

DYNAMICAL SYSTEMS, MATH 117, HW#3

Exercises 4.4, 4.6, 4.7, and the following problems:

Problem 1.

Consider the map $f : [0, 1] \rightarrow [0, 1]$, $f(x) = \begin{cases} 1/2 + x, & \text{if } x \in [0, 1/2]; \\ 2 - 2x, & \text{if } x \in [1/2, 1]. \end{cases}$

Periodic points of what periods does this map have?

Problem 2.

Suppose a homeomorphism of the circle $f : S^1 \rightarrow S^1$ has a periodic point of period 3. Can it have a periodic point of period 7? Explain your answer.