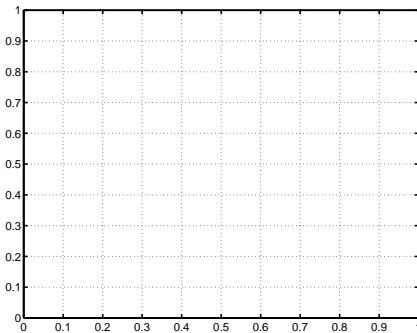
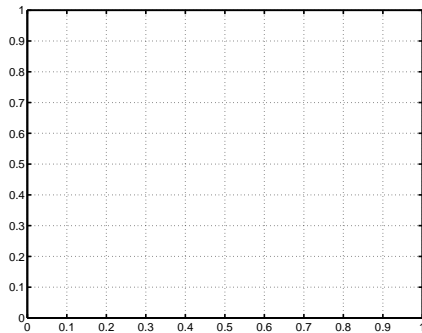
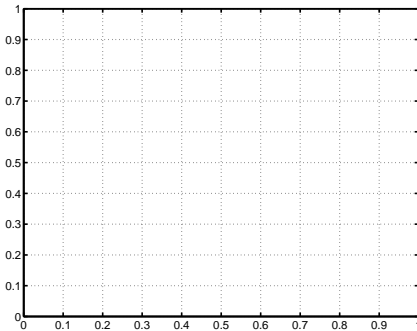
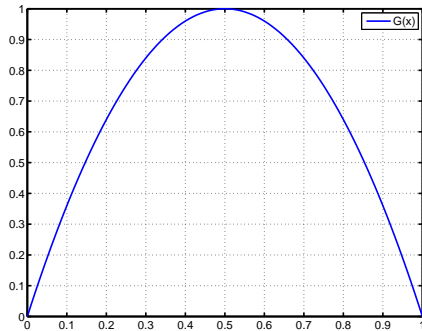


Worksheet #3: Counting periodic orbits

Consider the logistic function $G(x) = 4x(1 - x)$. Plot $G^2(x)$, $G^3(x)$ and $G^4(x)$.



- (1) How many fixed points of G^3 should there be?

- (2) How many fixed points of G^3 are in 1-period orbits? 2-period orbits? [Hint: which lower periods give fixed points of G^3 ?]

- (3) So how many period 3 orbits are there?

- (4) How many fixed points of G^k are there?

Complete the periodic table.

period-k	# of fixed points of G^k	# of fixed pts due to lower periods	# of k -periodic orbits
1	2	0	2
2	4	2	1
3			
4			
5			
6			
7			