Thursday, October 14

Suppose that

$$F(\varphi) = 4\varphi(1-\varphi).$$

Plot the graph of F. How many fixed points are there? For each of them, answer the following question: If you choose $\varphi^{(0)}$ close to the fixed point, and define $\varphi^{(k)}$, $k = 1, 2, 3, \ldots$, by fixed point iteration, will the distance between $\varphi^{(k)}$ and the fixed point decrease monotonically?

You can read about what we are doing in class in Chapters 26 and 27 of my book, which you can download from the Tisch Library.