# Using Maxima in the Mathematics Classroom

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## ABSTRACT

Coming from the MACSYMA system and adapted to the Common Lisp standard, the symbolic calculus program called 'Maxima' can be considered as a possible tool in the Mathematics classroom. Several circumstances may lead us to this consideration.

Firstly, this software is a free program included in the Guadalinex distribution, supported by the *Junta de Andalucía*, which makes it easily available at almost every school in Andalusia. Secondly, Maxima is able to manipulate and simplify algebraic expressions and it is also a programming language which allow us to create our own specific applications. Besides, it has a lot of packages as a complement, making it suitable for working in a lot of mathematical branches. And finally, this tool has been developed under several operative systems. Particularly, it can be implemented under Windows, Linux and Macintosh, what can contribute to spread its use.

The main aim of this work is to show some of the possibilities of Maxima and its graphical interface as a tool for teaching Mathematics at University as well as at Secondary school levels. Both Mathematics courses in Business degrees and A-levels can be provided with a resource that will ease the learning of this subject to students.

As a conclusion, we also present a report of the main strengths and weaknesses of this software when used into the Mathematics classroom.

## Keywords

Symbolic calculus, Mathematics teaching, algebraic expressions, management & business degrees, undergraduate Mathematics.