

# WPF PUZZLE GP 2016 COMPETITION BOOKLET

**Puzzle Authors: Hungary**

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**Special Notes:** The point values are final in this version of the booklets.

## 1-3. Mastermind [Anikó Kozics] (4, 13, 32 points)

Each row represents a guess at a secret code. A black dot represents a symbol in the guess that is in the same position as a symbol in the secret code. A white dot represents a symbol in the guess that is in the secret code, but not in the same position. The dots are given in no specific order, and each symbol in the secret code contributes at most one dot with black dots given priority over white dots in case of ambiguity (for example, if the guess was FREED and the codeword was GEESE, the puzzle would display 1 black and 1 white). Each symbol in the secret code appears in at least one guess. Blank spaces can appear in the guesses but will never appear in the secret code.

Y O U ○  
R U N ○  
F O R ○○  
U F O ●○  
□ □ □ ●●●

*The last line with empty space for the secret code, and any notes on the side, are given for aesthetic reasons only. The secret code may or may not be a word.*

**Answer:** Enter the secret code.

**Example Answer:** OFF

1    8   1   3   ○  
     2   5   0   ○  
     9   0   3   ●  
     7   1   4   ●  
     □   □   □   ●●

2    2   0   1   6   ●  
     8   3   5   1   ●○  
     5   6   3   4   ○○  
     3   7   6   8   ○○○  
     9   8   7   3   ○○  
     □   □   □   □   ●●●

3    6   0   3   1   5   ●○○○  
     1   3   4   7   2   ●○○○  
     1   8   9   4   5   ○  
     7   4   0   2   0   ○  
     6   3   1   2   1   ○○○○  
     2   6   3   6   1   ○○○○  
     □   □   □   □   □   ●●●●



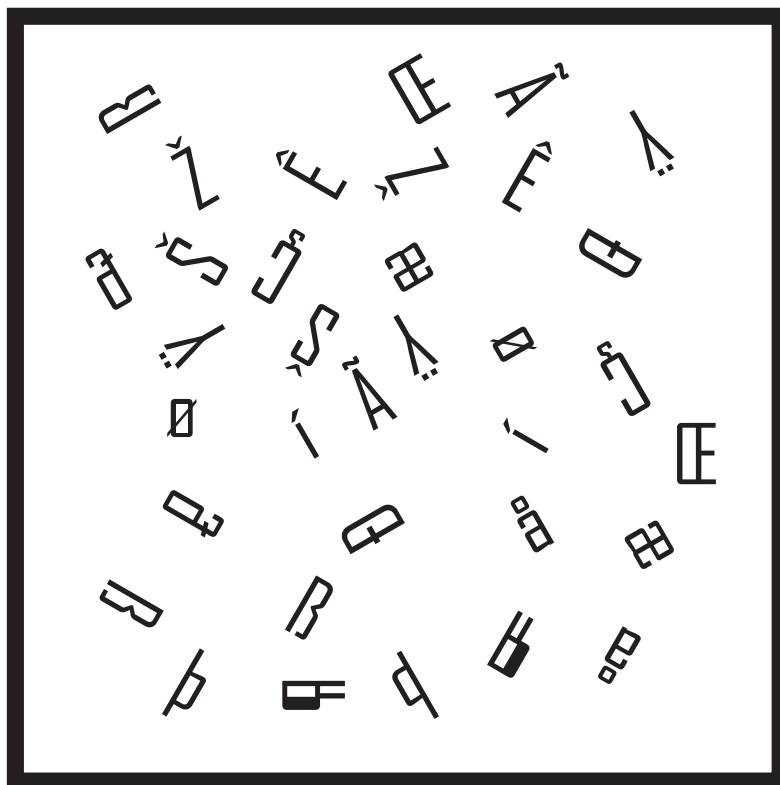
## 4-5. Find the Triplets [Pál Madarassy] (5, 6 points)

Two symbols appear three times in the box; the other symbols appear two times. Which two symbols appear three times? The symbols may be rotated and moved but not reflected.

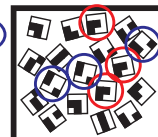
**Answer:** Enter the two-digit numbers corresponding to the two symbols that appear three times.

**Example Answer:** 12, 22 or 22, 12

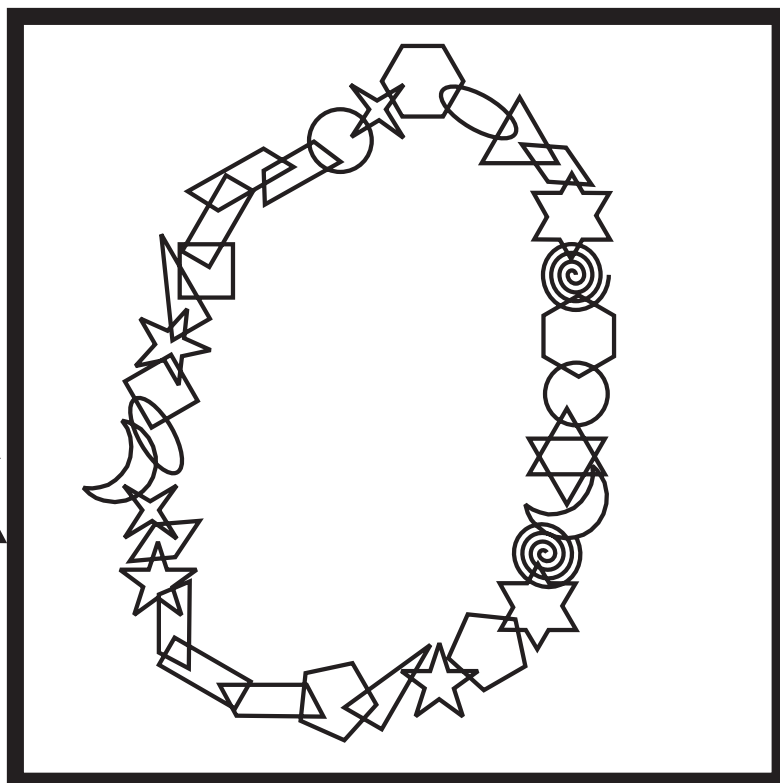
11	⌚	31	Å
12	ž	32	Ê
13	Š	33	Ð
14	ÿ	34	Ç
21	æ	41	í
22	ð	42	â
23	ø	43	ß
24	þ	44	ŕ



11	⌚	22	ð
12	ž	23	Ç
13	Š	31	Å
21	æ	32	Ê



11	□	31	⬡
12	▭	32	✕
13	◇	33	☆
14	○	34	★
21	◊	41	▵
22	▴	42	▭
23	△	43	☾
24	⬠	44	⊙





## 6-8. Snake Cities [Zoltán Németh] (6, 4, 11 points)

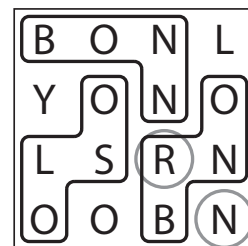
Locate multiple “snakes” in the grid. Each snake is a path that starts in a cell, goes through some number of cells orthogonally, and ends in a cell. Each cell is used at most once by the snake. The snake may not touch itself, not even diagonally. (In other words, if two cells in the snake touch orthogonally, 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.)

Each snake spells out the (English) name of a city. The unused letters in each grid also spell out the name of a city, when read across from left-to-right, top-to-bottom. All cities have a population of at least 600,000 (300,000 in the example).

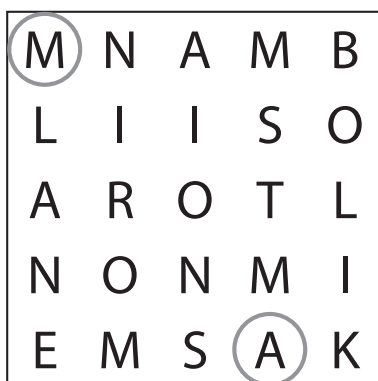
The circles are used only for entering your answer.

**Answer:** For each circled letter, in order from top to bottom, enter the name of the city that contains that letter. Ignore any spaces or symbols that might be in the proper name of the city.

**Example Answer:** BRNO, LYON



6a →

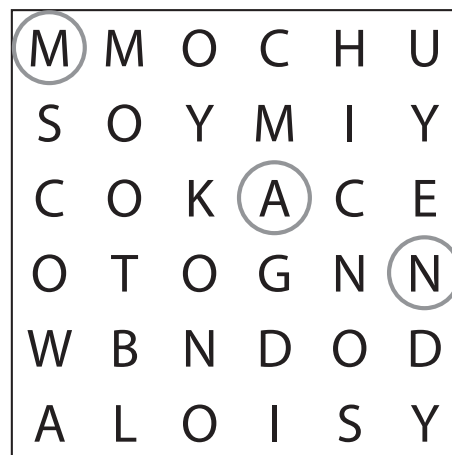


6b →

7a →

7b →

7c →



8a →

8b →

8c →

8d →

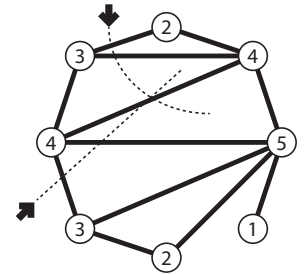


**9-10. Connections [Zoltán Horváth] (3, 9 points)**

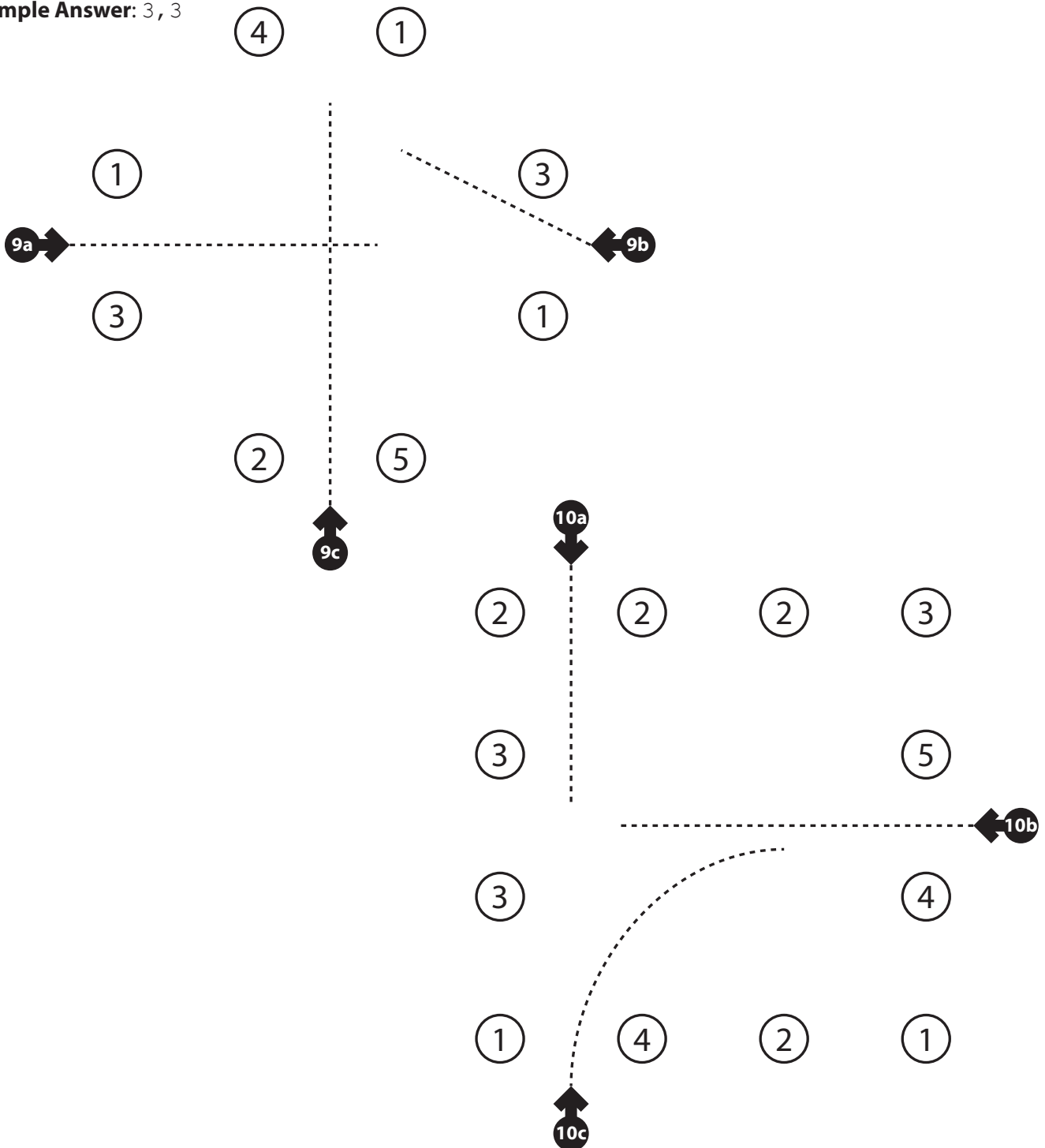
Draw straight connections between numbered circles so that each circle has the appropriate number of connections to other circles. Connections may not go through other circles. Connections may not intersect other connections.

*The dotted curves are used only for entering your answer. Their order will be unambiguous in the competition puzzles.*

**Answer:** For each dotted curve, enter the number of connections that cross that curve.



**Example Answer:** 3, 3



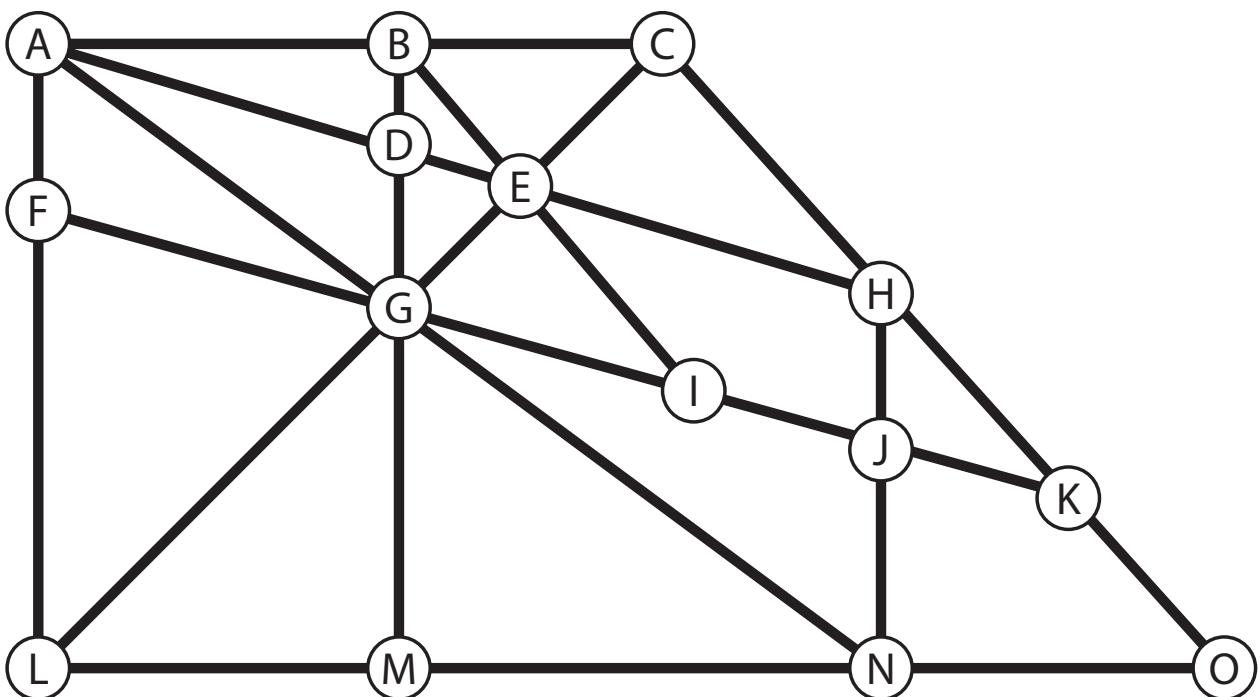
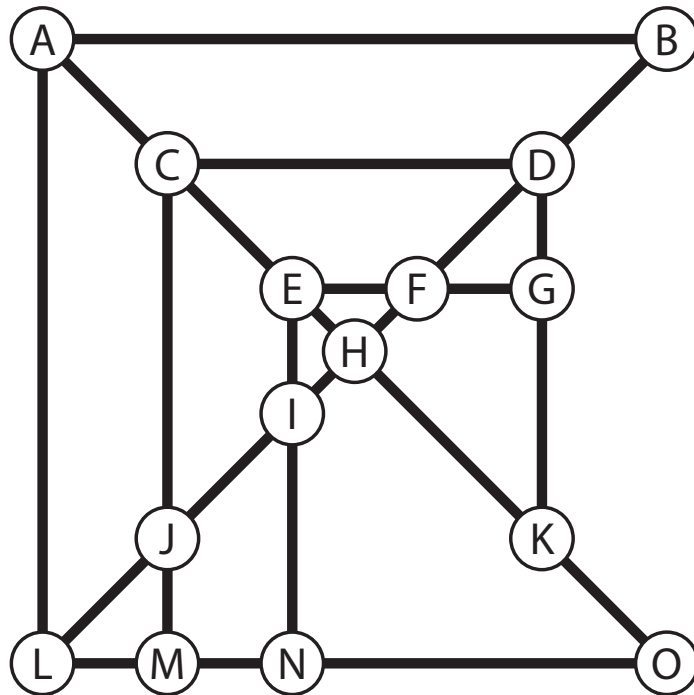
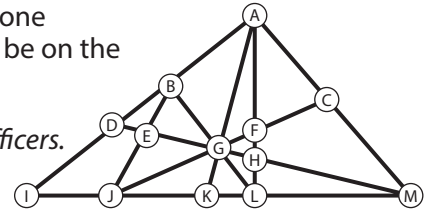
**11-12. Police [Zoltán Horváth] (10, 11 points)**

Place four police officers on intersections so that each street can be seen by at least one officer. Officers can see past other intersections, and it is fine for multiple officers to be on the same street.

*The letters are used only for entering your answer. The example only uses three police officers.*

**Answer:** Enter the letters with police officers, in alphabetical order.

**Example Answer:** AGJ





## 13-14. Association Football [Pál Madarassy] (9, 3 points)

Four association football (soccer) teams play a round-robin tournament, where each team plays each of the other teams in one match. The winner of each match gets 3 match points (MP) while the loser gets 0 MP. If the match has a tie score, then both teams get 1 MP. The four teams are then ranked by total MP (ties are broken by total number of goals scored, then by random coin flip), and the resulting ranking is that Amplistan is ranked highest, followed by Bestrudia, then Conesto, then Delphiz.

Team	MP
Amplistan	?
Bestrudia	
Conesto	3
Delphiz	2

Given a partially-filled scoresheet, determine what possible MP values could go in the space indicated with a question mark.

**Answer:** Enter all possible scores that could be in the space indicated with a question mark, in numerical order from lowest to highest.

**Example Answer:** 57

Team	MP
Amplistan	?
Bestrudia	
Conesto	5
Delphiz	

Team	MP
Amplistan	3
Bestrudia	
Conesto	
Delphiz	?

## 15-16. Chess [Zoltán Horváth] (25, 24 points)

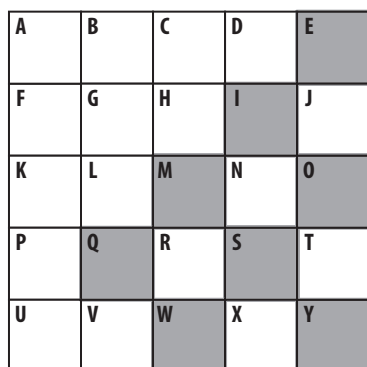
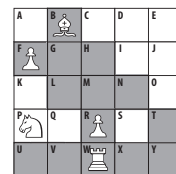
Place the five chess pieces (a rook, knight, bishop, and two pawns) on the board such that all the gray squares are under attack and none of the white squares are under attack.

Pieces can attack pieces of the same color. The rook's and bishop's attacks can be blocked by other pieces. Pawns may be placed anywhere, including the top and bottom row, and attack the two diagonal squares above it. Pieces do not attack themselves.

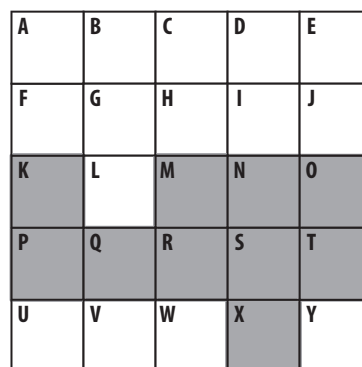
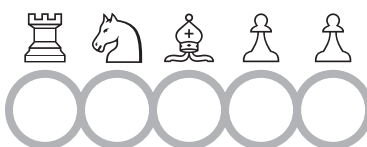
*The letters in the cells and the circles are used only to help you enter your answer.*

**Answer:** Enter the letters corresponding to the cells with the corresponding pieces. You may enter the cells for the two pawns in either order.

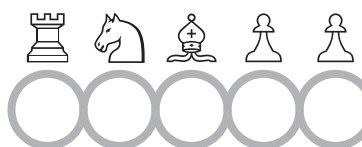
**Example Answer:** WPBRF or WPBFR



15



16



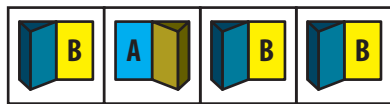
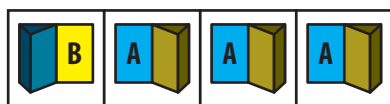


## 17-18. Lights and Switches [Zoltán Horváth] (8, 13 points)

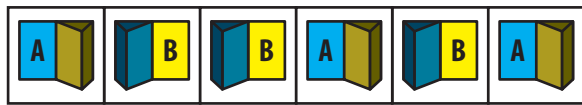
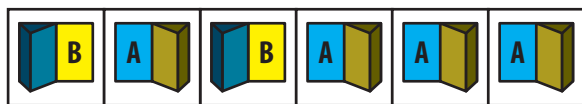
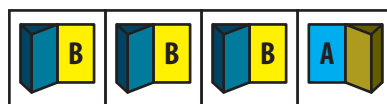
There are several switches and lightbulbs. Each switch is connected to **exactly** one lightbulb. Each lightbulb is connected to **exactly one switch**, and turns on when **that switch is** in the "on" position. It is not known which one of "A" or "B" is the "on" position, and it could be different among different switches.

**What position must the switches be in to turn all the lights on?**

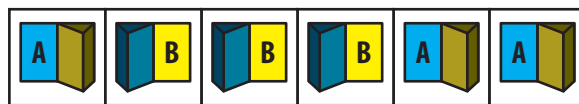
**Answer:** Enter the **correct position of the switches**, from left to right.



17 →



18 →

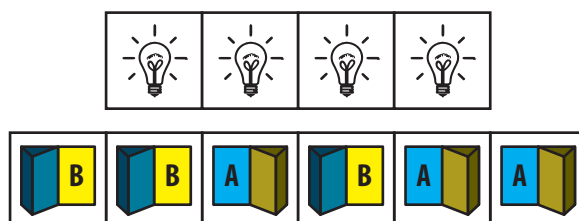
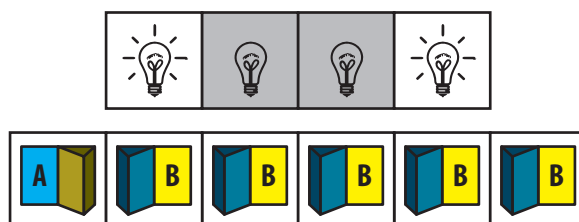
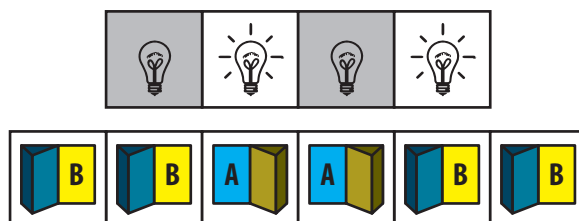
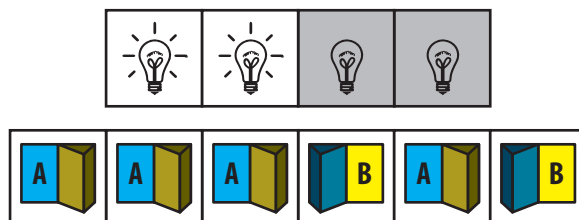


**19. Lights and Switches [Zoltán Horváth] (10 points)**

There are several switches and lightbulbs. Each switch is connected to **at most** one lightbulb. Each lightbulb is connected to **exactly one switch**, and turns on when **that switch is** in the “on” position. It is not known which one of “A” or “B” is the “on” position, and it could be different among different switches.

**Which two switches are not connected to any lightbulb?**

**Answer:** Enter the **letters matching the disconnected switches**, from left to right.



19 →

C

D

E

F

G

H



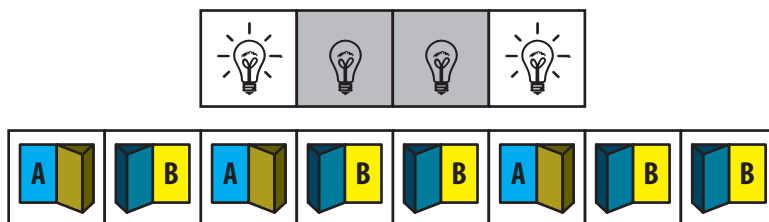
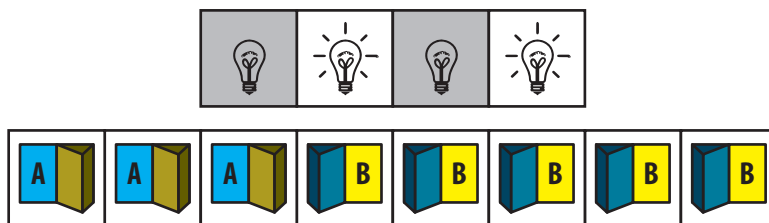
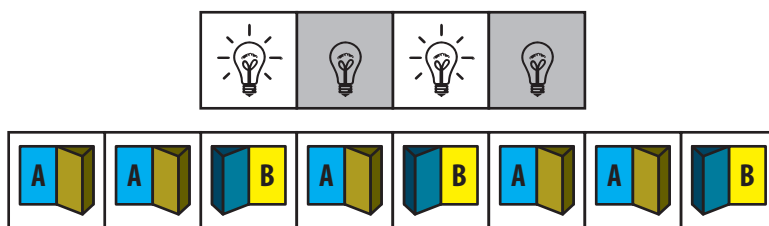
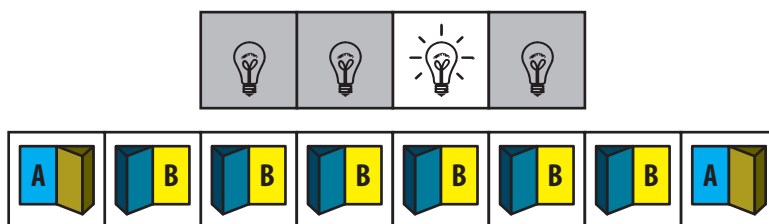


## 20. Lights and Switches [Zoltán Horváth] (53 points)

There are several switches and lightbulbs. Each switch is connected to **exactly** one lightbulb. Each lightbulb is connected to **exactly two switches**, and turns on when **both switches are** in the "on" position. It is not known which one of "A" or "B" is the "on" position, and it could be different among different switches.

**What position must the switches be in to turn all the lights on?**

**Answer:** Enter the **correct position of the switches**, from left to right.



20 →

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