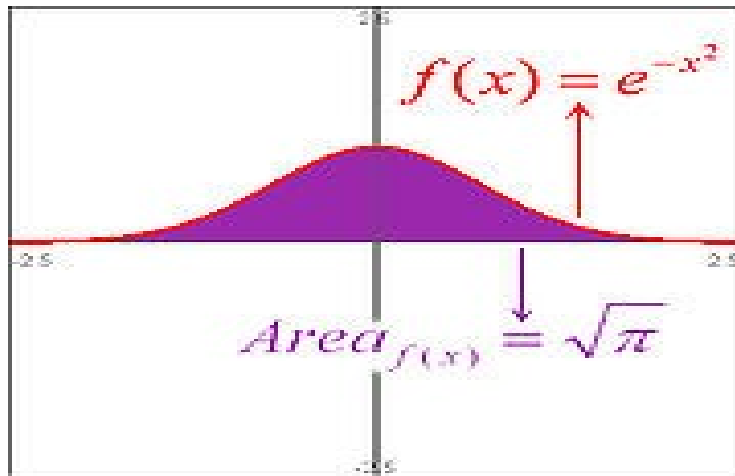


The SUMO Speaker Series for Undergraduates

(food from Pizza Chicago)
Wednesday, September 22nd
4:30-5:20, room 380C

Impossibility theorems for elementary integration

Professor Brian Conrad



ABSTRACT:

In calculus classes it is often said that $\int e^{-x^2}$ cannot be “computed in elementary terms.” How does one *prove* such a statement? At a more basic level, what exactly does “elementary terms” really mean? (Without a precise definition it's hard to make a proof!) After giving a reasonable definition, we'll discuss a remarkably concrete necessary condition for “elementarity” of integrals, and analyze the criterion in the case of $\int e^{-x^2}$ to verify it really is non-elementary.

sumo.stanford.edu/speakers