1. $x_{n+1} = 4x_n - x_n^2$, $x_0 = 4\,sen^2\theta$

$\Longrightarrow x_{n+1} = 4\,sen^2(2^{n+1}\theta)$

$x_1 = 16\,sen^2\theta - 16\,sen^4\theta$

$x_1 = 16\,sen^2\theta\,(1 - sen^2\theta)$

$x_1 = 16\,sen^2\theta\,cos^2\theta$

* $Sen(2\theta) = 2\,sen\theta\,cos\theta$

$sen^2(2\theta) = 4\,sen^2\theta\,cos^2\theta \rightarrow x_1 = 4(4\,sen^2\theta\,cos^2\theta)$

$\Rightarrow x_1 = 4\,sen^2(2\theta)$

$\Rightarrow x_{n+1} = 4\,sen^2(2^{n+1}\theta)$

* $x_{n+1} \Rightarrow 4x_n - 4x_n^2$ $\qquad x_0 = sen^2\theta$

$x_{0+1} = 4x_0 - 4x_0^2$

$= 4\,sen^2\theta - 4\,(sen^2\theta)^2$

$= 4\,sen^2\theta - 4\,sen^4\theta$

$4\,sen^2\theta\,cos^2\theta$

$\Rightarrow x_1 = Sen^2(2\theta$

$\boxed{x_{n+1} = Sen^2(2^{n+1}\theta)}$