Abstract

Numerical methods are techniques which give approximate but accurate solutions to difficult class of problems.

Fuzzy numbers are foundation of fuzzy sets and fuzzy mathematics that extend the domain of numbers from those of real numbers to fuzzy numbers.

Researchers in the past investigated a number of methods of numerical analysis with the help of Fuzzy theory. Recently, various methods have been developed for solving linear programming problems with fuzzy number. Many research works have been done on fuzzy numbers and on its applications in various fields. But very few developments have been seen in the area of numerical methods using fuzzy triangular numbers and actual computer codes.

In this paper the fuzzification of Newton Raphson method to find the solution of cubic equation has been discussed. Results have been obtained in the form of triangular numbers along with...
the membership functions using computer programs. The root obtained is then defuzzified using
centroid method to convert it into crisp number. Also computer codes are developed for the
Newton Raphson Method. Finally comparison has been made between the results obtained
from the two methods.

References

Method” Journal of Applied Mathematics Islamic Azad University of Lahijan,, Vol.7,
4. Ehiwario, J.C., Aghamie, S.O. “Comparative Study of Bisection, Newton-Raphson and
Secant Methods of Root- Finding Problems”, IOSR Journal of Engineering (IOSRJEN), Vol. 04,
Issue 04 [ 2014].
Intuitionistic Fuzzy Environment” , International Journal of Engineering Research and
Development, Volume 5, Issue 1,[ 2012], pp. 08-13 8.
8. Tanakan S.,“A New Algorithm of Modified Bisection Method for on linear Equation”,
Pure Mathematics, [2014].
Number Linear Programming Problems Using Linear Ranking Function”, Journal of Applied
Mathematics ,[ 2013].

Index Terms

Computer Science
Fuzzy Systems

Keywords
Newton Raphson Method, Fuzzy membership function, Triangular fuzzy number, α-cut etc.