

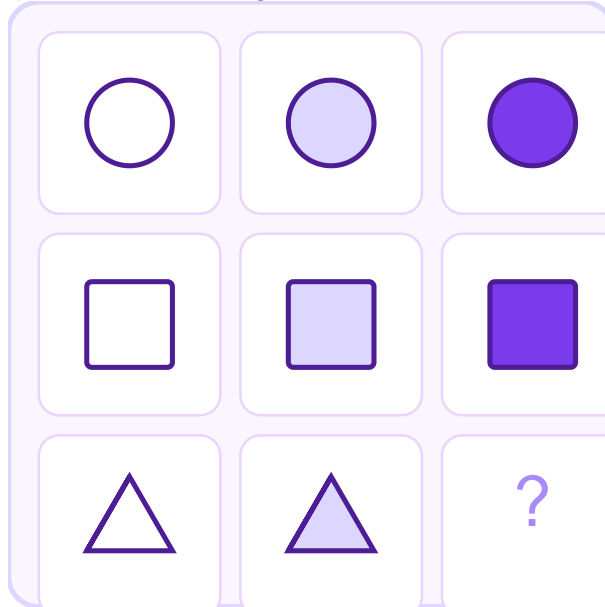
CCAT Non-Verbal Reasoning Practice

Figure Matrices, Paper Folding, Figure Classification & Spatial Reasoning

Figure Matrices

Study the pattern in the 3x3 grid. Choose the shape that completes the pattern in the missing cell.

- Each row shows the same three shapes (circle, square, triangle). Each column adds more shading. What is the missing shape in the bottom-right cell?

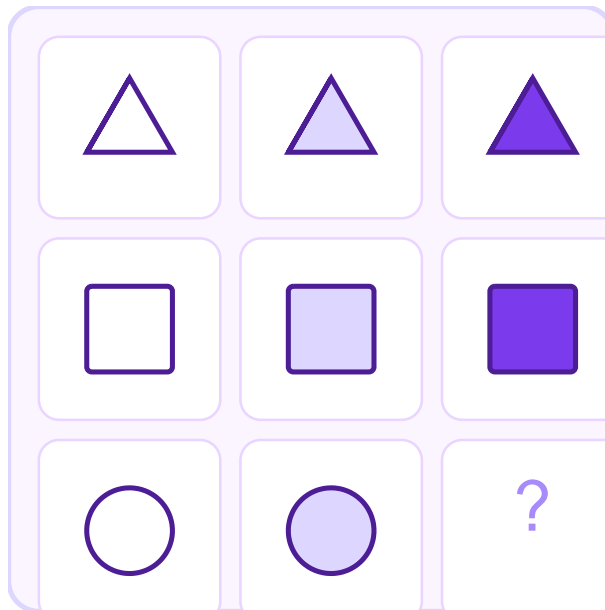


- Empty triangle
- Solid triangle
- Solid square
- Empty circle

- Row 1: three triangles (empty ? half ? full). Row 2: three squares same pattern. Row 3: two circles shown. What fills the missing cell?

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- A) Fully shaded circle
- B) Empty circle
- C) Half-shaded square
- D) Fully shaded triangle

3. A 3x3 grid shows shapes rotating 90° clockwise across each row, with size increasing down each column. The top-left is a small upward triangle. What appears in the bottom-right?

- A) Large left-pointing triangle
- B) Small downward triangle
- C) Large right-pointing triangle
- D) Medium upward triangle

4. Study the shape sequence. Each shape adds one more side. What is the fourth shape?



- A) Hexagon
- B) Pentagon
- C) Square
- D) Circle



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5. In the matrix pattern, shapes in column 1 are all empty, column 2 are all half-shaded, column 3 are all fully shaded. Row 3 shows: empty hexagon, half-shaded hexagon, _____. What fills the blank?
- A) Empty hexagon
 - B) Half-shaded pentagon
 - C) Fully shaded hexagon
 - D) Fully shaded pentagon

MapleMath

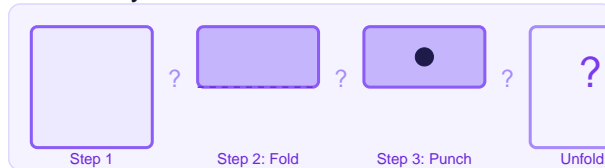
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Paper Folding

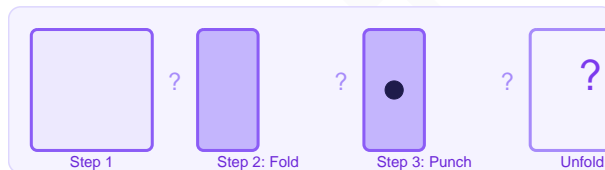
A piece of paper is folded and then a hole is punched. Determine what the paper looks like when unfolded.

6. A square paper is folded in half horizontally. A hole is punched through the centre of the folded paper. When unfolded, how many holes are there and where?



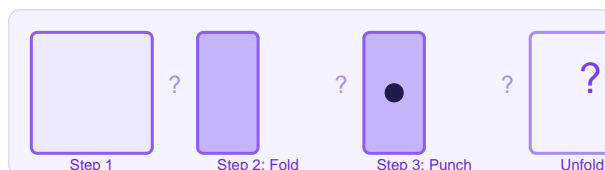
- A) 1 hole in the centre
- B) 2 holes, one in each half
- C) 4 holes, one in each corner
- D) 2 holes along the fold line

7. A square paper is folded in half vertically. A small triangle is cut from the top corner. When unfolded, what do you see?



- A) One triangle at the top-right
- B) Two triangles at the top (mirror image)
- C) Four triangles
- D) One triangle at the bottom

8. A square paper is folded diagonally. A notch is cut from the folded edge. When unfolded, the notch appears:



- A) Only along one edge
- B) Mirrored on both sides of the diagonal
- C) In all four corners
- D) Only in the centre



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9. A paper is folded in half three times (each fold halving the visible area). A single hole is punched through all layers. How many holes appear when fully unfolded?
- A) 3
 - B) 4
 - C) 6
 - D) 8
10. A rectangular paper is folded along its longer axis, then folded again along the shorter axis. A semi-circle is cut from the corner where all four layers meet. What shape appears in the centre when unfolded?
- A) Semi-circle
 - B) Full circle
 - C) Two semi-circles
 - D) Four quarter-circles forming a circle

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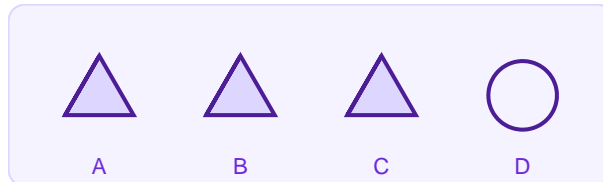
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Figure Classification

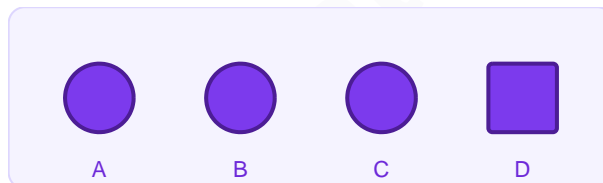
A group of shapes share a common property. Identify which additional shape belongs or which one does not.

11. Three shapes are all triangles with different sizes and orientations, some shaded. A fourth group contains: (A) a shaded circle, (B) a small triangle, (C) a large square, (D) a rectangle. Which shape belongs with the group?



- A) Shaded circle
- B) Small triangle
- C) Large square
- D) Rectangle

12. The group shows three shaded circles of different sizes. Which shape does NOT belong?



- A) Large shaded circle
- B) Medium shaded circle
- C) Small shaded circle
- D) Shaded square

13. All shapes in the group have exactly 4 sides. Which does NOT belong?

- A) Trapezoid
- B) Parallelogram
- C) Pentagon
- D) Rhombus

14. All shapes in the group are symmetric about at least one axis. Which belongs?

- A) Scalene triangle
- B) Isosceles triangle
- C) Irregular quadrilateral



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D) Right triangle

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Figure Analogies

Shape A is related to Shape B by a transformation. Apply the SAME transformation to Shape C to find Shape D.

15. A small circle becomes a large circle (enlargement). Applying the same transformation: a small triangle becomes ____?



- A) Small circle
- B) Large triangle
- C) Small square
- D) Large circle

16. A square is rotated 90° to become a diamond shape. Applying the same rotation: a pentagon becomes ____?



- A) Rotated pentagon
- B) Hexagon
- C) Upside-down pentagon
- D) Same pentagon

17. An empty shape becomes a fully shaded shape. A half-shaded circle becomes ____?

- A) Empty circle
- B) Fully shaded circle
- C) Half-shaded square
- D) Quarter-shaded circle

18. A shape with 3 sides becomes a shape with 4 sides (+1 side). A shape with 5 sides becomes ____?

- A) Shape with 4 sides
- B) Shape with 5 sides
- C) Shape with 6 sides
- D) Shape with 7 sides



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19. Shape A (pointing up) is reflected to Shape B (pointing down). Shape C points left. Shape D points ____?
- A) Up
 - B) Down
 - C) Left
 - D) Right

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