

Masterclass: Non-Verbal Reasoning

Comprehensive Conceptual Summary for Competitive Exams

1 Introduction to Non-Verbal Reasoning

Non-Verbal Reasoning (NVR) assesses an individual's ability to understand and analyze visual information, solve problems using diagrams, figures, and symbols, and recognize patterns without relying on linguistic or numerical proficiency. Mastery of NVR relies heavily on recognizing spatial transformations, symmetries, and logical progressions.

2 Core Categories and Analytical Strategies

2.1 1. Series Completion

In series problems, a sequence of figures evolves according to a specific rule or set of rules (e.g., rotation, addition/removal of elements, shading changes).

- **Rotation Rule:** Figures typically rotate clockwise or counter-clockwise by fixed angles (45° , 90° , 180°).
- **Movement Rule:** Elements shift positions within a grid or along a predefined path.

2.2 2. Analogy and Classification (Odd-One-Out)

Analogy requires identifying the relationship between a first pair of figures and applying it to a third figure. Classification involves picking the figure that does not share the common property.

- Look for geometrical attributes: number of sides, internal lines, symmetry axes, and intersection points.
- Analyze internal-external relationships (e.g., a circle inside a triangle vs. a triangle inside a circle).

2.3 3. Mirror and Water Images

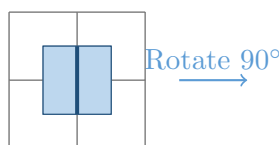
Understanding spatial inversion is crucial for reflection-based problems:

Mirror Image (Left-Right Inversion): $(x, y) \rightarrow (-x, y)$

Water Image (Top-Bottom Inversion): $(x, y) \rightarrow (x, -y)$

3 Visual Problem-Solving Framework via TikZ

To illustrate structural transformation, consider a basic geometric rotation matrix applied in visual logic:



Step 21: Base State

4 Key Takeaways and Tips

1. **Deconstruct Complex Figures:** Break composite diagrams down into individual components (e.g., arrows, shading, core shapes).
2. **Elimination Strategy:** Eliminate options that violate at least one governing rule immediately.
3. **Track Single Elements:** Instead of looking at the whole picture, track one element (like a dot or an arrow) from frame to frame.

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