Dynamical Systems | Instructor: Padraic Bartlett

# Lecture 4: Sharkovsky's Theorem

*Week 3* | *Mathcamp 2014*

In our last talk, we prove the main goal of this class: Sharkovsky's theorem.

**Theorem.** (Sharkovsky's theorem.) Suppose that $I$ is a closed interval and $f$ is any continuous function from $I$ to itself. Then, if $f$ has a $n$-periodic point, it has a $m$-periodic point for any $n \lhd m$ (under the Sharkovsky ordering.)

*Proof.* □