

CHAPTER-4 | Exploring Some Geometric Themes

QUIZ PART-01

1. Which of the following is an example of a fractal pattern?

- A. Sierpinski Carpet
- B. Rectangle
- C. Cuboid
- D. Cylinder

(A)

Explanation : The Sierpinski Carpet is a famous fractal because the same pattern repeats at smaller and smaller scales.

2. Fractals are connected with the idea of:

- A. Self-similarity
- B. Equal angles
- C. Area only
- D. Volume

(A)

Explanation: A fractal has smaller parts that look similar to the whole shape.

3. The Sierpinski Carpet is made by repeatedly breaking a:

- A. Circle
- B. Triangle
- C. Square
- D. Cube

(C)

Explanation: The Sierpinski Carpet is based on dividing a square into smaller pieces.

4. The Sierpinski Carpet was discovered by a mathematician from:

- A. India
- B. Poland
- C. Greece
- D. Egypt

(B)

Explanation: The PDF says it was discovered by Polish mathematician Sierpinski.

5. In the first step of making a Sierpinski Carpet, the square is divided into:

- A. 4 equal squares
- B. 6 equal squares
- C. 9 equal squares
- D. 12 equal squares

(C)

Explanation : The square is divided into a 3×3 grid, making 9 equal squares.

6. In the first step, the middle square is:

- A. Coloured
- B. Removed
- C. Enlarged
- D. Rotated

(B)

Explanation : A square hole is formed by removing the centre square.

7. After removing the middle square in Step 1, the number of remaining squares is:

- A. 6
- B. 7
- C. 8
- D. 9

(C)

Explanation : Out of 9 small squares, 1 middle square is removed, so 8 remain.

8. In the Sierpinski Carpet, the size of remaining squares becomes:

- A. Larger and larger
- B. Smaller and smaller
- C. Always equal to the original
- D. Zero immediately

(B)

Explanation : At every step, the square pieces become smaller and smaller.

9. The holes in the Sierpinski Carpet are shaped like:

- A. Circles
- B. Triangles
- C. Rectangles
- D. Squares

(D)

Explanation : The holes are formed by removing square pieces.

10. The pattern in Sierpinski Carpet continues by:

- A. Repeating the same process
- B. Drawing random lines
- C. Adding circles
- D. Joining cubes

(A)

Explanation : The fractal is formed by repeating the same removal pattern again and again.