

Calculus Without Limits – Abstract – Work in progress
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In our society the currently prevailing view is that calculus is extremely difficult and it takes the mind of a super genius to comprehend any idea what it is about. This societal attitude must be changed. The concepts of calculus are simple.

This view of calculus prevails only because the way calculus is introduced in classrooms and textbooks makes it appear incomprehensible and hard to learn. Calculations, which before computers were difficult to do by hand quickly and precisely, can now be done with calculators and computers. The teaching of calculus is a roadblock to increasing engineering and technology enrollments. It is time to consider

- 1) New definitions and visual interpretations of concepts – function, inverse function, derivative
- 2) Emphasis on the techniques of computing properties of curves, rising, falling, turning up, turning down, areas, arc lengths volumes, etc.
- 3) Emphasis on forms and the strategies of changing forms
- 4) Limiting curves under studied to those that are well behaved – that is curves that are mostly continuous, mostly smooth and do not wiggle excessively
- 5) Delaying introduction of Bolzano's analytic delta-epsilon methods of proof
- 6) Omitting mishmash of applications

Calculus can do much more for our society than serve as a vehicle for conveying proofs.