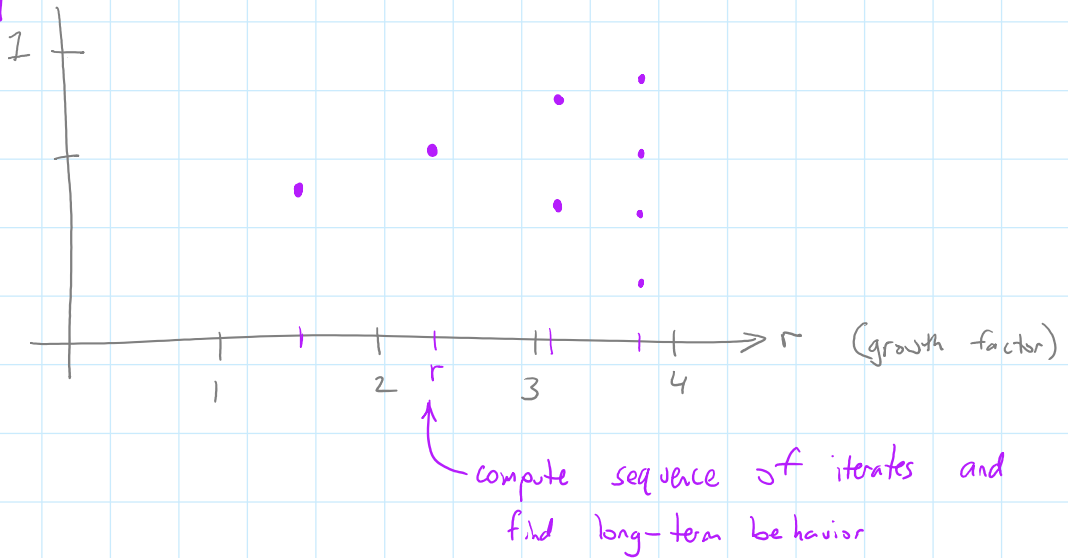
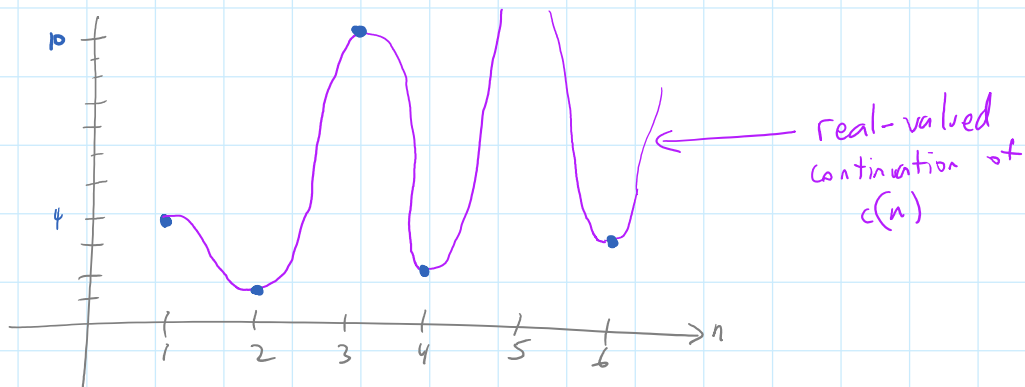


BIFURCATION DIAGRAM



Collatz Function:
$$c(n) = \begin{cases} 3n+1 & \text{if } n \text{ odd} \\ \frac{n}{2} & \text{if } n \text{ even} \end{cases}$$



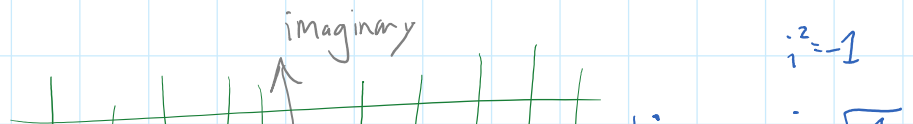
$$f(z) = \left[1 + \cos(\pi z) \right] \frac{z}{4} + \left[1 - \cos(\pi z) \right] \frac{3z+1}{2}$$

Generalized Collatz Function

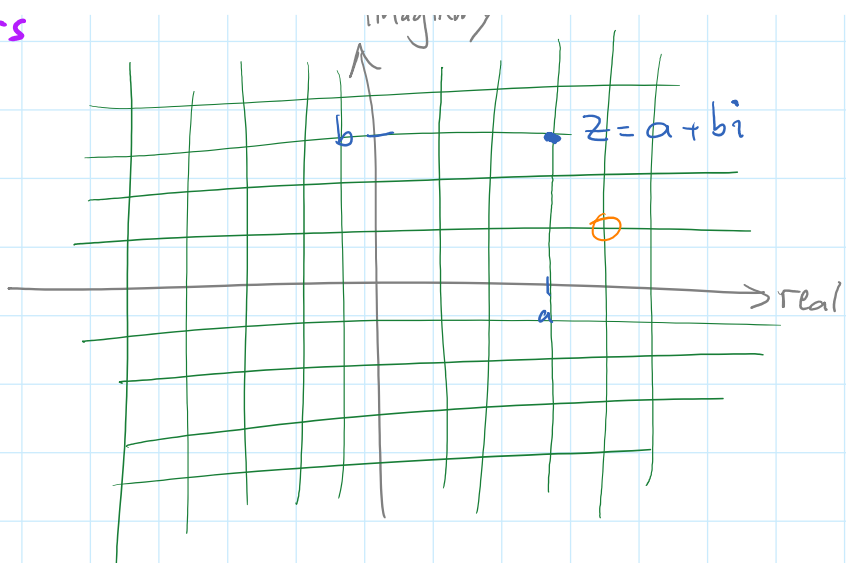
If z is even, then $f(z) = \frac{z}{2}$.

If z is odd, then $f(z) = 3z + 1$.

Complex Numbers



Complex Numbers



$$i^2 = -1$$
$$i = \sqrt{-1}$$