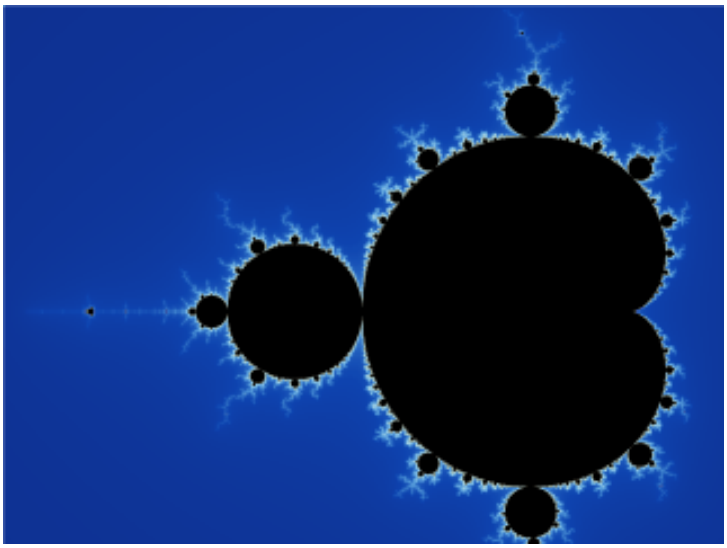
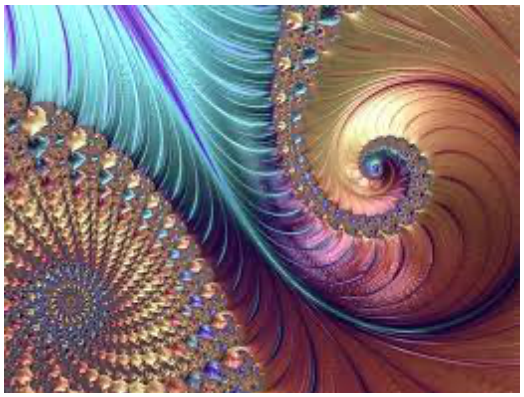
Fractals

Fractals appear the same at different scales. Fractals often exhibit similar patterns at increasingly smaller scales, a property called self-similarity, also known as expanding symmetry or unfolding symmetry

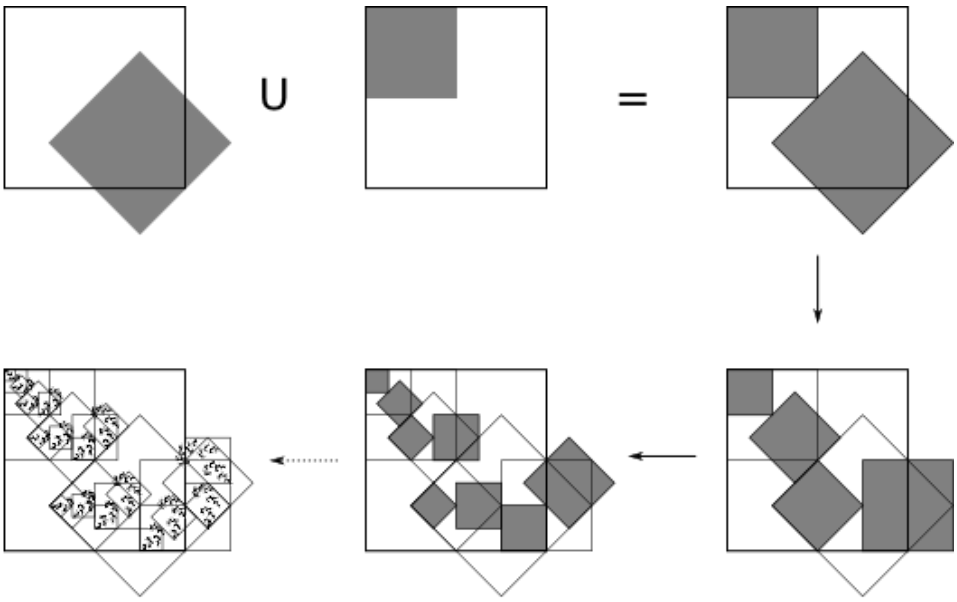
Example: Mendalbrot



Other Examples:



Iterated Functions (IFS)



Given 3 points, p_0, p_1, p_2, defining the outer boundary triangle, the 4th point $p_3$is generated as:

- Find the mid-point of p_0 and p_1, call it p_a
- Find the mid-point of p_0 and p_2, call it p_b
- Find the mid-point of p_a and p_b → p_3
- The rest of the points p_i are computed as the midpoint between p_{i-1} and random pick one from (p_0, p_1, p_2)

Given 3 points, p_0, p_1, p_2, defining the outer boundary triangle, the next level triangles are defined by the midpoints of the boundary lines of the previous level of the triangle