

Homework Assignment #3

(due: Friday, September 14, 9 pm)

1. **Linearity and Nonlinearity:** Taylor problem (12.4) (7P)
2. **Period-Doubling:** Taylor problem (12.8) BUT instead of $\gamma = 1.073$ use
 - 2a. $\gamma = 1.078$
 - 2b. $\gamma = 1.082$ ($40 \leq t \leq 50$) (7P)
3. **Liapunov Exponent:** Taylor problem (12.16) (7P)
4. **Feigenbaum Number:** Taylor problem (12.11) (7P)
5. **Chaos:** Taylor problem (12.14) (7P)
6. **Bifurcation Diagram:** Finish the mathematica lab of class on Sept. 10 (7P)
7. **Logistic Map: Two-Cycle:** Taylor problem (12.27) (8P)