

Science and Mechanics of Games

Board Games & Puzzles · Answer Key · 8 Questions

1. Which branch of mathematics is primarily used to analyze optimal decision-making in competitive board games like Chess or Go?

- A) Topology
- B) Game Theory**
- C) Calculus
- D) Number Theory

2. In a standard 8x8 chessboard, how many total squares (including those of sizes 2x2, 3x3, etc.) are there?

- A) 64
- B) 128
- C) 204**
- D) 256

3. What physical property allows the pieces of a Magnetic Chess set to stay attached to the board?

- A) Electromagnetism
- B) Ferromagnetism**
- C) Static electricity
- D) Gravitational force

4. The 'Rubik's Cube' belongs to a field of mathematics known as group theory. What is the maximum number of moves required to solve any position of a 3x3x3 cube, known as God's Number?

- A) 15
- B) 20**
- C) 26
- D) 32

5. In the game of Nim, a winning strategy is determined by calculating the 'Nim-sum'. Which binary operation is used to calculate this?

- A) XOR (Exclusive OR)**
- B) AND
- C) OR
- D) NAND

6. What geometric shape is the most efficient for tiling a flat surface with no gaps, a principle often used in board game tile-laying mechanics?

- A) Pentagon
- B) Heptagon
- C) Hexagon**
- D) Circle

7. In probability theory, what is the likelihood of rolling a sum of 7 with two standard six-sided dice?

- A) 1/6**
- B) 1/12
- C) 1/36
- D) 7/36

8. Which psychological concept explains why players often feel they have more control over the outcome of a dice-based game than they statistically do?

- A) The Gambler's Fallacy
- B) The Illusion of Control**
- C) Confirmation Bias
- D) Cognitive Dissonance