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Department of Mathematics, 617 N. Santa Rita Avenue, Tucson, AZ 85721. *Writing in the Vector
Calculus class.*

The vector calculus class is usually a prerequisite for the more advanced mathematics classes: the introduction to proofs course for math majors, in mathematical physics and advanced statistics, in engineering and other sciences. Despite the consistent emphasis of some textbooks on the importance of various concepts, the class is usually too packed with topics to allow much time for exploration through formal mathematical reasoning. Is mere memorization of formulas what most of the students end up with in vector calculus? Is it recognized by students as the “pinnacle of calculus”, or is it just viewed as a degree requirement? What role does it really play in the mathematical development of a student? This presentation reports on efforts made to encourage a mathematical discourse on calculus topics. The students write careful solutions and mathematical justifications for selected problems, then they receive feedback from the instructor. The success or benefits of the method can be evaluated through the evolution of students’ writing and through their exam performance. The background is that of a multiple section vector calculus course at the University of Arizona, Tucson. (Received September 25, 2006)