

Funny puzzles

Jerzy Pogonowski

Department of Applied Logic, Adam Mickiewicz University, Poznań, Poland

In the lecture there will be presented a few *mathematical puzzles*, the solutions of which are interesting challenges for the intuition connected to everyday experience. In our opinion, the didactics of mathematics should not be reduced to forming the elementary mathematic intuitions and fluency in the simplest calculation algorithms and object constructions. The pupil should be made *interested* in mathematics, should be intrigued enough to be willing to face the problem himself – the problem expressed in a simple language so that he perceives the solution as almost touchable. Once he encounters difficulties in reaching the solution, the teacher's is to task to discreetly provide suggestions how to surmount them. The pupil should reach the solution himself, feeling he did it himself, with small help only from the teacher. The consciousness of success makes his curiosity more vivid and motivates to further intellectual adventures.

What is particularly interesting is the formulation of the puzzle – its plot should not be banal but it should provoke, intrigue and wake pupil's imagination. The possibility of using previously learned techniques provides her with the feeling of safety which is necessary in the situation of cognitive stress. The solving of a well-written puzzle is not limited to the skillful calculation or producing routine drawings. In its background it is worthwhile to place mathematical ideas that she had not learned yet, of course in a careful way, so that the pupil may take her time in transforming them in her mind.

The lecturer is no professional in didactics of mathematics nor a specialist in pedagogical sciences. The problems touched in his lecture are the results of reflection on several dozen of years in attending service during which he came to acquaint (usually hostile or coldly indifferent) female students of the faculties named as the Humanities with various mathematical concepts, techniques and constructions. Partially the problems presented are also linked to the author's activities which bear the traits of scholarly work, recently aimed at attempts to understand the origin, conditions, functioning, dynamics etc. of the *mathematical intuition*.