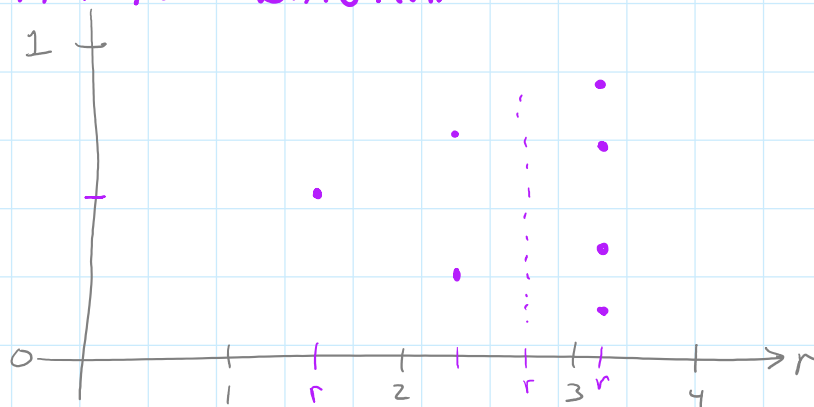
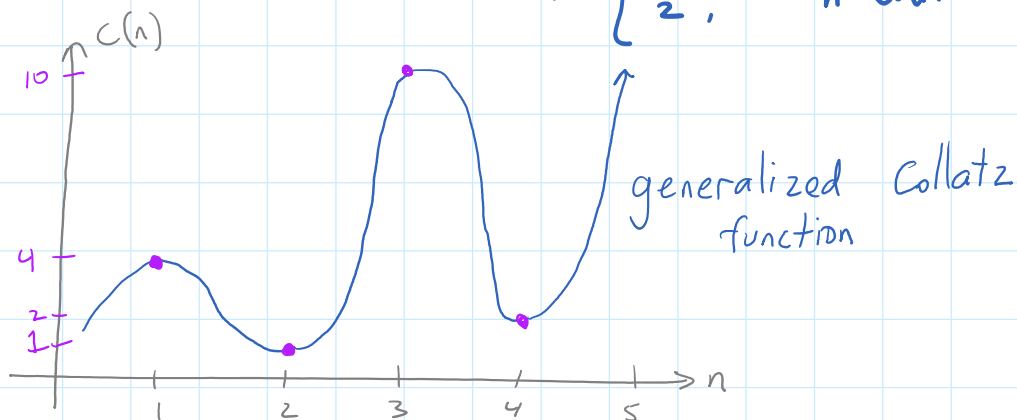


# BIFURCATION DIAGRAM



# COLLATZ FUNCTION

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



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

$z$  even:  $2 \cdot \frac{z}{4} + 0 = \frac{z}{2}$

$z$  odd:  $0 + 2 \cdot \frac{3z+1}{2} = 3z+1$

# Complex Numbers:

