MECHANICAL PUZZLE COMPETITIONS

World Mechanical Puzzle Competition
5th Edition — November 29, 2025

Puzzles & Rules

AI Secrets Edition — Where Human Ingenuity Meets Artificial Intelligence

CHECK that each puzzle matches its description. If you notice any discrepancy, ask the staff for a replacement.

SOLVE the puzzles as instructed and fill in the answer sheet. Time limit: 2 hours.

HAND IN the answer sheet to the staff, who will record your completion time.

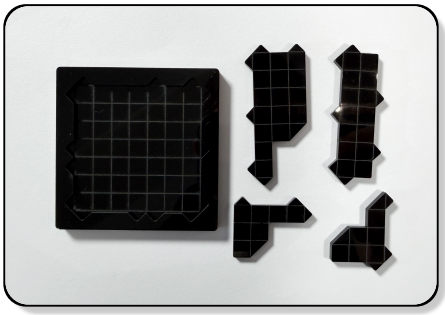
RULES: Stationery is allowed; cheating and outside assistance are not.

SCORING: sum of points for correct answers. Ties are decided by fastest time, then youngest age.

PRIZES: worldwide winners in each category will be contacted to arrange prize shipment.

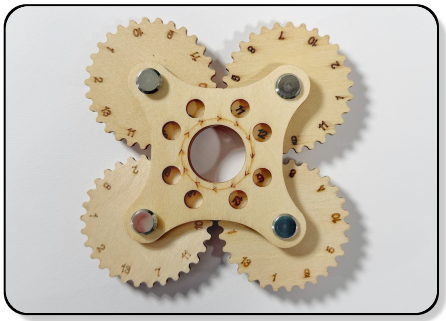
SOLUTIONS, rankings, puzzle kits from past editions, and more: `us.mechanicalpuzzlecompetitions.com`

1. BINARY (5 POINTS)



Type: 2D assembly. ***Parts:*** Square frame and 4 pieces. ***Goal:*** Fit all 4 pieces inside the frame. ***Question:*** The inner edge of the frame creates 14 triangles (6 along the sides, 4 pairs at each corner). How many of these triangles remain uncovered?

2. DRONE (6 POINTS)



Type: Sequential movement. ***Parts:*** Wooden object with 4 rotating gears. ***Goal:*** Rotate the gears until the numbers visible in the 8 circles are in strictly increasing clockwise order, following the arrows, starting from any circle. ***Question:*** What is the sum of the numbers visible in the 8 circles?

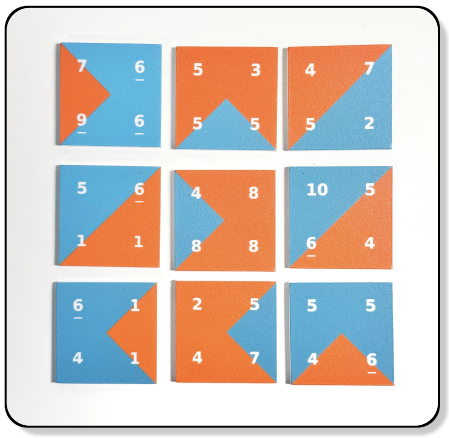
3. BIAS (7 POINTS)

Type: Sequential movement. ***Parts:*** 5 wooden cubes threaded on a cord, each with numbers printed on its 4 visible faces. ***Goal:*** Rotate the cubes so that each of the 4 sides of the puzzle (each formed by 5 cube faces) has the same total sum. ***Question:*** On how many of the 4 sides does the number 5 appear?

4. QUANTUM (7 POINTS)

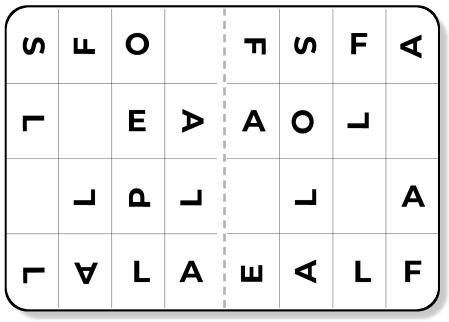
Type: 2D assembly. ***Parts:*** Round frame and 11 pieces with curved lines carved on their surfaces. ***Goal:*** Place all pieces inside the frame to create the maximum number of complete circles formed by the carved lines. Circles formed by piece edges do not count. ***Question:*** What is the maximum number of complete circles that can be formed?

5. DATA CENTER (8 POINTS)



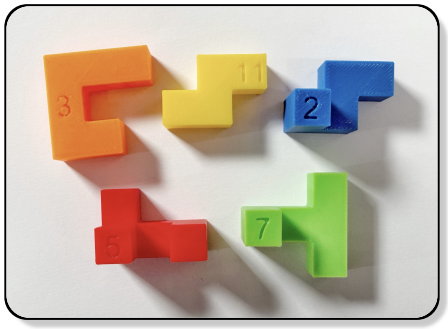
Type: 2D assembly. ***Parts:*** 9 squares with blue and orange sides, each side featuring 2 numbers. ***Goal:*** Arrange the squares into a 3×3 grid so that only sides of the same color touch. Each contact is either blue or orange and creates 2 sums, one for each pair of touching numbers. For example, in the figure, the bottom side of the top-left square produces 14 (9+5) and 12 (6+6). All individual sums generated by blue contacts must be equal. The same applies to orange contacts, but with a different value. ***Question:*** What is the sum of the 4 numbers at the outer corners?

6. PROMPT (8 POINTS)



Type: Folding. ***Parts:*** One sheet of paper with letters printed on both sides, arranged in a grid. ***Goal:*** Fold the sheet using only full-sheet folds. The word ALFA must appear on one side, with the letters correctly oriented, in the correct order, arranged in a straight line, and with no other letters visible on that side. ***Question:*** What is the minimum number of folds required?

7. NEXUS (9 POINTS)



Type: 3D assembly. ***Parts:*** 5 colored pieces with carved numbers. ***Goal:*** Use all 5 pieces to build a solid cube. ***Question:*** What is the sum of all the numbers visible on the outside of the completed cube?