1. In the sequence of stacked squares, the number of small squares increases by:
   A. 2
   B. 3
   C. 4
   D. 5 (C)

Explanation : In the sequence of stacked squares, the number of small squares increases by 4 in each step as each new square fits on top.

2. The number of little squares in the stacked square pattern follows which sequence?
   A. Fibonacci numbers
   B. Square numbers
   C. Triangular numbers
   D. Powers of 2 (B)

Explanation: The sequence of little squares in the stacked squares pattern follows square numbers, such as 1, 4, 9, 16, 25.

3. In the sequence of stacked triangles, the number of small triangles increases by:
   A. 1
   B. 2
   C. 3
   D. 4 (A)

Explanation: In the stacked triangles sequence, the number of small triangles increases by 1 each time, following the sequence 1, 3, 6, 10, 15.

4. The number of small triangles in the stacked triangles pattern follows which sequence?
   A. Cube numbers
   B. Triangular numbers
   C. Square numbers
   D. Fibonacci numbers (B)

Explanation: The number of small triangles in the stacked triangles pattern follows triangular numbers, which increase as 1, 3, 6, 10, etc.

5. What happens in the Koch snowflake sequence as more iterations are added?
   A. It becomes a circle
   B. It becomes a square
   C. It becomes more jagged with smaller line segments
   D. It becomes smooth and round (C)

Explanation : In the Koch snowflake sequence, each iteration adds smaller line segments, making the shape increasingly jagged and detailed.

6. How many total line segments are there in the first shape of the Koch snowflake?
   A. 3
   B. 4
   C. 6
   D. 12 (A)

Explanation : The first shape in the Koch snowflake sequence is an equilateral triangle with 3 line segments.

7. The total number of line segments in each subsequent shape in the Koch snowflake sequence follows which pattern?
   A. Powers of 2
   B. Triangular numbers
   C. Powers of 3
   D. Doubling numbers (D)

Explanation : In the Koch snowflake, the number of line segments doubles with each iteration, resulting in a sequence of doubling numbers.
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8. What geometric pattern is formed in the Koch snowflake sequence?
   A. Square
   B. Circle
   C. Fractal
   D. Rectangle (C)

Explanation : The Koch snowflake is a fractal because it self-replicates at different scales with each iteration.

9. What happens to the size of the "speed bumps" in the Koch snowflake sequence?
   A. They get bigger
   B. They stay the same
   C. They get smaller
   D. They disappear (C)

Explanation : As the Koch snowflake sequence progresses, the speed bumps (smaller triangular sections) become smaller and smaller, creating more detail.

10. The Koch snowflake is an example of which kind of pattern?
    A. Arithmetic sequence
    B. Geometric sequence
    C. Fractal pattern
    D. Random pattern (C)

Explanation : The Koch snowflake is a fractal pattern, which means it exhibits self-similarity at smaller scales.