

# WPF PUZZLE GP 2024 COMPETITION BOOKLET

Host Country: Bulgaria

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**Special Notes:** Point values are roughly correct but have not been finalized yet.

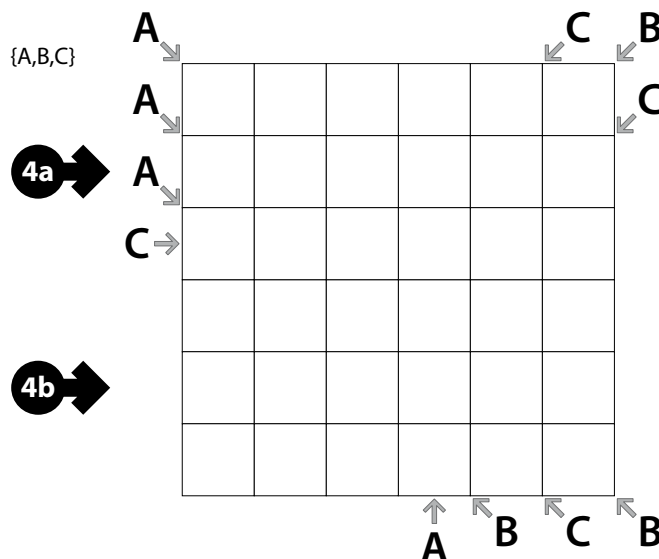
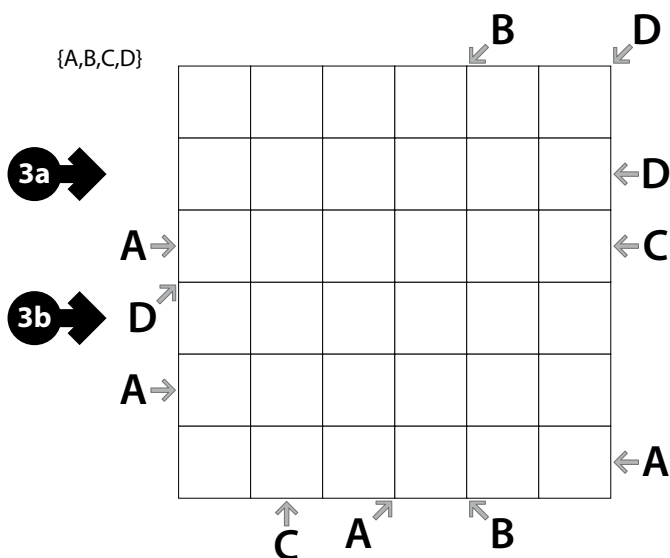
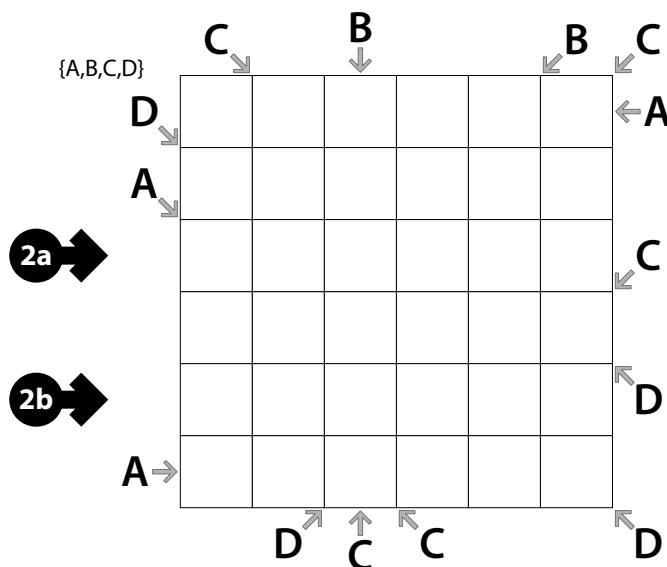
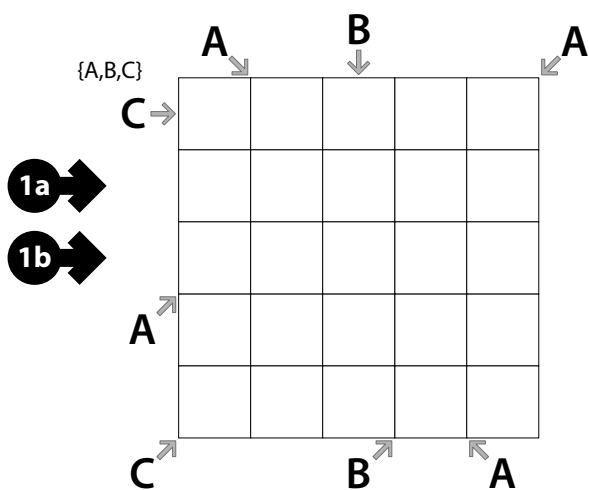
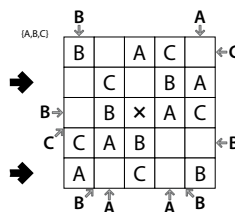
## 1-4. Easy As (Diagonal Clues) (14, 16, 18, 47 points)

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, column, or *diagonal* 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.

(Note that letters may repeat on diagonals.)

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

**Example Answer:** XCXBA, AXCXB



**5-8. Skyscrapers (Diagonal Clues) (12, 13, 30, 33 points)**

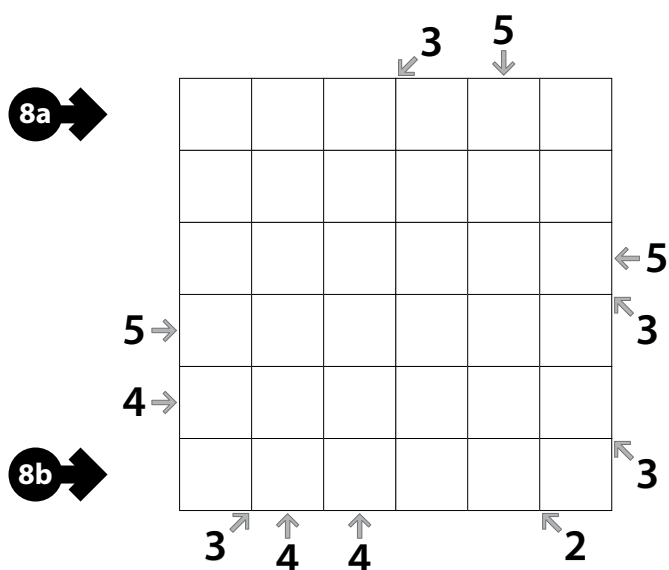
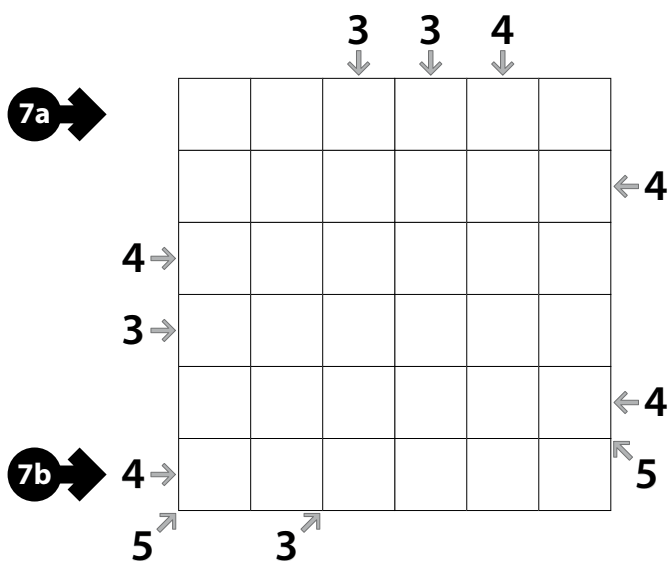
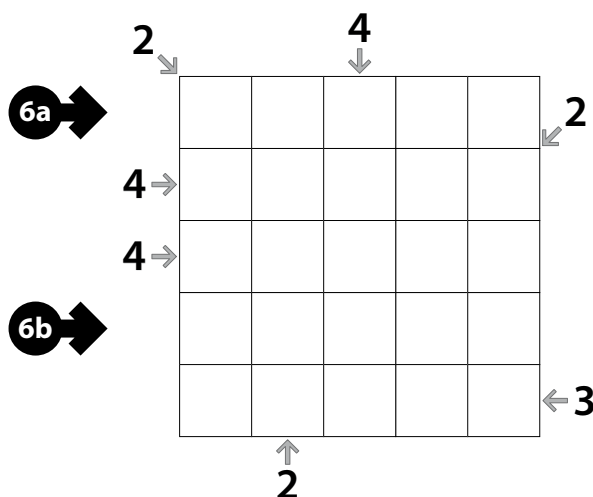
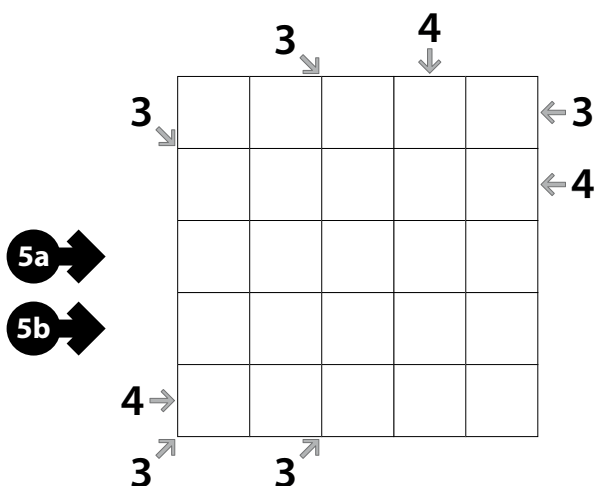
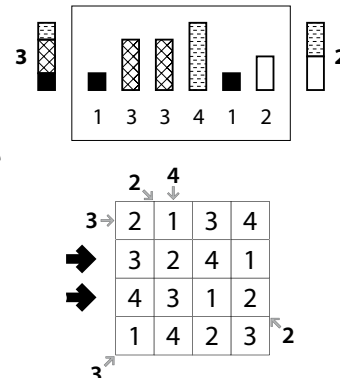
Place a number from 1 to X into each cell so that each number appears exactly once in each row and column. (X is the number of cells in each row.) Each number represents a skyscraper of its respective height. Some numbers may already be filled in for you.

The numbers outside the grid indicate how many skyscrapers can be seen in the respective row, column, or *diagonal* from the respective direction; smaller skyscrapers are hidden behind higher ones. Skyscrapers of the same height (as might be found on a diagonal) hide each other.

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

**Example Answer:** 3241, 4312

Skyscraper Clue Example



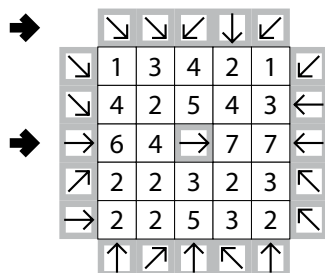


## 9-10. Arrows (Irregular) (13, 23 points)

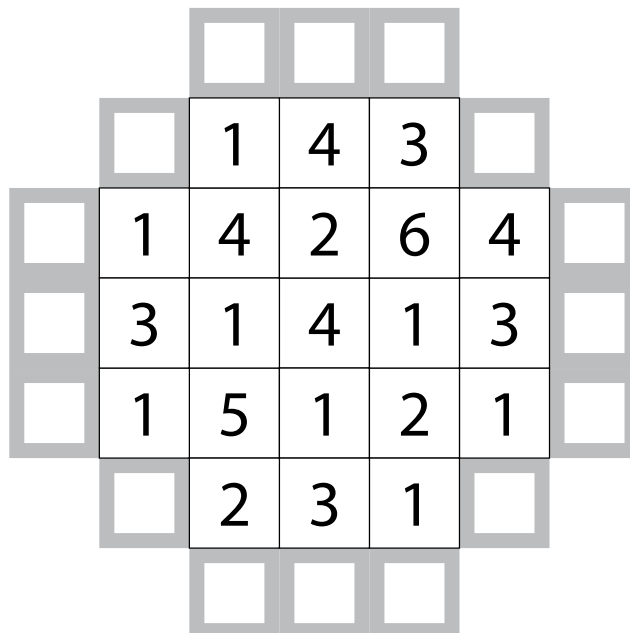
Draw an arrow in each of the grey-bordered cells (shown by a thick outline). Each arrow must point in one of the eight standard directions, and must point to at least one numbered cell. Each numbered cell must be pointed at by exactly that number of arrows.

**Answer:** Enter the contents of the indicated rows, from left to right. Use 'Z' for an arrow pointing diagonally to the lower-left or upper-right, a 'I' for an arrow pointing orthogonally, and 'N' for an arrow pointing diagonally to the upper-left or lower-right. Alternatively, you may use any three characters instead of 'ZIN', as long as they are distinct. Ignore any cells without arrows.

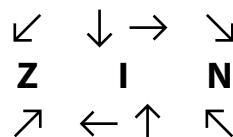
**Example Answer:** NNZIZ, III



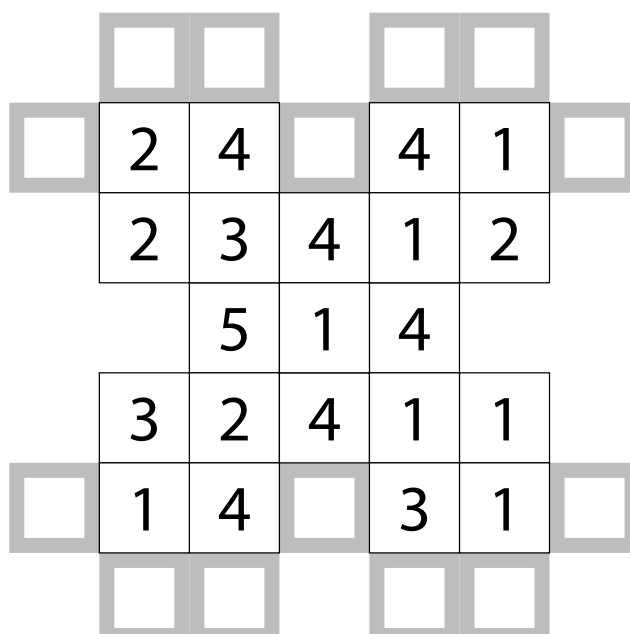
9a



9b



10a



10b



## 11-12. Arrows (Irregular) (30, 75 points)

**Answer:** Enter the contents of the indicated rows, from left to right. Use 'Z' for an arrow pointing diagonally to the lower-left or upper-right, a 'I' for an arrow pointing orthogonally, and 'N' for an arrow pointing diagonally to the upper-left or lower-right. Alternatively, you may use any three characters instead of 'ZIN', as long as they are distinct. Ignore any cells without arrows.

**Example Answer:**

NNZIZ, IIII

→	↘	↘	↘	↓	↘	
↘	1	3	4	2	1	↘
↘	4	2	5	4	3	←
→	6	4	→	7	7	←
↗	2	2	3	2	3	↖
→	2	2	5	3	2	↖
	↑	↗	↑	↖	↑	

↖	↓	→	↘
Z	I		N
↗	←	↑	↖

11a →

11b →

		2	2			
	6	3	5	5		
2	3			1	2	
1	6			1	3	
	3	2	2	3		
		2	4			

12a →

12b →

	2	4	3		1	9	1	
	7	4	5		7	5	6	
	1	7	1		1	3	0	
	1	3	1		0	1	2	
	5	1	3		2	1	3	
	4	7	4		1	6	4	



**13-15. Yajilin (Diagonal Clues) (9, 9, 14 points)**

Draw a single closed loop that passes orthogonally through centers of some empty cells in the grid. The loop connects centers of orthogonally adjacent cells, makes only right-angle turns or goes straight, and does not intersect or cross itself.

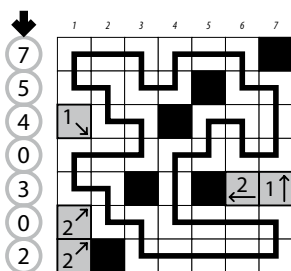
Some cells will remain empty; such cells are "unused" and cannot share an edge with each other.

The grid contains some outlined gray cells that cannot be part of the loop. Numbered arrows in such cells indicate the total number of unused cells along the direction of the arrow, between the arrowed cell and the edge of the grid. (Note that some arrows point diagonally, and that it is allowed for unused cells to share corners with each other.)

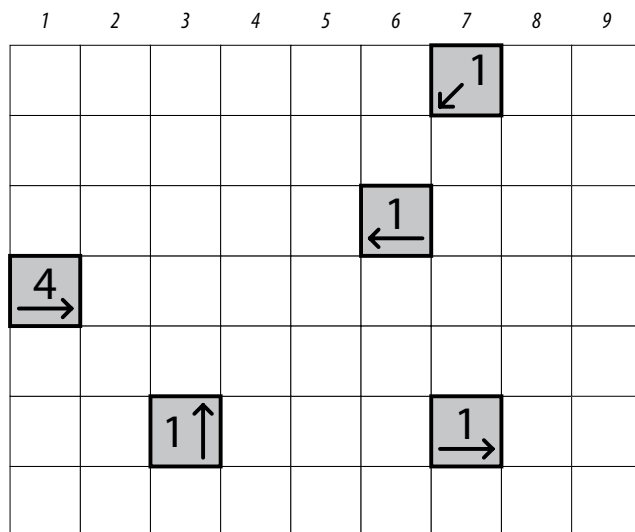
*The numbers on top of the diagram are for Answer purposes only. It may be helpful to shade the unused cells, as per the example answer.*

**Answer:** For each row from top to bottom, enter the column number of the left-most unused cell. (Outlined cells are *not* unused.) Use only the last digit for two-digit numbers; e.g., use '0' for column 10. If none of the cells in a row are unused, enter '0' for that row.

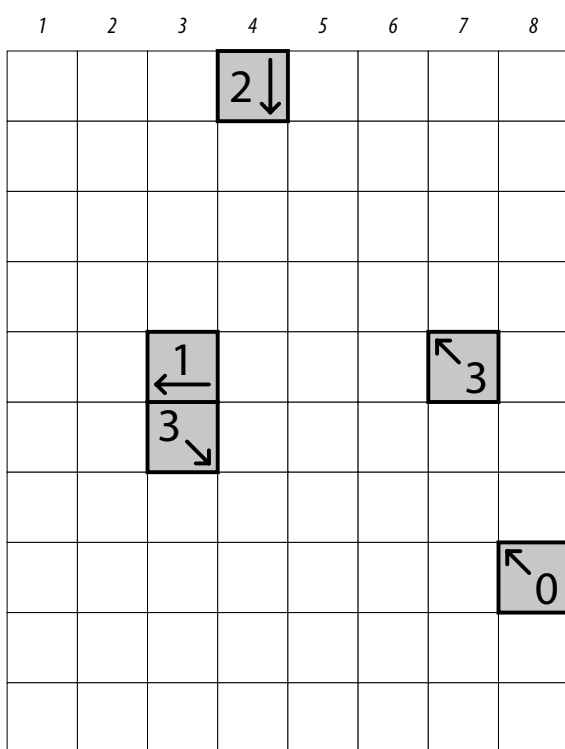
**Example Answer:** 7540302



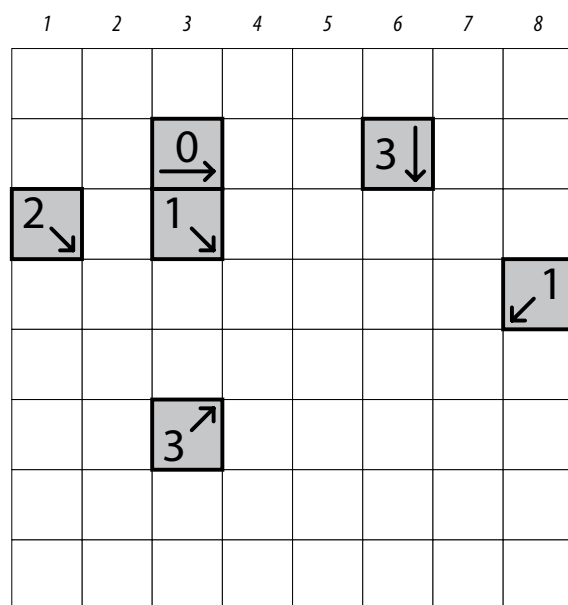
**13**



**14**



**15**



[illegible]

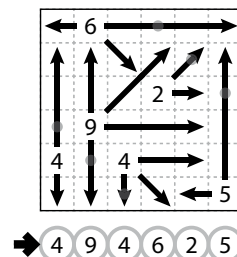


**18-21. Eight Winds (36, 17, 19, 39 points)**

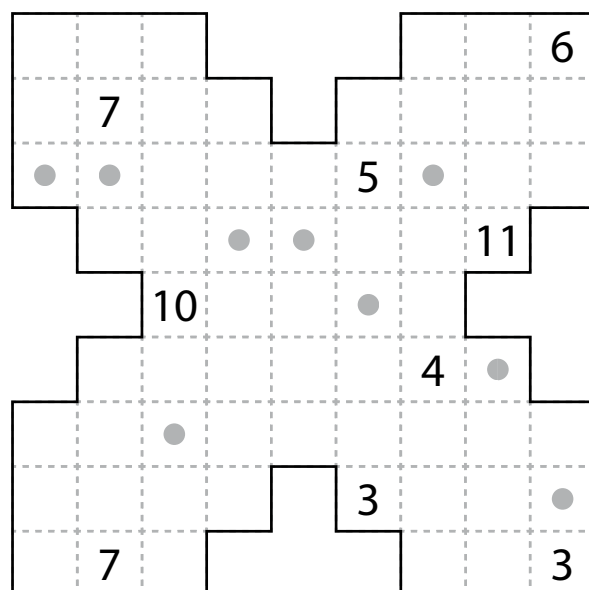
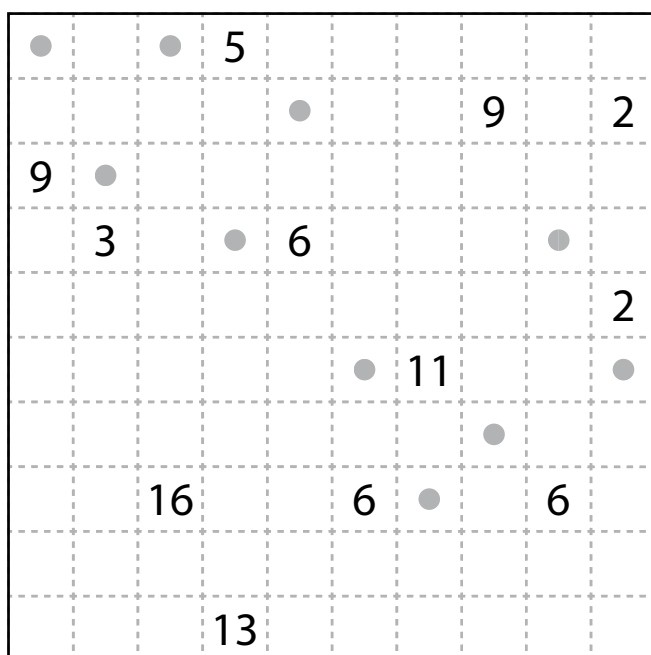
Draw arrows in the empty cells in the grid. Arrows can only go in the *eight* standard directions and must begin at the edge or corner of a cell with a number. Each empty cell must be covered by exactly one arrow. Each number indicates the *total number of cells used* by all the arrows that begin at an edge or corner next to that number's cell. Arrows cannot intersect each other.

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

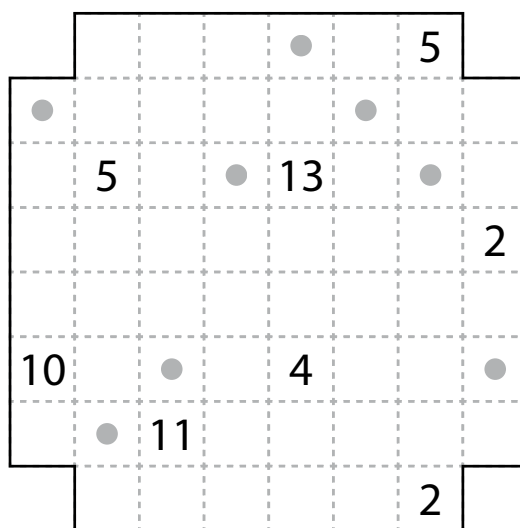
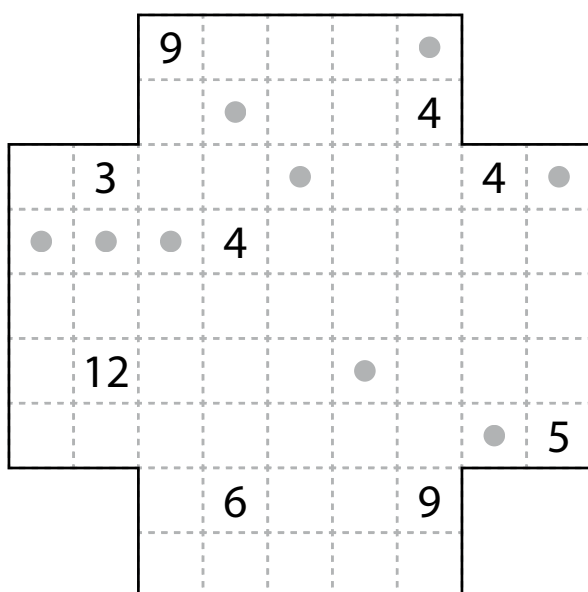
**Answer:** Enter the number whose arrow covers the dot, reading the dots from left to right. (Ignore which row the dots are in.) Use only the last digit for two-digit numbers; e.g., use '0' for an arrow that begins at a 10.



**Example Answer:** 494625



18 → ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ 19 → ○ ○ ○ ○ ○ ○ ○ ○ ○ ○



20 → ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ 21 → ○ ○ ○ ○ ○ ○ ○ ○ ○ ○



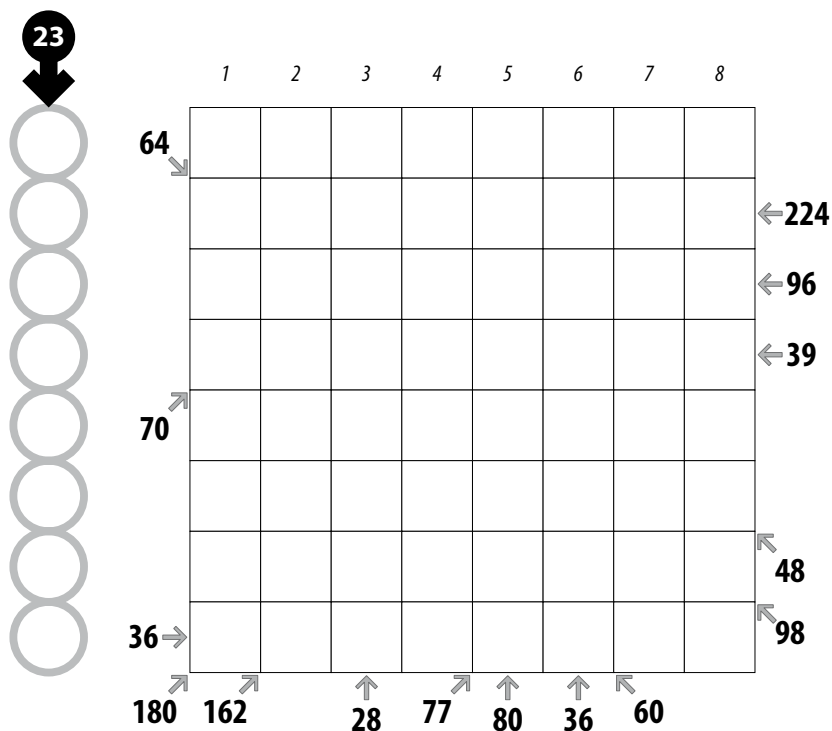
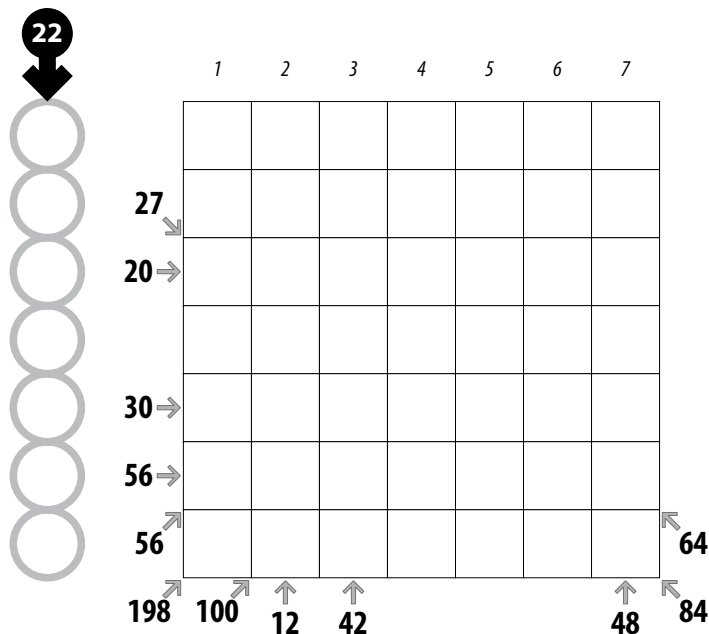
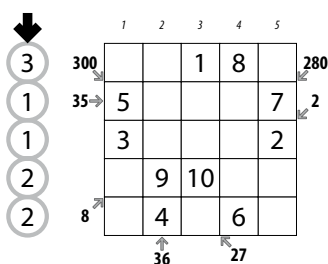
## 22-25. Products (Short Diagonals) (35, 38 points)

Fill in some cells with numbers, at most one number per cell. Each number from 1 to X must appear exactly once, where X is twice the number of rows in the grid. Each row must contain exactly two numbers. Each column must contain exactly two numbers. (There are no similar restrictions on the diagonals.) When given, the numbers to the left, right, and below the grid indicate the (multiplicative) product of all numbers in that row, column, or diagonal, respectively. (The product of one number is the number itself; the product of no numbers is 1.)

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 number appears (the number on top of that column). Use only the last digit for two-digit numbers; e.g., use '0' if the first number appears in column 10.

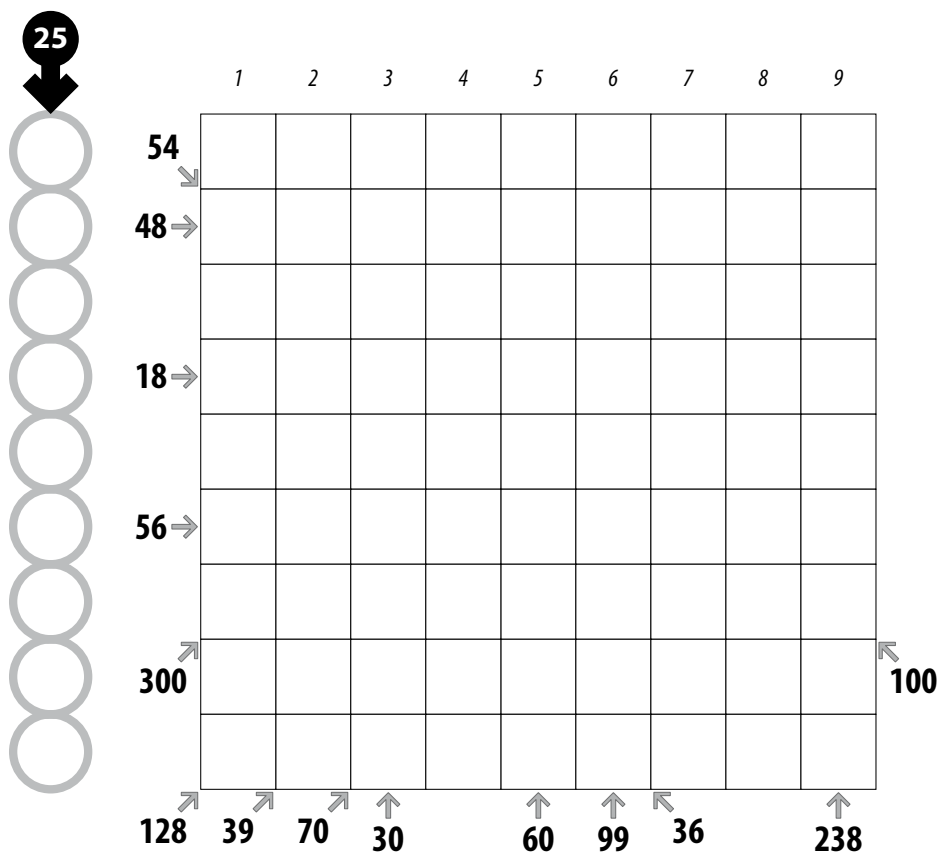
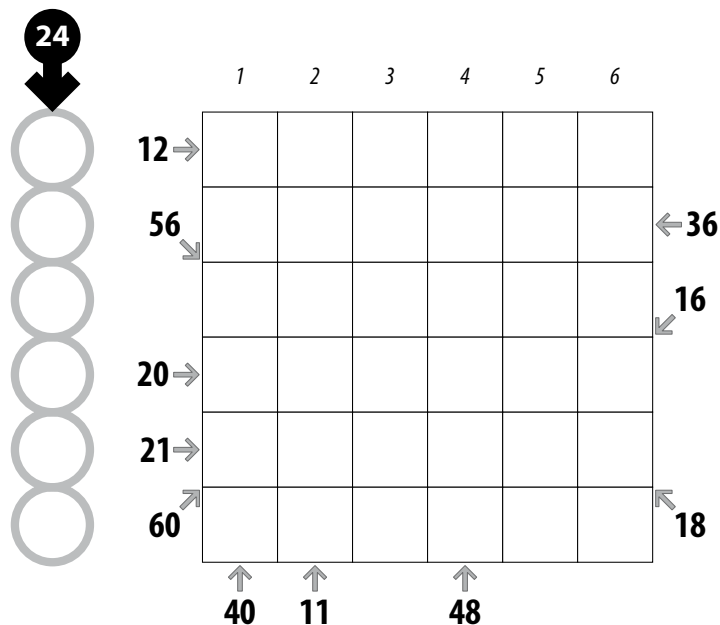
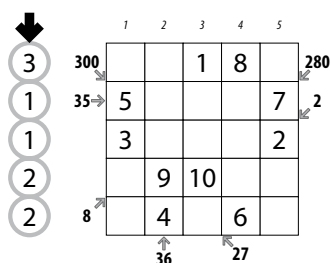
**Example Answer:** 31122



### 22-25. Products (Short Diagonals) (17, 88 points)

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

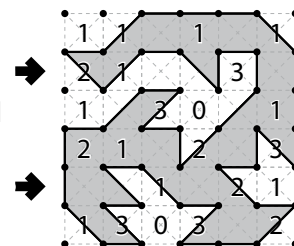
**Example Answer:** 31122



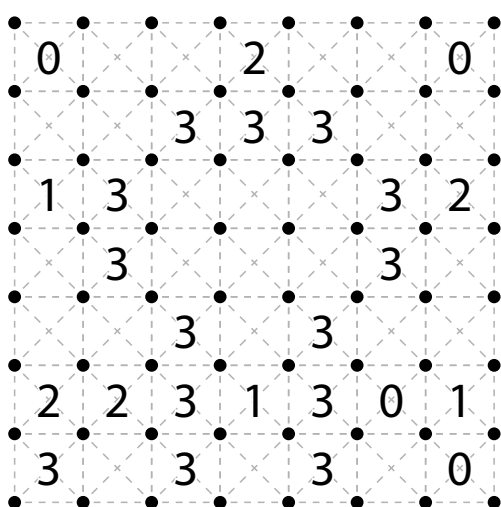
**26-29. Slitherlink (Diagonal) (36, 38, 43, 53 points)**

Draw a single, non-intersecting loop that only consists of line segments between the dots along the dashed lines, *including diagonals inside cells*. A number inside a cell indicates how many of the edges or diagonals of that cell are part of the loop. (Note that at most one diagonal may be used in each cell, as the loop is non-intersecting.)

**Answer:** For each designated row, enter its contents from left to right. Use 'o' for a cell that does not have a diagonal as part of the loop and 'x' for a cell that does have a diagonal as part of the loop. You may use two other characters, as long as they are distinct.

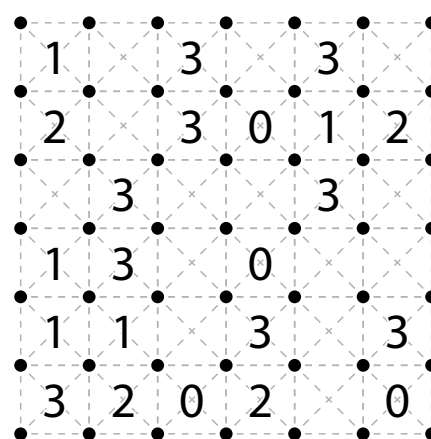


26a →



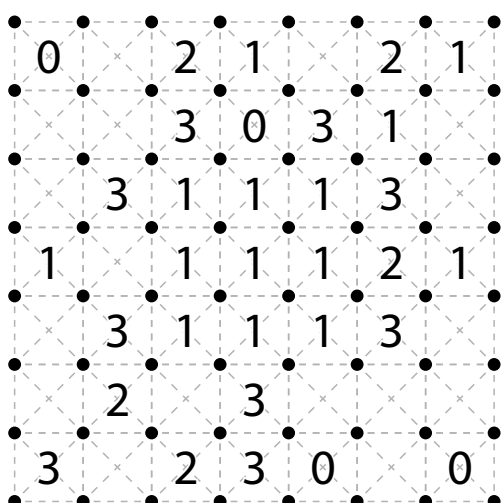
26b →

27a →



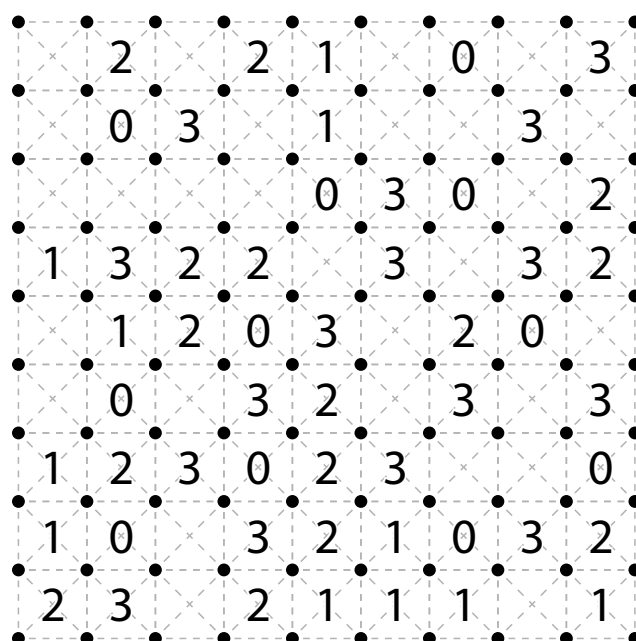
27b →

28a →



28b →

29a →



29b →



[illegible]