

Marta Lewicka, Math 5535, Winter 2005

Homework 2

1. Elaydi problems 1-4 pg 27
2. Elaydi problems 5-8 pg 28
3. Elaydi problem 17 pg 29
4. Elaydi problems 3-6 pg 35
5. (i) Prove that if x is of period n and of period $n + 1$ then it is a fixed point.
(ii) Prove that if x is of period m and of some other period n then it is also of period $k =$ the biggest common divisor of m and n .
6. Let $f : \mathbf{R} \rightarrow \mathbf{R}$ be a continuous function. Let x^* be an asymptotically stable fixed point of f . Call I the largest interval containing x^* and contained in $W^s(x^*)$. Prove that I is open and invariant (invariant means: $f(I) \subset I$).