Exploring Fractal Art in Complex Numbers

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April, 2024

1 Introduction

Look at this simple quadratic recurrence equation:

$$z_{n+1} = z_n^2 + c \tag{1}$$

Where

- z is a complex number
- c is a constant

We will see now how this seemingly simple equation can produce amazingly beautiful patterns in the complex plane.

2 Fractal Art Gallery

Artwork	**Artist**
Mandelbrot Madness	John Smith
Cosmic Chaos	Emily Johnson
Fractal Symphony	David Williams

These artists explore the fascinating world of fractal art by manipulating complex numbers to create stunning visual representations of mathematical concepts. For more info, see [1].

3 Mandelbrot Set

3.1 Definition

The Mandelbrot set is the set of all c for which Equation 1, starting from $z = 0$, does not diverge to ∞.

3.2 Diagram

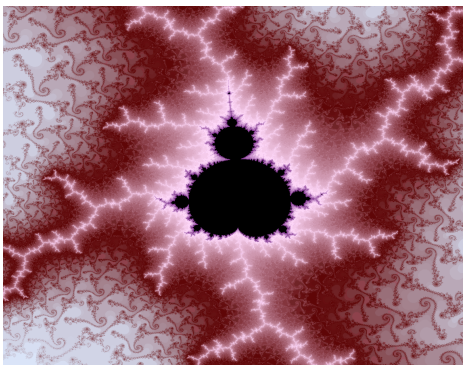

Figure 1: The Mandelbrot Set

References

[1] `https://en.wikipedia.org/wiki/Fractal_art`.