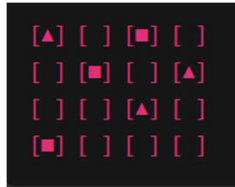


## 1. Geo-Sudo Challenge (Deductive Logical Thinking)

### Question:

Complete the 4×4 grid ensuring each shape appears only once per row and column.

### Grid:



### Solution:

This puzzle is similar to Sudoku but uses shapes instead of numbers. The goal is to place the shapes ▲, ■, ●, and ◆ such that each appears only once in each row and column.

### Step-by-Step:

- **Row 1:** Already has ▲ and ■. Place ● and ◆ in the remaining cells without repeating shapes in the corresponding columns.
- **Row 2:** Already has ■ and ▲. Place ● and ◆ accordingly.
- **Row 3:** Already has ▲. Place ■, ●, and ◆ without repeating in columns.
- **Row 4:** Already has ■. Place ▲, ●, and ◆ accordingly.

### Completed Grid:



Each shape appears only once per row and column.

---

## 2. Motion Challenge (Pathfinding Puzzle)

### Question:

Navigate the red ball through the maze to reach the hole, moving obstacles as necessary.

### Maze Representation:

S - Start (Red Ball)

E - Empty Space

P - Plastic Block (Movable)

R - Rock (Immovable)

H - Hole (Goal)

```
[ ] [ ] [P] [ ] [H]
[R] [P] [R] [P] [ ]
[S] [ ] [ ] [ ] [ ]
```

**Solution:**

The objective is to move the red ball from 'S' to 'H' in the fewest steps, moving plastic blocks if necessary.

**Step-by-Step:**

1. **From S (2,0):** Move right to (2,1).
2. **(2,1):** Move right to (2,2).
3. **(2,2):** Move right to (2,3).
4. **(2,3):** Move right to (2,4).
5. **(2,4):** Move up to (1,4).
6. **(1,4):** Move up to (0,4) - 'H'.
7. Total Moves: 6

---

**3. Switch Challenge (Pattern Recognition)****Question:**

Determine the code that transforms the input sequence of shapes to the output sequence.

**Input Sequence:**

[▲][■][●][◆]

**Output Sequence:**

[◆][▲][■][●]

**Solution:**

Observe the transformation pattern:

- Input Position 1 (▲) → Output Position 2
- Input Position 2 (■) → Output Position 3
- Input Position 3 (●) → Output Position 4
- Input Position 4 (◆) → Output Position 1

This indicates a right rotation of the sequence by one position.

**Code:**

Rotate Right by 1

---

#### 4. Digit Challenge (Mathematical Puzzle)

**Question:**

Using the digits 2, 3, 5, and 7 only once, form an equation where the sum equals 17.

**Solution:**

Try different combinations:

- $2 + 3 + 5 + 7 = 17$

This combination uses each digit once and sums to 17.

**Answer:**

$$2 + 3 + 5 + 7 = 17$$

---

#### 5. Inductive Logical Reasoning (Spacio Challenge)

**Question:**

Identify the figure that follows the same pattern as the given pair.

**Given Pair:**

- Figure A: A triangle inside a square.
- Figure B: A circle inside a triangle.

**Options:**

- **Option 1:** A square inside a circle.
- **Option 2:** A triangle inside a circle.
- **Option 3:** A circle inside a square.
- **Option 4:** A square inside a triangle.

**Solution:**

In the given pair, the inner shape becomes the outer shape in the next figure, and a new shape becomes the inner shape.

- Figure A: Triangle inside Square.
- Figure B: Circle inside Triangle.

Following this pattern:

- Next Figure: Square inside Circle.

**Answer:**

Option 1: A square inside a circle.

---

## 6. Grid Challenge (Memory and Attention Test)

### Question:

Remember the highlighted positions in a 3×3 grid and identify symmetrical figures presented simultaneously.

### Step 1:

Memorize the positions of the highlighted cells:



### Step 2:

After a brief interval, identify which of the following figures is symmetrical to the memorized pattern.

### Options:

- **Option A:** Same as above.
- **Option B:** Diagonal symmetry.
- **Option C:** Horizontal symmetry.
- **Option D:** Vertical symmetry.

### Solution:

The original pattern has both vertical and horizontal symmetry.

### Answer:

Option A: Same as above.

---

## 7. Follow the Same Rule Challenge

### Question:

Given a set of figures following a specific pattern, identify which option follows the same rule.

### Given Pattern:

- **Figure 1:** A black square with a white circle inside.
- **Figure 2:** A black triangle with a white square inside.

### Options:

- **Option A:** A black circle with a white triangle inside.
- **Option B:** A white square with a black circle inside.
- **Option C:** A black circle with a white triangle inside.
- **Option D:** A black square with a white triangle inside.

**Solution:**

The pattern involves a black outer shape with a white inner shape, where the inner shape becomes the outer shape in the next figure.

- Figure 1: Black square (outer), white circle (inner).
- Figure 2: Black triangle (outer), white square (inner).

Following this pattern, the next figure should have:

- Black circle (outer), white triangle (inner).

**Answer:**

Option C: A black circle with a white triangle inside.

---

**8. Deductive Reasoning Puzzle (Arrangement Challenge)****Question:**

Five friends — Arjun, Bhavya, Chetan, Divya, and Esha — are sitting in a row.

Conditions:

- Arjun is to the immediate left of Divya.
- Bhavya is not at any of the ends.
- Chetan is to the immediate right of Bhavya.

**Who is sitting at the extreme right?**

**Solution:**

Let's figure it out step-by-step:

- Bhavya **cannot be at the ends**, so she must be at position 2, 3, or 4.
- Chetan is immediately to Bhavya's right → Chetan must sit **immediately after** Bhavya.
- Arjun is to the immediate left of Divya.

Thus, the arrangement could be:

Seat	1	2	3	4	5
	A	B	C	D	E

Try Bhavya at position 2:

- Bhavya at 2 → Chetan at 3.
- Now Arjun and Divya must be adjacent.
- Place Arjun at 4, Divya at 5.

Thus, Esha at 1.

Final Order:

**Esha → Bhavya → Chetan → Arjun → Divya**

- Extreme right: **Divya**

**Answer:**

**Divya**

---

## 10. Pattern Series (Visual Reasoning)

**Question:**

Find the next figure in the sequence:

- Image 1: A triangle pointing up.
- Image 2: A triangle pointing right.
- Image 3: A triangle pointing down.
- Image 4: ?

**Solution:**

Observe the pattern:

- The triangle is rotating **90° clockwise** each step:
  - Up → Right → Down → (Next → Left)

Thus, the next figure will be a triangle pointing **left**.

**Answer:**

**Triangle pointing Left**

---

## 11. Basic Coding Puzzle (Simple Pseudocode)

**Question:**

What will be the output of the following pseudocode?

```
Initialize X = 5
Initialize Y = 10

While X < Y
    X = X + 2
    Y = Y - 3

Print X, Y
```

**Solution:**

Let's simulate step-by-step:

- **Initially:** X = 5, Y = 10 → X < Y
  - X = 5 + 2 = 7
  - Y = 10 - 3 = 7

- **Now:**  $X = 7, Y = 7 \rightarrow X$  is **not** less than  $Y$ , so stop.

Now **print X and Y**:

**Output:** 7 7

**Answer:**

**7 7**

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