1023-Q1-844   **Mark McClure*** (`mcmcclur@unca.edu`), Department of Mathematics, University of North Carolina at Asheville, Asheville, NC 28804. *Technical illustration for second semester real analysis.*

Second semester real analysis can be quite different in character from the first semester, particularly if only one semester is required. Typically, the class will be smaller, the students more motivated, and the list of potential topics more varied. In this talk, we focus on the use of technology to illustrate advanced ideas in such a second semester course. For example, we might generate and plot several sequences of Picard iterates to illustrate the proof of Picard's existence theorem for first order ODEs - a natural topic in basic functional analysis. As another possibility, we could generate some well chosen Fourier series to illustrate many of the strange things that can happen in that venue, such as the existence of divergent Fourier series. Specific examples will be presented using Mathematica. (Received September 22, 2006)