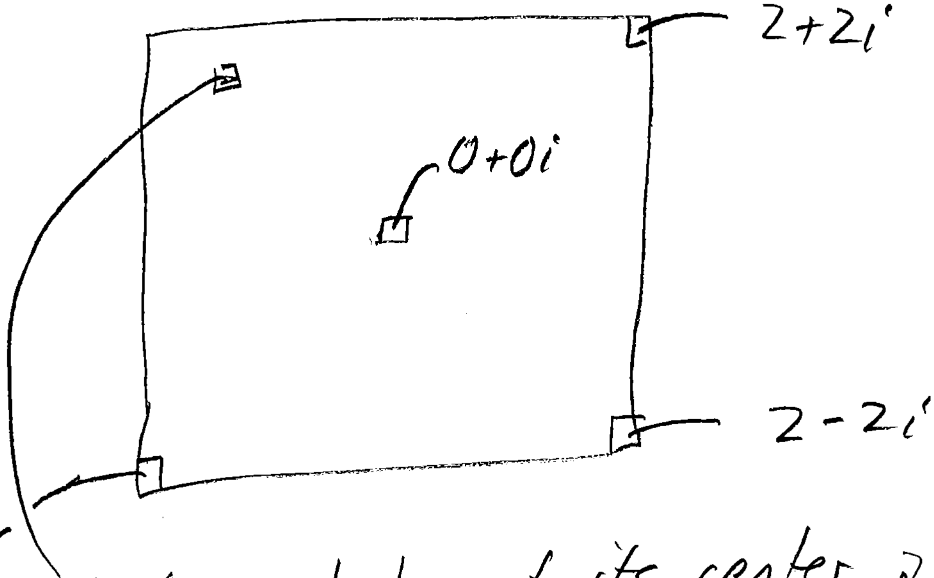
Julia sets: fix the number c Nov 27 notes



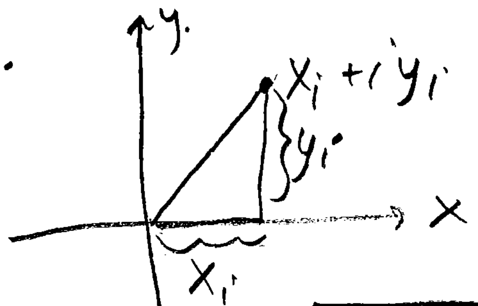
$-2-2i$ each pixel has at its center a z_0 value

For each z_0, iterate

$$z_1 = z_0^2 + c$$
$$z_2 = z_1^2 + c$$
$$z_3 = z_2^2 + c$$
$$\vdots$$
$$z_N = z_{N-1}^2 + c$$

N = max. number of iterates

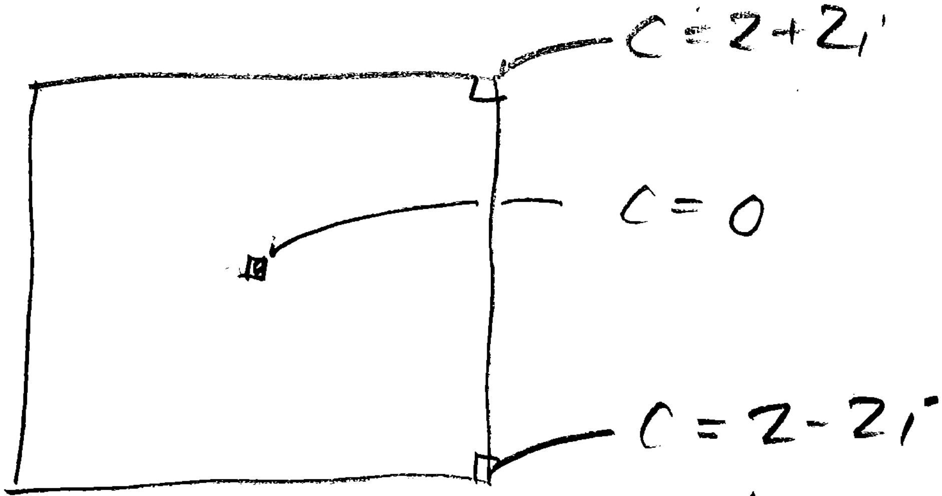
$z_i = x_i + i y_i$



dist. to origin is $\sqrt{x_i^2 + y_i^2}$

If dist to origin, $\sqrt{x_i^2 + y_i^2}$ is greater than 2, then $\text{dist}^2 = x_i^2 + y_i^2$ is greater than 4.

If no z_i is farther than 2 from the origin, z_0 belongs to the Julia set.



For each c, start with $z_0 = 0$ and iterate $z_1 = z_0^2 + c$, $z_2 = z_1^2 + c$, ... $z_N = z_{N-1}^2 + c$. The Mandelbrot set is those c for which the iterates remain closer than 2 to the origin.

The Mandelbrot set also is those c values for which the Julia set is connected.