1046-97-642Carol S Schumacher* (schumacherc@kenyon.edu), Department of Mathematics, Kenyon
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In an introductory real analysis course, students seriously confront the mathematics of limiting processes for the first time. This presents some conceptual challenges that are particular to analysis. In particular, reading, understanding and negating statements with stacked quantifiers; using analytical definitions involving quantifiers as "organizing principles" for planning and writing a proof; understanding the difference between proving a theorem in which a complicated sentence involving quantifiers is a conclusion and using such a sentence as a hypothesis in proving a theorem about something else. When teaching real analysis using an inquiry-based approach, we have the added challenge of helping our students confront and surmount these obstacles while leaving the proofs of the theorems to them. We will discuss specifically how to help students understand and use definitions from analysis, and how to help students make connections between heuristic ("closer and closer") language and the precise language of "epsilonics." If time permits, I will also talk about the connections between geometric and analytical ideas and how to get students using good pictures both for their own reasoning and to help in the presentation of analytical ideas. (Received September 09, 2008)