

MAHCET Abstract Reasoning

Sample Paper – 5

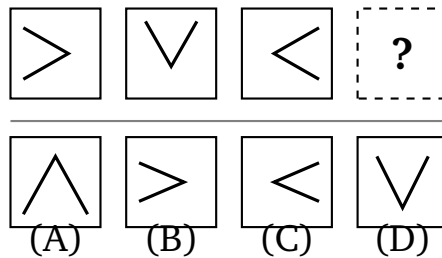
Duration: 19 Minutes **Total Marks:** 25 **Questions:** 25 **Negative Marking:** None

Instructions

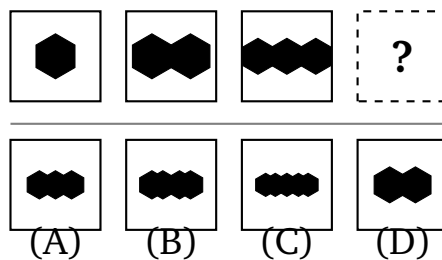
- This paper contains 25 questions from the Abstract Reasoning section of MAHCET.
- Each question carries 1 mark. There is no negative marking for wrong answers.
- All questions are compulsory. Choose the best option from (A), (B), (C), (D).
- This is a Computer Based Test (CBT). No physical calculator is allowed.
- Attempt all questions within the allotted time of 19 minutes.

Abstract Reasoning

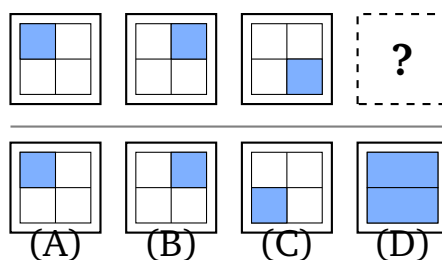
Q1. Find the missing figure in the series.



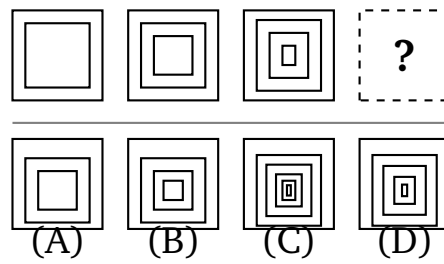
Q2. Find the missing figure in the series.



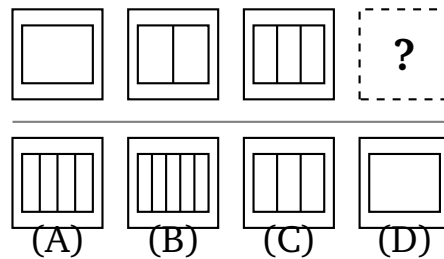
Q3. Find the missing figure in the series.



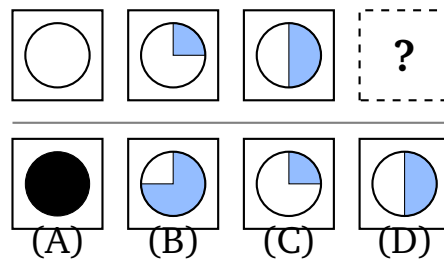
Q4. Find the missing figure in the series.



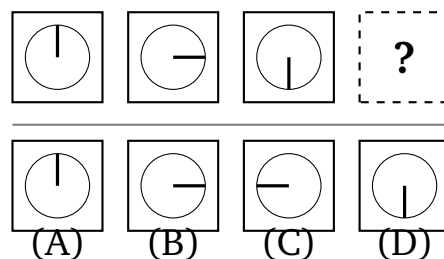
Q5. Find the missing figure in the series.



Q6. Find the missing figure in the series.

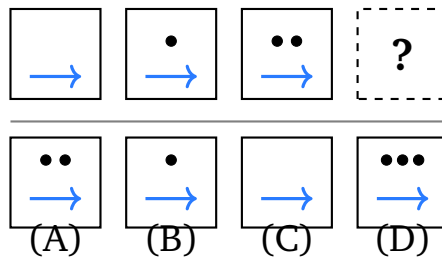


Q7. Find the missing figure in the series.

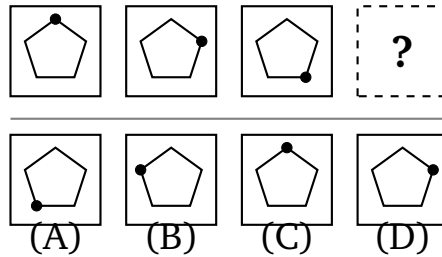


Q8. Find the missing figure in the series.

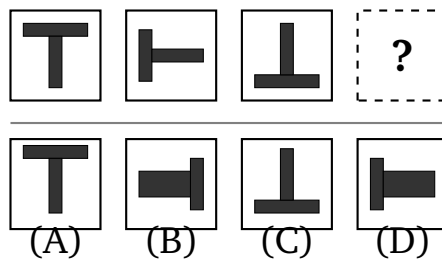




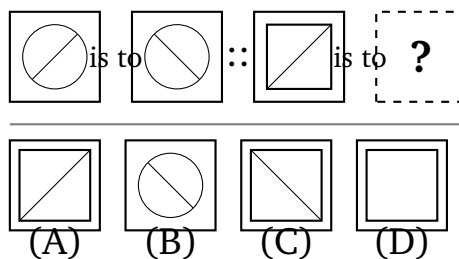
Q9. Find the missing figure in the series.



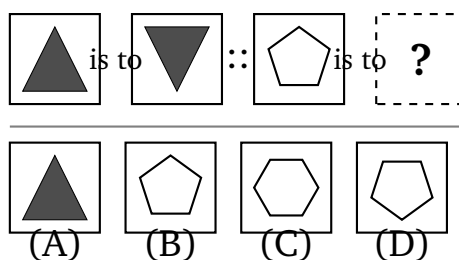
Q10. Find the missing figure in the series.



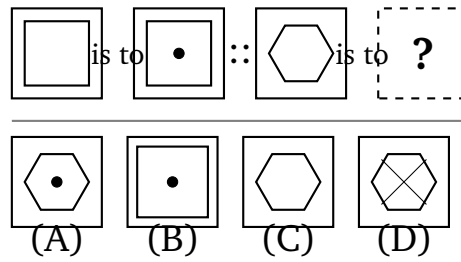
Q11. Choose the figure that completes the analogy.



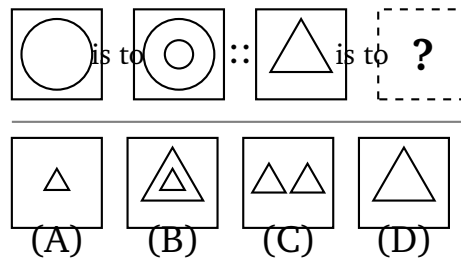
Q12. Choose the figure that completes the analogy.



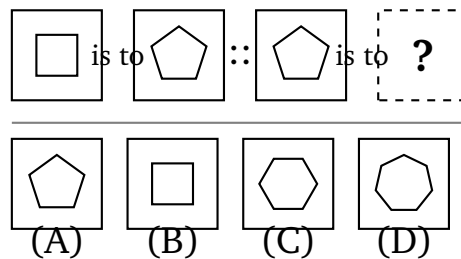
Q13. Choose the figure that completes the analogy.



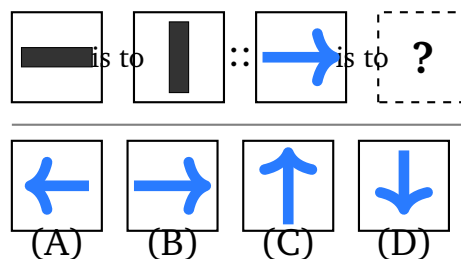
Q14. Choose the figure that completes the analogy.



Q15. Choose the figure that completes the analogy.

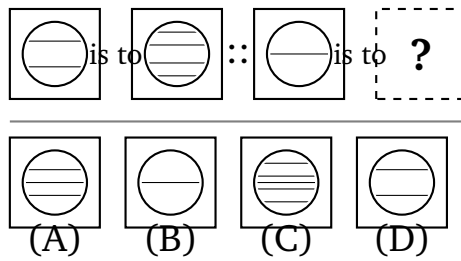


Q16. Choose the figure that completes the analogy.

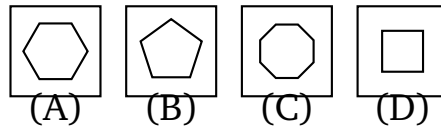


Q17. Choose the figure that completes the analogy.

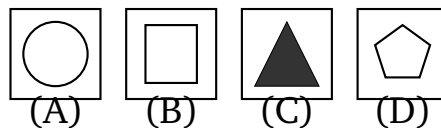




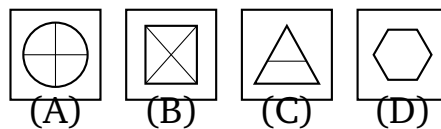
Q18. Which figure does NOT belong to the group?



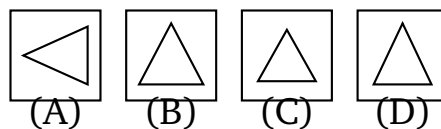
Q19. Which figure does NOT belong to the group?



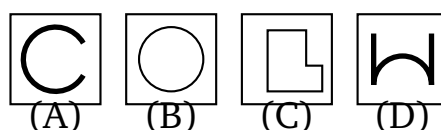
Q20. Which figure does NOT belong to the group?



Q21. Which figure does NOT belong to the group?

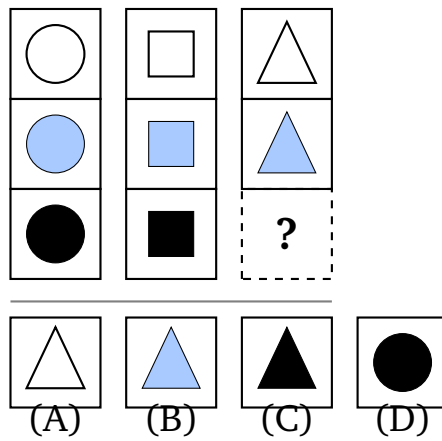


Q22. Which figure does NOT belong to the group?

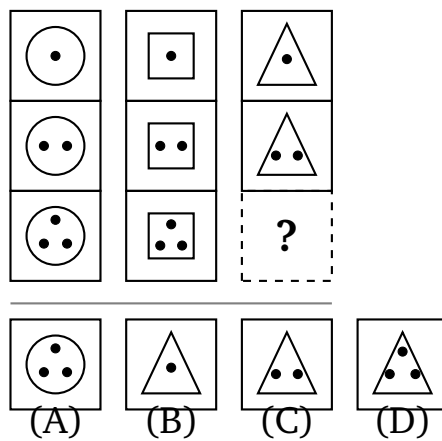


Q23. Find the missing figure in the 3×3 matrix.

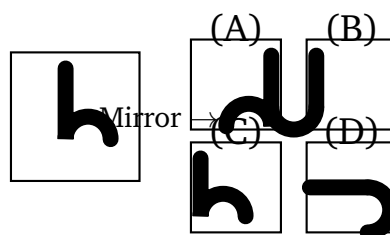




Q24. Find the missing figure in the 3×3 matrix.



Q25. Select the correct mirror image of the given figure.



Detailed Solutions



1.

Solution**Concept — Chevron Rotation 90°CW**

Identify the rule: A bold chevron (V-shape) rotates exactly 90 degrees clockwise at each step: right-pointing → down-pointing → left-pointing → up-pointing.

Apply the rule: After left-pointing (Step 3), the next 90°CW rotation produces an up-pointing chevron. Option A shows this correctly.

Why other options are wrong:

- Option B: Right-pointing chevron — this is the Step 1 position, already used.
- Option C: Left-pointing chevron — this is the Step 3 position, already used.
- Option D: Down-pointing chevron — this is the Step 2 position, already used.

Final Answer: Chevron rotates 90°CW per step; Step 4 must point Up. ⇒ A

Answer: (A) [Go Back to Q1](#)

2.

Solution**Concept — Counting Hexagons**

Identify the rule: One additional filled hexagon is added at each step: Step 1 = 1 hexagon, Step 2 = 2 hexagons, Step 3 = 3 hexagons.

Apply the rule: Step 4 requires 4 hexagons in a row. Option B shows exactly 4 filled hexagons.

Why other options are wrong:

- Option A: 3 hexagons — matches Step 3, not Step 4.
- Option C: 5 hexagons — overshoots the pattern by one step.
- Option D: 2 hexagons — matches Step 2, already passed.

Final Answer: One hexagon added per step; Step 4 = 4 hexagons (Option B). ⇒ B

Answer: (B) [Go Back to Q2](#)



3.

Solution**Concept — 2×2 Grid Clockwise Fill**

Identify the rule: Exactly one cell in a 2×2 grid is filled at each step, and it moves clockwise: top-left $\rightarrow$ top-right $\rightarrow$ bottom-right $\rightarrow$ bottom-left.

Apply the rule: After bottom-right (Step 3), the next clockwise position is bottom-left. Option C shows the bottom-left cell filled.

Why other options are wrong:

- Option A: Top-left filled — matches Step 1.
- Option B: Top-right filled — matches Step 2.
- Option D: All 4 cells filled — breaks the single-cell rule.

Final Answer: Clockwise single-cell fill; Step 4 = bottom-left (Option C). $\Rightarrow$ **C**

Answer: (C) [Go Back to Q3](#)

4.

Solution**Concept — Nested Squares**

Identify the rule: One additional concentric square is added per step: Step 1 = 1 square, Step 2 = 2 nested squares, Step 3 = 3 nested squares.

Apply the rule: Step 4 requires 4 nested squares. Option D shows 4 concentric squares.

Why other options are wrong:

- Option A: 2 nested squares — matches Step 2.
- Option B: 3 nested squares — matches Step 3.
- Option C: 5 nested squares — skips Step 4.

Final Answer: One square added per step; Step 4 = 4 nested squares (Option D). $\Rightarrow$ **D**

Answer: (D) [Go Back to Q4](#)



5.

Solution**Concept — Progressive Division**

Identify the rule: The number of vertical lines inside a rectangle increases by 1 each step: Step 1 = 0 lines, Step 2 = 1 line, Step 3 = 2 lines.

Apply the rule: Step 4 requires 3 vertical lines inside the rectangle. Option A shows a rectangle divided by 3 vertical lines.

Why other options are wrong:

- Option B: 4 vertical lines — skips Step 4.
- Option C: 2 vertical lines — matches Step 3.
- Option D: Plain rectangle (0 lines) — matches Step 1.

Final Answer: One vertical line added per step; Step 4 = 3 lines (Option A). $\Rightarrow$

A**Answer: (A)** [Go Back to Q5](#)

6.

Solution**Concept — Pie-Chart Filling**

Identify the rule: One additional quarter of the circle is filled (shaded) at each step going clockwise from the top: Step 1 = 0 quarters (empty), Step 2 = 1 quarter, Step 3 = 2 quarters (half).

Apply the rule: Step 4 requires 3 quarters filled. Option B shows a circle with 3 quarters (270°) shaded.

Why other options are wrong:

- Option A: Fully filled circle (4 quarters) — skips Step 4.
- Option C: 1 quarter filled — matches Step 2.
- Option D: Half filled (2 quarters) — matches Step 3.

Final Answer: One quarter added per step; Step 4 = 3 quarters filled (Option B).

 $\Rightarrow$ **B****Answer: (B)** [Go Back to Q6](#)

7.

Solution**Concept — Clock Hand Rotation 90°CW**

Identify the rule: The clock hand rotates 90° clockwise at each step: 12 o'clock → 3 o'clock → 6 o'clock → 9 o'clock.

Apply the rule: After 6 o'clock (Step 3), the next 90°CW rotation gives 9 o'clock (hand pointing left). Option C shows this.

Why other options are wrong:

- Option A: Hand at 12 — matches Step 1.
- Option B: Hand at 3 — matches Step 2.
- Option D: Hand at 6 — matches Step 3.

Final Answer: Hand rotates 90°CW per step; Step 4 = 9 o'clock (Option C). ⇒ **C**

Answer: (C) [Go Back to Q7](#)

8.

Solution**Concept — Arrow with Growing Dots**

Identify the rule: One filled dot is added above the right-pointing arrow at each step: Step 1 = 0 dots, Step 2 = 1 dot, Step 3 = 2 dots.

Apply the rule: Step 4 requires 3 dots above the arrow. Option D shows the arrow with 3 dots.

Why other options are wrong:

- Option A: Arrow with 2 dots — matches Step 3.
- Option B: Arrow with 1 dot — matches Step 2.
- Option C: Arrow only (0 dots) — matches Step 1.

Final Answer: One dot added per step; Step 4 = 3 dots (Option D). ⇒ **D**

Answer: (D) [Go Back to Q8](#)



9.

Solution**Concept — Pentagon Vertex Marker CW**

Identify the rule: A filled dot marks one vertex of a regular pentagon and moves one vertex clockwise at each step: top $\rightarrow$ upper-right $\rightarrow$ lower-right $\rightarrow$ lower-left.

Apply the rule: After lower-right (Step 3), the next clockwise vertex is lower-left. Option A shows the dot at the lower-left vertex.

Why other options are wrong:

- Option B: Dot at upper-left — this would be Step 5, skipping Step 4.
- Option C: Dot at top — matches Step 1 position.
- Option D: Dot at upper-right — matches Step 2 position.

Final Answer: Dot moves CW; Step 4 = lower-left vertex (Option A). $\Rightarrow$ **A**

Answer: (A) [Go Back to Q9](#)

10.

Solution**Concept — T-Shape Rotation 90°CW**

Identify the rule: A T-shape rotates 90° clockwise at each step: normal T (stem down) $\rightarrow$ T rotated 90°CW (stem right) $\rightarrow$ inverted T (stem up) $\rightarrow$ T rotated 270°CW (stem left).

Apply the rule: After inverted T (Step 3), the next 90°CW rotation gives a T with the stem pointing left (vertical bar on the right, arm extending left). Option B shows this.

Why other options are wrong:

- Option A: Normal T (stem down) — matches Step 1.
- Option C: Inverted T (stem up) — matches Step 3.
- Option D: T with stem right — matches Step 2.

Final Answer: T rotates 90°CW; Step 4 = T with stem left (Option B). $\Rightarrow$ **B**

Answer: (B) [Go Back to Q10](#)



11.

Solution**Concept — Analogy: Diagonal Line Rotation 90°CW**

Identify the rule: The diagonal line inside a shape rotates 90° clockwise. In the circle, a forward-slash (‘/’) becomes a backward-slash (‘\’). The same 90°CW rotation must apply to the diagonal in the square of FigC.

Apply the rule: FigC has a square with a forward-slash diagonal. Rotating 90°CW gives a square with a backward-slash diagonal. Option C shows this.

Why other options are wrong:

- Option A: Square with forward-slash — same as FigC, no rotation applied.
- Option B: Circle with backward-slash — wrong outer shape (circle, not square).
- Option D: Plain square — diagonal line removed entirely.

Final Answer: Forward-slash in square rotates to backward-slash (Option C). ⇒

C

Answer: (C) [Go Back to Q11](#)

12.

Solution**Concept — Analogy: Vertical Flip (Top-Bottom)**

Identify the rule: Each figure is vertically flipped (top-bottom mirror): upward-pointing triangle → downward-pointing triangle. The same vertical flip must be applied to FigC (pentagon with apex up).

Apply the rule: A pentagon flipped vertically has its apex pointing down and its flat edge at the top. Option D shows this flipped pentagon.

Why other options are wrong:

- Option A: Downward triangle — wrong shape (triangle instead of pentagon).
- Option B: Pentagon unchanged (apex up) — same as FigC, no flip applied.
- Option C: Hexagon — wrong shape entirely.

Final Answer: Pentagon flipped vertically gives apex-down pentagon (Option D).



$\Rightarrow$ DAnswer: (D) [Go Back to Q12](#)

13.

Solution**Concept — Analogy: Adding Center Dot**

Identify the rule: A filled dot is added at the center of the shape: plain square $\rightarrow$ square with center dot. The same transformation must be applied to FigC (plain hexagon).

Apply the rule: Adding a dot to the center of the hexagon gives a hexagon with a filled dot at its center. Option A shows this.

Why other options are wrong:

- Option B: Square with dot — correct transformation but wrong shape (square not hexagon).
- Option C: Plain hexagon — no dot added, same as FigC.
- Option D: Hexagon with X mark — wrong inner element added (X instead of dot).

Final Answer: Center dot added to hexagon (Option A). $\Rightarrow$ A

Answer: (A) [Go Back to Q13](#)

14.

Solution**Concept — Analogy: Concentric Copy Added Inside**

Identify the rule: A smaller copy of the same shape is placed concentrically inside the larger shape: large circle → large circle with small circle inside. Apply the same rule to FigC (large triangle).

Apply the rule: A small triangle is placed concentrically inside the large triangle. Option B shows a large triangle with a smaller triangle nested inside.

Why other options are wrong:

- Option A: Small triangle only — large outer triangle is missing.
- Option C: Two triangles side by side — not concentric, placed side-by-side instead.
- Option D: Large triangle only — same as FigC, no inner copy added.

Final Answer: Concentric small triangle added inside large triangle (Option B).

⇒ **B**

Answer: (B) [Go Back to Q14](#)

15.

Solution**Concept — Analogy: Add One Polygon Side**

Identify the rule: The polygon gains one additional side: square (4 sides) → pentagon (5 sides). The same rule applied to FigC (pentagon, 5 sides) gives a hexagon (6 sides).

Apply the rule: Pentagon (5 sides) gains one side to become a hexagon (6 sides). Option C shows a regular hexagon.

Why other options are wrong:

- Option A: Pentagon (5 sides) — same as FigC, no side added.
- Option B: Square (4 sides) — fewer sides, reverses the pattern.
- Option D: Heptagon (7 sides) — adds 2 sides instead of 1.

Final Answer: Pentagon (5) gains one side = hexagon (6) (Option C). ⇒ **C**



Answer: (C) [Go Back to Q15](#)

16.

Solution

Concept — Analogy: 90°CW Rotation of Arrow Direction

Identify the rule: The orientation of the figure rotates 90° clockwise: horizontal rectangle → vertical rectangle (90°CW). The same rotation applied to FigC (right-pointing arrow) gives a down-pointing arrow.

Apply the rule: A right-pointing arrow rotated 90°CW points downward. Option D shows a down-pointing arrow.

Why other options are wrong:

- Option A: Left-pointing arrow — this is a 180° rotation, not 90°CW.
- Option B: Right-pointing arrow — same as FigC, no rotation applied.
- Option C: Up-pointing arrow — this is 90°CCW, opposite direction.

Final Answer: Right arrow rotates 90°CW to point down (Option D). ⇒ **D**

Answer: (D) [Go Back to Q16](#)

17.

Solution

Concept — Analogy: Stripe Count +2

Identify the rule: The number of horizontal stripes inside the circle increases by 2: FigA has 2 stripes → FigB has 4 stripes (+2). Apply the same +2 rule to FigC (1 stripe).

Apply the rule: 1 stripe + 2 = 3 stripes. Option A shows a circle with 3 horizontal stripes.

Why other options are wrong:

- Option B: 1 stripe — same as FigC, no change applied.
- Option C: 5 stripes — this would be +4, not +2.
- Option D: 2 stripes — same as FigA, not derived from FigC.



Final Answer: 1 stripe + 2 = 3 stripes (Option A). $\Rightarrow$ A

Answer: (A) [Go Back to Q17](#)

18.

Solution

Concept — Odd vs Even Number of Sides

Identify the rule: Options A (hexagon, 6 sides), C (octagon, 8 sides), and D (square, 4 sides) all have an even number of sides. Option B (pentagon) has 5 sides, which is an odd number.

Apply the rule: The pentagon is the only shape with an odd number of sides, making it the odd one out.

Why other options are wrong:

- Option A: Hexagon (6 sides, even) — belongs to the group.
- Option C: Octagon (8 sides, even) — belongs to the group.
- Option D: Square (4 sides, even) — belongs to the group.

Final Answer: Pentagon (5 sides, odd) is the odd one out (Option B). $\Rightarrow$ B

Answer: (B) [Go Back to Q18](#)

19.

Solution

Concept — Odd One Out: Filled vs Outline

Identify the rule: Options A (circle), B (square), and D (pentagon) are all outline shapes with no fill. Option C is a solid filled (black) triangle.

Apply the rule: The solid filled triangle does not share the outline-only property of the other three figures.

Why other options are wrong:

- Option A: Outline circle — belongs to the outline group.
- Option B: Outline square — belongs to the outline group.



- Option D: Outline pentagon — belongs to the outline group.

Final Answer: Solid filled triangle is odd among outline shapes (Option C). $\Rightarrow$

Answer: (C) [Go Back to Q19](#)

20.

Solution

Concept — Odd One Out: Has Inner Element vs Plain

Identify the rule: Options A (circle with cross), B (square with X), and C (triangle with line) all contain an inner element drawn inside the shape. Option D (hexagon) has no inner element at all.

Apply the rule: The plain hexagon is the only figure without any inner geometric element, making it the odd one out.

Why other options are wrong:

- Option A: Circle with cross inside — has inner element, belongs to group.
- Option B: Square with X inside — has inner element, belongs to group.
- Option C: Triangle with line inside — has inner element, belongs to group.

Final Answer: Plain hexagon has no inner element, unlike the others (Option D). $\Rightarrow$

Answer: (D) [Go Back to Q20](#)



21.

Solution**Concept — Odd One Out: Triangle Direction**

Identify the rule: Options B, C, and D all show triangles with the apex pointing upward. Option A shows a triangle with the apex pointing to the left (base on the right side).

Apply the rule: The left-pointing triangle does not share the upward orientation of the other three triangles.

Why other options are wrong:

- Option B: Triangle pointing up — belongs to the upward group.
- Option C: Triangle pointing up (medium size) — belongs to the upward group.
- Option D: Triangle pointing up (slightly different proportions) — belongs to the upward group.

Final Answer: Left-pointing triangle is odd among upward-pointing triangles (Option A). $\Rightarrow$

Answer: (A) [Go Back to Q21](#)

22.

Solution**Concept — Odd One Out: Convex vs Concave**

Identify the rule: Options A (C-shape), C (L-shape), and D (U-shape) are all concave figures — they have at least one indentation or opening that creates a concave boundary. Option B is a complete circle, which is perfectly convex and closed.

Apply the rule: The circle is the only fully convex, closed figure among the group of concave shapes.

Why other options are wrong:

- Option A: C-shape (open arc) — concave opening on the right side.
- Option C: L-shape — has a concave corner at the inner angle.
- Option D: U-shape — has a concave opening at the top.



Final Answer: Circle is the only fully convex closed shape (Option B). $\Rightarrow$ **B**

Answer: (B) [Go Back to Q22](#)

23.

Solution

Concept — Matrix: Shape Type $\times$ Fill Level

Identify the rule: Columns determine shape type (Col 1 = circles, Col 2 = squares, Col 3 = triangles). Rows determine fill level (Row 1 = outline only, Row 2 = gray/myblue!40, Row 3 = solid black filled).

Apply the rule: Cell (3,3) is Column 3 (triangle) and Row 3 (solid black fill). The missing figure is a solid black triangle. Option C shows this.

Why other options are wrong:

- Option A: Outline triangle — correct shape but Row 1 fill (no fill).
- Option B: Gray triangle — correct shape but Row 2 fill (gray, not solid).
- Option D: Solid black circle — correct fill but Column 1 shape (circle, not triangle).

Final Answer: Col 3 + Row 3 = solid black triangle (Option C). $\Rightarrow$ **C**

Answer: (C) [Go Back to Q23](#)



24.

Solution**Concept — Matrix: Shape Type × Dot Count**

Identify the rule: Columns determine shape (Col 1 = circles, Col 2 = squares, Col 3 = triangles). Rows determine the number of dots inside (Row 1 = 1 dot, Row 2 = 2 dots, Row 3 = 3 dots). All shapes are outlines.

Apply the rule: Cell (3,3) is Column 3 (triangle) and Row 3 (3 dots). The missing figure is an outline triangle with 3 dots inside. Option D matches.

Why other options are wrong:

- Option A: Circle with 3 dots — correct dot count but Column 1 shape (circle).
- Option B: Triangle with 1 dot — correct shape but Row 1 dot count.
- Option C: Triangle with 2 dots — correct shape but Row 2 dot count.

Final Answer: Col 3 + Row 3 = triangle with 3 dots (Option D). ⇒ D

Answer: (D) [Go Back to Q24](#)

25.

Solution**Concept — Mirror Image Left-Right**

Identify the rule: A left-right mirror flips the figure horizontally. The original J-shape has its vertical bar on the left and the hook curls to the right at the bottom. After reflection, the bar is on the right and the hook curls to the left.

Apply the rule: Option A shows the vertical bar on the right side with the hook curling leftward — the correct left-right mirror image.

Why other options are wrong:

- Option B: J flipped top-bottom (hook at top) — this is a vertical flip, not a left-right mirror.
- Option C: Original J (bar left, hook right) — the figure itself, not its mirror.
- Option D: J rotated 90°CW — a rotation, not a reflection.

Final Answer: Left-right mirror places bar on right, hook curls left (Option A). ⇒

A

Answer: (A) [Go Back to Q25](#)



Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	A	2	B	3	C	4	D	5	A
6	B	7	C	8	D	9	A	10	B
11	C	12	D	13	A	14	B	15	C
16	D	17	A	18	B	19	C	20	D
21	A	22	B	23	C	24	D	25	A

