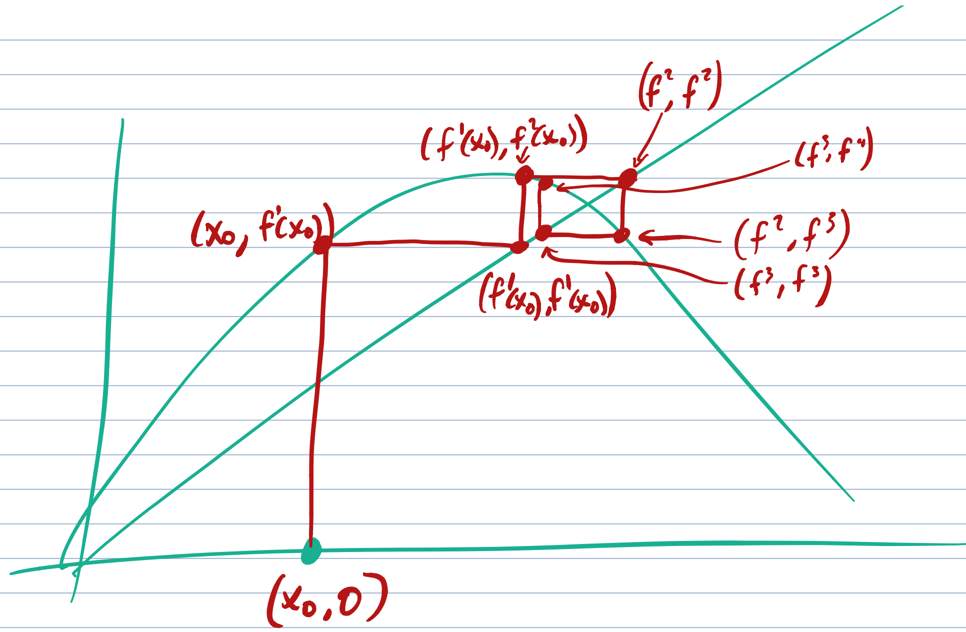


$x : [x_0, x_0, f^1, f^1, f^2, f^2, f^3, f^3]$

$y : [0, f^1, f^1, f^2, f^2, f^3, f^3, f^4]$

Pto. fijo

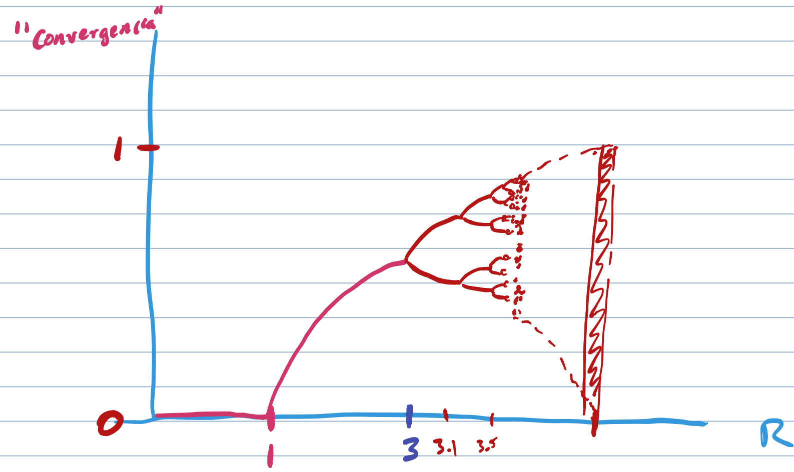
$Rx(1-x) = x$ $\qquad\qquad f(x) = x$

$R(1-x) = 1$

$R - Rx = 1$

$\boxed{\frac{R-1}{R} = x}$

$\left(R, \frac{R-1}{R}\right)$



Si:
órbita de f es $\ldots 0, 1, 0, 1, 0, 1, 0, 1, \ldots$

$x_0 = 0, x_1 = 1, x_2 = 0, x_3 = 1, \ldots$

$x_{i+1} = f(x_i)$

$$x_i = \begin{cases} 0 & \text{si } i \text{ par} \\ 1 & \text{si } i \text{ impar} \end{cases}$$

$g = f^2$

$0, 0$

$x_0 = 0, g(x_0) = 0, g^2(x_0) = 0, \ldots$

Si f^n converge (a un punto)

$\rightarrow f$ tiene un ciclo límite (de longitud n)

$$f(x) = Rx(1-x)$$

$$f^2(x) = R(R(x)(1-x))(1-(Rx(1-x)))$$

Si f^3 converge

$0, 1, 0, \underline{1}, 0, 1, \underline{0}, 1$ ✗

1, 1, 1, 1, 1, 1, ...

Si f^n converge

1, 1, 1, ...

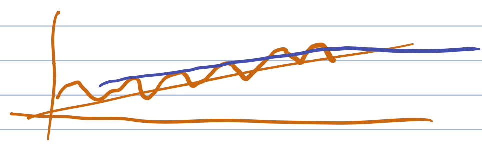
teo.

Si f tiene un ciclo de longitud k

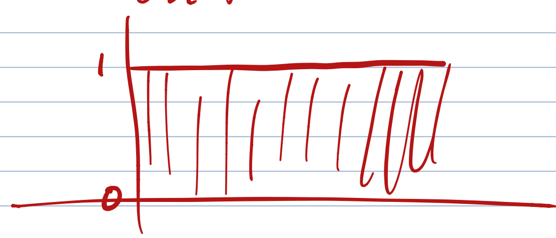
$\Leftrightarrow$ f^n converge para $k | n$

$n = rk \quad r \in \mathbb{N}$

$n =$ múltiplo de k



Uniforme



caos