# Contest: Compilation of Excellent Spatial Abilities (CELESTIAL) April 1, 2020 - June 19, 2020 11:59pm ET <br> Participants: 20 

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## Contest Information

Cheating: Do not discuss answers/hints. No time limit. Two attempts and reference aids are allowed. No penalty for guesses/wrong answers.

## Compilation of Excellent Spatial Abilities (CELESTIAL)

Observe the rotation and symmetry of the letters/numbers/symbols; for the solutions, use your keyboard - no drawing or software required!
I. Series

1. Complete the series:
(

$$
? \quad \text { ? }
$$

\{
2. Complete the series:
?

## 1111///1111

111//111
3. Complete the series:

$$
\stackrel{1}{\wedge}
$$

v
$-\infty-1+2$
$?$

## II. Matrices

4. Find the missing element in this matrix:

5. Find the missing element in this matrix:

6. Find the missing element in this matrix:


## III. Analogies

7. Complete the analogy:
) (: (: <> : ?
8. Complete the analogy:

9. Complete the analogy:


## IV. Odd-One-Out

10. Select the letter (A, B, C, or D) of the item that is different from the others:

11. Select the letter (A, B, C, D, E, F, G, H, I, J, or K) of the item that is different from the others:

| / | I | - | I | - | $\sim$ | T | Z | W | N | E |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| A | B | C | D | E | F | G | H | I | J | K |

12. Select the letter (A, B, C, D, E, or F) of the item that is different from the others:

A


C

D

E

V. Problem Solving
13. Select the letter (A, B, C, D, E, F, or G) of the item that needs to be removed to make the series correct:

| / | ( | ( | C | C | [ | I |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| A | B | D | E | F | G |  |

14. State the order that the following overlapping same-sized squares were put on top of each other:

15. Abe purchased a large bar of soap in the shape of a perfect cube with 12 -inch sides. He wants to share pieces of it with his college graduation class as a joke. What is the maximum amount of pieces after 12 straight cuts through this large bar of soap (without moving the pieces)?

Final Scoreboard (June 19, 2020)

| Ranking | Name | Country | $1^{\text {st }}$ Attempt | $2^{\text {nd }}$ <br> Attempt | Mean Score | Prize |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Winner | Luca Fiorani | Italy | 14 | 15 | 14.5 | Free test submission and free society membership until July 31, 2020. |
| $2^{\text {nd }}$ Place | Heinrich Siemens <br> Merlin Thieme | Germany Germany | $\begin{aligned} & 14 \\ & 14 \\ & \hline \end{aligned}$ | $\begin{gathered} \text { N/A } \\ 14 \\ \hline \end{gathered}$ | 14 | Free test submission until July 15, 2020. |
| $3^{\text {rd }}$ Place | Jewoong Moon Hidden Hidden Mirko Rossini | S. Korea Hidden Hidden Italy | 13 | N/A | 13 | 1/2-off test submission until June 30, 2020. |
| $4^{\text {th }}$ Place | Hidden James Gordon | Hidden USA | $\begin{aligned} & 13 \\ & 12 \\ & \hline \end{aligned}$ | $\begin{aligned} & 12 \\ & 13 \\ & \hline \end{aligned}$ | 12.5 |  |
| $5^{\text {th }}$ Place | Jim Lorrimore <br> Maximilian-Andrei Druță <br> Nitish Joshi <br> Gernot Feichter <br> Tiberiu Sammak | England <br> Romania India Austria Romania | $\begin{aligned} & 12 \\ & 12 \\ & 12 \\ & 12 \\ & 12 \end{aligned}$ | $\begin{aligned} & \hline \text { N/A } \\ & \text { N/A } \\ & \text { N/A } \\ & 12 \\ & \text { N/A } \\ & \hline \end{aligned}$ | 12 |  |
| $6^{\text {th }}$ Place | Göran Åhlander | Sweden | 11 | 12 | 11.5 | given to all participants |
| $7{ }^{\text {th }}$ Place | Anthony Sepulveda | USA | 11 | N/A | 11 |  |
| $8^{\text {th }}$ Place | Hidden Alexandre Alves Duran | Hidden Brazil | 10 | N/A | 10 |  |
| $9^{\text {th }}$ Place | Andrius Jodinskas | Wales | 10 | 8 | 9 |  |
| $10^{\text {th }}$ Place | Hidden | Hidden | 9 | 8 | 8.5 |  |

