuromasu (39 points)

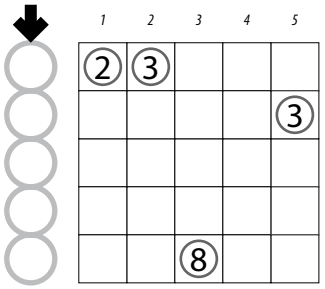
Shade some uncircled cells so that all remaining cells are connected orthogonally and no two black cells share an edge. Each numbered cell indicates the total count of unshaded cells connected in line vertically and horizontally to the numbered cell *including the cell itself*.

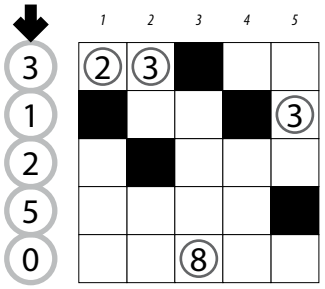
Cells with circles must not be shaded.

The numbers on 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 shaded square appears. Use only the last digit for two-digit numbers; e.g., use '0' if the first shaded square appears in column 10. If the row is empty, enter '0'.

Example Answer: 31250





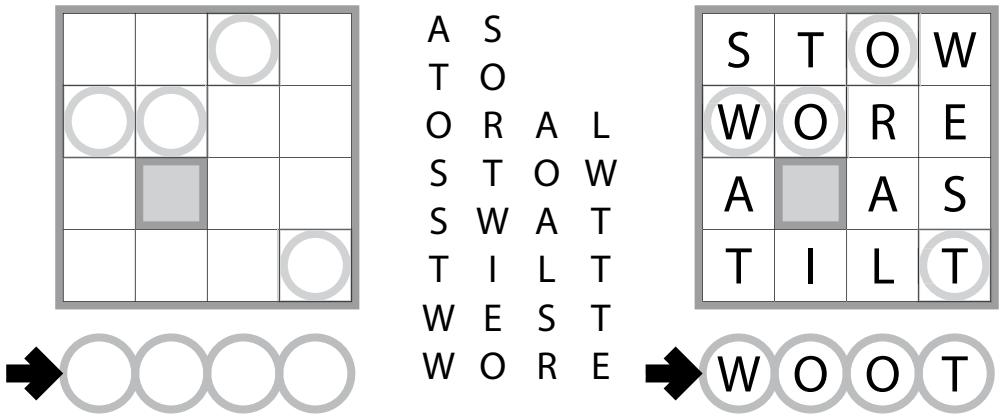
2. Criss-Cross (42 points)

Enter the given words in the grid, one character per cell. Each word is used exactly once, and will either read left-to-right or top-to-bottom.

The circles in the diagram are for Answer purposes only.

Answer: Enter the characters in each of the circled cells, from left to right. (Ignore the row each circle is in. The characters will not necessarily spell anything meaningful.)

Example Answer: `WOOT`



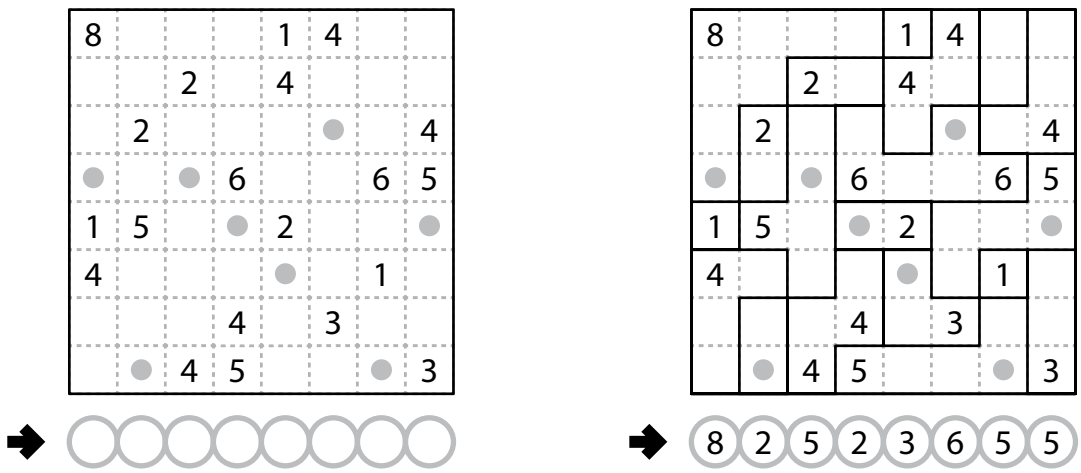
3. Fillomino (14 points)

Divide the grid along the dotted lines into regions (called polyominoes) so that no two polyominoes with the same area share an edge. Inside some cells are numbers; each number must equal the area of the polyomino it belongs to. A polyomino may contain zero, one, or more of the given numbers. (It is possible to have a "hidden" polyomino: a polyomino without any of the given numbers. "Hidden" polyominoes may have any area, including a value not present in the starting grid, such as a 6 in a puzzle with only clues numbered 1-5.)

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

Answer: Enter the area of the polyomino each dot is in, reading the dots from left to right. (Ignore which row the dots are in.) Use only the last digit for two-digit numbers; e.g., use '`0`' for a polyomino of size 10.

Example Answer: `82523655`

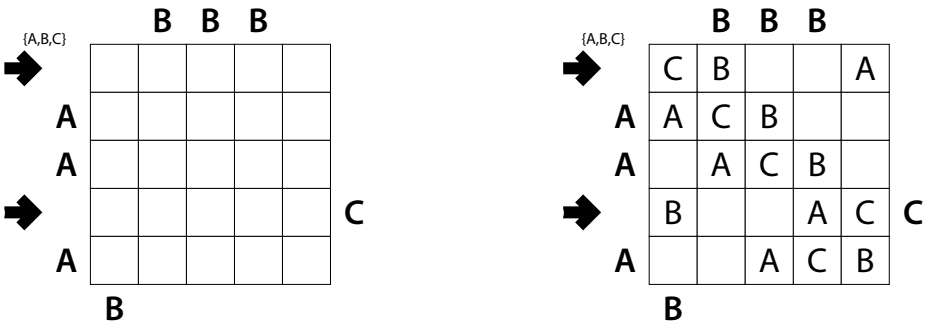


4. Easy As (11 points)

Place letters of the specified list into some cells, no more than one letter per cell, so that each letter appears exactly once in each row and column. The letters outside the grid indicate the first letter that can be seen in the respective row or column from the respective direction. Some letters may already be filled in for you. Some cells might be marked with a cross; do not put any letters into those cells.

Answer: For each designated row, enter its contents. Do *not* include any letters outside the grid. Use 'X' for an empty cell.

Example Answer: CBXXA, BXXAC



5. Battleships (150 points)

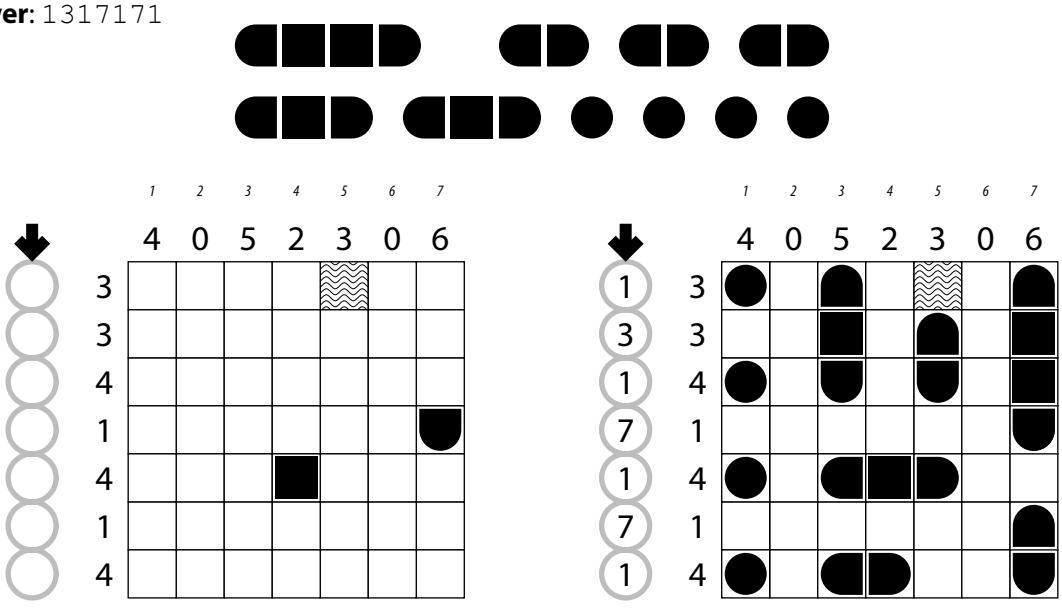
Locate the indicated fleet of ships in the grid. Ships may be rotated before being placed in the grid. Each piece of a ship occupies a single cell. A cell that does not contain a ship piece is considered "sea". Ships do not touch each other, not even diagonally (that is, if two ship pieces are cells that share an edge or a corner, they must be part of the same ship). The contents of some cells are given for you.

Each number to the top and left of the grid reveals the number of ship pieces that must be located in that row or column (including any that might be given for you).

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 ship piece 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 ship piece appears in column 10. If the row is empty, enter '0'.

Example Answer: 1317171



6. Kuromasu (Product) (52 points)

Shade some uncircled cells so that all remaining cells are connected orthogonally and no two black cells share an edge.

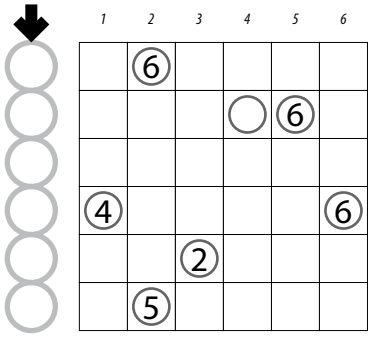
Cells with circles must not be shaded.

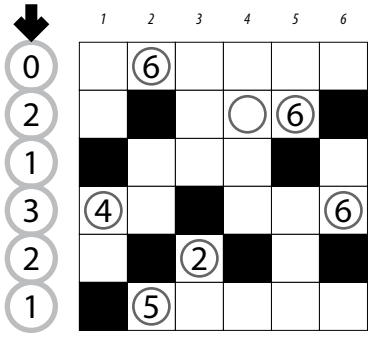
Each numbered cell indicates the count of unshaded cells connected in line vertically to the numbered cell *including the cell itself*, multiplied by the count of unshaded cells connected in line horizontally to the numbered cell (also including the cell itself).

The numbers on 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 shaded square appears. Use only the last digit for two-digit numbers; e.g., use '0' if the first shaded square appears in column 10. If the row is empty, enter '0'.

Example Answer: 021321





7. Kuromasu (Star Battle) (54 points)

Shade some uncircled cells. Each numbered cell indicates the total count of unshaded cells connected in line vertically and horizontally to the numbered cell *including the cell itself*.

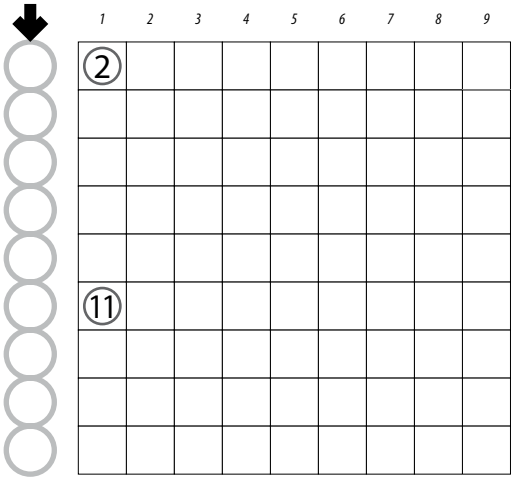
Cells with circles must not be shaded.

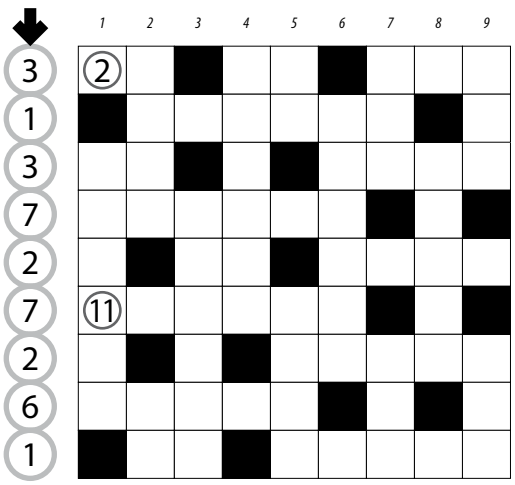
Each row and each column must contain exactly two shaded cells. Shaded cells may not touch each other along an edge or a corner.

The numbers on 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 shaded square appears. Use only the last digit for two-digit numbers; e.g., use '0' if the first shaded square appears in column 10. If the row is empty, enter '0'.

Example Answer: 313727261





8. Criss-Cross (TomTom) (33 points)

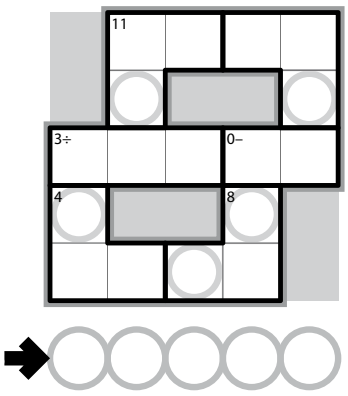
Enter the given words in the grid, one character per cell. Each word is used exactly once, and will either read left-to-right or top-to-bottom.

Numbers may repeat within an outlined region. The number in the upper-left corner of each region indicates the value of one of the four basic operations applied to all numbers in the region, starting with the largest number for subtraction and division (e.g., 1, 2, 4 with division has a clue of 2÷ as 4÷2÷1=2). The operation may or may not be given in the region, but at least one of the four operations must apply.

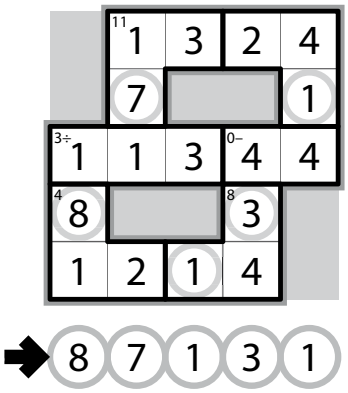
The circles in the diagram are for Answer purposes only.

Answer: Enter the characters in each of the circled cells, from left to right. (Ignore the row each circle is in. The characters will not necessarily spell anything meaningful.)

Example Answer: `87131`



1 7 1
1 8 1
4 1 4
4 3 4
1 2 1 4
1 3 1 4
1 1 3 4 4



8 7 1 3 1

9. Criss-Cross (Crowded) (71 points)

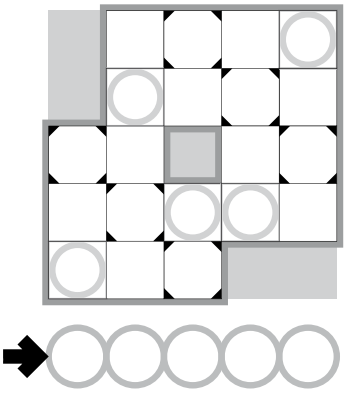
Enter the given words in the grid, at least one character per cell. Each word is used exactly once, and will either read left-to-right or top-to-bottom.

Cells with black marks in their corners may contain more than one character; cells without black marks must contain exactly one character.

The circles in the diagram are for Answer purposes only.

Answer: Enter the characters in each of the circled cells, from left to right. (Ignore the row each circle is in. The characters will not necessarily spell anything meaningful.)

Example Answer: `13131`



3 5 7
1 3 3 5
1 3 3 7
1 3 5 5
1 3 3 3 5
1 3 3 7 1
1 3 5 7 1
1 3 7 3 3
3 7 3 1 3
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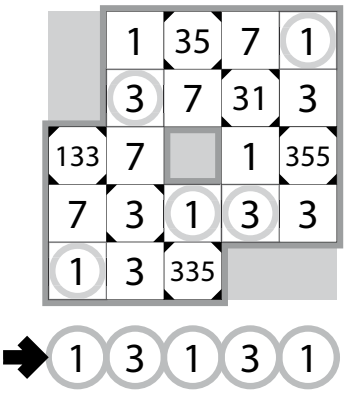
7 3 1 3 3
1 3 3 5 5 3



1 3 1 3 1

10. Fillomino (123) (38 points)

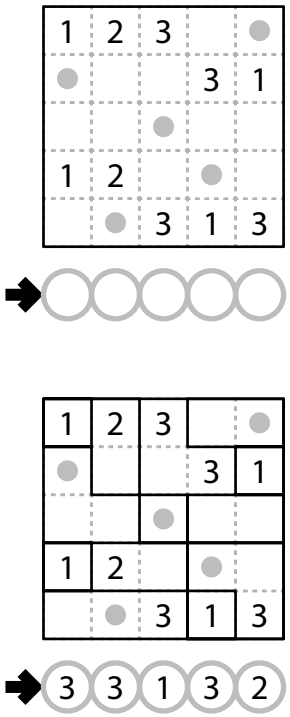
Divide the grid along the dotted lines into regions (called polyominoes) so that no two polyominoes with the same area share an edge. Inside some cells are numbers; each number must equal the area of the polyomino it belongs to. A polyomino may contain zero, one, or more of the given numbers. (It is possible to have a "hidden" polyomino: a polyomino without any of the given numbers. "Hidden" polyominoes may have any area, including a value not present in the starting grid, such as a 3 in a puzzle with only clues numbered 1-2.)

All polyominoes have area of 3 cells or fewer.

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

Answer: Enter the area of the polyomino each dot is in, reading the dots from left to right. (Ignore which row the dots are in.)

Example Answer: 33132



11. Fillomino (Futoshiki) (70 points)

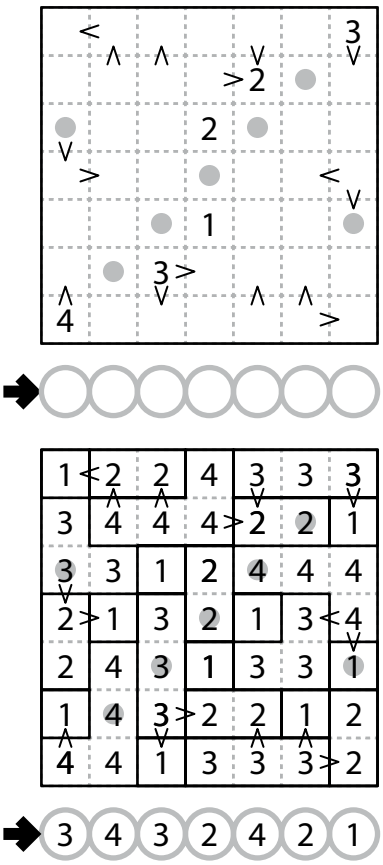
Divide the grid along the dotted lines into regions (called polyominoes) so that no two polyominoes with the same area share an edge. Inside some cells are numbers; each number must equal the area of the polyomino it belongs to. A polyomino may contain zero, one, or more of the given numbers. (It is possible to have a "hidden" polyomino: a polyomino without any of the given numbers. "Hidden" polyominoes may have any area, including a value not present in the starting grid, such as a 6 in a puzzle with only clues numbered 1-5.)

Place a number into each cell representing the area of the polyomino that cell is in. Each number from 1 to X must appear at least once in each row and column, and numbers greater than X may not appear in the grid. It is up to you to determine the correct value of X. Some inequality relations are given between adjacent cells; they must apply to the numbers in those cells.

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

Answer: Enter the area of the polyomino each dot is in, reading the dots from left to right. (Ignore which row the dots are in.) Use only the last digit for two-digit numbers; e.g., use '0' for a polyomino of size 10.

Example Answer: 3432421



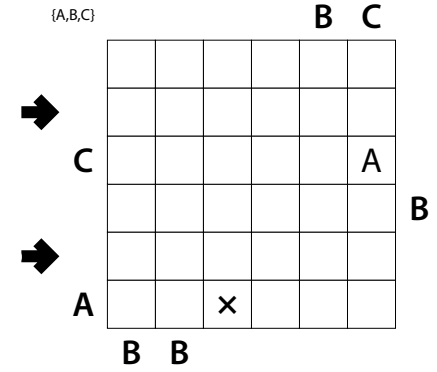
12. Easy As (no 2×2) (54 points)

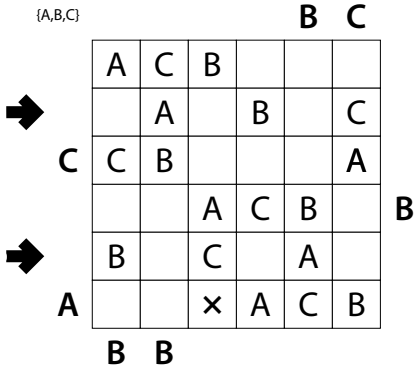
Place letters of the specified list into some cells, no more than one letter per cell, so that each letter appears exactly once in each row and column. The letters outside the grid indicate the first letter that can be seen in the respective row or column from the respective direction. Some letters may already be filled in for you. Some cells might be marked with a cross; do not put any letters into those cells.

No 2×2 group of cells can be entirely filled with letters (from the specified list). Every 2×2 group of cells must have at least one letter (from the specified list).

Answer: For each designated row, enter its contents. Do *not* include any letters outside the grid. Use 'X' for an empty cell.

Example Answer: XAXBXC, BXCXAX





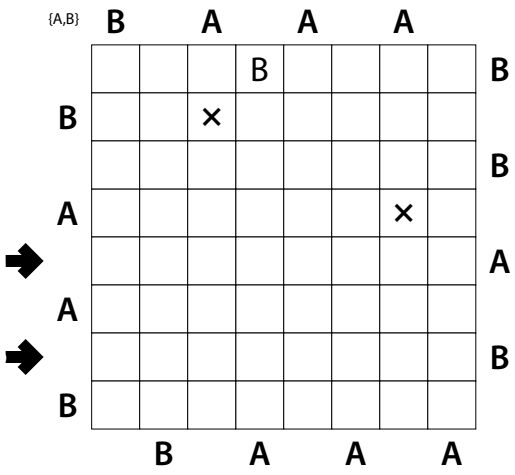
13. Easy As (Loop) (61 points)

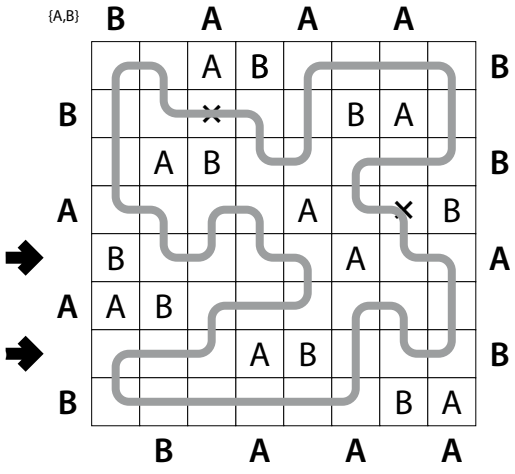
Place letters of the specified list into some cells, no more than one letter per cell, so that each letter appears exactly once in each row and column. The letters outside the grid indicate the first letter that can be seen in the respective row or column from the respective direction. Some letters may already be filled in for you. Some cells might be marked with a cross; do not put any letters into those cells.

It must be possible to draw a single loop that passes orthogonally through centers of all cells without a letter (from the specified list). The loop does not intersect itself or enter the same cell more than once.

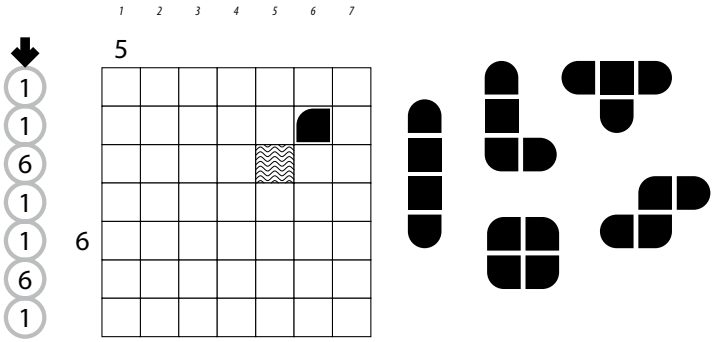
Answer: For each designated row, enter its contents. Do *not* include any letters outside the grid. Use 'X' for a cell without a letter.

Example Answer: BXXXXAXX, XXXABXXX





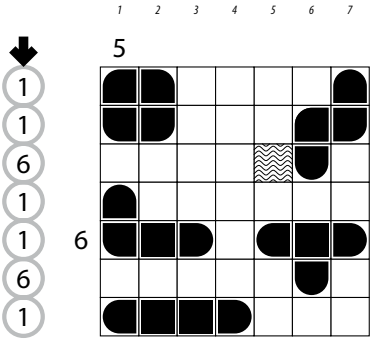
14. Battleships (Different Fleet) (89 points)



Locate the indicated fleet of ships in the grid. Ships may be rotated *and may be reflected* before being placed in the grid. Each piece of a ship occupies a single cell. A cell that does not contain a ship piece is considered "sea". Ships do not touch each other, not even diagonally (that is, if two ship pieces are cells that share an edge or a corner, they must be part of the same ship). The contents of some cells are given for you.

Each number to the top and left of the grid reveals the number of ship pieces that must be located in that row or column (including any that might be given for you).

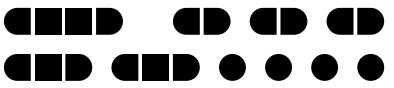
Note that the fleet is not the standard fleet, and that reflecting ships before locating them is possible. The numbers on the far top of the diagram are for Answer purposes only.

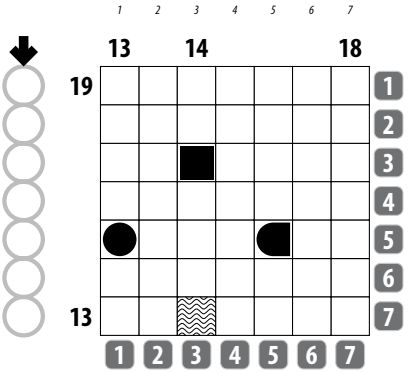


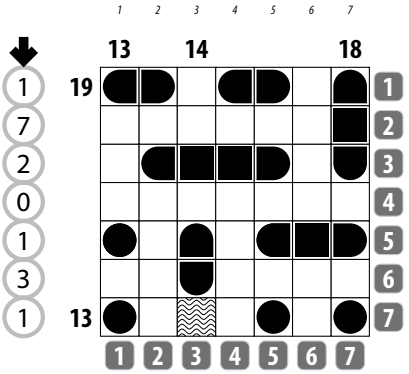
Answer: For each row from top to bottom, enter the number of the first column from the left where a ship piece appears (the number on the far top of that column). Use only the last digit for two-digit numbers; e.g., use '0' if the first ship piece appears in column 10. If the row is empty, enter '0'.

Example Answer: `1161161`

15. Battleships (Index Sums) (21 points)







Locate the indicated fleet of ships in the grid. Ships may be rotated before being placed in the grid. Each piece of a ship occupies a single cell. A cell that does not contain a ship piece is considered "sea". Ships do not touch each other, not even diagonally (that is, if two ship pieces are cells that share an edge or a corner, they must be part of the same ship). The contents of some cells are given for you.

Each cell in the grid has a row number (the white-on-gray numbers to the right of the grid) and a column number (the white-on-gray numbers below the grid). Each large number above the grid represents the sums of the row numbers of the ship pieces in that column. Each large number to the left of the grid represents the sums of the column numbers of the ship pieces in that row.

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 ship piece 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 ship piece appears in column 10. If the row is empty, enter '0'.

Example Answer: `1720131`