Integral Inequalities and Computer Algebra Systems

Authors:	**John Roumeliotis**,

Abstract:

Theoretical results involving approximation of integrals are often established from the construction and resultant manipulation of an appropriate kernel. The systematic use of these kernels has produced an abundance of new approximations and error estimates in terms of norms of the integrand. Notwithstanding the great success of this approach, many approximations and error results have yet to be discovered due to the algebraic complexities involved; especially those that involve product integrands.

We outline a method that uses the computer algebra system Maple that is able to recapture the well known Ostrowksi, trapezoidal and Simpson's inequalities. Moreover, the technique, which involves manipulation of the Peano kernel, can be adapted to develop new rules.

Download Screen PDF

Download Print PDF

Send this article to a friend

Print this page