#p9

read "C:/Users/rmn74/Documents/M9.txt"
Help9( )

$$Orb(f,x,x0,K1,K2), Orb2D(f,x,x0,K) , FP(f,x) , SFP(f,x) , Comp(f,x) \qquad \textbf{(1)}$$

 # Att Q-1:

$f := 3.6 \cdot x \cdot (1 - x)$

$$f := 3.6\, x\, (1 - x) \qquad \textbf{(2)}$$

$FP(f, x)$

$$[0., 0.7222222222] \qquad \textbf{(3)}$$

$Orb(f, x, 0.7222222222, 1000, 1020)$

$[0.7222222220, 0.7222222224, 0.7222222220, 0.7222222224, 0.7222222220, 0.7222222224, \qquad \textbf{(4)}$
$\quad 0.7222222220, 0.7222222224, 0.7222222220, 0.7222222224, 0.7222222220, 0.7222222224,$
$\quad 0.7222222220, 0.7222222224, 0.7222222220, 0.7222222224, 0.7222222220, 0.7222222224,$
$\quad 0.7222222220, 0.7222222224, 0.7222222220, 0.7222222224]$

#stable fixed points by hand

 # x = 3.6x - 3.6 x^2
 # -2.6x + 3.6x^2 = 0
 # x = 0, 0.7222222222
 # f'(x) = 3.6 - 7.2x
 # f(0) = 3.6 > 0 therefore it is unstable
 # fixed stable point is 7.222222222

 # 2) What other constant did Feigenbaum discover and what is it's significance

> *# Feigenbaum besides the 2 bifurcation theory constants also discorvered the Fractal constant where the constant is the ratio between the diameters of successive circles on the real axis in the complex plane.*