

LOGISTIC MAP

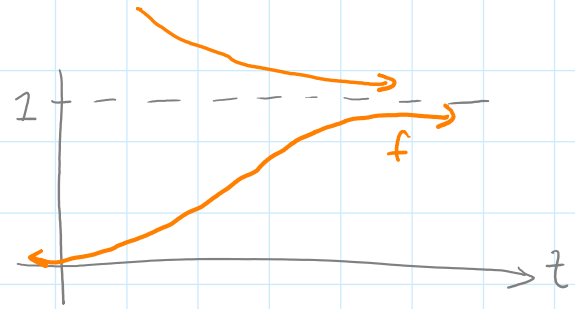
Population growth model:

$$\frac{df}{dt} = r f (1-f)$$

r = growth rate

1 = carrying capacity

$f(t)$ = population size at time t



Consider a sequence x_1, x_2, x_3, \dots satisfying

$$x_{n+1} = r \cdot x_n \cdot (1 - x_n)$$

Investigate: choose $0 < x_1 < 1$ and $0 < r < 4$

Iterate to compute x_2, x_3, x_4, \dots

What happens?