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FLAT CURVES GENERATION IN MATHEMATICA PROGRAM

The Mathematica program is the specialized platform which has been created for symbolic and numeric calculation from the field of all mathematics branch and has lots of graphic possibilities [1].

In the seventh version of this program the tools which were used in previous editions and connected with geometry and graphics have been improved and completed their set which gives a user the possibility of generation of curves in a simple way.

Equations which describe this curve (algebraic, polar or parametric ones) are good enough to generate a plot of a curve [2]. In many cases we cannot imagine how a change of a given curve parameter influences its character. That is why the authors have created the library of curves. A rule of these libraries elements formation have been worked out so that a user can use it without getting acquainted with every individual description of a curve. The authors have decided that library should be operated in the simplest method (Fig.1).

The next problem is to record parameters dimensions and plot a curve in such a form which will enable its further usage (pictures for presentation etc.). Precise change of picture dimension and represented range enable simple introduction with analyzed part of curve (Fig.2).

The library of procedures has been worked out its use in current research and as didactic aid for students. Placing extra information connected with the history of present curve as well as a part connected with curve generation is plane.
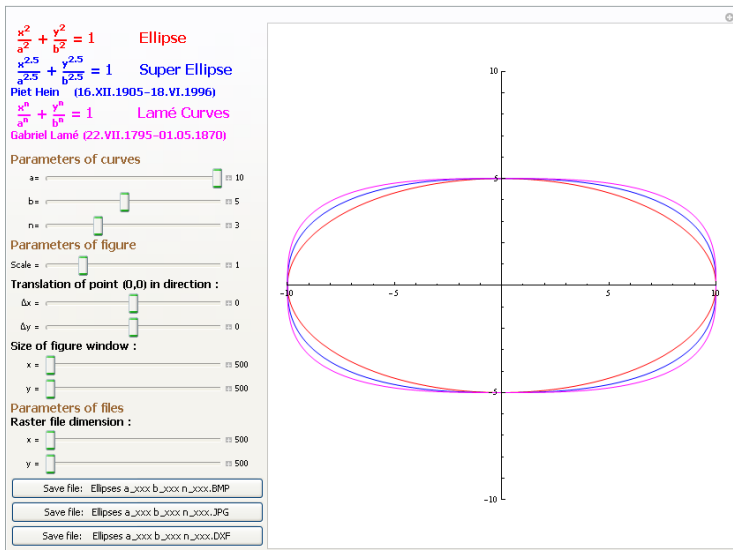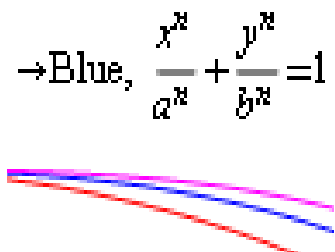
Fig. 2 Exemplary window for function of Ellipse, Super Ellipse and Lame Curves

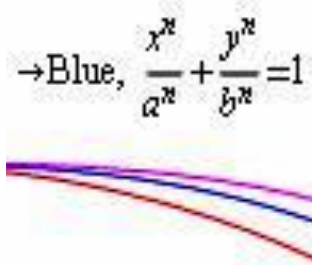a)   b)

Fig. 2. Exemplary files: a) BMP file, b) JPG file (compression)

References

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