



**WPF PUZZLE GP 2023**  
**COMPETITION BOOKLET**

## Host Country: Czechia

**Jakub Hrazdira, Karel Šterba, Ondřej Motlíček, Petr Lichý, Jan Novotný**

**Special Notes:** None.

### 1. Alphametic [Jakub Hrazdira] (19 points)

Each symbol, except for the square, represents a different (base ten) digit. Figure out which symbol corresponds to which digit so that the calculation is correct. Multi-digit numbers cannot start with the digit 0 (zero).

*A smaller copy of the puzzle with letters in place of symbols is provided for your solving convenience.*

**Answer:** For the designated row of symbols, submit the digits those symbols stand for, from left to right. (It is possible for not all symbols to be in the row.)

**Example Answer:** 189263

➔ 1 8 9 2 6 3 (ABCDEF)

$$\begin{array}{ccccccc} \boxed{1} & \boxed{8} & \div & \boxed{9} & = & \boxed{2} \\ - & & & \div & & \times \\ \boxed{6} & & \div & \boxed{3} & = & \boxed{2} \\ = & & & = & & = \\ \boxed{1} & \boxed{2} & \div & \boxed{3} & = & \boxed{4} \end{array}$$

$$\begin{array}{rcl} AB \div C & = & D \\ - & \div & \times \\ E \div F & = & D \\ = & = & = \\ AD \div F & = & G \end{array}$$

**1** **FIRST** (FIRST)

$$\begin{array}{r}
 \text{KEN} \\
 + \text{ENDO} \\
 \hline
 = \text{FIRST}
 \end{array}$$



## 2. Alphametic [Jakub Hrazdira] (62 points)

**Answer:** For the designated row of symbols, submit the digits those symbols stand for, from left to right. (It is possible for not all symbols to be in the row.)

**Example Answer:** 189263

2 → BRAINS (BRAINS)

$$\begin{array}{r}
 \text{SNYDER} \\
 + \text{MEBANE} \\
 \hline
 \text{BRAINS}
 \end{array}$$
 SNYDER+MEBANE=BRAINS

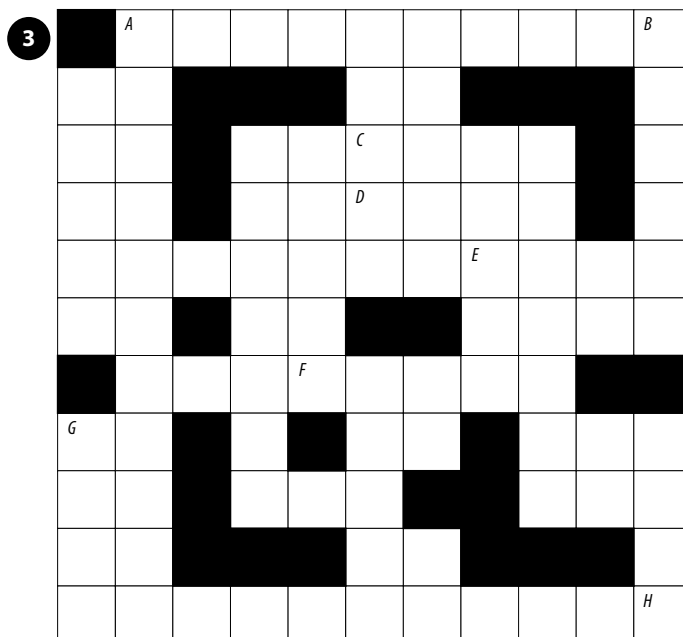
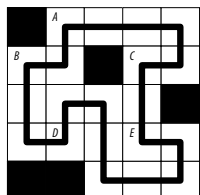
## 3. Loop [Karel Štěřba] (6 points)

Draw a single non-intersecting loop through the centers of all white cells. Loop paths must be orthogonal.

*The letters in the grid are for Answer purposes only.*

**Answer:** Starting at the "A" in the upper-left and heading to the right, enter all the letters in the grid in the order in which the loop encounters them, ending at the letter "A" (again). You may leave out the final letter "A", but the answer length checker will mention your answer is too short.

**Example Answer:** ACEDBA or ACEDB





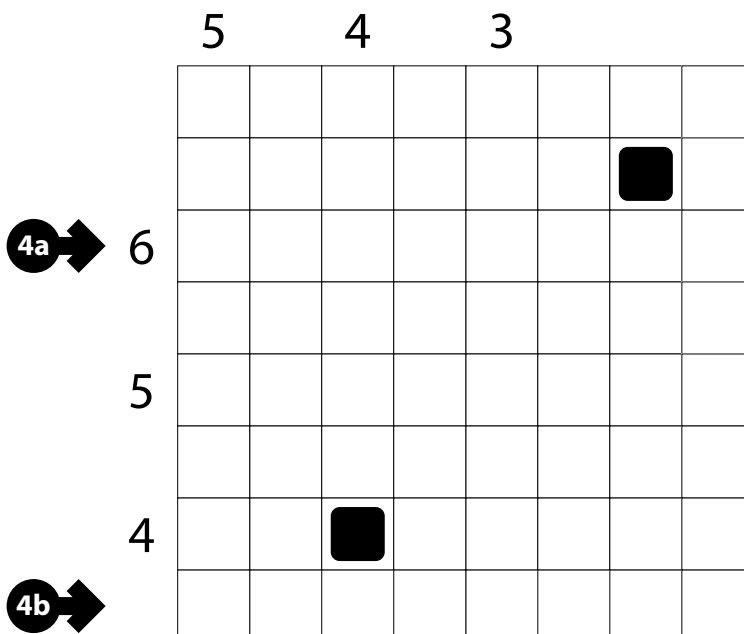
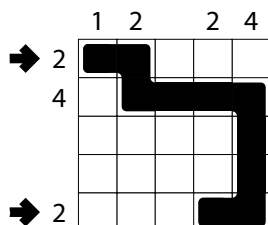
#### 4. Snake (Ends) [Jakub Hrazdira] (23 points)

Locate a "snake" in the grid. The snake is a path that starts in a cell, goes through some number of cells orthogonally, and ends in a cell. The snake cannot go through any cells marked with 'x'. Each cell is used at most once by the snake. The snake may not loop around to touch itself, not even diagonally. (In other words, if two cells in the snake touch orthogonally, then they must be exactly one cell apart along the path of the snake, and if two cells in the snake touch diagonally, then they must be exactly two cells apart along the path of the snake.) Numbers outside the grid, if given, indicate how many cells in that row or column are occupied by the snake.

The two cells containing the ends of the snake are shaded.

**Answer:** For each designated row, enter its contents. Use ○ for a cell occupied by the snake and × for a cell not occupied by the snake. Alternatively, you may use any two distinct characters instead of 'xo'.

**Example Answer:** ○○×××, ×××○○

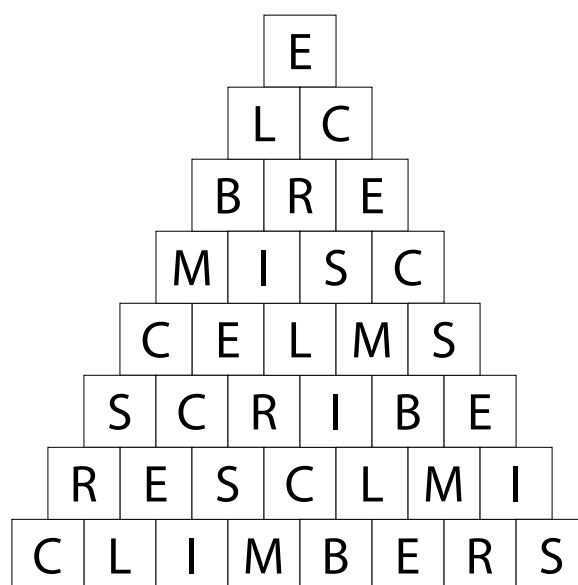
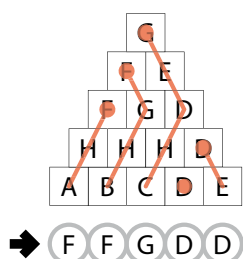


#### 5. Pyramid Climbers [Ondřej Motlíček] (35 points)

Each cell at the bottom of the pyramid has a "climber" associated with it. Each climber climbs up a path of adjacent cells. (Climbers do not climb sideways.) For each path, all the letters in that path's cells are distinct. Determine the paths of all climbers. Each cell is reached by exactly one climber.

**Answer:** For each climber (going from left to right), enter the top-most letter on its path.

**Example Answer:** FFGDD



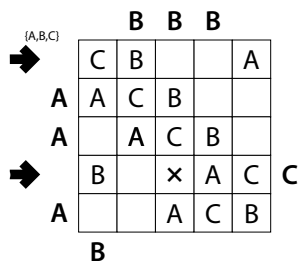


## 6. Easy As [Jakub Hrazdira] (28 points)

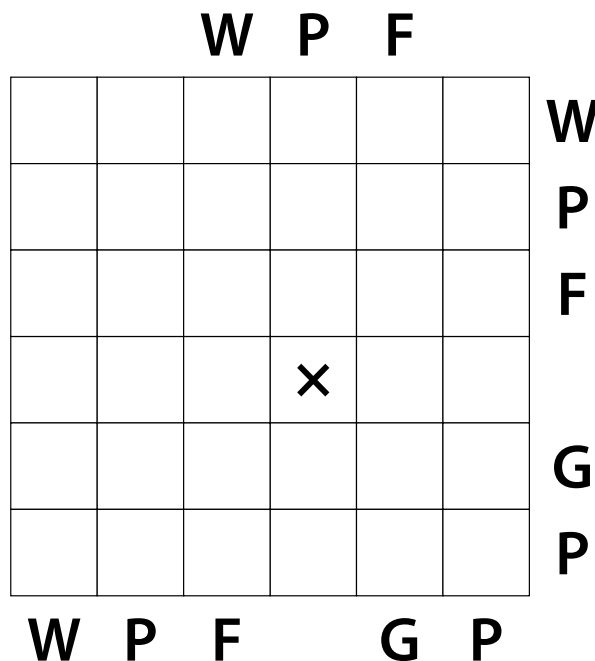
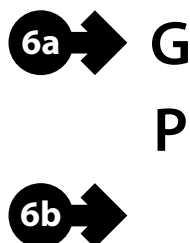
Place letters of the specified list into some cells, no more than one letter per cell, so that each letter appears exactly once in each row and column. The letters outside the grid indicate the first letter that can be seen in the respective row or column from the respective direction. Some letters may 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



{F,G,P,W}



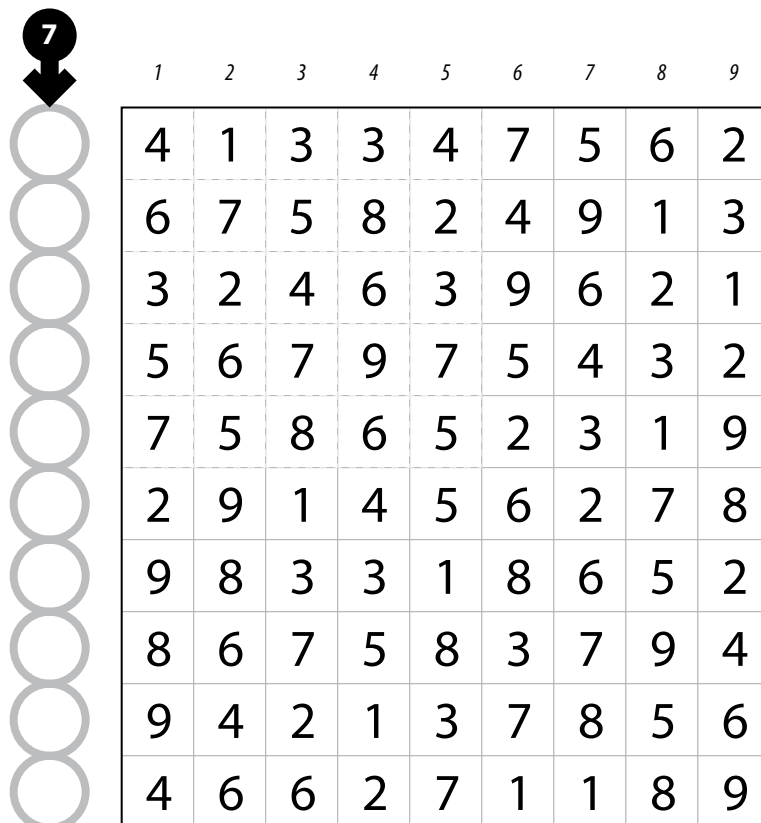
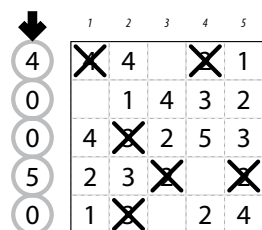
## 7. Hitori [Petr Lichý] (28 points)

Remove some cells from the grid so that all remaining cells are connected orthogonally and no two removed cells are adjacent orthogonally. Additionally, for each row and each column, the numbers in the unremoved cells must be all different.

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

**Answer:** For each row from top to bottom, enter the number (on top) of the *second* column from the left that has a removed cell. Use only the last digit for two-digit numbers; e.g., use '0' if the second removed cell appears in column 10. If fewer than two of the cells in the row are removed, enter '0'.

**Example Answer:** 40050



### 8. Kakuro [Petr Lichý] (78 points)

Place a digit from 1 to 9 into each white cell. The numbers in grey cells indicate the sum of digits in the adjacent "word" across or down. (Across "words" are to the right of their sums, Down "words" are below their sums.) Digits may not repeat within a "word."

It is possible for some "words" to not have a provided sum.

*The circles in cells are only used for entering your answers.*

**Answer:** Enter the contents of each circled cell, reading the cells from left to right. (Ignore which row the circles are in.)

**Example Answer:** 17752

	7	13	16		
10	2	1	7	29	
28	4	7	9	8	6
4	1	3	12	9	3
	11	2	3	5	1
		10	1	7	2

➡ 1 7 7 5 2

				3	17	24		11	28	7	
			19				20				
	10	29	13								6
31							18				
23							12				
				21	3			9			
	2		23								
	22									42	15
14			12			16					
						34					
6			23						8		
			7				6	1			
14					6				12		
				14	15				8		
	21							8			
								5			8
		21					21				
	11	24									
17				7							
			11				10	3	4	13	
21						26					
						6					
	16										

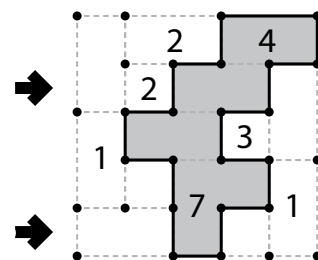
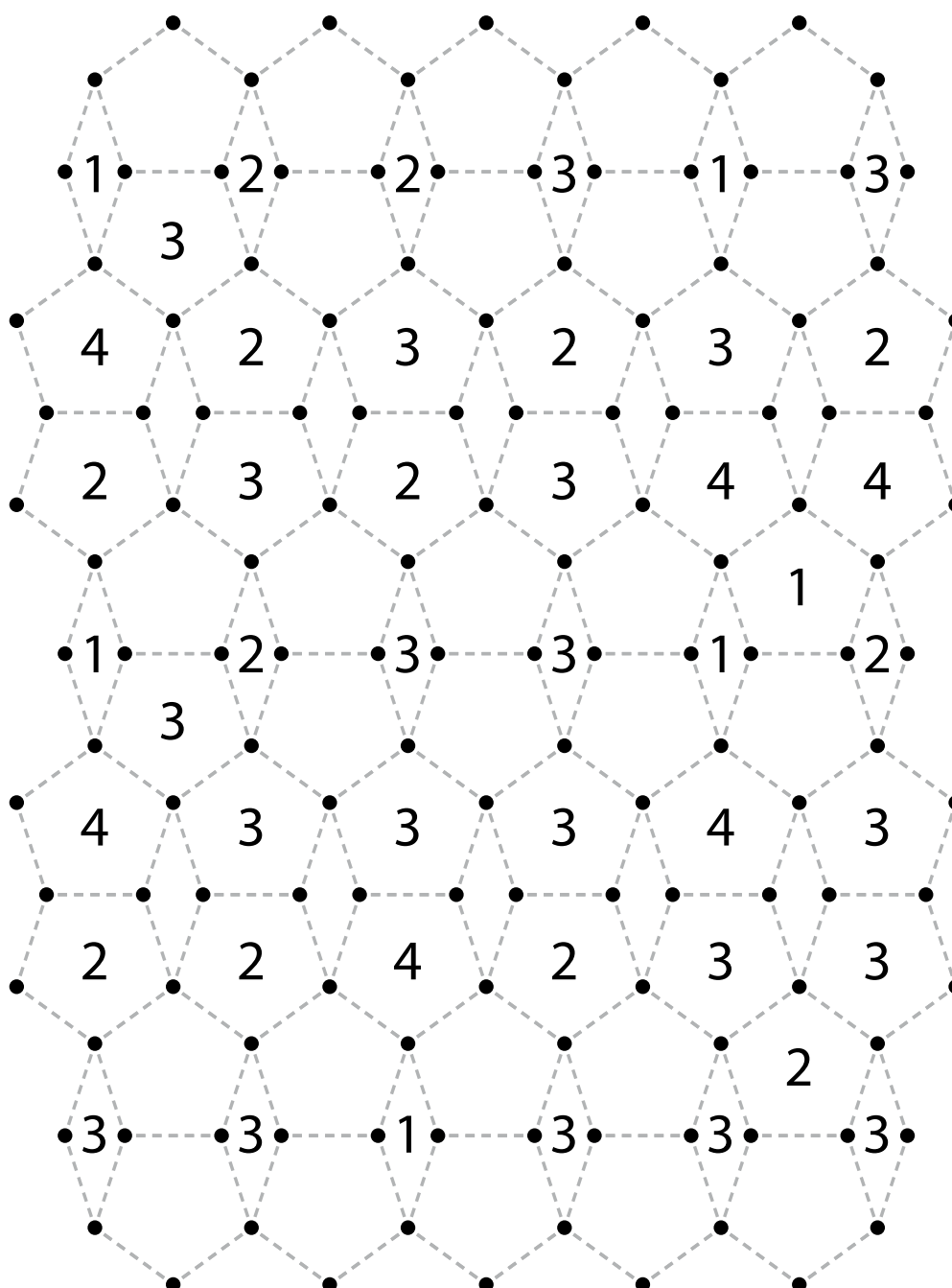
8 ➡ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○


**9. Slitherlink (Irregular) [Jan Novotný] (37 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. Not all cells will be squares with four edges. Edges are separated by dots, even if they are along the same line, and might not all be the same length.

**Answer:** For each designated arrow, enter the letter for each cell that the arrow points to, from left-to-right. A cell's letter is 'o' for a cell inside the loop and 'x' for a cell outside the loop. If the arrow crosses over the same cell more than once with one or more other cells in between (for example, a "U"-shaped cell), write its letter multiple times, once for each time the arrow crosses it. You may use two other characters, as long as they are distinct.

**Example Answer:** xxox, xox


**9a** →

**9b** →

**10. Criss-Cross (Loops) [Jan Novotný] (14 points)**

Enter the given words in the grid, no more than one character per cell. Cells with black dots must not contain characters. Each word appears exactly once, around all the cells that touch (by edge or corner) a cell with a black dot. (For each black dot, the starting cell, the direction, and which word is for you to determine.) Some characters may already be given for you. All black dots will be used.

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

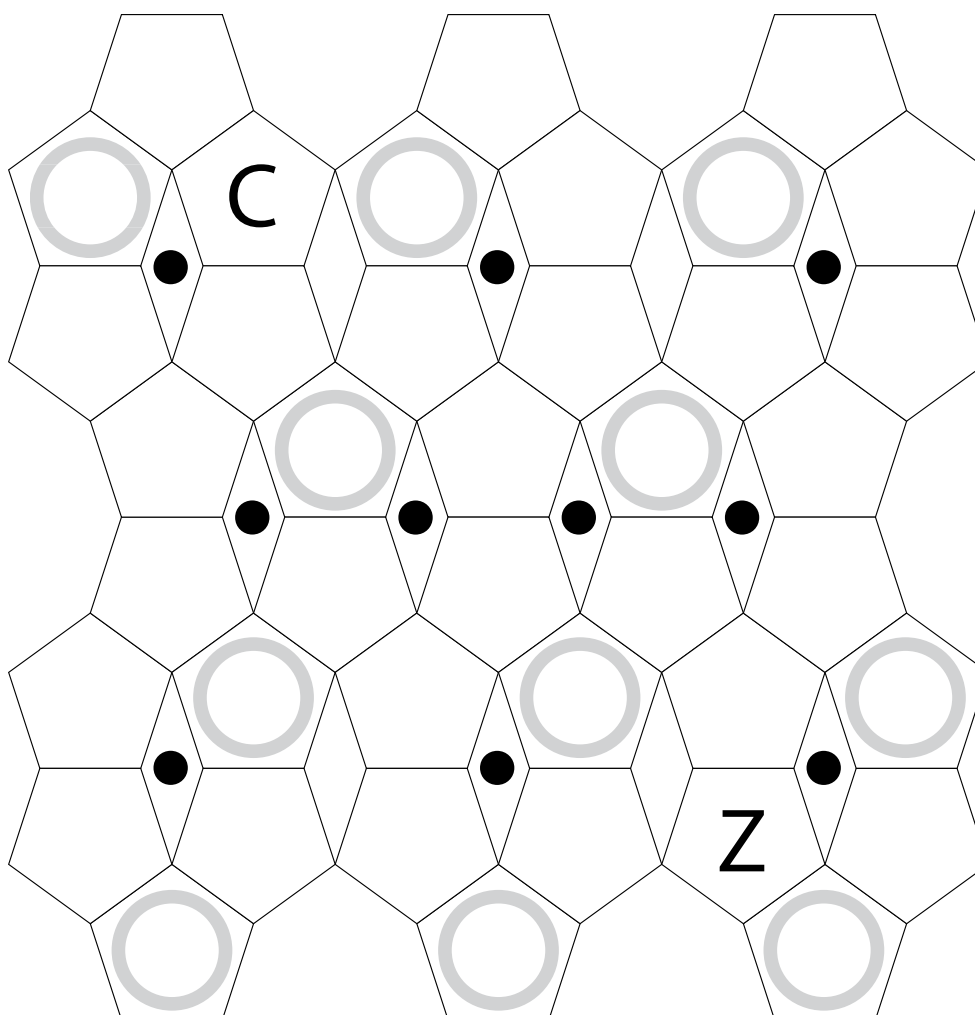
**Answer:** Enter the characters in each of the circled cells, from left to right. (Ignore the row each circle is in. The characters will not necessarily spell anything meaningful.)

H	C	A				
I	•	S	O	T		
L	L	E	•	E	H	S
U	•	C	I	R	•	E
L	A	R	•	C	U	L
		A	L	U		

→ I L C L R H L

**Example Answer:** ILCLRHL

B A C I L Y    M A Z I V O  
F R A K C E    O H R A D A  
H O S T E L    P O L E N O  
H R A N O L    S V I S T Y  
K A L I N A    Z L O S Y N









## 13. Pick a Letter [Petr Lichý] (104 points)

Each cell contains a word. Select one letter from each word. For each word, it must be possible to spell that word in the grid *using only selected letters* by starting on any cell (taking its word's selected letter), going to a cell that shares a corner or edge with that cell (taking its word's selected letter), then going to another cell that shares a corner or edge with that cell, and so on, until the word is spelled. The path that spells each word must start on or enter the cell that contains the word, and cannot use any cell more

than once. (It is possible for multiple cells to have copies of the same letter selected, and it is possible for there to be multiple valid paths for a word.)

*The example solution shows some, but not all, of the paths.*

**Answer:** For the indicated rows, enter the selected letters for each of its cells from left to right.

**Example Answer:** SUR, QET

SIS	ASSET	ART
I	S	A
SET	TRUE	ASSET
S	U	R
SQUARE	ISSUE	SUET
Q	E	T

→

→

13a →

DEAL	CHALKED	WHALE	CALM	THING
DYE	LEAKY	PANCAKE	ZUCCHINI	TWICE
LEACHING	HAZELNUT	PRINCE	MAID	KIND
STUN	CZECH	PUZZLE	GRAND	PRIX
COST	HICCUP	WINGS	COUGAR	AXING
GUST	SUGAR	SPARK	GRAIN	PARKING

13b →

**14. Euler Square [Jakub Hrazdira] (79 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. Place numbers of the specified list into some cells, no more than one number per cell, so that each number appears exactly once in each row and column. No two cells may contain both the same letter and the same number. Some letters and numbers may already be filled in for you.

**Answer:** For each designated row, enter the contents of its cells, from left to right. The contents of a cell are its letter, followed by its number.

**Example Answer:** D4C1A3B5E2, E5A2B1D3C4

{A,B,C,D,E} {1,2,3,4,5}

B2	E3	C5	A4	D1
A1	D5	E4	C2	B3
D4	C1	A3	B5	E2
E5	A2	B1	D3	C4
C3	B4	D2	E1	A5



{P,U,Z,L,E} {1,2,3,4,5}

**14a** →

	U	Z	1	
P		2	Z	
	3		L	
	4	E		
	5			

**14b** →


**15. Star Battle (Double) [Ondřej Motlíček] (101 points)**

Place black stars and white 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 black stars and two white stars. Cells with stars of the same color may not touch each other along an edge or a corner. Some stars are already placed for you.

*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 *black* 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 black star appears in column 10.

**Example Answer:** 3726172831

