

FRACTALS

Discovered 1979/80 - Benoit Mandelbrot

Dynamical Systems - anything that moves or changes in time

- * Weather prediction
- * Stock market
- * Chemical reactions

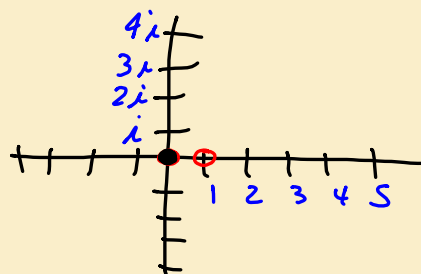
$$f(x) = x^2 + C$$

$$f(x) = x^2 + (0 + 0i)$$

Seed value $x_0 = 0$

$$f(0) = 0^2 + (0 + 0i) = 0$$

$$f(0) = 0^2 + 0 = 0$$



$$C = 0 + 0i$$

$$C = 1 + 0i$$

Orbit - the list of #'s that result from iteration.

Colors - how fast the iterations went to ∞
red = fast

blue
purple = slow

Any value for c in which the orbit does not go to ∞ .

Fractals are self-similar -
Same image is inside itself.

