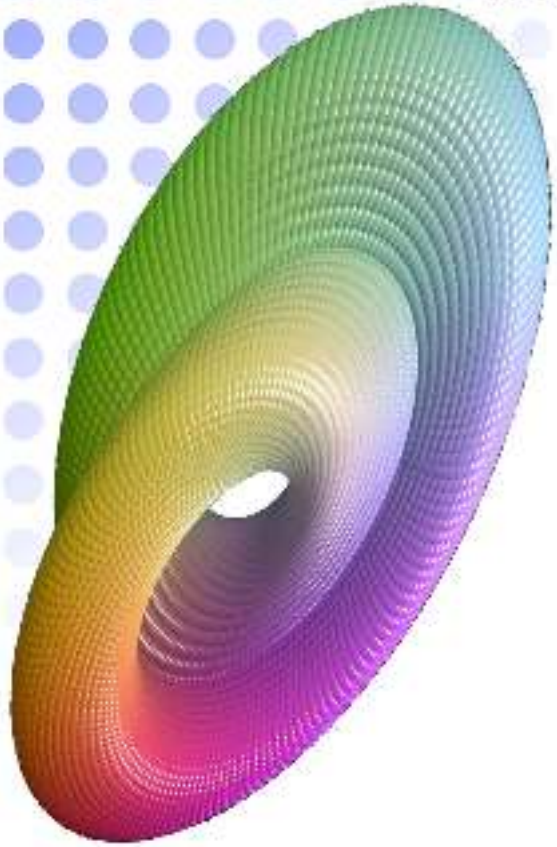
Michigan Math Club

Thursday at 4pm in East Hall 2851

(Nesbitt Room) Free Pizza and Pop



Finding Zeros of Functions by Iteration

E. Hunter Brooks

Abstract for 8 Dec. 2011

If you have played with the cosine button on a calculator, then you may have discovered that no matter which angle A you pick, the quantity cos(cos(cos(…(cos(A)))) tends to the same number 0.73908513…. This number is the zero of the function f(x) = cos(x) - x. Newton discovered a more refined iterative method than this one for finding zeroes of functions. We will investigate Newton's method - both its successes and failures - and look at applications to number theory.