

## **MATHEMATICS AND ECONOMICS**

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### **Abstract**

In the study there are drawn and discussed some issues, connected with the rationalization of the nature and process of mathematical cognition with respect to the following: the subject and peculiarities of mathematics, the kinds of abstraction in mathematics, the methods of idealization, formalization and axiomatization. There is presented the specific role of the practice in the development of mathematics, the criteria for the genuineness of mathematical knowledge, some objective laws in the historical development of mathematics.

Special treatment is given to the mathematization of natural sciences and the practice as one of the leading tendencies in the development of contemporary science. There is put forward the idea, that the main cause for the process of mathematization is found above all in the qualitative growth in scientific knowledge. Of course the reason for the possibility to apply mathematics is hidden also in the development of mathematics itself, the latter offering adaptive mathematical mechanism, capable of studying quantitative interdependencies in the new spheres of the real world.

There is made an attempt at drawing the factors and possibilities for applying the mathematical tools in economics. There is emphasized the fact, that the need for specific study tools within economics itself as scientific knowledge calls for the intensive use of mathematics in economic theory.

The study pays particular attention to the need to build, test and use economic-mathematical models at the current stage of the economic development, characterized above all by the transition to the knowledge economy. In this context, in the study there is made an attempt, on the basis of the results that have been achieved, to outline the new concept of the role and place of economic-mathematical models in the system of theoretical and applied economic research, broadening the traditional views on the mathematical model as a tool for economic analysis.