

# WPF PUZZLE GP 2023 COMPETITION BOOKLET

**Host Country: Türkiye**

**Salih Alan, Murat Can Tonta, Hatice Esra Aydemir**

**Special Notes:** None.

## 1. Password Path [Salih Alan] (26 points)

Find a path that starts at the upper-left letter, ends at the lower-right letter, goes through each letter once, and repeats only the password (given below the grid). The path may only travel in the eight standard directions and may *not* intersect itself.

*The small digits are only used for entering your answer.*

**Answer:** Enter the order in which the digits appear on the path.

**Example Answer:** 1463580972



PUZZLE

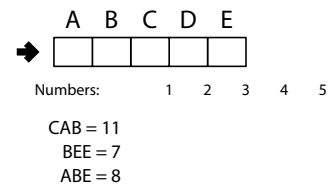
1

A	C	D	B	D	<sup>1</sup> A	B	C
B	D	<sup>2</sup> A	C	C	B	B	D
A	C	B	A	D	A	C	A
B	<sup>3</sup> A	B	B	C	D	A	D
C	C	D	C	<sup>4</sup> A	B	D	<sup>5</sup> A
<sup>6</sup> A	D	B	D	C	D	C	B
B	C	A	D	B	<sup>7</sup> A	A	C
D	A	B	C	C	D	B	D

ABCD

**2. Letter Weights [Murat Can Tonta] (64 points)**

Write a number under each letter (in each cell) so that the numbers corresponding to the letters in each given word have the given sum. Different letters must have different numbers. The list of allowed numbers is given in a row underneath the cells.



**Answer:** Enter the contents of the cells, from left to right. Enter all digits for multi-digit numbers (for example, if the cell contents were 12, then 5, then 25, enter 12525).

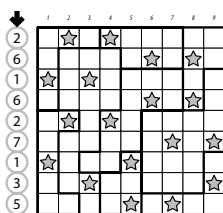
**Example Answer:** 25431

	A	B	D	E	H	L	O	P	R	T	U
➔											
Numbers:	1	2	3	4	5	6	7	8	9	10	11
	BLOB = 32										
	HEART = 39										
	LETTER = 46										
	PURPLE = 26										
	TADA = 32										



### 3. Star Battle [Hatice Esra Aydemir] (17 points)

Place stars into some cells in the grid, no more than one star per cell. Each row, each column, and each outlined region must contain exactly two stars. Cells with stars 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 star appears (the number on top of that column). Use only the last digit for two-digit numbers; e.g., use '0' if the first star appears in column 10.

**Example Answer:** 261627135

### 4. LITS [Hatice Esra Aydemir] (22 points)

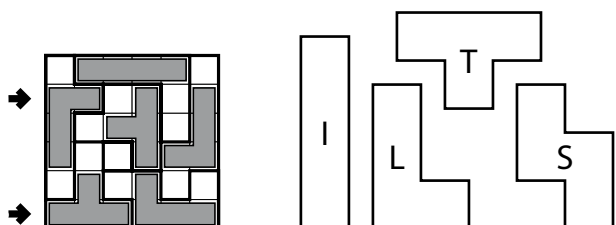
Shade exactly four connected cells in each outlined region (with at least four cells) to form a tetromino, so that the following conditions are true: (1) All tetrominoes are connected into one large shape along their edges; (2) No 2x2 group of cells can be entirely shaded; (3) When two tetrominoes share an edge, they must not be of the same shape, regardless of rotations or reflections. (Not all four possible shapes have to be present in the grid; for example, it is possible for your solution to not have any "I" shapes.)

Regions with fewer than four cells will not have any shaded cells.

A list of shapes to the letters "LITS" is provided. This is only needed for entering your answer.

**Answer:** For each designated row, enter the contents of each cell, from left to right. For each cell, its contents are the letter of the tetromino occupying that cell, or the letter 'X' if the cell is not shaded.

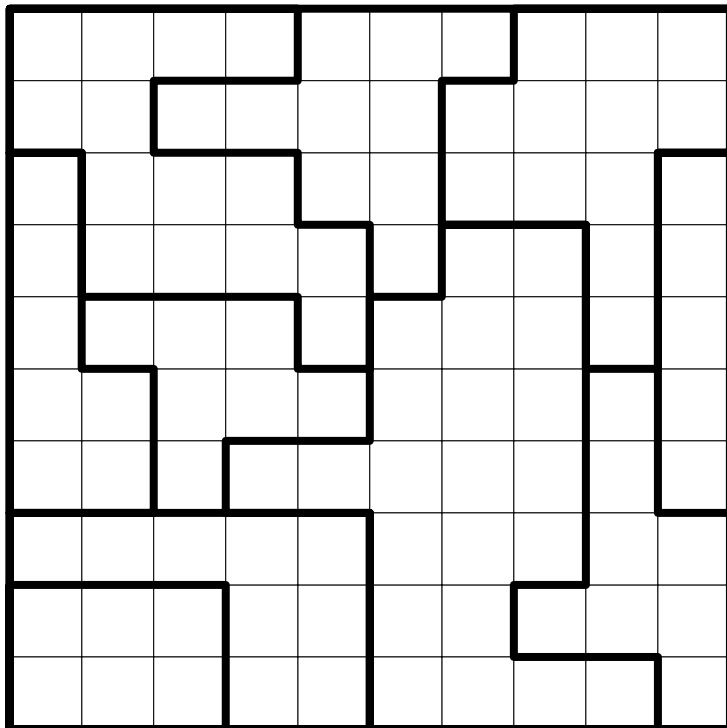
**Example Answer:** LLXTXL, TTLLL



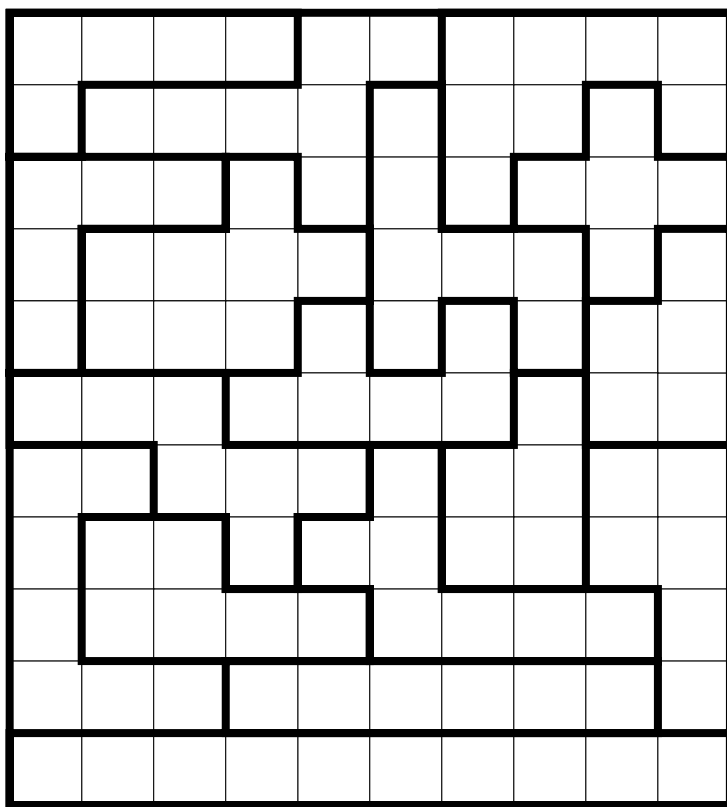
3

Answer input area for puzzle 3, consisting of a vertical column of 10 circles. The top circle is filled with the number 3.

1 2 3 4 5 6 7 8 9 0



4a

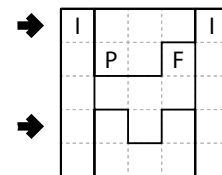


4b



**7. Pentominous [Salih Alan] (46 points)**

Divide the grid into pentominoes such that every cell in the grid is part of exactly one pentomino. Pentominoes of the same shape (rotations and reflections of a pentomino count as the same shape) cannot touch each other along an edge (but they may touch diagonally). Some letters are given in the grid. Each letter must be part of a pentomino with that letter's shape. It is permissible for a pentomino to contain more than one letter. (It is possible for some pentomino shapes to never appear in the grid, or more than once.)

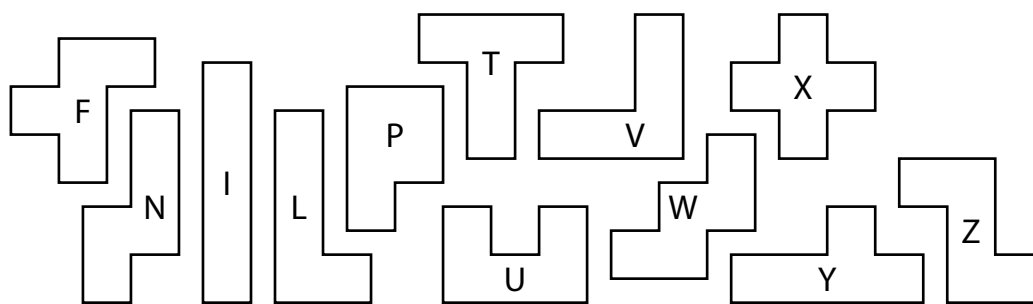


The letter-to-shape correspondence for pentominoes has been supplied for you.

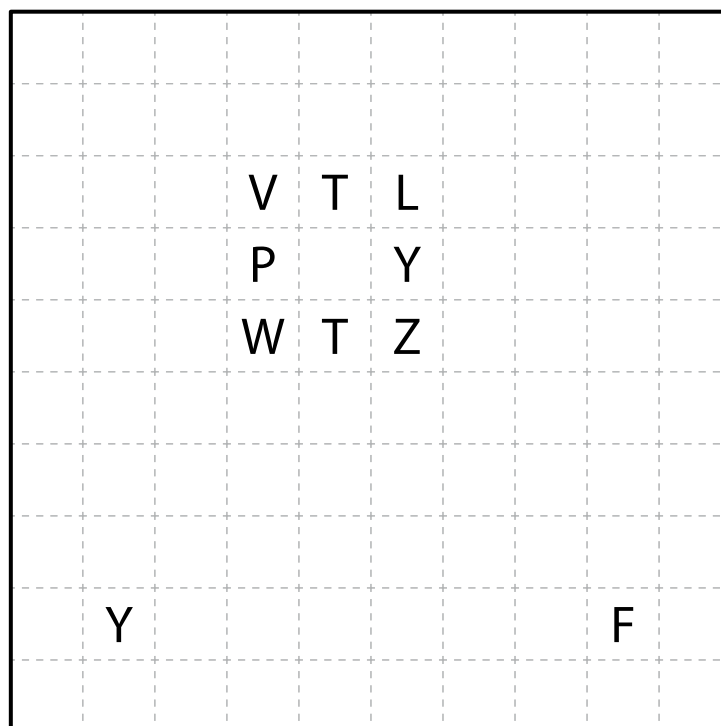
*In the competition puzzle, there may be black areas that are not part of the grid.*

**Answer:** For each designated row, enter the letter for the pentomino that each cell belongs to, from left to right.

**Example Answer:** IPPPI, IUFUI



**7a** →



**7b** →



### 8. Ripple Effect [Hatice Esra Aydemir] (50 points)

Place a number into each cell so that each outlined region contains the numbers from 1 to X, where X is the number of cells in the region. Cells containing the same number N within the same row (or column) must have at least N cells between them in that row (or column). (For example, cells containing "1" cannot touch along an edge, cells containing "2" cannot touch or have exactly one cell between them in the same row or column, and so on.) Some numbers may be already filled in the grid.

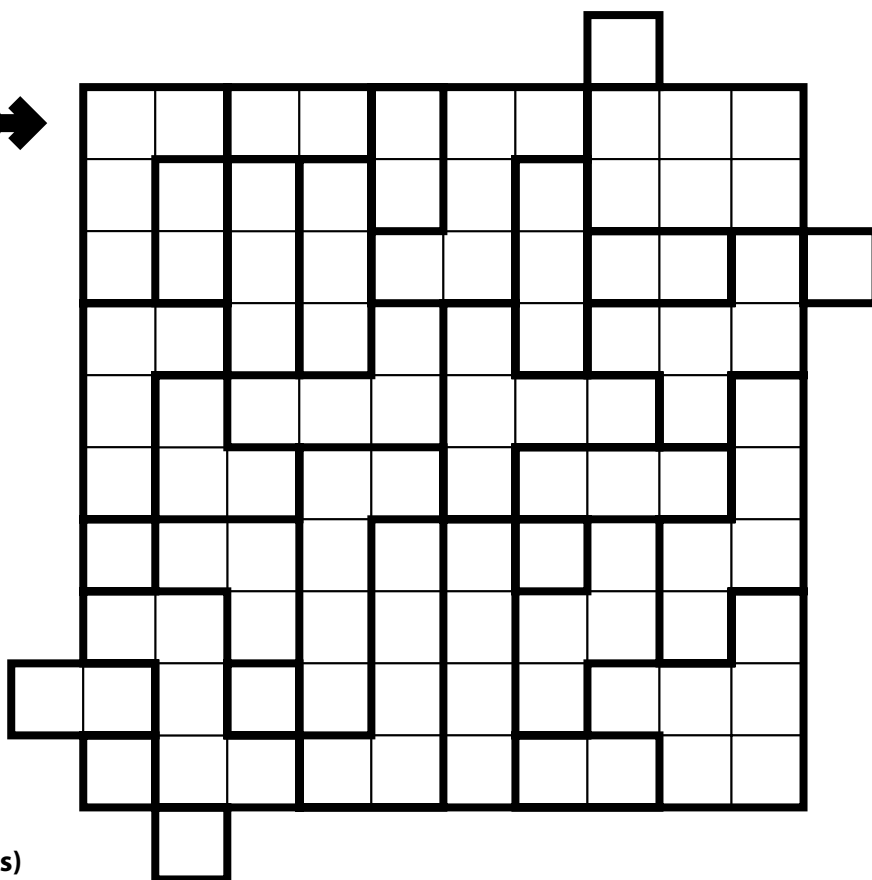
**Answer:** For each designated row, enter its contents (including any given numbers).

**Example Answer:** 121314, 213241

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

8a →

8b →



### 9. Skyscrapers [Murat Can Tonta] (40 points)

Place a number from 1 to X into each cell so that each number appears exactly once in each row and column. (X is the number of cells in each row.) Each number represents a skyscraper of its respective height. The numbers outside the grid indicate how many skyscrapers can be seen in the respective row or column from the respective direction; shorter skyscrapers are hidden behind taller ones. Some numbers may already be filled in for you.

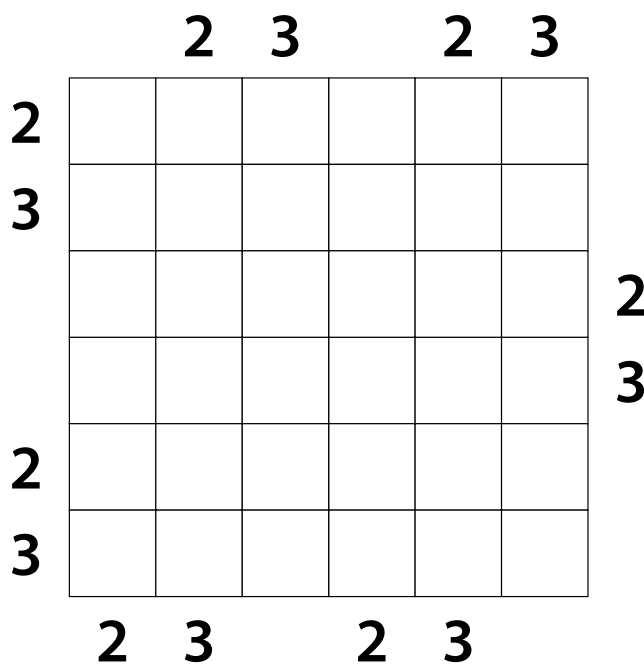
**Answer:** For each designated row, enter its contents from left to right. Do *not* include any numbers outside the grid.

**Example Answer:** 45312, 23541

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

9a →

9b →





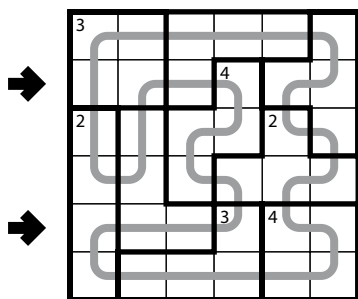


### 12. Maxi Loop [Hatice Esra Aydemir] (24 points)

Draw a single closed loop that only travels orthogonally and goes through every cell exactly once. A number given in an outlined region indicates the longest (uninterrupted) length of the loop in that region (counted by number of cells).

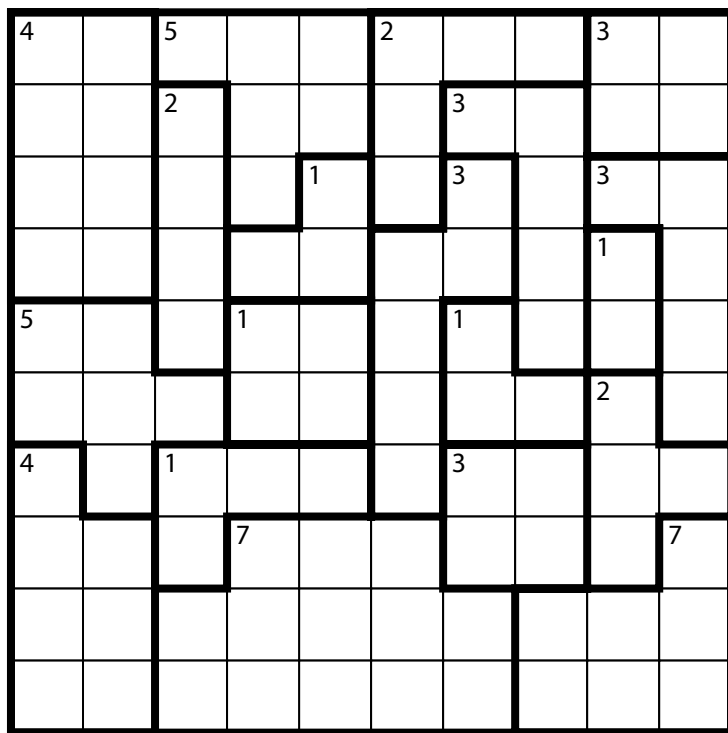
**Answer:** For each designated row, enter its contents from left to right. Use 'I' for a cell in which the loop goes straight, and 'L' for a cell in which the loop turns. You may use two other characters, as long as they are distinct.

**Example Answer:** ILILLL, LIILLL



12a →

12b →



### 13. Easy as Japanese Sums [Salih Alan] (46 points)

Place a number from the specified list into some cells so that every number appears exactly once in each row or column. Cells may remain empty. Each number outside the grid indicates the sum of the first continuous group of at least one number (including "sums" of a single number) that is encountered in the respective row or column from the respective direction. The group ends at the edge of the grid or a cell without a number. Some cells might be marked with a cross; do not put any numbers into those cells.

*Unlike a standard "Japanese Sums" puzzle, it is not possible for numbers in the list to be missing from any rows or columns.*

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

**Example Answer:** 213XX, X3X12

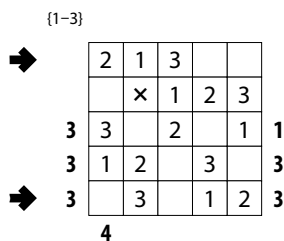
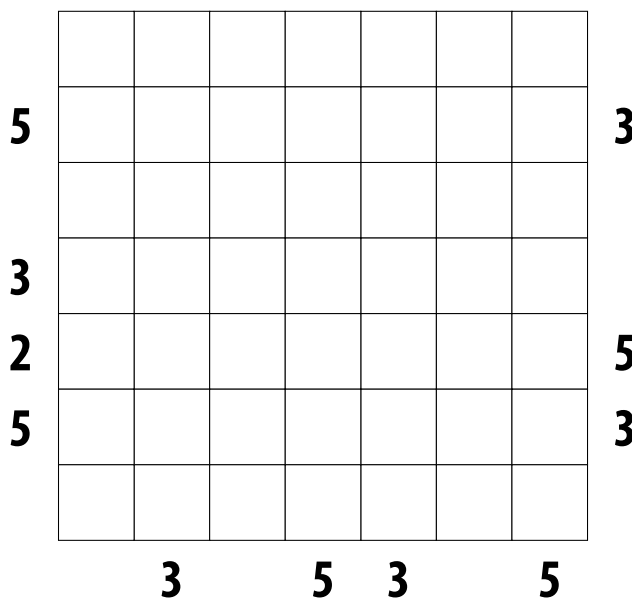
{1-4}

3

5

13a →

13b →





**14. Kuromasu [Hatice Esra Aydemir] (40 points)**

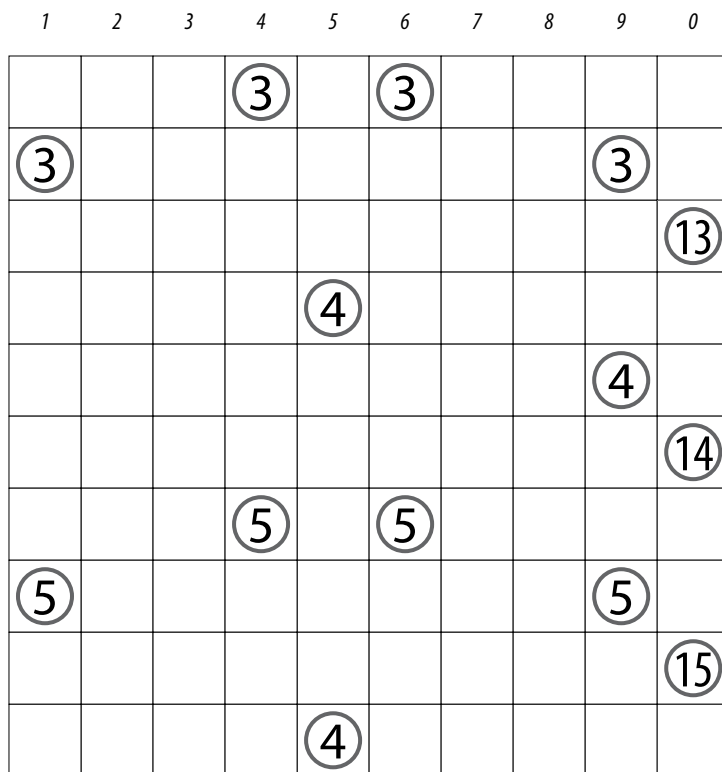
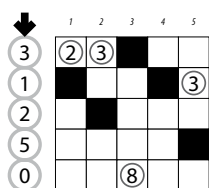
Shade some cells so that all remaining cells are connected orthogonally and no two shaded cells share an edge. Each numbered cell indicates the total count of unshaded cells connected in line vertically and horizontally to the numbered cell *including the cell itself*.

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



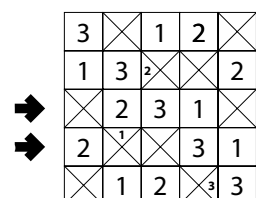
**15. Range [Salih Alan] (40 points)**

Some cells in the grid are marked with a cross; let X be the number of uncrossed cells in each row or column. Place a number into each empty cell so that in each row and column, each number from 1 to X appears exactly once in an uncrossed cell.

Some clues are given in the crossed cells; each clue is about the numbers that can be seen in that direction from the crossed cells before encountering another crossed cell or the edge of the grid. If there is only one number, then the clue is equal to that number; otherwise, the clue is the difference of the largest seen number and the smallest seen number.

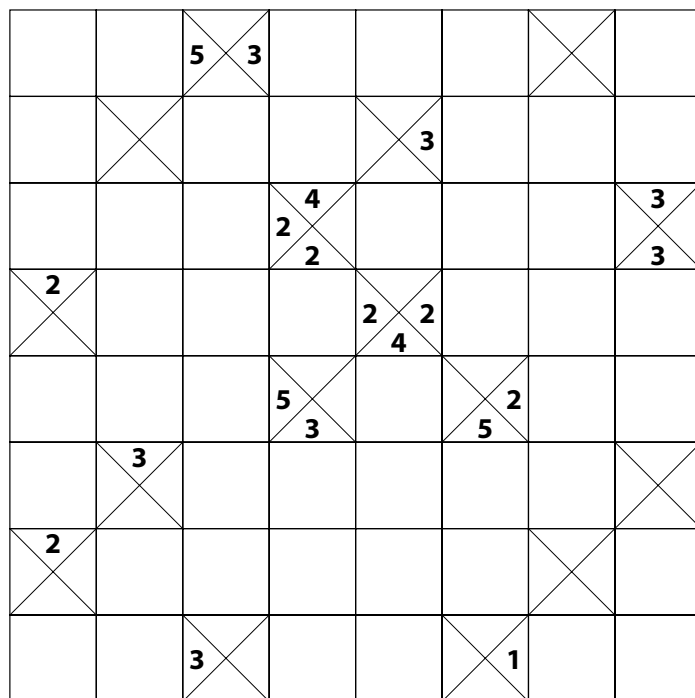
**Answer:** For each designated row, enter the contents of the uncrossed cells, from left to right.

**Example Answer:** 231, 231



**15a** →

**15b** →





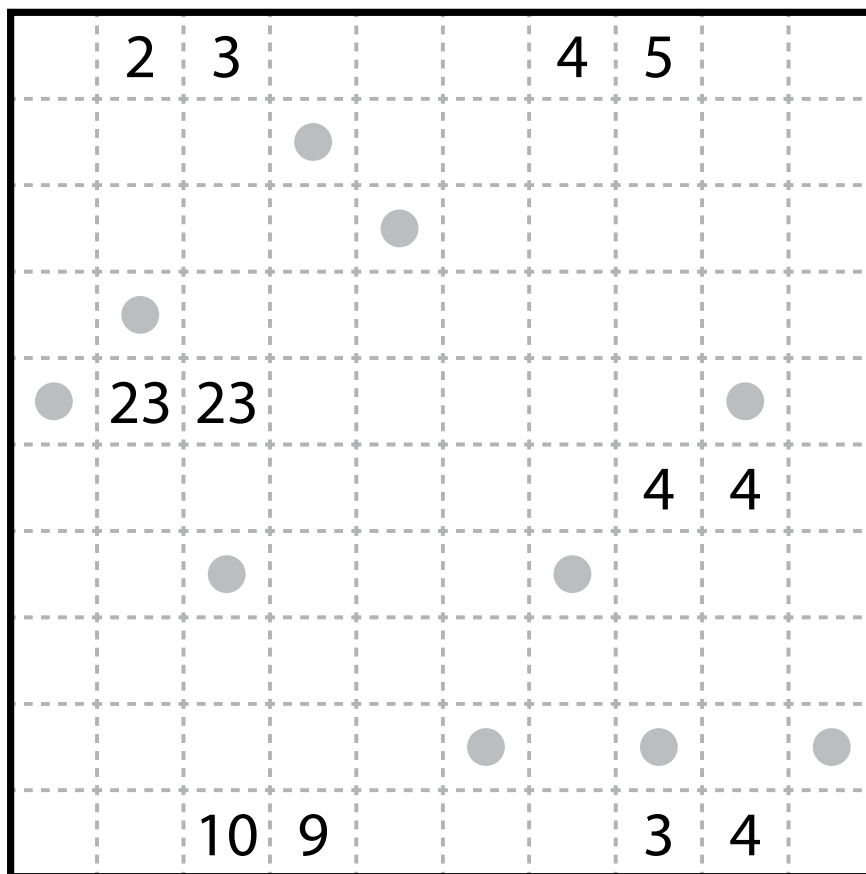
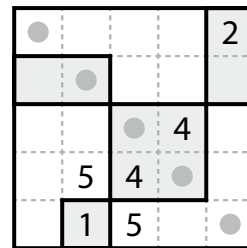
### 16. Chocolate Banana [Murat Can Tonta] (51 points)

Divide the grid along the dotted grid lines into regions. Each region must either be "chocolate" (in the shape of a rectangle or square), or "banana" (not in the shape of a rectangle nor square). No two "chocolate" regions may share an edge, and no two "banana" regions may share an edge. Each given number indicates the area of the region that number is in. (It is possible for a regions to contain no numbers, or to contain multiple numbers.)

*The shading of "chocolate" in the solution is only to make the solution easier to see. The dots in cells are only used for entering your answers.*

**Answer:** Enter the area of the region 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 region of area 10.

**Example Answer:** 62445



16 → ○ ○ ○ ○ ○ ○ ○ ○ ○ ○

