
CURVES IN HISTORY AND IN TEACHING OF MATHEMATICS: PROBLEMS, MEANINGS, CLASSIFICATIONS

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In mathematical teaching nowadays curves appear as graphs of functions. They have more or less become an exercise of applications of calculus, and their place is less and less important. So the interest for curves disappeared for students and for teachers in secondary schools and also in universities.

But in history of mathematics, from Greek geometry to mathematics of today, curves play an important role. We can learn many things from history. The first point is that curves are not only a pedagogical object to judge the competencies of students: they were invented to solve problems of geometry, optics, etc. Another point was to examine how the curves can be drawn, produced or constructed, and we find many possibilities given by mathematicians of the past. Last point but not the least was to classify the curves. The purpose of the workshop is to examine some historical steps in the long history of curves, and the goal is to reintroduce curves in teaching as a rich, interesting, open subject. We will examine the possibility to create an European Team of teachers and researchers working together to progress on this subject.

Texts taken from Geminus of Rhodes (1st century), the Mathematical Collection of Pappus of Alexandria (3rd century), the Commentaries of Eutocius of Escalon (6th century), the Geometry of Descartes (1637), papers of Van Schooten (1654) and Leibniz (1693), the Introduction to the Infinitesimal Analysis of Euler (1748), papers of Peaucellier (1868), and (Kempe (1877), the Mechanisms for the Generation of curves of Artobolevsky (1964).