

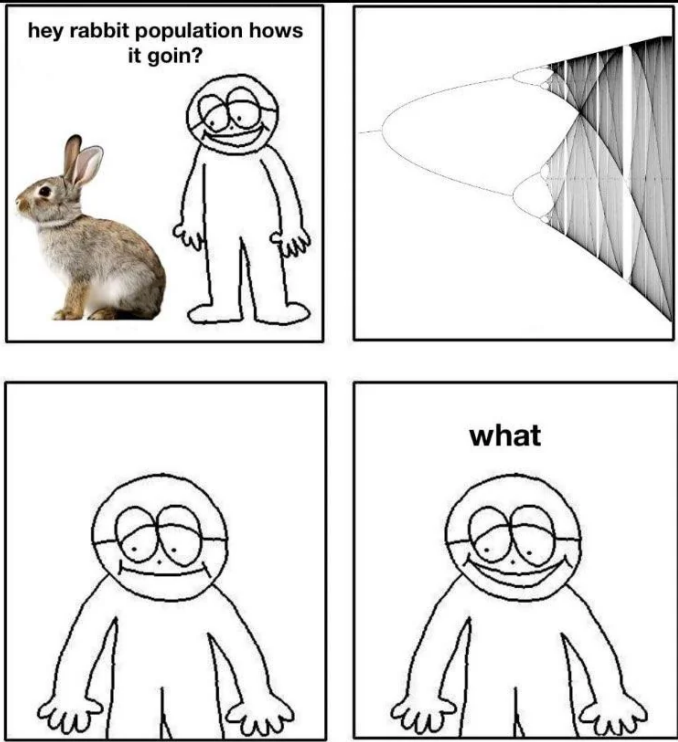
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Logistic map

#Wiki/dynamics

Definition. Logistic map

$$x \mapsto rx(1 - x)$$



conjugacy of $z^2 + c$ with the logistic map

$f_r(x) := rx(1 - x)$ and $g_c(z) := z^2 + c$ then if

$$c \mapsto \frac{r}{2} - \frac{r^2}{4}; \Phi(x) := -rx + \frac{r}{2}$$

then

$$g_{c=\frac{r}{2}-\frac{r^2}{4}}^n(\Phi(x)) = \Phi(f_r^n(x))$$

$$g\left(-rx + \frac{r}{2}\right) = \left(-rx + \frac{r}{2}\right)^2 + \frac{r}{2} - \frac{r^2}{4} = -r^2x + r^2x^2 + \frac{4}{2}$$

$$\Phi(f(x)) = -r(rx(1 - x)) + \frac{r}{2} = -r^2x + r^2x^2 + \frac{r}{2}$$

Current note has 0 direct children and 0 total descendants.

- [squishy](#)
 - [Polynomials](#)
 - [Logistic map](#)

And it has 17 siblings.

- [squishy](#)
 - [Polynomials](#)
 - $X^n + Y^n = Z^n$
 - $8X^3 + 4X^2 - 4X - 1$
 - $x^2 + y^2 - 3$
 - [Folium of Descartes](#)
$$X^3 + Y^3 - 3aXY$$
 - $X^3 + Y^3 - a$
 - $3X^3 + 10X^2 + 3 - Y^2$
 - $3X^8 + 10X^4 + 3 - Y^2$
 - $XYZ - 1$
 - [Pythagorean triples](#)
 - [Bolza curve](#)
 - [Irreducible polynomials in \$\mathbb{C}\[x, y\]\$](#)
 - [Polynomial maps \$\mathbb{C}^n \rightarrow \mathbb{C}^n\$ of degree at most \$d\$](#)
 - [Chebyshev polynomials of the first kind](#)
 - [Logistic map](#)
 - [Dynamics of the map \$z^2 + c\$](#)
 - $\begin{pmatrix} x \\ y \\ y \end{pmatrix} \mapsto \begin{pmatrix} (1 + xy)^3z + y^2(1 + xy)(4 + 3xy) \\ y + 3x(1 + xy)^2z + 3xy^2(4 + 3xy) \\ 2x - 3x^2y - x^3z \end{pmatrix}$
 - $(w^2 - 1)^2$