Zewail City of Science and Technology

PEU Program, Fall 2018-19

PEU 450: Computational Physics

Homework 7

Due date: Thursday, Nov 1st



- 1. (10 points) **Problem 3.12**. Just obtain Fig 3.9.
- 2. (10 points) **Problem 3.13**. Obtain Lyapunove exponent λ by averaging your results.
- 3. (10 points) Use the function Fourier[] to reproduce Figs. 3.26 27.
- 4. (10 points) Obtain the bifurcation diagram (Fig. 4.23 in S. T. Thornton and J. B. Marion 5^{th} Ed.) of the logistic map and determine the parameter δ_n given by equation 3.21 for different values of n. Compare the convergence of this parameter to the Feigenbaum constant $\delta = 4.669$.