

Question

Show that $G(x) = 4x(1 - x)$ has orbits of every period.

Answer

G^n has 2^n fixed points (from graph). Of these, a maximum of $2 + 4 + \cdots + 2^{n-1} = 2^n - 2$ can be fixed points of G for $m < n$, so there are at least 2 points of period n .